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Online newsletter of Army aircraft mishap prevention information

In this month's issue of Flightfax, we are focusing on individual and aircrew situational awareness and how our ability to process information influences our performance and risk management decision making abilities.

From a senior leader's perspective, both Pilot In Command and Air Mission Commander are the leaders within the flight that are responsible for establishing and maintaining the positive working environment that encourages open and free exchange of information. You are responsible for setting the tone within the cockpit. Once you have established this open exchange of information, where even the newest PI or most junior CE feels comfortable participating in the crew, then you, as a PC, will be provided the right information necessary for you to build the right mental models for a successful mission. The excellent article "Situational Awareness and Decision Making" by Craig Geis details how our past experiences shape our situational awareness and why complacency is more of a danger to experienced aviators.

Situational awareness is expanded into a crew attribute in CW4 Fenner's article "Don't Be Afraid to Speak Up." The entire aircrew, not just the PC or AMC, is responsible for successful mission execution and each crew member has a role to play. When each crew member is afforded the right voice within the cockpit, the PC will be provided the right information at the right time to make the best decisions. Clear information flow directly influences situational awareness and good situational awareness enhances information flow. It is up to the leaders within the aircraft, supported by a good cockpit team, to achieve this state.

On behalf of the Combat Readiness Center Aviation Team, thank you for your dedication to this Nation and your Selfless Service during this time of conflict. My additional appreciation and well wishes to the Soldiers deployed and their Families. May all be blessed and have a Merry Christmas / Happy Holidays!!

LTC Mike Higginbotham
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Situational Awareness and Decision Making by Craig Geis

This is the fourth in a series of articles presented by Mr. Geis designed to help you better understand the science of human factors, which simply stated, is the study of the human capabilities and limitations that give rise to human performance errors. The three previous articles are found in the Sept 12, Jan 13, and Mar 13 issues of Flightfax.

In order to better understand situational awareness, we need to further explore the interaction of the previously discussed human factor concepts in the previous three articles.

Situational awareness involves being aware of what is happening around you in order to understand how information, events, and your own actions will impact your decisions, both immediately, and in the near future.

A common view of situational awareness involves ***perceiving, understanding, and thinking ahead*** to come up with an anticipated result.

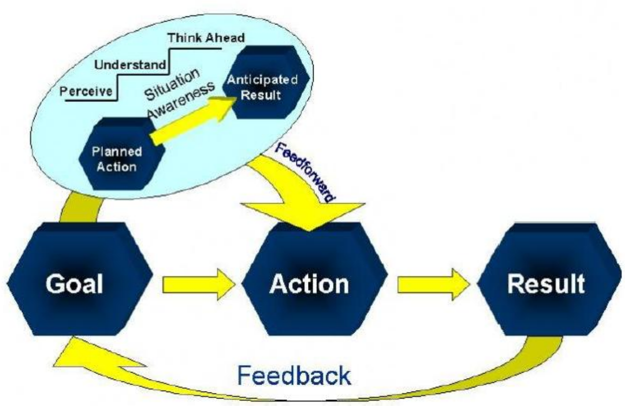

Figure 1: Situational Awareness Model
Reference: Sky Library - European Organization for the Safety of Air Navigation

The model in Figure 1 is simple, but the concept of situational awareness is not. In reality, our ability to perceive, understand, and think ahead requires us to examine a multitude of human factor issues.

Perception & Information Processing

Our level of situational awareness is ultimately determined by our ability to effectively process information. In order to be processed, the incoming information must first be perceived. To prevent overload, the brain selects only a small portion of the information detected by the peripheral nervous system to process consciously. Figure 2 illustrates that effective information processing is a function of our current physiological state which ultimately determines what information is available to process.

Individual stress levels determine the nervous systems level of arousal, which determines what we are able to attend to. We may be scanning our environment for threats, but if we do not attend to a stimulus, we do not perceive it at the conscious level. In this instance, our level of situational awareness is zero. A lack of situational awareness is often seen as complacency. Physiologically we perceive the information but are not consciously aware of it, so there is no understanding.

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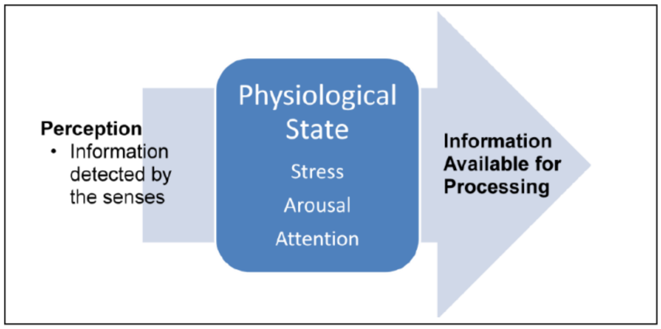

Figure 2

Complacency

We have all seen complacency in ourselves. Complacency, in simple language, is ***a lack of situational awareness or concern for a problem, accompanied by a feeling of pleasure and security in the task we are doing.***

While complacency may be about a feeling of self-satisfaction, contentment, and sometimes smugness about what we are doing, we need to be aware that complacency starts <u>unconsciously</u> *- by not effectively processing the information detected by the peripheral nervous system.*

The root cause factors listed below are most often seen in accident reports as complacency error. The seven factors are:

1. Habit Patterns - Automatic actions requiring little or no conscious thought, and no conscious monitoring.

2. Normalcy - Things appear normal because of the highly repetitive nature of the task, and the high probability of success.

3. Simplicity - The result of learning a task so well that no thought or concern is put forward to complete it.

4. Familiarity - The result of continued exposure to the same task. Familiarity is also the result of experience.

5. Assumption - If something has always worked in the past, we believe it will work again.

6. Expectations - Low expectation of encountering a problem often comes from success in prior experiences.

7. Constant Success/Lack of Negative Consequences – A lack of negative consequences leads to learning that has a high probability of repeating itself.

Constant exposure to any or all of these seven principles wires the nervous system to unconsciously choose courses of action. Choosing a course of action without thoroughly understanding the potential implications means we have a reduced level of situational awareness.

Understanding this helps explain why it is often the ***more experienced*** pilots that are ***more susceptible to complacency;*** they just don't perceive the threat. Less experienced individuals are more susceptible to skill-based error. I have developed a simple assessment tool that can assist you in determining the level of risk/probability of complacency vs. skill-based error. It will allow you to assess the type of error an individual may make by looking at the basic components that lead to complacency and skill-based error. This tool is available for download at

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www.cti-home.com under the Articles tab in the Heliprops folder.

Understanding: Comprehending the Situation

The initial development of situation awareness comes from our understanding the meaning of the perceived information. This is accomplished by comparing incoming stimulus with information stored in our memory. We also make our initial risk assessment at this stage.

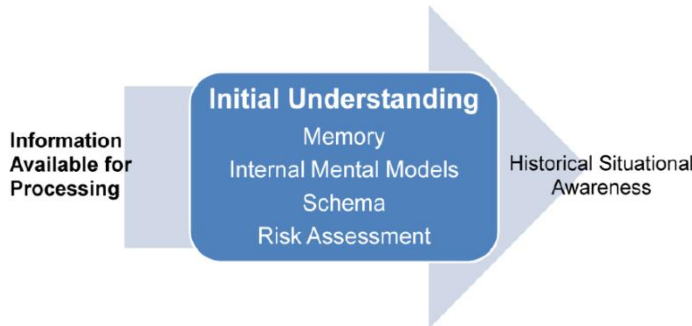

Figure 3: Understanding & Internal Models

The information stored in our memory is called a ***mental model*** or ***schema***. Think of them as a mental structure or composite of memories that we use to organize and simplify our knowledge of the world around us. We have schemas about ourselves, other people, our company, our equipment, the weather and, in fact, almost everything. They are so basic to our understanding of behavior that we are rarely aware of their impact on our decisions***. Most of our daily decisions are performed unconsciously based on mental models.***

Schemas (mental models) also affect what we notice, how we interpret things, how we make decisions, and how we act. Remember, the seven root causes of complacency, each one acts as a filter, accentuating and downplaying various elements. We use them to classify things, such as when we 'pigeon-hole' people. Schemas also help us forecast or predict what will happen. Schemas help us 'fill in the gaps.' When we classify something we have observed, the mental model will tell us much about its meaning, hence enabling a threat assessment and other predictions.

These permanently stored models are developed throughout life, and are acquired through experience and training. They are composed from bits and pieces (thin slices) of information gathered and stored in our memory. We sometimes call them experiences, biases, prejudices, attitudes, etc. If a schema is incomplete or wrong for the current situation, it can act as an information filter, and we will perceive only selected parts of the information. When schemas are complete, we can use them to make general predictions about a particular situation. Think of it as *a static assessment in historical time.*

While helpful, static mental models may replace carefully considered analysis as a means of conserving time and energy, and play a major role in applying knowledge, and in making decisions. Mental models become deeply ingrained blueprints of thought and action. This knowledge is fundamental to understanding how we view situations through our own filters, and how we ultimately make decisions. Our mental models help shape our behavior and define our approach to solving problems. Internal models are good for general predictions, but what about operating in a real-time environment? Remember that '*lazy piece of meat'* between our ears,

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mentioned in the first article? Many accidents occur when a crewmember distorts current information to fit their own internal model. The brain likes this simple way of conserving energy for 'more important tasks.'

Understanding: Comprehending the Situation

At any given time, our personal level of situational awareness is the degree of accuracy by which our perception of our current environment mirrors reality. In most accident investigations, we find that reality should have reflected more than the individual's internal model. Situational models help us to create a clearer perception of the situation, and a more accurate assessment of risk.

Figure 4: Understanding & Situational Models

We develop a situational model by gathering real-time, current information, (which may or may not agree with our internal mental model), and creating a new situational model. This new situational model is seen as our level of situational awareness.

Thinking Ahead

Conscious behavior comes from our ability to use the information available to think ahead. Our new situation model may or may not change our behavior. If the new cues we receive are strong enough, and we are willing to modify our solid internal models, it probably will change our behavior.

Individual vs. Crew Situational Awareness

Every individual will perceive a situation differently, based upon their internal mental models and their interpretation of new information. If we are alone, our decisions are based on our own perceptions. When we operate in a multi-crew/team environment, effective crew situational awareness depends on crewmembers developing accurate expectations for team performance by drawing on a common knowledge base. Even as a single pilot we need to gather information for outside sources to make decisions.

Each crew member will have their own mental model *but* ***to act as a crew, we need to develop a <u>Shared Mental Model</u>.***

A *shared mental model* allows team members to effectively:

- Anticipate the needs of the crew
- Adapt to the changing demands of the task

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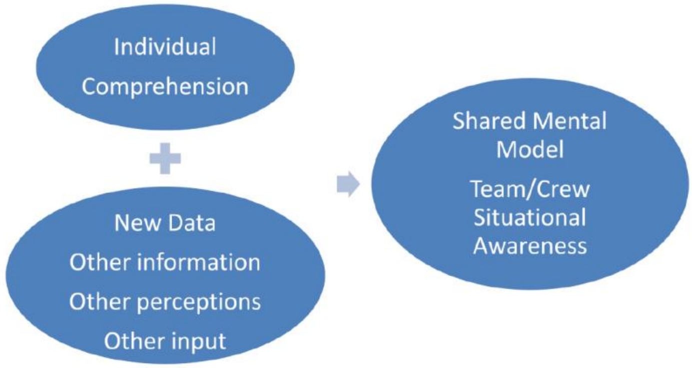

Figure 5: Crew/Team situational Awareness

To ensure a Shared Mental Model of the situation**, crew members must share their knowledge relative to**:

- The task
- Team goals and objectives
- Team member roles and responsibilities
- Information regarding threats/hazards that each person perceives

To provide a solid base for building crew situational awareness, crew members need to have information that will help them develop relevant expectations about the entire crew task.

Key Points to Remember:

1. Situational awareness is the process of keeping track of what's going on around you in a complex, dynamic environment.
2. We develop situational awareness from experience, training, practicing our job skills, and the use of good crew resource management skills.
3. We must first perceive a stimulus before we can understand its meaning.
4. Complacency generally occurs from a faulty perception of the situation.
5. You can assess the risk of skill error and complacency error by using the Complacency Error vs. Skill-Based Error Risk Assessment Tool.
6. An accurate comprehension of the meaning of a situation comes from both internal and situational mental models.
7. Internal mental models are developed throughout our lives, and are used to filter information quickly and make decisions.
8. Situational mental models represent a real-time assessment of a current situation. The brain compares them to permanently stored internal models and they are adjusted accordingly.
9. Team situational awareness depends on the sharing of information among team members and developing a shared mental model.
10. To develop a shared mental model, teams need to share information on the task, goals & objectives, roles & responsibilities, and information regarding threats.
11. Complacency affects the most experienced person the most.
12. Less experienced people are less complacent, but more prone to skill errors.

Don’t Be Afraid to Speak Up

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UH-60 SP/IE

As we close the chapter on over a decade of combat operations in two different combat zones, our future as a force will be intertwined with the motto’ “doing more with less.” So, as a community, we will be required to focus our attention on maximizing all available training opportunities. Gone will be the days of 700 flight hours in a calendar year. The impact of simple preventable mistakes will be exponentially more costly in this new budget constrained environment.

With that being said, aircrew coordination training will become even more vital to our mission as a force.

We all remember our first RL progression after graduating from flight school: there we sat, nervously trying to be perfect in every action and in every word. We looked at that instructor pilot with perhaps a sense of awe or wonder. Or perhaps you were a junior pilot flying with a well experienced pilot in command, that person being someone you might want to emulate someday.

So this bodes the question: are you being enough of an active crewmember? Only we can answer this if we are being honest with ourselves. The Alaska Airlines Flight 60 crash on April 5, 1976, reminds us that even if you are acting as only a copilot, you still must be a vigil crewmember.

Here’s what happened: The Boeing 727 overran the runway after landing at excessive speed. The captain failed to initiate a go-around, even though the copilot expressed multiple times that they weren’t “going to make it.” This occurred while the aircraft was committed to a full stop landing following an excessively long and fast touchdown from an unstabilized approach. So, expressing your opinion as a crewmember not on the controls that the aircraft does not have enough runway left to land on, during the crash, is obliviously too late.

Being an involved and active crewmember, ready to maneuver the aircraft out of a dangerous situation, may be the difference between life and death.

If we look at the four principles of aircrew coordination in Chapter 6 of the respected Aircrew Training Manual, we can understand what is expected of us. When we **‘Communicate Effectively and Timely,’** it enables the efficient flow and exchange of important mission information. This creates a fluid atmosphere of cooperation between all crew members and allows each one to feel they have a “vested” interest in the safe operation of the aircraft.

Sustain a climate of ready and prompt assistance. Each crewmember must be willing to practice advocacy and assertiveness should the situation demand a different course of action, as time permits. Crewmembers must feel free to voice any concerns they may be feeling in certain situations. We all have different comfort levels in regards to certain environments.

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A 100 hour NVG PI does not have the same comfort level of a 1,500 hour NVG PC in a zero illumination, desert environment. When assistance is offered, it should not be treated as an opinion of one's abilities. It should be treated as a genuine outreach to provide assistance.

TC 3-04.93, Aeromedical Training for Flight Personnel, cites examples of stress responses. The Perceptual Tunneling phenomenon, under cognitive responses, is one that, as aviators, we all have experienced at one time or another whether it was during flight school or your last Annual Proficiency and Readiness Test.

The conundrum is being able to recognize in yourself perceptual tunneling and to request assistance if needed. The simplest act of merely "Passing Off" the flight controls to the other pilot in the aircraft has thwarted many a potential aircraft mishap. Also, it's important that a pilot in command or instructor pilot should be able to recognize when a less experienced pilot is experiencing task overload.

Provide Situational Aircraft Control, Obstacle Avoidance, and Mission Advisories. Nothing could be more paramount to this Aircrew Coordination Principle than **Situational Awareness**. Crew members must feel free to express their concerns or offer information pertinent to the safe conduct of the aircraft. As the saying goes, "The only stupid question is the one that is not asked." Our occupation is a very dangerous one, filled with many strong willed personalities. But as a community, we have got to learn to put our ego's in check from time to time, and place the safety of the crew above all else.

In summary, it takes all crewmembers, acting in unison, for the safe operation of today's Army aircraft. As aircraft technology continues to increase and pilot workload grows along with it, there will be an ever greater need for practicing good aircrew coordination. As history has proven, there is a thin line between overconfidence and complacency. It takes a pilot lashed with intrepidity to identify and correct any pitfalls to the adherence of good aircrew coordination.

Situational Awareness: Don't Let it bite you!

Mishap Review: NVS Training Flight

While stable at a five-foot hover during night NVS training, the AH-64D experienced an un-commanded cyclic displacement to the left, rolling the aircraft approximately 60° causing an impact with the ground. The impact resulted in catastrophic damage to the aircraft, with no significant injuries to the crew.

History of flight

The crew began their duty day with a show time of 1700L for an NVS training flight. They participated in a mission brief and assessed the flight as low risk. At 1845, the crew proceeded to the aircraft to conduct the pre-flight and aircraft run-up. The weather was clear skies with 10 miles visibility, winds 340/09 knots. Temperature was +10C and PA of +100 feet.

At approximately 1940L, the crew departed home station to a designated training area to conduct terrain flight tasks. At the completion of the terrain flight training, the crew proceeded to the stage-field to perform slope landings, arriving at approximately 2030L. Upon completion of a slope landing, while at a five-foot hover with the PI on the controls, the aircraft entered an uncommanded roll to the right and twice to the left. The IP took the controls and stabilized the aircraft. The aircraft then began an uncommanded rolling motion to the left and right, followed by a cyclic displacement to the left, resulting in the main rotor blades making contact with the ground. The aircraft subsequently crashed and sustained extensive damage, the crew was not significantly injured.

Crewmember experience

The IP, in the back seat, had nearly 3,000 hours total flight time, with 2,800 in the AH-64, 1,200 hours as an IP and 800 hours NVS time. The PI, in the front seat, had 142 hours total time, 62 hours in the AH-64D and 12 hours NVS time.

Commentary

The crew that had flown the aircraft the day prior, reported uncommanded left cyclic-input as well, while operating on the ground. Maintenance personnel conducted the appropriate maintenance for the anomaly, and released the aircraft for flight. The aircraft had flown one flight period prior to the mishap flight, with no anomalies noted. Investigation determined that contaminants in the hydraulic system caused malfunction. These contaminants created a binding event with the mechanical spool valve and the Stability Augmentation System (SAS) Actuator Sleeve. As a result, the lateral servo actuator back drove the flight controls, through the mechanical linkage connected to the servo.

Leadership challenges during cold-weather operations

Sept 93 Flightfax

The principles of leadership are unaffected by the weather, but challenges for leaders can be profound during cold weather. To accomplish the mission, leaders must also contend with the stress of the environment. When addressing cold-weather operations, we most often address the threat of frostbite, chilblain, trench foot, dehydration, hypothermia, and so forth. However, the stress of cold can also adversely affect attitudes and morale, and leaders must recognize and cope with these effects if they are to maintain their unit's effectiveness.

Many soldiers come from regions where winters are not severe, and few have experience in working or living outdoors during cold weather. Initially, these soldiers may lack confidence in their ability to cope with and survive in cold weather.

The cold can seem inescapable. Even when soldiers are able to stay warm, the effects of the cold are felt in the need to wear awkward cold-weather clothing, confinement to small shelters, and problems with equipment. These effects can lead to anger, frustration, and depression, which can be intensified by fatigue, periods of isolation, and shortened daylight hours.

When conditions are extremely cold and soldiers have been out for a long time, the need to stay warm tends to become the individual's most important concern. Hurrying to finish the mission and get into a warmer environment can lead crews to take shortcuts, which often leads to accidents.

Leaders are responsible for prevention of cold injuries among their crews. Susceptibility to cold injury varies considerably. The sidebar shows some of the risk factors that can make individuals more susceptible to cold-weather injuries.

Although it's usually the newly-assigned individuals with little or no cold-weather training or experience who sustain cold injuries, leaders cannot fail to monitor the individuals with considerable cold-weather experience. They can become too desensitized to the threat of cold injuries. Leaders must be alert to this kind of carelessness too. Crews need to be taught that when it is cold, tasks may be more difficult but not impossible.

Leaders can build this confidence in their crews by having them practice tasks and survival skills in the cold and by conducting cold-weather training exercises. Viewing the cold as a challenge to be overcome is the key to the positive attitude required to successfully complete the mission.

-Adapted from Su*staining Health* a *Performance In the Cold:* A *Pocket Guide* to *Environmental Medicine Aspects* of *Cold Weather Operations*, U.S. Army Research Institute of Environmental Medicine

Individual cold-injury risk factors

- *Inadequate training*
- *Prior cold Injury*
- *Inadequate clothing and equipment*
- *Illness, Injury, wounds*
- *Fatigue*
- *Dehydration* (*Poor Intake of fluids or excessive caffeine Intake)*
- *Alcohol*
- *Poor nutrition*
- *Low body fat*

Class A – C Mishap Tables

	Manned Aircraft Class A – C Mishap Table									as of 12 Dec 13
	Month	FY 13					FY 14			
		Class A Mishaps	Class B Mishaps	Class C Mishaps	Fatalities		Class A Mishaps	Class B Mishaps	Class C Mishaps	Fatalities
1st Qtr	October	1	0	7	0			1	3	
	November	0	1	5	0		3		7	
	December	2	1	0	0				2	
2nd Qtr	January	0	0	6	0					
	February	0	0	2	0					
	March	2	1	5	6					
3rd Qtr	April	1	1	6	2					
	May	0	0	5	0					
	June	1	1	3	0					
4th Qtr	July	0	0	6	0					
	August	1	1	9	0					
	September	0	1	0	0					
	Total for Year	8	7	54	8	Year to Date	3	1	12	0

UAS Class A – C Mishap Table									as of 12 Dec 13
	FY 13 UAS Mishaps					FY 14 UAS Mishaps			
	Class A Mishaps	Class B Mishaps	Class C Mishaps	Total		Class A Mishaps	Class B Mishaps	Class C Mishaps	Total
MQ-1	5	1	0	6	W/GE	1			1
MQ-5	2	0	3	5	Hunter	1			1
RQ-7	0	4	10	14	Shadow		5	1	6
RQ-11					Raven				
RQ-20	0	0	6	6	Puma				
YMQ-18									
SUAV					SUAV				
Aerostat	1	3	1	5	Aerostat	1			1
Total for Year	8	8	20	36	Year to Date	3	5	1	9

It’s coming ...

Whether you're prepared or not, the snow and ice of winter are just a few short weeks away.

Sept 1992 Flightfax

Operating aircraft in cold weather conditions or an arctic environment presents no unusual problems *if you're prepared.* If crews are aware of the changes that take place and conditions that may exist because of lower temperatures and freezing moisture, risk can be minimized and missions safely accomplished.

Preflight

Pilots must be more thorough in the preflight check when temperatures have been at or below O°C (32°F). Water and snow may have entered many parts of the aircraft during operations or in periods when the aircraft was parked unsheltered. This moisture often remains to form ice that will immobilize moving parts, damage structure by expansion, or occasionally foul electric circuitry.

Covers afford protection against freezing rain, sleet, and snow when installed on a dry aircraft before precipitation begins. Since it is not practical to completely cover an unsheltered aircraft, parts not protected by covers, parts adjacent to cover overlap, and joints require closer attention, especially after periods of blowing snow or freezing rain.

Crews should remove accumulations of snow and ice before flight. Failure to do so can result in hazardous flight because of aerodynamic and center of gravity disturbances, as well as the introduction of snow, water, and ice into internal moving parts and electrical systems. Particular attention is required for the main and tail rotor systems and their exposed control linkages.

Flight

Hovering helicopters produce the greatest amount of rotor wash, creating the potential for rotor-induced whiteout when operating over snow-covered terrain. The hazard is not as serious for aircraft with wheels as it is for skid-mounted aircraft. Aircraft with wheels can be ground taxied safely to the takeoff point with only minimum blade pitch, thus reducing rotorwash. Takeoffs pose a hazard in snow-covered terrain because of the lack of visual cues for peripheral vision and landing can present a significant hazard unless aircrews follow proper landing procedures. Selecting an improper landing technique can also result in whiteout. FM 1-202: Environmental Flight recommends specific techniques pilots should use when taking off from and landing on snow-covered areas.

Maintenance

The increased requirement for aircraft maintenance stems directly from low temperatures. Operation at temperatures below -50°F should not be attempted except in emergencies, unless the aircraft with the appropriate winterization kit and auxiliary systems has proven reliable at lower temperatures. The following special precautions and equipment are necessary to ensure efficient operation of the aircraft:

- Reciprocating engines should not be started at temperatures of 10°F and below without the

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use of an electrical power unit for assistance in starting. A source of external heat for application against the engine accessory case, carburetor induction system, oil pump, and battery will ensure easier starting.

- The standard portable combustion type heater that includes a blower and flexible hoses for application of heat to localized areas may be used for preheating aircraft components and systems before starting. In addition to preheating engines for starting, these units may also be employed to heat specific portions of the aircraft so that maintenance personnel can work without gloves. (Don't forget that touching cold metal with bare hands in below-freezing temperatures can tear the skin right off your hands.)

- For aircraft with internal combustion heaters, the heaters should be turned on to warm the aircraft for at least 20 minutes before operating hydraulic systems. Otherwise, damage to the system is more likely.

- Some system gauges/indicators are unreliable until the system reaches operating temperature.

-When temperatures remain below freezing, aircraft batteries not in use should be removed and stored in a warm place.

-When transferred from a warm to a cold environment, some aircraft engines, transmissions, and hydraulic and landing gear systems may require a different kind of lubricating oil or hydraulic fluid.

-Thickening of oils at low temperatures presents problems in operation and starting. Installing standard winterization equipment that includes baffles on oil coolers and engine cowl baffles can aid in maintaining proper temperatures. Oil dilution units may also be installed, although it is normally satisfactory to drain the oil from engines at the end of the day's operations and to heat it before replacing it in the engine.

- Aircraft with air-charged components such as accumulators and cargo hooks should be charged with nitrogen because air condenses and contracts in colder temperatures. Low pressure and moisture in the system may prevent the system from functioning properly.

-Operation of aircraft in temperatures below -35°F results in a marked increase in metal fatigue. All metals become increasingly brittle as temperatures decrease. This will be evidenced by an increase in the number of skin cracks and popped rivets in stress areas. Careful attention must be devoted to these areas during all stages of maintenance operations.

Fortunately, most units are not subjected to a severe cold-weather environment the entire year. But many units do encounter some snow and ice conditions during winter months. And a lack of recent flight experience in snow and ice conditions-skill decay-leads to accidents. Field manuals and operators and maintenance manuals for your aircraft contain suggested techniques and procedures for flight and maintenance operations in the cold environment.

You can't control or eliminate all risks associated with cold-weather operations, but you can learn to manage them. Prepare now by brushing up on techniques and procedures you'll be using in the months ahead. Even in those areas where summer lingers, watch out: it's coming - old man winter will soon be here. Don't let him catch you unprepared.

Selected Aircraft Mishap Briefs

Information based on Preliminary reports of aircraft mishaps reported in November 2013.

Attack helicopters

AH-64 

-D Series. Crew was conducting aircraft qualification training, when crew reported uncommanded cyclic input. Aircraft contacted the ground. (Class A)

-D Series. Aircraft crashed just after take-off from the airfield and came to rest on its left side. One crewmember suffered abrasions in the impact. (Class A)

-E Series. Crew was participating in night operations when they detected smoke odor in the cockpit. While conducting emergency landing, the crew experienced electric power outage in the cockpit and subsequently impacted the ground. Crew was able to egress. (Class A)

-E Series. Crew was conducting a #1 Engine Max Power Check, with #2 Engine power lever reduced, when the #1 engine sustained a high-side event. Suspect #1 engine damage requiring replacement. (Class C)

-D Series. Crew experienced NR exceedance and engine-out warning during RL progression training (DECU lock-out procedure/task). Crew conducted single-engine landing to the runway. MDR read-out confirmed NR over speed. (Class C)

Cargo helicopters

MH-47 

Right side M134 Mini-gun malfunctioned. Two crewmembers manning the weapon received minor shrapnel wounds to the lower extremities. (Class C)

Utility helicopters

UH-60 

-M Series. Crew was initiating a two-wheel landing during NVG training when the underside of the fuselage made contact with the ground. (Class C)

-A Series. Post-MTF Flight inspection revealed a transmission overtorque condition. MTF comprised engine power checks. (Class C)

Observation helicopters

MH-6M 

Aircraft MRS made contact with the cupola during familiarization training. Damage reported all MRB and cupola antenna. (Class C)

Unmanned Aircraft Systems

MQ-5B 

System had reached 250' AGL following launch when it initiated an un-commanded descent and impacted the runway. (Class A)

RQ-7B 

-Crew experienced engine failure during flight, under the TALS, at approx. 600' AGL, and deployed the recovery chute. System crashed on impact, sustaining significant damage. (Class C)

-Crew experienced RPM fluctuations while system was in flight, following by full engine failure at 300' AGL. FTS was activated but system landed with damage. (Class C)

U.S. ARMY COMBAT READINESS/SAFETY CENTER

If you have comments, input, or contributions to Flightfax, feel free to contact the Aviation Directorate, U.S. Army Combat Readiness/Safety Center at com (334) 255-3530; DSN 558

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