

# Chapter 8

## U.S. AIR FORCE COMBAT PSYCHIATRY

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Peter Hurd

*Aerial Gunner, England*

1944

Peter Hurd was a Life Magazine artist during World War II, assigned to cover the action on Ascension Island and also in England. His painting depicts a gunner standing in front of his turret on the belly of a bomber. For sheer terror, few jobs in the U.S. Army Air Forces in World War II could compare to his—relying on his own composure, wits, and agility to shoot down enemy aircraft, while totally exposed to return fire

Art: Courtesy of US Center of Military History, Washington, DC.

## INTRODUCTION

The U.S. Air Force mission and its possible combat scenarios differ considerably from those of other services. Traditionally, the people at risk in the U.S. Air Force have been the fliers—the pilots, navigators, weapons systems operators (WSOs), electronics countermeasure operators, radio operators, gunners, loadmasters, flying crew chiefs, and other highly skilled and carefully selected personnel. These fliers have been the tip of the arrow, supported by the rest of the U.S. Air Force. Thus, at a 3,000-person airbase, only the 300 or so fliers might be exposed to combat. Security police armed with light weapons provide perimeter security against small attacks, but most of the personnel on base are usually not even issued personal weapons. The U.S. Air Force has no tradition of arms, little training in the use of rifles and pistols, and essentially no tactical field training in self-defense. In case of ground attack, most personnel are expected to take cover and wait while some other military service or the base's own aircraft and security police fight off the attacking enemy. Leadership training of U.S. Air Force officers and noncommissioned officers (NCOs) does not address handling troops in deadly peril, and the average service member knows little about how to behave under attack. Few

role models are available, either through tradition or in real life.

Thus, two differences come immediately into focus when comparing the U.S. Air Force role to the roles of the other services<sup>1</sup>:

1. In the past, the brunt of battle has been borne by a select, highly trained small group of U.S. Air Force fliers, with whom the mass of troops may not be able to identify personally.
2. In the event of enemy attack, most U.S. Air Force members will have to take cover and wait while others decide their fate. This passive role carries with it a particular vulnerability to combat reactions. [This is further discussed in Chapter 6, *A Psychological Model of Combat Stress*.—Ed.]

The combat stresses borne by the fliers and by those nonflying members who may have to suffer through a ground attack on the base will be considered separately, drawing examples from wars of the past in order to develop and discuss future preventive and therapeutic measures to preserve the fighting strength.

## SUPPORT OF FLIERS IN COMBAT

The nature of war dictates that, certainly in the beginning phases and perhaps for several weeks, fatigue is the order of the day. Operation Desert Storm, the combat phase of the Persian Gulf War, followed that rule, and so, no doubt, will the next conflict. As usual, all did not go according to plans. The uncertainty of the length of deployment contributed to general tension. Combat air patrols up to 8 hours long could be followed by alert scrambles of equal length. Tanker schedules sometimes consisted of 12 hours flying, 12 hours rest, and 12 hours of alert. Some crews flew 36-hour crew days. Sleep was interrupted by aircraft noise and Scud missile alerts. Some line commanders seemed not to understand the effects of stress and chronic fatigue. Some flight surgeons felt that aircrews were pushed to the limits of their endurance, to the point where flying safety suffered. Fatigue was a consideration in at least two noncombat fatal accidents. Other problems included missed meals

because of scheduling conflicts, crowded billeting of crews flying different schedules when all fliers were brought on base for security reasons, and environmental stressors such as heat and isolation. The pace of the war was so rapid that there seemed to be no time to deal with emotional reactions to the deaths of squadron mates.<sup>2</sup> In brief, the emotional aspects of war have not changed much in the last 40 years.

Most of the literature concerning the effects of combat stress on fliers derives from World War II; little was written on this subject during the Korean conflict, and there is essentially no psychiatric literature on the U.S. Air Force experience in Southeast Asia during the Vietnam conflict. No significant publications on this topic have emerged from recent U.S. Air Force operations in Libya, Grenada, Panama, or Kuwait and Iraq. This is a regrettable lack, for several demographic factors have changed during this period.

Fliers today differ considerably from their predecessors. The fliers in World War II were wartime volunteers, high school graduates or college students commissioned through the Aviation Cadet Program, trained in a specific aircraft, and sent into combat with perhaps 200 flying hours altogether. Most of these fliers separated from the service after the war, having no intention of a career in military aviation. Some joined the reserves, probably thinking that they would be recalled to active duty only in the unlikely event of a national emergency.

The call came sooner than anyone expected. Many of the reservists were reactivated in 1950 for the Korean conflict. This "police action" did not generate the sense of national unity that World War I and World War II had, and many reservists were quite bitter about having their lives and careers interrupted to fight in a war not linked to a clear threat to the nation. (Their feelings were expressed in the sardonic song, "Here's to the Regular Air Force, they have such a wonderful plan: They call up the Goddam Reservists, whenever the shit hits the fan!") Somewhat older, not as committed, and with considerably less motivation to fly, those recalled fliers became a problem because of their increased incidence of refusal to fly combat missions due to "fear of flying."<sup>3-5</sup> Harking back to lessons learned during World War II, flight surgeons would check such fliers to assure that they had no psychopathology, and then clear them medically for flying duties. Any further refusal to fly was handled administratively rather than medically.

The demographic characteristics of U.S. Air Force fliers have continued to change since the mid-1950s. All fliers (indeed, all officers) must have a college degree, and most obtain their commissions either through the U.S. Air Force Academy or through Reserve Officers' Training Corps programs. Many go on to obtain master's degrees after entry on active duty. Except for the few older officers commissioned through the old Aviation Cadet Program or Officer Candidate School, this was the complexion of the force in Southeast Asia. These young, bright, well-educated fliers had thus spent at least 5 years (4 in college, 1 in flight training) directed toward the goal of becoming a U.S. Air Force officer and flier. Many were seriously considering 20-year careers, and most of those who were not were hoping for careers as airline pilots. Thus they went to war older and better educated, and with a longer career view than their predecessors. Many were fairly "high-time" fliers when they arrived in Southeast Asia, although the younger ones might arrive with only 200 to 300 flying hours. The professional

fighter pilots were a subgroup of the U.S. Air Force, a tactical cadre that rotated between Southeast Asia, the Tactical Air Command in the United States, and tactical fighter wings in the U.S. Air Force, Europe (USAFE). Some of these men served two, three, or four tours in Southeast Asia. These fliers differed from the U.S. Army helicopter pilots, who were younger, less educated, and more like the World War II volunteers.

The U.S. Air Force today has continued its policy of producing highly selected, educated, and trained pilots. The increasing complexity of aircraft (frequently called "weapons systems" to underline this complexity) requires continued high-grade training. Many frontline pilots, navigators, weapons systems operators, and electronic warfare operators are in their 30s, and some are in their 40s. They are, as stated earlier, considerably different from their predecessors in World War II, and more like those who flew in Southeast Asia. Yet there are almost no specific data about combat reactions of fliers in action in Southeast Asia, the Libya raid, the invasions of Grenada and Panama, or the Persian Gulf War, or about the types of support most effective in maintaining their morale and fighting spirit. Thus, any ideas or plans for furnishing such support in a future conflict must be based on the reports of U.S. experiences in World War II and Korea, along with anecdotal data and reminiscences from Southeast Asia, data obtained from the performance and support of fliers from the U.S. and other nations in the more recent conflicts, and projections of all of this information onto present U.S. Air Force fliers. Added to these changes will be the effects of the drawdown of the U.S. Air Force since the collapse of the Soviet Union, the increase in the proportion of women and their new roles, and the outcome of the present debate about homosexuals and lesbians in the service. Still, one may reasonably assume that principles of support to morale and flying efficiency that have been effective in a variety of past conflicts are probably basic enough to prove useful when flexibly and thoughtfully adapted to the particular circumstances of future conflicts.

U.S. Air Force fliers may fill a number of roles in a combat situation. Some tactical fighters will fly air-to-air combat missions to establish air superiority over the battlefield by attacks on enemy aircraft. Others will fly tactical air-to-ground missions, attacking enemy troop concentrations, armor, artillery, supplies, and equipment. These aircraft may be single-seat (pilot only), or may be crewed by a pilot and a weapons system officer. Forward air controllers will coordinate some strikes and will

identify targets. Reconnaissance pilots will take photographs before and after air strikes to use in planning missions and to assess damage. Tactical helicopter pilots may fly special missions, inserting or extracting troops, rescuing downed fliers, and carrying patients to the rear. Tactical transport crews will airlift supplies, delivering them from the air by parachute or by special low-altitude extraction systems, or by landing to off-load in the conventional way.

These and other tactical aircrew will be exposed to specific dangers: ground-based small-arms fire, surface-to-air missiles, conventional anti-aircraft fire, and attack by enemy aircraft. The threat of chemical or biological warfare at base or just prior to takeoff may act as a stress multiplier. Tactical missions tend to be fairly short, lasting from 1 to 4 hours, and thus the aircrew may fly two, three, or even four missions in a day. Israeli fighter pilots in the 1967 war, expected to fly an average of three or four sorties a day, flew an average of seven a day; some pilots flew as many as 10.<sup>6</sup> The dangers of such missions may vary considerably; some are the proverbial "piece of cake" while others may be extremely lethal. At times the danger—or lack of danger—will be familiar to the fliers. Other missions or target areas will be known as unpredictable, thus adding the considerable stress of uncertainty to all the other stresses of combat.

For the tactical fighter pilot, the success both of air-to-air and air-to-ground missions depends on personal skills. Dual-crewed aircraft such as the F-15E integrate the weapons system officer into the equation, but the skill of the pilot is still paramount. Whether a pilot lives or dies in such combat depends upon personal prowess to a degree that may be unique in modern warfare.

Such a pilot must have supreme confidence in personal skills and a strong narcissistic component recognized when he is selected for training. This narcissism, an almost magical sense of personal invulnerability, is nourished by the U.S. Air Force's system of training. It displays itself in the "typical fighter pilot personality" that is immediately apparent to the most casual observer of human nature. This pilot's effectiveness in battle depends on boldness, self-sufficiency, situational awareness, and an internal locus of control. Such pilots may depend to some extent upon a wingman and a squadron for support, but deep in their hearts, each knows that one can ultimately depend only upon oneself. Maintenance of this narcissism in the face of mounting losses to the enemy of friends—fliers who were known to be skillful and brave—requires a healthy

initial motivation to fly, a strong ego, and well-developed denial skills to defend against personal fear and sense of mortality. Magical thinking and superstition may also be observed. Deaths are briefly acknowledged and then consciously suppressed in order to continue the squadron mission.

Support of tactical fliers in the combat arena has been similar during each of America's last four wars. Airfields have been reasonably free from enemy attack in most cases, and fliers have lived in a base environment in which a great deal of effort has been devoted to their personal comfort and support. Nourishing meals available 24 hours a day, specified crew-rest periods with exceptions granted only by higher headquarters, personal health care and welfare overseen by a squadron flight surgeon and his staff, quiet quarters that are air-conditioned or heated—all these amenities and more are provided by regulation, if not always in fact.

Transport crews will be affected by some but not all of these considerations, with added stresses deriving from their particular mission profiles. Tactical transport aircraft, particularly the C-130s and the cargo helicopters, may be used for resupply under fire of troops and bases, or of besieged civilians receiving humanitarian aid. The resupply of the besieged Khe Sanh defenders during the Vietnam conflict is an example of such an endeavor. Not only the pilots' skills count here, but also those of other aircrew members and even the ground crew who must help off-load the aircraft under fire. The stress of flying in such a large, unarmored, defenseless "sitting duck" target during the approach, landing, taxiing, off-loading, takeoff, and departure under fire is enormous, especially because each of these activities must take place in a location known in advance to enemy gunners, whose weapons may already be ranged and sighted in. Transport crews may be called upon to make a half-dozen or more landings during a day's missions, and their vulnerability to ground fire leads to a constant state of arousal; there are only limited options to counter such fire when it occurs. Flying such missions when attack by enemy aircraft is possible will add to the strain. This was exemplified by the slaughter in April 1943 when American fighters caught about 100 JU-52 transports carrying troops to reinforce the German Army in Tunisia, shooting down 52 of them over the Mediterranean Sea.<sup>7</sup>

Strategic bomber crews may face different perils. Penetration of enemy defenses depends upon surprise, electronics countermeasures, such techno-

logical advances as the cruise missile, and whatever escort aircraft may be used. The venerable B-52s are neither fast nor maneuverable when compared with air-defense aircraft or with surface-to-air missiles. Presumably, their airfields will be far enough from the conflict on the ground to be safe from attack with conventional arms and will be vulnerable only to long-range missiles, to enemy strategic attacks, or to saboteurs.

Strategic bomber crews had the highest proportion of combat losses among fliers in 1944, 7.7 per 1,000 hours flown, compared to light bombers (3.4) and fighters (1.1).<sup>8(p10)</sup> The B-52 experience in Vietnam shows the difference in attacking targets with and without air defense. Between June 1965 and August 1973, the Strategic Air Command flew more than 124,000 B-52 sorties against targets in Southeast Asia, losing 29 B-52s altogether. All of the 17 B-52s lost to hostile fire were shot down over North Vietnam; none were lost to hostile fire over the lightly-defended South. (The other 12 were lost through accidents or midair collisions.)<sup>9</sup>

Fifteen of these 17 were shot down during the 11 days of Operation Linebacker II, when some 740 sorties were flown against targets in Hanoi and Haiphong in December 1972.<sup>9</sup> These B-52s were based on Guam and in Thailand, secure from enemy attack, but the cumulative and rapid losses caused considerable concern among the fliers involved. According to their flight surgeon, this concern manifested itself as a rapid and forceful statement up the chain of command of the need to change tactics over the target, a statement that quickly led to the needed changes.<sup>10</sup>

In addition to the operational factors already mentioned, three other matters distinguish the support of U.S. Air Force fliers in combat. One is the similarity between the "fear of flying" syndrome, which may occur in peace as well as in wartime, and the signs and symptoms usually associated with combat fatigue.<sup>11</sup> The second is the use of *rest* as a primary preventive and therapeutic measure. The third is the specific relationship between the fliers and the flight surgeon who is directly responsible for furnishing their preventive health measures and medical support. These three factors will be considered separately.

### **"Fear of Flying" and Combat Fatigue**

"Fear of flying" has been called a symptom without a disease.<sup>12</sup> Recognized early in the history of powered flight, it was the subject of two of the nine chapters in one of the first textbooks of aviation

medicine.<sup>13</sup> Through the years, it has had about as many synonyms as has combat fatigue itself: aeroneurosis, chronic fatigue, staleness, aviator's neurasthenia, flying phobia, and others.<sup>14</sup> The crux of the problem appears to be that humans have an instinctive fear of falling, which is overcome to some extent during the early years of muscular development as children learn to control their environments by their own efforts. Some youngsters conceive of flying as the ultimate mastery and power ("Put out my hand, and touched the face of God") and thus present themselves for flying training saying, "I've wanted to fly as long as I can remember" (ie, since age 5 or so).

The central unifying force through the Air Corps is the intangible yet powerful devotion to aircraft felt in different degrees by all its members....Planes receive an almost libidinal investment of interest...the aircraft became anthropomorphized ...This devotion and enthusiasm for aircraft is of such a compelling force that it to some extent supercedes military discipline.<sup>1(p99-101)</sup>

Other fliers may be motivated less by such a long-lived desire than by their perception of flying as a way to enhance a career in the U.S. Air Force. In other words, motivation to fly may be largely emotional, or it may be largely cognitive.<sup>11</sup> Most fliers are probably motivated by some mixture of the two, and fliers at either end of the motivational spectrum may serve complete careers in the cockpit, honorably and well. Yet the underlying instinct to avoid heights persists. Many pilots joke about being mildly afraid of heights in the ordinary sense, but show no carryover of this fear to flying in their aircraft. Through their desire to fly, they deny, suppress, or repress their primitive anxiety about heights. "You can get killed just crossing the street" is their common response to questions about their view of the dangers of flying.

Still, the dangers are real and, with continued exposure to the world of flying, a military flier's ability to deny them is slowly eroded. "There are old pilots, and there are bold pilots," goes the old saw, "but there are no old, bold pilots." Youthful enthusiasm is tempered by maturity and the lessons of experience. "Flying is 99% boredom and 1% pure terror." The jokes and sayings reflect the realities. As youthful fliers begin to comprehend the realities, the strength of their motivation is tested. When it is flawed, it fails early.

A few fliers are driven by psychologically overdetermined factors—an anxiety-driven need to "prove" something to someone (usually father) may

be seen in some. When success is near, the primitive symbolism of succeeding (defeating father) arouses basic anxieties that interfere with successful flying, and the flier either quits, fails through “lack of adaptation,” or presents with disabling medical or psychiatric symptoms.

Others fail in less spectacular ways, with symptoms that are similar to the effects of combat on infantry. They may be restless and irritable, with nerves on edge. They may have insomnia, and whatever sleep comes is light or fitful, disturbed by unpleasant dreams or actual nightmares. They may report profound dread or apprehension about flying, with tremors, sweating, and palpitations. They may have difficulty with concentration, begin to experience airsickness, or report that they are so preoccupied with their fears that they must concentrate on not activating the ejection seat in normal flight. Symptoms may be of disabling and phobic proportions, or they may be mild and only slightly distressing. At times, symptoms may have begun with a specific and clearly recognized traumatic event, such as a personal close call or the crash of a friend. Other cases may begin as the accumulation of stresses which gradually and finally overcome a strong motivation to fly and the flier comes to the reluctant realization that the joy is gone from flying.<sup>11</sup>

Some fearful fliers, having no conscious recognition of their underlying anxiety, may also present with psychophysiologic disorders. Headaches, vasovagal syncope, obscure visual problems, gastrointestinal upsets, and many other systemic complaints may be presented for diagnosis. The astute clinician may note that the chief complaint is presented in a framework of “I’d like to fly, but ...” which indicates that the flier has linked the symptoms with a hoped-for result of *not* flying. This attitude distinguishes this particular flier from the other fliers who complain about possibly being grounded, or conceal their symptoms, fearing that they will lose their flying status.<sup>11</sup>

All this and more occurs in military flying in times of peace. U.S. Air Force doctrine<sup>15</sup> calls for evaluation to determine whether medical or psychiatric disease is present. If so, medical grounding and treatment are in order. If no physical or mental disease is present, the flier is returned to his or her commander as medically cleared to fly. Further refusal to fly is handled administratively and may result in simple reassignment to ground duties (especially if the precipitating event is acknowledged to be catastrophic and the resultant fear understandable to all), or may involve adverse administrative action.

Estimates of the incidence of such cases of fear of flying (the U.S. Air Force term for this symptom in the absence of psychiatric disease) are difficult because they are not routinely tabulated through medical channels, but the best guess was about seven cases per year during the period from 1975 to 1984.<sup>16</sup> Thus, fear of flying may be regarded as a peacetime paradigm for combat fatigue, admittedly on a much smaller scale. Such cases are difficult to handle in the local fishbowl environment of the squadron.

The author, in his past capacity as a psychiatrist at the U.S. Air Force School of Aerospace Medicine, has worked with flight surgeons in the field who were wrestling with the problem of a flier—and friend—who developed some manifestations of fear of flying. Such fliers were not mentally ill, in which case they would be medically grounded; they had simply lost their motivation to fly and presented themselves as no longer safe. Every instinct cries out against requiring someone to fly who no longer wants to do so; such a flier will clearly be unsafe, and requiring one either to fly against his will, or to face possible adverse administrative action seems the height of folly. How much more difficult, then, will it be for a flight surgeon to take similar action to require a flier to fly into combat? Yet this is exactly the kind of judgment required, to extract from each flier every possible combat mission before allowing him to step down to nonflying duties or to return to noncombat flying. Thus the role of the flight surgeon in maintaining the operational strength of the squadron must be considered.

### The Use of Rest for Prevention and Treatment

As *fatigue* is a primary underlying pathologic process, *rest* is a prime restorative. Rest may be used in several ways that may be stated as “rules,” if those responsible understand the need for exceptions in individual cases.

#### Crew Rest

The major problem with research in this area derives from the lack of any agreed-upon objective measure of fatigue. Many biochemical and behavioral factors have been studied in this regard, and recently such manifestations as characteristics of eye blinks, voice stress analysis, and rate of mistakes in flight simulators have been studied to see if they could be quantified. However, the final “gold standard” is the flier’s subjective appraisal of his condition. Further adding to the complexity are the

numerous combinations of work-rest-sleep cycles available.

Hartman<sup>17</sup> reviewed some of the current literature and discussed some of the differences between various kinds of missions: *tactical, strategic, airlift, and ground-based control centers*. Briefly, his opinions are:

- *Tactical missions* involve brief multiple sorties in one day. The special stresses include high workload environments, highly hazardous missions, acute fatigue effects (the physical results of pulling high-G loading, for instance), and rapidly cumulative chronic fatigue. Circadian factors are also involved in all-weather aircraft.
- *Strategic missions* (bombers, AWACS [Airborne Warning and Control System aircraft], tankers) may involve longer missions, in some cases extending beyond 24 hours. In-flight work/rest cycles become a factor, as do reasonable in-flight rest facilities, nutrition, and the different jobs performed by flight crew and mission crew in AWACS and command post aircraft.
- *Airlift missions* may involve multiple short sorties (tactical) or long-range missions crossing many time zones (strategic). There is more scientific information on such flights and also on the use of multiple crews for one aircraft. One particular problem involves "ramp-pounding," a pernicious and frustrating form of nonwork experienced while waiting for an aircraft to be loaded, repairs to be made, passengers to be rounded up, or during any of the many other occurrences that may delay an aircraft for minutes, hours, or days. Circadian stresses cause a small but appreciable decrement in performance, but may be magnified by other stresses. The conventional wisdom of the many studies in this area is reflected in U.S. Air Force crew-rest regulations.
- *Ground-based centers* (command posts, towers, radar sites, and the like) may have unique stresses based on workload, the facility itself, its location, its dangers, and other unforeseen factors.

Rayman<sup>18</sup> reported on a heavy flying schedule for C-130 crews during a 2-month emergency airlift. The crews flew almost 180 hours per month (the usual limit is 125 h), involving three or four shuttles per day. He defined "fatigue" as cumulative effects

that were not relieved by a single day's rest and "tiredness" as the acute effects that were. His practical conclusions, listed below, are applicable to all flying circumstances, regardless of their complexities, because they derive from the subjective effect of daily stress, yet allow for a reasonably objective aeromedical judgment.

- Understand that crew duty limitations are due to variables and must be established by experience and precedent, as well as by local needs. Be flexible.
- With good motivation and good support, aircrew members can exceed normal crew-rest requirements for at least 2 months.
- Routine aeromedical surveillance suffices for the first month. Extra surveillance (defined as the flight surgeon's meeting each aircrew member before each takeoff and after each landing) is necessary after that.
- Assess fatigue frequently. One may do this by daily contact; occasional anonymous questionnaires; aircrew briefings on fatigue factors; assuring the best available crew-rest quarters, food, and in-flight provisions; and establishing rapport with aircrew and supervisors.
- The decision to restrict an aircrew member temporarily from flying because of fatigue should be made jointly by the flight surgeon, the operations officer, and the aircrew member. Remember that grounding one flier means more work for another.
- Aircrew members should be relieved of all additional duties, so as to direct all their energies to the flying mission.
- Bend every effort toward flying the schedule as scheduled; avoid needless changes, delays, and excessive ramp time. Quarters near the flight line (but not so near as to cause the crews to be kept awake by the noise) reduce wasted travel time.
- Incentive pay for extra effort is a strong motivating factor for paramilitary flying.

Each U.S. Air Force major air command has its own crew-rest regulations. Variables that contribute to these regulations include size of crews, type of aircraft, flying hours each day, hours of rest between flights, hours of nonflying duty, and hours flown each month. All of these factors may be waived if the exigencies of the situation demand it, but the wise commander will consult with the flight surgeon before doing so, and the wise flight sur-



geon will look at the fliers on an individual basis before giving advice on the subject. The difference between granting a crew-rest waiver for a single-seat fighter mission and a similar waiver for a transport mission where one pilot may take a nap in a bunk during the mission is immediately apparent, even in principle.

The literature is specific, however, that one must consider more than the hours of crew rest available. Sleep disturbances are a consistent early symptom of cumulative combat stress in fliers, and thus the flight surgeon must discuss the quality of their sleep with individual fliers. If sleep is disturbed by nightmares or insomnia to the point that the flier remains as tired upon awakening as when going to bed, the cumulative fatigue after 2 or 3 days may well render him or her ineffective at best and unsafe at worst.

The social role of alcohol in the ambiance of combat fliers deserves brief consideration. The drinking habits of aircrew are the stuff of legends. The stories, the songs, the customs, the superstitions, the very social fabric of the squadrons of old are celebrated and, in the opinion of this author, reasonably accurately presented in plays, movies, books, television, and folklore. For more than 30 years to which the author can attest, flight surgeons in training have been urged to go to the bar with "their" fliers in order to meet them socially, to learn what's really going on, to find out what makes them tick. From the 1940s through the 1970s, at least, the Officers Club bar was a center of aviation society.

These habits are changing as American society changes, as the realities of working spouses and modern family dynamics have affected the social structures of flying squadrons, and as the incredible demands of modern military aviation have demonstrated that "you cannot hoot with the owls if you want to fly with the eagles." Still, the tendency of many fliers to treat their fatigue symptoms with alcohol has been well-observed in the past, and will probably continue in the future. Many books attest to this. Gene Basel's *Pak Six*<sup>19</sup> contains repeated references to bar conversations, and the personal experiences of the author's generation of flight surgeons in Southeast Asia corroborate Basel's writings. One does not need a postgraduate education to understand that alcohol abuse is dangerous in such circumstances. It is not necessary to belabor the point beyond observing that drinking serves several purposes: as a self-administered and socially acceptable psychotropic medication, as a social lubricant to allow personal conversation among somewhat emotionally distant people, and as a sedative.

There is one specific observation, based on the author's experiences as a flight surgeon, that may not be quite as intuitive as "Alcohol abuse is bad for flying safety," or "Alcoholics should be identified, grounded, and treated." That observation stems from the use of alcohol as a sedative. If a flier takes a couple of drinks late in the evening to help get to sleep, that amount of alcohol may be seen as benign and insignificant. The flier may, however, go to sleep easily, dream extravagantly, and awaken feeling refreshed and invigorated. Glancing at the clock, the flier notes that it's only 0130; 2 hours of sleep have passed, not a whole night, and there's plenty of time left to sleep after all. But now the flier can't go back to sleep, or sleeps only fitfully, with many awakenings, and much punching of the pillow. Finally, perhaps about 0430, the flier does fall hard asleep for an hour, only to be awakened at 0530 to prepare for the day's flying. A couple of cups of coffee help, although the flier may feel a bit dulled all day.

This is not really a big deal, once. But repeat that drinking pattern for a week or two, and the flier's edge is definitely dulled. Fatigued, he continues to take a couple of late evening drinks as a sedative, not getting drunk, but interfering with the normal sleep cycles on a chronic basis.

The giveaway is the extravagant dreaming early in the night's sleep. Alcohol may produce a self-sustaining dysregulation of the normal sleep cycle. Its effects are complex, but the end result is a diminution of concentration and memory, and an increase in fatigue, anxiety, and irritability. These changes can persist even after the drug is no longer present.<sup>20,21</sup>

It is this author's opinion that aircrew should be taught this signal: if they dream and awaken early in the night, they've had too much to drink and should change their pattern. Again, it's no big deal once in a while, but common sense indicates that interfering with the normal sleep cycle on a recurrent basis is not good for the flier who must be sharp and prepared for anything that combat flying (or, for that matter, ordinary flying) should bring along.

What should the flight surgeon do to help aircrew sleep? Should hypnotic agents be allowed? The general rule is that one should not use hypnotic agents unless, using mature and informed judgment, one decides that it is less dangerous to use them than it is not to use them. The British used 20 mg of temazepam (Restoril) as a hypnotic for fliers during the South Atlantic (Falkland Islands) campaign. Group Captain Michael Fisher commented:

We were particularly impressed by a short-acting drug for ensuring our aircrews adequate sleep before flights. Very often they were having to get their sleep at unusual hours of the day under very noisy, cramped conditions. [Temazepam] is rapidly excreted, though it's rapid in its effect. People were able to sleep and wake up and go flying without any sort of hangover effect. Aircrew eventually were permitted to fly within only six hours of taking the drug.<sup>22(p10)</sup>

The decision to use temazepam during the South Atlantic campaign was based upon British recognition of demanding operational workloads, the need for extension of permissible flying hours, and the potential for these conditions to continue for several weeks. Their experience included transport crews logging up to 150 hours in 24 days, with single bomber missions lasting up to 28 hours. Even without the use of test doses, they encountered no problems with this medication.<sup>23</sup>

Temazepam is a short-acting benzodiazepine most active 20 to 40 minutes after oral administration, with peak effect in 2 to 3 hours, and a biphasic half-life with a 30-minute short peak and a 10-hour terminal half-life. Temazepam does not affect rapid eye movement (REM) sleep and somewhat decreases slow wave sleep. Exigencies of combat may dictate its use, or the use of a similar short-acting benzodiazepine, but *only* after ground testing by administration to the individual flier on a night prior to a nonflying day, in order to detect any unusual or idiosyncratic effects on the ground rather than in flight. A new, nonbenzodiazepine hypnotic, zolpidem tartrate (Ambien), may offer some advantages over benzodiazepines (BDZs). It is important to remember that many BDZs induce a retrograde amnesia that could interfere with last minute instruction before sleep.<sup>24</sup>

Amphetamines have been used by pilots during deployments and on prolonged combat missions for several decades. Most recently fighter pilots deploying from the United States to Saudi Arabia were permitted their use, and 5 mg dextroamphetamine tablets were made available to tactical pilots for combat air patrol missions. Of 464 fighter pilots surveyed by the Tactical Air Command after the Persian Gulf War, 65% said they used amphetamines during Operation Desert Shield (the mobilization phase of the war), and 57% during Operation Desert Storm (the combat phase of the war). The U.S. Air Force subsequently decided to reevaluate this policy, and authorization for their use was withdrawn effective 13 March 1992. No untoward occurrences or reactions were reported, but a deci-

sion was made "to make sure that what we were doing was correct."<sup>25(p3)</sup>

Lyons and French et al<sup>26</sup> published an aero-medically-oriented review of modafinil, a nonamphetamine stimulant developed in France. Unlike the amphetamines, it apparently has a low abuse potential. It also has minimal peripheral side effects at therapeutic doses. The authors concluded that this medication might be an ideal replacement for amphetamines in short-term operations in which fatigue might be a limiting factor. They recommend further study of modafinil, or a similar alpha 1 receptor agonist.

In the opinion of this author, sedative and stimulant medications should only be used when, in the best judgment of the most operationally experienced line and medical authorities available, it is more dangerous not to use them than it is to use them. Further, they should be used only by fliers who have been previously ground-tested, and who (a) have had no untoward effects, (b) are familiar with their primary effects, and (c) wish to use them.

Also in the author's opinion, tactical pilots—especially those who fly single-seat aircraft—should be ground-tested regardless of the current policy allowing or not allowing their use in flight, because such policies can change quickly, and the circumstances mandating the change may not allow time for proper ground-testing.

Ground-testing is carried out in the following manner. Information about the medications to be used is gathered by the flight surgeon from the most up-to-date sources available. A questionnaire is developed that inquires specifically after primary effects, secondary ("side") effects, and any significant idiosyncratic reactions. Open-ended and nondirective questions are added for anything else the flier may have noticed, desirable or undesirable.

On a Friday when the flier will dependably not be flying until the following Monday, he (alone, or in a group briefing) is informed about the ground-test and its purposes. Alcohol is specifically forbidden during the test, and, needless to say, the flier should take no other medications during the test.

At the agreed-upon hour (say, 2200), the flier takes the sedative medication and retires 1 hour later. Upon awakening the next morning, the flier notes the quality and quantity of sleep, and fills out the questionnaire regarding medication effects.

If all is well, the flier then takes the first dose of stimulant (at, say, 0800). Four hours later, the flier notes any reactions on the questionnaire. If all is well, the flier then takes the second dose. Four

hours subsequent to that, the flier notes any further observations. He uses no further medications, and no alcohol, that Saturday evening.

Sunday, no medications are taken.

Early Monday, the flier sees the flight surgeon (or vice versa), individually goes over his questionnaire, and confirms its information. The flight surgeon asks any follow-up questions indicated.

The flier and the flight surgeon both sign the questionnaire, which is placed in the flier's medical records. The bottom line (literally) is that the flier is signed off as ground-tested and approved for the supervised use of the two medications tested while flying, or the flier is not approved for their use.

Two points should be stressed. First, *not* being approved for their use does not disqualify the flier for anything—any mission, any flight, any profile. Second, even if approved for their use, the actual choice to use medications is always left up to the flier. The flight surgeon may only offer to make them available for certain missions. No one—commander, flight surgeon, or anyone else—may order the flier to take them. The flier is now familiar with the medications, and may make up his own mind about their use.

### *The Interval Between Missions*

World War II flight surgeon reports generally agreed that missions should not be flown on more than 3 consecutive days.<sup>27,28</sup> All involved were aware that standing alert was as wearing as flying an actual mission, if not more so, in that there was no release of anxiety through action. Further, flight surgeons reported that the period between learning about a mission and flying the mission was the most stressful. Weather holds, slipped takeoff times, and scrubbed missions were extremely nerve-wracking and, at least from the point of view of generating combat fatigue, should be counted as a mission day.<sup>28</sup>

A day off must be *off*, with no duty requirements whatsoever. Further, the flier should know about it ahead of time, so that its relaxation may be anticipated as a short-term goal. Specific recommendations for time off in the Eighth Air Force area were 10 to 15 hours of operational flying per week, 24 hours of leave per week, 48 hours of leave every 2 weeks, and 7 days of leave per 6 weeks.<sup>29</sup> Grinker and Spiegel commented on the strength of the group identification among fliers, that there was little relaxation available to a flier on the ground if his friends—or especially his crew—were flying.<sup>1</sup> Thus, if possible, a wing stand down will provide much

more release of anxiety for fliers than will an individual day off. Exigencies of combat, however, rarely allow such a policy.

The author's conversations with Southeast Asia combat fliers have underscored the value of trusting the flier's own judgment in determining when one should not fly a given mission because of fatigue. A flier in a well-run squadron may be allowed to take his name off the flying schedule every now and then without question if that flier feels not fit to fly that day. Clearly, any flier whose overuse of such a privilege points to an unwillingness to do his share should be evaluated by the operations officer or flight surgeon. Giving the fliers a bit more control, balanced by the self-policing action of a well-integrated squadron, may enhance morale and delay combat fatigue.

### *Rest and Recreation*

A prolonged combat tour should be split by a 1-week rest-and-recreation ("R and R") break. Realistic flight surgeons recognized during World War II, and again 20 years later in Southeast Asia, that fliers do not necessarily rest on R and R. It is wise not to schedule them to fly for 1 day after they return from R and R, but to use this period to accomplish ground training or administrative duties.<sup>29</sup> Some fliers will object to time off, wishing to hurry through their tour and get home. If the rest causes more stress than it relieves, such a schedule may be modified a bit. In general, though, its beneficial effects will be obvious throughout the squadron.

### *Tour Length*

The length of a combat tour is a decision that should be made by line commanders at the highest level. It is discussed here because of its immense importance to fliers' morale and its epidemiologic role in shaping the patterns of susceptibility to combat fatigue.

In World War II, the tour length for heavy and medium bomber crews depended upon the number of missions flown, with the "magic number" being predicated on giving each aircrew member a better-than-even chance of surviving the tour. The Twelfth Air Force determined "the maximum effort of the average flier," essentially based upon attrition rates, to be based on a 60% to 80% chance of completing a tour, if the military situation permitted.<sup>8</sup> Attaining the desired number of missions or flying hours became a valued short-term goal for fliers, and the

demoralizing effects of shifting the magic number, always upward, furnished one of the themes for the novel *Catch-22*.<sup>30</sup> The uncertainties of when personnel deployed for the Persian Gulf War would return, and the effects of those uncertainties on morale, recapitulated this theme.

The knowledge that the combat tour has a finite duration becomes more important in maintaining tolerance of the growing anxiety, and

[E]xperience...repeatedly demonstrated that this factor has been responsible for many individuals achieving the expected level of operational missions. Without this certainty of relief, the ego in many instances would have succumbed much sooner, and an appreciable decrease in the number of combat missions flown by available personnel would have resulted.<sup>31(p9)</sup>

How long should such a tour be? The answer depends on many factors: (a) the type and severity of the flying operation, (b) losses to combat and accidents, (c) the physical conditions of the bases, and (d) the realities of the combat needs. However, once a tour is announced, it should be changed only for absolutely critical reasons, and such a change should be accompanied by a responsible explanation to the fliers of the exigencies leading to the decision.

From a pragmatic point of view, a combat tour, usually measured in number of missions, should allow each flier *at least* a better-than-50% chance of going home in one piece. In the author's opinion, odds less than 50% should apply only in last-ditch efforts, such as in the Philippines in 1942.

Completing a combat tour in prior wars was not without a striking psychological and psychosomatic cost to the fliers. The prolonged tension led to progressive loss of normal personality features. Aircrew became quieter, more serious and cautious, sometimes seclusive and depressed, with loss of interest in other pursuits, loss of spontaneity, and a decreased love of flying. Sleep disturbances included insomnia and nightmares, with battle scenes a frequent theme. Fliers would have little appetite for food, but their intake of coffee, cigarettes, and alcohol would increase. Their increased tension would also be manifested as irritability, jumpiness, and tremors. Fantasies of omnipotence and invulnerability would be replaced by obsessive fantasies of death and ruminations about lost friends. Physical fatigue in periods of prolonged or intense flying would accelerate this process and might lead to a clearly visible decline in a flier's ability to fly and to fight, which the whole squadron would recognize.

At this point, if not removed from operational flying, the flier would either experience such severe symptoms as to develop full-blown combat fatigue, or might become so ineffective as to be at special risk in combat.

### The Role of the Flight Surgeon

As this discussion has demonstrated, fliers are different from other combat troops. This difference extends to their medical support, which is provided on a highly personal and individualized basis by the squadron flight surgeon. Thus, morale support and first-echelon mental health care may well be furnished by the flight surgeon rather than by enlisted medical technicians or by "buddy care" from peers. The flight surgeon is an intrinsic part of the squadron's internal support system and should be present on a day-to-day basis to furnish primary medical care and to advise the squadron commander on matters of preventive medicine, including matters of morale.

Flight surgeons have only a few tools with which to slow the inevitable progress of combat fatigue in fliers, but these are powerful therapeutic agents if properly used. Above all, flight surgeons must understand that combat fatigue is a normal reaction of a normal group of people to a dreadfully abnormal situation. As a normal reaction, combat fatigue cannot be prevented or avoided, but may be delayed. The frame of reference must not be "Does anyone in my squadron have combat fatigue?" but rather, "I must understand how each of my fliers is dealing with this stress and watch for defenses that are crumbling." With this attitude, the flight surgeon is ready to support the flying mission by helping each flier to fly as long and as effectively as possible.

### Combat Flying for Flight Surgeons

The flight surgeon must fly combat missions, if at all possible. This sets in motion a complex set of tried-and-true interpersonal dynamics that pay off with several specific benefits.<sup>27(p81)</sup>

**Understanding the Mission.** Flying the mission will enable flight surgeons to understand the stresses of combat at a visceral level. By thoughtful reflections upon their own reactions, a level of understanding develops that would not otherwise be possible. Good flight surgeons identify strongly with "my" squadrons and "my" fliers. The use of the possessive pronoun is universal among the best flight surgeons, who are much like fliers in their own personalities. Yet they must recognize

that they are *not* pilots, navigators, electronic warfare operators, or gunners. Overidentification can lead to prostitution of medical ethics and to fuzzy professional thinking. It can also lead flight surgeons to think that flying, rather than caring for the fliers, is their own mission. How much should a flight surgeon fly? That depends on the aircraft, the mission profiles, and the press of other duties. In general, based on the author's experience in Vietnam, a flight surgeon should log not less than one nor more than two missions per week during duty hours, except in support of aeromedical evacuation. After-hours flights should be negotiable with the squadron or wing commanders, depending upon the flight surgeon's being able to sleep normally and to be fully functional in all medical duties.

**Credibility.** By flying the squadron mission, the flight surgeon establishes credibility. The fliers know that the flight surgeon flies and the flight surgeon can "speak the language" without being awkward or pretentious. More importantly, the flight surgeon can discuss his own personal fears, anxieties, and reactions in such a way as to give these strong (and often unacknowledged) feelings a legitimacy of expression. Such modeling of openness is quite healthy. A flier who is terrified, and who is also ashamed of that terror, may experience considerable relief in laughing with the flight surgeon who says "I thought I was going to wet my pants on *that* one!" Other fliers may have had precisely the same feeling but were unwilling to admit it, each feeling like the only coward in a group of heroes.

**Acceptance.** The flight surgeon, by flying and by being accepted by the fliers as "one of us," assumes a symbolic importance within the squadron, perhaps second only to that of its command echelon. Such a flight surgeon is a person whose judgment is trusted, a confidant of the commander and the operations officer. Understanding, tolerant, noncritical, realistic, yet firmly committed to the squadron goals, the flight surgeon develops an image as an important person, one whose good opinion the flier values. Giving sympathy, affection, and protection to the fliers, still the flight surgeon expects of them dedication, perseverance, and a willingness to continue the mission. The excellent flight surgeon does not overidentify with the squadron, does not fear their rejection (a healthy personal sense of self-esteem comes from within), and deals adaptively with personal internal conflicts between protective drives and the need to keep the fliers flying even if some die. This requires a well-integrated personal-

ity structure, buttressed by professional skill, and a strong personal value system.<sup>31</sup>

**Intercession.** The flight surgeon who flies combat missions can see firsthand the reactions of the troops to real-life combat stress, can observe their discipline, sees the fliers *in vivo*, as it were, and can then use the information to keep the commander informed about morale. These words may look a bit cynical in print, but the matter is quite practical. As a flight surgeon with an Air Commando wing in Vietnam, the author flew with enough different crews to appreciate how the fliers behaved in routine flight and in combat. He carefully avoided any actions that smacked of "informing" on specific fliers, but was able to keep the wing commander up to date on how well his fliers followed crew rest procedures, in-flight safety measures, and general flight discipline. Being known and trusted both by the commander and the fliers, the author was able to explain and interpret each to the other, informally and nonthreateningly. He represented a way by which petty gripes and problems could be taken outside the chain of command to the one who could fix things, in matters that might have led to hard feelings if official action had been necessary. The credible flight surgeon thus may become a sort of ombudsman within the squadron and the wing, able to get things done that need to be done, and to interpret—and occasionally to soften—policies imposed from above. Such an outlet, serving also as a safety valve, may contribute considerably to the fliers' morale.

#### ***Ventilation, Observation, and Early Intervention***

In common with combat troops in other situations, some psychological relief may be afforded aircrew by allowing them to ventilate after missions and by participating in group activities. These functions are served to some extent by the intelligence debriefing that takes place after combat missions for fighter and bomber crews and by the natural tendency of crews to gather at the bar at the end of a day's flying. Again, excessive drinking is a danger to be guarded against, but such activities in moderation have a cathartic and mutually supportive role for the squadron and are of real value in the world of the flier. If conditions allow, an intramural sports program (softball, volleyball) has a similar value, as well as serving as a physical outlet. Such activities must be voluntary, however. Some troops can lose themselves in reading, and a library or other source of books and magazines is a useful asset. Informal reports from the Persian Gulf War

also indicate the value of hand-held computer games. The value of mail from home cannot be overstated.

The flight surgeon may also keep in touch with the reactions of individual fliers to the combat situation. Any group of fliers reflects the strain of combat, and the flight surgeon will have to become acquainted with the ways that fliers show the strain. Most of the literature on combat fatigue speaks of the effects of war on infantrymen who are exposed to death for days, weeks, or months at a time, without letup. The flier goes on a mission, faces death, sees comrades die at a distance (or, rarely, on the same aircraft), and returns to a generally safe environment.

The ego of the flier uses various strategies to cope with the stress of combat. These strategies are familiar from the peacetime environment, but are generally discussed only in the context of psychopathology, rather than as useful adaptive mechanisms. During the prolonged combat tours of World War II, flight surgeons became familiar with a pattern of coping mechanisms in fliers progressing through their tours. Ignorance or denial of the realities of combat protected the fliers' egos against fear at first, because their perceptions of dangers were only intellectual and theoretical. This attitude would disappear after a few flights, as the realities intruded. Fliers might feel some anxiety, but the continued flying, the acquisition of combat survival skills, and the reassurance of peers and of the flight surgeon would generally suffice to keep the anxiety tolerable. Successful aggressive action against the enemy served as a powerful way to discharge anxiety and helped the flier maintain some sense of control over the flying environment.

The individual aircrew member would identify strongly with a unit or with his crew (a small group of men to whom he might ascribe almost magical powers) or even with a single flier. Similarly, some would identify strongly with an aircraft as a powerful and deadly champion. It was but a short step to superstitions about flying as magical defenses: "lucky" items, rituals, and so forth.<sup>32(p16)</sup> (The recent movie *Memphis Belle* showed several examples of such superstitions, rituals, and amulets.) Freedom from anxiety in flight depended upon the fantasy of the aircraft as safe and upon a flier's identification with its strength and invulnerability. Fliers also identified with leaders and with particularly skillful comrades. Such identification might be badly shaken if an accident or combat loss claimed these magical objects, because the identification was now with a wounded or dead person, rather than with an

invincible, potent one. Some magical feeling of immunity and omnipotence would also help carry the flier along, strengthening ego defenses against reality, because many elements in aerial warfare are truly beyond anyone's ability to control.<sup>1</sup> Denial of these realities ("They'll never get *me!*") would bolster such magical fantasies for a while, but the accumulation of combat experience would gradually erode this fantasied invulnerability and the ego would begin to lose its power to protect itself against crippling anxiety.

Not one man in a hundred looked forward to an operation with relish, although most of them derived considerable satisfaction from doing an operation well and returning safely...all that most aircrew wanted after furnishing their reports was breakfast and bed and sleep. They did not remember vividly every detail of all their operations, but they were conscious of no urgent desire to forget them...Their attitude to losses and the death of friends was particularly striking; it was one of supreme realism, of matter-of-fact acceptance of what everyone knew perfectly well was inevitable. They did not plunge into outspoken expression of their feelings, nor did they display any compromise with conventional reticence about violent death. They said "Too bad...sorry about so-and-so...rotten luck." Their regret was deep and sincere, but not much displayed or long endured. They were apt and able to talk of dead and missing friends, before mentioning their fate, just as they talked of anyone else or of themselves. It took the loss of particular friends or leaders, flight commanders or squadron commanders to produce a marked reaction among a squadron. Then they might feel collectively distressed, have a few drinks because of that, go on a party and feel better.<sup>32(p15)</sup>

These words were written about British night bomber crews in World War II, but they apply just as well to the Air Commandos (now Special Operations) and tactical fighter pilots with whom the author worked in Vietnam. The men had seen friends die in aircraft accidents before the war, and combat losses were regarded in much the same light. There was some corporate acknowledgment of those who were killed, but relatively little grief was expressed. Spontaneous expressions of anger or acute grief at the loss were heard as the news was delivered, and then the old mechanisms of denial, intellectualization, rationalization, altruism, humor, and magical thinking reasserted themselves and the loss was thenceforth discussed more coolly. Toasts might be drunk in the bar; a few (but by no means all) of the squadron would attend a memorial service; and the war went on. Symonds<sup>33</sup> speaks

of the mental state (“confidence”) that carries a flier through such experiences, ascribing it to a blend of resolution, bravery, and frankness. As frankness ebbs (as reality intrudes), bravery and resolution to see the job through keep the flier going.

Still, fliers did, and will, break down in combat. A number of authors in World War II and Korea commented on a pattern that most likely will be seen in future prolonged aerial conflicts.<sup>1,3,28,32,33</sup> There will be a few fliers who suffer disabling symptoms of anxiety early in their combat flying (Group A). A few of these fliers may be returned to flying, but most seem not to have the capacity to tolerate combat flying and may need to be relieved from duty. These fliers may represent the U.S. Air Force equivalent of the U.S. Army’s early breakdowns among men with immature, dependent, or other maladaptive personality structures<sup>34</sup> as discussed in Chapter 1, Psychiatric Lessons of War, and Chapter 2, Traditional Warfare Combat Stress Casualties. Other cases of combat fatigue tend to occur in two clusters: toward mid-tour (Group B), and as the tour nears its end (Group C). Finally, there will be a scattering of fliers who undergo extremely stressful events, who then break down in consequence (Group D). Such events may be scattered throughout the tour. Stafford-Clark<sup>32</sup> and Symonds<sup>33</sup> concur that the prognosis is poor for Groups A and D, and better for Groups B and C.

Some of the fliers in Group A are described in terms that today would place them among those having antisocial personality traits: lack of allegiance to others than themselves and little regard for the social conventions or expectations of the squadrons. One would hope that most potential fliers with such personalities have been detected and eliminated by the preselection interview with the flight surgeon, the Adaptability Rating for Military Aviation (ARMA).<sup>35</sup> If not, such fliers may show their true colors during the extensive flying training and combat crew training process or by their behavior in squadron operations during peacetime. Failing that, there is no way to treat such an ingrained personality pattern, and these fliers must be administratively eliminated from flying status if they are detected.

It is axiomatic that it is impossible to predict who will do well in combat and who will not, until they are actually exposed to enemy fire. Some fliers will be unambiguous in their refusal to fly combat missions. Because they are not psychologically conflicted about their determination not to fly into danger, they do not become symptomatic. (Symptoms

arise from unresolved internal conflicts.) They may even express their surprise that no one understands their feelings and excuses them. Appeals to duty, to squadron or personal loyalty, or to pride will have no effect. Such aircrew must be grounded in disgrace by their commanders. The wise flight surgeon will counsel administrative authorities that, if these fliers are not punished, they should at least not be rewarded by being administratively grounded and given a job seen as desirable by squadron members.

Whether combat fatigue occurs early in the tour or toward its midpoint, the first contact of the anxious flier will be with the flight surgeon, who certainly does not need to be a psychiatrist to deal with most such cases. The flier may come in of his or her own accord, or the flight surgeon may have noted the classic early symptoms: gradual withdrawal from social contact, loss of sense of humor, lack of spontaneity, passivity leading to moroseness, the onset of multiple complaints of vague symptoms that would hitherto have been ignored or even hidden from the flight surgeon to avoid grounding, and diminished energy and appetite. Later symptoms will almost certainly include irritability; increased use of cigarettes, coffee, and alcohol (which obviously make things worse); digestive disturbances; weight loss; insomnia; and the disturbance of sleep by bad dreams or nightmares. The flier may develop tics, frank tremors, or an increased startle reaction. Further symptoms of anxiety, depression, and psychophysiological reactions will be superimposed on these symptoms if matters are not corrected.

The best early intervention is to talk things over privately with the troubled flier. Whether the interview is initiated by the flier, flight surgeon, or squadron commander, the flight surgeon should take the role of a sympathetic and concerned counselor who wishes to help the flier regain composure and return to the cockpit, once more fully effective. Thus the flight surgeon supports that part of the conflicted flier that wants to return to effective duty. How long has the flier felt below par? Was it due to a particular event, or to an accumulation of things?

If an accident or a particular mission is on his mind, allow him to ventilate. What was he doing? Where? When? Then what happened? How did he react? How did others react? How does he think he *should* have reacted? What is he telling himself now about the whole thing?

If it were cumulative stress, how has it affected him? What is he afraid of? How does he see others

reacting to the situation? How do they react to him? How much does he feel a part of the group and how much ego support does he derive from them and from the leaders? At times one may encounter marked misperceptions about how others feel, how they handle things, and how "I have let them down."

In each case, the flight surgeon can reflect the reality of the situations involved, correcting misapprehensions, clarifying the flier's status in the squadron, and helping to strengthen the ways in which the flier has dealt with the stress so far. An understanding, noncritical, tolerant acceptance and explanation of the flier's anxieties (unrealistic) and fears (realistic) is essential, so that the flight surgeon then assumes a warm but firm parental role that allows for sympathy, affection, and protection while expecting and demanding the utmost dedication to the mission, to the point of possible self-sacrifice.

By allowing the flier to talk about his anxiety, especially if it is manifested through psychophysiological mechanisms, the flight surgeon may help clarify that which the flier really fears: injury or death. Verbalizing this fear allows the flier to examine it directly, rather than dealing through a smoke screen of symptoms and vague apprehensions. It also allows the flier to deal realistically with anxiety about being seen as afraid, which may be perceived as a strong taboo within a "macho" squadron: "Better to die than to look bad."

When the flight surgeon accepts and defines this fear as natural and universal, the flier's tendency to view it as an unnatural, exaggerated personal failing may be corrected. Thus he reassures himself that he is normal and that if his squadron mates are dealing with similar feelings and yet can continue to function, so can he. Reassurance, accepting support, and firm encouragement to return to duty will strengthen his ego and help him deal with the doubts, self-criticisms, and guilt with which his superego may be taxing him about his not being the perfect flier. Remembering that the flier *is* conflicted (or else he would have quit long ago!) will help the flight surgeon deal with personal uncertainties about such a therapeutic approach.

Gratification of the need for the flight surgeon's approval may do much to relieve anxiety, particularly in the more passive or dependent members of the squadron. The amount of positive feedback needed obviously varies from person to person.<sup>31,36</sup>

At a deeper level, an individualized psychotherapeutic technique must be used. This may be performed by some particularly adept flight surgeons, or may require the services of more skilled

psychotherapists. Uncovering therapy will help aircrew members express their honest fears; they frequently lack insight into their own apprehensions. The insight gained may be only intellectual; but, even expressing it verbally gives the emotion legitimacy. Furthermore, the flier may be relieved by no longer being afraid and unwilling to acknowledge emotions he regards as unworthy. The more that the anxiety is expressed verbally, the less the need to express it physiologically or psychosomatically; thus, the flier is relieved of the added fear of bodily disease.

The ego, weakened and shaken by anxiety, needs strong and repeated doses of reassurance, support and encouragement....Many men despise and often condemn fear as unmanly and cowardly, and therefore suppress or repress their own, out of guilt or the hurt to self-esteem. These superego tensions must be relieved by appropriate explanations.<sup>31(p82)</sup>

If fears are already conscious, uncovering is not necessary; ventilation and reassurance may suffice.

Should such fliers be unwilling to tolerate their fears or somatic concerns, they may respond to an appeal to pride and conscience by pointing out the obvious secondary gains. For example, being grounded would remove them from danger, but would transfer the risk to comrades. Use the transference relationship with the flight surgeon and squadron for leverage: "We will think better of you if you fly in spite of your feelings." This may be tempered by simultaneously gratifying dependency needs through allowing extra time with the flight surgeon, or a special system of appointments after missions.

In the case of fliers who attempt to compensate for these needs by denying them and rejecting proffered help, an especially sensitive and tactful approach may be necessary. The therapist may encounter displaced hostility, especially if morale in the squadron is low. This symptom may need to be interpreted to the flier: "I know things are bad in the squadron, and I know you're unhappy with them. Still, we've got a mission, and you're not really sick and don't need to be grounded. I know you can fly and I'll be willing to check you over after every flight to be sure nothing else is going wrong with you. This tension gets to everybody, but I know you can gut it out for a while longer."

Levy,<sup>31</sup> whose approach has been paraphrased, noted that no one had good statistics on what went on within the squadrons. He felt that about 40% of medical/operational failures were primarily psychological and that about half of these failures oc-



curred in the first 10 missions. He went on to point out, as do all authorities, that all fliers would finally break down if not eventually relieved from duty.

Captain Robert Rehm<sup>27</sup> carried his interest in the progression of responses to combat stress beyond that of most flight surgeons. After a year as a flight surgeon in Italy, he felt that he had merely scratched the surface in dealing with his fliers' psychological problems; therefore, he began flying regularly with the crews to better understand their experiences. Although he does not specify, he was probably assigned to a B-24 heavy bomber squadron. He reports various common psychological factors occurring in three segments (the first 10 missions, the subsequent 30, and the final 10) during his 50-mission experience. He expresses the certainty that anxiety was the greatest during the initial missions over the target, especially when the new flier is confronted with serious occurrences such as flak wounds, aircraft damage, or witnessing the loss of another aircraft.<sup>27(p5)</sup> Such a "mild catastrophic event" [!] will shake the resolve of unaggressive aviators. Captain Rehm states that he found it necessary to take a firm attitude and *not* to leave the decision to continue flying up to the flier, but to explain—repeatedly, if need be—that he had no medical reason to ground the flier, who must continue to fly. Such a firm stance was usually effective.

During his own "tour," Captain Rehm describes mostly short and rather easy missions at first, with some exhilaration at actually being in combat and taking some flak hits. However, a near crash on takeoff laid the basis for a later phobia—he preferred to sit where he could not see the ground on takeoffs. One such episode was not sufficient to keep him anxious, but an accumulation of similar phobias could become disabling.

After his first 10 missions, he found that the excitement was subsiding as familiarity increased. The many novel experiences were now accepted as routine, given that no truly catastrophic event occurred. He felt less alone in the aircraft and more homogeneous with the other aircrew members. The war was no longer a personal matter between him and the enemy, but the cooperative effort of a force of which he was a part. He also felt a growing blind faith in his pilot, something quite common in his squadron. "All the dangers which have been safely encountered and surmounted are epitomized in that particular pilot. He stands as a tribute to experience and a symbol of their safety."<sup>27(p7)</sup> This statement clearly delineates the identification with the pilot and the magical powers attributed to him by an ego defending itself against reality.

As the second period progressed, Captain Rehm describes his emotional plateau as being able to relax over friendly territory and more nervous in the briefing for a bad target (Ploesti, for example) than during the actual mission. After seeing one of their planes shot down, he became somewhat anxious and was insomniac for a few nights. However, his assurance reasserted itself when all went well on subsequent flights.

He comments here on the importance of keeping men flying regularly, "regardless of unusual or catastrophic episodes ... [I] returned a man to duty as soon as physically able, following any injuries which he has sustained. The longer he has to think about his injuries and how they occurred, the more the mental 'gremlins' play on his emotional stability."<sup>27(p8)</sup> He experienced the effects of a long stand down after his 35th mission, just after seeing a plane crash and burn on takeoff, when bad weather grounded the squadron for 10 days. This exacerbated his growing fear of takeoffs, which was relieved only when a trusted pilot had him sit on the flight deck during takeoff and explained how little danger they were in once takeoff speed was attained. (This explanation is, of course, somewhat irrational when one considers that Captain Rehm had, in 35 rides, seen two planes crash and burn on takeoff. One sees how the weight of reassurance from a valued authority transcends logic.) The flight surgeon must understand that a flier who is conflicted about continuing to fly is just that, *conflicted*. That part of him that wants to fly will seize on any information from a valued figure, such as the flight surgeon, as an excuse to return to what he knows he should be doing anyway. Flight surgeons must never underestimate their power in such instances, even though they understand the irrationality involved.

At about this point in a combat tour, Captain Rehm comments upon the "benign hypochondria" in many fliers who develop vague somatic symptoms, some real, such as head colds, some not. Wise flight surgeons will not overemphasize the importance of such symptoms by initiating "junior medical student" workups for minor complaints, sometimes thereby attempting to exorcise their own anxieties. In others, Captain Rehm observed overuse of alcohol and tobacco, irritability, insomnia, nervousness, and temper outbursts. As he began his last 10 missions, he summarized his own situation:

I realized how all important the factor of physical fatigue was. I became nervous and irritable and I had a great deal of trouble controlling my emotions. I had little zest for the squadron activities.

My appetite decreased materially and I noted that during the past two and one-half months my weight had dropped from 178 to 156 pounds. I found that I was smoking two packs of cigarettes daily instead of one. The most noticeable factor was my inability to sleep, especially before each mission. This was most marked on the event of my fiftieth mission. Missions to (various targets) were met and completed with much trepidation. The easier missions...gave much relief but seemed much more hazardous than formerly. However, throughout this entire period, the interest and encouragement of the men in the squadron and group spurred me on to greater efforts than before.<sup>27(p10)</sup>

If a flier must be grounded for combat fatigue, and local treatment is not sufficient, that flier must be evacuated to a treatment facility where specialized psychiatric care is available. The author's experience in Vietnam was that the few fliers who were evacuated for psychiatric care to the hospital at Cam Ranh Bay 25 miles away were returned in a week or two and were able to return to flying duties without further difficulty. The author has heard anecdotal reports from multiple sources about several fliers who were grounded for similar symptoms during the Persian Gulf War, and who were evacuated to the United States for treatment. Upon their hospital discharge, no administrative route was available to return them to duty with their squadrons; thus, they were returned to their Stateside bases. There they and their spouses were shunned by other fliers' families, and when their squadrons returned from overseas, they were not accepted back. In essence, their careers are ruined. While these stories cannot be confirmed, their consistency among the sources rings true. If so, they furnish a stark example of the loss of competent fliers because of aeromedical evacuation beyond the point of return to duty. This provides another reason to give treatment as far forward as possible. Medical authorities should also plan to provide an administrative mechanism for return of such fliers to their overseas squadrons.

As combat flying draws to a close, several changes may be noted. Jones<sup>37</sup> speaks of the "short-timer's syndrome" in soldiers, a mixture of mild anxiety and phobic symptoms near the end of a fixed 1-year tour. Some commanders kept men off tough patrols and assignments during their last month, which unfortunately tended to move the onset of the symptoms to the 11th month rather than the 12th. Thus, the division psychiatrist discouraged this policy, in order to maintain consistency in all units and to avoid premature onset of symptoms.

The author saw two sorts of reactions in fliers near the ends of their combat tours. The first was a tendency to "beat up the sky" on the last mission, a tendency that resulted in some unnecessary losses from enemy fire or from crashes. One squadron adopted the policy of suddenly announcing to a flier, "That was your last mission—turn in your gear," about 10 days before the end of the tour.

The second reaction was to become progressively cautious and super-safe, which at times resulted in mission ineffectiveness. This reaction may represent the flying equivalent of "short-timer's syndrome." If so, this author agrees with Jones' approach, which is to advise the commander not to make special allowances for a flier near the end of the tour, in order to avoid adding a secondary gain to the natural tendency to let down right at the end.

Any person, flier or nonflier, needs a chance to debrief and "decompress" at the end of a combat experience. This process should be led in a sympathetic setting by a knowledgeable practitioner. Ideally, the squadron could undergo the process together, giving all a chance to achieve closure on matters of self-esteem, of group validation of individuals' performances, and of an agreed-upon remembrance of how things were. This process should be formalized by such elements as a memorial service for lost comrades and a military parade, with awards and decorations, and a casing of the colors. Ratification of the worthiness of one's service by a valued authority is a powerful antidote for a stressful experience that may be used to balance the doubts and emotional reactions yet to come.

## Summary

Plans for dealing with combat fatigue in fliers must be based on experiences of flight surgeons and psychiatrists in past wars with the clear caveat that conditions in future wars may be quite different. Flight surgeons must understand the basic principles underlying the prevention, or at least the delay, of combat fatigue; and they must use their two major therapeutic modalities wisely: (1) the judicious prescription of rest as a palliative and restorative and (2) their own influence in sympathetic yet authoritative roles that offer understanding while expecting faithful service.

Psychiatrists to whom flight surgeons refer fliers must also understand these principles and must take care not to preempt the role of the flight surgeon, nor to belittle or ignore the need for coordination between the two disciplines in decisions regarding flying status.

## SUPPORT OF NONFLYING PERSONNEL IN COMBAT

U.S. Air Force doctrine currently calls for four echelons of medical care in combat situations. The first echelon (1-E) consists of care given before a physician becomes involved: preventive measures, first aid, buddy care, and the attention given by enlisted medical personnel. The second echelon (2-E) is the first care given by a physician's assistant, nurse practitioner, or physician, perhaps in a base medical facility or in one located just off-base. Third echelon (3-E) care is given in a larger medical facility (250 to 300 beds) located well off-base, either in a presited hospital or in a transportable hospital brought in by air or by truck. The fourth echelon (4-E) facilities are larger still, and are located well away from the primary battle zone. From these hospitals, patients requiring long-term care will be evacuated back to the United States.

By the nature of these facilities, psychiatric care at the 3-E and 4-E level will be given by specialists. Information in this chapter is primarily intended for nonspecialists, and thus it will deal almost exclusively with the 1-E and 2-E care.

As mentioned in the Introduction, there is little historical information on the effects of combat upon the support troops who make up the majority of any U.S. Air Force base population. In contrast to the classical estimates of psychological casualties as comprising about a one fourth to one half of all battle-induced casualties in combat, during the Persian Gulf War psychiatric diagnoses among U.S. Air Force troops averaged about 3/1,000/wk, about 5% of the total morbidity. This may be compared to the reported average for respiratory diseases of 21/1,000/wk, or the nonbattle injuries rate of 12.3/1,000/wk. Psychiatric diagnosis peaked at about 5.8/1,000/wk during the third week of the air combat campaign.<sup>38(p30)</sup>

These relatively low numbers would have undoubtedly been higher had the bases been under concerted attack, and one might reasonably assume that the particular vulnerability to stress found in U.S. Army support troops under fire would apply here also. Sir Winston Churchill once said, "Nothing in life is so exhilarating as to be shot at without result," but the more common experience seems to be, "Few things in life are as stressful as being shot at and not being able to shoot back."

Consider the situation of an overseas U.S. Air Force base under conditions of impending combat on which troops might come under attack by enemy air and land forces or by missiles that might bear

nerve gas or mustard. There is little precedent in today's U.S. Air Force for a line chief to tell his armament troops, "You have to upload that F-16 right now! I know there's persistent nerve gas around, but all of you have your chemical assemblages on. We fixed up the rips the best we could with plastic tape. If any of you get gas symptoms, try to get back here. The rest of you will have to keep uploading the plane, so don't stop to help each other. We have to get that plane off before they hit us again!" Grinker and Spiegel<sup>1</sup> describe similar stress on ground maintenance troops in North Africa who came under attack by German fighters.

Especially in the early days of the Tunisian campaign, although the forward airfields were constantly patrolled by the fighter aircraft, these were no match for enemy aircraft coming in considerable numbers. The planes appear from nowhere, announcing their presence by the spatter of machine gun bullets and the thump of explosive cannon shells. They appear mysteriously, almost magically, flying out of the sun in the early morning, or diving from behind a cloud to lay a string of bombs throughout the dispersal area. One minute all is peaceful, a scene of quiet, busy activity. There may be a roar of motors in the air, but that is the normal state over an airfield. The next minute enemy fighter planes are buzzing the field, bullets kick up dirt all about, and the tremendous crump [*sic*] of exploding bombs deafens the ears. There is no time to look for shelter, hardly time to put on a helmet—nothing to do but lie flat on the ground and hope for the best. The ack-ack batteries contribute to the general noise and confusion—ineffectively in most instances, because the planes usually come in too low and too fast for effective anti-aircraft fire. In no time at all, the enemy planes are gone, leaving behind them a few twisted, burning planes, a few injuries and deaths, and a number of incipient anxiety states.

Because in this kind of attack the ego has actually no time for defensive activity, its helplessness is real and actual. There is nothing in the environment which can be used to anticipate the approach of danger. Under such circumstances, any stimuli, any loud noise, even the roar of aircraft motors, may actually mean the beginning of an attack. Inhibition of anxiety becomes increasingly difficult. When enemy attacks become incessant, almost everyone on the field develops some degree of free-floating anxiety. The development of the symptoms of neurosis, aside from those of anxiety, in this situation, is directly dependent on the capacity of the individual ego to tolerate free anxiety.<sup>1(pp103,104)</sup>

Marquez reports a similar scene 25 years later, during the Tet attacks on Bien Hoa Air Base in South Vietnam, 0200, 29 January 1968.

People were running around trying to find shelter anywhere....The 120-mm rocket was an especially frightening weapon because, in addition to doing damage as a fragmentation weapon, it made a lot of noise....Great fires were started, and the firefighters were unable to put them out. People were standing around staring and were too frightened to act...Through it all, there was rampant confusion and no one knew if another attack was imminent....It's hard, but important, to keep busy in the aftermath of one of these things. Some were scared; some were totally out of their minds; others were enjoying it!<sup>39(p22)</sup>

Marquez goes on to describe that someone issued weapons to the U.S. Air Force troops on the base, and suddenly there were

500 armed aircraft mechanics running around with weapons, no enemy to shoot at, and no one in charge....They were just firing at noises. It took me four hours to retrieve those guns....My reasons were clear—I was afraid my troops would kill each other before dawn....Fear drives people to do very irrational things ... It takes a lot of discipline to get people back together and working productively.<sup>39(p22)</sup>

What can be done today to prepare for such stresses tomorrow? What should be done as the war begins? General preparation should include attention to education, training, group cohesion, morale, and sleep discipline, as well as to other elements leading to improved or prolonged combat effectiveness. These preventive measures will be considered individually. They serve as prophylaxis and, in a sense, as early treatment measures at the 1-E level of medical care.

## First-Echelon Measures

### *Education and Training*

The medical officer on base who is most knowledgeable in such matters must be sure that all officers and senior NCOs understand the basic message of this chapter, that they will have to deal with acute stress reactions from the announcement of deployment through the first few days of combat, and that more chronic combat fatigue will inevitably build as time goes on. They must understand that they should take preventive measures before and during the conflict. Briefings should be given by mental

health professionals if possible, and, if not, by the senior flight surgeon.

This information must be transmitted down through the ranks to the working level. Leaders should tell their troops ahead of time as much about the combat conditions as possible. They may want to say that it is almost certain that everyone, themselves included, will be afraid, and that it is normal to experience the physical manifestations of that fear. They must expect dry mouths, sweaty palms, palpitations, rapid heartbeats, breathlessness, stomach flutters, and perhaps even nausea and vomiting, urinary frequency, or diarrhea. They will surely be tremulous. All these symptoms are to be expected, as is a realization of their fear about what is about to happen.

Leaders must also make it clear that they expect all of their troops to do their jobs in spite of their fears and to help each other out. In a phrase, "It is all right to be afraid, and your body may let you know that it feels the fear, but you must not let that fear keep you from doing your duty." This may be compared to an athletic contest in which the players know they are nervous and yet go into the game to do the best they can, knowing that they will lose much of the tension as soon as the first contact is made. At that point, they will revert to the skills that they have worked so long to acquire.

By discussing their feelings ahead of time, each individual will know that he or she is not the only one who is aware of being afraid, not the only coward in a band of heroes. Each will know that it is all right to feel fear, as long as each performs assigned duties when the time comes for action. A poll of infantry veterans has shown that, prior to battle, 69% were aware of a racing, pounding pulse; 45% had sweaty palms; 15% had cold sweats; and a lesser percentage felt faint, were nauseated or vomited, or had strong urinary or defecation urges.<sup>40(p11)</sup> *Most of these men were aware of the physical symptoms of fear before they were aware of the emotion which caused them!*<sup>40(p24)</sup>

This poll also emphasized the importance of the control of behavior in action. Of the infantrymen surveyed, 94% said that seeing others act calmly under fire helped them to feel better and act better themselves. Many found that concentrating on their own duties helped, as did cracking jokes about the situation. Some 97% said that knowing morale was high in their unit made them better soldiers.<sup>40(p47)</sup>

All troops must understand the importance of the unit mission and must know how their own work helps the unit achieve its goals. They must understand how they fit into the big picture and

why that picture is important, or they will certainly not risk their lives to do what must be done. More concretely, they must understand exactly what they are to do under attack, whether by land or air, by conventional, chemical, or other means. Warnings and all-clears must be crystal clear, to avoid unnecessary or panicky decisions. All concerned should understand that people tend to regress in their behavior when under acute stress, and a simple rote performance of duty may see them through until they become more accustomed to combat conditions. Actions to be taken under attack should be rehearsed so as to be well-nigh automatic. As noted, knowing that training is excellent and that readiness is high is a powerful antidote to fear in combat and will help prevent acute combat stress reactions.

In a study of British unexploded ordnance disposal personnel, Rachman noted qualities of underlying resilience which he described as present in a great many military individuals. When combined with "adequate training, good and reliable equipment, high group morale and cohesion," he found that a sense of calmness, awareness of physical fitness, and general psychological health nearly completed the picture. The single factor that, he felt, distinguished the "courageous" (decorated) individuals was a singular lack of any hypochondriacal features at all. Most had "no bodily or mental complaints whatsoever."<sup>41</sup>(p102)

If one regards the desired outcome of a battle or an attack as the transformation of a disciplined and effective enemy military force into a disorganized and powerless rabble ["Inside every army is a crowd struggling to get out,"<sup>42</sup>(p175)] then this issue of performance of duty under attack becomes the proper focus of all military training. People on air bases under attack must understand that failure to do their work under the conditions of noise, smoke, confusion, death, and destruction that have accompanied warfare since the invention of gunpowder, will result in defeat. As different as battles and warfare have become from those of the past, what they retain is the human element:

the behavior of men struggling to reconcile their instinct for self-preservation, their sense of honour and the achievement of some aim over which other men are ready to kill them. The study of battle is therefore always a study of fear and usually of courage; always of leadership, usually of obedience; always of compulsion, sometimes of insubordination; always of anxiety, sometimes of elation or catharsis; always of uncertainty and doubt, misinformation and misapprehension, usually also of faith and sometimes of vision; always of violence,

sometimes also of cruelty, self-sacrifice, compassion; above all, it is always a study of solidarity and usually also of disintegration—for it is toward disintegration of human groups that battle is directed.<sup>42</sup>(p303)

Understanding these elements of battle, the wise physician, who has the commander's ear, will assure that everyone within the command understands them also. It is a message seldom heard in the peacetime U.S. Air Force, and then heard only faintly. Much in battle is sociologic and psychologic, and those who understand these factors and can communicate them to the troops in a manner that is understandable and memorable may have much to do with winning.

With this background, the junior officers and senior NCOs should get into the habit of having small "how-goes-it" sessions to assure that everyone gets "the word" at the working level. Hocking<sup>43</sup> comments that an excellent indicator of good morale among troops is the liberty felt by their officers to tell the truth in times of difficulty or failure. Tempering the truth is a sign of distrust of the troops and an attempt to manipulate morale from the outside. As such, it is immediately suspect. Morale is a state of faith between the leaders and the troops and must not be abused. If one does not know what the situation is, one should say so and do everything possible to discover what it is, rather than lying about it. Faith, once betrayed, is almost impossible to reestablish. Troops who know the truth, and know that they know it, are much better prepared to deal with it than those from whom it has been concealed.

### *Group Cohesion and Morale*

At the lowest unit level, a buddy system (the British call it "battle friends") should be established whereby pairs of troops are specifically instructed to look after each other. This system should reflect natural friendships whenever possible, rather than being imposed from above. Thus, each person is aware that there is another person who will be specifically looking out for his welfare when things get rough, that no one will be forgotten or unaccounted for. As a corollary, each unit should maintain small group integrity so that individual bonds and loyalties are not arbitrarily disrupted. Such small groups should be together off-duty as well as on in order to foster their interdependence. Working groups should live together in barracks or shelters, rather than being split up as sometimes occurs in peacetime living.

This point was emphasized by Manning and Ingraham,<sup>44</sup> who surveyed U.S. Army units to establish some of the underpinnings of unit cohesion. One element, usually missing but of inestimable value when present, was the presence of commanders or senior NCOs in after-duty, informal settings if they felt socially at ease doing so. By doing so, they shared experiences other than those of the workplace. "The more people interact, the more varied the settings, and the more time the group maintains stable membership, the more the members have in common and the higher the resultant cohesion."<sup>44(p65)</sup>

### ***Skillful Leadership***

The small unit leader must be familiar enough with the troops to recognize when an individual's stress symptoms are getting out of hand. The leader should be willing to give a little extra rest and time off to those whose fears are beginning to get the best of them. In his book *Fighting Spirit*, Major General F.W. Richardson, a retired British Army physician, discusses the here-and-now treatment of acute combat stress reactions.<sup>45</sup> Two hundred yards behind the battle line he had established

a sheltered rest station ... at the bottom of the hill ... (S)omeone had given this place the name of 'Tranquility House.' Once its value had been clearly recognized and the...medical officers instructed about the early handling of cases of threatened breakdown, it was enough for them to mark men's field medical cards 'T.H.' After 12 to 24 hours of rest and hot meals at this post, many men, who might otherwise have had to be sent to hospital, were able to rejoin their units...without loss of face.<sup>45(p106)</sup>

Such an arrangement may or may not involve a medical professional, but the circumstances described certainly should not involve a formal admission in the medical sense, which would reinforce the "sick" role. The message should be "You're not sick and you're certainly not a coward; you're just worn out and need a bit of rest before you go back to duty."

Obviously, medical advisors should assure that officers and NCOs understand the early symptoms of combat fatigue, those at the mild end of the spectrum that might otherwise be ignored: insomnia, nightmares, restlessness, decreased appetite, irritability, increased startle reflex, decreased efficiency, increased smoking or drinking, loss of sense of humor, and changes in normal temperament

beyond those that are taking place in the unit as a whole. Troops showing these symptoms should, if possible, be given a little extra time off, or at least the opportunity for a good night's sleep ("three hots and a cot"). A little consideration in these matters may go a long way in prolonging the efficiency of the unit, as well as its individual members' ability to function well.

Richardson went on to report that hundreds of British soldiers were sent out of battle in World War II by their officers because they were showing physical signs of fear. This practice not only was a waste of manpower, but had the potential for a snowball reaction among the troops not yet affected, to whom the secondary gain for the symptoms was all too clear. He points out the clear necessity for commanders to learn to

distinguish between men who are simply afraid and those who are beginning to find fear uncontrollable. To distinguish between a man who needs to be encouraged to carry on and one who should quietly be got rid of, for the time being, lest his fear become infectious, can test experienced leaders. During the trial by court martial of a soldier for cowardice in Korea, a civilian counsel for the accused was trying subtly to shift the blame onto the shoulders of the platoon commander who, he claimed, should have seen that the man was on the verge of a breakdown. 'Could you not see,' he demanded aggressively, 'that Fusilier L... was trembling involuntarily?' The young officer's splendid reply was 'We were ALL trembling involuntarily.'<sup>45(p111)</sup>

In the same vein, the leader should provide the best amenities possible under the circumstances, including food, shelter, and cleanliness. The troops who know that their leaders are living up to this valuable and venerable military tradition will understand the implicit message that underlies it: "As I show that your physical comforts are important to me, you can see that I consider each one of you valuable, and you know that I will not waste your lives needlessly in battle." Loyalty in battle is, after all, a two-way process.

Leaders should also be alert to undue confusion or agitation in their troops while under fire, and should set a firm, calm example. The timely joke is of inestimable value in this respect. The leader should help turn their minds outward, away from their own troubles and toward their comrades, reinforcing each other's efforts, doing the job at hand, and supporting the base fighting mission. The emphasis should be on teamwork and accomplishment ("We're all counting on you") to appeal to that

part of each person's ego that wants to perform honorably under fire, to be thought well of by comrades, and to be part of the best unit in the winning force. By setting a calm example, not minimizing the occasion but instead helping the troops rise to its demands through pride and loyalty, by making them part of something bigger than themselves, the U.S. Air Force leader is following the example of the great leaders of history. Morale, in this context, becomes a matter of concentration of purpose, competence, honesty, selfless generosity, dignity, and exemplary behavior.<sup>43</sup>

### *Sleep Discipline*

Medical personnel must impress on commanders the importance of making sure that their troops get adequate sleep, to the extent that the situation allows. Studies have shown that 4 hours of uninterrupted sleep, especially if it includes the 3 hours between 2 AM and 5 AM, are necessary to maintain the efficiency of the troops over the long haul. In these studies, the 4 hours of sleep consisted of the total amount of Stage 4 sleep and of REM sleep that the troops would have gotten under more normal conditions; that is, their sleep became more condensed and efficient in refreshing them in the field conditions of relative sleep deprivation. Less than 4 hours of sleep led to progressive fatigue and inefficiency.<sup>46</sup>

This doctrine may be hardest to apply to the commanders themselves, who may believe that they are indefatigable. The military writings of Wellington, of Napoleon (whose ability to nap was legendary), and of Montgomery (in contrast with Rommel, who exhausted himself) all bear witness that "the high commander who, under the strain of a prolonged campaign, can preserve an undisturbed sleep pattern is the right man in the right place!"<sup>45(pp76,77)</sup> This may be contrasted with the old saw that "the military regard sleep as monks do sex: the really competent ones get along without it!"<sup>45</sup>

### *Other Factors*

Commanders should be aware that there are some specific factors that may increase their troops' susceptibility to fear: being alone, darkness, rumors, lack of plans, and insidious silence punctuated by loud or unexplained sounds. Knowing ahead of time that such things increase apprehension may help to reduce their effects, and the troops should be warned about them. At best, the men may recognize their own fears and joke about them. At

least, they will not be surprised that they feel afraid. They will understand that there is no disgrace in feeling fear, only in giving way to it.

Commanders must also be aware of the insidious effects of prolonged inactivity or unstructured time on morale, especially if accompanied by an undertone of anxiety about what might happen. Several traditional antidotes are available, tailored to the specific circumstances.

A good sports program is worth its weight in gold. The one drawback is a tendency to cause injuries, so be careful about activities involving physical contact, and provide referees to keep things in hand. Educational offerings will attract some: lessons in the local language, history, and customs, or even a formal course program if available. An enlightened leave program may be possible, with tourist-type day or overnight trips to local attractions. For prolonged campaigns, consider an R and R policy.

Pay attention to work-alert-rest schedules. Avoid switching personnel on and off night duty; it may be possible to have reasonably stable day and night sections, to avoid undue circadian disturbances. Rotate tasks. Provide military training and upgrade. Cross-train if it is reasonable; this will also benefit the organization in case of losses through combat or illness.

As Hoffman<sup>47</sup> points out, these factors, combined with a sense of good leadership, fairness, competence, and caring, will demonstrate to the troops that their commanders are looking out for their welfare. Attention to details, alertness to signs of stress in self and buddies, and open lines of communication up and down the chain of command during lulls will help assure good performance when things get rugged.

Medical personnel must assure that line officers and NCOs understand that the best way to counter the demoralizing and fearful effects of combat is to foster good morale. The wise leader knows that there are clear indicators of poor morale available, such as an increase in abuse of alcohol and drugs, venereal disease, fights, AWOLs (absent without leave), and similar Article 15 offenses. One may also see an increase in a constellation of medical conditions, the prevention of which is a function of personal discipline: sunburn, frostbite, immersion foot, malaria (the troops are not using insect repellent, taking their prophylactic medications, or sleeping under their mosquito netting), food-borne diseases (improper hygiene), and other such maladies.

Further, a unit that is well-led, and knows it, will identify itself with its leader and will begin to use

his way of speaking, habits of behavior, and even personal mannerisms.<sup>48</sup> This magical identification with a leader who is perceived as wise and powerful is a notable indicator that morale is high. Although a unit with good morale may not display its discipline in the “snappy salute” sense, it will take good care of itself. It will practice the essentials necessary to preserve its own health and its operational readiness, and the troops will reinforce each other in following the formal and informal rules that maintain and increase their collective effectiveness.

### Second-Echelon Measures

Almost all of the literature concerning the initial care of combat fatigue victims has been written by U.S. Army psychiatrists. One of the clearest descriptions of this care was given by W.C. Menninger<sup>49</sup> in his classic monograph, *Psychiatry in a Troubled World*, in which he discussed the treatment regimen developed by the psychiatrists in the Mediterranean Theater in World War II.

By their plan the battalion aid station surgeons were indoctrinated with “first aid” psychiatry. It was they who had to decide whether a man should be returned to duty, given a brief respite, or evacuated to the clearing station. It was fully appreciated that many soldiers, if returned to the battalion kitchen area and permitted a night of sound sleep with the aid of a mild sedative and some warm food, would be ready in 24 hours to return to combat. No record was ever kept of the men so handled, but it is known to be a sizable percentage of the men seen at the battalion aid station.

The seriously upset soldiers were sent 2 to 5 miles farther back to the division clearing station where the division psychiatrist had his headquarters and treatment center. This sometimes was in a tent or in a commandeered building such as a schoolhouse, factory, or whatever might be available. The soldier arrived here from his foxhole within 1 to 3 hours. Each one was seen initially by the psychiatrist and interviewed briefly. If he was recognized to be too sick to benefit from brief rest and such psychotherapeutic help as could be given in a short time, he was immediately evacuated farther back. The largest percentage of the soldiers who came to the clearing station remained there for 48 hours. These men were given sufficient sedation to insure a good 12 to 24 hours of sleep, only interrupted when awakened for food. On the second day, they had an opportunity to shave and bathe. Approximately 40 per cent could return to combat on the third day. Follow-up studies suggest that many of these men carried on indefinitely. Perhaps 25 per

cent of this group had recurrence of symptoms and became repeaters.”<sup>49</sup>(pp306–307)

Menninger goes on to describe the treatment of those not handled at the clearing station (which, in U.S. Air Force terminology, would be an off-base 2-E facility). The worst casualties, or those not responding to brief intervention, were sent to “exhaustion centers” 16 to 24 km (10–15 mi) behind the lines. These were staffed by 12 officers and 99 enlisted and were equipped to take care of 200 to 500 psychiatric casualties. Patients remained there 5 to 8 days and were treated with rest, recreation, and narcosynthesis using sodium pentothal. These centers developed training platoons, directed by line officers, “which provided an additional 2 to 5 days of military activities at a graded tempo to prepare the men for return to combat. Of the combat casualties, 20 per cent were returned to combat from these centers.”<sup>49</sup>(p307)

Menninger notes specifically that, besides adhering to the classic treatment principles of proximity-immediacy-expectancy, the entire program assumed that the chief preventive efforts were a function of commanders, not of the medical personnel, and that the active support of the line officers was required in order to assure its success.

Thus the elements of care at the 2-E level include the location of the unit, its staffing, its function, the treatment setting, the principles of management, the use of medications, and the options available for disposition of those treated there.

### Location and Staffing

Plans for locating the U.S. Air Force 2-E mental health services change from time to time, but the doctrine, configuration, and location will probably not differ greatly from what will be described below, and will correspond in function, if not in location, to the system of which Menninger wrote. Medical personnel remaining on a base under continuing attack or threat of attack will probably consist of a few flight surgeons, perhaps a surgical specialist, some medical technicians and ambulance drivers, and a mental health team consisting of a psychiatrist, a psychologist, a clinical social worker, and some mental health technicians. The remainder of the local medical and mental health personnel, perhaps augmented by others brought in under mobilization plans, will work at one or more sites located 5 to 10 km (3–6 mi) off-base; each site will be independently capable of giving stabilizing medical care in support of approximately 4,000 troops. It



should be noted that distances given are rather arbitrary. The important concept is “psychological distance”: far enough from combat to be safe, near enough to return to one’s own unit.

Although preliminary plans call for a psychiatrist, a psychologist or a clinical social worker, and two mental health technicians to augment some 2-E facilities as part of the 50-bed Air Transportable Hospital, current U.S. Air Force manning levels make it unlikely that more than one off-base 2-E facility per base will be so staffed. Thus, each local Director of Base Medical Services (DBMS) may well have to decide how best to use the available mental health staff, considering the on-base situation, the off-base situation, the adequacy of communication and transportation links, the combat/casualty situation, the nature of the threat, and other such variables. The disposition of local mental health resources may be changed as the situation dictates, and such local flexibility should not be hampered by excessive doctrinal rigidity. Common sense should prevail, and all concerned should be aware that their experience with the realities of the situation may quickly supersede set-piece planning.

Why be so insistent that early treatment be given at the on-base 2-E facility rather than off-base? In a lecture to U.S. Air Force mental health professionals in 1983, an Israeli psychologist pointed out the value of having mental health professionals use their knowledge and experience close to the fighting:

- They can use their professional stature to resist local unit commanders who want to evacuate troops with symptoms of combat fatigue. Less knowledgeable people might give way to such pressure.
- They can respond realistically to any troops who say “You don’t know what it’s like,” because they live on the same base and under the same conditions. This corresponds to the principle that flight surgeons should fly in unit aircraft, both in peace and in war, to meet the flier on equal footing in terms of understanding the situation personally. Although some 2-E facilities off-base may also need a mental health capability, it is crucial that patients with only mild or early symptoms be kept on-base, along with a contingent of mental health personnel.<sup>50</sup>

To his two reasons, a third may be added. Few U.S. Air Force medical personnel today, officer or enlisted, have personal combat experience. To leave

the triage decisions concerning patients with psychiatric symptoms in the hands of the flight surgeon or DBMS, neither of whom is likely to have either combat or psychiatric experience, is to put the troops doubly at risk of the wrong decisions being made. Mental health workers must be on-base, making every effort toward rapid, effective interventions: reassuring, explaining, exhorting, and above all, returning troops to their units as rapidly as possible.

What, then, might be the function of a 2-E site off-base? The author sees this as an overflow facility, used for patients who are truly mentally ill, or who have not been able to return to duty as expected and are awaiting evacuation. This facility may also receive patients when the on-base 2-E facility is overrun with troops. The realities of the situation faced by the DBMS and the mental health staff should quickly result in the available facilities being used in the most efficient manner possible, if the tried-and-true principles outlined here are intelligently applied.

#### *Function of the Second-Echelon Facility*

Clearly, the burden of the initial management of acute symptoms immediately after a base is first attacked will fall upon whatever medical personnel remain on that base, whether or not they have had formal mental health training. Another Israeli Defense Force psychologist has emphasized that such reactions may overwhelm unprepared medical personnel, especially if they themselves have also just experienced their first attack.<sup>51</sup> Human nature leads one to look to any perceived authority for help in crises, and the disaster literature leaves no doubt that anyone who is seen as having special knowledge or skills in such a case will quickly be sought out. When confronted with troops having combat shock reactions, medical personnel will certainly look to colleagues with mental health training—*any* mental health training—to handle the unwounded stress casualties.<sup>51</sup>

By now the reader must be aware that all military mental health authorities agree on the necessity *not* to overreact to such circumstances by evacuating troops to the rear—not even a little bit to the rear—because of the perceived secondary gain. “*If they ain’t hurt, don’t ship ‘em out!*”

This inelegant slogan is easy to remember in a crisis, and may be used by medics and line personnel alike. If the mental health troops on a base overwhelmed with somatic casualties are pressed into triage, litter-bearing, or treatment teams, they

may join in following the course of least resistance and shipping the unhurt but stunned and sobbing troops off-base to a less harassed 2-E facility. This impulse must be resisted, or there will be an intolerable loss of unwounded troops to off-base locations from which it may prove very difficult to reclaim them.

An on-base holding facility must be provided to the DBMS by a wing commander who understands the principles involved, explains them to the commanders of the various squadrons, and supports the DBMS in their application. Reflecting upon Richardson's Tranquility House described above,<sup>45</sup> this author recommends that such an on-base facility be established in a reasonably secure location, away from primary targets, and run by the available mental health personnel. Flexibility in assigning mental health nurses and occupational therapists to this facility may also prove useful.

In the personal communication previously noted,<sup>51</sup> Levy commented that the Israeli medical service organizes its combat stress casualties along military lines, with unit names rather than medical names. Under this model, each U.S. Air Force psychiatric technician might direct a "flight" of 10 or more casualties. Three or more flights would comprise a "squadron," with the squadron command element consisting of the psychiatric social worker, an NCO-in-charge (NCOIC), and, if available, an occupational or physical therapist. This latter function might even be filled by a knowledgeable physical training technician from the base gymnasium.

The structure of this local treatment team would thus emphasize the military aspects of the situation and minimize the medical aspects. At this level, treatment essentially consists of acknowledging a temporary inability to work, without falling into the medical model (taking a history, writing up a chart, making a formal diagnosis), that reinforces the patient role. Such troops—do *not* call them "patients"!—should not be formally admitted to the facility. "You're not a coward, you're not sick, you're just worn out, and you'll be all right in a day or two" must be the constant theme. A chance to rest, a hot meal (the U.S. Army's "3 hots and a cot"), a physical examination, however perfunctory, to reassure that there is no physical problem, and an appeal to honor, group loyalty, and the mission may be all that is necessary. In fact, at his first contact with the medics, all that a scared kid may need is for someone in authority to tell him that he's all right, and that he must get back to work, do his part, and not let his buddies down.

### Principles of Treatment

The treatment of acute combat reactions or of combat fatigue on-base may be summarized in the acronym BICEPS (brevity, immediacy, centrality, expectancy, proximity, and simplicity). The author coined this acronym in 1980 for use in the U.S. Air Force Surgeon General's Medical Red Flag training program. The principles of proximity, immediacy, and expectancy, so named by Artiss, were articulated by Glass<sup>52</sup> in World War II and were derived from Salmon's forward treatment during World War I.<sup>53</sup> The principles of brevity, centrality, and simplicity were discussed by F. Jones, after the war in Southeast Asia.<sup>37</sup> Each principle might, of course, be discussed at length, but, in the total context of this discussion, they are identified as follows:

- **Brevity.** Treat briefly, from 12 to 72 hours, with the explicit goal being a rapid return to duty.
- **Immediacy.** Treat as soon as the person's behavior makes it clear that he or she can no longer function as a productive squadron member. Do not wait for full collapse of function, especially if squadron authorities or buddies indicate that this individual is becoming nonfunctional. Do not wait for an outside consultant, either. Begin treatment now.
- **Centrality.** Treat combat fatigue cases who are being considered for evacuation in a single location, separate from somatic casualties and "sick" patients, preferably administered by a single individual. At this single location skilled personnel may be able to prevent further evacuation.<sup>34,37</sup>
- **Expectancy.** Treatment should be aimed at getting the individual back to duty, and all concerned must expect this to be the inevitable and only outcome. The therapists should ally themselves with the patient's conscious will to remain and do the necessary duty, and should work together toward that goal so the fatigued person can return to friends, unit, and job. The therapeutic alliance must not allow any other goal to interfere with getting the person well, and the functional definition of "getting well" is a return to duty.
- **Proximity.** Treat close to the unit, so that cohesion continues. This will be most concretely demonstrated by having the person's friends and commander visit, thus proving

that they do not reject combat fatigue victims as cowardly or unworthy. Those who repudiate their stricken comrades may be unable to tolerate any such tendencies in themselves and thus reject those who symbolize their own fears. Such people will contribute to the problem by increasing the victim's guilt; and, if they are leaders themselves, may lose troops unnecessarily because of this attitude. Close liaison between therapists and the parent unit will not only help the troops in question, but will demystify the whole experience for the unit as well, and will show the lack of secondary gain: becoming symptomatic is not an automatic ticket out of combat. Here again, the value of keeping this 2-E function on-base rather than several kilometers away is obvious.

- **Simplicity.** Treat in the here-and-now, aimed at a return to duty. This is not the time for a full-scale psychiatric evaluation and formulation, or a treatment contract extending into the indefinite future.

### Medications

Psychopharmacology, like other areas of drug therapy, is a dynamic and rapidly changing field. Each physician uses medications in a highly personal way, and psychiatrists are no exception. Some are chemical nihilists, while others write a prescription for almost every patient they see. Thus, the precedents for the use or nonuse of medications in combat situations are by no means applicable to all situations or to all therapists.

In World War II, psychiatrists frequently used sodium pentothal or Sodium Amytal<sup>1(p52)</sup> to help soldiers abreact their emotional turmoil. A review of the use of medications in the Vietnam War by some 40 U.S. psychiatrists revealed that a large proportion of them used anxiolytic and neuroleptic agents, even in early or mild cases of combat fatigue.<sup>54</sup> These therapists reported the use of recuperation, social therapy (the milieu of expectancy), and medications, in that order of frequency, in the 2-E environment.

They used anxiolytics in about 30% of their cases, mainly for early symptoms, including apprehension (especially the "short-timer's syndrome"), sleep disturbances, tremors, and increased startle reactions. They used neuroleptics in about 20% for threatened assaultive behavior, defects in judgment, or other behavioral changes which concerned or alarmed the unit. Neuroleptics were used with

increasing frequency in patients with increasingly disturbed behavior, especially in those for whom recuperative facilities seemed to be of little use.<sup>54</sup>

More recent practices contradict these findings. The Israelis, as has been noted, are much more interested in behavioral treatment. One source cites the use of medications, and only tricyclic antidepressants at that, in only 8% of the 60 soldiers referred for 3-E and 4-E treatment out of the 600 soldiers who were evacuated as combat fatigue casualties in the 1982 Lebanon War. The treatment program for the majority consisted of "walking and talking," abreactive individual and group psychotherapy, individual and group sports activities, and combat-oriented military training.<sup>55</sup> By contrast, the British, in the Falkland Islands War, used short-acting benzodiazepines as a prophylaxis against excessive fatigue due to insomnia, evidently with good results.<sup>23</sup>

Two major cautions are offered against the early use of medications. First, their use tends to reinforce the sick role, because the giving of medications is one of the hallmarks of the physician-patient relationship in American society. Second, many psychotropic medications have a duration of action longer than the 72 hours that a combat fatigue victim may spend in a 2-E facility, especially if one takes into account the active metabolic products of some of the drugs. Sending a person back to combat duty still under the influence of psychoactive drugs may be dangerous. Even in peacetime, people in the many combat support positions covered by the Personnel Reliability Program would not be allowed to take such medications and continue to work in their sensitive, demanding jobs. The use of such medications under combat conditions must thus be thoughtfully weighed for the risk-to-benefit ratio, both for the individual and for the mission.

In the end, the decision to use or not to use psychotropic medications rests with the physician on the scene. There is much information on this subject elsewhere, and anyone potentially faced with this situation would do well to know as much as possible about a few psychotropic drugs before the combat situation occurs, when there will be no time to look them up. Use such drugs sparingly and for specific target symptoms, with full consideration of the two negative factors noted above.

### Treatment Setting

Although one may find it impossible to imagine what a 2-E facility might look like, on- or off-base, perhaps Enoch's<sup>56</sup> description of such a function in

the Israeli campaign in Lebanon will be useful, especially when compared and contrasted with Menninger's description of a similar function in World War II, cited above.

Initially, (the) team would conduct an interview to establish where the soldier had been, what he had done, and what had happened to him. This interview was oriented objectively rather than toward thoughts and feelings. The team confirmed two of the observations made in previous wars. First, thoughts and feelings inevitably followed the description of the objective events. Second, just describing what had happened clarified events and reduced the emotional turmoil. The team would allocate the next 6 to 8 hours of treatment to physical replenishment (water, food, and rest). Then the soldier was given useful tasks to do and invited to join in supportive individual and group psychotherapy. Next, the team arranged for comrades from the soldier's unit and for the unit commander to visit the soldier. Then the soldier himself was taken to visit the unit. In these ways, mutual confidence between the soldier and his unit was restored. When the soldier had recovered enough to return to the unit, the team would arrange for comrades from his unit to pick him up. This team took advantage of its proximity to the front and the soldier's unit to maximize expectation that he would return and to reinforce the soldier's link to his comrades and commander. The team observed that units were happy to receive the soldier back, confirming the finding from other sources that under stress group members prefer someone they know to someone they do not know, regardless of presumed competence. With respect to themselves, the members of the psychiatric team noted that, because of their proximity to the front, they were all afraid. However, sharing the dangers of combat with the soldiers being treated reduced their reluctance to return a soldier to his unit. They noted that their fear was diminished to the degree that the (medical) commander was competent in ensuring their supplies of gasoline and other essentials. When this was not the case, they became more afraid, hoarded supplies, and saw their clinical effectiveness decline. The team observed their tendency to overidentify with the soldier they were treating; to want to be the "good father," and to protect their new-found "son" from harm. This difficulty was reduced through once-a-day staff meetings for the purpose of discussing cases, providing mutual support, and working through emotional conflicts. The Israelis observed that the psychiatric symptoms changed from the time the soldier broke down at the front to the time he arrived at the (medical station). At the front, soldiers suffering psychiatric breakdown complained of an inability to perform—termed by the Israelis "the ticket out" of combat,

while upon reaching the (medical station) they complained of difficulties with thoughts and feelings—termed "the ticket in" to treatment. The Israelis concluded that severity of initial symptoms had little to do with prognosis for recovery; the most important indicator of a good prognosis was the soldier's labeling himself as healthy, taking initiative in his own care, helping others, and helping run the treatment team's area.<sup>56(p14,15)</sup>

With the applications of the BICEPS principles there is a deemphasis on medications and the "sick" role. Troops in this ambiance must not be treated as patients. They must spend the day in uniform, not in pajamas, unless they are specifically supposed to be in bed resting for the first 12 to 24 hours. Their days should be structured and should be used purposefully to maintain the identity of each as a functional military person. Daily roll call, announcement of the day's schedule, physical training, useful activities such as digging trenches or bunkers, filling sandbags, improving the local area, playing sports, and attending meetings should be the order of the day. The value of occupational and physical therapists in planning and carrying out such activities is clear.

In the 528th Medical Detachment, already mentioned, the role of occupational therapy personnel as "environmental managers" both in the consultation role and the therapeutic role proved extremely valuable during the Persian Gulf War. Presentation as "work therapy" furthers the sick role, so the presentation as "work assignment," "work detail" or "work activity," may be more appropriate to the "return to duty" ambiance of this modality. Ellsworth and colleagues<sup>57</sup> have presented a review of this subject, together with a model schedule for patient activities (Exhibit 8-1).

Group therapy sessions must be carefully monitored and one must be particularly careful not to let them turn into "my experience was worse than your experience" sessions. Such an ambiance may be perceived as rewarding symptoms, and troops may escalate each other into brief reactive psychoses if not restrained.<sup>51</sup> Thus, such sessions should be goal-directed, here-and-now, and oriented toward health rather than emphasizing symptoms and disability. Sports programs, which by their nature reward healthy behavior, are of particular value. Coaches urge one to perform in spite of symptoms.

The programs of Menninger<sup>49</sup> and the Israelis<sup>56</sup> were reflected in that of the U.S. Army in the Gulf War. "PSYCH-FORCE 90" was the self-designation of the 528th Medical Detachment, a psychiatric OM (combat stress prevention and treatment) organiza-

**EXHIBIT 8-1****SECOND-ECHELON TREATMENT FACILITY: MODEL SCHEDULE FOR PATIENT ACTIVITIES**

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Adapted with permission from Ellsworth PD, Sinnott MW, Laedtke ME, McPhee SD. Utilization of occupational therapy in combat stress control during the Persian Gulf War. *Milit Med.* 1993;58:383.

tion of 15 officers and 33 enlisted troops deployed to Saudi Arabia in October, 1990, to support the Persian Gulf War.<sup>58</sup> This unit operated three consultation teams that made proactive visits to U.S. Army units, and one base camp treatment team that furnished outpatient and inpatient therapy (20 beds). Between November 3, 1990 and January 10, 1991, the unit performed 600 unit consultations. Several thousand soldiers were seen altogether. The units performed 387 formal psychiatric evaluations, and held 123 soldiers for treatment. Fifteen percent were evacuated out of theater. (Of all the soldiers evacuated to Europe, less than 6% had psychiatric diagnoses.)<sup>59</sup> This effective use of psychiatric treatment teams involved two facets. First, in consultations with commanders, they actively sought to advise the field units about psychological stress, work-sleep cycles, heat stress, buddy-aid, critical event debriefings, and follow-up consultations when necessary (as with training accidents or firing weapons in anger).

Their second mission was to triage and treat dysfunctional soldiers. After one interview, they would make disposition: evacuate the truly mentally ill, hold a soldier for treatment if suicidal. Otherwise, they attempted simple ventilation, focusing on solutions in the here-and-now. Problems involving the family back home were referred to the chain of command. (Their experience, and that of the author 30 years earlier, was that evacuating troops from a combat zone for family reasons was folly, and would result in an epidemic of family problems within the unit.)

Soldiers held for duty were kept in a military environment—cots in tents. Therapeutic emphasis was on healthy functioning through an intensive work-therapy program, promoting adaptation through psychological educational classes and small group therapy. This involved only limited ventilation, restructuring problems into here-and-now resolvable issues, and acquiring adaptational skills. Command consultation was obtained when warranted.

A common factor associated with developing adjustment disorders was the soldier's assignment to a new unit within 90 days of deployment (ie, the soldier was not yet strongly bonded to the unit). Most soldiers presented for treatment within their first month in theater, pointing up the need for some stress training *prior* to deployment. Also, problems reflecting troubles at home indicated the usefulness of strong family support programs.

Other patient clusters centered around: (a) mothers leaving small children, losing their bonding; (b) Reserve or Guard troops taking psychoactive medications prescribed by their civilian physicians, being cut off these medications through lack of availability, or contraindicated because they lowered heat tolerance; (c) functional symptoms found to be due to organic conditions; and (d) veterans of prior wars undergoing exacerbations of traumatic stress reactions. This latter situation frequently involved medical troops, and was possibly associated with their easy access to psychiatric care.

After the OM team arrived in theater, the evacuation of personnel because of personality disorders fell by 50%; most evacuations after that were for major psychiatric disorders.<sup>58</sup> The success of this unit should light the way for U.S. Air Force mental health professionals.

***Options for Disposition of Troops***

Therapists working at on-base or off-base 2-E facilities will have a number of choices for disposition

## EXHIBIT 8-2

### OPTIONS FOR DISPOSITION OF TROOPS PRESENTING AT 2-E FACILITIES

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1. Immediate return to duty.
2. Hold for a brief period, perhaps with a meal, rest, and return to duty without having been admitted.
3. Hold overnight, as in (2) without admission. Possible use of a single dose of short-acting benzodiazepine for sedation.
4. Relieve from duty (admit) and treat as indicated for 2–3 days. Use BICEPS principles. Return to duty.
5. Use of (4), with return to limited duty or to less hazardous or less demanding duty. This may be especially useful in the “old sergeant’s syndrome.”
6. Use of (4), with unsatisfactory results and with subsequent evacuation to a 3-E facility.
7. Treatments (1–5), with subsequent return to commander for administrative action, in instances where the problem is due to personality disorder rather than to medical or psychiatric problem.
8. Evaluation and immediate evacuation to the 3-E level when the diagnosis is a true and severe mental disease. This procedure should occur only rarely.
9. Evaluation leads to a diagnosis of probable somatic disorder and the patient is transferred to the appropriate treatment facility.

of troops who come under their care (Exhibit 8-2). Precedent, imagination, and experience suggest the outcomes delineated in the exhibit; others may be developed as the exigencies of the situation dictate.

In the section on care of fliers, the value of a formal ending to a unit’s combat experience has been mentioned. Current literature also underscores the value of a stress debriefing of the entire unit. This is a formal process, and should be undertaken only by trained professionals, preferably not assigned to the unit. It is modeled on the Critical Incident Stress Debriefing,<sup>60</sup> used by many civilian fire and police departments, and similar organizations. This process has been termed the “After-Action Stress Debriefing.”<sup>61</sup>

This process is too involved to be discussed here, but is discussed extensively in Chapter 11, Debriefing Following Combat. Authors who served in the Gulf War have attested to its value, and to the consequences of not having such a program available.<sup>62,63</sup> Medical personnel of many disciplines know of the concept, and the absence of a chance to process their combat experiences will be missed and commented upon.

### Summary

Future wars may replicate past wars in which air crews carried out transportation, bombing, and fighting missions from a relatively safe support base. In this case, little change from prior practices in the care of nonflying personnel is required. In a large-scale engagement, however, modern tactics, reflecting technological advances, call for pressing the battle to support facilities, perhaps through long-range missile or air assaults. In such a situation (eg, the Persian Gulf War) nonflying U.S. Air Force personnel may become combat targets and thus combat stress casualties. Currently, little provision is made for such casualties; however, there is good reason to believe that the traditional principles of U.S. Army combat psychiatry, as described by the “BICEPS” acronym, can be effective in treating and returning to duty the majority of these casualties. Provision of this treatment will require education and training of all personnel and medical and mental health personnel assigned “forward” at first- and second-echelon support installations. As always, good leadership and cohesive units will minimize combat stress casualties.

### CONCLUSION

The author has studied this topic, lectured on it, and discussed it with colleagues since 1979. He has also read historical and current military biographies,

histories, aeromedical reports, and the literature of military medicine and psychiatry. In a most introspective way, he has reexamined his service as a flight

surgeon with the Air Commandos in Vietnam, and would add the following remarks to this chapter.

To begin with, physicians and others thinking about combat must understand that they will have to deal with combat from three points of view. The first of these has already been thoroughly discussed—the care of others. The second of these is that they must also think about caring for themselves. The realities of combat will also reach those trying to ameliorate its effects, often in a most intrusive and distressing way. Those feelings will have to be dealt with. It is vital that mental health providers take care of themselves and their colleagues. And the third point of view is that they must care for their colleagues. This includes being alert for the abuse of alcohol as a solvent for pressures and emotions, and be aware that medics, too, need time off, especially those in the surgical arena, confronted daily with carnage beyond comprehension. Patients, self, and fellow medics: one must be aware of all three.

Commander Sandra Yerke's graphic description of the difficulties encountered in molding a group of strangers into a competent staff on a hospital ship during the Persian Gulf War<sup>64</sup> should be required reading for each medic on active duty. Anyone may deploy at any time, if the circumstances are right, and all must be prepared, always.

Wars tend to be come-as-you-are events, and there will be little time to read up on them once one starts. Field medical units usually do not include libraries, and thus mental health providers most often deploy with only the knowledge they carry in their baggage or in their heads. Base or post libraries usually have very good military sections and the author urges the reading of some books written by medical personnel about their experiences. The thoughtful perusal of a few such books, combined with constructive thinking about what the role of the mental health provider might be in such a situation, may help prepare such personnel in ways that would not otherwise occur to them or to those who train them.

In addition, medical officers and NCOs may well have to exercise command of troops in the combat ambiance, a fact that may never have occurred to them until now. The responsibility for giving orders that may result in the loss of life or limb by those carrying out the orders is not a subject taught in medical school or emphasized in unit training exercises. It is an awesome responsibility, and all medical personnel would do well to learn a bit more about combat leadership than the service usually teaches medics. Military medical officers are accustomed to maintaining currency in their medical literature. It is vital that they maintain currency in the military literature as well. Through long experience, line officers will tend to believe that a medic is a good medic unless proven wrong. They will also tend to believe that a medical officer is not a good officer until the medical officer proves that he is. Medics must be as good at their job as those on the line are at theirs.

Principles of conservation, training, planning, and execution of war plans apply to the medical commander as surely as they do to the line commander.

(T)he physician-soldier must be able to make the hard decisions that are required ... with little time to reflect, depending instead on the education and training that has led him [or her] to a leadership position and the medical intelligence available....The troop commander must be prepared to make decisions that place the lives of those that he is responsible for at risk. So must the physician who commands others in war."<sup>65(p375)</sup>

Finally, and most personally, the author recalls the well-known words of General Robert E. Lee as he viewed the appalling battlefield at Fredericksburg after his victory over General Burnside: "It is well that war is so terrible, else we should become too fond of it." Having spent a year in Vietnam, and having been immersed in the medical literature of war since 1979, the author agrees. His wish and his prayer are that none who read these words may ever have to put into practice the principles of combat psychiatry.

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