Leadership / Followership
Recurrent Training

Student Manual

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PARTICIPANTS AND ACKNOWLEDGMENTS

INTRODUCTION

This project was supported by the Office of the Chief Scientific and Technical Advisor to the Federal Aviation Administration for Human Factors. The purpose is to provide practical application of the research conducted relating to identification of leadership and followership skills that are used in Crew Resource Management. The products of this project include

- Two manuals—one for the student that provides basic precepts of leadership and followership in the context of the cockpit and an instructor manual that provides tools for classroom instruction and facilitation

- A videotape comprised of three video vignettes, each with three to four outcomes

- A leadership/followership web site that includes these materials plus links to other sites relating to leadership and followership

- A CD-ROM that includes the manuals and video.

These products are designed to support a three-hour block of recurrent training conducted at the awareness level. Skills development training integrated into the Advanced Qualification Program (AQP) will be part of a follow-on project.

Although we have attempted to provide a comprehensive package it is intentionally generic in nature. You will need to customize elements that are unique to your airline. For example you may wish to determine if your company has a policy statement regarding the scope of crew member's authority—do you need one and/or is it appropriate? Guidance on how to prepare your own company policy is provided on page 5 of the this manual. Another area that would be helpful in customizing your curriculum is to compare your company policies and operating norms to the FARs relating to crew member duties and responsibilities. A table provided on page 7 of this manual is for that purpose. In addition, your company may have developed a list of skills and/or behaviors relating to leadership and followership that are specific to your environment. You may want to relate your skills to those described in the manuals. The material contained herein is not provided as a definitive answer to leadership/followership training with the intent of replacing your existing skill sets but rather to provide information and a framework for adaptation. Procedures for relating your carrier's skills to those described in the manuals are provided on page 25 of this manual.

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Leadership and learning are indispensable to each other.

John F. Kennedy

In the best circumstances almost anyone can lead;
in the worst circumstances only the best leaders emerge.
The same is true for followership.

U. S. Air Force Academy, *Subordinate-Leader Training*

To live in a quantum world . . . we will need to change what we do.
We will need to stop describing tasks and instead facilitate process.
We will need to become savvy about building relationships,
how to nurture growing, evolving things.
All of us will need better skills in listening, communicating, and facilitating groups,
because these are the talents that build strong relationships.

Margaret Wheatley, *Leadership and the New Science* (1992)

But of a good leader, who talks little,
When his work is done, his aim fulfilled,
They will all say, "We did this ourselves."

Lao Tzu

Leadership is a dialogue, not a monologue.

James Kouzes and Barry Posner, *The Leadership Challenge*,
1995

Question authority, but raise your hand first.
Bob Thaves

Good pilots learn from experience—unfortunately, so do bad pilots.
Anonymous

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GETTING THE GREATEST BENEFIT FROM THIS TRAINING

How to get the Greatest Benefit from this Training
1. Look with "new eyes" and listen with "new ears."
2. Participate fully in the training.
3. Do all the exercises.
4. Ask questions.
5. Practice and apply what you learn.
6. Conduct continuous self-critiques of your operational performance.

LEARNING OBJECTIVES FOR RECURRENT CRM TRAINING

At the completion of this block of instruction the student should:

1. Understand the regulatory environment influencing authority and leadership.

2. Understand the corporate philosophy pertaining to authority.

3. Know the relationship between leadership and authority as part of a larger system.

4. Know the impact of Captain's performance on overall crew effectiveness.

5. Understand the importance of setting the structure and setting the climate for efficient and effective flight operations.

6. Be able to select appropriate leadership behaviors for a given situation.

7. Understand the use of supporting behaviors for leadership and authority skills.

8. Understand the skills needed for effective cockpit leadership and followership.

9. Understand the need to clarify roles and expectations for followers.

DEFINITIONS

Adaptability: Adjusts to changing environments, ambiguity, and abnormal situations

Attribute: Attributes can be stable personality traits (e.g., emotional stability, surgency, openness, conscientiousness, and agreeableness) or variable dispositions such as motivation, values, and attitudes.

Authority: Potential to influence or command thought, opinion, or behavior of others. The effectiveness of that authority is influences by peers' and coworkers' respect for that authority.

Authority and responsibility of the PIC: The pilot of the aircraft is directly responsible for, and the final authority as to, the operation of that aircraft. (FAR91.3)

Envisioning: An individual's ability to create and articulate a picture of the future or a desired state.

Followership: An individual's ability to contribute to task and goal accomplishment through supportive technical, interpersonal, and cognitive skills. Followership is not a challenge to the captain's authority, but neither is it unthinking compliance with directives. Good followership is proactive without diminishing the authority of the captain.

Influence: An individual's ability to obtain commitment from others to ideas or actions using effective interpersonal skills, styles and methods.

Initiative: An individual's ability to begin an action, without external direction, to overcome a perceived deficiency.

KSAs: Knowledge, skills and attributes.

Leadership: A general systemic and relational process that emphasizes the ability to exercise skill in the movement toward goal attainment. From this perspective, leadership is proactive rather than reactive, and necessarily takes into account other members of the group.

Modeling: An individual's ability to exhibit behavior consistent with the industry's highest technical and ethical standards.

Operational Control: The exercise of authority over initiating, conducting or terminating a flight. (FAR 1.1)

Power: Possession of control, authority or influence over others.

Receptiveness: An individual's ability to encourage, pay attention to, and convey understanding of another's ideas, comments or questions.

Responsibility: The quality or state of being accountable for ones actions or obligations.

Skill: A skill is a developed ability, aptitude or knowledge used effectively and readily in the execution or performance of tasks. A skill is practiced by using certain items of knowledge stored in the mind and can be developed--or improved--with experience or practice.

Task: A task is a coherent set of activities (steps, operations or behavior elements) that leads to a measurable end result (Romiszowski 1984, p. 85).

CORPORATE POLICY ON AUTHORITY

An important element of leadership is the authority vested in the crew by the FAA and the company. Most pilots are very interested in the extent of their authority. Any discussion of leadership and followership is likely to raise questions about the carrier's corporate policy. For this reason, the following activities might be useful in order to prepare instructors to effectively address these questions.

It is recommended that an examination of corporate policy by managers and instructor pilots be conducted prior to presenting the following matrix in class. The matrix should be used as an instructional tool to promote discussion rather than having students fill in the blanks.

1.   Determine if your carrier has a written corporate policy. If so, you might want to include the policy in this handbook and review it in terms of the following items:

- Is the policy adequately articulated?
- How is the policy conveyed?
- Does the policy support or inhibit your actions?
- Where or when does the Captain's authority start?
- What are the Captain's and First Officer's roles?

2.   If your carrier does not have a written policy, this might be a good time to prepare one. Listed below are examples of issues you might wish to address in your policy:

- When does captain's authority begin (e.g., when the last cabin door closes prior to departure)
- Captain and first officer responsibilities if captain's authority is not in effect
- Captain's responsibilities in terms of ground crew, cabin crew, other flight deck crew, passengers
- First officer's responsibilities relative to captain's responsibilities
- Second officer responsibilities relative to captain's responsibilities
- Flight attendant's responsibilities relative to captain's responsibilities
- Extent of carrier support for captain's (and other crew member) decisions

3.   Review your carrier's documents and appropriate FAA documents in order to identify possible inconsistencies concerning crew authority. These documents should include:

- Operations manual
- Flight standards manual
- Quick reference handbook
- Flight attendant's manual
- Dispatcher's manual
- FARs

You may be surprised to find important inconsistencies in these documents. If so, your pilots may have discovered them as well. It may be useful to point out these discrepancies in your training course and to address questions that arise. The following page provides a template form that you can use to accomplish this activity.

FARs and Your Airline Policy

Pilot in Command

FARs	Your Flight Operations Handbook
1.1 General definitions "Operational control", with respect to a flight, means the exercise of authority over initiating, conducting or terminating a flight. "Pilot in command" means the pilot responsible for the operation and safety of an aircraft during flight time. "Second in Command" means a pilot who is designated to be second in command of an aircraft during flight time. 91.3 **Responsibility and Authority of the Pilot in Command** (a) The pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft.	
121.533 Responsibility for operational control: Domestic operations. (a) Each certificate holder conducting domestic operations is responsible for operational control. (d) Each pilot in command of an aircraft is, during flight time, in command of the aircraft and crew and is responsible for the safety of the passengers, crewmembers, cargo, and airplane. (e) Each pilot in command has full control and authority in the operation of the aircraft, without limitation, over other crewmembers and their duties during flight time, whether or not he holds valid certificates authorizing him to perform the duties of those crewmembers.	

FARs and Your Airline Policy Con't

Pilot in Command cont.

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121.557 Emergencies: Domestic and flag operations
(a) In an emergency situation that requires immediate decision and action the pilot in command may take any action that he considers necessary under the circumstances. In such a case he may deviate from prescribed operations procedures and methods, weather minimums, and this chapter, to the extent required in the interests of safety.
(b) In an emergency situation arising during flight that requires immediate decision and action by an aircraft dispatcher, and that is known to him, the aircraft dispatcher shall advise the pilot in command of the emergency, shall ascertain the decision of the pilot in command, and shall have the decision recorded. If the aircraft dispatcher cannot communicate with the pilot, he shall declare an emergency and take any action that he considers necessary under the circumstances.

91.3 Responsibilities and Authority of the Pilot in Command
(b) In an in-flight emergency requiring immediate action, the pilot in command may deviate from any rule of this part to the extent required to meet that emergency.

(c) Each pilot in command who deviates from a rule under paragraph (b) of this section shall, upon the request of the administrator, send a written report of that deviation to the administrator.

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First Officer

FARs	Your Flight Operations Handbook
1.1 General definitions "Second in Command" means a pilot who is designated to be second in command of an aircraft during flight time.	

Other

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Subpart G - Manual Requirements
121.135 Contents
(4) Not be contrary to any applicable Federal regulation and, in the case of a flag or supplemental operation, any applicable foreign regulation, or the certificate holder's operations specifications or operating certificate.

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FARs and Your Airline Policy Con't

Flight Attendant

FARs	Your Flight Attendant Manual

121.421 Flight attendants: Initial and transition ground training.
(1) General subjects -
    (i) The authority of the pilot in command;
 	
    (iii) Approved crew resource management initial training.	

LEADERSHIP/FOLLOWERSHIP MODEL COMPONENTS

The cockpit system structures in our model include the external environment, the climate and structure of the cockpit, individual attributes, and the roles and responsibilities of the crew members. These various factors are acknowledged and attended to through effective communications.

External Environment. We identified four external environmental factors -- factors over which the flight crew has little or no control -- that influence leadership and followership. While the crew may not be able to change these factors readily, their reaction to these external factors may be critical to flight safety. The most obvious external factor that influences leadership and followership is the *regulatory environment*. This is the legal structure within which the flight operates. The Federal Aviation Administration, the International Civil Aviation Organization, and other aviation regulatory agencies, impose many of these parameters. Another external force is the *corporate environment*. This is most apparent, from the pilot's perspective, as yet another layer of written policies and procedures established by the company. In addition, the corporation -- knowingly or unwittingly -- conveys an attitude and this corporate culture is manifested in the cockpit, often as unwritten norms. Indeed, on occasion, the corporate culture may be in conflict with the regulatory environment or individual values.

Yet another external factor which influences the crew is the *market environment*. Customer expectations, external service providers (i.e., catering and fuel services, crew accommodations), and labor/management relations each have an impact flight operations as do factors that impact profitability and the overall health of the company. The last external factor affecting leadership and followership is the *physical environment*. This includes the weather, the condition of the aircraft, and Air Traffic Control considerations. These forces can have a considerable impact on crew performance, particularly on operational decisions.

Climate and Structure. Much more within the control of the flight crew are the internal climate and structure. The ultimate goal of setting a climate and establishing a structure is to ensure effective crew performance. To this end, one or more of the crew members carry out structuring tasks (i.e., planning, delegating, coordinating and monitoring) and climate-setting tasks (i.e., motivating, clarifying roles, coaching) using technical, cognitive and communication skills to accomplish both types of tasks. The anticipated outcome is more effective problem solving, decision making, workload management, and/or conflict resolution.

To some degree the structure is dictated externally by federal regulations and company procedures. The cockpit climate, on the other hand, is a mixture and a reflection of the attitudes of the crew members. In most cases, the captain has the greatest impact on cockpit-specific climate and structure. Further, climate-setting, in particular, can be very subtle. Non-verbal cues and body language can be as illuminating as words. If the captain conducts only a cursory briefing -- or no briefing -- he or she conveys an attitude about the value of crew coordination and communication.

The structure is established -- normally during the briefing -- by setting the operational parameters. The captain can discuss the specifics of the route, who will fly what leg, how abnormal situations should be handled, etc. The captain may elect to include the cabin crew or not during the pre-flight briefing. While our main concern is with the cockpit, the climate and structure which includes the cabin crew and the ground crew cannot be ignored. Examples of the negative results of a poor relationship between the cabin and flight crew are all too frequent.

Roles and Responsibilities. At the individual level, the leader and the follower(s) are defined by the hierarchical position held--their formal role. In addition, each crew member has a designated, functional role -- pilot flying (PF) or pilot-not-flying (PNF). Leader/follower roles may be associated with the formal or designated role. However, leadership and followership may also shift as the situation changes. In abnormal situations, for example, one crew member may be required to take a leadership role with other crew members or passengers. In other instances, leadership and followership roles may emerge as the result of operational variables.

Knowledge, Skills & Attributes. Each member of the crew brings to the cockpit knowledge, skills, and attributes which can be applied to their formal role (i.e., captain, first officer, second officer), to their designated, functional role (i.e., pilot flying, pilot not flying), and to their informal or emergent role as a leader or follower.
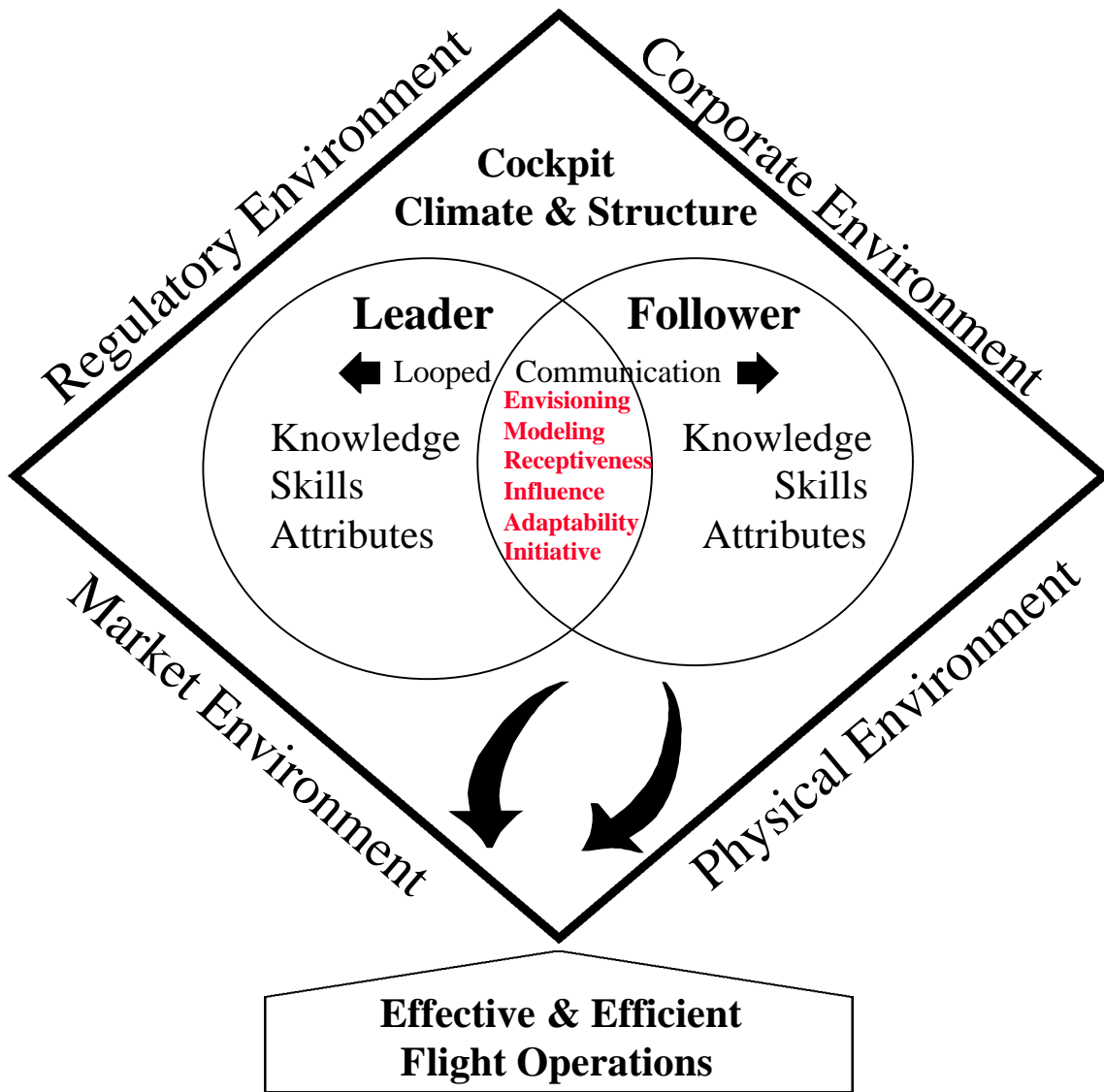
Knowledge refers to information that the individual remembers and/or understands. Knowledge can be classified as facts, procedures, concepts, or principles (Romiszowski 1984). For the purposes of this research, we defined skill as a developed ability, aptitude or knowledge used effectively and readily in the execution or performance of tasks" in an effort to differentiate skills from operational functions or tasks and from personal attributes. Attributes can be stable personality traits (e.g., emotional stability, surgency, openness, conscientiousness, and agreeableness) or variable dispositions such as motivation, values, and attitudes.

Communications. Effective communications is an essential component of the leadership/followership model. It is the critical link and crew members need to communicate openly and supportively. Stevens & Campion (1994) suggest that open and supportive communication has five characteristics. First, it is behavior- or event-oriented, not person-oriented. Second, there is congruence between what the communicator feels and says, between verbal and nonverbal messages. Third, open and supportive communication validates individuals. Messages that convey superiority, rigidity of position, or indifference toward the recipient do not validate. Fourth, open and supportive communication is conjunctive; that is, each crew member has the opportunity to speak (using appropriate timing) and topics are not disconnected or monopolized. Fifth, open and supportive communication is owned. Ownership means that crew members take responsibility for their statements and ideas.

Stevens and Campion also suggest that effective communications skill include the ability to listen actively and non-evaluatively, interpret nonverbal messages, and engage in small talk and ritual greetings. We would also suggest that effective cockpit communications are "loop" communications; that is, the communication must include a feedback loop otherwise cockpit communications are likely to be one-way. This communications loop is implicit in our model.

Interacting Skills. **S**kills analysis resulted in the identification of six skills common to both leadership and followership. As noted previously, we defined skill as "a developed ability, aptitude or knowledge used effectively and readily in the execution or performance of tasks" in an effort to differentiate skills from operational functions or tasks and from personal attributes. These skills have a knowledge base and they can be developed, practiced, observed, and assessed.   Our validation research strongly suggests that effective use of these skills increases crew effectiveness.

Leadership / Followership Model

Cockpit
Climate & Structure

Leader

Follower

← Looped Communication →

Envisioning
Modeling
Receptiveness
Influence
Adaptability
Initiative

Knowledge
Skills
Attributes

Knowledge
Skills
Attributes

Regulatory Environment

Corporate Environment

Market Environment

Physical Environment

Effective & Efficient
Flight Operations

LEADERSHIP/FOLLOWERSHIP SKILLS

The following is a list of CRM skills for crew members, that define the six leadership/followership skills. Included is the definition and a brief description of what these skills look like and how they are applied. This is WHAT YOU DO. Included in the descriptive paragraphs is how you do it using good communication skills.

1.   ENVISIONING

A crewmember creates and articulates a picture or a plan. Part of this process of envisioning involves one's experience with the particular task. This can originate, from any crewmembers not just the captain. It is, however, primarily associated with captains and their effectiveness. Because of varied experience levels, it is necessary, for crew members to clearly verbalizing to others their plan of how to do a specific task. It also involves anticipating future problems and/or opportunities as they relate to a specific task. A crew member who has a clear vision of a task also supplies meaning and direction to other crewmembers. A clear vision begins as an idea -- an idea that is a part of one's decision making process. To develop the idea or vision, one must create an open communications environment. That idea is validated by asking questions and receiving input, critiquing one's idea, and stating decisions so others know what is expected of them and the boundaries within which they are expected to operate. They know the expected outcome and what the process was to achieve that task

2.   MODELENG

Modeling in not only "do as I say" but "do as I do". Crewmembers exhibit behavior that is consistent with the Company's and the Industries highest technical and ethical standards. These standards can be found in many places including the FOM, FA Handbook, Bulletins, and even the ALPA Magazine: and relate to either safety or service standards.

Modeling correlates fairly equally to all crewmember's effectiveness. One's personal example demonstrates what is expected of others. Captain can model very effectively during the crew formation process by conducting an effective bringing. The captain who flies by profiles when possible, and uses all available navaids during approaches, is telling the first officer this is the way to fly. FAs who spend time walking through the cabin after scheduled service are telling the FAs this is also the way to do the job. Modeling is also giving advice and positive feedback to others when appropriate. The first officer who is struggling to fly an approach or is a little behind the airplane may be soliciting advice when s/he verbalized frustration or anger over his/her inability to catch up. The flight attendant that is reacting stressfully to events during service or in dealing with an unruly customer may appreciate verbal support or suggestions on how to deal with the issues.

3.   INFLUENCE

A person who has good influencing skills obtains commitment from others to ideas or actions using effective interpersonal skills and methods. One of the effective interpersonal skills when trying to influence others is to be tactful. Tact involves courtesy, respect, and rapport. This term includes the concept of assertiveness. The term assertion means to state a need, thought or want. People often have difficulty influencing others by the way they express an assertive statement. The desired result is to try to get others to listen to ones' ideas and consider them for their merit without becoming offended or defensive

Influencing others occurs when one appeals to others' logic in order to get support for an idea or viewpoint. Using " I think" statements or " I would like" statements rather than "you should" statements creates ownership rather than projecting fault. Statements like "what about …" or "what do think about…", while common, and probably effective, may not be the most efficient. These statements invite dialogue that may or may not be relevant. Dialogue about the issue is important. Dialogue about the meaning of a statement or playing "twenty questions" is inefficient.

4.   RECEPTIVENESS

Receptive crewmembers encourage others, pay attention to , and convey understanding of another's ideas, comments or questions. This is done when captains encourage feedback when briefing first officers and flight attendants. One of the responsibilities of the "A" flight attendant is to provide leadership within the cabin to ensure the highest level of service. Part of this leadership is being receptive to other flight attendants and customers. Receptiveness is displayed during the pre-flight briefing when A effectively coordinates inflight duties such as announcements and service positions with the B and C flight attendants.

Receptive crewmembers encourage feedback from others and incorporate suggestions from them into decisions. Feedback involves active listening which includes body language such as direst eye contact, and nodding with understanding. Paraphrasing, agreeing and questioning are verbal components of active listening as well When the flying pilot asks if there are any questions after the approach briefing s/he needs to be receptive to the solicited input.

5.   INITIATIVE

Crewmembers who show initiative, begin an action, without external direction, to accomplish a necessary task. These are the pilots or flight attendants who also look for a more effective way of doing things. Most of what we do is procedural but flight attendants for example, can take initiative when dealing with unruly customers. The B or C flight attendants can volunteer to do some specific PAs during the preflight briefing. For pilots, initiative correlates highly to both captains and first officers when they are working together. When captains create a vision or mental model such as the departure briefing, and share that with the first officer, a higher level of initiative results in the first officer. The first officer knows what is

expected, and knows the limits of his/her behavior. Initiative also takes place on tasks that need to be done. The non-flying pilot can volunteer to call flight service to get the latest weather. The first officer reminds the captain about turning on the engine anti-ice when the captain has forgotten it. And finally, initiative means taking appropriate action without having to be told and then informing others of the action.

6.   ADAPTABILITY

Adaptability means the ability to adjust to changing environments, ambiguity, and abnormal situations.   Pilots deal with this all of the time. It is a crewmember's ability to recognize this need to adapt and how quickly they do it that is important here. Changing weather, traffic flows, abnormal problems, all require pilots to recognize the need and adapt plans and change decisions. Turbulence, time and customer demands can require flight attendants to adapt service and normal routines. Highly adaptive crew members are able to make these changes without difficulty when new information indicates changes are required. They operate within the structure, but understand the occasional need for structural and personal flexibility. Highly adaptable crewmembers are able to perform well even when there is not enough time, information or resources to accomplish normal routines.

WHAT LEADERS MUST KNOW AND DO, AND THEIR RELATIONSHIP TO FOLLOWERS

Leadership

What do good leaders need to know? need to do?

< Leadership is a relational process

< Leadership is the exercise of skills to achieve goal attainment

< Leadership is proactive rather than reactive

< Leadership takes into account other crew members

Followership

What do good followers need to know? need to do?

< Followership is the ability to contribute to task and goal accomplishment

< Followership is characterized by supportive technical, cognitive and interpersonal skills

< Followership is not a challenge to the captains authority, but neither is it unthinking compliance with directives -- especially if those directives might adversely impact the safety of the operation

< Followership is proactive without diminishing the authority of the captain.

< Followership is an active role that holds the potential for leadership.

Relationship between Leadership and Followership

RELATIONAL ASPECTS OF LEADERSHIP AND FOLLOWERSHIP
1. Leadership and followership are   <   interrelated concepts   <   complementary rather than competitive   <   synergistic rather than separate   <   dialectic (that is, they depend on each other for existence and meaning)
2. Leadership and followership skills are related as much to designated roles (i.e., PF/PNF) and situational role requirements as they are to formal role (i.e., captain, first officer, flight engineer).
3. A minimum combined level of leadership and followership is required for safe, efficient flight operations.
4. If more and/or more effective skills are brought to the situation, efficiency will be increased.
5. If one member of the crew is weak in one or more skill area, other members of the crew must fill this skill "void" in order to produce an effective outcome.
6. Leadership and followership skills are especially critical in airline operations because of the constantly changing composition of airline crews and the rotation of designated roles, that is, the pilot flying/pilot not flying (PF/PNF) function.

ENABLING AND FORCEFUL LEADERSHIP

The following table is provided to compare a range of leadership behaviors from 'too forceful' to 'too enabling.' When observed in the cockpit behavior at the ends of the spectrum tends to evoke an escalation of adverse responses in the other crew members. For example, too forceful of behavior in one crew member tends to stifle initiative and evoke "stonewalling" or cynicism in the others. Conversely, too enabling behavior in one crew member tends to evoke a relaxing of standards and provides free reign to the others.

Robert Kaplan, researcher and author of "Forceful Leadership and Enabling Leadership: You can Do It Both," indicates that although too forceful and too enabling leadership are seemingly at opposite ends of the spectrum that there is a balance of appropriate behavior equally necessary to effectiveness. For example, he states, "On one hand leaders need to be forceful to assert themselves by means of their intellect, vision, skills and drive to push others hard to perform. Forceful leaders take charge, very much make their presence felt, make it clear what is expected, let little deter them from achieving objectives, step up to tough decisions, and so on."

"On the other hand leaders need to be enabling to tap into, bring out and show appreciation for the capabilities and intensity of other people. Enabling leaders do a great job of involving their people and of opening themselves to their influence."

A balance of appropriate enabling and forceful leadership behaviors may be found in the middle two columns of the table. It is the individual who must decide how much and of which type to use. What is clear from the research is that the degree of adaptability an individual uses in selecting appropriate behavior to influence another increases the potential for an effective outcome. The table is provided as a reference tool one can use to bench mark their behavior.

Forceful Leadership and Enabling Leadership Table

Too Forceful	FORCEFUL	ENABLING	Too Enabling
Takes over, doesn't give people enough rope.	Leads personally. Is personally involved in solving his or her unit" problems.	Enables subordinates to lead. Is able to let go and give individuals the latitude to do their jobs.	Empowers to a fault. Gives people too much rope.
Other people don't speak out, aren't heard.	Lets people know clearly and with feeling where he or she stands on issues. Declares himself or herself.	Is interested in where other people stand on issues. Is receptive to their ideas.	People don't know where he or she stands.
Is insensitive, callous.	Makes tough calls- including those that have an adverse effect on people.	Is compassionate. Is responsive to people's needs and feelings.	Is overly accommodating. Is nice to people at the expense of the work.
Is harshly judgmental. Dismisses the contributions of others. Is an "unloving critic."	Makes judgments. Zeros in on what is substandard or is not working – in an individual's or unit's performance.	Shows appreciation. Makes other people feel good about their contributions. Helps people feel valued.	Gives false praise or praises indiscriminately. Is an "uncritical lover."
Is parochial, a partisan, rivalrous.	Is competitive. Is highly motivated to excel and have his or her unit excel.	Is a team player. Helps other units or the larger organization perform well.	Sacrifices sharp focus on own unit.
Pushes too hard. Demands the impossible. Risks burnout.	Has an intense can-do attitude. Expects everyone to do whatever it takes to get the job done.	Is realistic about limits on people's capacity to perform or produce.	Is too understanding. Doesn't expect enough
Is arrogant. Fills his or her space and some of yours, too.	Is confident. Gives people the feeling that he or she believes in self and his or her abilities.	Is modest. Is aware that he or she does not know everything, can be wrong.	Is self-effacing or down on self. Doesn't fill own space.
Sticks rigidly to a course of action, despite strong evidence it's not working.	Is persistent. Stays the course – even in the face of adversity.	Is flexible. Is willing to change course of the plan doesn't seem to be working.	Is inconstant, changeable. Is too quick to change course.
Forces issues when finesse would work better.	Raises tough issues. Acts as a "forcing function."	Fosters harmony, contains conflict, defuses tension.	Avoids or smoothes over tense issues that need attention.

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USING LEADERSHIP / FOLLOWERSHIP SKILLS

A set of skills that supports effective leadership and followership was identified through a comprehensive review of the leadership and followership literature, and through extensive discussions with subject matter experts from regional and major air carriers. These skills were subsequently validated by staff from the University of Texas at Austin in line audits conducted under the supervision of Dr. Robert Helmreich. We feel that these skills reflect important aspects of effective leadership and followership that should be addressed in leadership/followership training. The six leadership/followership skills are described in the next section of this manual.

It is quite likely, however, that your carrier has identified its own set of Crew Resource Management skills that reflect its unique operational environment. Your pilots may be comfortable with these skills and may be resistant to the introduction of "yet another" set of skills they must memorize. For these and other reasons, you may not want to replace your skills with those described here.

Although you could choose to simply not use our skills, there are other alternatives you might wish to consider. If your skills are very similar to ours, you might combine our definitions and examples with your terminology. For example, planning, team mental model, and other terms could be used to convey the idea of envisioning.

It may be the case, though, that your carrier's skills are very different from ours. If so, another approach you might want to consider was developed by Alaska Airlines in order to enable them to keep their skills and supplement them with ours. They accomplished this by referring to our skills as "tools" that could be used by pilots and flight attendants to support the use of their skills. For example, influence is a "tool" that can be used to support effective communication skills. The value of influence as a "tool" can be seen in the following Alaska Airlines examples:

- Crewmembers contribute to the decision making process by stating their own ideas, opinions and recommendations.
- Crewmembers state their own ideas, opinions, and recommendations during the resolution process.
- Crewmembers advocate their point of view during the resolution process.
- Crewmembers are assertive until resolution is achieved.

These are just two approaches that could be used to relate our skills to your carrier's existing skill set. There are likely to be others.

ENHANCING YOUR SKILLS

This module on effective leadership/followership introduced six skills that are associated with good leadership and followership. Now that you are somewhat familiar with these skills, you may still have questions as to how these skills can actually be employed in the flight environment. The purpose of this document is to give you some examples of how these skills can actually be used. It is quite likely that you, and those with whom you fly, already use many of these skills as a normal part of doing the job. It is probably the case that, although the terminology is unfamiliar, the skills themselves are not. A clearer understanding of what the skills are may help you use these skills in other ways that you may not have thought of.

Envisioning

What is Envisioning?

DEFINITION

- Creates and articulates a plan for the future.

BEHAVIORS

- Develops and shares the plan or "mental model" of the flight or task

- Anticipates problems and/or opportunities

- Supplies meaning and direction to other crewmembers

Your flight training emphasizes the importance of planning. Before a flight even begins, you perform a series of activities that contribute to developing a plan as to how the flight will be performed. You review the flight plan prepared by dispatch, check the current and forecasted weather conditions, assess aircraft status, and review other factors that might impact how the flight, as a whole, will take place. Most of these activities are completed before the engines are even started. You also perform a before takeoff briefing to make sure that each crewmember understands his/her role during the demanding takeoff phase of flight and is prepared for any contingencies that can reasonably be expected to occur during this phase, such as an engine problem. Additional briefings are performed at various stages in the flight and in response to changes in flight conditions that could require changes in the planned flight.

An effective leader uses these various planning stages to envision how the flight or specific flight phase your carrier's SOP. The intent is to encourage the leader to create and articulate a clear and comprehensive view of what is taking place or what should take place. This envisioned plan must be shared with other appropriate crewmembers in order to ensure that all crewmembers possess the same understanding of what is planned and are prepared to perform the same plan.

Planning and briefings are the most obvious examples of envisioning. There are less obvious uses of envisioning that are equally important. Once a plan or briefing has been performed, the crew then performs the activities called for by the plan or brief. They must then assess whether the goals of the plan or briefing are being achieved. In other words, they must monitor the effectiveness of the plan or briefing in achieving intended flight goals.

In addition, the time required to complete all of the tasks required by the plan must be assessed. For example, on short legs, flight attendants may have difficulty providing inflight service and cleaning up the cabin before the final approach is initiated. Coordination with the cockpit crew may be required in order to gain the additional time required to complete these activities. As this example demonstrates, coordination may be required to integrate the requirements of the flight attendant plan with the cockpit crew plan.

Envisioning can also take place on a small scale. Plans and briefings are formalized examples of envisioning. There are less formal uses of envisioning that contribute to achieving a safe flight. Every time you perform an action in the cockpit, you usually perform that action in order to achieve some type of goal. You push the yoke forward to reduce the aircraft's pitch. When you do that, you have certain expectations as to how the aircraft will respond. A good pilot monitors the outcome of each action to make sure that the desired goal is achieved. In effect, there is some goal you wish to achieve. You determine how best to achieve that goal, perform the action, then assess whether you got the desired results. This is envisioning on a small scale. In all cases, however, your actions are performed within the context of your vision of what these actions will achieve.

As these examples suggest, there is nothing magical about the skill of envisioning. The activities just described are performed by you and your fellow crewmembers on every flight. And you know that both crewmembers contribute to effective envisioning. The leader is responsible for the initial task of envisioning the flight or flight phase. The follower is responsible for understanding the envisioned plan, ensuring that it is complete, and helping to carry it out. Notice that the word "leader" is used here rather than "captain" or "PIC." This is because the crewmember who plays the role of leader at any point in time depends upon the specific flight conditions. For example, the first officer, when serving as PF, is responsible for the job of envisioning, such as briefing the takeoff or approach. Similarly, flight attendants are responsible for creating and executing their own plans in order to ensure that all of their tasks are completed in a timely fashion. All crewmembers must be effective at creating plans and sharing these plans with their fellow crewmembers.

A clear vision begins as an idea—an idea that is a part of one's decision-making process. To fully develop the idea or vision, open communications play a pivotal role. The idea is validated by asking questions and receiving input, critiquing one's idea, and stating decisions so others know what is expected of them and the boundaries within which they are expected to operate. They know the expected outcome and the process for achieving that outcome.

All crewmembers are responsible for ensuring that accurate and comprehensive plans are created and that a shared understanding of the plan is achieved. If you do not understand some

aspect of the plan or if you feel that the plan does not adequately address all relevant issues, it is your responsibility to ask questions. There may even be cases where you feel that conditions have changed to such an extent that the current plan is no longer appropriate and a new plan is required. Again, it is your responsibility to say something. Remember that effective leadership is only possible when there is effective followership. The two roles are intimately related and require all crewmembers to contribute to effective envisioning.

Using Envisioning

One of the challenges of using any skill is recognizing when use of the skill is appropriate. Listed below are some examples of when envisioning might be useful:

- Reviewing the flight plan

- Coordinating roles and responsibilities for various tasks

- Preparing to perform a briefing.

- Performing appropriate contingency planning. For example, if the flight is carrying passengers belonging to a group (e.g., a sports team, vacation tour), the flight attendants may have to perform special procedures to manage the group so as to avoid annoying other passengers.

- While monitoring the flight, assessing whether the flight is unfolding as planned

- In response to a change in flight conditions such as:

  * degradation in weather conditions that could affect the flight currently or at some future time

  * aircraft system failure or a system that is not performing as expected

  * an ATC clearance that requires changes in aircraft course, speed, etc.

  * any change that prevents performance of the planned flight

- Ensuring that sufficient time is available to complete the plan.

Modeling

What is Modeling?

DEFINITION

- Exhibits behavior consistent with the carrier's highest technical, CRM, and ethical standards

BEHAVIORS

- Demonstrates through personal example what is expected of others

- Gives advice and positive feedback to others when appropriate

- Treats other crewmembers, employees, and passengers with respect

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Have you ever flown with a pilot who is so good you think to yourself: "He does everything right"? Have you ever worked with a flight attendant who is a pleasure to be around and effortlessly accomplishes each task? You may even have found yourself observing his every action, trying to find the secrets that made him so good. Perhaps you even tried to do your job the same way he did. This is the essence of modeling: Doing the job right and setting a good example that others might wish to follow.

Modeling has several dimensions to it. First is the desire to perform each task correctly by following SOP and expending the effort to make each flight as safe as possible. In addition, modeling involves treating those around you ethically and with respect. Finally, it involves helping others to achieve the same high standards. Sharing one's experience and knowledge, and encouraging others in what they do are all important dimensions of modeling.

Why is modeling important? The air carrier crew's job is unique. First, each job requires a high level of skill in a number of different areas. For the pilot, these skills include stick and rudder, systems understanding, managing a number of tasks that must be performed at the same time, and coordinating the contributions of all the people who make the flight as safe as possible. For the flight attendant, important skills include interpersonal skills, understanding of cabin systems, managing a number of tasks that must be performed at the same time, and coordinating the contributions of all the people who contribute to making the flight happen.

In addition, the job involves a high level of self-management. Most of the time, you are on your own in the sense that it is only the pilots and the cabin attendants who are physically present. There is no "boss" observing your every move. The heart of the job is a small group of people working together in accordance with regulatory, company, and ethical requirements. For the most part, it is up to you and each crewmember to decide the extent to which you will do the job the right way. Unless you really screw up, it is possible to get away with quite a bit in the airplane.

Modeling correlates fairly equally with all crewmembers' effectiveness. One's personal example demonstrates what is expected of others. Captains can model very effectively during the crew formation process by conducting an informative briefing. The captain who flies by profiles, when possible, and uses all navaids during approaches is telling the first officer this is the way to fly. Likewise, a first officer who maintains his or her high standards, while the Captain does not, is also setting an example by modeling what is expected. A flight attendant who spends time walking through the cabin interfacing with customers after scheduled service is also telling the other flight attendants this is the way to do the job. Additionally, modeling is giving advice and positive feedback to others when appropriate. The first officer who is struggling to fly an approach or is a little behind the airplane may be soliciting advice by verbalizing frustration or anger over the inability to catch up. The flight attendant who is reacting to stressful events during service or when dealing with an unruly customer may appreciate verbal support or suggestions on how to deal with these issues.

Each crewmember contributes to the overall aircraft environment. This is particularly the case for the captain in that the captain sets the tone—sloppiness on his part can encourage sloppiness by others. Nonetheless, each crewmember *can* influence the aircraft environment. Most of us are sensitive to the opinions of others. Consequently, a first officer who insists on doing the job right and by the book can place subtle pressure on a sloppy captain to also do it right. Similarly, the way in which a flight attendant performs her tasks can influence the other crews and also the passengers as well. It is the responsibility of all crewmembers to do the job to the best of their abilities.

You may be thinking that there is more to modeling than doing a good job and setting a positive example. We usually associate a certain degree of charisma with those who we admire. Charisma is one of those things that people either have or don't have. This does not mean, however, that those lacking in charisma cannot serve as good models. Everyone has the potential to have a positive impact on those around them, even those completely lacking in charisma. We influence each other in positive and negative ways, and to large and small degrees. Setting a positive example is something that we all can strive for. By insisting on doing the job right, we encourage others to do the same. By treating others with courtesy and respect, we make the working environment more positive. And by sharing what we know with others, we have the opportunity to help others become more effective at their jobs and learn from them how better to do the job.

Modeling means "do as I do," not just "do as I say." A good model exhibits behavior that is consistent with the company's and the industry's highest technical, CRM, and ethical standards. These standards can be found in many places including the Flight Operations Manual, Flight Handbooks, the Flight Attendant Handbook, and Bulletins.

Using Modeling

Unlike other skills, modeling is appropriate in virtually any group environment:

- Expending the effort to perform each task correctly and thoroughly, thus subtly encouraging others to do the same. For example, repeating an uncompleted checklist from the beginning to make sure that it is thoroughly completed.

- Sharing your knowledge and experience, when appropriate.

- Providing positive feedback when someone does a good job or completes a task they did not have to do. Positive feedback helps people feel that their efforts are valued and gives them the incentive to continue making extra effort to accomplish the job properly.

- Introducing yourself to all of the staff (e.g., gate crew), thus encouraging them to feel comfortable in asking questions or addressing problems.

- Using your demeanor to calm others. Nervous or stressed passengers may calm down in the presence of a flight attendant who is confident and relaxed.

- Captains modeling exemplary levels of personal and professional behavior so as to create and maintain proper authority dynamics. This helps other crewmembers establish a clear vision of their roles in the decision making process.

What is Influence?

DEFINITION

- Obtains commitment from others to ideas or actions.

BEHAVIORS

- Using effective interpersonal skills, styles, and methods to appeal to others' logic in order to get support for an idea or viewpoint

- Uses tact when asserting a position

- Uses appropriate level of assertion when advocating a position

- Establishes a rapport with others

The crew's job always involves working within a team context. An effective team takes advantage of the knowledge and skills of each team member, thus making the team as a whole more successful. Working within a team means dealing with other people's opinions and input. Even the captain, in spite of having ultimate authority, should possess the skills required to utilize each team member's knowledge and skills. The captain can, of course, simply give commands, ignore what others have to say and insist that things happen the way he wants. In doing so, however, it is quite likely that he will anger those around him and undermine their willingness to contribute to overall team effectiveness. People don't like being ordered around, except under special circumstances, such as emergencies. They like to feel that their input is important and that they are valued members of the team.

An alternative approach is to gain people's cooperation by getting them to agree with one's position. This is the concept of influence. Although influence is a useful skill for the captain, it is even more important for those who do not have captain's authority. A number of NTSB reports describe accidents where a first officer or flight engineer recognized that there was a problem but was unable to effectively communicate the nature of the problem to the captain. The result can be tragic. It is the responsibility of each crewmember to share information with the rest of the crew and to ensure that this information is understood and acted upon. To do so effectively often requires the use of influence.

Influence means using your interpersonal skills to obtain a commitment from others to your ideas or understanding of a situation. Achieving this commitment can require the use of a number of techniques. Convincing someone that your understanding of the situation is accurate can be accomplished by pointing out the facts that support your case. In some cases, describing how the facts contradict the other person's position may be useful if tactfully done. Encouraging others to review the facts and try to explain these facts is an important technique for encouraging

them to accept your position. Keeping the focus on the facts is critical to avoid arguments about who is right and who is wrong.

Also, people are more likely to give you a fair hearing if they do not feel threatened by you. This means using tact when stating your idea or position rather than simply attacking their position. In a sense, the goal is to make it comfortable for them to accept your position. A positive rapport between you makes it easier for the other person to switch positions. Any sort of adversarial relationship is likely to encourage that person to hold firm in his/her belief.

Keep in mind that changing one's opinion can be harder for those in positions of authority. First of all, these people have the responsibility of ensuring the safety of those on-board. If a captain is reluctant to change her mind, it may be due in large part to the additional pressures that she faces. Also, it is possible that you could be wrong. Therefore, it is important to discuss all of the facts and let the facts drive your conclusions.

Utilizing the appropriate tone is fundamental to effective influencing skills. Tactful influence, based on courtesy, respect, and rapport, is more likely to achieve the desired outcome. Tact may, however, need to be mixed with assertiveness. The term "assertion" means to state a need, thought, or want. People often have difficulty influencing others by the way they express an assertive statement. The desired result is to try to get others to listen to one's ideas and to consider them for their merit without becoming offended or defensive.

The way in which a concern is phrased can determine how the concern is received. Using "I think" statements or "I would like" statements rather than "You should" statements creates ownership rather than projecting fault. Statements like "What about..." or "What do you think about...," while common and probably effective, may not be an efficient approach to handling a time-critical situation. Dialogue about the issue is important; dialogue about the meaning of a statement or playing "twenty questions" is inefficient. Conveying a concern in a direct but non-threatening fashion is the goal of effective influencing skills.

Using Influence

Recent research indicates that influence correlates highly with both captain's and first officer's behaviors. Since captains also possess an authority dynamic, it is especially important that first officers know how to use influence effectively:

- The captain/PF's approach briefing does not take into account weather conditions that might affect the missed approach. The first officer/PNF suggests that the missed approach plan might need to be modified based upon weather constraints.

- The flight is very late and one passenger, in particular, is vocally expressing his frustration. The flight attendant takes a few moments to calm the passenger by explaining why the flight is late and asking what she can do to make him more comfortable.

- The captain, acting as PNF, notices that the first officer has pulled the power back too much during an approach in possible windshear conditions. The captain, not wishing to

take away the PF's authority, suggests that power be added and explains the windshear threat.

- The lead flight attendant shows up to the flight late after getting caught in traffic. While attempting to compensate for being late, she tries to rush through the passenger count and fails to get a correct count. Another flight attendant, seeing her frustration, makes a joke that helps to defuse the lead flight attendant's stress.

Receptiveness

What is Receptiveness?

> **DEFINITION**
>
> - Encourages, pays attention to, and coveys understanding of another's ideas, comments, or questions
>
> **BEHAVIORS**
>
> - Encourages feedback from others
>
> - Incorporates suggestions from others into decisions
>
> - Actively listens to others

Receptiveness refers to being open to the thoughts and opinions of others. It is the flip-side of influence in that it is easier to influence someone who is receptive to being influenced than someone who is close-minded to all other opinions. Receptiveness is an important contributor to safety. The complexity of the flight environment means that it is possible to miss an important source of information or forget to perform or complete a task. Acknowledging that it is possible to make a mistake makes you more open to other people's input.

Receptive crewmembers encourage others, pay attention to, and convey understanding of others' ideas, comments, and questions. This is done when a captain encourages feedback while briefing the first officer and the flight attendants. One of the responsibilities of the lead flight attendant is to provide leadership within the cabin to ensure the highest level of service. Receptive crewmembers encourage feedback from others and incorporate suggestions from them into decisions. Feedback involves active listening, which includes appropriate body language such as direct eye contact and nodding to denote understanding. Paraphrasing, agreeing, and questioning are verbal components of active listening as well. When the flying pilot asks if there are any questions after the approach briefing, receptiveness to the solicited input should be conveyed.

Being receptive does not mean that you are weak or uncertain of your abilities. It does mean recognizing the other crewmembers are important contributors to getting the job done right. It also means recognizing the limitations shared by all people.

Receptiveness requires you to use "active listening." That is, you must pay close attention to what the other person is trying to tell you. This can be difficult to do, especially when you are feeling overloaded with all of your tasks. It may be the case, though, that your colleague is trying to warn you of something that you have an immediate need to know.

Also keep in mind that receptiveness is hardest when you are in a tough situation. It may seem that listening to what the other person has to say is simply one more task you must do when you are already very busy. You must be prepared, however, to determine if the other person is trying to warn you of something you need to know.

Receptiveness is something that you can encourage in others. There will be occasions when you may catch something that the other person missed. This should never be interpreted as a failure on their part. Nor should it be interpreted as an indication of superiority on your part. Recognize it for what it is—you did your job and the other person did his as well by listening to, and accepting, what you had to say.

Receptiveness can be encouraged by setting the tone ahead of time under non-stressful circumstances. During the briefing, encourage others to offer their input by asking that they do so. This clearly indicates to them that you will be receptive when the time comes.
Ask for advice when you are unsure about something. The best indication that you are receptive is to seek information from others. Ask about simple things during a briefing. This sets a tone of receptiveness from the start. Also, be sure to ask if there are any questions about the briefing or the flight in general.

Using Receptiveness

Line audit data suggests that receptiveness in captains is one of the highest indicators of crew effectiveness. Receptiveness can be established in a number of ways, even through approaches that are not directly related to the flight environment.

- The captain tells the first officer that she has only flown into a particular airport a few times and is not totally comfortably with the taxi routes. This encourages the first officer to help guide the way to the gate.

- There are times when the flight attendants have a more accurate understanding of a situation, such as an irate passenger. The captain needs to seriously consider their input.

- First officers need to be receptive to the captain's input even if the tasks being performed are their responsibility.

Initiative

What is Initiative?

DEFINITION

- Begins an action, without external direction, to resolve an operational need.

BEHAVIORS

- Looks for more effective ways of doing things

- Takes on a task or job which needs to be done

- Takes appropriate action without having to be told; informs others of the action

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Crewmembers who show initiative begin an action, without external direction, to accomplish a necessary task. These are the pilots and flight attendants who also look for more effective ways of doing things. Most of what we do is procedural, but flight attendants, for example, can take initiative when dealing with unruly customers. Flight attendants who normally do not perform PAs can volunteer to do some during the preflight briefing. First officers can show initiative by calling maintenance when they notice something on a walk around that needs attention; or by going beyond their duties when they know that the captain will be late. Initiative takes place when tasks need to be done. The non-flying pilot can volunteer to call flight service to get the latest weather. The first officer reminds the captain to turn on engine anti-ice when the captain has forgotten it. And finally, initiative means taking appropriate action without having to be told and then informing others of the action.

The aircraft environment has clearly defined authority relationships in terms of who are the leaders and who are the followers. Effective leadership, however, requires there to be effective followers capable of providing the support leaders need to accomplish the range of tasks that must be performed. An important characteristic of effective followers is the willingness to take the initiative when the job requires it.

Initiative takes a variety of forms. It can involve suggesting to the leader the need for a task to be performed in a timely fashion. For example, the PF may be so preoccupied with flying the aircraft during takeoff and initial climb under windshear conditions that she forgets to ask the PNF to raise the gear. The PNF can remind the PF of this task by simply asking, at the appropriate time, if the gear should be raised. This type of initiative is a valuable technique for supporting a busy and preoccupied leader.

Initiative can also involve pointing out indicators that the flight situation has changed. The PNF detects a thunderstorm indication on the weather radar and brings it to the attention of the PF. At that point, a determination can be made as to whether the aircraft's course should be changed.

Finally, initiative can help with workload management. If one pilot is overloaded, the other pilot might offer to take on some of the overloaded pilot's responsibilities. More effective workload distribution is the result.

Initiative is a valuable contribution the follower can make to effective flight management. It must be accompanied, however, by good communication to ensure that both pilots are aware of the other's activities. For example, changes made to the autoflight system could be disruptive if accomplished without the awareness and consent of the other pilot.

In addition, initiative should be taken within the context of overall authority relationships. The follower contributes to flight safety by taking the initiative to help out but the leader still remains the leader. Initiative should not be used as an excuse for the follower to do things the way he wants them to be done. Initiative in the first officer role should not be used as an excuse for the first officer to do things the way he or she wants them to be done—when they are contrary to the captain's envisioning or flight operations policies. Conversely, the captain should not feel threatened when the first officer demonstrates exceptional initiative when a task clearly needs to be accomplished. Positive initiative contributes to more effective completion of all flight tasks. It is not a challenge to the leader's authority.

Examples of Initiative

Initiative involves contributing to the successful completion of a task or set of tasks, including:

- The captain (as PNF) is having difficulty programming a waypoint. The first officer knows how to enter such a waypoint and offers to do so while the captain temporarily flies the aircraft.

- The forward flight attendant has several passengers making requests at the same time. The aft flight attendant, seeing that she is overloaded, comes forward to handle some of the requests.

- The aft flight attendant hears an unusual engine sound during takeoff and informs the cockpit crew of what he heard.

Adaptability

What is Adaptability?

DEFINITION

• Adjusts to changing environments, ambiguity, and abnormal situations

BEHAVIORS

• Changes the plan without difficulty when new information indicates changes are required

• Able to operate within the structure, but understands the occasional need for structure and personal flexibility

• Performs well even where there is not enough time, information, or resources

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Adaptability is the ability to adjust to changing environments, ambiguity, and/or abnormal situations. Pilots deal with this all of the time. It is the crewmember's ability to quickly recognize this need to adapt and determine how to adapt that is important. Changing weather, traffic flows, and abnormal problems all require pilots to recognize the need and subsequently modify plans and change decisions. Turbulence, time, and customer demands can require flight attendants to adapt service and normal routines. Highly adaptive crewmembers are able to make these changes without difficulty when new information indicates the need. They operate within the structure but understand the occasional need for structural and personal flexibility. Highly adaptable crewmembers are able to perform well, even when there is not enough time, information, or resources to accomplish normal routines.

In order to be adaptive, the crew must first be able to quickly and accurately assess the nature of the situation. That is, they must first recognize that the situation has changed, then determine what needs to be done to handle the situation.

Adaptability also means taking advantage of the strengths of team members. For example, during a system non-normal, it may be appropriate to bring maintenance into the picture. This means being able to accurately assess the requirements of the situation and modify the team composition as appropriate.

Keep in mind that it may be possible, in some cases, to modify the characteristics of the situation in order to make the situation easier to manage. For example, if things are happening too quickly, slow it down: Slow the airplane down or request a hold. A problem in the cabin might require that the cockpit crew be asked to wait before initiating the descent. Adaptability does not always mean modifying yourself to meet the situational requirements. It can also mean modifying the situation, when possible, to meet your needs.

Adaptability also can mean dealing with stress. Unexpected change is often stressful and if the time demands or associated risk also increase, unexpected change can be very stressful. The ability to mange one's own stress level and that of others is an important dimension of adaptability.

Examples of Adaptability

- Captains need to recognize the need to divert to the alternate in a timely fashion.

- The captain takes on some of the first officer's duties when the first officer becomes overloaded.

- The lead flight attendant recognizes the need to allow passengers to use the first-class lavatory when one of the aft lavatories becomes inoperative.

VERBAL VIGNETTES

Four vignettes have been provided to serve as discussion pieces concerning authority, leadership, and followership among crew members. These vignettes can be used as homework assignments, classroom discussion tools, or in other forums to support identification and use of effective leadership/followership skills. Two vignettes focus on Captain's issues, while the remaining two address First Officer issues.

First Officer Scenario #1 (First Officer behavior focus)

General Theme: The purpose of this scenario is to investigate authority relationships and boundaries across cockpit roles. The facilitator should encourage the Captain and First Officer to discuss the balance between situational leadership, authority boundaries, and role-specific duties.

Scenario Theme: First Officer initiative when the Captain will be late for the flight.

The scheduled Captain for your flight calls in sick. The reserve Captain will be arriving at the plane only at the last minute prior to scheduled departure time.

First Officer question: What tasks would you complete in preparation for the flight while waiting for the Captain?

Captain question: What tasks would you wish the First Officer to complete in preparation for the flight while waiting for you?

A. Pull the weather information packet
B. Have the release waiting for the Captain in the cockpit
C. Greet and brief the Flight Attendants
D. Perform First Officer preflight duties
E. Perform Captain preflight duties
F. Make a preliminary fuel load decision based on release and weather
G. Make a final fuel load decision
H. Greet the passengers through the initial P/A call
I. Discuss a potential maintenance discrepancy with a mechanic (e.g., questionable tire)
J. Write up and have addressed a maintenance discrepancy
K. Receive the ATC clearance, having it available for when the Captain arrives
L. Greet gate agent, be certain they are informed and discuss potential delay
M. List any other steps you would likely take/like to see taken

_____

_____

N. List any other steps you would likely not take/not want to be taken

_____

_____

Captain Scenario #1 (Captain's behavior focus)

General Theme: This scenario has two goals. First, the scenario addresses issues pertaining to authority. In particular, who should make decisions pertaining to handling a passenger problem? In addition, the scenario looks at the process by which information is gathered that can be used as a foundation for making a decision.

Scenario Theme: Handling individual passenger dignity and comfort as well as passenger health. Secondarily, providing a reasonable passenger environment.

A passenger becomes very sick, including vomiting and severe diarrhea. The flight is totally full. There is a physician on board who, after examining the passenger in question, volunteers that the situation is not critical and the passenger is stable enough to travel to the final destination, which is two hours ahead. However, the immediate environment surrounding the passenger is filthy.

Captain's question: Which of the following group of behaviors is closest to how you would want the Captain to respond?

A.   The Captain verifies through the Flight Attendant that the physician feels the condition is not life threatening, and chooses to press on. The Flight Attendants are requested to do the best they can to clean up the cabin and the passenger.

B.   The Captain asks the Flight Attendant to describe how bad the situation is. The Flight Attendant, intimidated by the magnitude of the mess, recommends an immediate landing. The Captain takes the recommendation and complies.

C.   The Captain asks the Flight Attendant to describe how bad the situation is. The Flight Attendant believes that it is a bad situation and recommends the cockpit crew check it out. The Captain can't quite visualize the situation being that bad, sends the First Officer back to look and awaits the First Officer's recommendation.

D.   The Captain asks the Flight Attendant to describe how bad the situation is. The Flight Attendant believes that it is a bad situation and recommends the cockpit crew check it out. The Captain can't quite visualize the situation being that bad and decides to check it out firsthand.

First Officer Scenario #2 (First Officer behavior focus)

General Theme: This scenario is intended to examine what constitutes appropriate First Officer influence.

Scenario Theme: What type of issue is an appropriate reason for the First Officer to attempt to convince the Captain that the First Officer has the right answer (influence)?

During taxi out, the First Officer notices a minor mechanical discrepancy that is an MEL issue. The First Officer calls the Captain's attention to this.

Captain's Question: You judge this to clearly be non-safety related. You have seen this exact situation on this tail number very recently. Last time, the "problem" corrected itself shortly after takeoff. Would you:

A.   Stop the taxi, contact maintenance/dispatch and get an enroute MEL
B.   Decide that this is not a big deal and propose to depart as is
C.   Taxi back to the gate for repair

First Officer's Question: What actions would you want and expect the Captain to take:

A.   Stop the taxi, contact maintenance/dispatch and get an enroute MEL
B.   Decide that this is not a big deal and propose to depart as is
C.   Taxi back to the gate for repair

Captain Scenario #2 (Captain behavior focus)

General Theme: This scenario is intended to investigate how a Captain views his or her role in determining the suitability of a crewmember for duty. In this instance, the boundary of authority crosses over to the cabin crew.

Scenario Theme: What is an appropriate reason to ask a crewmember to remove him-/ herself from a flight, or have the individual removed.

While greeting the cabin crew on an originating flight, the Captain and First Officer notice immediately that one of the flight attendants has laryngitis and an inaudible voice.

Captain's Question: Which of the following group of behaviors best represents your reaction to this situation?

First Officer's Question: Which of the following group of behaviors best represents how you think the Captain should react to the situation?

A.   This does not cause any specific concern. Don't believe any action is appropriate or would be taken.

B.   This is a potential compromise to safety as well as customer service, and needs attention and a resolution. The Captain verbalizes this to the crew and encourages the Flight Attendant to call in sick and remove him-/herself from the trip.

C.   The Captain takes no immediate action. Instead, she/he discusses the issue with the First Officer in private, then consults the Lead Flight Attendant and leaves the final decision to the latter.

D.   This situation gives the Captain some concern but decides to not address the issue in any way.

SUMMARY OF RESEARCH

The objectives of the early phases of the project were to 1) review the literature on leadership and followership, 2) identify trainable cockpit leadership and followership skills using a skills analysis methodology, and 3) develop leadership/followership training and evaluation guidelines for air carriers. A brief summary of the methodology employed to achieve these objectives is presented in this section.

Literature Review

The goal of our research has been to identify trainable leadership and followership skills and to develop airline training and evaluation guidelines for these skills. For the purposes of this project, therefore, we examined two veins of literature: 1) the research and theory relevant to leadership and followership, both as individual and as related concepts, and 2) instructional theory relevant to the anticipated training program.

First, it was important to gain an understanding of the current research and theory associated with leadership and followership. The volume of literature on leaders and leadership is immense. However, as the summary of the literature in this report suggests, much of the research and theory concerns the personal attributes of leaders and/or their leadership styles. Only in recent decades has the process of leadership been given any great attention. The literature on leadership *skills* is meager and complicated by definitional difficulties. A concerted effort was made to define the term *skill*, differentiate skills from tasks, and to define the characteristics of CRM skills in order to focus our project.

Similarly, there are many theories of instruction and approaches to leadership training and leadership development. Two models -- one on adult learning and one on leadership development -- seemed most salient to the goals of this project. A brief description of these models is presented in the section on theoretical perspectives.

Skills Identification and Model Development

After a search of the literature on leadership and followership, several subject matter experts (SMEs) were asked to assist with the skills analysis phase of this project. The SMEs represent a wide variety of flight experience and air carriers. Each of the SMEs is employed by an air carrier and has developed and implemented flight crew training programs during his airline career.

The group's first objective was to identify leadership and followership skills. The initial session was a one-day group session. SMEs were asked to identify the skills they observed in good leaders and followers. This discussion led us through a number of issues: definitions of tasks, skills, and management functions; the criteria for CRM-related skills; the variety of cockpit roles, including position, designated duty role, and informal roles; the impact of temporal constraints on leadership and followership; the moral dimensions of these concepts; and training and evaluation methodologies.

Written notes and a video recording were made. We utilized various methods of analyzing and representing the topics discussed during this session. The skills analysis sessions led us to believe that training cockpit leadership and followership skills would be most effective if the broader context of leadership and followership was addressed. This insight led us to develop the Leadership/Followership model presented in Figure 1. The model was refined slightly after SME evaluation and input.

The leadership/followership model includes the cockpit, the individuals in the cockpit, and environmental factors outside the cockpit. This model is not intended to encompass all the complexities of the operational environment, but those having the greatest impact on leadership and followership skills. The skills analysis resulted in the identification of six skills -- in addition to technical and communication skills -- used by crew members in both leadership and followership roles.

These six skills have several significant characteristics. First, our focus was on CRM-related leadership/followership skills. Thus, the skills meet our definition of a skill: "a developed ability, aptitude or knowledge used effectively and readily in the execution or performance of tasks." They also met certain criteria related to our notion of CRM skills. Specifically, we can identify a knowledge base for these skills and individuals can develop or improve these skills through experience and/or practice. In addition, each skill can be linked to a standard of performance, to one or more observable behaviors, and, consequently, the skills can be assessed. These six skills are common to both leadership and followership, but can also be integrated with other CRM skills. The six skills -- envisioning, modeling, influence, receptiveness, initiative, and adaptability -- are discussed in more detail in Section IV.

In addition to the identification of the six cockpit leadership/followership skills and the system in which leaders and followers operate, the literature review and the skills analysis led to the following premises:

1. Leadership and followership are interrelated concepts, complementary rather than competitive, synergistic rather than separate, and leadership and followership are dialectic -- that is, they depend on each other for existence and meaning.

2. Leadership and followership skills are related as much to designated duty role (PF/PNF) and informal (or emergent) role as they are to formal role (seat position).

3. A minimum combined level of leadership and followership is required for safe, efficient flight operations.

4. If more and/or more effective skills are brought to the situation, efficiency will be increased.

5. If one member of the crew is weak in one or more skill area, other members of the crew must fill this skill "void" in order to produce an effective outcome.

6. Leadership and followership skills are especially critical in airline operations because of the constantly changing composition of airline crews and the shifting cockpit roles, the result of the common practice of rotating pilot flying/pilot not flying (PF/PNF) duties.

Validation of the Model

In order to validate the leadership and followership skills to observe these skills in an operational environment. An observable behavior was defined for each of the six skills (see Table 1). The leadership/followership behaviors were included as part of the Line-LOS Checklist used in a line audit of a major air carrier in cooperation with the NASA/UT/FAA Aerospace Crew Research Project (e.g., Helmreich, Hines & Wilhelm 1996). Four hundred seventy-one observations of flight crews during actual line operations were made during the line audit. A follow-on line audit was conducted at another major air carrier in which over six hundred observations were made.

Table 1 LEADERSHIP/FOLLOWERSHIP SKILLS AND OBSERVABLE BEHAVIORS	
Skill	**Observable Behavior**
Envisioning	"Crewmember develops and articulates a picture of the future or desired state."
Modeling	"Crewmember's conduct with other employees and passengers is consistent with the company's highest standards."
Receptiveness	"Crewmember gives attention to other crewmembers' ideas, concerns or questions."
Influence	"Crewmember obtains a commitment from others to ideas or actions using a variety of effective interpersonal skills."
Adaptability	"Crewmember states need to make adjustments to changing environments and abnormal situations."
Initiative	"Crewmember begins an action, without external direction, to respond to an operational deficiency."

Overall Crew Effectiveness. Our primary interest was in the relationship between observed leadership/followership skills and overall crew effectiveness. Table 2 summarizes this data. The highest correlations between overall crew effectiveness and leadership/followership behaviors were found when adaptability, envisioning, and/or receptiveness were observed in the captain. However, all the leadership/followership behaviors were positively correlated with

overall crew effectiveness. In general, higher correlations were found between crew effectiveness and observations of the captain's leadership/followership skills.

Table 2 CORRELATIONS BETWEEN LEADERSHIP/FOLLOWERSHIP SKILLS AND RATINGS OF "OVERALL CREW EFFECTIVENESS"		
Skill	**When Observed in Captain**	**When Observed in First Officer**
Envisioning	.70	.55
Modeling	.58	.60
Receptiveness	.62	.56
Influence	.56	.62
Adaptability	.81	.59
Initiative	.55	.30

A follow-on line audit was conducted at another major air carrier in which over six hundred observations were made. The results are depicted in Tables 3-5.

Table 3 CORRELATIONS BETWEEN LEADERSHIP/FOLLOWERSHIP SKILLS AND RATINGS OF "OVERALL CREW EFFECTIVENESS"		
Skill	**When Observed in Captain**	**When Observed in First Officer**
Envisioning	.57	.47
Modeling	.58	.48
Receptiveness	.49	.47
Influence	.66	.54
Adaptability	.52	.40
Initiative	.52	.32

In both studies First Officer Initiative was least correlated to overall crew effectiveness and at the air carrier reflected in Table 3, the skill of Influence is most highly correlated with overall crew effectiveness followed by Modeling and Envisioning, when observed in the Captain.

Most definitions of leadership and followership possess a common theme in the ability to influence. Often the skill of influence is confused with assertiveness. The element missing in assertiveness is tact, or stated another way, the ability to tactfully assert oneself.. Correlation of Influence between Captain and First Officer is .73. Correlation of influence with other skills leadership/followership skills when observed in both the Captain and First Officer is depicted in the following two tables:

Table 4
CORRELATIONS BETWEEN <u>INFLUENCE</u> OBSERVED IN THE <u>CAPTAIN</u> AND RATINGS OF OTHER LEADERSHIP/FOLLOWERSHIP SKILLS

Skill	When Observed in Captain	When Observed in First Officer
Envisioning	.71	.46
Modeling	.73	.48
Receptiveness	.79	.61
Adaptability	.69	.41
Initiative	.70	.35

Table 5
CORRELATIONS BETWEEN <u>INFLUENCE</u> OBSERVED IN THE <u>FIRST OFFICER</u> AND RATINGS OF OTHER LEADERSHIP/FOLLOWERSHIP SKILLS

Skill	When Observed in Captain	When Observed in First Officer
Envisioning	.51	.71
Modeling	.56	.72
Receptiveness	.52	.75
Adaptability	.55	.66
Initiative	.52	.62

Additional findings relevant to leadership/followership curriculum development include the following:

Severity of Abnormals. The higher the severity of abnormals and other systems events, the less likely the Captain was to articulate a vision for the flight (envisioning), meet company standards (modeling), obtain commitment from other crewmembers (influence), or be adaptable. Both Captains and First Officers were less likely to initiate actions in response to an operational deficiency when the severity of abnormals was high.

Position and Time Together. We had anticipated differences in the ratings of leadership/followership behaviors based on which crew member was flying the aircraft as well as differences based on the time the crew had been flying together. However, whether the Captain was flying or the First Officer was flying had little effect on ratings. Neither were there any significant differences on ratings of the crew's leadership/followership behavior as a result of whether the segment was the crew's first leg together on the trip or if they had been flying together more than a day.

Captain/First Officer Interactions. The data showed strong relationships between:
> Captains articulating a vision (envisioning) and the First Officer initiating a response, without direction, to an operational deficiency (initiative),
> Captains exhibiting good conduct standards (modeling) and First Officers exhibiting similar behavior, and
> Captains receptiveness and First Officers receptiveness.

Vigilance. During predeparture, takeoff and climb, and cruise phases of flight, vigilance was strongly correlated with the Captain's envisioning, modeling, and receptiveness. During the descent and approach phase, vigilance was strongly related to the First Officer's conduct and standards.

Workload and Task Distribution. The data suggests that good workload management was dependent on positive ratings of the Captain's modeling and receptiveness.

Automation Management. The automation marker, "establish guidelines for automated systems," -- *for all phases of flight* -- was moderately correlated with the Captain's envisioning, modeling, receptiveness, and influence. All other relationships with automation management markers were associated with the descent/approach phase of flight and were moderately correlated:
> "Establish PF/PNF duties" was related to FO initiative."
> "Verbalize and acknowledge system entries/changes≅ was related to FO adaptability, and the initiative of both the CA and the FO."
> "Plans for sufficient time for programming≅ was related to CA initiative."
> "Automated systems are used at appropriate levels≅ was related to FO adaptability and both CA and FO initiative."

Implications for Training. The results of the validation study suggested several important considerations for the development of the curriculum.

1. Envisioning -- developing and articulating a vision--for the flight, a shared mental model -- is an essential skill.

2. Modeling and receptiveness appear to reinforce one another. Further, modeling is strongly related to the maintenance of standards and discipline.

3. The data suggest that vigilance could be improved with training in envisioning, modeling, and receptiveness.

4. Workload management could be improved with training in receptiveness -- being open to the suggestions and ideas of other crewmembers -- especially in high workload situations (when receptiveness is more difficult to practice, of course).

5. Crew performance during abnormals and the management of automation might be improved with discussion about the benefits from the appropriate application of initiative.

SELF-ASSESSMENT

The following exercise is designed to provide you feedback with regard to specific leadership/followership skills.

Listed below are a number of statements concerning personal attitudes and traits. Read each item and then circle the number which best describes you. At the end of the exercise are instructions on how to interpret your score.

	very much like me	**not at all like me**

1. Setting clear objectives   7 - 6 - 5 - 4 - 3 - 2 - 1

2. Creating a friendly work environment   7 - 6 - 5 - 4 - 3 - 2 - 1

3. Soliciting the advice and ideas of others   7 - 6 - 5 - 4 - 3 - 2 - 1

4. Being assertive without being aggressive   7 - 6 - 5 - 4 - 3 - 2 - 1

5. Responding well to unexpected changes in my plans   7 - 6 - 5 - 4 - 3 - 2 - 1

6. Trying to find better ways of doing things   7 - 6 - 5 - 4 - 3 - 2 - 1

7. Never hesitating to go out of my way to help
      Someone in trouble   7 - 6 - 5 - 4 - 3 - 2 - 1

8. Articulating my plans to others   7 - 6 - 5 - 4 - 3 - 2 - 1

9. Giving other people feedback about their performance   7 - 6 - 5 - 4 - 3 - 2 - 1

10. Encouraging others to give me feedback about my
      performance   7 - 6 - 5 - 4 - 3 - 2 - 1

11. People listen carefully when I speak   7 - 6 - 5 - 4 - 3 - 2 - 1

12. Performing well, even when there is not enough
      time, information, or resources   7 - 6 - 5 - 4 - 3 - 2 - 1

13. Questioning tradition   7 - 6 - 5 - 4 - 3 - 2 - 1

14. Never experiencing an intense dislike of someone   7 - 6 - 5 - 4 - 3 - 2 - 1

15. Making sure that others know what my plans
      and goals are   7 - 6 - 5 - 4 - 3 - 2 - 1

16. Deliberately setting a good example for others   7 - 6 - 5 - 4 - 3 - 2 - 1

17. Open to learning about new ideas   7 - 6 - 5 - 4 - 3 - 2 - 1

18. Establishing rapport with others with little difficulty 7 - 6 - 5 - 4 - 3 - 2 - 1

19. Changing or altering my viewpoint   7 - 6 - 5 - 4 - 3 - 2 - 1

20. Taking charge when necessary   7 - 6 - 5 - 4 - 3 - 2 - 1

21. Never "playing sick" to get out of something   7 - 6 - 5 - 4 - 3 - 2 - 1

22. Thinking about how to become a better team member 7 - 6 - 5 - 4 - 3 - 2 - 1

23. Other people seek advice from me   7 - 6 - 5 - 4 - 3 - 2 - 1

24. Incorporating the suggestions of others into my
      decisions   7 - 6 - 5 - 4 - 3 - 2 - 1

25. Stating my views, repeatedly if necessary, to ensure
      that I am heard and understood   7 - 6 - 5 - 4 - 3 - 2 - 1

26. Willing to deviate from my plan   7 - 6 - 5 - 4 - 3 - 2 - 1

27. Taking appropriate action without having to be told 7 - 6 - 5 - 4 - 3 - 2 - 1

28. Always willing to admit it when I make a mistake   7 - 6 - 5 - 4 - 3 - 2 - 1

29. Developing mental images of how to achieve my goals 7 - 6 - 5 - 4 - 3 - 2 - 1

30. Deliberately putting other people into situations that
      will help them develop their capabilities   7 - 6 - 5 - 4 - 3 - 2 - 1

31. Allowing others to have substantial responsibility
      and discretion in carrying out their duties   7 - 6 - 5 - 4 - 3 - 2 - 1

32. Using techniques that appeal to other's logic in
      order to gain support for my ideas and plans   7 - 6 - 5 - 4 - 3 - 2 - 1

33. Flexible in implementing changes to my plans   7 - 6 - 5 - 4 - 3 - 2 - 1

34. Willing to state my concerns or misgivings to
    others when it seems important to do so   7 - 6 - 5 - 4 - 3 - 2 - 1
35. Not afraid to admit when I don't know something   7 - 6 - 5 - 4 - 3 - 2 - 1

36. Ensuring that the members of a team I am working
    with support common objectives   7 - 6 - 5 - 4 - 3 - 2 - 1

37. Setting an excellent example of proper behavior at
    work   7 - 6 - 5 - 4 - 3 - 2 - 1

38. Accepting the reasoning or evidence of others about
    a decision I am about to make or have made   7 - 6 - 5 - 4 - 3 - 2 - 1

39. Using techniques to appeal to the values of others
    to get support for my ideas   7 - 6 - 5 - 4 - 3 - 2 - 1

40. Trying to understand a viewpoint different from my
    own   7 - 6 - 5 - 4 - 3 - 2 - 1

41. Taking action on my own when I see an inconsistency
    or get new information   7 - 6 - 5 - 4 - 3 - 2 - 1

42. Never considering the option to let someone else
    be punished for my wrong doings   7 - 6 - 5 - 4 - 3 - 2 - 1

43. Providing rationale to other about my actions or plans   7 - 6 - 5 - 4 - 3 - 2 - 1

44. Giving praise to reinforce the good behavior or
    performance of others   7 - 6 - 5 - 4 - 3 - 2 - 1

45. Being conscious of other people's prejudices when
    I talk   7 - 6 - 5 - 4 - 3 - 2 - 1

46. Using persuasion rather than authority to get things
    done   7 - 6 - 5 - 4 - 3 - 2 - 1

47. Changing my normal schedule without being upset
    about it   7 - 6 - 5 - 4 - 3 - 2 - 1

48. Taking on a task that needs to be done without
    being asked   7 - 6 - 5 - 4 - 3 - 2 - 1

To score this exercise and get a sense of your perceptions about your leadership/followership skills, add the following questions together and record the score in the space provided.

Add your answers to these questions together	Write your score here	Skill
1, 08, 15, 22, 29, 36, 43		Envisioning
2, 09, 16, 23, 30, 37, 44		Modeling
3, 10, 17, 24, 31, 38, 45		Receptiveness
4, 11, 18, 25, 32, 39, 46		Influence
5, 12, 19, 26, 33, 40, 47		Adaptability
6, 13, 20, 27, 34, 41, 48		Initiative

The higher the score in a particular area, the greater ability you feel you have in a particular skill area.

You may want to consider having a number of individuals you know and trust complete the exercise, answering the questions about yourself, and compare their response with your perceptions about yourself.

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Internet Sites

AAIB Air Accidents Investigation Branch (UK)
http://www.open.gov.uk/aaib/aaibhome.htm

Aviation Leadership and Followership
http://aviation-leadership.org/

ASRS Aviation Safety Reporting System (USA)
http://olias.arc.nasa.gov/asrs/asrs.html

BASI Bureau of Air Safety Investigation (AUS)
http://www.dot.gov.au/programs/basi/basihome.htm

The Center for Creative Leadership
http://www.ccl.org/

FAA Human Factors
http://www.faa.gov/aar/human-factors/welcome.htm

Industry CRM Developers
http://www.caar.db.erau.edu/crm

Internet Resources for Leadership/Management Development
http://www.oise.on.ca/~bwillard/leadaid.htm

The Leader Links Home Page
http://www.stolaf.edu/stolaf/depts/psych/leadership/

NASA Aviation Human Factors
http://www-afo.arc.nasa.gov

NTSB National Transportation Safety Board (USA)
http://www.ntsb.gov/aviation/aviation.htm

Canadian Transportation Safety Board
http://bst-tsb.gc.ca/english.html

FEEDBACK

We are interested in hearing feedback so that we may continue to improve upon this manual. Please take time out to complete this form and mail/fax or email to:

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1. In what capacity was this manual used?
  a. To support recurrent training
  b. To support other training—specify_____
  c. Just happened to pick up and peruse

2. Check all that apply

Section	Did not use this section	Used this section			
		Very Helpful	Somewhat Helpful	Not very Helpful	Not Helpful
Getting the Greatest Benefit		1	2	3	4
Learning Objectives		1	2	3	4
Definitions		1	2	3	4
Corporate Policy on Authority		1	2	3	4
L/F Model Components		1	2	3	4
What Leaders Must Know		1	2	3	4
Forceful and Enabling Ldrshp		1	2	3	4
Using L/ F Skills		1	2	3	4
Verbal Vignettes		1	2	3	4
Summary of Research		1	2	3	4
Self-Assessment		1	2	3	4
Reference / Resource list		1	2	3	4

Additional Comments: