The Three Tiers of Wingmanship:
An Operational Framework for Crew Resource Management

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The word "wingman" has become a casual part of our modern language, often used to describe a friend who offers support in social situations. But the term's true origin is far from casual. It was forged in the lethal laboratory of World War I, where the sky was the newest and most unforgiving battlefield. The wingman was not created for friendship, but for victory. This new form of combat created a fighting element of just two men, whose partnership was a tactical innovation born from a brutal reality: to win was to live, and survival required a fusion of technical skill, tactical discipline, and teamwork that the world had never seen.

This fundamental need gave rise to a timeless military philosophy encapsulated in a poem taught to every Naval Academy midshipman: "On the strength of one link in the cable, dependeth the might of the chain." This concept has a dual meaning that forms the foundation of all elite teamwork. For the individual, it is a solemn call to action: you must never be the weak link whose failure jeopardizes the entire enterprise. For the leader, it is a stark warning: your own personal strength is irrelevant if the link next to you breaks. The goal, then, is to forge a chain where every single link is exceptionally strong.

The relationship between a flight lead and their wingman was the first true tactical Crew Resource Management (CRM), a system of trust and mutual responsibility designed to dominate a hostile environment. However, this ideal has often been challenged by a deeply ingrained counter-philosophy. In fighter aviation, this took the form of a long-held mindset that demanded the wingman simply "join up and shut up," positioning them as a purely subordinate asset. This mindset had direct parallels in civilian aviation, where it took the form of the "sole operator" culture, creating a steep "authority gradient" where first officers were hesitant to speak up.

In both worlds, the conventional thinking assumed the junior member was a liability to be managed, rather than an asset to be leveraged. This created a self-fulfilling prophecy: the leader, believing they must do everything themselves, never gave the junior member the opportunity to become the capable partner the team desperately needed.

As a young F/A-18 pilot, I began a journey to understand this relationship, first as the wingman trying to be that strong link, and later as a flight lead learning how to forge one. From that experience, I developed a simple, powerful model for assessing and improving crew performance in real-time. It's a framework I call the *Three Tiers of Wingmanship*.

A Framework for Fighter Element Effectiveness

The *Three Tiers of Wingmanship* framework provides a clear system for assessing the operational state of a fighter element by first defining the performance of its foundational component: the wingman. A wingman's effectiveness is broken down into three distinct, mutually exclusive tiers:

- **Tier III:** Out of position.
- **Tier II:** In position, low situational awareness.
- **Tier I:** In position and ready to take the lead at any moment.

Tier III: Out of position

The wingman has one fundamental role: to support the flight lead in mission accomplishment—and that starts with being in position. To be "out of position" is to be functionally disconnected from the element. Whether you are too far away to provide mutual support, "blind" with no visual contact on your lead or the threat, or otherwise unable to employ your aircraft as a coordinated part of the team, the result is the same: you are no longer an asset.

The implications are immediate and severe. A Tier III wingman is not merely a distraction; they become a direct burden on the flight lead's **cognitive load**. In neuroscience, cognitive load refers to the limited number of discrete tasks or pieces of information a person's working memory can process at one time. Instead of helping the flight lead manage the mission, a Tier III wingman actively detracts from it, forcing the flight lead to become a shepherd—diverting precious attention and brainpower away from the threat to manage a stray partner.

The element's playbook shrinks instantly, as any tactic requiring mutual support is now off the table. The two-ship element is effectively crippled, its combat power reduced to that of a single, overburdened pilot.

If you find yourself in Tier III, your priority is singular and absolute: *get back in position*. This is not the time to manage weapons systems, sort communications, or build a mental picture of the broader fight. Every ounce of your focus must be dedicated to rectifying your position and re-establishing yourself as a functional part of the team. A wingman with a perfect radar setup but a mile out of position is worthless to the fight, and in fact, they are a detriment.

Tier II: In position, with low situational awareness

Tier II is defined as the state where a wingman is in the correct physical position but has low situational awareness (SA). This means the wingman could not effectively take the lead of the element if needed, a failure which may stem from a lack of critical information or a gap in the necessary skillset. In this state, the pilot is functionally reactive. They can follow directives with precision but are unable to anticipate future events or understand the *why* behind commands. They are executing the sheet music perfectly but have no sense of the symphony's broader composition; they are a follower, not yet a partner.

The primary implication is that the full cognitive burden of the mission now rests entirely on the flight lead. While a highly skilled flight lead may be able to manage this burden alone under some conditions, the element has become dangerously brittle, with the flight lead being a single point of failure. If the flight lead misses a critical piece of information, or if the situation becomes too complex for one person to manage, there is no one to provide backup. The Tier II wingman brings nothing proactive to the table, leaving the flight lead to face any unexpected event completely on their own.

For a pilot in this state, the priority is singular: *to achieve Tier I.* The process is driven by **metacognition**—the ability to think about one's own thinking. It requires the wingman to ask not just "What is happening?" but also, "What am I missing? Why am I not ready to take the lead?" This self-diagnosis pinpoints the specific gap in awareness or skill that must be closed. The first principle in closing this gap is self-sufficiency; a good wingman can often achieve a Tier I state simply by listening intently and paying close attention to what is happening.

However, when observation is not enough, asking for information becomes a duty. The tactical error of remaining silently in Tier II is far greater than briefly taxing the flight lead's attention. The key is to make this request as efficient and targeted as possible. An open-ended query forces the flight lead to diagnose the wingman's problem, imposing a significant cognitive load. A precise question, however, allows the flight lead to provide a quick answer with minimal distraction, allowing the entire element to remain focused on the mission.

<u>Tier I</u>: In position and ready to take the lead at any moment

Tier I is the optimal operational state for a wingman, defined by synchronized awareness and disciplined execution. Cognitive scientists refer to this synchronized state as a **Shared Mental Model (SMM),** where both individuals possess a near-identical understanding of the mission's goals, their roles, and the environment. With a robust SMM, the wingman is no longer just a receiver of information but is actively gathering and processing their own data in parallel with the lead. This creates critical redundancy, as two human minds analyze the tactical problem simultaneously. The result is a resilient element that can withstand a system failure or a lapse in one pilot's perception—the ultimate insurance policy against mission failure.

The functional requirement for Tier I stands in stark contrast to the flawed "join up and shut up" mentality. A Tier I wingman must possess the same tactical understanding as the flight lead, because they must be prepared to take lead of the element at any moment. Their job is not to stay out of the way; it's to be ready to save the day.

This highlights an often-overlooked reality of elite teamwork. Arguably, the role of a Tier I wingman is far more demanding than is commonly understood. The wingman must execute all of their own tasks while simultaneously maintaining a complete understanding of the flight lead's responsibilities, anticipating the flight lead's every move, and ready to assume the lead instantly. It is this incredibly high standard that frees the flight lead from the need to monitor their partner, allowing them to dedicate their full attention to leading the element and achieving the mission.

For a pilot who has reached Tier I, the priority shifts from *achieving it* to *maintaining it*. This is a high-wire act that demands continuous, disciplined self-assessment of one's position, systems, and situational awareness. It also requires understanding the hierarchy of systematic degradation: if a choice must be made under pressure, it is always better to accept a temporary slip into Tier II (degraded SA) than to lose position and fall straight into Tier III.

This brings us to the fundamental rule that serves as the operational core of the framework:

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You *never* want to be in Tier III

You *always* want to be in Tier I

You must *at least* be in Tier II

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The Three Tiers of Flight Leadership

With the wingman's state defined, the framework expands to assess the performance of the entire fighter element. This overall effectiveness is categorized into three corresponding tiers.

- **Tier III:** Two aircraft operating independently.
- **Tier II:** Two aircraft operating together.
- **Tier I:** Two aircraft operating as one.

Tier III: Two aircraft operating independently

This is the lowest state of teamwork, where the element is little more than two individual aircraft occupying the same airspace. There is no synergy; at best, their actions are deconflicted, and at worst, they actively interfere with one another. The total combat power of the element is less than the sum of its parts.

Tier II: Two aircraft operating together

This represents a state where both pilots are performing their assigned duties correctly, but they are not fully synchronized. They are coordinating on a basic level, but they are not anticipating each other's actions or proactively covering each other's blind spots. The wingman is keeping up with the flight lead, but not functioning as a true partner. This creates a brittle element. If a single, unexpected event occurs, the lack of deep synchronization makes it much more likely for the element to regress into a dysfunctional Tier III state. Its effectiveness is therefore limited to being simply the sum of its parts.

Tier I: Two aircraft operating as one

This is the highest state of operational synergy, where simple coordination transcends into true collaboration. The lead and wingman are so synchronized in their awareness and intent that they function as a single, cohesive unit, seamlessly adapting to dynamic situations. They appear to see

everything and be everywhere at once. There are no gaps in their awareness and no blind spots, allowing them to manage complex challenges with a far greater reserve of capacity. Their combined effectiveness is truly greater than the sum of its parts.

The Burden of Command

Achieving a Tier I element is not a matter of chance; it is the direct result of the flight lead's mindset and actions. A fundamental aspect of this framework is that the flight lead's status is inextricably linked to their wingman's. A flight lead can only achieve Tier I status if they have a Tier I wingman, because excellence in leadership is a shared state, not an individual accolade.

Therefore, when a wingman is not performing at the Tier I level, the flight lead is faced with a fundamental choice. They can take the easy path of blaming their wingman, a decision that guarantees the element will remain in a degraded state, ultimately undermining mission effectiveness. Or they can choose to take full ownership and control of the situation.

Taking control requires the flight lead to actively monitor and understand their wingman's state—to know what they know, what they can do, and where their gaps in skill or awareness lie. When a leader senses their partner is in Tier III or Tier II, they must take deliberate action to guide them to Tier I. This intervention can take many forms depending on the context—a calm explanation, a quick injection of critical information, or a stern, directive command. Whatever it takes, the flight lead's job is to provide what the wingman needs to become a fully contributing partner.

This commitment to the outcome extends beyond the cockpit, if necessary. A Tier I Flight Lead does whatever it takes to forge a Tier I element, and thus a Tier I wingman. If that requires extra time on the ground providing instruction, mentorship, or guided practice, then that is what they do. They understand that the burden, duty, and responsibility for achieving maximum effectiveness rests with them.

Application to Crewmanship

The principles forged in the world of fighter combat are not confined to it. While the titles differ, the fundamental role of a captain is identical to that of a Flight Lead: to lead a small team in a high-stakes, dynamic environment to achieve a critical mission objective. A captain is therefore ultimately responsible for the outcome of their mission—a safe and successful flight—and by extension, responsible for the performance of the crew that enables it.

Because this core function is the same, the framework used to measure the effectiveness of a fighter element can be directly applied to the cockpit of any multi-crew aircraft. The Tiers of Flight Leadership—operating independently, together, or as one—provide a powerful lens through which to assess the performance of a captain and their first officer (FO).

The Three Tiers of Crewmanship

Tier III: Two crew members operating independently

This is the most dangerous and dysfunctional state for a flight crew, defined by a complete breakdown in communication and shared awareness. The cockpit contains two individuals operating independently, instead of one integrated team.

- **From the first officer's Perspective:** This is a direct violation of the FO's primary duty to support the captain. It mirrors the state of a Tier III Wingman, but instead of being physically "out of position," the FO is cognitively disconnected or out of sync. This occurs when they become so absorbed in a single task that they miss checklist items, fail to hear critical radio calls, or deviate from standard procedures. In this state, they are not just failing to support the captain; they become a liability who actively degrades the crew's performance.
- **From the captain's Perspective:** This state creates a Tier III Crew. It occurs either when the captain makes critical decisions without including the FO, or when they are forced to pick up the slack for an underperforming partner. The result is the same: the captain must dedicate their cognitive bandwidth not just to directing the aircraft, but to constantly monitoring the FO. This creates a persistent state of distraction, as the captain is left wondering what the FO might do wrong next and how he will have to compensate. This dynamic creates a brittle, single-point-of-failure operation.

Tier II: Two crew members operating together

Tier II represents a state of functional, professional compliance. The crew correctly executes all required procedures and tasks, but the collaboration lacks the deep synergy of a Tier I crew. While it is the minimum acceptable standard for safe operations, it does not possess the resilience required to effectively handle complex or unexpected events.

- **From the first officer's Perspective:** This mirrors the state of a Tier II Wingman. The FO performs all assigned duties correctly, but the defining characteristic of this state is that they lack the situational awareness required to take control at a moment's notice.
- **From the captain's Perspective:** This mirrors a Tier II Flight Lead. By allowing a Tier II FO to persist, the captain accepts a hidden risk and undermines the very principle of multi-crew redundancy. The safety of the flight and the ability to achieve the mission are now predominantly relying on the captain's ability to perform and address unexpected issues alone.

Tier I: Two crew members operating as one

This is the optimal state of crew performance, where synergy and proactive collaboration create an operational effectiveness far greater than the sum of its parts. The two pilots function as a single, cohesive unit, operating with a quiet and seamless efficiency. Their thought processes are so synchronized that one pilot's action is instantly understood and complemented by the other, as

if they are operating from a single, shared brain. This frees up a massive amount of cognitive bandwidth, allowing the crew to stay ahead of the aircraft—proactively managing the flight, anticipating the next challenge, and ready to handle any unexpected event with a calm, unified response.

- **From the first officer's Perspective:** In this state, the FO is actively and meaningfully supporting the captain in the safe execution of the flight. They are operating as a Tier I Wingman, thinking ahead, and anticipating needs. They possess the complete situational awareness required to take control of the aircraft at any moment.
- **From the captain's Perspective:** A Tier I captain understands that their primary duty—the safe operation of the aircraft—is best fulfilled by actively maintaining a Tier I crew. They achieve this by creating an environment of trust, openness, and partnership. Their leadership is focused on continuously building and reinforcing a robust Shared Mental Model, ensuring their partner is always a fully engaged and informed participant, ready to take command at any moment.

The Tier I Mindset

The clearest way to illustrate Tier I is to consider a team composed of two fully qualified leaders—a flight of two flight leads or an airline crew of two captains. They are constantly thinking ahead of the aircraft, anticipating the leader's needs, and providing proactive support, often without being asked. Crucially, they are always ready to take command instantly and seamlessly if required. They embody the principle of operating based on "role," not "rank," focusing entirely on creating the most effective team.

While this "dual-leader" example isn't the daily norm, establishing this state as the standard creates a powerful mindset shift for every crew member.

- **For the first officer or wingman,** it reframes their position entirely. Instead of passively waiting to be directed or told what to do, their goal is to proactively adopt the perspective and skills of a leader, constantly working to close the capability gap and doing what it takes to be ready to take the controls at any moment.
- **For the captain or flight lead,** it requires them to reject the "sole operator" mentality. Their responsibility is to actively cultivate a capable partner by keeping their FO or wingman "in the game" and up to speed, ensuring they are always ready to take over. This is not just about mission effectiveness; it's a matter of self-preservation. If a flight lead goes down, that wingman becomes the on-scene commander; if a captain is incapacitated, that FO is the only person who can safely land the aircraft.

The Price of Tier III

To understand the real-world stakes of this framework, there is no clearer illustration of a Tier III failure than the tragic accident of Colgan Air Flight 3407 on February 12, 2009. The event was a watershed moment that spurred the most significant regulatory changes in decades, including the

1500-hour minimum for airline pilots, and serves as a devastating example of a crew regressing to Tier III.

The catalyst was the stick shaker activating unexpectedly, which triggered a classic startle reaction in the Captain known as an **amygdala hijack**. In this state, the brain's primitive threat-response center overrides the prefrontal cortex, making trained procedures momentarily inaccessible. Instead of executing the correct stall recovery, the Captain's response was the exact opposite: he pulled back on the control column, actively fighting the aircraft's automated stick pusher, which was trying to save the aircraft. In that instant, he regressed to a Tier III captain—silent and disconnected.

The First Officer, who was likely operating in a Tier II state, also dropped into Tier III, taking the inexplicable and counterproductive action of retracting the flaps. This total, simultaneous breakdown proves the crew's foundation was already brittle and lacked the resilience to withstand a single unexpected event, proving she was never in a position to take control of the aircraft. The system's last line of defense—a Tier I first officer ready to take control—was not present. This highlights a critical nuance: while a captain's Tier I status depends on their partner, a first officer *can* and *must* strive for Tier I regardless of the captain's state. In this case, it was the difference between life and death.

The result was the ultimate manifestation of a Tier III crew: two individuals, disconnected from each other, flying a perfectly functioning aircraft into the ground. The loss of 50 lives was the immense cost of just 26 seconds of Tier III performance, a sobering lesson that brings the framework back to its core purpose: the Tier I standard is not a principle of professional achievement, but the standard required to fulfill one's duty. The final, sobering lesson from Colgan Air 3407 is that a few moments of Tier III performance can have consequences that ripple through eternity.

Conclusion

The *Three Tiers of Wingmanship* provides a simple but powerful operational framework for any crew member to use in real-time. It offers a clear language to diagnose a crew's current state—Tier III, II, or I—and provides an immediate and singular priority for action based on that assessment. It is an operational tool designed to help individuals and teams prioritize their focus to achieve a safer, more synchronized, and more effective performance.

Ultimately, it is a framework for ensuring that every link in the cable is strong, because the might of the crew, and the lives in their hands, depends on it.