Recommended Practice

U.S. Army
Aircrew Coordination Training

Helicopter-Safety Enhancement 22A
Detection and Management of Risk Level Changes During Flight

September 23, 2020

ABSTRACT: The purpose of this document is to highlight and share a crew resource management program that is utilized by the U.S. Army for usage in the civilian helicopter community. The target audience is all members who fly in the helicopter and actively participate and contribute toward the safety of flight.

Several of the safety enhancements that are seen in the civilian helicopter community today have origins with the U.S. military. Some examples of these safety enhancements include flight helmets, flame-resistant flight suits, energy-attenuating seats, and crash-resistant fuel systems. Another safety enhancement that has its origins with the U.S. military and that can be applied to the civilian aviation community is crew resource management training (CRM). The Federal Aviation Administration (FAA) Advisory Circular (AC) 120-51E Crew Resource Management Training defines what CRM is and states in part:

CRM refers to the effective use of all available resources: human resources, hardware, and information. Other groups routinely working with the cockpit crew, who are involved in decisions required to operate a flight safely, are also essential participants in an effective CRM process.

AC 120-51E also discusses the importance of CRM training and states in part:

CRM training is one way of addressing the challenge of optimizing the human/machine interface and accompanying interpersonal activities. These activities include team building and maintenance, information transfer, problem solving, decision making, maintaining situation awareness, and dealing with automated systems. CRM training is comprised of three components: initial indoctrination /awareness, recurrent practice and feedback, and continual reinforcement.

While CRM training is not required for most civilian operations, such CRM training can greatly aid aircrews with detecting increased risk levels that occur during the flight, can provide a medium to facilitate effective communication on these increased risk levels, and can provide a path for aircrews to make a decision and execute an appropriate mitigation strategy. The term aircrew is used here to incorporate all members who fly in the helicopter and actively participate and contribute toward the safety of the flight (such as pilots in command, copilots, crew chiefs, aerial observers, biologists, geologists, firefighters, flight nurses, etc.). Regardless if one or two pilots are used, these principles apply regardless of crew composition.

National Aeronautics and Space Administration astronaut Neil Armstrong once said, “We always need to prepare ourselves for handling the unexpected.” Having a solid CRM program in place, that is trained on a regular basis, and that is briefed before every single flight with all aircrew members are ways to prepare for the unexpected. The U.S. Army provides a ready to use CRM syllabus that can be incorporated (and modified if needed) for any civilian organization to use. The U.S. Army’s CRM syllabus is not subject to copyright and this syllabus is attached to this document. The U.S. Army Combat Readiness Center provides a checklist that U.S. Army air safety investigators utilize to evaluate CRM during accident investigations. This same checklist can be utilized as a training aid and evaluation tool if the U.S. Army CRM syllabus is adopted by a civilian organization.

To aid in the process of the effective usage of all available resources, an Aircrew Coordination Training (ACT) program was developed. The U.S. Army has a large helicopter fleet that consists of AH-64 Apaches, CH-47 Chinooks, UH-60 Blackhawks, and UH-72 Lakotas. All these platforms utilize a minimum of two pilots, and CH-47, UH-60, and UH-72 helicopters typically fly with crew chiefs, door

gunners, and flight medics on board. The U.S. Army broadly defines aircrew coordination as, "the cooperative interaction between crew members necessary for the safe, efficient, and effective performance of flight tasks."

The ACT consists of four aircrew coordination principles, that when combined, produce coordinated objectives as shown below in Figure 1.

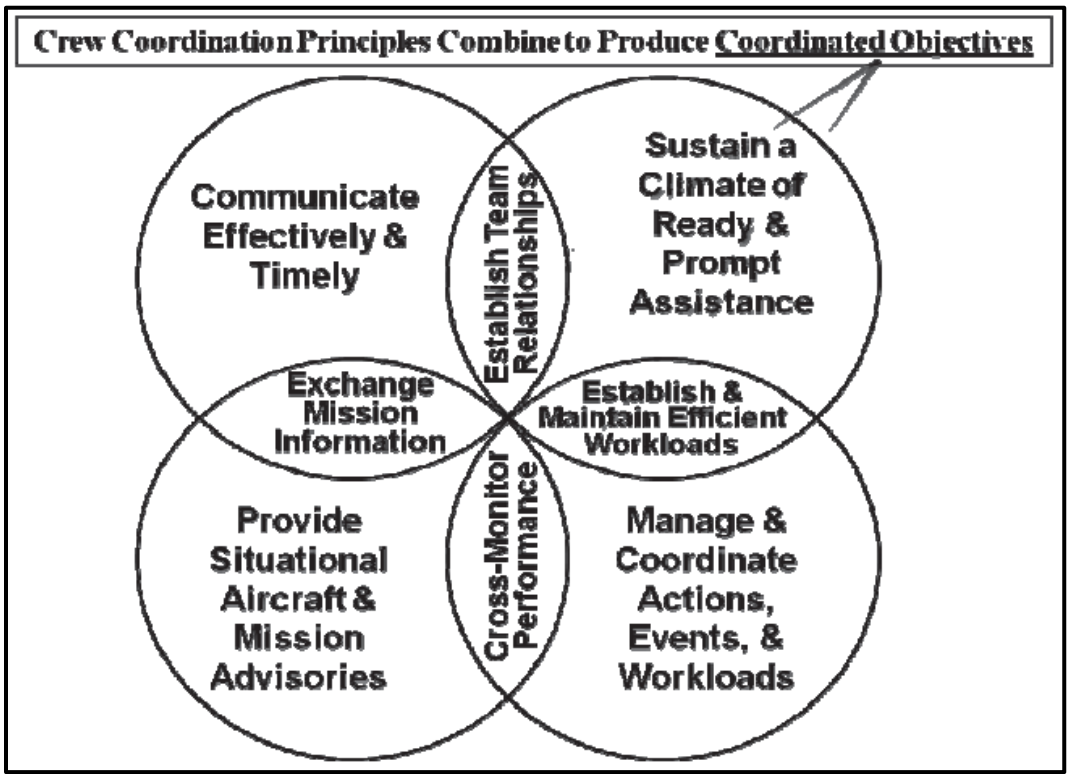

Figure 1 – The U.S. Army aircrew coordination principles (circles) combined to produce aircrew coordinated objectives (lenses) (courtesy of the U.S. Army).

1. The first aircrew coordination principle is: communicate effectively and timely. Stated in part:

Good team relationships begin with effective communication among crewmembers. Communication is effective when the sender directs, announces, requests, or offers information; the receiver acknowledges the information; and the sender confirms the receipt of information, based on the receiver's acknowledgment or action. This enables the efficient flow and exchange of important mission information that keeps a crew on top of any situation that arises.

To aid with this aircrew coordination principle, it is imperative to announce and acknowledge decisions and actions. Also, it is important to ensure that statements and directives are clear, timely, relevant, completed, and verified.

2. The second aircrew coordination principle is: sustain a climate of ready and prompt assistance. Stated in part:

The requirement to maintain a professional atmosphere by all members of the team begins with the team leadership of the pilot in command. However, all crewmembers must equally respect the value of other crewmember's expertise and judgment regardless of rank, duty, or seniority. Every member has a

responsibility to maintain situational awareness for mission requirements, flight regulations, operating procedures, and safety. Each crewmember must be willing to practice advocacy and assertiveness should the situation demand a different course of action, as time permits. It is critical to maintain this crew climate that enables opportunity to apply appropriate decision-making techniques for defining the best course of action when problems arise. Courses of action may demand that assistance be directed to other crewmembers or could be voluntary assistance that is offered in a timely manner, depending on time constraints and information available. All crewmembers must remain approachable, especially in critical phases of flight when reaction time is at a premium.

3. The third aircrew coordination principle is: effectively manage, coordinate, and prioritize planned actions, unexpected events, and workload distribution. Stated in part:

The crew performing as a team should avoid distractions from essential activities while distributing and managing the workloads equally. Both the technical and managerial aspects of coping with normal and unusual situations are important. Proper sequencing and timing guarantees that the actions of one crewmember support and mesh with the actions of the other crewmembers. Responsible effort must be used to ensure that actions and directives are clear, timely, relevant, complete, verified, and coordinated with minimal direction from the pilot in command.

To aid with this aircrew coordination principle, it is imperative to direct assistance between crew members. Also, it is important to prioritize actions and equitably distribute workload.

4. The fourth aircrew coordination principle is: to provide situational aircraft control, obstacle avoidance, and flight advisories. Stated in part:

Although the pilot on the flight controls is responsible for aircraft control, the other crewmembers may need to provide aircraft control information regarding aircraft position (airspeed, altitude, etc.), orientation, obstacle avoidance, equipment and personnel status, environmental and battlefield conditions, and changes to mission objectives or evolving situations of the mission (situational awareness).

Specific goals with this aircrew coordination principle include situational awareness, flight changes and updates, and offering assistance between crew members.

There are four aircrew coordination objectives. The U.S. Army discusses the aircrew coordination objectives and states in part:

Aircrew coordination principles and objectives originate from and are fundamentally supported by a set of individual, professional skills. Each crewmember is responsible for attaining the leadership skills of effective communication, resource management, decision-making, situational awareness, team building, and conflict resolution. When crewmembers are actively using these skills and practicing aircrew coordination principles, results can be seen and measured to determine if the objectives of the aircrew coordination program are being met.

1. The first aircrew coordination objective is: establish and maintain team relationships. Stated in part:

Establish a positive working relationship that allows the crew to communicate openly, freely, and effectively in order to operate in a concerted manner where a climate of professional assistance is easily found and promptly provided.

2. The second aircrew coordination objective is: establish and maintain efficient workloads. Stated in part:

Manage and coordinate priorities and execute the mission workload in an effective and efficient manner with the redistribution of task responsibilities as the mission situation changes. Flight duty responsibilities are performed in a timely manner where mission needs are always anticipated.

3. The third aircrew coordination objective is: exchange flight information. Stated in part:

Establish all levels of crew and mission communications using effective patterns and techniques that allow for the flow of essential data and mission advisories among all crewmembers in a timely and accurate manner.

4. The fourth aircrew coordination objective is: cross-monitor performance. Stated in part:

Cross-monitor each other's actions and decisions to ensure workloads and crew actions are performed in a coordinated manner and to standard. Cross-monitoring crewmember performance keeps a crew ready to provide aircraft and mission advisories to each other and helps to reduce the likelihood of errors affecting mission performance and safety.

Typically, the U.S. Army conducts ACT in a classroom at least once a year. For the civilian community, a similar requirement can be utilized. Additionally, simulator-based training can be used to complement classroom-based training. The U.S. Helicopter Safety Team (USHST) provides low cost alternatives to simulator training.

Below is a list of accidents that can be used as case studies during classroom-based training (the hyperlink is for the National Transportation Safety Board full accident report, along with a hyperlink at the bottom of the report for the public docket items):

1. WPR14LA008 (McDonnell Douglas 369FF collision with a tower near Paducah, Texas, on October 6, 2013).

2. WPR13GA128 (Bell 206B collision with power lines near Eureka, Nevada, on February 18, 2013).

3. ERA13LA057 (Hughes 369D collision with power lines near Corning, New York, on November 15, 2012).

4. WPR12MA034 (Eurocopter EC130B4 collision with mountainous terrain near Pukoo, Hawaii, on November 10, 2011).

5. WPR12LA259 (Robinson R-44II collision with a power line near East Wenatchee, Washington, on June 12, 2012).

6. WPR10GA097 (Bell 206B collision with power lines near Auberry, California, on January 5, 2010).

It is best to conduct an aircrew briefing before each flight that is led by the pilot in command. All aircrew members should actively participate in the briefing. All the aircrew coordination principles and aircrew coordination objectives can be discussed. This should be done at every aircrew briefing before every single flight (no exceptions). These aircrew coordination principles and aircrew coordination objectives can be captured on the organization's standardized aircrew briefing card. The USHST provides an aircrew briefing card template that can be utilized.

Chapter 6

Aircrew Coordination

This chapter describes the background of aircrew coordination development. It also describes the aircrew coordination principles and objectives, as found in the Army Aircrew Coordination Training-Enhancement Program.

Note. Digitization of the crew compartments has expanded and redefined the lines of responsibility for each crewmember. The enhanced ability for either pilot to perform most aircraft/system functions from his or her crew station breaks down the standard delineation of duties and has added capabilities, and potential distractions, in training and in combat. This could mean that during an unforeseen event, one pilot may attempt to resolve the situation rather than seeking assistance from or even communicating that action with the other crewmember. It is essential for the PC to brief specific duties prior to stepping into the aircraft. Effective sharing of tasks relies on good crew coordination and information management.

6-1. AIRCREW COORDINATION BACKGROUND AND PLANNING STRATEGY. An analysis of U.S. Army aviation accidents revealed that a significant percentage of aircraft accidents resulted from one or more aircrew coordination errors committed during and even before the flight mission. Often, an accident was the result of a sequence of undetected crew errors that combined to produce a catastrophic result. Additional research showed that even when crews actually avoided potential accidents, these same errors could result in degraded *performance that jeopardized mission success*. A systematic analysis of these error patterns identified specific areas where crew-level training could reduce the occurrence of such faults and break the *chain of errors* leading to accidents and poor mission performance.

a. Aircrew coordination patterns begin with the accomplishment of crew-level pre-mission planning, rehearsal, and after-action reviews. Pre-mission planning includes all preparatory tasks associated with accomplishing the mission. This would include assigning crewmember responsibilities and conducting all required briefings and brief-backs. Pre-mission rehearsal involves the crew collectively visualizing and discussing expected and potential unexpected events for the entire mission. Through this process, all crewmembers discuss and think through contingencies and actions for difficult segments, equipment limitations and failures, or unusual events associated with the mission, and develop strategies to cope with possible contingencies (METT-TC).

b. Each crewmember must actively participate in the mission planning process to ensure a common understanding of mission intent and operational sequence. The PC prioritizes planning activities so that critical items are addressed within the available planning time. Crewmembers must then mentally rehearse the entire mission by visualizing and discussing potential problems, contingencies, and assigned responsibilities. The PC ensures that crewmembers take advantage of periods of low workload to review or rehearse upcoming flight segments. Crewmembers should continuously review remaining flight segments to identify required adjustments, making certain their planning is consistently ahead of critical lead times.

c. After a mission or mission segment, the crew should debrief, review, and critique major decisions, their actions, and task performance. This should include identifying options and factors that were omitted from earlier discussion and outline ways to improve crew performance in future missions. Remember, this discussion and critique of crew decisions and actions must remain professional. "Finger pointing" is not the intent and shall be avoided; the emphasis should remain on education with the singular purpose of improving crew and mission performance.

6-2. AIRCREW COORDINATION PRINCIPLES. Broadly defined, aircrew coordination is the cooperative interaction between crewmembers necessary for the safe, efficient, and effective performance of flight tasks. The essential principles and qualities of aircrew coordination are described in figure 6-1.

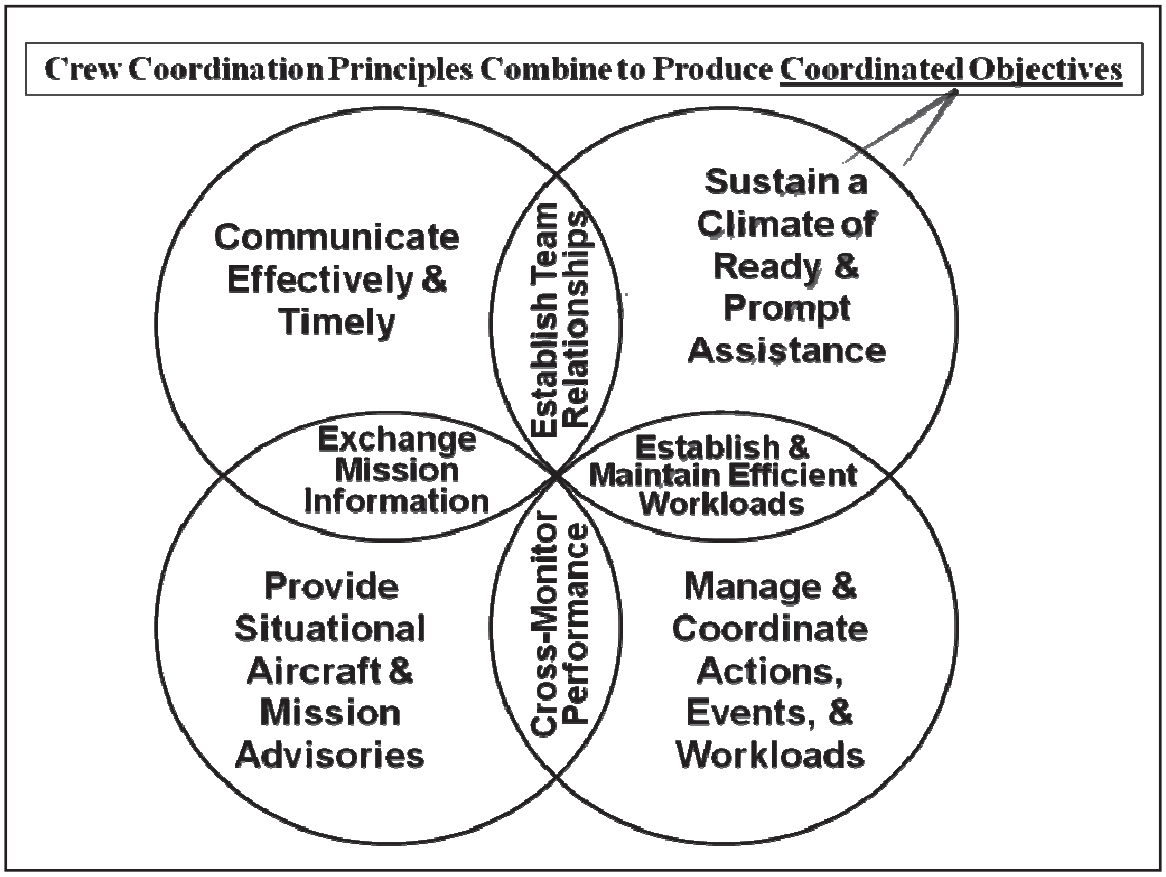

Figure 6-1. Aircrew coordination objectives

a. Communicate Effectively and Timely. Good team relationships begin with effective communication among crewmembers. Communication is effective when the sender directs, announces, requests, or offers information; the receiver acknowledges the information; and the sender confirms the receipt of information, based on the receiver's acknowledgment or action. This enables the efficient flow and exchange of important mission information that keeps a crew on top of any situation that arises.

(1) Announce and Acknowledge Decisions and Actions. To ensure effective and well-coordinated actions in the aircraft, all crewmembers must be kept informed and made aware of decisions, expected movements of crew and aircraft, and the unexpected individual actions of others. Each crewmember will announce any actions that may affect the actions of other crewmembers. In turn, COMMs in the aircraft must include supportive feedback that clearly indicates that crewmembers acknowledge and

correctly understand announcements, decisions, or directives of other crewmembers.

(2) Ensure that statements and directives are clear, timely, relevant, complete, and verified. These are qualities that must describe the kind of communication that is effective. Considering the fleeting moments of time in a busy aviation environment, only one opportunity may exist to convey critical and supporting information before tragedy strikes. That information must be clearly understood, not confusing, and said at the earliest opportunity possible. It must be applicable to the events at hand to support the needs and security of the mission. The information must include all elements needed to make the best decision based on its urgency; and the communication must come with ability of proven confirmation and without redundancy. It must also include the crew's use of standard terminology and feedback techniques that accurately validate information transfer. Emphasis is on the quality of statements associated with navigation, obstacle clearance, instrument readouts, and emergencies. Specific goals include—

(a) Crewmembers consistently make the required callouts. Their statements and directives are always timely. Their response to unexpected events is made in a composed, professional manner.

(b) Crewmembers actively seek feedback when they do not receive acknowledgment from another crewmember. They always acknowledge the understanding of intent and request clarification when necessary.

(c) Be explicit. Crewmembers should use clear, concise terms, standard terminology, and phrases that accurately convey critical information. They must avoid using terms that have multiple meanings, such as "right," "back up," or "I have it." Crewmembers must also avoid using indefinite modifiers such as, "Do you see that tree?" or "You are coming in a little fast."

b. Sustain a Climate of Ready and Prompt Assistance. The requirement to maintain a professional atmosphere by all members of the team begins with the team leadership of the PC. However, all crewmembers must equally respect the value of other crewmember's expertise and judgment regardless of rank, duty, or seniority. Every member has a responsibility to maintain situational awareness for mission requirements, flight regulations, operating procedures, and safety. Each crewmember must be willing to practice advocacy and assertiveness should the situation demand a different course of action, as time permits. It is critical to maintain this crew climate that enables opportunity to apply appropriate decision-making techniques for defining the best course of action when problems arise. Courses of action may demand that assistance be directed to other crewmembers or could be voluntary assistance that is offered in a timely manner, depending on time constraints and information available. All crewmembers must remain approachable, especially in critical phases of flight when reaction time is at a premium.

Note. The two-challenge rule allows one crewmember to assume the duties of another crewmember who fails to respond to two consecutive challenges automatically. For example, the P* becomes fixated, confused, task overloaded, or otherwise allows the aircraft to enter an unsafe position or attitude. The P first asks the P* if he is aware of the aircraft position or attitude. If the P* does not acknowledge this challenge, the P issues a second challenge. If the P* fails to acknowledge the second challenge, the P assumes control of the aircraft.

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c. Effectively Manage, Coordinate, and Prioritize Planned Actions, Unexpected Events, and Workload Distribution. The crew performing as a team should avoid distractions from essential activities while distributing and managing the workloads equally. Both the technical and managerial aspects of coping with normal and unusual situations are important. Proper sequencing and timing guarantees that the actions of

one crewmember support and mesh with the actions of the other crewmembers. Responsible effort must be used to ensure that actions and directives are clear, timely, relevant, complete, verified, and coordinated with minimal direction from the PC.

(1) Direct Assistance. A crewmember will direct or request assistance when he cannot maintain aircraft control, position, or clearance. A crewmember will also direct assistance when being overloaded with tasks or unable to properly operate or troubleshoot aircraft systems without help from the other crewmembers. The PC ensures that all crew duties and mission responsibilities are clearly assigned and efficiently distributed to prevent the overloading of any crewmember, especially during critical phases of flight. Crewmembers should also watch for workload buildup on others and react quickly to adjust the distribution of task responsibilities.

(2) Prioritize Actions and Equitably Distribute Workload. Crewmembers are always able to identify and prioritize competing mission tasks. They never ignore flight safety and other high-priority tasks. They appropriately delay low-priority tasks until those tasks do not compete with tasks that are more critical. Crewmembers consistently avoid nonessential distractions so that these distractions do not affect task performance (i.e. sterile cockpit) or ability to help another crewmember. Crew actions should reflect extensive review of procedures in prior training and pre-mission planning and rehearsal.

d. Provide Situational Aircraft Control, Obstacle Avoidance, and Mission Advisories. Although the P* is responsible for aircraft control, the other crewmembers may need to provide aircraft control information regarding aircraft position (airspeed, altitude, etc), orientation, obstacle avoidance, equipment and personnel status, environmental and battlefield conditions, and changes to mission objectives or evolving situations of the mission (situational awareness). Crewmembers must anticipate and offer supporting information and actions to the decision-maker, which is usually the PC or may be the AMC in a mission related situation. Specific goals include the following:

(1) Situational Awareness. Crewmembers must anticipate the need to provide information or warnings to the PC or P* during critical phases of the flight or mission. The PC must encourage crewmembers to exercise the freedom to raise issues or offer information about safety or mission related matters. In turn, the crewmembers will provide the required information and warnings in a timely and professional manner. None of this could be accomplished without cross-monitoring performance and crew tasks.

(2) Mission Changes and Updates. Crewmembers should routinely update each other while highlighting and acknowledging mission changes. They must take personal responsibility for scanning the entire flight environment, considering their assigned workload and areas of scanning. Each crewmember needs to appropriately adjust individual workload and task priorities with minimal verbal direction from the PC when responding to emergencies and unplanned changes of the mission.

(3) Offer Assistance. A crewmember will provide assistance, information, or feedback in response to another crewmember. A crewmember will also offer assistance when he detects errors or sees that another crewmember needs help. In the case where safety or mission performance is at risk, immediate challenge and control measures must be assertively exercised. A crewmember should quickly and professionally inform and assist the other crewmember committing the error. When required, they must effectively implement the two-challenge rule with minimal compromise to flight safety. This means that you must continually cross-monitor other crewmember's actions and remain capable of detecting each other's errors. Such redundancy is particularly important when crews are tired or overly focused on critical task elements and thus more prone to make errors. Crewmembers must discuss conditions and situations that can compromise situational awareness. These include, but are not limited to, stress,

boredom, fatigue, and anger.

6-3. AIRCREW COORDINATION OBJECTIVES. Aircrew coordination principles and objectives originate from and are fundamentally supported by a set of individual, professional skills. Each crewmember is responsible for attaining the leadership skills of effective communication, resource management, decision-making, situational awareness, team building, and conflict resolution. When crewmembers are actively using these skills and practicing aircrew coordination principles, results can be seen and measured to determine if the objectives of the aircrew coordination program are being met. The goals of the program have been defined by four aircrew coordination objectives. The four objectives are—

a. Establish and maintain team relationships. Establish a positive working relationship that allows the crew to communicate openly, freely, and effectively in order to operate in a concerted manner where a climate of professional assistance is easily found and promptly provided.

b. Establish and maintain efficient workloads. Manage and coordinate priorities and execute the mission workload in an effective and efficient manner with the redistribution of task responsibilities as the mission situation changes. Flight duty responsibilities are performed in a timely manner where mission needs are always anticipated.

c. Exchange mission information. Establish all levels of crew and mission COMMs using effective patterns and techniques that allow for the flow of essential data and mission advisories among all crewmembers in a timely and accurate manner.

d. Cross-monitor performance. Cross-monitor each other's actions and decisions to ensure workloads and crew actions are performed in a coordinated manner and to standard. Cross-monitoring crewmember performance keeps a crew ready to provide aircraft and mission advisories to each other and helps to reduce the likelihood of errors affecting mission performance and safety.

6-4. STANDARD CREW TERMINOLOGY. To enhance communication and aircrew coordination, crews should use words or phrases that are understood by all participants. They must use clear, concise terms that can be easily understood and complied with in an environment full of distractions. Multiple terms with the same meaning should be avoided. DOD FLIP contains standard terminology for radio COMMs. Operator's manuals contain standard terminology for items of equipment. Table 6-1, page 6-6, is a list of other standard words and phrases that crewmembers may use.

Table 6-1. Examples of standard words and phrases

Standard word or phrase	***Meaning of standard word or phrase***
Abort	Terminate a preplanned aircraft maneuver.
Affirmative	Yes.
Bandit	An identified enemy aircraft.
Bingo	Fuel state needed for recovery.
Blind	No visual contact of friendly aircraft/ground position. Opposite of VISUAL.
Break	Immediate action command to perform an emergency maneuver to deviate from the present ground track; will be followed by the word “right,” “left,” “up,” or “down.”
Call out	Command by the pilot on the controls for a specified procedure to be read from the checklist by the other crewmember.
target/object Captured	Specific surface target/object has been acquired and is being tracked with an on-board sensor.
Cease fire	Command to stop firing but continue to track.
Clear	No obstacles present to impede aircraft movement along the intended ground track. Will be preceded by the word “nose,” “tail,” or “aircraft” and followed by the direction (for example, “left,” “right,” “slide left,” or “slide right”). Also indicates that ground personnel are authorized to approach the aircraft.
Come up/down	Command to change altitude up or down; normally used to control masking and unmasking operations.
Contact	1) Establish communication with (followed by the name of the element). 2) Sensor contact at the stated position. 3) Acknowledges sighting of a specified reference point (either visually or via sensor). 4) Individual radar return within a GROUP or ARM.
Controls	Refers to aircraft flight controls.
Deadeye	Laser designator system inoperative.
Drifting	An alert of the unintentional or undirected movement of the aircraft; will be followed by the word “right,” “left,” “backward,” or “forward.”
Egress	Command to make an emergency exit from the aircraft; will be repeated three times in a row.
Execute	Initiate an action.
Expect	Anticipate further instructions or guidance.
Firing	Announcement that a specific weapon is to be fired.

Table 6-1. Examples of standard words and phrases

Standard word or phrase	***Meaning of standard word or phrase***
Fly heading	Command to fly an assigned compass heading. (This term generally used in low-level or contour flight operations.)
Go ahead	Proceed with your message.
Go AJ	Directive to activate anti-jam COMMs.
Go plain/red	Directive to discontinue secure operations.
Go secure/green	Directive to activate secure COMMs.
Hold	Command to maintain present position.
Hover	Horizontal movement of aircraft perpendicular to its heading; will be followed by the word “left” or “right.”
Inside	Primary focus of attention is inside the cockpit for longer than 5 seconds.
Jettison	Command for the emergency or unexpected release of an external load or stores; when followed by the word "door," will indicate the requirement to perform emergency door removal.
Laser On	Start/acknowledge laser designation.
Lasing	The speaker is firing the laser.
Maintain	Command to continue or keep the same.
Mask/unmask	To conceal aircraft by using available terrain features and to position the aircraft above terrain features.
Mickey	A HaveQuick time-synchronized signal.
Monitor	Command to maintain constant watch or observation.
Move back	Command to HVR back, followed by distance in feet.
Move forward	Command to HVR forward, followed by distance in feet.
Negative	Incorrect or permission not granted.
Negative contact	Unable to establish communication with (followed by name of element).
Negative laser	Aircraft has not acquired laser energy.
No joy	Aircrew does not have positive visual contact with the target/bandit/traffic/obstruction/landmark. Opposite of TALLY.
Now	Indicates that an immediate action is required.
Offset (direction)	Maneuver in a specified direction with reference to a target.
Outside	Primary focus of attention is outside the aircraft.
Put me up	Command to place the P* radio transmit selector switch to a designated position; will be followed by radio position numbers on the intercommunication panels (1, 2, 3). Tells the other crewmember to place a frequency in a specific radio.

Table 6-1. Examples of standard words and phrases

Standard word or phrase	***Meaning of standard word or phrase***
Release	Command for the planned or expected release of an external load.
Remington	No ordnance remaining except gun or self-protect ammunition.
Report	Command to notify.
Roger	Message received and understood.
Say again	Repeat your transmission.
Slide	Intentional horizontal movement of an aircraft perpendicular to its heading; will be followed by the word "right" or "left."
Slow down	Command to reduce ground speed.
Speed up	Command to increase ground speed.
Splash	1) (air-to-surface) Weapons impact. 2) (surface-to-surface) Informative call to observer or spotter five seconds prior to estimated time of impact. 3) (air-to-air) Target destroyed.
Stand by	Wait; duties of a higher priority are being performed and request cannot be complied with at this time.
Stop	Command to go no further; halt present action.
Strobe	Indicates that the aircraft AN/APR-39 has detected a radar threat; will be followed by a clock direction.
Tally	Sighting of a target, non-friendly aircraft, enemy position, landmark, traffic, or obstruction positively seen or identified; will be followed by a repeat of the word “target,” "traffic," or "obstruction" and the clock position. Opposite of No Joy.
Target	An alert that a ground threat has been spotted.
Target/object captured	Specific surface target/object has been acquired and is being tracked with an on-board sensor.
Traffic	Refers to friendly aircraft that present a potential hazard to the current route of flight; will be followed by an approximate clock position and the distance from your aircraft with a reference to altitude (high or low).
Transfer of controls	Positive three-way transfer of the flight controls between the crewmembers (for example, "I have the controls“, "You have the controls," and "I have the controls").
Turn	Command to deviate from present ground track; will be followed by words "right" or "left," specific heading in degrees, a bearing ("Turn right 30°"), or instructions to follow a well-defined contour ("Follow the draw at 2 O'clock").
Unable	Indicates the inability to comply with a specific instruction or request.
Up on	Indicates primary radio selected; will be followed by radio position numbers on the intercommunication panels ("Up on 1, up on 3").

Table 6-1. Examples of standard words and phrases

Standard word or phrase	***Meaning of standard word or phrase***
Visual	Sighting of a friendly aircraft/ground position. Opposite of BLIND.
Weapons hot/cold/off	Weapon switches are in the ARMED, SAFE, or OFF position.
Wilco	I have received your message, I understand and I will comply.
Winchester	No ordnance remaining.
Zoom In/Out	Increase/decrease the sensor's focal length. ZOOM IN/OUT is normally followed by "ONE, TWO, THREE or FOUR": to indicate the number of FOVs to change. (Note: It is recommended only one change in or out at a time be used for the FOV.)