Chapter 9

PSYCHIATRIC DISORDERS IN FLYING PERSONNEL

Psychiatric disorders in flying personnel have been recognized since the days of World War I when it became evident that loss of functional efficiency could occur without any physical evidence to account for it. In explaining this phenomenon at first, the physical aspect was emphasized with little attention being given to the psychological factors that could be of etiological importance.

The various factors adversely affecting the flying ability of a person, were summed up under the title "flying stress." Unfortunately, the symptoms attributed to the adverse factors under flying stress acquired the title of "flying stress"—or "aeroneurosis," "aviation neuroasthenia," "flying fatigue," and so forth. This led to the assumption that a clinical entity had arisen that was unique to the flying situation, and that anyone exposed to the latter environment might develop this disease.

It is the opinion of many that "flying stress" can best be defined in terms of the special stresses and strains to which flying personnel are exposed. Whether or not the person succumbs to the stresses depends on many variables—the most important being his personality structure. If by reason of distorted emotional development the person suffers from excessive latent anxiety, then, undoubtedly, his ability to withstand stress will be minimal, both in degree and duration.

STRESS, ENVIRONMENT, AND PERSONALITY

Loss of functional efficiency due to emotional factors can best be understood through comprehensive examination of many different factors impinging on each flier. For convenience, the important variables can be grouped into: a. The *Stress* to which the individual is exposed; b. *Environmental Factors* affecting tolerance to specific stresses; and c. specific *Personality Factors,* including inherent adaptability. Whether or not a person loses functional effectiveness because of failure in emotional adaptation depends in large measure on subtle interaction of factors in these three groups. These factors are closely interrelated in actual situations, but for clarity will be discussed individually here.

Stresses evolve from situations which engender fear, insecurity, frustration, pain, fatigue, or any other tension or discomfort. Some situations represent severe stress for everyone, but no situation has an absolute definite quantitative stress value. Stress has meaning only as related to the person who experiences it. Therefore, one must know not only the nature and degree of stress, but also the specific meaning it may have for the person involved.

The ever-present threat of death and mutilation results in a certain amount of inherent stress even in noncombat flying. The degree of this varies depending on the type of aircraft, jet or conventional—the presence or absence of other crew members—the weather—the type of mission and the nature of the terrain underneath. Flying pay and the increased cost of life insurance for fliers reflect these inherent dangers which are but rarely acknowledged consciously by fliers.

In the combat situation, additional factors are, of course, present. In addition to enemy aggressive and defensive action, such factors as anticipation of missions, casualty rates, length of mission tours, injury and death of crewmembers and friends all affect the quantity and quality of stress. During World War II it was discovered that there was a striking correlation between the number of aircraft

lost and the incidence of emotional disorders. Appreciable anxiety resulted when the casualty rate was high.

Environmental factors are second in importance only to specific personality factors in effecting a person's tolerance of such stresses both in combat and noncombat flying. These environmental factors include such abstract concepts as *morale, leadership, sense of support,* and *group identity.* The direct and powerful impact of these variables on the person's tolerance to stress is often not fully appreciated. Their importance has long been recognized by military leaders, but their significant implications for aeromedical practice have not been fully appreciated until recent times.

Present concepts of human behavior acknowledge the profound and powerful effect of culture and social attitudes and mores on individual behavior. It has been recognized that the social needs of the person are nearly as strong as his personal needs, and in most cases are closely interwoven with them. Thus, when a person is in a unit where his social interactions produce minimal personal anxiety and frustration and maximum gratification and security, his resistance to stress is greatly increased.

Identifying with a group—developing a sense of "belonging" and loyalty—broadens a person's sense of duty beyond himself to include responsibility to the group. Thus, when the group's mission is clear, the person is willing and able to tolerate more personal stress while pursuing the group goal. The strong cultural restriction against expression of destructive, hostile aggression interferes with achievement of military objectives. One of the important cultural functions of the military group is to establish an atmosphere in which aggression towards the enemy is encouraged and rewarded. When this succeeds, the passive person (whose aggression is ordinarily inhibited by guilt) will be more able to express such aggression.

Aggressive action has a secondary advantage in affording relief of tension and anxiety and thus enhancing a person's stress tolerance. Stressful situations which prevent active aggressive action on the part of the individual are likely to result in increased tension and lessened tolerance for stress. Examples of such situations include making a bomb run through flak, sitting through an air raid, or being grounded by weather instead of flying aggressive sorties. Resistance to stress is reduced under these circumstances.

When a person and/or a group feel that others are doing their fair share and that their efforts and sacrifices are recognized and appreciated, a *sense of support* develops. Such subtle factors as having adequate quarters, good food, recreational facilities, and numerous other "fringe benefits" contribute directly to this sense of support.

Effective *leadership* develops group cohesion and helps define both individual and group roles and responsibilities. It is a key factor in the development of group mores, attitudes, goals, and motivation. Sense of support is largely mediated through leaders.

All of these factors contribute to *morale* which refers in general to the degree of willingness of a group to work towards the group goal. Thus, we can see that all of these environmental factors directly affect a person's ability and willingness to tolerate stress and, accordingly, are quite legitimate, necessary medical considerations.

The personality of the individual upon whom all of these foregoing factors are impinging is, of course, of fundamental importance. If his basic personality structure is sound, with minimal underlying conflict and latent anxiety, then his capacity to tolerate stress will be greater. His basic attitudes toward aggression, regimentation, self-sacrifice and devotion to duty will all affect his performance.

Also significant are: his capacity to identify with a group, his ability to get along with other people, his innate sense of responsibility, and his devotion to principles. These determine *motivation* which is the key factor in determining how much stress a person can or will tolerate. Other important personal factors are age and nutrition, fatigue, and the opportunity for aggressive action and

training. The effect of fatigue has been discussed at length in a separate chapter.

By facilitating action, training and education in the use of weapons, in emergency procedures, in self-defense, survival, and escape and evasion tactics, tend to offset the anxiety induced by passivity. Thus, capacity for aggressive action is increased. Education eliminates the doubt and anxiety from unknown and fantasied perils, and replaces it with informed expectation and confidence arising from preplanned offensive and defensive measures.

It can be seen, then, that a wide variety of factors are significant in determining one's resistance to stress and must be considered by the Flight Surgeon if he is to be optimally effective in assisting his fliers in adapting to trying situations. Thus, the role of the Flight Surgeon encompasses not only recognition and treatment of reactions to stress in individual fliers, but also an understanding and analysis of many other factors operating in his unit.

PSYCHIATRIC REACTIONS IN FLYING PERSONNEL

The various psychological reaction types do not differ significantly from those observed in civilian life. They can be described and explained both diagnostically and dynamically by utilizing modern psychiatric terminology and psychopathology. This is particularly true in the early stages of training where the stress is usually minimal.

Despite selection methods, some accepted candidates will show psychological dysfunction in the early stages of their training. Various reaction types are observed, the most common of which are: somatization-reactions including headache, backache, and gastrointestinal dysfunction, anxiety-reactions; conversion-reactions usually related to the special senses (vision and hearing); psychogenic motion sickness; and character and behavior disorders.

Persons whose symptoms occur early during training or without any unusual environmental stresses, will often be found to have immature or passive behavior patterns which have predisposed them to emotional disturbances. They may have embarked on a flying career to prove masculinity or deny a deep-seated need for dependence. In most cases, it will be necessary to recommend removal from training since recurrence of symptoms under future stresses is likely.

REACTIONS TO COMBAT

Under the stress of flying hazardous combat missions, the presence of some degree of apprehension and fear is almost universal. In addition, many people suffer from some of the somatic concomitants of this apprehension. The physiologic effects of anxiety, mediated through the autonomic nervous system, include tachycardia, hyperventilation, nausea or "queasiness," diarrhea, urinary frequency, tremulousness, and "startle." The person so affected may feel restless and irritable, and may have insomnia and anorexia. So common are these symptoms that they can be considered "normal" reactions to combat.

Most people, because of their intrinsic motivation, and the supportive aspects of their group's environment, will be able to tolerate their symptoms and operate effectively despite them. However, occasionally, because of an innate reluctance to continue, one will seek removal from the hazardous situation, and will often justify this on the basis of his physical symptoms. He often will have flown only a few missions and will not have been directly exposed to any unduly stressful experience. Such a person is likely to come to the Flight Surgeon with his mind already made up that grounding or hospitalization is necessary.

Some of these men will be able to continue if the cause and mechanism of the symptoms are explained, and if everything about the manner of the Flight Surgeon indicates his underlying attitude that the person should be able to continue in spite of these normal manifestations of his apprehension. If these superficial measures fail, and the individual must be removed from flying, then this

should be done *on an administrative basis.* Any other course would tend to undermine the resolve of men who do continue to function despite their fear and discomfort.

Another group of men develop symptoms only later in a tour after having flown a number of stressful missions. They recognize their reluctance to continue, but because of underlying, sound motivation and identification with the group they wish to complete their tours. Thus, they respond well to the superficial measures mentioned above. If chronic anxiety and fatigue have resulted in insomnia, weight loss and other physical manifestations, then the individual may be benefited by supportive measures such as sedatives for a few days or a short "rest and recuperation" leave.

These decisions are best made by the unit Flight Surgeon. If a pilot is evacuated to a hospital for decision, then his ties to his unit are broken and a potent motivating force is lost. Further, a distant medical officer does not have the same identification with the group as the local Flight Surgeon, and the former's understandable sympathy for his unhappy patient may result in the loss, through medical channels, of a pilot who could have continued. The unit Flight Surgeon, by virtue of his being a member of the group, is better able to recognize that the too-easy release of each pilot from his responsibilities would ultimately undermine the group as a whole.

It should be mentioned that an unnecessarily "tough" policy will also be detrimental to group morale. When a person has been exposed to prolonged severe hazard and ultimately becomes incapacitated in spite of basic good motivation and a strong desire to continue, then medical disposition may be indicated. In such circumstances, as other fliers can sympathize with the disabled pilot, a policy that seems to them tough and unsympathetic may also cause deterioration in group morale. The decision about medical versus administrative disposition is usually not an easy one, and calls for mature professional judgment on the part of the physician.

FEAR OF FLYING

The term "fear of flying" is applied to the circumstances in which a flier requests removal from flying duty because he suffers from an incapacitating fear of flying. This request is usually the last of a series of attempts to avoid a particular type of flying duty or assignment which is unpleasant. There may be some underlying anxiety associated with such a request for relief from flying duty, but defective motivation rather than psychiatric disease is the dominant feature. It is the Flight Surgeon's responsibility to determine whether psychiatric illness or lack of motivation is interfering with the flier's performance of duty.

Difficult questions commonly arise when a flier develops incapacitating emotional symptoms (*i.e.*, of such a nature as to represent a threat to flying safety) which seem especially related to flying stress. Are the disabling symptoms related to a "genuine" illness which is interfering with the effectiveness of a conscientious, responsible person who is struggling to overcome his difficulty? Or, is he a poorly motivated, less responsible person who finds the hoped for secondary gain (removal from stress) too appealing to resist by suppressing his uncomfortable symptoms?

To reward symptoms secondary to poor motivation with medical grounding is, of course, grossly unfair to the rest of the group who may be flying with equal or even greater anxiety and discomfort. On the other hand, to "punish" a sincere, devoted flier who has actually had more than he can take is also grossly unfair to both him and the group. In either case, group morale and motivation are likely to be adversely affected.

As was pointed out earlier, one's stress tolerance varies and is dependent on many factors, among which are group pressures and attitudes. Social disapproval of the man may follow voluntary removal from flying status.

Being on flying status, especially at great personal risk and sacrifice, has high prestige value. Such cultural attitudes must not in-

fluence medical judgment and confound an already difficult situation. Nowhere is the skill and clinical judgment of the Flight Surgeon more taxed than in this area. Obviously, evaluation of many cases in this group will be difficult, as considerable subjective judgment is necessary to determine how much "is enough" and what satisfactory motivation is.

It should be noted that the presence of emotional symptoms is not necessarily evidence of psychiatric disease but can be and often is a reflection of faulty motivation. Fair and reasonable handling of the individual case must be based on careful appraisal of the stresses, environmental factors, and motivational or personality factors which have contributed to symptom formation.

Handling must be not only in terms of what is best for the person, but also in terms of what disposition will most favorably affect successful accomplishment of the group's mission. The nature of the military mission is such that we must recognize the persistent appearance of emotional reactions in response to flying duty as evidence of poor motivation for flying rather than as the emotional illnesses which they strongly resemble. In practice, the person's needs and the needs of the group are usually quite compatible. This is in part a result of the fact that allowing the poorly motivated person an easy exit from flying duties through medical channels may cause him to have chronic feelings of failure, guilt, and anxiety. Firm but supportive handling often results in early return to flying duties—an outcome which is optimal both for him and group.

PSYCHIATRIC ASPECTS OF MISSILE OPERATIONS

In missile operations, the relative influence of stress and environmental factors upon the individual is somewhat different from that in the flying situation. Stresses that do exist, such as the hazards of explosion, noxious fumes, and accidents, are, in general, less acute and anxiety-producing. Chronic combat tensions, obviously, are unlikely. Environmental factors, on the other hand, are of much greater significance. Remote locations, small stations with few personnel, limited recreational facilities, insufficient and possibly substandard housing are all important variables.

The strategy of deterrence depends upon the awesome destructive potential of our missiles. Should we have to launch them, then our strategy has failed. Ability to operate the weapon system with very short warning is essential for the success of this strategy. The constant vigilance which is necessary demands alert, keyed-up people.

Maintaining such a frame of mind is difficult enough in a hot war where use of the weapon system is imminent. It is a prodigious task to overcome complacency and establish an alert attitude in the cold war situation where the weapon system has failed in its mission if it has to be operated. These factors—remote location, cold war, and lack of opportunity to operate the system—all tend to render an individual more susceptible to impaired efficiency from emotional symptoms.

Furthermore, it has been shown that from 25% to 40% of all missile failures are caused by human error. A sizeable proportion of these errors is due to impaired efficiency from underlying emotional tensions. Momentary lapses of attention, simple mistakes, slipshod and careless work can often be directly traced to emotional pressures.

Thus, counteractive measures as great or greater than those expended in the combat flying situation are needed to insure against significant decrements in operational effectiveness. The Flight Surgeon's efforts should be directed toward both initial elimination and continual screening out of those whose presence is detrimental to the group or may be a threat to security. He should work with command in identifying morale-reducing factors and faulty leadership. He can recommend and show the need for improved living, recreational and transportation facilities.

As much medical judgment is needed here as is required in the combat situation to

decide who should be transferred from a remote site. Extreme attitudes—too lenient or too strict—can have a detrimental reaction on the effectiveness of the unit. Thus, the local Flight Surgeon, as in the past, is in the best position to evaluate the individual case and arrange its disposition. This action is not only fair to the person and the group, but maintains group effectiveness at the highest possible level.

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