

## **The ISR Traffic Jam: How to improve ISR operations in USINDOPACOM**



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## **Abstract**

As the department of defense (DoD), shifts its focus from counter insurgency (CI) operations toward great power competition (GPC) specifically in the United States Indo-Pacific Command (USINDOPACOM) theater, commanders and staff will need to prepare for an increase in ISR capable platforms. Without proper preparation and restructuring USINDOPACOM will experience a similar ISR traffic jam that CENTCOM has. Increased capability does not lead to increased efficiency or less intelligence gaps, this is due to several factors one being the principle of induced demand. To overcome these factors, USINDOPACOM commanders will need to replace the collection management model and delegate mission command authority to ISR mission commanders. Introducing mission command focused ISR operations would not only help prevent the ISR traffic jam but enable accurate assessment of ISR operations and ultimately greater efficiency.

## INTRODUCTION

In March of this year in a session of the Senate Armed Services Committee, Adm. Philip Davidson, former United States Indo-Pacific Command (USINDOPACOM) Commander, announced his request to dramatically increase the amount of Intelligence, Surveillance, and Reconnaissance (ISR) in his theatre. He stated he currently only has “one-quarter” of its total ISR needs.<sup>1</sup> As ISR capabilities continue to flow into the Pacific theater, USINDOPACOM will be face with the same problem that CENTCOM has struggled with for decades. An increased number of ISR platforms does not necessarily lead to greater effectiveness or reduced intelligence requests. This paper will attempt to answer why this statement is true and how the USINDOPACOM Commander and staff can learn from ISR problems in CENTCOM to prevent an ISR traffic jam as the U.S. shifts to great power competition in the Pacific.

A commonly held belief is that if we want to know more about the enemy in a specific theatre we can increase the number and type of ISR assets to satisfy the intelligence requirements or intelligence gaps. This line of thinking is very similar to the build bigger roads argument to solve traffic problems. The reader, like many people stuck in a traffic jam, may have thought at one time that if the road they were on simply had another lane or multiple lanes there would not be as much traffic. However, research has found that building bigger roads does not make traffic lighter, in fact it can make the problem worse. The reason for this can be explained by the concept of induced demand. This concept in simple terms means that as the supply of a resource increases the demand for that resource also increases at the same or similar rate. Therefore,

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<sup>1</sup> Admiral Philip Davidson, Testimony before the Senate Armed Services Committee meeting, Washington DC, March 9, 2021.

simply building bigger roads in heavy populated cities does not reduce traffic jams.<sup>2</sup> We see similar dynamics with ISR assets in CENTCOM.

During the early 2000s the number of ISR capable aircraft rose dramatically in CENTCOM theatres. By 2008, 80% of all the DoD ISR aircraft, from remotely piloted aircraft to planes like the U-2, were busy in CENTCOM areas of operations. Despite this increase in capacity and capability the demand for ISR assets did not decrease but rather increased.<sup>3</sup> As more and more ISR capable platforms arrived in theatre, CENTCOM experienced an ISR traffic jam where ISR capabilities were literally flying circles in the sky waiting for a mission because of ineffective mission taskings.<sup>4</sup> Increased capacity did not lead to greater effectiveness or reduced demand. There are several reasons for this, larger number of assets creates larger demand to sort and organize and process the data into intelligence, increased asset numbers create more time and effort to assess and assign assets to correct missions, and of course the principle of induced demand. CENTCOM has understood there have been challenges in tasking ISR platforms effectively and has had outside agencies, such as the RAND corporation, conduct studies on ISR effectiveness in their area of responsibility.<sup>5</sup>

As stated above, one of the reasons for decreased efficiency as capacity increases is the requirement to sort, organize, and process the data. This is an easier problem to solve, as it can be solved with simply greater manpower, or improved structured data formats for implementing

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<sup>2</sup> Gilles Duranton, Matthew Turner, “*The Fundamental Law of Road Congestion: Evidence from US cities*”, *American Economic Review*, Oct 2011, 2616.

<sup>3</sup> Defense Industry Daily, “*CENTCOM Looks to Boost ISR Capabilities in 2008-2009*”, Aug 2008.

<sup>4</sup> Authors own experience.

<sup>5</sup> RAND Corporation, “*Measuring Intelligence, Surveillance, and Reconnaissance Effectiveness at the United States Central Command*”, Jan 2021, 2.

advances in artificial intelligence (AI) sorting and identification.<sup>6</sup> These solutions relate to the intelligence processing aspect of ISR, this paper focuses on the operational aspect of ISR.

There are three concepts the USINDOPACOM commander and staffs should think about to prevent an ISR traffic jam. First, ISR operations should be missionized not generalize, second, measures of effectiveness and performance must tie to mission impact and be assessed at the mission level, and lastly ISR operations should be led and not managed.

### **Missionized not Generalized ISR**

One of the problems with properly allocating and prioritizing ISR capabilities is the vague and obfuscating language to ISR operational taskings. During Operation Iraqi Freedom U-2 pilots would be tasked with “ISR taskings” to take images throughout Iraq.<sup>7</sup> Images taken at different times over the same location were used to try and identify IEDs by looking for changes between images, a technique called change detection. Ultimately the U-2’s efforts were wasted because they were being tasked to take images over the entire AO, regardless of troop movement, in a “peanut-butter spread” fashion causing days in between images, while most insurgents planted and detonated IEDs within hours.<sup>8</sup> The “ISR taskings” some would say was successful, because they satisfied collection requirements over a large area, however the ISR operations should have been focused on areas where friendly forces were maneuvering requiring integration of the aircrew with ground personnel, this is a mission set known as Close Air Support (CAS).<sup>9</sup> Had the U-2 been tasked with a specific mission set, vise simply an “ISR

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<sup>6</sup> Brian Hill, “*Assessing ISR, effectively measuring Effectiveness*”, Air and Space Power Journal, Fall 2017, 41.

<sup>7</sup> Jason Brown, “*Strategy for Intelligence, Surveillance, and Reconnaissance*”, Joint Forces Quarterly, Mar 2014, 39

<sup>8</sup> Stephen C. Price, Jr., “*Close ISR Support: Re-organizing the Combined Forces Air Component Commander’s Intelligence, Surveillance and Reconnaissance Processes and Agencies*” (Thesis, Naval Postgraduate School, December 2009), 156.

<sup>9</sup> Joint Publication 3-09.3, “*Close Air Support*”, Nov 2014, xi.

tasking” of collecting images from a target deck they arguably could have prioritized specific areas and locations to focus on and been more effective.

ISR is not a mission, treating it as a mission creates confusion, however there are specific mission sets under ISR operations. Joint Publication 1-02 defines ISR as, “An integrated intelligence and operations function”.<sup>10</sup> ISR is a core function much like Air Supremacy is a core function for the Air Force. When an F-22 is tasked, it is not given an Air Supremacy mission but is given an Offensive or Defensive Counter Air (OCA/DCA) mission. Those mission sets are clearly defined, tactics have been written specifically for them and the mission is much easier to assess if it was effective or not. However, in ISR operations it is common for assets to be given an “ISR tasking”. While there are usually essential elements of information (EEI) or a target deck that assets look for, an “ISR tasking” is not well defined, there are no tactics for general ISR, and it is much more difficult to assess if the mission successfully had the impact the commander desired. A lack of mission specifics, or specific ISR mission sets, has led to an inefficient collection requirement model and led CENTCOM to make up “roles” for ISR assets.

In the CENTCOM RAND ISR effectiveness report they identified various “roles” that ISR assets had: ISR support to fixed point security, ISR support to force protection of maneuvering friendly forces, ISR support to the targeting cycle, ISR support to strike planning and damage assessment, and ISR support to intelligence.<sup>11</sup> These ISR “roles” are not well understood like traditional mission sets and are not standardized anywhere. If we break down the “roles” to traditional missions we get: force protection, close air support, dynamic targeting, reconnaissance, and surveillance. These mission sets are much more defined and thus help in

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<sup>10</sup> Joint Publication 1-02, “*Department of Defense Dictionary of Military and Associated Terms*”, Nov 2010, 127.

<sup>11</sup> RAND Corporation, “*Measuring Intelligence, Surveillance, and Reconnaissance Effectiveness at the United States Central Command*”, Jan 2021, 2.



assessing the effectiveness of the missions. Shifting to a mission set focus for ISR operations in the Pacific theater will help alleviate the “granularity” problem that the RAND study highlights as a challenge to ISR assessment effectiveness in CENTCOM and help properly allocate and prioritize ISR operations.<sup>12</sup> Some ISR mission sets that can be used in competition vise conflict in the USINDOPACOM theater are: Force Protection (I&W), Search and Rescue (SAR), Surveillance, and Reconnaissance. Focusing on specific mission sets for ISR operations can help USINDOPACOM commanders effectively task and improve assessments, thus avoiding an ISR traffic jam.

### **Measuring Mission Effectiveness**

ISR operations measures of effectiveness (MOEs) and measures of performance (MOPs) are used to attempt to assess the efficiency and effectiveness of ISR operations, however because of lack of specifics and mission focus, MOEs and MOPs can be misleading and inaccurate. Each metric has its own flaws but moving toward mission set focused operations can improve both metrics.

Measures of performance can answer the question, “are we doing things well?”, but they can also be misleading if not related to a desired effect. Going back to the traffic jam analogy, if the designers of a road measured the through put of cars (the number of cars passing through a point on the road), then building an extra lane should show higher throughput. However, to see if the traffic jam problem was reduced they would have to measure the average time a car spent on a specific stretch of road. A measure of performance should tie directly to the effect operations are looking to achieve.

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<sup>12</sup> RAND Corporation, “*Measuring Intelligence, Surveillance, and Reconnaissance Effectiveness at the United States Central Command*”, Jan 2021, 7.

In a similar way, measures of ISR performance need to be related to the intent of the ISR operation. If an ISR MOP simply count the total hours an ISR platform spent collecting data, then it would not be able to answer the question the mission is assigned to answer. For example, if a commander wanted to know the number and type of ships sailing in a stretch of the South China Sea for a specific intent, a surveillance mission, a measure of performance could be the number of ships found over the number of ships identified. In this case a higher number would indicate a problem in identification. If the numerator were low, this could indicate a problem in finding ships. In either case, using the intent of the tasking (including negative reporting) would be easier to assess the effectiveness of the surveillance mission than simply counting the number of hours an asset spent in the area. An important note is that MOPs generally do not tell you if you are looking for the right things, that is the intent behind MOEs.

Measures of effectiveness (MOE) are supposed to answer the question are we doing the right thing as opposed to are we doing things well, however if MOE are not tied to mission accomplishment they are subjective.<sup>13</sup> One key insight from the RAND study showed that feedback like asking the commander if ISR was effective in getting him or her actionable intelligence was “infrequently obtained and not of great value in assessing the effectiveness of ISR collection”.<sup>14</sup> The reason why directly asking a commander if ISR was effective did not work is because by the time effects of ISR operations reach a commander they are lumped in with all ISR information (all source data) and their for extremely difficult if not impossible to tell if individual assets and missions are effective. The problem here is MOE should be assessed at the mission level not the operational or strategic level to assess mission effectiveness. A

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<sup>13</sup> Brian Hill, “*Assessing ISR, effectively measuring Effectiveness*”, Air and Space Power Journal, Fall 2017, 36.

<sup>14</sup> RAND Corporation, “*Measuring Intelligence, Surveillance, and Reconnaissance Effectiveness at the United States Central Command*”, Jan 2021, 4.

collection manager model does not have anyone qualified or authorized to make these mission level effectiveness assessments, thus MOEs become subjective.

Apart from losing the ability to assess individual assets effects to mission accomplishment, current collection based MOEs reward inaccurate reporting and promote resource hogging. Much like the use or lose concept of end of year funding in the military, were if a commander does not use all the money allotted to his or her unit by the end of the year they could lose it the following, ISR assets are allotted to commanders by need. Commanders are then prone to have their assets used even if a mission or tasking is less effective (like having an asset with cameras over a cloud covered area) to keep “hours of ISR” up and not risk losing an asset.<sup>15</sup> Additionally, because a commander’s level of confidence and perception of risk is directly tied to their ISR operations, competition for resources between organizations personally affect the commander. Thus, ISR MOEs incentivize commanders to report mission effectiveness and use resources at a higher rate than mission accomplishment demands.

It costs nothing for a commander to request and then task ISR capable platforms. This is one reason why the principle of induced demand holds, and the major reason why demand for ISR capability increases even as ever-increasing numbers of assets are available. According to Duranton and Turner the solution to induced demand is cost.<sup>16</sup> If users of a resource incur a cost, the demand will decrease to a manageable and efficient level. One way that the USINDOPACOM Commander can induce cost to ISR operations and avoid a traffic jam is by encouraging delegation of authority to ISR mission commanders.

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<sup>15</sup> Authors own experience.

<sup>16</sup> Gilles Duranton, Matthew Turner, “*The Fundamental Law of Road Congestion: Evidence from US cities*”, American Economic Review, Oct 2011, 2618.

## ISR Mission Command

Mission command is a principle of almost all military operations as it contributes to (among other things) risk management and agile force employment, but it is absent in ISR operations. As Colonel Jason Brown pointed out, “one fundamental flaw in current joint (ISR) doctrine, is that ISR is managed, while other forms of operations are led”.<sup>17</sup> Instead of empowering ISR mission commanders, Joint Publication 2-0 defines collection managers as the persons who plan and monitor ongoing ISR operations. There are various reasons why the joint ISR force has employed a management verses command structure, one reason is the vast, diverse, and distributed nature of the joint ISR force. Another reason is the language used by senior leaders. For example, former Chairman of the Joint Chiefs of Staff, General Martin Dempsey, stated, “*The development of ISR Joint Force 2020 should create effective Joint ISR management processes and structures to improve operational effectiveness.*”.<sup>18</sup> Dempsey’s statement focused on management not leadership and ignores his own statements such as “*our collective efforts must institutionalize mission command ... at all levels of the force*”.<sup>19</sup>

Applying the idea of mission command to ISR operations is not new, however using the concept to help solve the ISR traffic jam or induced demand problem is.<sup>20, 21, 22</sup> Army Doctrine Reference Publication (ADRP) 6-0 defines mission command as the “*enable disciplined initiative within the commander’s intent to empower agile and adaptive leaders in the conduct of*

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<sup>17</sup> Jason Brown, “*Strategy for Intelligence, Surveillance, and Reconnaissance*”, Joint Forces Quarterly, Mar 2014, 46.

<sup>18</sup> General Martin E. Dempsey, “*Joint Force 2020 ISR White Paper*”, June 2014, 3.

<sup>19</sup> General Martin E. Dempsey, “*Exercising Mission Command through Memoranda of Understanding*”, White paper, March 2015, 2.

<sup>20</sup> Michael Downs, “*Rethinking the CFACC’s Intelligence, Surveillance, and Reconnaissance Approach to Counterinsurgency*”, Master’s thesis, Naval War College, 2007.

<sup>21</sup> Garry Floyd, “*Airborne Intelligence, Surveillance, and Reconnaissance” Mission Command and Centralized Control*”, Monograph, School of Advanced Military Studies, 2013.

<sup>22</sup> James Harvard, “*Airmen and Mission Command*”, Air and Space Power Journal, 2Qtr, 2013.

*unified land operations*”.<sup>23</sup> While others have argued that ISR operations can be improved through mission command, this paper will outline the cost it imposes on commanders and how that cost can actually be beneficial in reducing the ISR traffic jam problem. Mission command imposes cost in two-ways, time, and personnel.

An initial time cost is added to a commander because it takes time for a commander to convey his intent to a mission commander. Clear commanders intent is one of the six principles of the Army’s mission command philosophy and is needed in any operation using mission command.<sup>24</sup> By comparison, assigning collection priorities, as happens with collection management, requires little intent. Often intent is inferred from a static Air Operations Directive (AOD). In Joint Intelligence publication 2-0, commanders intent is mentioned only twice as compared to 31 times in ADRP 6-0 on mission command. Developing and communicating commander’s intent would require clearly defined objectives and missions for ISR operations. This level of planning will require a significant initial investment of time but will contribute to increase ISR operational effectiveness.”<sup>25</sup>

The second cost for commanders to implement an ISR mission command model is in personnel. The current collection management model has a collection manager as the singular point of contact for the varied and wide range of ISR operations and missions in their area of responsibility. In contrast the ideal ISR mission command model for ISR operations would have several mission commanders specializing in each ISR mission set such as, dynamic targeting, search and rescue, force protection, surveillance, and reconnaissance. A mission command

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<sup>23</sup> Army Doctrine Reference Publication, “*Mission Command*”, July 2019, 1-1.

<sup>24</sup> Army Doctrine Reference Publication, “*Mission Command*”, July 2019, 2-1.

<sup>25</sup> Jason Brown, “*Strategy for Intelligence, Surveillance, and Reconnaissance*”, Master’s thesis, Air University-Air War College 2013, 14.

model can be implemented at all levels from a task force level to the Joint Reconnaissance Center (JRC) if we consider Sensitive Reconnaissance Operations (SRO). Mission commanders would be pulled from operators with expertise in specific mission sets. For example, if the required mission set is dynamic targeting sourcing an MQ-9 pilot as the mission commander would be appropriate. Mission commanders, because of their operations experience, would be able to directly assess the effectiveness of the missions and assets for improved MOPs and MOEs. This would allow operational assessments to fall under mission commanders with operational experience vice the current structure of having intelligence officers assess operations. As stated earlier, the ISR force is vast and diverse and going back to the definition of ISR as intelligence functions and operations function integrated together, ISR mission commanders can come from each operational community with specialty in an ISR mission set. There is an overhead cost to adding personnel to operational staffs but with that cost comes operational expertise and understanding that collection managers simply do not have, and operations can shift from simply being managed to being led.

The costs outlined above maybe why, despite the growing body of work advocating for ISR mission command, the concept still has not gained traction. However, if considering the principle of induced demand, these costs might be exactly what is needed. Moving to an ISR mission commander model for USINDOPACOM would not just solve the ISR traffic jam problem by inducing cost but can also increase ISR operational flexibility and help assess effectiveness of ISR operations at platform specific levels and thereby increase overall theater ISR effectiveness.

## **Counter Argument**

Some may argue collection managers already act as pseudo ISR mission commanders. Indeed, collection managers do monitor and modify ongoing ISR operations and have something akin to mission command authority in “collection management authority”. However, this is not mission command.

Mission command requires delegated decision-making authority to react immediately to changing mission requirements and collection managers do not have the experience to make mission specific decisions. To make up for this lack of ISR operational experience, operators are often brought in as liaison officers to help collection managers make real time decisions. These liaison officers could be given mission command authority and replace collection managers.

Additionally, another core principle of mission command is team building and intent based taskings both of which are lacking under the management structure. There is no team mentality in a management structure, ISR operators are simply given target decks with vague or no intent behind them. Because of their lack of experience in operations, collection managers cannot build cohesive teams through mutual trust with operators. The best they can do is manage operations, but not lead them.

A final distinction between collection management and mission command is the principle of risk. Mission command requires understanding and accepting prudent risk, collection managers generally do not understand the risks associated with ISR operations. For example, during operations in Iraq, MQ-9s were tasked to operate over a city that was known to have Anti-Aircraft Artillery (AAA) fires and planes repeatedly came back with battle damage. The crews requested time to scan the area every hour to mitigate the risk of getting shot down. The

collection manager, not understanding the risk to the platform denied the request not wanting to lose collection time over the target.<sup>26</sup> Proper risk assessment will only increase in importance as ISR operations in the Pacific shift to great power competition.

### **Conclusion and Recommendations**

Adm Davidson said that adding ISR assets would help “add capacity to the picture” in the East and South China Sea, however based on experience and social science, commanders across the board will want more ISR capability no matter how much they currently have.<sup>27</sup> Without adding cost to ISR operations with ISR mission commanders and tying metrics with mission results, as ISR platform density increases their effectiveness in USINDOPACOM will likely decrease. Commanders can pay for improved ISR operations by spending time and personnel in ISR mission command focused operations. ISR mission commanders would be directly responsible for the information they gather and the resources they used to collect that information. Additionally, having an ISR mission commander would allow for direct feedback and accurate, mission focused, assessment of ISR platform contributions.

Just as building bigger roads will not solve traffic jams, giving commanders more ISR platforms will not decrease their demand for ISR. It is human nature to want more of a valuable item, like ISR, but as the supply increases without a plan to use it, some of it will go to waste. To avoid the ISR traffic jam in the USINDOPACOM theatre commanders and staff will need to shift away from a collection management model and move toward specific mission set focused operations led by ISR mission commanders.

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<sup>26</sup> Authors own experience.

<sup>27</sup> Admiral Philip Davidson, Testimony before the Senate Armed Services Committee meeting, Washington DC, March 9, 2021.



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