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A Reconceptualization of the Adaptability Rating for Military Aviation

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14. ABSTRACT

As a component of selection and force maintenance, the various branches of the United States armed forces rely on flight surgeons to assess ability, stability, and motivation as special characteristics of the military aviator. Generally referred to as "adaptability," the concept of an Adaptability Rating for Military Aviation is not universally understood and is difficult to operationalize. In this paper, its history is briefly described, and a proposal to limit the Adaptability Rating for Military Aviation to pilot selection is outlined along with a proposal for a new approach to trained aviators with Behaviors Inconsistent with Flying Duties. Using a case study, the utility of this concept is explored and operational application strategies are suggested.

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1.0 SUMMARY

As a component of selection and force maintenance, the various branches of the United States armed forces rely on flight surgeons to assess ability, stability, and motivation as special characteristics of the military aviator. Generally referred to as “adaptability,” the concept of an Adaptability Rating for Military Aviation is not universally understood and is difficult to operationalize. In this paper, its history is briefly described, and a proposal to limit the Adaptability Rating for Military Aviation to pilot selection is outlined along with a proposal for a new approach to trained aviators with Behaviors Inconsistent with Flying Duties. Using a case study, the utility of this concept is explored and operational application strategies are suggested.

2.0 INTRODUCTION

For most military aviators, the lengthy selection process begins long before they are actually considered for a coveted “pilot slot.” Most pass through a series of filters, either at a military academy, a Reserve Officers Training Corps candidacy, or with demonstrated performance as an enlisted member. The services have the opportunity to observe and mentor potential pilots, and many “eyes” have assessed them. In recent times, U.S. Air Force (USAF) pilots, for example, have been described as having the legendary “right stuff,” and by and large have similar (exceptional) intelligence and demonstrated character and proven functional capacity. In summary, by the time they make it to consideration for pilot candidacy, they have passed many objective and subjective tests.

The special role of the flight surgeon (FS) as the medical caretaker of the aircrew is unique both in the military and in medicine. This begins with the initial flight physical, a special examination for enhanced medical standards. A small portion of the examination includes attention to attributes beyond the demonstrably physiological. Considering ability, stability, and motivation, the FS is asked to attend to adaptability. This is, ideally, a consideration of a wide array of personal characteristics ranging from character, social fitness, rational understanding of the inherent risks of aviation, and reasonable motivation. Should the FS determine the candidate is unacceptable for one or more of these “fuzzy” criteria, then he or she may medically disqualify the candidate.

As will be discussed below, the history of this practice is varied, although it is an understood duty and is well ensconced in the FS culture. The present difficulty arises in the rare, but consternating, event when a trained aviator “breaks bad” and behaves inappropriately. The FS may not be very helpful in answering the question as to why an individual’s behavior has changed unless it is due to a medical cause. Mental health practitioners can be useful in answering certain questions, but the Adaptability Rating for Military Aviation standard itself becomes nebulous when a previously vetted, successful pilot is now showing a pattern of unacceptable behaviors. How do we handle aviators with a history of acceptable, perhaps even laudable, conduct who now are under scrutiny for inappropriate behavior? Is the behavior an isolated event or is it a pattern? Is it new or just previously unreported? Are there mitigating circumstances or medical explanations? To answer these questions, it may be necessary to consider a new strategy that departs from the traditional concept of the Adaptability Rating for Military Aviation, one that benefits from the special skills of the FS and mental health colleagues, and one that satisfies the needs of the system by fostering cooperation with Line leadership.

Prior to exploring this problem and describing a potential solution, a review of the history of the Adaptability Rating for Military Aviation is warranted.

3.0 HISTORY OF THE ADAPTABILITY RATING FOR MILITARY AVIATION

In the earliest days of aviation, little attention was given to the psychological aspects of pilot selection. Flyers were often thought to be "fools" and "crazy," their intrepid nature dismissed as daredevilry [1]. The aviator selection process in the 1912 Directive of the Army Surgeon General did not include assessment of personality or psychological status [2]. Upon entering World War I, the United States adopted arbitrary physical fitness standards without consideration of mental condition. Armstrong [3] described those standards as "a major problem" and noted that prior to 1917 "…the selection of a pilot resolved itself into the simple process of finding someone with the 'nerve' to fly.'"

Although pilots were in great demand in 1918, large numbers of candidates were rejected because of trivial health conditions posing no real threat to their abilities. Whereas in the past, minimal screening had been applied to flying personnel, World War I brought excessive, procrustean efforts. That same year, Parsons [4] expressed his frustration: "Indeed, if all ideals that have been set forth were ever complied with by one of our aviators, one might point to him and truly say 'Behold, the perfect man!'"

Still, perfect health did not necessarily correlate with a candidate's flying potential or ability to complete training. Parsons believed in exceptionally important "other things" that made up a successful aviator, things aside from obvious physical attributes. He sought help from experienced flying instructors and compiled a list of the essential qualities of a successful aviator including coolness under strain, dependableness to always do the correct thing at a critical moment, mental and physical alertness, lack of inherent fear of being in the air, persistence and perseverance in his ambition to become a successful aviator, intelligent, athletic and endowed with good muscular coordination, keen sense of equilibrium, and a good judge of velocity and distance [4]. Favoring certain personality characteristics, other anatomical and athletic attributes are notably less emphasized. Only one instructor emphasized exceptional vision [4]. From their perspective, the necessary qualities were difficult to articulate, but could be easily recognized. "Show us a skillful motorcyclist or automobile driver, and we will show you the making of a good aviator" [4].

Screening methods were flawed as reflected in aerial accident statistics: 70% of accidents occurred during peacetime and almost 20% of fatalities were attributed to carelessness, overconfidence, and recklessness. Ignorance and insufficient knowledge of basic flying principles were thought to account for 5% of accidents [5]. Mincing no words, Armstrong concluded, "The greatest defect is not in the standards, but in their applications by careless or incompetent examiners" [3].

In his "Personality Study" published in the inaugural issue of the Journal of Aviation Medicine, Longacre offered his opinion on the favorable traits of an aviator including youth, no spouse, good family history, few and only minor diseases with no surgical history, and no history of serious injuries or stresses. Additionally he found "unusual ability in athletics" favorable as well as dexterity evidenced by proficiency in "billiards, tennis, sailing, golf, violin, piano, horseback riding." Combat experience was positive, as long as the candidate was not injured and experienced no "unfavorable reactions" [6].

For clarity, Longacre provided a list of unfavorable characteristics. Several were simply the converse of the positive: increased age, marriage, poor family history, poor dexterity, and history of severe disease of childhood, "especially nervous diseases and defects" [6]. Additionally, Longacre viewed vanity, loquaciousness, poor sportsmanship, submissiveness, irritability, and liking to be alone as negative traits.[7] He also warned against low intelligence and volition [6]. It should be noted that the concept of temperament, intelligence, and volition as important in aviators remains extant in today's parlance of ability, stability, and motivation [6].

Longacre understood it was impossible for the new aviator to possess all of the good qualities and none of the bad. Rather, he proposed that the more favorable traits one possessed, the more promising was his potential. His hypothesis served as the foundation for later policies such as the U.S. Navy's Aeronautical Adaptability (AA) and the Army's Adaptability Rating for Military Aeronautics (ARMA) [6].

In 1927, under scrutiny for excessive costs, the especially high failure rate in its training program led the Navy to develop its concept of AA. Confronted with the need to either lower standards or improve selection methods, the Superintendent of Aviation Training turned to Iverson and Crummes, who had, 1 year earlier, developed a novel evaluation method [7]. Iverson conducted physical examinations during which he attempted to endorse a final opinion of the candidate's aptitude, and Crummes performed psychiatric interviews and testing. At the end of each day, they assigned letter grades and recommended disposition. Allocated grades were later compared with the individual's performance during training. These reported findings ultimately led to the development of psychological testing and the concept of AA.

Similarly, in 1931, the Army's School of Aviation Medicine at Randolph Field was tasked to compare flight school graduates with those who failed. This comparison was used to identify characteristics that might be used to predict training success [8]. Out of this work came the Flying Adaptability Rating. Assigning value to certain variables, it used a grading system in an attempt to predict whether the candidate adapted to rigors of flight training and successfully graduated. An "Excellent Score" was 200 points and the "Minimum Passing Score" was set at 160 points. Table 1 illustrates how points were awarded by the examining flight surgeon in 14 different categories.

Table 1. Flying Adaptability Rating System in 1931 [8]

Category	Points
Personal and Family History	20
Judgment	20
Emotional Content	20
Attention	20
Intelligence	15
Resistance to Emotional Stimuli	15
Alertness	15
Precision	15
Ability to Relax	10
Psychomotor Activity	10
Temperamental Assimilability	10
Reaction Time and Accuracy	10
Coordination Response	10
Equilibrium	10

In 1942, the Army adapted elements from the Flying Adaptability Rating system creating the ARMA, which was based on a similar numerical scale. Starting with a perfect score of 200, a range of points was deducted from a variety of categories as shown in Table 2. As the "flight surgeon's contribution to the field of psychiatric selection," ARMA relied on flight medicine to search for and weigh the factors influencing a candidate's adaptability for military flying [9]. Taking into account "all the facts obtained on the medical, psychological, and psychiatric histories," the FS considered the candidate's "maturity," "stability," "zeal," and "drive in the face of the obvious hardships and hazards of military aviation [10]. At the conclusion of the examination, the FS was asked to make an assessment of whether the candidate *should* fly, but not a judgment of the candidate's ability to *learn* to fly [9]. Mebane stressed that the ARMA evaluation required time and believed the "minimum" was at least 30 min [9]. Anything less "should not be referred as an ARMA interview" [9]. Even still, it was not to be equated to a psychiatric evaluation due to its brevity.

Table 2. 200-Point Scale with Suggested Deductions from the Flight Surgeon's Handbook of 1943 [11]

Category	Deduction
Nervous and mental disease in family (each instance)	10-20
Alcoholism in family (each instance)	10-20
Criminality in family (each instance)	10-20
Insomnia in applicant (persistent)	5-10
Hay fever, asthma, or other allergic phenomena	20-40
Enuresis (prolonged)	10-40
Alcoholism	5-40
Fainting (inadequate)	15-40
Unconsciousness (duration and cause)	12-40
Fracture of skull or severe concussion	40
Phobias and obsessions (excessive fears)	5-40
Nail biting	10-20
Amnesia	20-40
Fits, spasms, and convulsions	20-40
Speech defects (corrected or uncorrected)	10-40
Chorea, poliomyelitis, encephalitis, meningitis	10-40
Arrests	10-40

In 1949 Deemer and James recognized that certain areas of personality and historical background were fundamentally important to ARMA. This led to the creation of a 31-item checklist organized in logical fashion and designed to facilitate an ARMA interview, whereby upon completion the candidates' responses are tallied and reviewed against the 200-point ARMA scoring system [12].

4.0 CURRENT APPROACH

According to current USAF regulation, ARMA (now called Adaptability Rating for Military Aviation, as opposed to Aeronautics) is applied to aviators and to other military personnel with special duties such as marine divers, ground-based controllers, remotely piloted aircraft, and missile operation duty. It assigns the responsibility of conducting ARMA assessment to examining flight surgeons [13]. Unsatisfactory adaptability ratings, commonly called ARMA UNSAT, are *usually* rendered at entry into training for poor motivation or evidence of potential safety to flight. In its most recent version, the USAF Medical Standards Directory defines unsatisfactory ARMA as a medically disqualifying condition and states: "Maladaptive personality traits (not meeting diagnostic criteria for a personality disorder), or a pattern of maladaptive behavior that significantly interferes with safety of flight, crew coordination, or mission completion. In the absence of maladaptive personality adjustments, traits, or behavior patterns, motivational issues are managed administratively and the AR must be rated satisfactory."[1]

The Army's approach differs somewhat. Army Regulation 40-501, Standards for Medical Fitness, reads: "The unsatisfactory AA is not a diagnosis, but is a determination by the FS and aviation commander or supervisor of suitability or adaptability. An unsatisfactory AA may be revealed by interview, records review, command referral, security investigations, or other documented sources" [14].

Psychiatric and psychological consultations may be obtained, but for trained aircrew, command referral is necessary "for administrative evaluation of nonmedical disqualifications and determination of fitness to retain the aircrew member's aeronautical rating or status" [14].

The Navy and Coast Guard share two distinct but similar definitions for untrained and trained aviators, the so-called aeronautically adapt*able* versus adapt*ed*. Untrained assets have "the **potential** to adapt to the rigors of the aviation environment by possessing the temperament, flexibility, and appropriate defense mechanisms necessary to suppress anxiety, maintain a compatible mood, and devote full attention to flight and successful completion of a mission" [5] [emphasis ours]. Whereas, trained "adapted" aviators have already demonstrated those characteristics [5].

Successful completion of a mission involves not only safety and crew coordination, but also harmonious work with other squadron members and authority figures. The stresses of operational training and deployment should be easily tolerated. Personal behavior and habits should not negatively impact the aviator's military or flying duties. Additionally, the Coast Guard Aviation Medicine Manual states that only a qualified flight surgeon can render a finding on AA UNSAT; it also specifies 10 conditions for which an unsatisfactory AA is mandatory [15].

[1] U.S. Air Force. Section Q: psychiatry and mental health, Q35. In: Medical standards directory. 2016:58. [Accessed 6 May 2016]. Available from https://kx2.afms.mil/kj/kx4/FlightMedicine/Documents/Medical%20Standards%20Directory%20(MSD)/MSD%20June%202016%20(final).pdf to those with access.

5.0 CURRENT CHALLENGES

AA and AR were created as selection tools employed by the FS. Over the course of a hundred years, it has slowly evolved into current practices of the various armed services. From the authors' experiences, the USAF's use of ARMA lacks clarity in regard to the question of evaluation of trained aviators. The current edition of the Medical Standards Directory states that an ARMA assessment is required prior to training and that it "may" be accomplished "at any point in an aircrew member's flying career if the flight surgeon determines that to be an appropriate course of action."[2] Since the concept is based upon answering the question of whether or not an individual has the *potential* to succeed in training and an aviation career, it becomes awkward when applied to a trained, successful aviator.

6.0 THE NEW MODEL OF ADAPTABILITY DETERMINATION

ARMA determination is based on the assumption that an aviator's adaptability to military aviation is based on stable characterological and enduring traits and, therefore, is almost exclusively done during the selection of untrained assets by the FS. In this selection the FS, through interview, observation, and review of historical personal data, makes a decision based on ability, stability, and motivation. The FS may find additional help in the Coast Guard's adaptability standard as well as the spirit contained in Parsons' and Longacre's outdated criteria.

A challenge arises in the determination of ARMA in a trained asset. Once the FS is contacted by the Line to assess a trained aviator for ARMA, the fundamental concern of the FS should not be "ARMA SAT or ARMA UNSAT?" but rather "Why the change? What behavior is the aviator exhibiting that has raised the concern of the Line or flight community? And why this behavior at this time?"

By the end of the formal developmental period, character and personality are thought to be relatively durable. However, new habits and behaviors can develop as one proceeds through the challenges of life. The reason for the change in behavior, character, or possible adaptability is of equal or greater importance than the behavior itself. Reasons may include illness, injury, substances, social and relationship factors, and choice. The FS and military medical community need to determine the cause and rule out any medical or mental health etiology. If there is a medical or mental health disorder, it must be accurately diagnosed, treated, and then reevaluated. If the member does not have a medical or mental health disorder affecting behavior, then the aviator's disposition is in the hands of his/her leadership for an administrative action that may involve a Flying Evaluation Board.

Historically, any determination of behavioral and characterological adaptability in both untrained assets and trained aviators has been termed "ARMA Determination," even though the populations and associated issues may be very different. This use of common verbiage has led to an inappropriate homogenization of approach to assessing the candidate or aviator in question. To clarify the assessment, these authors propose that a new term be utilized.

For assessment of untrained assets based primarily on interview and records review, Adaptability Rating for Military Aviation remains the appropriate term.

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[2] U.S. Air Force. Adaptability rating (AR). 2012. [Accessed 6 May 2016]. Available from https://kx2.afms.mil/kj/kx4/FlightMedicine/Documents/Forms/ShowFolders.aspx?RootFolder=%2Fkj%2Fkx4%2FFlightMedicine%2FDocuments%2FStandards&FolderCTID=0x0120004DEB19A0C597EF4794DF99094B5AD8FC&View=%7BF2BF56F2%2D1249%2D4387%2DBBD9%2DFF9D369D4FC0%7D to those with access.

For trained assets with a behavior change that is prompting evaluation, we recommend the term “Behavior Inconsistent with Flight Duties” (BIFD). Instead of a “yes/no” answer, this term urges the requisite “Why the change in behavior and why now?” questions that may have a medical or administrative outcome. Figure 1 illustrates the proposed algorithm.

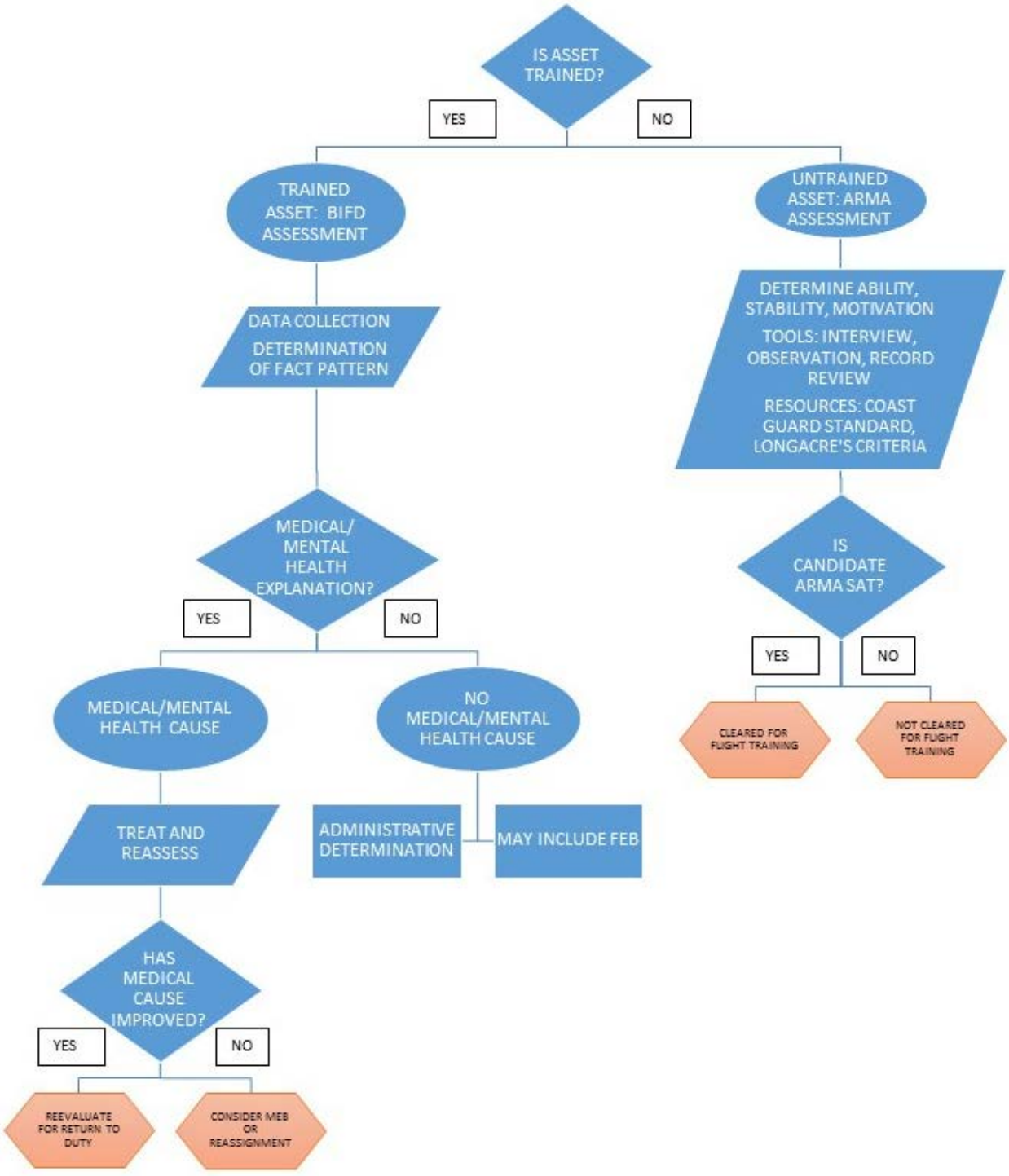

Figure 1. ARMA vs. BIFD assessment.

7.0 APPLICATION OF THE BIFD MODEL

A few issues need to be kept in mind when making a BIFD determination. It has long been recognized that FSs by their very nature have dual loyalties. They simultaneously represent the aviator and his/her interests, as well as the military and its interest regarding ability, safety, "deployability," etc. These dual loyalties come to sharp contrast in the adaptability discussion. The BIFD evaluation is by its very nature a fitness for duty determination, and the FS conducting it is operating on behalf of the military and not representing the aviator as in a typical clinic appointment. This role distinction needs to be clearly communicated to the aviator at the beginning of the evaluation.

While the evaluation is being conducted, the FS must be attentive to a few common threads that continue through each evaluation stage below. First, the question of "Why now?" This requires understanding of the fact pattern of the person's behavior (When did the behavior start? Is it really new? Is there evidence of longstanding behavior that has been tolerated or ignored?) and what prompted the commander to seek consultation. Also, at each stage the FS must be looking for data to lead to a determination of physical and cognitive ability, emotional stability, and motivation of the aviator to continue or return to flying. Lastly, the FS must always be concerned with indicators of safety, both the personal safety of the aviator as well as flight safety in general.

Step 1: In the initial communication with the commander, the FS needs to understand the commander's concerns and urge the commander to clearly describe exactly what behaviors or conduct are of concern. It may be necessary for the FS to help the commander to articulate what questions are being asked for the FS to answer. The more precise the questions and requests, the more precise the FS's input can be. Also in this discussion with the commander, the FS should ask questions to better understand the aviator's general level of functioning and performance before, during, and after the aviator's concerning behaviors presented.

Step 2: The FS needs to gather additional information prior to interviewing the aviator. This includes reviewing medical records, the aviator's Single Unit Retrieval Format, Personal Information File, flight records, and administrative disciplinary history. This will help to develop a basic timeline of the aviator's career and a better understanding of issues relevant to the concerning behavior and assist the FS to formulate questions to pose to the aviator. The FS needs to ensure he/she has obtained the appropriate consent or permission to view such records.

Step 3: A face-to-face interview with the aviator is essential. The FS should gather a personal history. This should include a discussion of when and why the aviator decided he/she wanted to fly, his/her level of motivation to become and aviator, his/her performance in Undergraduate Pilot Training and B School, etc. Additional knowledge of previous assignments and deployments is essential with a focus on performance, relationships (both professional and personal), and traumas or other significant events that may have impacted the aviator's behavior. At the onset of the interview, the FS needs to clearly state his/her role in representing the interests of the military. It is recommended for the FS to query the aviator about each issue or behavioral concern that was identified by the commander. Understanding the aviator's perspective will greatly assist the FS in answering the "Why now?" question.

Step 4: After interviewing the aviator, the FS may feel additional information is warranted. If collateral information is needed from the commander, colleagues, those impacted by the behavior, spouse or significant other, it is important that consent of the aviator is obtained. Also, the FS may need to consider additional medical or mental health evaluation of the aviator

to understand contributory and associated issues. If a mental health evaluation is requisite, the FS should communicate directly with the mental health evaluator to ensure he/she is experienced and aware of the unique needs and issues related to flight operations. The FS may need to work with the commander to initiate a formal command-directed evaluation to mental health.

Step 5: With the above information the FS can make a more educated assessment of the behavioral fact pattern as well as a determination of the aviator's ability, stability, and motivation to remain on or return to flight duties.

Step 6: The FS should then communicate his/her findings to the commander and answer the questions agreed upon in Step 1. Together they should decide on a way forward. The FS, in coordination with the commander, should then communicate the findings and any flight medicine-related actions directly with the aviator.

8.0 CLINICAL CASE EXAMPLE

As the base FS you receive a phone call from a relatively new commander. He informs you that he has a pilot, John, with "some issues," and he wants you to evaluate the aviator and determine if he is "ARMA UNSAT."

8.1 Step 1: Gather Further Information from the Commander to Establish an Understanding of the Pattern of the Aviator's Concerning Behavior

You are familiar with John as the squadron flight doc but don't know him well. The commander relates that John has 5 yr of active duty time and about 1200 flight hours in the C-130. John appeared on his "radar" about 6 mo ago. Following a squadron activity, John went out with some other members and continued to drink heavily. John was arrested outside a bar on charges of public intoxication after yelling obscenities at a crowd of partygoers in full view of a police officer. The commander bailed him out. Even though the commander felt it was overkill at the time, he complied with regulations and referred John for an Alcohol & Drug Abuse, Prevention and Treatment (ADAPT) evaluation. John was assessed but was not diagnosed with an alcohol use disorder.

Next, about a month ago, on a mission as co-pilot, while out drinking with the aircraft commander (AC) at a local bar, John became "agitated and irate" over national political issues. The AC, also drinking and of the same rank, told John that he was not comfortable having him as co-pilot on the rest of the mission and John would need to fly back to base commercially. The squadron commander tells you he had never encountered this situation before and he called John into his office and communicated concern and disappointment. He had a sit-down discussion with both John and the mission AC. John, although appearing somewhat distant and distracted, was apologetic and indicated that it would not happen again. For the second time the commander referred him to ADAPT. Again, he was not diagnosed with a drinking problem.

The commander goes on to explain that in the last few months, John's attitude had visibly changed and it was apparent to his coworkers in the squadron. He tells you about several unfortunate instances including an embarrassing, heated, public argument with a scheduler over a minor issue that required intervention to deescalate. Another concern was John's disinterested participation in an upcoming inspection that required his coworkers to pick up the slack, resulting in the commander issuing John a letter of counseling.

He adds that John had come down to the wire to complete his only supervisee's enlisted performance review, a well-liked and hardworking Airman First Class, and submitted a very mediocre product. John developed a reputation of showing up to meetings ill prepared. Many of his fellow crew members began to grumble that they would rather not be assigned to fly with him. However, each time the commander has conversations with him, John makes excuses and says that he's doing well and there is no reason for concern.

After validating the commander's concerns and summarizing the pattern of concerning conduct, you assist him to craft answerable questions: (1) Should John be put on duties not including flying (DNIF) status? (2) What's the cause for his change in attitude and behavior? (3) Is he salvageable as a pilot and can his attitude and behavior be improved? (4) How can the unit help?

8.2 Step 2: Gather Information from Available Sources

You review John's medical record and build a timeline of his treatment history. In the last year, he has utilized medical services for routine issues significantly more than in the past. The abbreviated ADAPT notes highlight that he was assessed twice within the last 6 mo. After his first incident, he completed the standard two alcohol brief counseling sessions. After his second, he was again not diagnosed with an alcohol use disorder and participated in ADAPT's alcohol brief counseling program, this time consisting of four compulsory sessions with a counselor and two outpatient treatment group meetings. You see from John's Single Unit Retrieval Format that he was a prior enlisted crew chief and deployed twice before becoming a pilot. His officer performance reports have been consistently strong. He does not have a Personal Information File. You read the letter of counseling and it's consistent with the information you received from the commander. After receiving informed consent from John, you call neuropsychiatry at the School of Aerospace Medicine's Aeromedical Consultation Service for any insight from his initial Flying Class I medical flight screening. You are informed that his testing revealed strong cognitive abilities, an emotionally stable demeanor, and high motivation. The change in John's behavior appears very recent. There's no evidence of prior problems; in fact, he has a stellar record until the last half year.

8.3 Step 3: Interview the Aviator

After meeting John, you explain the nature of the interview and your role and identify the specific questions you've been asked to answer. You learn that John wanted to fly since he was a young boy. He maintained decent grades throughout high school, played varsity-level basketball and tennis, participated in the Junior Reserve Officer Training Corps program, and enlisted into the USAF within a week of graduation. Coming from a lower middle class family, John felt enlisting in the military and taking advantage of higher education opportunities to be his best chance at becoming a pilot. When John entered the USAF, there were limited slots for the flying career field, and he signed up to be a crew chief. He did well in basic training and school and became an F-16 crew chief. John performed very well as a mechanic and enjoyed working with and around airplanes. He was consistently a high performer and stood out among his peers. He deployed to Afghanistan twice and his experiences were beneficial. He felt he made a "real difference." He described himself as an "introvert," kept mostly to himself, but got along well

with his coworkers. He indicated that he was always punctual and motivated to perform his duties.

For over 6 yr he performed his crew chief duties while earning an engineering degree in his free time. During this period he met his wife, Rachel, and the couple had the first of their three children. With strong letters of recommendation and support from his commander, he applied for a pilot slot. Receiving notification of his selection was one of John's proudest moments. He eagerly completed all requirements and graduated in the middle of his class. His younger classmates called him "Old Man" and some looked to him for advice. He was earnest and persistent. Despite his disappointment in not being selected to fly a fighter, he devoted himself to his C-130 training and was proud of his identity as a USAF pilot.

John was career focused and maintained a sense of exhilaration and fulfillment when flying. He worked to get himself on the flight schedule as much as possible. He was one of the earliest of his peer group to reach 500 flight hours, and although he continued to be relatively reserved compared to the other pilots in the squadron, he reported that he was dependable and respected.

Although John had gone on temporary duty as a crew chief, he was gone from home much more as a pilot. He enjoyed the traveling. The constant variety of temporary duty had great appeal, and he felt a sense of pride accomplishing the mission. However, after a couple years it began to take its toll on the marriage. When John was home, he found that Rachel always had a long list of tasks for him to do. He did not feel as close to her any more or that he could completely relax at home. He enjoyed the time with his kids, but it always seemed the experiences were tainted by the growing division between him and Rachel.

John indicated that he was never much of a drinker. When he drank it was only in social situations and he found that it helped him to feel more relaxed and become more social. He acknowledged that as he began to spend more time at the squadron after hours due to his challenges at home, he began to drink more regularly. However, dinking never seemed to impair his work performance and, up until the last year, he never had an alcohol-related incident. He felt that his drinking was consistent with other members of the squadron. Regarding the two incidences, he seemed to minimize the alcohol as a factor, reporting that he was committed to not being sent back to ADAPT.

When queried regarding his challenges in the squadron, John states he was distracted and worn out by the continuing challenges at home. John admits that he's never had problems like he has recently and realizes that things have continued to deteriorate. As part of your evaluation, you had John complete a basic depression and anxiety screener before the appointment. Although the results are not considered in the clinical range, there is some elevation that is worth asking him about. John admits that his relationship with Rachel has had a huge influence on him and he's been very distracted. He reiterates his desire to continue flying. He's interested to save his marriage but not sure he'll be able to.

8.4 Step 4: Gather Additional Information and Consider Referral

You have a suspicion that John is struggling with depressive issues stemming from his marriage difficulties, although he doesn't necessarily appreciate the effects it's having on his behavior. At this point, there is likely limited benefit of a command-directed evaluation to mental health as you sense that John needs treatment, not simply another assessment to answer the commander's questions.

8.5 Step 5: Formulate Case Conclusions and Prepare Your Input to the Commander

At this point you feel confident about your conclusion. You develop the following deductions: (1) Ability: John has a solid track record and history of performance. The change has really occurred with the last 6 mo. His ability appears good. (2) Stability: John appears weakest in this area. He seems to be struggling with depression, which appears to be manifesting itself more as irritability, decreased concentration, feeling keyed up or tense rather than feeling sad or "blue." Ideally, John would have recognized he needed assistance and stepped forward on his own before his behavior had raised serious concerns about his continued adaptability to fly. You rate his current emotional stability as poor. (3) Motivation to fly: John voices a desire to continue to fly, but this appears to be contradicted by many of his behaviors over the last few months. You rate his motivation as fair; however, this may change depending on what he does with the recommendations moving ahead.

8.6 Step 6: Communicate Findings to the Commander, Formulate a Way Ahead, and Present to the Aviator

You meet the commander in his office and present your assessment finding. You answer each of his questions: (1) Should John be put on DNIF status? Yes. You recommend that taking him out of the air, although uncomfortable for John, will afford him time to get the assistance he needs but will also communicate the seriousness of the commander's concerns. (2) What's the cause for his change in attitude and behavior? Without revealing too much private information about John's marriage, you explain that he is struggling with depressive symptoms that appear to be related to conflict in his marriage relationship. (3) Can his attitude and behavior be improved? Yes. Given John's successful track record and your assessment of his ability, stability, and motivation, you explain that there is a fair to good probability that if a plan is developed and he engages in the assistance he needs, John will move forward as a successful pilot and squadron member. (4) How can the unit help? Although John will be DNIF for at least a couple of months, he needs to remain gainfully employed in the unit. Frequently communicating support and the commander scheduling time to regularly meet with John will likely be very helpful to change his behavior.

You and the commander sit down with John together in the commander's office. The commander communicates his support for John and his importance to the unit. You outline the basic findings of your evaluation and inform John that he will be DNIF for at least 2 mo. The commander communicates an expectation to John that he will return to flight status. He encourages John to get the treatment he needs and he is available at any time for assistance. John indicates that he's disappointed but motivated to return to flying status.

After the meeting, you communicate privately with John. You indicate that you have spoken with a specific provider in the mental health clinic who has experience with pilots and you feel will be a good fit for him. The provider is willing to work closely with John and, if marital therapy is pursued, will assist to help coordinate. You explain that you will continue to be involved in his case and are available at any time. You reiterate that if medication is desired, the AF has approved certain anti-depressant use for aviators. John decides to go to mental health for psychotherapy. He's not currently interested in medicine but indicates that he may be in the future.

9.0 CONCLUSION

Determining individual risk for any behavior is especially difficult, and robust data indicate that special clinical knowledge does little, if nothing, to improve one's skills above chance. The best one can do is assess risk with some measure of confidence. One cannot predict, per se.

In the mental health fields, actuarial tools call attention to specific risk factors thought to be associated with a specific behavior. In the assessment of risk for violence, for example, psychopathy is a known factor, and a diagnosis of antisocial personality or similar is concerning for future risk of violence or criminal behavior. The same is true for an early age of first violence or demonstrable maladjustment. Over the course of the last century, actuarial methods of risk assessment have shown their utility over a purely "clinical" assessment [16]. Structured clinical judgment, a method that combines actuarial techniques and an expert's ability to make determinations based on "personal experience and knowledge," is considered by some a superior approach [17]. Neither method is strictly available to the FS for ARMA determination.

Although several authors have attempted to help the FS make an assessment of adaptability by creating lists of considerations or suggested interview topics based on some retrospective review or expert consensus, the FS is left to gauge the wind with his/her thumb. At least in the case of the USAF, the FS relies on guidance little altered since before the birth of the service itself. Future research focusing on appropriate select-in criteria could be used to develop a more systematic and evidence-based approach to ARMA during the pre-training process.

In recent times the authors have been presented with several cases involving highly trained assets who are now exhibiting behaviors inconsistent with flying duties. In most of these cases, the unit had access to the wide range of information necessary to establish a pattern of inappropriate behavior and would have sufficient justification to employ the various available administrative strategies ranging from local discipline to permanent removal from flight status and separation from the military. In these cases medical disqualification was sought under ARMA. The FS and mental health consultants are skilled at helping leadership determine if there is a medical cause for the change in behavior and whether or not treatment for such is possible or practical. Since it is in the best interest of all concerned to keep a trained asset on duty, if possible, it is entirely appropriate to involve flight medicine and mental health to ensure all possibilities are considered and addressed. In the absence of such, for example in the case of character pathology, we respectfully offer our proposal that two pathways be operationalized. The first BIFD determination is a medical one, involving treatment of an underlying condition contributing to the behavior. The second BIFD determination is administrative and, although it involves medical staff as appropriate, provides a pathway for appropriate disposition for an individual's behavior-related problems that do not, otherwise, medically disqualify.

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LIST OF ABBREVIATIONS AND ACRONYMS

AA	Aeronautical Adaptability
AC	aircraft commander
ADAPT	Alcohol & Drug Abuse, Prevention and Treatment
ARMA	Adaptability Rating for Military Aeronautics/Aviation
BIFD	Behavior Inconsistent with Flight Duties
DNIF	duties not including flying
FS	flight surgeon
USAF	U.S. Air Force