On Intelligence, Part II

Understanding intelligence in risk mitigation

by Capt Christopher "Harold" Denzel

Years ago, I used my placement and access at a unit providing cyberspace operations support to a sub-unified special operations forces (SOF) command to investigate SOF air intelligence. I wanted to see what I could bring back to the Marine Corps Intelligence, Surveillance, and Reconnaissance Enterprise (MCISRE) to improve our own air intelligence capabilities.

Like many in the conventional forces, I assumed SOF had some "secret sauce" in the form of special tactics, techniques, and procedures; and if I could just find out what they were, I could exfiltrate some of those tactics, techniques, and procedures back to Marine air intelligence elements. I learned that, at least for SOF air intelligence, this is generally not true.

But in the process of learning this and figuring out why it was, I re-framed my understanding of how intelligence supports commanders' risk mitigation and how that relationship shifts in different circumstances, whether between conventional forces and SOF or across the competition continuum. Some extrapolation of this concept can help intelligence Marines, operational planners, and commanders alike improve their understanding of both the conceptual mechanisms by which intelligence supports commanders' decision making and how the relationship between intelligence and operations shifts across the competition continuum.

The most basic form of this understanding is how commanders balance risk in their decision making, weighing risk acceptance against risk mitigation/reduction. The two means by which they mitigate risk are operational measures and intelligence.

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This is obvious and well known. But here's the kicker: because of the *way* this plays out, in some cases operational and intelligence risk reduction can be redundant and more of one (whether more/better forces or less uncertainty) *will not* necessarily enable the commander to achieve additional risk mitigation.

By better understanding the interplay between intelligence and operational measures in risk reduction during planning and execution, Marines will be equipped with a more comprehensive framework for understanding the intelligence warfighting function's place in the commander's broader decision-making responsibilities.

While the examples below are air intelligence specific, the lessons that can be drawn from them apply broadly.

The SOF Vignette

To provide a brief case study in which to learn about this interplay, let us use the following vignette, approximating of at least one SOF aviation mission:

Three MH-47s and two MH-60 DAPs (direct air penetrators—heavily-armed Blackhawk helicopters that provide CAS) crest a ridge, the rough terrain giving way to a dried lakebed. Through night vision goggles, the pilot of the third MH-47 visually tracks a well-worn truck path across her view from left to right. "There it is," she thinks as she spots her landing zone. Just as quickly, she notices a technical (a pickup truck with a heavy machine gun mounted on the bed) in the middle of the zone. She relays this to the troop commander in the back and asks, "I can land in an offset, a hundred meters away? Or I could go around while the DAPs reduce it?"

The troop commander quickly does the math. The chalks in the other MH-47s are to establish blocking positions between his target and the garrison to the north, containing almost 100 enemy fighters. His chalk's mission is to rapidly enter and clear the building being used as a prison for the three American citizens they're here to rescue. Going around would give the hostage takers critical moments to fortify their position, execute the hostages, or both. Landing in an offset would similarly delay his force as they made their movement to the prison entrance. "I need you to put me in that zone. Whatever it takes."

"WILCO," is her response. Because of the close and habitual training relationship between her unit and the ground force in the back, as well as the detailed planning and rehearsals for this mission, the pilot knows the troop commander wouldn't ask her to put her aircraft at risk unless it was absolutely necessary.

"Left gun, cleared to fire."

The left door gunner unleashes 1,500 rounds in a staccato series of bursts. The minigun is still spouting fire as the bird touches down in the zone its rotor arc feet away from the technical, now engulfed in flames. Ricochets and fragments from the vehicle pepper the side of the airframe. Almost before the aircraft's rear wheels hit the deck, troops pour out of the rear

ramp and make entry into the building. Within minutes, the hostages are rescued, the rescue force is aboard the helicopters, and the entire package is speeding across the border, back to safety.

When I heard the details of a mission much like this, I had two reactions:

First, I could not imagine a Marine assault support crew not adjusting to an offset or waving off while an escort reduced the technical. Intelligence regarding the location of the technical would have been crucial to mission success on such a demanding and precise timeline. This is not for want of bravery and daring, but because the "fleet average" Marine pilot is not trained to the same level of proficiency (lower operational risk mitigation), and Marine aviation is not normally tasked with such no-fail missions (lower risk acceptance).

Second, I imagined myself briefing the location of the technical to a SOF aviator and having them thank me for the information but not be particularly concerned about it because of their ability to handle it in-stride (higher operational risk mitigation), and the fact that it did not really matter since they were going to have to land there, technical or not (higher risk acceptance).

A Construct for Risk and Risk Mitigation

To unpack my two reactions and seek a lesson that could be applied more broadly than aviation-borne hostage rescue, I've come up with a construct for risk, risk mitigation, and the role that operational measures and intelligence play in commanders' risk decisions that is more explicit than I've seen elsewhere: If (Risk Mitigated + Risk Accepted ≥ 100 percent), Then (Mission Approval).

If the figures sum to less than 100 percent, there is residual risk that has *not* been accepted and the mission will not have a favorable "cost/benefit" risk assessment. In this case, the mission will either not be approved or will not meet launch criteria.

Using this construct (see Figure 1), we can imagine risk on a spectrum from zero percent (the mission is guaranteed to go perfectly) to 100 percent (the mission is guaranteed to fail completely).

Associated with this spectrum are four key risk concepts:

- *Risk acceptance*: The amount of risk the commander will accept and still launch the mission.
- *Risk mitigation*: The amount of risk that is reduced through operational measures or intelligence.
- *Intelligence risk mitigation*: Uncertainty *reduced* through intelligence (e.g., identifying composition, disposition, and strength of enemy forces).
- *Operational risk mitigation*: Risk that can be *compensated* for (e.g., through friendly force size, capability, or other operational measures).

To talk through this construct further, we need the ability to assign nominal figures to any of the concepts in a given situation. It should go without saying that, in reality, it is never possible to identify such precise numerical figures. But numbers are nonetheless useful for the discussion at hand.

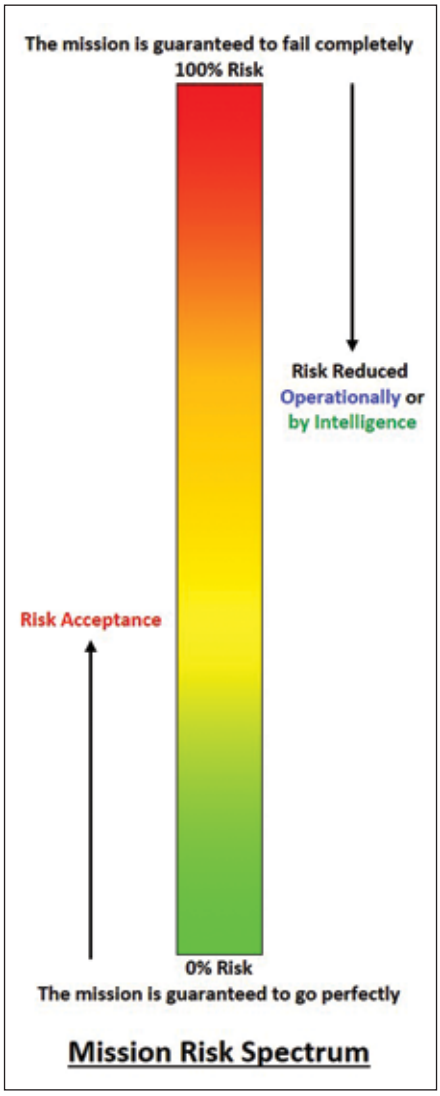

Figure 1. *(Figure provided by author.)*

When conceived of this way, risk acceptance is some number greater than zero percent where the commander is willing to risk the accomplishment of the mission (risk to mission) and risk people/equipment (risk to force). In Figure 1, this number works "upward" from zero percent.

Similarly, risk mitigation is some number greater than zero percent where mission planning (operations *and* intelligence) reduces uncertainty and risk. Put another way, this mitigation "buys down" the total possible risk. In Figure 1, this number works "downward" from 100 percent. Without planning (including appropriate force and equipment selection) or intelligence, risk is entirely unknown. For the purposes of risk decisions, this makes risk close to 100 percent.

Imagine the simple example of a unit ordered to seize a hill.

"Intelligence risk mitigation" answers questions such as: Is the hill unoccupied, is there a fire team on the hill, or is it a tank company dug in? Where are the machine guns located, and where is their kill zone? As these questions are answered, uncertainty is reduced and risk mitigation is increased (or at least bounded).

"Operational risk mitigation" answers questions or addresses issues such as: What size friendly unit will we employ, a fire team or a battalion? Do we have grenades and body armor? Are my Marines expert rifle shots or barely qualified sharpshooters? Are they all privates or do we have veteran NCOs? Have I task organized my forces appropriately? Have we rehearsed the plan?

Viewed this way, the troop leading steps, BAMCIS, are risk mitigation measures. "Begin planning," "Complete the plan," and "Supervise" are all operational measures to reduce risk. "Arrange for reconnaissance" and "Make reconnaissance" are intelligence measures to reduce risk. "Issue the order" reduces risk through both means by conveying the plan and associated intelligence.

Risk Construct, Applied

Let us now apply this construct to our vignette and explore what it tells us about both the conceptual mechanisms by which intelligence supports commanders' decision making and how the relationship between intelligence and operations shifts across the competition continuum or between SOF and conventional forces.

First, imagine a conventional aviation force attempting to conduct an analogous mission (the left side of Figure 2).

Risk acceptance (point A) is lower (40 percent) because conventional forces are not directed nor accustomed to risking their force or mission accomplishment in the way SOF units are (the joint definition of special operations makes this clear, whatever complaints conventional forces might make). SOF missions are also likely to be a higher priority or even "no fail," pushing risk acceptance upwards. We might imagine a conventional aviation commander describing point A by saying: "I'm willing to get shot at. But the mission isn't important enough to lose an aircraft with two dozen Marines in the back."

Operational risk mitigation (point B) is also lower (40 percent). The training, equipment, experience, and expertise level is that of the "fleet average" pilot/crew chief. The supporting "air stack" might be a single MQ-1 Predator, some H-1s, and a section of AV-8Bs. A conventional aviation commander might describe point B by saying: "If there are only a handful of guys with AK-47s or RPGs on the target, we can deal with that in-stride."

But without knowing the threat estimate of the objective area, we have a situation where our theoretical equation (Risk Mitigated + Risk Accepted 100 percent) is not satisfied. Residual risk is twenty percent.

If intelligence is able to offer 60 percent risk mitigation, however (40 percent of which is theoretically redundant with this example's operational risk mitigation), we are able to satisfy the equation and the mission is a go. This is the potential *value added* by intelligence (point C). Thus, a conventional aviation commander might describe point C with: "I need the S-2 to tell me if there's going to be a technical on the target so we can plan for the AV-8Bs to reduce it before the MV-22s crest the ridge."

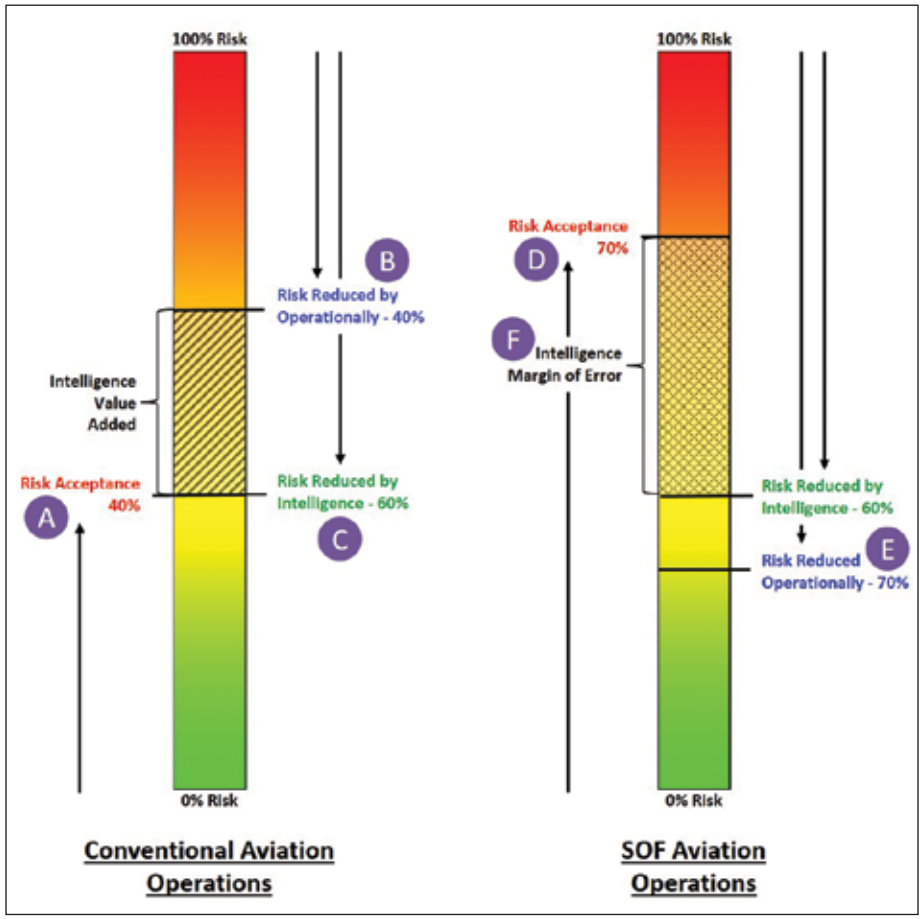

Figure 2. *(Figure provided by author.)*

Now let us use this same construct for SOF aviation (the right side of Figure 2). Risk acceptance (point D) is higher (70 percent) both because national and unit-level leadership accept higher risk for their forces because of their unit's mandate but also because the mission is higher priority. We can imagine the SOF aviation commander saying about point D: "I'm willing to get badly shot up and maybe even lose an aircraft. American hostages are at stake." Operational risk mitigation (point E) is comparatively higher (70 percent). Your average SOF pilot might have under his belt sixteen years of service, a dozen combat tours, hundreds of similar missions, thousands of combat flight hours, and a rigorous training program after being selected for the unit before even being eligible to deploy. And these, the most proficient combat aviators in the world, will be flying the most advanced combat helicopters on the planet. All supported by a stack of dozens of intelligence or strike aircraft that stretches up to 25,000 feet. The SOF aviation commander might say of point E: "Even if there's a technical on the target that I don't know about, I can deal with that in-stride."

Thus, with SOF aviation, using this risk construct, air intelligence actually has a margin of error (point F) as opposed to value added. Describing point F, a SOF aviation commander might say: "If the S-2 knows there's a technical on the target, great. If not, we can mitigate that uncertainty with our training and big guns."

There are certainly other elements that complicate this simple example. For example, such a hostage rescue mission relies on some of the most exquisite support offered by the intelligence community to first locate the hostages. So while this example works best by

focusing on the *air intelligence* support to this raid, the proper caveats still allow us to draw broader conclusions.

There also remains the question of whether this truly is a valid way to understand the interplay of intelligence and risk. But if so, there appears to be at least two broad lessons we can draw.

Intelligence Lesson 1: Risk Context

The first lesson we might draw out is that the *risk acceptance* context of a situation is a significant determinant of the role of intelligence. In this vignette, we were considering a no-fail hostage rescue. The question of whether a technical is in the landing zone or not is a small, if not negligible, factor in whether the commander launches. By comparison, the last two decades of low-intensity, low-risk acceptance combat has accustomed both conventional forces and SOF to a higher level of minimum intelligence support than we might see on the higher end of the conflict spectrum. High-end, peer combat is likely to see higher risk acceptance and, therefore, comparatively lower levels of importance to at least *tactical* intelligence. This is not to downplay the importance of intelligence generally, but to point out that for World War II's Doolittle Raid, the exact level of air defense artillery around Tokyo and intelligence-driven calculations about how many B-25s would get through was unlikely to have played a major role in the decision to launch the mission.

Intelligence Lesson 2: Operational Capability

The second lesson is that when operational capability is high (i.e., high operational risk mitigation), intelligence can sometimes find itself redundant with operational measures, having a higher threshold to cross before it begins making critical contributions to risk decisions. For example, if an F-35 S-2 only locates *legacy* surface-to-air missile (SAM) systems that are already mitigated by the low-observable characteristics of the aircraft, this may not add meaningful value to the mission commander's risk decision.

It seems that in these circumstances, intelligence efforts should focus on the specific support that allows for the precision application of those operational capabilities rather than the general reduction of uncertainty. This might allow for less redundancy between operational and intelligence risk mitigation and pivots the added intelligence value to increasing the lethality of those operational tools. To continue the (admittedly simplistic) F-35 example, this might be focusing effort on developing a mensurated grid coordinate for a precision-guided munition rather than the location of legacy SAMs.

Correspondingly, when operational capability is lower (i.e., lower operational risk mitigation), intelligence should focus on support that allows for the general protection of those capabilities through general uncertainty reduction. For example, it may be more important to get an AV-8B past those legacy SAM systems than providing a mensurated grid coordinate only for the aircraft to get shot-down en route by an un-located SAM.

In reality, this lesson is not that foreign to air intelligence Marines. Any intelligence Marine who has dealt with a Cobra pilot knows they have a comparatively higher degree of comfort in an uncertain enemy environment than an Osprey pilot. As one Cobra pilot put it to me, "there are no threats, only targets."

We might then postulate generally: when operational capability is high, intelligence adds the most value when helping employ the operational platform; when operational capability is low, intelligence adds the most value when increasing survivability of the operational platform.

Caveats

The risk construct provided here is a model. And any model attempts to represent reality by making assumptions and simplifying. This increases the risk, as it were, of identifying lessons too conclusively.

There is also the issue of the type of intelligence focused on in the vignette and the construct. One might call it tactical intelligence. The Doolittle Raid was indeed driven by *strategic* intelligence that 1) Tokyo was the most appropriate target, and 2) demonstration of the United States' ability to strike the main island would have a demoralizing impact and/or force Imperial Japan to divert resources to its rear area. The *tactical* intelligence involved in the raid was probably less significant. So simply using the term "intelligence" is not sufficiently specific.

However, "tactical intelligence" does not seem sufficiently specific, either. The location of the hostages in the SOF vignette is tactical intelligence, and the entire operation hinges around that information. Yet the enemy disposition seems less critical for the rescue force to know. Perhaps the appropriate division to draw, then, surrounds how directly the tactical intelligence drives achievement of the military objective. Or perhaps the division is between tactical intelligence that drives the targeting cycle versus tactical intelligence that serves other purposes. Defined this way, the enemy disposition at the prison in the vignette is secondary in nature to the achievement of the objective (hostage rescue).

Conclusion

With these caveats, the risk construct presented here better enables intelligence Marines, operations planners, and commanders to describe and discuss these differences and to acknowledge that they don't just need "more intelligence" to achieve a higher degree of risk mitigation, but they need intelligence that is specifically *additive* to operational risk mitigation measures.

How we practically define this and turn it into a useful intelligence planning tool for the practitioner remains an area for further development. Yet this richer understanding is a necessary first step.