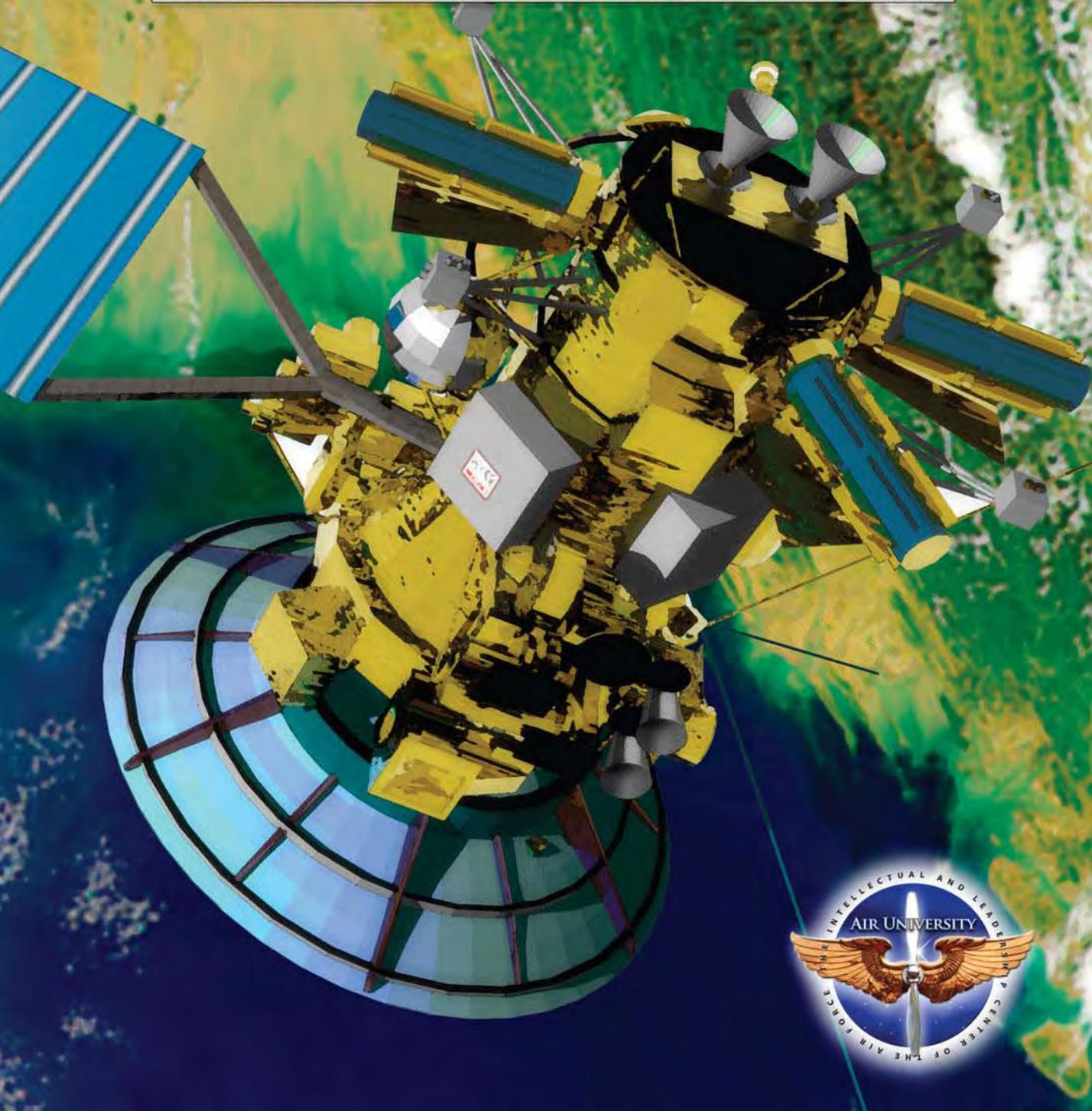


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Emphasizing Effect over Domain

Merging Three Organizations to Enhance the Efficacy of Our Nation's Intelligence Production*

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Editorial Abstract: Dr. Tomme proposes a new split in the Air Force's organizational structure that de-emphasizes the domain and stresses effects; this involves separating combat effects from combat-support effects for the best exploitation of these effects-based synergies. An Air Force Space Command combined with the new Air Force Intelligence, Surveillance, and Reconnaissance Agency would become the cornerstone of a new combat-support command that would enable a single commander to support joint Department of Defense operations and the intelligence community more effectively than is possible under the current structure. Such a new command could quickly become the nation's preeminent provider of high-ground command, control, communications, computers, intelligence, surveillance, and reconnaissance effects.

AIRFORCE SPACE Command (AFSPC) is currently organized around a domain: it does things in and through space. Such organization is not optimal because it ignores synergies gained from effects-based organization—the grouping of missions according to similar effects instead of by similarity of platforms and platform locations.

I propose a new split in the Air Force's organizational structure to de-emphasize the domain and place more stress on effects: the separation of combat effects from combat-support effects in order to better exploit these effects-based synergies. An AFSPC combined with appropriate elements from the new Air Force Intelligence, Surveillance, and Reconnaissance Agency (AFISRA), much of the op-

*Editor's note: The author adapted this article from his longer monograph *Expansion or Marginalization: How Effects-Based Organization Could Determine the Future of Air Force Space Command*, Research Paper 2008-1 (Maxwell AFB, AL: Air Force Research Institute, July 2008), http://www.au.af.mil/au/au/au/press/ARI_Papers/Tomme%20AFRI%20Paper%202008-1.pdf. The monograph fleshes out some of the arguments presented in the article.

erational structure of the National Reconnaissance Office (NRO), and all support functions working in cyberspace would become the cornerstone of a new combat support command that would enable a single commander to support joint Department of Defense (DOD) operations and the intelligence community more effectively than is possible under the current structure. Such a new command could quickly become the nation's preeminent provider of high-ground command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) effects. The question of whether one command absorbs the others or whether rough equals merge is only a matter of semantics; the important concept is that the consolidation would enhance our military's ability to deliver coordinated C4ISR effects.

Effects are the foundation upon which our modern military is based. *Effects-based operations* has circulated as a common buzzword for almost two decades now. Such operations have the goal of effectively and efficiently producing desired results where the focus is on the ends and not the means, with emphasis on the outcome and not necessarily on raw military destructive power.¹ The crux of my article is its suggestion of a path for organizationally separating producers of combat effects from units that produce support effects, taking advantage of synergies gained from organizing and training similar units together to form a more potent fighting force. Organizing along lines of common effects instead of domains aligns perfectly with the Air Force's goals of maximizing cross-domain dominance, enabling enhanced defense capabilities for our nation, and filling critical seams that exist within the current structure.

Effects are what matter, not the location or platform that produces those effects. An article in which the term *effects* is so germane to the discussion must define up front the meaning of combat effects and combat-support effects. Some have suggested splitting effects along kinetic/nonkinetic lines.² Such a division appears artificial, a red herring; whether one destroys the target with bombs, light, or binary

code, the destructive effect is all that matters. A more natural and organizationally useful split occurs between combat and combat-support effects. Combat effects are the results of direct actions taken to deny the enemy the use of an asset or direct actions taken to defend a friendly asset. However, combat effects are not necessarily kinetic. Maneuvering a small spacecraft near an enemy's imaging satellite and placing a screen to obstruct its cameras is an example of a nonkinetic action that produces the combat effect of negating the usefulness of that space asset. Taking action through the Internet to incapacitate systems necessary to the operation of an enemy nation's financial system illustrates a cyber-based nonkinetic action that results in a combat effect. Conversely, support effects are the results of actions that enable combat effects to occur, but those actions are not the ones associated with combat effects.

One may find a good doctrinal example of the difference between combat effects and combat-support effects in the dynamic-targeting kill chain of find, fix, track, target, engage, and assess (F2T2EA). Joint doctrine states that "the find, fix, and track steps tend to be ISR-intensive, while the target and engage steps are typically labor-, force-, and decision-making intensive."³ If an organization does not carry out the actual targeting and killing of the enemy asset in the F2T2EA kill chain, then that unit performs a combat-support function.* Many providers of combat effects *can* independently perform all steps in the kill chain, but they are most often assisted by providers of combat-support effects, who do not target or engage.

The use of the term *combat support* is not intended to denigrate those missions or imply that they are only secondary considerations. On the contrary, combat-support effects within the kill chain are becoming ever more important. In a recent article, Lt Gen David Deptula noted that "finding the enemy has become a great challenge. . . . Knowledge—having always been key—is assuming precedence over kinetics as the prerequisite 'weapon' of war. . . . We are in an era when we can already kill prac-

*Here, one may interpret *killing* to mean any method along the spectrum of negation—the ability to deny, disrupt, deceive, degrade, or destroy an enemy asset.

tically any target we can find. Our chief challenge is to *find-fix-track* low-signature targets, however fleeting and unique they may be. Without this capability, precise shooters are of little use” (emphasis in original).⁴ My article concerns itself mainly with the appropriate method of organizing our forces so these combat and combat-support functions operate as effectively as possible to ensure that the shooter has the best information obtainable.

Domain versus Effect

In the early 1990s, the Air Force reorganized many major commands (MAJCOM) to take advantage of synergies that come from grouping assets that deliver similar effects to the war fighter.⁵ For example, Air Combat Command (ACC) delivers primarily destructive kinetic effects, and Air Mobility Command delivers the effect of rapid, responsive logistics. There remains only one real holdout within the Air Force on the service’s push toward universal effects-based organization: AFSPC, the organization that prides itself on delivering “space effects.”

In congressional testimony and in a recent public speech at a major space conference, Gen Kevin Chilton, AFSPC commander at the time, stated that the first of his four main priorities for the command was to “preserve and expand our ability to deliver *space effects* to the joint fight” (emphasis added).⁶ This worthy goal has two problems. First, warriors do not care where their effects come from. The *space* modifier to *effects* is completely irrelevant to them. As eloquently stated by one current Marine space officer, “No one in the field has ever sent out an urgent call for more space. It’s the effects they want.”⁷

A quotation currently in vogue among senior space officers cites a young soldier who, when asked if he needed space to fight in today’s wars said, “No, all I need is my rifle, my box of ammunition and that little black box over there that tells me where I am.”⁸ Space officers proudly cite this soldier to show that space has become so pervasive that people

don’t even know they’re using it. They appear to have missed the irony that the quotation actually highlights the fact that warriors not only don’t *need* to know but also shouldn’t *have* to know they’re using space. Were the satellite-navigation information that soldier found so important delivered from another source, it would be just as valuable to him. As long as they get reliable, salient information that they need to prosecute the battle, and as long as they can effectively communicate, as well as give and receive orders at will, warriors are happy and effective. Details of the delivery mechanism should be transparent to them.

A second problem with the use of the phrase *space effects* is that many of the effects delivered by space assets aren’t unique, and warriors could actually benefit from the synergies of grouping them with other deliverers of similar effects. By combining the strengths of all space and airborne C4ISR assets under one commander, by leveraging global overflight and deep-look capabilities of orbital platforms, together with tactically tailorable timing and localization available from airborne and high-altitude/near-space systems, one could make the effects delivered by the command even more formidable and useful both to commanders in the field and to the national intelligence community (IC) as a whole.

AFSPC has long seen itself as the command that does things in and through the domain of space. As early as the mid-1980s, internal Air Force documents noted the problem that “space continues to be a place, not a mission for the United States Air Force.”⁹ Even the much more recent Space Commission Report continued to promulgate that nonproductive notion: “Space is not simply a place from which information is acquired and transmitted or through which objects pass. It is a medium much the same as air, land or sea.”¹⁰

AFSPC operates satellites that provide much of the nation’s strategic overhead C4ISR. * What if the command

- changed its focus from the domain to the effect?

*The NRO is responsible for a great deal of overhead ISR as well. I discuss its role later in this article.

- decided that *where* it operated mattered less than *what* it delivered?
- became an *effects-based* command?

Could it see its mission areas expand rather than contract? Could it become an even more effective enabling linchpin in our nation's defense organization?

The military's organizational structure must be derived from the large-scale goal of delivering the most effective defense for the nation. Anyone who has spoken to war fighters realizes quickly that they are effects-driven. It appears axiomatic that organization by domain is not necessarily the most efficient method of supporting them. We go to great lengths to ensure that human factors have been taken into account during the design of rifles and aircraft cockpits, assuring that these tools fit the way the warrior will use them. If we organized our support forces in a way that maximized the coherent production of effects and designed them to fit the way warriors use them, it appears equally obvious that their effectiveness in battle would increase.

I contend that AFSPC is on the verge of being marginalized primarily because of its misidentification of its function as a producer of combat-support effects within the larger machinery of national defense, and because of its insistence on limiting itself to Keplerian physics.¹¹ Granted, this focus is not completely internally driven—some of it is budget-driven. Adding further mission areas could cost money that is in short supply. However, to throw up one's hands at this obstacle is to surrender to the bean counter's point of view instead of looking at the bigger picture of improved national defense. US Strategic Command (USSTRATCOM) and the DOD leadership also direct much of AFSPC's focus. Significant internal factions within the command continue to shun anything nonorbital. Many senior space officials and thinkers actively promote

the idea that the space domain is so different and revolutionary that it, not effects production, becomes the primary consideration. This mind-set may be the greatest inhibitor to AFSPC's becoming a more effective contributor to the national fighting force.

Notably, the space doctrines of the DOD and three of the four services¹² also treat the domain as more important than effect.* Like every MAJCOM, AFSPC directly operates under two sets of doctrine: joint and Air Force. Air Force Doctrine Document 2-2, *Space Operations*, deliberately orders the two views of space (i.e. domain and effect) in a way that highlights the platform-based, domain-first view:

First, [emphasis added] space is viewed as a *physical domain* [emphasis added] where *space-centric* activities are conducted to achieve objectives. *Space is a domain—like the air, land, sea, and cyberspace—within which military operations take place.* This view is relevant at the tactical (e.g., operation of specific platforms), operational (e.g., synchronization of military operations to achieve the commander's objectives), and strategic (e.g., space as a domain that must be protected and controlled) levels of war. . . . The *second* [emphasis added] doctrinal view of space is an *effects-centric* view, and is particularly relevant at the operational level of war.¹³ [other emphasis in original]

AFSPC is thus both internally and externally driven toward domain as its primary reason for existence and thus appears only peripherally focused on effects. For a major military organization with such huge potential, focusing on the domain leads inexorably down the path of mediocrity.[†] Although such a doctrinal view of space may benefit those who seek a Space Force separate from the other services, it prevents the command from reaching its full potential to serve the higher cause of national defense by relegating effects production to a secondary position. It also endangers the command's continued existence since other organizations understand the bene-

*Joint, Air Force, and Army doctrine treat space as a domain first. Only the Navy discusses effects ("capabilities," in its words) first without mentioning domain or platform.

[†]*Mediocrity* is a relative word. Without question, AFSPC currently controls the greatest, most powerful, most capable space force in history. However, comparing the command with what it could be with the appropriate effects-based focus reveals the appropriateness of the term.

fits of massing similar effects under a single commander and have their eyes on portions of AFSPC's turf.

Filling the Effects-Based Void

In hindsight, the logic behind organizing major military commands by effect is almost self-evident. Assigning responsibility for closely related effects to an organization enables single, very senior commanders to use their "big-picture" views of the need for those effects to guide the organization of subordinate units, training of personnel, and acquisition of their equipment. They can thus ensure that all the intricate parts work together to provide a seamless, interwoven, redundant-where-necessary whole that supports the combatant commanders. It is hard to imagine why it was ever done differently.

Establishing cross-domain dominance practically requires an effects-based orientation. According to Gen T. Michael Moseley, former Air Force chief of staff, "We are transforming our thinking from considering the space and cyber domains as mere enablers of air operations to a holistic approach that factors in their interdependence and leverages their unique characteristics. We must continue to push this conceptual envelope—and expand the boundaries of existing tactics, techniques and procedures—to fully exploit the synergies of cross-domain dominance."¹⁴ To become more than mere enablers, practitioners of air, space, and cyber specialties must be fully integrated into the appropriate effects-related portions of the kill chain in order to maximize those interdependent synergies. As Maj Gen John C. Koziol, commander of the AFISRA, succinctly puts it, "We must focus on how we achieve and assess effects, not where."¹⁵

Conversely, the concept of organizing space as a domain doesn't appear to survive an effects-based investigation. One consistent theme appears throughout the literature and in many speeches delivered by prominent space advocates: a separate Space Force is patiently ges-

tating inside the Air Force, waiting until the proper stage of its development to emerge like Athena, fully armored, from the skull of Zeus. In the view of these domain advocates, a Space Force is the ultimate goal—the proper target at which space professionals should be shooting.

The argument for a separate Space Force, while good for space professionals in that they could finally prevent their budgets from being raided for air-breathing exigencies,* does little else to help the greater cause of national defense. The key defining capability of any war-fighting organization is the ability to apply force to the enemy's territory; air-on-air, ship-on-ship, and other such encounters are merely means to the territorial-conquest end. Until we solve the dollars-per-kilogram-to-orbit problem (i.e., the high cost of space launches), can launch on a few minutes' notice, change orbits at will, and truly solve the energy-dissipation problem during reentry, implementation of a separate Space Force remains an academic exercise because force application where it matters—in the enemy's backyard at a time of our choosing—is impractical. It is hard enough to rationalize the effectiveness of an air occupation, much less one from space.

Note the other side of the coin of these dilemmas preventing effective space-based force application: if we shoot even higher than Space Force advocates are currently aiming, the need for a separate force actually evaporates. Solve the expedient and affordable launch, maneuver, and reentry problems, and the Space Force begins to look a lot like today's Air Force—but with a greatly expanded service ceiling. From a tactical point of view, the artificial distinction between endo- and exoatmospheric regimes disappears when warriors can maneuver in and out of space at will; the fallacious academic argument about an artificial dividing line in the continuous transition between atmosphere and vacuum dissolves. Current nonmaneuverable space-asset manifestations are recognized as functional equivalents of earthly television antennae and sea-based buoys, and the current Air Force air-

*This problem, actually in dire need of a solution at the present time, is perhaps the only existing, rational basis for pushing for a separate Space Force.

and-space mantra becomes reality. We will eventually find solutions to each of these problems, but reasonable expectations of technological progress in the next several decades indicate we will not do so in the short term. Thus, we better serve the greater good by integrating the effects produced by orbital assets with similar ones produced by nonorbital assets instead of segregating space assets through an artificial domain distinction.

While AFSPC has been moving away from effects delivery and toward a Kepler-only paradigm, others within the Air Force have picked up the dropped ball and moved out in a more productive direction. Gen John Jumper, former Air Force chief of staff, attempted to foster a mind-set that integrated air and space ISR operations “so that the space guys were forced to be less platform-centric and more results-oriented.”¹⁶ Evidently, he believed that AFSPC was more interested in domain than effect. Apparently reacting to the same perceived proclivity among officers within the space community to favor platform over effect, the Air Force recently announced the formation of the very effects-based AFISRA.¹⁷ This new agency may soon have the mandate to take a large portion of the current AFSPC portfolio—and then morph into a MAJCOM of its own—in order to deliver coordinated space/airborne ISR effects to the war fighter.

Currently, stand-up of the AFISRA essentially involves only renaming the former Air Intelligence Agency, previously located under ACC. However, it does not take a rocket scientist to read between the lines in the briefing presented to Air Force leaders that justified the agency’s formation to see where they believe the future lies.¹⁸ In that briefing, General Deptula envisioned “transform[ing] AF [Air Force] Intel[ligence] into a *pre-eminent* military intelligence organization; with the *most respected* personnel; and the *most valued* ISR capability” (emphasis in original).¹⁹ He identified this goal as an approach designed to “manage ISR from a capabilities based perspective, and as a consolidated functional area.”²⁰

How does one go about consolidating ISR as a functional area? The designers of this briefing clearly understood that in order to provide the nation the absolutely finest intelligence capability, they needed to own and control not only the intelligence analysts but also the means of producing the data the analysts would use. The National Research Council also recognizes the synergy gained by colocating collection and analysis within the same organization since

the principal function of the intelligence, surveillance, and reconnaissance . . . component of command, control, communications, computers, intelligence, surveillance, and reconnaissance . . . is to find, fix, and track both friendly and hostile forces, as well as to assess damage to hostile targets in an area of interest.* In addition to sensing (collection), the function includes the tasking of sensors and the integration, interpretation, and exploitation of sensed information.²¹

A telling phrase appears on a slide from the AFISRA stand-up briefing that discusses longer-term actions which the nascent command saw as future requirements: “Explore consolidation of related AF space activities into AF intel.” That statement stabs right at the heart of the domain-based ethos and appears to be a reaction to AFSPC’s apparent lack of emphasis on effects delivery.

The impetus behind creation of the AFISRA—giving a single commander control over both the means of production and the means of analysis for ISR—is a line of thought that logically crosses organizational lines at a higher level than just within the Air Force. The 2001 Space Commission Report touched on this even more politically sensitive thrust when it suggested that the NRO shift a large portion of its responsibilities to the Air Force.²² Such a broad consolidation would significantly enhance the nation’s ability to deliver ISR effects.

In its early days, the NRO was an agile acquisitions organization that could quickly field systems vital to the nation’s defense. However,

*This F2T2EA reference leaves out “target” and “engage”; these authors definitely understood the break between combat and combat support.

according to the report, “The NRO’s capacity to convert leading edge research and technology into innovative operational systems is inhibited by the requirement to maintain its legacy programs.”²³ What better way to return to the lean organization of the NRO’s glory days than to shed its long-term maintenance requirements by passing them on to an Air Force ISR Command (AFISRC)? With such an organizational shift, AFISRC would assume control of all day-to-day space-based ISR activities, integrating them seamlessly into USSTRATCOM’s global operating picture while allowing the NRO to return to a “skunk-works” mentality led by the Central Intelligence Agency’s considerable brainstorming and expertise present in its early days.²⁴ Such an organization could quickly deliver cutting-edge technology to meet war-fighter needs without having to devote large amounts of manpower to supporting operations after delivery of the system. Considerable coordination between AFISRC and the NRO would need to take place to make each handoff run smoothly, but such coordination would undoubtedly facilitate a better understanding within both organizations of the requirements from the field that drove the development of each NRO system in the first place.

Some have argued that the real strength of the old NRO was the system-specific end-to-end responsibility and accountability for a single pillar of excellence vested in a single individual.²⁵ However, ship builders do not routinely go on to command ships; aircraft designers are not ultimately the pilots. Even the acquisition arms of the uniformed services are separate from the operational arms. Although all of those groups take input from the end users—and even are manned in part by those who have been or will be end users—the entire organization does not normally become the operator.

The natural break between designer/manufacturer/acquirer and operator takes place after the initial shakedown of the system. There appear to be no fundamental reasons why such a model would not also work for a revamped NRO. Individual accountability could be assessed upon successful delivery of a fully functioning asset to the end user. Once the

newly responsive NRO designed and launched its few-of-a-kind systems, it could transfer day-to-day operations to AFISRC and begin working on the next generation of systems.

Unfortunately, arranging our intelligence infrastructure to achieve that single intelligence capability is easier said than done. While DOD versus IC institutional rivalries play a role in these difficulties, the root cause is actually much higher than the level of the individual agencies and cabinet departments. It lies in the basic structure of Congress itself. Both the House of Representatives and the Senate have separate committees that oversee the DOD and the IC. Each committee fiercely guards its own empire, and none is likely to surrender budgetary or oversight authority to another without momentous political bargaining, even if such actions would result in demonstrably better effects production from assets now separately managed.

Further discussion of the desperately needed consolidation of orbiting and airborne C4ISR functions controlled by the defense and IC divisions of Congress lies beyond the scope of this article. I introduce the subject here to give the reader an idea of the daunting nature of true effects integration. However, in addition to the stand-up of the AFISRA, the Air Force can take a number of actions independently of other services and government agencies to increase significantly the efficacy of C4ISR effects.

Further Consolidation for Better Effectiveness

Action taken by the Air Force to consolidate all of its ISR in one effects-based organization is definitely a move in the right direction. However, it could go just a little further and become even more effective. ISR does not operate in a vacuum, isolated from all other things. ISR information must be communicated across distances near and far, from point of collection to point of analysis to point of use. Most, if not all, of the information generated by our ISR system passes from machine to machine, processed almost exclusively by

computer. ISR information is also one of the primary influencers of the orders that pass through the command and control (C2) networks—networks again almost totally handled by computer. We commonly use the label *C4* to describe the four functions (command, control, communications, and computers) so critical to an effective ISR program. Instead of stopping at AFISRC, consolidating functions so that the command becomes the Air Force C4ISR Command (AFC4ISRC) would make it even more effects-based. With the addition of those functions, its commander could concentrate on *all* interrelated problems associated with being the premier deliverer of C4ISR effects to the entire DOD and the nation as a whole. The command would become, in the words of General Koziol, “an all-source, full-spectrum ISR mission-capable organization.”²⁶

If one uses Col John Boyd’s observe-orient-decide-act (OODA) loop model to see how interrelated these support effects are, the grouping is even more logically effects-based.²⁷ In this model, the “observe” portion is obviously ISR assisted by precision navigation and timing to place the observations accurately. ISR observations are merely data until transformed into information through intensive computer and computer-assisted analysis, the “orient” portion of the model. Some form of communications then transmits ISR information to commanders, who “decide”—the command portion of C2—and send decisions to subordinate units in the field, again using communications, for the control portion of C2. Only after the entire C4ISR process has had its say do warriors execute the “act” portion of the loop. Thus, one can view C4 as a domain of sorts—a virtual, digital medium from which effects can be derived, the domain enabling the entire OODA loop. Consolidation of C4 with ISR would certainly optimize the possibilities for improved delivery of ISR effects.

Once all this consolidation has occurred, AFC4ISRC would become a much more effective organization supporting USSTRATCOM’s Joint Functional Component Command for ISR. It would work hand in glove with other intelligence organizations such as the National Geospatial-Intelligence Agency and the

National Security Agency to satisfy combatant command and national operational and intelligence requirements. The critical effects for which it has responsibility would even enable much of the work of those other agencies. Having a single person responsible for coordinating delivery of all of the Air Force’s ISR effects—whether derived from satellites or dedicated ISR unmanned aerial vehicles—can only improve the service’s ability to function in the joint arena.

Of course, AFSPC consists of more than just C4ISR. It also has a significant combat-effects component that includes nuclear missiles and organizations devoted to offensive and defensive counterspace. Those components would not belong to AFC4ISRC. I discuss their proposed disposition in a more lengthy publication.²⁸

Conclusion

General Moseley recently articulated three precepts for revolutionizing airpower.²⁹ Two are germane to this discussion: (1) the development of new operational concepts that integrate air, space, and cyberspace, and (2) the transformation of Air Force culture and its organization. An effects-based way of integrating the three existing organizational domains of air, space, and cyberspace involves consolidating all ISR-related tasks, regardless of domain, thereby gaining synergies from organizing, training, and equipping producers of support effects into one organizational location. Organizing by effect is a key enabler to the goal of establishing cross-domain dominance. It “refocus[es] our organization and culture on the warfighting mission [by] implement[ing] advanced operational concepts to fly, fight and win in all domains.”³⁰

Being able to operate in space with personnel who understand that domain in exquisite detail is, without a doubt, one of the key enablers of modern warfare. However, like a hilltop taken by ground forces, having a presence in space is of no inherent value. Troops in combat do not take a hill just to be there. They understand that what they can *do* from the

hilltop makes it valuable. Likewise, it is the effects we produce from space and cyberspace that matter.

The primary goal of all these recommendations is to develop a new structure that supports joint DOD operations, combat operations, and the national IC more effectively than the current organizational structure. At present, disparate organizations are responsible for the delivery of small, isolated bits of C4ISR effects. Focusing on effects instead of domain will solve many of these problems, enabling the even more effective support we all desire. To institute this change, we must consolidate under one command all support functions dealing with C4ISR effects, regardless of whether the platforms delivering those effects reside in air, space, or cyberspace. AFSPC's global positioning system and communications satellites, ACC's U-2 and RC-135 intelligence-gathering aircraft, the NRO's ISR birds, and a plethora of other C4ISR assets—all would be gathered into one effects-based organization. (Air Force Cyber Command, originally intended as a separate MAJCOM, will now become a numbered air force under AFSPC.³¹ This is a positive first step toward a restructuring for coordinated effects delivery because it places cyber intelligence functions under the umbrella of a more general ISR organization.)

The various commands need to embrace an expanded vision of their roles within the greater whole of national defense instead of pushing away and separating missions that logically should be integrated.

It is imperative for national defense to integrate C4ISR effects to move more effectively toward the goal of acquiring a seamless picture of the battlespace, and to significantly improve C2. Completely coordinated intelligence is every bit as important as a properly coordinated attack. The first step toward realization of that goal calls for a revision of service and joint space doctrine to reflect the primacy of effect. Because cyberspace doctrine is in its formative stage, we should build in consideration of these crucial points from the beginning. From these doctrinal changes will logically flow an integration of the producers of C4ISR effects.

Though not previously brought together under one heading (as I have hopefully done in this article), the conclusions presented here are not mine alone. In fact, in the very speech cited above in which he listed "space effects" as a goal for AFSPC, General Chilton later demonstrated a thorough understanding of the fundamental problem when he said, "It's about delivering effects. It's not about just flying satellites."³² □

Notes

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