

# Flight Discipline

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# 5

## Organizational issues for flight discipline

by Ron Westrum and Tony Kern

*There are no bad regiments—only bad colonels.*

### **Napoleon**

Ninety-five percent of all aviators fly as part of some organization. In many cases, this is as part of a professional relationship—where crewmembers fly for pay as in the military or commercial airlines. In other cases, it is part of an enthusiasts' or social organization, such as the Aircraft Owners and Pilots Association (AOPA) or a local chapter of a glider club. The relationships between the organization and the individual are unique in many ways depending on the nature of the flying or the organization. But there are also many constants, and these constants can and do have a dramatic effect on the discipline of the individuals within them.

Organizational factors impacting upon discipline have been the focus of a great deal of research in recent years. Ron Westrum, a professor of sociology and interdisciplinary technology at Eastern Michigan University discusses several current concerns for organizations in the following pages.

### **Organizational impacts**

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Organizational factors are the macro forces that affect safety—including aircrew discipline—in an aviation organization. Every cockpit, flight deck, maintenance hangar, dispatch office, and control tower is a microcosm. In this microcosm, action is shaped by

the immediate decision making of those present: pilots, dispatcher, shift supervisor, etc. Yet the makeup of the microcosm is shaped by decisions made elsewhere in the organization. The decision makers—remote in time, space, or organizational linkages—set the stage. These decision makers put the actors in place and choose the props they will use for their performance.

For instance, decisions about the selection of personnel, including who sits at the controls of an aircraft, are often made in the executive suite. The type and condition of equipment in use also reflect an executive decision. Software or manuals chosen for use in operations or in training, operating rules for crew, the way errors are dealt with, and the level of communication between departments are all matters that reflect decisions made and conditions created by management.

These are organizational factors because they pertain to the organization, not just to a single crew or station in the organization. They reflect executive decisions because people at the executive level decide what trade-offs to make between safety and efficiency, investment and fluidity, buying new equipment and repairing the old, etc. These decisions, often made far from the scene of action, set the stage for what happens at the operational level. In the past, human factors studies have concentrated on the interactions between human and machine. In more recent times, studies have examined the interactions of the crewmembers. Yet the arenas in which piloting, maintenance, dispatch, or air traffic control take place are shaped by managerial decisions. The choices of people, equipment, and policies shape events. We therefore need to look at what management does, and why.

## **Climate versus culture**

When we talk about the climate of the whole organization, we use the phrase “organizational culture.” The word “culture” calls up images of a miniature social system, with its own rules and codes. We think of an organizational culture as slowly changing over time, reflecting growth, experience, and struggles. When an organization has been able to mature over a long period of time, this set way of doing things shapes all kinds of decisions. But not all aviation organizations have a culture in this sense. This model of slow growth and distillation of tradition seems poorly suited for the active world of today’s flying organizations. Rapid growth, company mergers, changing leadership, military downsizing, and fierce competition have powerful effects on organizations that “culture” does not capture.



Culture reflects the established policies and values. But even new organizations have a climate—that is, each person in the system senses the corporation's overall values and norms. These values and norms are communicated by the choices it makes—the choice of people, the choice of organizational goals, the willingness to invest in training, etc. These highly visible choices communicate what is expected and valued, and what actions or accomplishments are likely to be rewarded. This can, and often does, have a large impact on pilot discipline. To a lesser extent, advertising and public relations also provide messages about a company, but for employees these messages are always compared to the day-to-day realities. The organization may carefully orchestrate its external image; within the organization itself, however, it is the key choices management makes that signal its priorities, and aviators are quick to take note.

A good example of the role of personnel actions in shaping corporate culture is a recent incident at a major U.S. carrier which decided to ground one of its captains after the pilot was involved in a dispute with another crewmember. The pilot was suspended from duty because the cockpit incident in which he was involved belonged to a larger pattern of aggressive behavior both at work and at home. He was described by the chief psychiatrist of the U.S. Federal Aviation Administration (FAA) as “stubborn, pompous, self-centered, domineering, belligerent, and aggressively intimidating,” but not unfit to fly. On the advice of a medical consultant, the airline suspended the pilot. No doubt in an earlier era the captain, who sued the air carrier, would have received his certificate back without delay. But in this age of crew resource management (CRM) the airline would have put its own training programs at risk if it had not fought to have him removed. Actions taken in relation to such behavior send strong messages about what is acceptable and what is not. Organizations that permit or encourage the kind of aggressive behavior that eventually got this pilot's license suspended would have no credibility, when trying to foster crew resource management or enforce strict standards of flight discipline.

Tolerating poor flight discipline or unsafe behavior can result in serious organizational problems. An extreme example of such problems led to tragedy at Fairchild Air Force Base in the United States when a B-52 crashed while its pilot attempted unauthorized maneuvers during a practice session for an air show (see Chapter 2). The pilot, who was much liked by his superiors, had a long record of taking dangerous risks. Eight commanders had failed to take action against him. The loss of the aircraft and its crew was only the last, fatal step in a

long series of extremely poor discipline by this pilot; the real failure was that he had been allowed, through his risky actions, to do things that should not have been tried and to create a culture that was not conducive to good airmanship.

### Shaping a climate

Selection of personnel for key positions is only one of the ways in which top management shapes an organizational climate. By a constant succession of actions, management creates the atmosphere in which members of the organization operate. One useful indicator of the overall climate is the way that information is handled in the organization. It might be useful to suggest a range of climates, using information flow as the indicator. One such range is the pathological, bureaucratic, and generative scheme, shown in Figure 5-1.

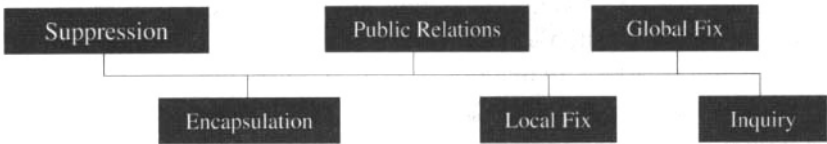
Professor James Reason has suggested that latent pathogens—unseen, unsafe conditions—tend to build up within an organization before an accident. Obviously information flow is the means by which such conditions are spotted and acted upon. When information flow is brisk (as in a generative organization) the latent pathogen is quickly spotted and remedied. In a pathological climate, however, it is the person who spots the pathogen who is suppressed, and the problem is not resolved. In fact, we might go further and characterize organizations according to how they respond to anomalous conditions. In Figure 5-2 we see a spectrum of responses to anomalies.

On the left, we see denial responses. Those who spot latent pathogens are suppressed or isolated, unable to do anything (e.g., a high-level safety investigator who completes a confidential report showing many safety lapses is suddenly transferred to another, less politically sensitive post). In the middle of the spectrum, we see the more typical repair responses: the immediate problem is explained away or remedied, but no deeper inquiry is undertaken. This kind of “quick fix” often seems to take place when problems are first spotted, but where there has been no disaster to provide public awareness and compel action. Unhappily, a serious accident may be required to get some problems addressed. Only then are the more thorough reform solutions on the right brought into play.

“Global fixes” are often used in the aviation community to correct a problem that is common to all units of a certain aircraft type. These often take the form of airworthiness directives or in the military, new “flight crew information files” (FCIF) or Operating Instructions (OI).

<b>Pathological</b>	<b>Bureaucratic</b>	<b>Generative</b>
Information is hidden	Information may be ignored	Information is actively sought
Messengers are "shot" Responsibilities are shirked	Messengers are tolerated Responsibility is compartmentalized	Messengers are trained Responsibilities are shared
Bridging is discouraged	Bridging is allowed but discouraged	Bridging is rewarded
Failure is covered up	Organization is just and merciful	Failure causes inquiry
New ideas are crushed	New ideas create problems	New ideas are welcomed

5-1 *How organizations respond to information concerning safety (Westrum 1996).*



5-2 *Responses to an anomaly. Organizations can respond with a wide variety of tactics to news of an anomaly, from pathological actions to generative responses which actively seek information.*

“Inquiry” takes place in those rare organizational climates where a leader decides to correct not only the immediate problem, but to attack underlying conditions as well. This happened at United Airlines following an accident in Portland in 1978, in which a Douglas DC8 ran out of fuel while the pilots circled the airport after an indicator light malfunctioned, attempting to determine whether the landing gear was down and locked. Investigation found that poor training and crew coordination was at fault, and a follow-up survey of pilots showed that there was a widespread problem that needed correction. United Airlines proceeded to develop one of the first CRM programs, its “command, leadership, and resource management” program. This thoughtful response to an underlying problem is typical of generative organizations.

In his investigation of the Dryden, Ontario, accident of 1989, Canadian Chief Justice Virgil P. Moshansky helped bring about an understanding of the accident’s organizational causes.

In spite of pressure to limit his inquiry, Chief Justice Moshansky insisted on examining the background of the accident. He was able to show that the pilots and dispatchers were only the last links in a chain of unsafe practices.

Just as the corporate climate is shaped by day-to-day actions, it is also shaped by major organizational changes. As the organization grows and changes—or downsizes and changes, as is often the case in the government sector—the rapid change stresses the organizational leadership. In this situation problems can occur even when management tries to foster a positive climate. Rapid change causes managers to be overloaded with responsibilities, and these overloads can have fatal results.

### **Chaos and confusion**

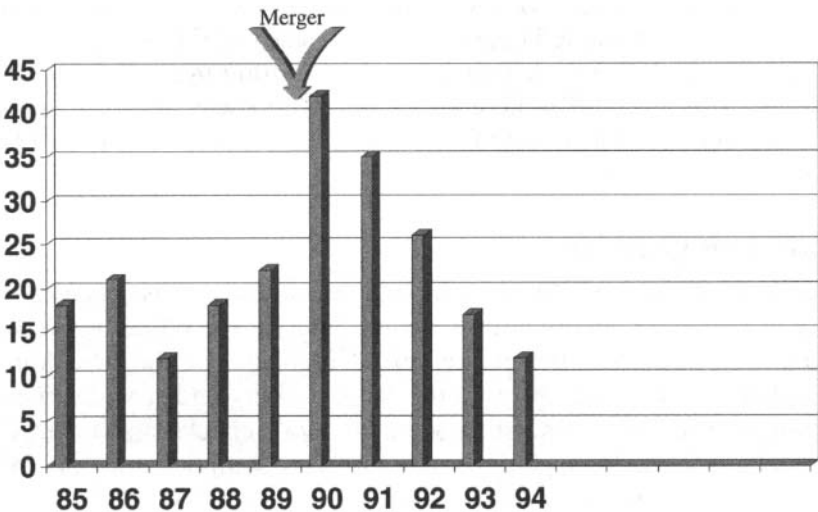
A changing organization is an organization at risk. Change increases mental workload. Psychologists talk about the mental workload of pilots as critical to situational awareness and flight discipline, but the mental workload of managers is just as important. Rapid change overloads the mind and clogs the desk of the busy commander or executive. As an aviation operation grows or shrinks, several things happen. New operations may be opened up or merged with the existing operations. Rules change as one organization comes under the control of another. Managers change positions and are forced to learn a large number of new things. Some of this workload—never enough—is passed on to their subordinates, many of whom are also new. Keeping track of events becomes more difficult. A manager can have dual responsibilities, for instance, when in transition to a new job, and often may tend to apply old skills to the new position. This overload provides for highly stressed and tired managers and the consequences may be serious, even deadly. Key issues may be deferred, forgotten, or misplaced. Some tasks may be placed in limbo as others force immediate attention. But the tasks put on hold may need immediate attention, too.

Mergers and rapid growth often cause such overloading. As two groups of personnel—often with different training—are merged, conflicts of tradition take place. Which set of standards become the new ones for the merged organization? Whose aircraft manuals take precedence? These factors may have played a major part in the Dryden accident mentioned above. The airline involved had just gone through a merger that had had several consequences—a labor strike, management turnover, and many staff departures—and it left the company with too many responsibilities covered by too few people. The organization was stretching its capabilities to the limit, and events pushed it over the limit. With ice on its wings, a Fokker F28 attempted takeoff, crashing into the trees just beyond the runway.

Pilot error? Certainly, but behind that error were management conditions that had set the stage for the fatal events.

Another example worth studying is what happened after U.S. Air acquired Pacific Southwest Airlines and Piedmont Airlines, and merged them into a single carrier. According to figures published by *The New York Times* (see Figure 5-3), pilot deviations (actions which might violate regulations) for the merged airline were high, and only gradually decreased as integration proceeded over the next five years.

Even without a merger, rapid growth can cause severe stress. Consider U.S. based ValuJet. When new aircraft were added to its fleet, often of different types, it placed a major stress on the system. This temporary stress was an opportunity for incidents to occur. Many problems went unfixed while the organization worked to absorb the additional equipment and personnel. Aircraft flew with unrectified engine problems, badly rigged safety equipment, and hydraulic system leaks. Undertrained mechanics failed to complete repairs or to do them properly. Only after Flight 592 crashed into the Florida Everglades was the airline compelled to correct many of its serious problems.



**5-3** *Pilot deviations at U.S. Air. Organizational upheaval has a dramatic impact on individual performance, as illustrated here. Pilot deviations rose sharply after a corporate merger but recovered to premerger levels after pilots acclimated themselves to the new order.*