The Life Style Keys to Flight Deck Performance of the Naval Aviator — Another Window

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ABSTRACT

This paper presents the views of a Naval Flight Surgeon on the coping mechanisms that the Naval Aviator brings to his occupation. It develops the theme that four life style characteristics necessarily receive inordinate polishing, and that the aviator's continued safety is dependent on his ability to fully exploit all four of these in concert. When one of the four is flawed, he is in jeopardy. Also identified in the paper are five built-in defects present in the healthy aviator that require that he be protected from these, both by his own recurring awareness and by concerted institutional measures. Implicit in the complexity of modern military aircraft is that they are designed for the aviator who's described characteristics are forever uncompromised. The engineer is wrong who believes that the capabilities of the aviator who will fly his creation are static, or that these capabilities are always tweaked to the maximum,

IT WOULD APPEAR to this flight surgeon that cockpit information systems and other forms of aircraft performance measurements are designed for use primarily by an uncluttered mind, capable of assimilation and interpretation with uncommon accuracy, in order to make the judgments and take the appropriate actions that will sustain safe flight. In tactical military aviation, where the capabilities of the machine have already outdistanced the physiologic capabilities of the man, the feedback loop that keeps the pilot informed of how close to the edge of that safe envelope he is represents the difference between victory and defeat in wartime, and survival and demise in peacetime. Because my specialty field deals with human frailty and its interface with aviation from the perspective of preventive medicine, I have made it my business to discover what it is that the Naval Aviator brings to this occupational environment. I am dismayed to find that his airplane frequently requires him to be what I would compare to a blank slate, or cerebral chalkboard. On this gray-matter slate is to be sequentially recorded and erased appropriate flight data parameters. Using this data he exercises learned skills, and must demonstrate a certain stage presence. His task is to correctly select pertinent information and guarantee its flow. Then he must act on it, with this cycle to then repeat itself over and over as new information presents. The problem with this chalkboard comparison is that it presupposes that upon entry into the flight regime, the aviator's information slate has been neatly erased clean; that on each occasion of flight, all of the existing space for recording on that imaginary slate is, in fact, available to him; that only those things appropriate to aviating will find their way onto the slate; that the information displayed there is usable--it tells him what he needs to know, in a way that is both articulate and concise, and that he be able to use it.

The catch, of course, is that the aviator in this loop is nothing like a clean chalkboard. He is neither your average man (or woman), nor is he or she the unfettered information system that the slateboard would appear to represent, though at certain times he functions beautifully in this mode.

There are certain, very specific characteristics that will be found in the successful, healthy Naval Aviator. It is my impression that these characteristics are common to the professional aviation community as a whole, but tweaked to a higher degree in tailhook aviation. These characteristics are present to a less predictable degree in general aviation. In all aviation communities, however, the more imperfectly developed are these characteristics, the greater is the risk. Having knowledge of what the aviator's positive features are supposed to be can equip the flier or his flight surgeon with a yardstick against which to measure predicted and predictable performance. Similarly, having an awareness of the coexisting negative features resident in the typical aviator equip him to stay out of areas where his performance is likely to be substandard. What is being described here, then, is the person on the upper end of the performance spectrum for whom the engineer is designing aircraft, and for whom "the system," Naval Aviation, or a commercial airline company, is structured. Using this knowledge, the flight surgeon can make assessments of risk and neatly circumscribe periods of time when that risk becomes inordinate. The characteristics to be outlined here summate into an equation of sorts that describes the aviator's ability to cope. When all goes smoothly, when the aviator is maximally exploiting the positive features of his personality and assiduously avoiding those areas where his weaknesses would trap him, then and only then does the cerebral chalkboard function as advertised. The design engineer needs to appreciate that this person for whom he is designing is not always the same person. Events far removed from the cockpit can either degrade or improve his efficiency quite substantially. The performance available may be exceeded by the performance required.

Using the Naval Aviator as a model, there are identifiable features of his life style which, when orchestrated together, are most conducive to good function. Similarly, when one or more is flawed, so is he. Balancing these productive assets, on the other hand, are those features of his life style that would tend to disrupt his function and are of such sufficient impact as to warrant special steps, institutional if possible, to protect the flier from their influence. These features can be likened to characteristics of first the "heads," and then the "tails" side of a coin.

THE HEADS SIDE OF THE COIN

Examining the life style keys shows that not unlike a coin, the good features are on one side and the not-so-good features are on the other. The "heads" side of the coin shows four separate but clearly interrelated features which complement each other. They are most visible in the cockpit. They are, however, present and functional at all other times of the day, both at work and at home. In the business of aviation, they combine smoothly to produce a safe and aggressive aviator. Sadly, in the home their appropriateness is open to question because they do not contribute to the image of a sensitive spouse, though they are found there as well. These features are:

1. He is **in control.**

2. His male-female interface is characterized by emotional distance.

3. He is a mission-oriented compartmentalizer.

4. He is systematic and methodical

The first feature, being in control, is the cardinal feature of the healthy aviator. It is the one that consumes the majority of his energies. If he is visualized in the mind's eye as being in his airplane, he can be seen there in all his controlling splendor. With feet on the rudders, one hand on the stick, and the other hand on the throttle, his aircraft is precisely responsive to his measured control inputs. He has gravitated towards this task, where he is indisputably in control, since he was a toddler. He probably is the oldest son. He has learned to survive in a success oriented home environment where mastery and achievement were the order of the day. Recognition for achievement was prominent by its absence, though criticism for minor failings was easily obtainable. The circle of friends he chose varied with his age so that by the mid to late teens, he selectively co-mingled with other over-achievers who had also set very high standards for themselves. Priorities were set. Competitiveness ran high. The thrill of controlling your destiny through your own efforts came in small doses on athletic fields. This group of young men will become the professionals of their adult world: the physicians, engineers, and aviators in the community.

Progressively important and demanding challenges were seized. Great satisfaction came from successes that followed in increasingly more complex tasks. There was a surprising amount of comfort to be derived from interfacing with other controllers. One can, of course, always trust another controller--he won't let you down. There are rules of engagement to be followed. Everyone knows what they are. The controlling features that mark his performance in the cockpit are not restricted to the cockpit, they are everywhere. As a parent he can sometimes be seen treating his children the same way he treats his airplane: measured input - measured response, forthwith:

The fairly classic scenario that shows the adult controller "doing his thing" is not original. It happens in almost every household. It has to do with a family automobile trip. The "preflight" trip planning is extensive, though the vehicle is made by GM and not Lockheed. Maps are pored over. The availability of gasoline or diesel fuel is established. Radar traps are identified. Detours are confirmed with the Automobile Association. The appointed hour for departure and arrival are agreed upon, if only to himself. When that appointed hour arrives, there he is, pacing smartly around the car, awaiting family assemblage. The only flaw in the planning will have been one that he has relegated to being a minor concern: the availability of ladies' rest rooms during the day's driving marathon. He is in control There will be no surprises. It will be a good day.

Taking the same scenario and twisting it a bit can be enlightening, because in the event that Mr. Controller, for whatever reason, failed to do his pre-trip planning, the family is alerted to an upcoming "bad day." Father is not good company on the trip. It has been agreed that he "...is in a bad mood." The bad mood, in fact, is the fate of the controller who thinks he should be in control of a situation, but is not. Controllers are comfortable with other controllers. Aircraft squadron Ready Rooms are a case in point. It should come as no surprise, then, that controllers **marry** controllers. Oldest sons marry oldest daughters. If, between them, there are no rules to establish whose turn it is to be in control, the relationship will not survive.

As a youngster, the budding controller makes a terrifying discovery. He has a grievous shortcoming in his makeup that defies control. Feelings. There are feelings within him that would control him. How can you have feelings and control, too? It will be one or the other. Something must be done.

The second feature of the heads side of the coin shows what is to be done. It flows naturally from the first: The controller's male/ female interface is marked by calculated emotional distance. This, too, has its origins in early childhood where it is obvious to all that the boy who clings to his parents is an embarrassment. Big boys don't cry: Dependency feelings are un-masculine. By the time the boy has experienced the first pangs of puppy love, he has added a sinister dimension to the whole concept of feelings: He learns that he who shows his feelings risks being manipulated at the hands of another. As if this were insufficient, he also discovers that feelings parasitize energy. They detract from mission. Feelings are dynamite. The less to do with them, the better. At risk is control. Result: The feelings get buried, compartmentalized at a safe distance so they do not have to be dealt with. As long as they are kept in their private, locked, hidden compartment where the controller can carefully meter their visibility on an "as required" basis, things are comfortable. (That the spouse or girlfriend decides that because the visibility of feelings she **wants** to see is so low--tenderness, love, etc., that therefore they do not exist, is an underwritten risk).

When a controller is placed in a situation where his feelings will be exposed, he will respond in a universal manner. He absents him-self. He departs the pattern, seeking safer havens. Consider the feelings attendant to the aircraft carrier's deployment. Does it strike anyone as curious that there are never any tears on the ship? That there are only tears on the pier? And, that Mrs. Controller will tell you that over the two weeks immediately preceeding deployment things at home became increasingly distant. Not intimate, not sharing the upcoming departure, but distant. Why? Because two weeks before deployment he began to systematically and gradually withdraw his emotional irons from the fire - imperceptibly he thought. (Not so.) Some of the greatest domestic rows in the Naval Aviator's marriage will occur in the two weeks prior to carrier deployment. He has elected not to deal with those feelings. They are loaded.

The third feature of the heads side of the coin is that the Naval Aviator is a mission-oriented compartmentalizer. Visualizing him, again, in his cockpit, compartmentalization offers a system to exclude distractions such that while he is charged with accountability for that multi-million dollar national asset, those things that do not contribute to the mission of flying that airplane are excluded from his conscious. Referring to the cerebral chalkboard that began this paper, it is compartmentalization that insures that the chalkboard is clean before entry into the cockpit. If the mission is "Fly My Airplane," that becomes the functional compartment. Excluded are all the unrelated compartments: an overdrawn bank account, a fight with the spouse, an impending major purchase, a clan-destine evening meeting, etc., etc. Similarly, when functioning in one of these other compartments, that problem-solving mission is also undistracted; attention is zeroed onto that task. Among special compartments are: deployment, combat, get-home-itis, and sexuality; a myriad of commonplace compartments exist, including wash the car, mow the lawn, in-basket/out-basket, and the evening news. Controllers dislike interruptions and are commonly quite intense in mission accomplishment, sometimes without regard for the relative importance or unimportance of the task. This makes for trouble in the home at the hands of the equally competent but dis-involved controller spouse.

The fourth feature of the heads side of the coin is actually a summation of the other three. The controller, hell-bent to accomplish a mission, unencumbered by distractions, and reinforced by his successes, believes he has found a system or method to insure the continued success of his efforts. By being methodical, and having learned to worship the god of checklists, he precludes the occurrence of the one thing he is least comfortable with: Surprises. There shall be no surprises. If there are surprises, the controller must indeed be severely flawed. Procedures manuals are meticulously developed to program **out** any surprises. Situations known to contain hidden surprises are either figured out in advance or avoided. In the case of feelings, which by their spontaneous nature can defy the dictum of no surprises, it is far easier to avoid provocations than to attempt to handle them after the fact. It is noteworthy that the spouse quite commonly would launch an attack explicitly for the purpose of getting out in the open some of these mysterious feelings, only to find her partner unwilling to participate, electing to leave the matter unresolved - a form of control in itself. Though both members of a team may be quite like each other in handling life problems, there are notable differences that become difficult. Using the carrier deployment example again, it is not uncommon that at the completion of the deployment, when some semblance of normalcy has returned to the family constellation, **she** wants to talk. She wants to share her feelings with him now that she no longer needs to deal with them. She would simply like him to listen, to know, to share. He does not engage in discussions for the purpose of sharing, he engages in discussions to identify and solve problems. She is likely to address a short-fused audience.

Working smoothly in concert with each other, these four features of the heads side of the coin are the hallmark of the aviator who approaches his occupation with the greatest chance of success. When any one is flawed, so is he. To be able to use his learned skills and apply the "stage presence" perspective, he must:

1. be comfortable that all significant compartments of his life are amenable to his control and that no major or significant threat exists that would compromise this requirement;

2. keep sufficient distance between himself and others of the opposite sex so that feelings and emotional involvement are on his terms and amenable to control;

3. be expert at precluding distraction by compartmentalizing out of his conscious those things which do not contribute to a specific mission compartment;

4. be methodical and systematic to effect a form of pre-programed approach to task accomplishment which, for him, is time proven, for the purpose of excluding "surprises."

Continued flight status requires that all four of these features be functional and adequate in any life situation. Temporary termination of flight status when these coping methods are inadequate for the need is appropriate.

THE TAILS SIDE OF THE COIN

Not all the built-in features of the healthy Naval Aviator are conducive to his safety and survival. The flip side of the coin shows the existence of five defects which, if left to themselves, would tend to trap the unwary into foreseeable untoward incidents, some of which can have disastrous consequences. In implicit and sometimes explicit recognition of these shortcomings, many institutionalized pressures are brought to bear to protect the Naval Aviator from himself in these areas. These defects are:

1. limited spontaneity

2. complacency

3. the "familiarity breeds contempt syndrome"

4. the ritual trap

5. the "positive maleness feedback" requirement

The first defect, on the tails side of the coin, distresses the Naval Aviator when it is pointed out. This is because the existence of such a defect is anathema to the image he would like to project. Recalling Clark Gable and Errol Flynn in the 1939 movie epic "The Dawn Patrol," or more recently, "The Great Waldo Pepper," it is more or less expected that the normal or average happy-go-lucky aviator has no deep attachments, is likely to be a semi-alcoholic skirt-chaser, and is an incompletely bridled adventurer who often borders on the psychopathic. For him, ending up in a smoking hole holds no horror, and he frequently does. The symbolism of the white silk scarf in the slipstream embodies this attitude. This frankly ignores that today's Naval Aviator is a **complex weapons platform operator** who is in every respect a professional. He is neither an impulsive Waldo Pepper nor a psychopathic Gable or Flynn. The defect to be addressed is not the difference between what he actually is versus what he would like to see himself as, but an ironic contradiction. The contradiction is that he lacks spontaneity. The learned procedures and the systematic, programmed approach to management of flight are explicitly geared to keep him out of the spontaneous arena. "Spontaneous," for the aviator, is often better equated with "impulsive." As his experiences in the airplane multiply, he becomes equipped with more and more wherewithal from which to draw in the decision-making process. Spontaneity would deny or abort this learned process.

One of the reasons that the compartment labeled as "get-home-itis" is so dangerous is that in this scenario of compartmentalization gone awry, the fixation on getting home impedes his ability to make correct judgments, in effect denying him access to his training and experience. He thus finds himself in a spontaneous mode, deprived of that wherewithal that normally keeps him out of trouble.

He intuitively recognizes, without any words having to be said, that it is the spontaneity of emotions that constitute their major threat to his continuing control.

In a hedge to protect the fledgling aviator from his spontaneity, there exists the time-honored institution of "hangar flying." Through the sharing of experiences, a relatively inexperienced aviator can, in effect, have a pre-programmed response to a future crisis or scenario, thus avoiding the happenstance of having no experience or training from which to draw, and responding spontaneously.

The U.S. Navy institution known as "The Plan Of The Day," for the wing-wearing community, is a document not merely outlining events and information, but also is a vehicle for use to keep the training, or pre-programming current. Therein will be found a daily feature known as the Emergency-Of-The-Day, specifically designed to keep the flyer refreshed, current, programmed, and out of the spontaneous mode.

The charming and socially adept aviator who can command an adoring audience with his wit at a cocktail party, rather than being the classic example of spontaneity at its best, is, instead, preprogramming at its best. The behavior pattern he exhibits is the result of very carefully studied effort at collecting the best stories he has heard, the social affectations he thinks are most becoming, and the appearances of savvy and aplomb acquired from his experiences and preserved for use in just such situations. He thinks he is a model of spontaneity. His spouse knows better. In his airplane, it spells trouble.

The second defect on the tails side of the coin is probably the best known, and as such needs little amplification. It is the destructive monster poised to strike at a time when things go well. It is complacency. The only requirement for its presence is a sense of security. It is not necessary that the aviator-victim be a competent and skilled performer. It is only necessary that he **think** so.

The third defect on the tails side of the coin is a cyclic, repetitive phenomenon very closely allied to complacency. It is "The Familiarity Breeds Contempt Syndrome." It is a misperception born of increasing experience with a specific model aircraft. At the initial stage of experience in a given model, the aviator is quite hyper-aware of the reputation of the plane, of the bad things it has done to others in the past, and that this man-machine interface can be a tenuous one with unhappy results. As his proficiency increases, his perspective changes. "This airplane only eats other people, less smart than myself." This is most clearly visible in the military aviator in the early stages of his career as he progresses up the ladder of increasing aircraft complexity, culminating with the model he will ultimately fly in the fleet, spanning a twenty-four-month period. His first entrees to each were accompanied by transitory realizations that this airplane kills. Soon, however, he has issued himself a private waiver from inclusion in this group of mortals. For some, the inappropriateness of this judgment will be vividly brought home at a later date. A step in the direction of an institutional "fix" for the problem is the community-wide circulation of mishap and incident reports that involve his aircraft type.

The fourth defect on the tails side of the coin is the ritual trap. When a repetitively performed task no longer requires conscious attention to make it happen, the task can be completed by rote, with no conscious attention at all, with a cerebral disconnect. The perpetrator need not even be aware that the task is complete. He certainly will not have any cognitive awareness of new information that the ritual should have uncovered. This is the trap awaiting the aviator who has performed thousands of essentially identical preflight examinations of this type aircraft and who can now do it with his eyes closed - literally. This is the trap ready to be sprung in response to the ground controller's ritual challenge to "check wheels down and locked." This is the trap set for the husband whose ritual “goodbye kiss” as he goes out the door to work has become devoid of meaning. People who, for whatever reason, fail to perform the prescribed ritual (or cannot recall whether it was performed) come away feeling guilty because the ritual was not done. That the ritual was meant to accomplish something has been lost. Witness: It is acceptable in the business of aviation to perform a preflight check with a cerebral disconnect, but it is not acceptable to omit a preflight check - even though one is the equivalent of the other.

The fifth and last defect on the tails side of the coin is the most involved of the five, and has the greatest potential for mischief. On the surface it appears benign, and for some aviators will always be so. But for most aviators, at least once in their lives (and probably more often than that), the defect that is "a requirement for positive maleness feedback" will have to be recognized for what it is and dealt with head-on. It is as if every compartment of the healthy aviator's multi-compartmented life contributes a measurable quantity of positive maleness feedback, indicating to him that his coping skills are at least adequate for the need. On an imaginary cerebral totalizer instrument, the aviator always has a readout relative to his performance as a male. This totalizer instrument has painted on its imaginary face a red line, below which the reading indicates an insufficient amount of positive maleness feedback. Under most circumstances, the healthy aviator knows his totalizer instrument reads well into the higher numbers. When adverse impact on the totalizer results from scenarios involving negative maleness feedback from any compartment, he can direct his attention and efforts to maximizing the positive maleness feedback from another compartment and thereby nullify or balance the negative input. The peculiar significance of this phenomenon in aviation is that if the stresses are such that the aviator is unable to muster sufficient positive maleness feedback to counter negative maleness feedback, he is at risk for flying dangerously, for risk taking, in an ineffective and inappropriate but unoriginal attempt to prove himself better than his coping ability at the time would suggest. This is a form of mandatory self-actualization not unique to aviation but possessing uniquely high price tags if aviation is involved. The real curiosity surrounding the concept of positive (or negative) maleness feedback is that the protagonist is usually the last to know that his behavior is so distinctly goal oriented, and is readily perceived as such by others.

The classic example of a benign situation containing the conflicts of positive and negative maleness feedback inputs occurs in the occupational setting. It usually involves controversy between the aviator subject and an important member of the institutional leadership structure over him. In short, things do not go well for the aviator. Pending his getting a handle on the problem, negative maleness feedback can become significant, causing the needles on the imaginary totalizer to fall towards the red line. In response to this, specific other constructive actions will take place as he seeks a countering effect from other compartments. A more notorious occurrence in such a scenario involves an increase in the level of sexual activity for the duration of the occupational crisis that can seem inexplicable to the partner, and doubly so when crisis resolution is complete and the need no longer exists for that level of bedroom activity.

THE PECKING ORDER

Partially in response to Training Command grades required for entry into a specific flight community (transport/patrol, rotary wing, attack, fighter) and partially in response to the relative mundane or colorful nature of the mission, a hierarchy exists among wing wearers. Naval Aviators consider themselves to be at the top. Within the aviator community, the inhabitants of the lower end of the spectrum are pilots of multi-engined, multi-placed propeller driven aircraft. At the upper end are pilots of single-seat jet aircraft. The presence or absence of a tailhook is considered a hallmark of excellence. Aircraft speed increases as one proceeds up the spectrum, as does the rate of fuel consumption. In the rotary wing community, helicopters with weapons affixed require a more colorful aviator than the rest. A carrier qualified aviator will be higher on the spectrum than one who is shore based.

The higher up on the pecking order one goes, the greater is the preponderance of oldest sons to be found, beginning at the low end with 50% or less, and culminating at the high end with 80% or better. To state that this is a self-selective and unique community of aviators is a master understatement. The higher an aviator is found on the pecking order, the more urgent is the requirement for a functional heads and tails of the coin.

THE FAILING AVIATOR

Not everything goes well at all times for the Naval Aviator. Where the coping mechanisms outlined at the beginning of this paper are overwhelmed, the entity of The Failing Aviator presents. The most common cause of the failing aviator is a failing marriage. The spouse of the Naval Aviator is presented with unique hardships and burdens not to be found in any other occupation, and for some, will have to face these **alone**, and on a repetitive basis. Some marriages cannot survive. Where there is some form of mutual agreement between the two on the need for dissolution of the relationship, the aviator may have all the coping tools required. Where there is bitterness, the impact of the negative maleness feedback commonly overwhelms the available resources and the "Failing Aviator," in desperation, trolls for new methods to recoup his perceived ego losses. The indicator needle on his cerebral totalizer instrument sweeps past the red line heading downward. His response, a newly adopted behavior pattern that is the hallmark of the Failing Aviator, is a distinct change from what was. He has lost control. She calls the shots. He cannot escape the impact of the overwhelming negative maleness feedback bluntly delivered in his home. It defies compartmentalization. It cannot be sequestered out of his conscience. He ruminates over it. What used to be "safe" emotional distance is no longer safe as, in his view, she runs amok over his sensitivities, tromping through his once protected feelings, and casting his very sexuality on the public highway. He can concoct no system to handle this.

Instead, the emergence of the behavior pattern of the Failing Aviator identifies a heretofore unknown entity. It is characterized by bravado, risk-taking, abandon, macho, and an implicit acceptance of physical pain. He sets out to show the world that he **is** a man. He acts like an 18-year-old wild man, a classic of youthful exuberance, sowing wild oats and meeting artificial challenges, except he is not eighteen, he's twice that. The end result is an automobile accident, public disgrace, and finally an aircraft accident. He is clearly identifiable **before** the latter occurs. The trail of carousing, alcohol excess, the snappy new sports car, the speeding and DWI tickets, the level of competition in physical prowess sports, the injuries accumulated in the process, and the sexual promiscuity point out that the aircraft accident is on the way, if he survives the auto accident. The process may last six months.

The curiosity is that for one who at one time possessed and used the heads and tails side of the coin that is his best asset, clearly none of these are in the running for the duration of the Failing Aviator. The cure is to re-establish dominance of his old coping methods. They may not immediately solve the family problem that is the genesis of the entity, but neither can the Failing Aviator. If he is made aware that this newly adopted behavior pattern is goal oriented and **meant** to be destructive, he will stop it. This does not require psychotherapy. Anyone (except the spouse) can do it, as long as the one who does it is respected in the eyes of the victim. In recent years over ten percent of Naval Aviators involved in accidents were the Failing Aviator.

CONCLUSION

The healthy aviator's armamentarium meant to keep him healthy contains clearly identifiable assets and liabilities. If known, these can be weighed against the impact of the environment in which they are to function, giving a prediction of coping success or failure. For some aviators, certain stressful situations will provoke an identifiable maladaptive coping style which requires and is amenable to interruption. It is the whole man who enters the cockpit to undertake flight; into that arena is brought all the frailties that mark the man. His ability to dissect out purely occupational from the non-occupational requirements of the task is the cornerstone on which his aircraft is designed. **This cornerstone is not always made of the granite that the engineer would require.**

Note: The opinions presented in this paper are those of the author. No endorsement by the Department of the Navy has been given or should be inferred.