ASSESSMENT

Last Updated: 27 October 2015

Assessment encompasses all efforts to evaluate effects and gauge progress toward accomplishment of tasks, effects, and objectives. It also helps evaluate requirements for future action**,** helping answer two questions: "Are we doing things right?" and "Are we doing the right things?" In an effects-based construct, it is not possible to think about actions and their effects without considering how creation of those effects should be measured. Assessment applies as much to the conduct of counterair operations as to any other air, space, or cyberspace function. In fact, assessment may be more tangible and immediate in the case of counterair operations: if an enemy site shoots at friendly aircraft, it may warrant immediate dynamic targeting or at least inclusion on the next tasking cycle's list for deliberate targeting. Assessment is performed by personnel in the strategy, intelligence, surveillance, and reconnaissance (ISR), and combat operations divisions in the air operations center (AOC).

Measures and indicators

Measures are empirical observations used to evaluate progress of an operation. Indicators are things that can be inferred from existing evidence to indicate progress. These may be either quantitative or qualitative in nature. All of these must be determined and linked to friendly tasks and desired effects during planning. The types of measures and indicators used in assessment are described below.

At all levels of assessment, planners should choose criteria that describe or establish when actions have been accomplished, desired effects have been created, and objectives have been achieved. There are three distinct types of measures and indicators:

- **Measures of performance**: Objective or quantitative measures assigned to the actions of a task and against which a task's accomplishment, in operations or missions terms, is assessed. At the tactical level, measures of performance (MOPs) are generally related to weapons effects on individual targets. Operational level tasks and MOPs are typically broader and system-based (e.g., the number of surface-to-air missile (SAM) sites neutralized versus number of SAM sites operational).

- **Measures of effectiveness (MOEs) and success indicators**: Quantitative or qualitative measures assigned to an intended effect (direct or indirect), against which

the effect's creation is directly assessed. Some of these may be direct forms of measurement, such as first-hand observation of an early warning radar's destruction; some may be more circumstantial or indirect, such as signals intelligence reports of no emissions from the radar site. Success indicators evaluate progress toward objectives and MOEs measure progress toward effects.

Assessing the degree of friendly control of the air is challenging. The inherent characteristics of airpower—speed, range and flexibility—apply to enemy air and missile threats as well, which makes assessment of enemy actions and intent more difficult. As previously stated, the joint force air component commander's (JFACC) first priority is to determine the level of control of the air needed to achieve the joint force commander's (JFC) objectives. All subsequent planning and assessment is based on this determination. A thorough understanding of the enemy system and its components should logically drive the development of friendly objectives, effects and tasks. The key to effective assessment is to develop measures and indicators *at the same time* as the objectives, effects and tasks they measure—not after the fact. Measures and indicators should be either directly observable, or something that can be reliably inferred from other data.

Task performance is typically the easiest to measure. At the tactical level MOPs feed combat assessment: Was the mission flown? Were weapons released as intended? Did they create the weapons effects anticipated? Within the AOC, the ISR division's analysis, correlation, and fusion cell uses these tactical data to determine the status of enemy air systems (operational status of airfields, enemy sorties flown, SAM sites destroyed) and feeds this data to the operational assessment team (OAT) within the strategy division. Operational level tasks (e.g., neutralize enemy SAM systems) are also measured by MOPs and provide a big-picture report to the JFACC on task performance.

Measuring effects in the counterair fight may seem daunting, but the very purpose of counterair operations provides some guidance: counterair is conducted to ensure freedom to maneuver, freedom to attack, and freedom from attack. The effects associated with counterair will necessarily be related to these three items. It is possible to measure, directly, the number of successful friendly and enemy air attacks as well as the number of missions (or friendly operations) affected by enemy air activity. The desired effects will also be based on the level of control of the air required (as determined by the JFACC). Regardless of which effects are desired, or how they are measured, one important point must be understood: task performance and effect performance must be measured (and reported) independently.

Measuring task and effect performance separately provides the clearest picture of progress towards achieving the objective. The expected outcome of these measures and indicators is a rough alignment between task, effect, and objective performance. Since tasks were designed to create effects—and desired effects lead to the achievement of objectives—this makes sense. When the levels of performance in task, effect and objective do *not* align it may have a profound effect on future actions in the offensive counterair (OCA) or defensive counterair (DCA) effort.

For example, if a large number of enemy airfields are assessed as degraded due to runway damage (high task performance), but the enemy continues to generate a large number of sorties (low effect performance) then the OCA plan needs to be examined. How does the enemy continue to generate sorties? Are they rapidly repairing the runways? Have they relocated to other airfields or highway strips? Perhaps airfield runways are not a critical node of the enemy system after all—and the focus should shift to targeting fuel or munitions storage. These are questions that never would have revealed themselves if task performance was the sole determinant of success in the objective.

Even more revealing is a high level of effect performance, accompanied by low task performance. To use the example above, suppose that only a few enemy airfields have been targeted, but the enemy air force does not generate a single sortie. The enemy is clearly capable of flying, but for some reason (as yet unknown) does not fly. Future actions, in this case, will depend on the amount of risk the JFACC is willing to accept. If the acceptable level of risk is low—enemy airfields will continue to be attacked until the enemy's potential sortie count is very low. In effect: the task performance will "catch up" to the effect performance and the risk of attack from enemy aircraft will be very low. Conversely, if the JFACC is willing to accept a higher risk (or, if the enemy subsequently buries his aircraft in the sand) efforts may shift away from airfields to other components of the enemy IADS—or to different objectives entirely.

OCA and DCA performance may be measured separately, or they may be combined depending on the course of action selected. In many cases, desired effects for control of the air are applicable to both DCA and OCA. For example: OCA efforts to shut down enemy sortie production will necessarily have a positive impact on the DCA effort since fewer enemy aircraft will be available to challenge friendly air defenses. Conversely, successful enemy air attacks on friendly airfields (due to unsuccessful DCA efforts) will have a negative impact on friendly sortie generation—affecting both DCA and OCA (and other mission types as well.)

Effective assessment is a key feature of the effects-based approach to operations, and if done correctly should generate as many questions as answers. Warfare is a clash between living, thinking systems which react to one another in often unexpected ways. By measuring friendly actions (tasks) and changes in the enemy system (effects) separately, critical review of actions and effects becomes possible. The questions: why are my actions not producing results? Why is the enemy behaving in this manner? What changes should be made to the plan – and why? These are exactly the questions and answers the JFACC needs to effectively prosecute the JFC's objectives.