U.S. Department of Transportation
Federal Aviation Administration

Advisory Circular

Subject: COMMUNICATION AND COORDINATION BETWEEN FLIGHT CREWMEMBERS AND FLIGHT ATTENDANTS

Date: 7/13/88 **Initiated by:** AFS-220

AC No: 120-48 **Change:**

1. PURPOSE. This advisory circular presents information on common problems associated with crew coordination between flight crewmembers and flight attendants and how these problems can be avoided.

2. RELATED FEDERAL AVIATION REGULATIONS (FAR) SECTIONS. 1.1, 91.3, 121.131, 121.133, 121.135, 121.397, 121.417, 121.421, 121.533, 121.542, 125.269, 125.289, 135.100, 135.123.

3. BACKGROUND. Research on cockpit and cabin crew coordination was conducted in response to the requirements set forth by the Federal Aviation Administration (FAA). The purpose of this research was to review problems that have arisen with crew communication and coordination, to determine the extent to which the current status of crew coordination could be improved, and to generate specific recommendations for training and standard operating procedures to help ensure that flight crewmembers and flight attendants work together effectively. The report on which this advisory circular is based, "Cockpit and Cabin Crew Coordination," is available through the National Technical Information Service, Springfield, Virginia 22161.

4. DISCUSSION. In certain circumstances it is important for flight crewmembers and flight attendants to act as one cohesive crew, even though they are trained, scheduled, and generally regarded as two, independent crews. When it is necessary to act as one crew, the activities of the cockpit and cabin should be coordinated. One of the prerequisites for crew coordination is effective communication between all crewmembers. In a 1986 survey of pilot safety representatives and flight attendants, only 37% of the flight attendants and 60% of the pilots said that they thought that communication between the cockpit and cabin is adequate. The key to improving coordination between flight crewmembers and flight attendants lies not only in improving communications between crewmembers, but also in increasing flight crewmember awareness of flight attendant duties and concerns, and in increasing flight attendant awareness of flight crewmember duties and concerns. Seventeen percent of the flight attendants and 12% of the pilots surveyed said that their training did not cover each other's duties during emergencies; 51% of the flight attendants and 24% of the pilots said they did not cover each other's duties before takeoff and landing. During normal operations, it is important that each crewmember be familiar with the duties of the other crewmembers at every stage of the flight so that they can be sensitive to the other's level of workload. Such

knowledge helps to avoid miscommunication, unrealistic expectations, and inappropriate requests of other crewmembers. During emergencies, each crewmember should know exactly what to expect from the other crewmembers so they can work together effectively.

5. COCKPIT-TO-CABIN COMMUNICATION.

a. Takeoff and Landing. It is vitally important that flight attendants are given adequate time to prepare the cabin and themselves for takeoff and landing, especially since most accidents occur during these critical phases of flight. Even when flight attendants are informed that takeoff is imminent, problems can arise that result in flight attendants not being properly seated for takeoff, particularly with unusually short taxi times. Similar problems arise when flight attendants do not have adequate time to prepare the cabin for landing and take their jumpseats. The potential for problems is heightened when meal or beverage service is offered on very short flights (30 minutes or less). The most effective remedy for these problems is to have a flight attendant inform the captain, either by interphone or signal, that the cabin is secured for takeoff or landing. This procedure was regarded as important by 96% of the pilots and 91% of the flight attendants surveyed.

b. Turbulence. It is important that flight attendants receive timely notification of turbulence from the flightcrew. Flight crewmembers generally warn flight attendants of anticipated turbulence so that lack of such notice is not a common problem. However, it is one that can result in severe injury, particularly to flight attendants, since the majority of the serious injuries that occur as a result of turbulence are incurred by flight attendants. A member of the flightcrew should inform the flight attendants of anticipated turbulence prior to the flight, since notification en route may come too late to prevent injury. This is best accomplished by discussing en route weather in a flight crewmember/flight attendant preflight briefing. While airlines consider this practice to be standard operating procedure, it is not always done. Only 56% of the flight attendants surveyed said that en route weather is typically covered in a captain/flight attendant briefing. (However, 84% of the pilots surveyed reported covering it.) During the flight, flight attendants need to be informed of the immediacy and severity of unexpected turbulence so that they may determine whether to secure the cabin or to be seated immediately. On large turbojet airplanes, turbulence experienced in the flight deck may be much less than that experienced in the cabin. So, in some cases, flight attendants should advise the flightcrew about the severity of turbulence so that the seatbelt sign can be illuminated.

c. Emergencies. The most common examples of problems in communication during emergencies involve the flight crewmembers not informing the flight attendants of the nature of the emergency, the time available to prepare the cabin, and the necessary special instructions (e.g., to use only one side of the aircraft in the evacuation). This problem has arisen several times, despite instructions in flight manuals to relay such information to the flight attendants. The quality and timing of the information given to the

flight attendants is extremely important in an emergency. Communications from the flightcrew should be clear, precise, and instructional. A vague description of the situation without specific instructions may be misinterpreted and result in valuable time being misspent. The timing of the information transfer is as important as the quality of the information. For example, when an aircraft will be landing without a functional nose gear and the captain decides to prepare for an emergency evacuation and to move passengers to the rear of the airplane, the flight attendants should be informed of the decision to move passengers at the same time that they are informed of the emergency so that they are aware of all the conditions before they select and instruct passengers to assist them in the evacuation. Also, in any emergency or unusual situation, it is important that the flight attendants be informed before the passengers, so that they have time to prepare.

6. CABIN-TO-COCKPIT COMMUNICATIONS. Just as with cockpit-to-cabin communications, the timing and quality of the cabin-to-cockpit communications are critical. When flight attendants convey information to the flightcrew, the information should be timely and specific. The most common problems with cabin-to-cockpit communications can be divided into two categories: the failure of the flight attendants to convey important safety-related information to the flight crewmembers and inappropriate requests for information by flight attendants (i.e., breaking the "sterile cockpit" rule for reasons unrelated to safety). Both of these types of communication problems are related to the "sterile cockpit" issue. There are two major problems associated with flight attendant observance of sterile cockpit procedures; sterile cockpit time and sterile cockpit meaning.

a. Sterile Cockpit Time. It is difficult for the flight attendants to judge when sterile cockpit procedures are in effect. Flight attendants have no way of knowing when the aircraft is at 10,000 feet, unless they are told or signaled in some way. Some airlines have advocated the 10-minute rule, i.e., sterile cockpit procedures should be in effect for 10 minutes after takeoff and 10 minutes before landing. However, it is very difficult to estimate a time interval before an event.

b. Sterile Cockpit Meaning. Many flight attendants do not have a clear understanding of what "sterile cockpit" means. Eighty percent of the pilots and 86% of the flight attendants surveyed said this concept needs to be clarified for flight attendants. That is, flight attendants need to be given specific information about the purpose and meaning of the regulation and what type of information merits contacting flight crewmembers during the sterile period. There have been many instances of flight attendants going into the cockpit to request passenger information (e.g., on connections) or for other reasons not related to safety when sterile cockpit procedures were in effect. Such interruptions can distract flight crewmembers and have a detrimental effect on their performance. However, hesitancy or reluctance on the part of a flight attendant to contact the flight crewmembers with important safety information because of a misconception of the sterile cockpit rule is potentially even more serious

than the unnecessary distraction caused by needless violations of the sterile cockpit. Flight attendants have failed to communicate to flight crewmembers important information concerning, e.g., fire in a galley trash container, a loud noise with vibration, and changes in cabin pressure for fear of violating sterile cockpit procedures. Flight attendants should be aware that it is always important they report unusual noises and abnormal situations to flight crewmembers as soon as possible and be specific in their report.

7. EMERGENCY PROCEDURES. Training is widely regarded as the most effective means of improving crew coordination. Statements in manuals, without the appropriate training, may not lead to the proper response in an emergency. Training for good crew coordination should include instructing flight crewmembers and flight attendants on each other's emergency procedures, codes, signals, and safety-related duties. In an emergency, it is imperative that each crewmember interpret emergency signals and codes in the same way. For example, code words or signals for hijacking or evacuation are useless unless each crewmember is aware of their meaning. Furthermore, emergency procedures for flight crewmembers and flight attendants should be compatible. For example, if flight attendants are taught that the second officer will occupy a cabin seat in preparation for a ditching in a certain aircraft, then flight crewmembers should be informed of this in their training. When manuals for flight crewmembers and flight attendants are written and revised independently, they should be cross-checked for consistency. Training administrators should ensure that the emergency procedures and other safety-related information presented to flight crewmembers is compatible with the information presented to the flight attendants. In any emergency, the flight attendants should know the nature of the emergency, the time available to prepare the cabin, what the bracing signal will be, and if there are any special instructions. When possible, the flightcrew should be ready to give the flight attendants this information in a timely manner. A well-orchestrated preparation for an emergency evacuation, or the handling of any other emergency, requires stressing the appropriate procedures in training for all crewmembers so that they act as a well-coordinated crew.

8. NORMAL OPERATIONS.

a. Coordination between flight crewmembers and flight attendants during normal operations also requires appropriate training. Crewmembers should be instructed on each other's safety-related duties and workload during preflight, takeoff, cruise, and landing. Such training helps to avoid miscommunication, unrealistic expectations and inappropriate requests of other crewmembers. Additionally, training should stress the types and quality of information that one crewmember expects from another. This is best accomplished by either having flight crewmembers and flight attendants in classes together or by having the same instructors teach flight crewmembers and flight attendants. The training material may also be covered by a flight attendant instructor participating in flight crewmember training and a representative of the flightcrew (e.g., instructor or check airman) participating in flight attendant training. A videotaped or slide presentation on each crewmember's duties can also be extremely effective, as well as cost effective, when presented by an instructor and discussed.

b. Cockpit resource management programs present an ideal opportunity to cover communication and crew coordination between flight crewmembers and flight attendants during flight training. However, training for flight deck/cabin communication should not be limited to captains, as cockpit resource management programs often are. First and second officers often handle all of the communications with the flight attendants. In fact, second officers usually act as the communication link between the flight deck and the cabin.

c. Flight attendants should receive special instruction regarding "sterile cockpit" procedures so that they neither naively violate them nor hesitate to communicate relevant information to the flightcrew. They should be given a clear, operational definition of the regulation and instructed as to when, and with what information, to contact the flightcrew. Flight attendants are typically instructed that they should not contact the flightcrew with information unless it is "safety-related." This directive alone leaves much room for interpretation. While it would be impossible to describe the kinds of information that should be relayed to the flightcrew, perhaps it would be helpful to give a few examples in training. The quality of the decisions (as to whether or not to contact the flightcrew) made by the flight attendants will be directly related to the information they received in training. The clearer the flight attendant's understanding of sterile cockpit procedures and flight operations, the better these decisions will be.

9. PRACTICES AND PROCEDURES. There are many simple practices that can help to enhance the working relationship between flight attendants and flight crewmembers and which may be used to foster an atmosphere that is conducive to good communication. These practices include: respectful introductions, displays of common courtesy, announcements from the flight deck during delays to keep flight attendants and passengers informed, and the captain being supportive of flight attendants when problems arise in the cabin (e.g., a disorderly passenger). Perhaps the single most important procedure for setting the stage for good coordination between flight crewmembers and flight attendants on any flight is the flight deck/cabin (or captain/flight attendant) preflight briefing.

a. Cockpit/Cabin Preflight Briefing. A good flight deck/cabin preflight briefing gives the flight attendants the names of the flight crewmembers, the in-flight weather, the estimated flight time, and any unusual circumstances expected during the flight. Other topics can also be covered such as flight deck entry procedures, a review of emergency communication procedures, details of the meal service, or any topic that any crewmember considers to be important. The briefing should allow crewmembers to solicit information from each other and to bring to the attention of the other crewmembers any information that they believe to be relevant.

b. Other Recommended Practices. Most of the recommended procedures are stated as company policy for many airlines. This indicates a need for these

practices to be stressed during crewmember training as procedures to be followed on every flight. In addition to a flight deck/cabin preflight briefing, the following practices are highly recommended for optimizing crew coordination:

(1) Warnings from the flight crewmembers to the flight attendants when the time between taxi and takeoff will be shorter than expected and when arrival time will be sooner than expected to give the flight attendants an indication of the time available to prepare the cabin for takeoff and landing;

(2) Notification to the flight crewmembers from the flight attendants when all pre-takeoff and pre-landing duties have been completed and the cabin is secured;

(3) Pre-takeoff and pre-landing signals or announcements from the flight crewmembers to allow sufficient time for the flight attendants to be seated;

(4) Use of public address system to alert flight attendants and passengers of anticipated in-flight turbulence;

(5) Notification to flight attendants when turbulence is severe enough to cease in-flight meal and beverage service and/or be seated with their restraints fastened, and when it is safe for them to resume their duties; and

(6) Notification to flight attendants when "sterile cockpit" procedures are in effect. A good signal for this is an indicator light above the cockpit door or on the annunciator panel that has a duration as long as the sterile cockpit interval (as opposed to discrete tone or announcement that could be missed) and cannot be confused with another signal.

D.C. Beaudette
Acting Director of Flight Standards