NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N 8000.301

8/1/05

Cancellation
Date: 8/1/06

SUBJ: OPERATIONAL RISK ASSESSMENT PROGRAMS FOR HELICOPTER EMERGENCY MEDICAL SERVICES

1. PURPOSE. This notice was developed with the helicopter emergency medical services (HEMS) community to provide for principal inspectors (PI) in all specialties guidance related to risk assessment programs used by HEMS operators. This notice also contains information for PIs to provide to HEMS operators for developing their risk assessment program.

> **NOTE: This notice identifies possible risk factors and the dangers those risks pose to both flightcrew and patient; for this reason, all aircraft operators involved in air medical flight should actively promote the use of risk assessment models.**

2. DISTRIBUTION. This notice is distributed to the division level in the Flight Standards Service in Washington headquarters; to the branch level in the regional Flight Standards divisions; to the Flight Standards District Offices, and to the Regulatory Standards Division at the Mike Monroney Aeronautical Center. This notice is also distributed electronically to the division level in the Flight Standards Service in Washington headquarters and to all regional Flight Standards divisions and district offices. This information is also available on the Federal Aviation Administration's (FAA) Web site at: http://www.faa.gov/library/manuals/examiners_inspectors/8000/media/n8000-301.doc.

> **NOTE: For budgetary reasons, the examples in the appendixes are printed in black and white. To view them in color, go to the above Web address.**

3. BACKGROUND.

a. Introduction. HEMS operate in a demanding environment. They provide an invaluable service to the nation by providing crucial, safe, and efficient transportation of critically ill and injured patients to tertiary medical care facilities. While the contribution of HEMS is profound as a component of the nation's medical infrastructure, from an operational standpoint, it is a commercial aviation activity performed by air carrier operators. It therefore must be conducted with the highest level of safety. To meet this requirement, risks must be identified, assessed, and managed to ensure that they are mitigated, deferred, or accepted according to the operator's ability to do so within the regulations and standards appropriate to the operation.

b. Regulatory Requirements.

(1) Title 14 of the Code of Federal Regulations (14 CFR) part 135 operators are required to have management personnel identified per 14 CFR part 119, § 119.69. This section states, in pertinent part (***emphasis added***):

> (a) Each certificate holder must have sufficient qualified management and technical personnel to ensure the safety of its operations. Except for a certificate holder using only one pilot in its operations, the certificate holder must have qualified personnel serving in the following or equivalent positions:
>
> (1) Director of Operations.
> (2) Chief Pilot.
> (3) Director of Maintenance.
>
> ……
>
> (d) The individuals who serve in the positions required or approved under paragraph (a) or (b) of this section and anyone in a position to exercise control over operations conducted under the operating certificate must—
> (1) Be qualified through training, experience, and expertise;
> (2) To the extent of their responsibilities, ***have a full understanding*** of the following material with respect to the certificate holder's operation—
> ***(i) Aviation safety standards and safe operating practices;***
> (ii) 14 CFR Chapter I (Federal Aviation Regulations);
> (iii) The certificate holder's operations specifications;
> (iv) All appropriate maintenance and airworthiness requirements of this chapter (e.g., parts 1, 21, 23, 25, 43, 45, 47, 65, 91, and 135 of this chapter); and
> (v) The manual required by § 135.21 of this chapter; and
> ***(3) Discharge their duties to meet applicable legal requirements and to maintain safe operations.***

(2) HEMS operators, which are certificated under part 135, must have adequate management personnel in place. These personnel, within the extent of their responsibilities, must have a full understanding of safe aviation operating practices. They must discharge their duties to meet applicable legal requirements and to maintain safe operations throughout their organization and locations. The use of a risk assessment and risk management program provides a way to ensure that these management responsibilities are met. The company's operating procedures should incorporate the program's principles throughout the flight, as portions of the flight may be conducted under 14 CFR part 91 (general operating rules) or part 135 (EMS passenger-carrying operations).

c. Review of Recent Accident Data.

(1) A preliminary review of the commercial HEMS accidents from January 1998 through December 2004 revealed that CONTROLLED FLIGHT INTO TERRAIN (CFIT), INADVERTENT FLIGHT INTO INSTRUMENT METEOROLOGICAL CONDITIONS (IMC), AND LACK OF OPERATIONAL CONTROL are predominant factors, particularly at night and during low visibility conditions. Of the 27 fatal HEMS accidents, 21 occurred during night operations. Of the 21 night accidents, 16 of the operations originated under visual flight rules (VFR); the pilots inadvertently flew into IMC conditions, resulting in a CFIT accident.

(2) This preliminary review revealed that inadequate risk assessment and management deficiencies may have contributed to many recent fatal accidents in HEMS operations. Notice N 8000.293, Helicopter Emergency Medical Services Operations, provides a recommendation that HEMS operators emphasize a safety culture within their organization by applying basic system safety attributes and risk management techniques to operations. Operators were also advised to apply safety attributes or risk assessment/management strategies to each flight. As a reference, operators and inspectors could access information on system safety and risk management from http://www.asy.faa.gov/Risk/.

d. Basic Concepts Used in a System Safety Risk Management/Assessment Program. System Safety Risk Management techniques optimize safety by identifying operational hazards and related risk, and eliminating or mitigating them to a safe state by using established policies and procedures. The company procedures manual should contain clearly defined procedures for maintaining operational control during all phases of aircraft operations, and those procedures should contain processes or procedures for risk assessment and management. The pilot has the ultimate responsibility and authority to determine the risks associated with a flight operation. However, the method of operational control should promote his/her use, as a resource, the input of the mechanics, communications specialists (individuals who function as a dispatcher/flight follower), both ground and flight medical personnel, managers, and all other related support personnel involved with a flight operation.

(1) Concepts. The basic concepts of risk management include:

(a) The overriding concept is that the pilot's authority to decline a flight assignment is supreme, while his/her decision to accept a flight assignment is subject to review, if certain risks are identified.

1 The pilot's decision to decline, cancel, divert, or terminate a flight overrides any decision of other parties to accept or continue a flight.

2 The pilot's decision to accept a flight assignment may be overridden by other personnel by use of the operational control procedures and policies of the certificate holder, including the use of risk assessment and management tools and techniques.

(b) If the pilot has declined a flight assignment, NO other parties (e.g., management, operations, etc.) shall continue to conduct risk assessments pertaining to that flight as their input could not be used to override the pilot's decision to decline the assignment.

(c) A risk-assessment plan is a tool used by the flight management personnel and flightcrews to expand the parameters of decisionmaking for the pilot and flightcrew, and to assist in preflight planning and operational control of the aircraft. The company should have procedures on how to mitigate or reduce the risk to an acceptable level.

(d) If the pilot's initial risk assessment results in a tentative decision to accept the flight, but significant risks have been identified, then per the company's integrated risk assessment plan, additional operational inputs are used.

(e) As potential hazards are identified in the assessment process, a collaborative group of additional persons who have the experience/knowledge to assist the flightcrew in safety determinations are brought into the decisionmaking process. Such collaboration should never result in the questioning or overruling of the pilot's determination that the risks associated with a flight mission or operation are too numerous or high.

(2) Examples. Examples of risk assessment and risk management could include:

(a) A flightcrew is aware of a maintenance discrepancy that has been repaired, or a component that has been overhauled. The flightcrew may be concerned with what to watch for on subsequent flights, i.e., higher temperatures or higher pressures (providing the instrument readings are within the required operating range), and seek input from maintenance professionals.

(b) A VFR-only pilot accepts a flight assignment in marginal VFR conditions, and following the company's risk management plan receives subsequent input on the status of nearby airports/heliports. The pilot then uses the information to support his/her decision: to fly the planned flight, cancel the flight, delay the flight until weather improves, or determine that an IFR (instrument flight rules) certificated aircraft and flightcrew is required. In any case, the information is used to support the pilot's decisionmaking process.

(3) Variables. In the above examples, as more information is attained to assist the flightcrew with the go/no-go decisionmaking process, another iteration or cycle in the risk assessment process is begun and the determination to fly is reviewed against a new, better-defined, standard/environment. Typical risk variables include, but are not limited to:

(a) Weather (Current and Forecast).

- Ceiling, visibilities—departure, en route, arrival, alternate
- Precipitation—type(s)
- Turbulence—existing and forecast
- Icing—type and forecast
- Winds/gust spread—wind direction, speed, gust spread
- Density altitude
- Ambient lighting

(b) Airworthiness Status of the Helicopter.

- Proper preflight
- Any deferred items in accordance with the Minimum Equipment List (MEL)
- Fuel and oil serviced
- Security of cowling(s), doors and/or equipment

- VFR vs. IFR equipment capabilities
- Inspection status
- Recent maintenance actions
- Time remaining until next inspection, overhaul, teardown, etc.
- Required current maps, approach plates, NOTAMs

(c) Incorporation of Technologies to Aid in Managing Risks.

- Radio/radar altimeters
- High intensity search/landing light systems
- Global positioning system (GPS) moving map systems
- Airborne weather radar systems
- Night vision goggles
- Enhanced vision systems
- Autopilot/stability augmentation systems
- Terrain Avoidance Warning System (TAWS)
- Adequacy of training on new technologies

(d) Performance Margins.

- Weight/center of gravity margins
- High density altitudes
- Fuel margins and range limitations

(e) Pilot and Flight Crewmember Performance.

- Experience in make and model of helicopter, area of operations, and type of operation
- Rest, duty, and flight time impacts on human performance (additional duties during duty time and adequate sleep during rest period time)
- Personal performance factors, such as personal stress (recent divorce, death, illness, or birth in family)
- Influence of pilot's knowledge of the patient's status (pediatric, critical injury)
- Communication between crew and all pertinent specialists
- Continuity during shift changes
- Currency of training
- Inadvertent IMC training
- Crew resource management
- Experience of crewmembers operating together as a unit

(f) Operating Environment.

- Terrain/obstructions
- Ambient lighting
- Natural and industrial weather factors
- Availability and status of airports/heliports

- Air traffic density
- Knowledge that other operators in the area have declined the flight due to
  - Localized weather
  - Forecast weather
  - Recent flight(s) experiencing marginal conditions
- Airspace requirements
- Communications and navigation facilities
- Availability of low-level VFR route structure

(g) Organizational Environment.

- Changes in required management personnel
- Changes in air carrier management
- Rapid expansion or growth
- New or major program changes
- Merger or takeover
- Labor management relations
- Organization accidents, incidents, or occurrences

4. RISK ASSESSMENT PROGRAM CONFIGURATIONS.

NOTE: Appendixes 1, 2, and 3 contain examples of risk assessment tools that are currently used in the HEMS operational community. There is no "one size fits all" tool. Each operator should consider its own operational and environmental needs in developing its risk assessment tool(s) and plans. In addition, these unique operational and environmental needs will drive the relative weight of each identified risk for each operation and/or location. The operator must determine the specific weighting of risks for its particular operation. The examples given are for reference only; the FAA does not endorse the use of one tool over another. Each of the following risk assessment configurations is useful; however, an integrated program providing enhanced training in aeronautical decisionmaking, combining procedure-weighted, training-weighted, and other programs, may achieve the best results.

a. Procedure-weighted Program. To standardize risk assessment while minimizing training requirements, an operator may opt to develop and implement a "procedure-weighted" program configuration. This configuration typically uses a checklist format tool, often with numerical weighting values, which trigger levels of concurrence with the pilot's "go" decision. Appendix 1 includes examples of representative procedure-weighted tools.

(1) Advantages of the Procedure-weighted Configuration Include:

(a) Minimal training is required on the principles of risk assessment and risk management.

(b) Standardized assessment of risks and mitigations, especially when using a system that is numerically based.

(2) Disadvantages of the Procedure-weighted Configuration Include:

(a) Takes more time and effort to complete the assessment, and may delay departure.

(b) May not provide visual cues to the level of risk and, therefore, may not be as obvious to all users.

(c) A checklist does not address the continuing risk assessment skills necessary during the entire flight. Risk assessment is an ongoing process; during a single flight, multiple risks are monitored on different levels.

b. Training-weighted Program. To minimize the time spent upon receiving a flight assignment, an operator may opt to "front load" its efforts in risk assessment and risk management by providing a higher level of training on the principles of risk assessment and developing a highly integrated risk management program. In doing so, it may be able to achieve an effective risk assessment and risk management program by using fairly simple (and often graphically based) decision tools. Appendix 2 includes representative examples of training-weighted tools.

(1) Advantages of the Training-weighted Configuration:

(a) In practical use, minimal time is required to make the series of decisions necessary to assess and manage risks.

(b) The use of graphical tools provides a visual, immediately understood description of the risk and the required mitigations.

(2) Disadvantages of the Training-weighted Configuration:

(a) May require more demanding training at the initiation of the process and in subsequent recurrent training.

(b) May require a stronger set of "soft skills" by users of the process.

NOTE: "Soft skills" refers to proficiencies that go beyond technical knowledge and psychomotor skills necessary to operate a helicopter and are often the first line of defense¾ and sometimes the last¾ against accidents caused by lapses in human performance. This includes adherence to standard operating procedures, decisionmaking, judgment, air medical resource management (known as AMRM; similar to crew resource management), and professionalism. These skills are not easily or quickly conveyed in training programs but are developed through the continuing commitment of corporate owners/executives, managers, trainers, pilots,

crewmembers, mechanics, medical staff, and communication specialists to an organizational safety culture.

c. Alternative Risk Intervention Policy. Some operators integrate "releasing authority" after a nonroutine event. Experience has shown that the community tends to hire "mission oriented" individuals who will seek ways around an obstacle to complete the mission. It may be beneficial to intentionally slow the go/no-go decisionmaking process, particularly at the first indication that an abnormal situation might be developing. Appendix 3 includes an example of an alternative risk management tool.

5. ACTION. PIs assigned to HEMS operators should review the content of this notice and provide a copy of this notice to their assigned operators. PIs should encourage the operators to distribute this notice to each of the operator's bases and sub-bases. Operators should be strongly encouraged to implement a risk assessment and management program, which may incorporate this notice as a component of the program, or otherwise identify their management processes and operational controls that ensure that safe operating practices are applied in flight operations and to maintain safe operations.

6. TRACKING. Document the conveyance of the information contained in this notice for each HEMS operator:

a. Use Program Tracking and Reporting Subsystem (PTRS) codes 1030, 3030, or 5030, as applicable.

b. Enter "N8000301" in the "National Use" field (without the quotes).

c. After the review of the certificate holder's procedures is complete, close out the PTRS.

7. DISPOSITION. This notice will NOT be incorporated into Order 8400.10, Air Transportation Operations Inspector's Handbook, nor into Order 8700.1, General Aviation Operations Inspector's Handbook. Questions concerning this notice should be directed to the Air Carrier Operations Branch, AFS-220, at (202) 267-9518, or the Operations and FAA Safety Team Support Branch, AFS-820, at (202) 267-8212.

/s/ James J. Ballough
Director, Flight Standards Service

APPENDIX 1. EXAMPLES OF PROCEDURE-WEIGHTED RISK ASSESSMENT AND MANAGEMENT PROCESSES

EXAMPLE 1. GO/NO-GO DECISION MATRIX

STATIC RISK FACTORS		SCORE
< 6 mos. on Current Job	+1	
< 1 yr. in EMS	+1	
< 200 hrs. in Type	+1	
> 500 hrs. in Type	-1	
Last Flight > 30 Days	+1	
Last Night Flight > 30 Days (night requests only)	+1	
6 mos. Since Check Ride	+2	
Cockpit Not Configured for Inadvertent IMC	+1	
Navigation or Radio Item on MEL	+1	
Back-up Aircraft	+1	
Newly-installed Equipment (i.e., satellite phone, avionics, GPS)	+1	
Night Vision Goggles (NVG) Equipped	-1	
< 3 NVG Flights in the Last 120 Days	+1	
Medical Crew < 1 yrs. Experience (both crewmembers)	+1	
IFR Program	-4	
VFR Program	+1	
External Stresses (divorce, illness, family/work issues/conflicts)	+1	
Total Static Score		

DYNAMIC RISK FACTORS		
Ceiling within 200' of Program Minimums	+1	
Visibility within 1 Mile of GOM Minimums	+1	
Precipitation with Convective Activity	+1	
Convective Activity with Frontal Passage	+1	
Deteriorating Weather Trend	+1	
High Wind or Gust Spread Defined by Operations Manual	+2	
Moderate Turbulence	+2	
Temperature/Dew Point < 3 Degrees F	+1	
Forecast Fog, Snow, or Ice	+2	
Weather Reporting at Destination	-1	
Mountainous or Hostile Terrain	+1	
Class B or C Airspace	+1	
Ground Reference Low	+1	
Ground Reference High	-1	
Night Flight	+1	
90% of Usable Fuel Required (not including reserve)	+1	
Flight Turned Down by Other Operators Due to Weather (if known)	+4	
Control Measures		
Delay Flight	-1	
Avoid Mountainous/Hostile Terrain	-1	
Utilize Pre-Designated LZs for Scene Requests	-1	
Plan Alternate Fuel Stop	-1	
Familiarization Training (self-directed)	-1	
Total Dynamic Score		

APPENDIX 1. EXAMPLES OF PROCEDURE-WEIGHTED RISK ASSESSMENT AND MANAGEMENT PROCESSES (Continued)

EXAMPLE 1. GO/NO-GO DECISION MATRIX (Continued)

Grand Total of Static and Dynamic Scores	

RISK CATEGORY	COLOR CATEGORY		EOC ACTION	TOTAL POINTS
NORMAL		GREEN	Pilot Approval	0 - 14
FLIGHT MANAGER LEVEL		YELLOW	Call Manager	15 - 18
UNACCEPTABLE		RED	Cancel Flight	19 or Greater

NOTE: This example is for reference only. Each operator should consider its own operational and environmental needs in developing its risk assessment tool(s) and plans.

APPENDIX 1. EXAMPLES OF PROCEDURE-WEIGHTED RISK ASSESSMENT AND MANAGEMENT PROCESSES (Continued)

EXAMPLE 2. ASSESSMENT CHART

1. EXPERIENCE **Less than 2 years** **2 - 3 years** **4 - 5 years**	 **+10** **+5** **+2**	☐
2. WEATHER **Less than 3,000' – 5 sm** *(Anywhere on the route)*	**+5**	☐
3. NIGHT *(During any portion of the flight)*	**+5**	☐
4. NON-LOCAL *(Applies to all flights out of defined local flying area)* **Not local** **New location**	 **+4** **+3**	☐ ☐
5. EARLY MORNING **Flight between 2 a.m. and 5 a.m.** *(If any portion of the flight to fall in this time window)*	**+1**	☐
TOTAL		☐

Considerations ¾

1) Have you been to this destination before? How recently?
2) What are the weather conditions? How confident are you of the weather along the entire route?
3) Is all or any part of this mission going to occur at night? If so, will you have some moonlight?
4) Have you thought through the entire mission? That is, can you return as easily as you can get there?
5) Are there any problems with the aircraft that may be a factor for this mission?
6) How many consecutive shifts have you worked prior to this mission? How much flying have you done during those shifts?
7) Do you feel fully rested and capable to accept this mission?
8) Do you have any reservations at all with accepting this mission?

A TOTAL of 20 or higher requires greater operational control.

NOTE: This example is for reference only. Each operator should consider its own operational and environmental needs in developing its risk assessment tool(s) and plans.

APPENDIX 2. EXAMPLES OF TRAINING-WEIGHTED RISK ASSESSMENT AND MANAGEMENT PROCESSES

EXAMPLE 1. RISK ASSESSMENT MATRIX

RISK ASSESSMENT MATRIX				
	Severity			
Likelihood	Negligible	Marginal	Critical	Catastrophic
Frequent				
Probable				High
Occasional			Serious	
Remote		Medium		
Improbable	Low			

Severity Scale Definitions	
Catastrophic	Results in fatalities and/or loss of the system.
Critical	Results in severe injury and/or major system damage.
Marginal	Results in minor injury and/or minor system damage.
Negligible	Results in less than minor injury and/or less than minor system damage.

Likelihood Scale Definitions		
Frequent	Individual	Likely to occur often.
	Fleet	Continuously experienced.
Probable	Individual	Will occur several times.
	Fleet	Will occur often.
Occasional	Individual	Likely to occur sometime.
	Fleet	Will occur several times.
Remote	Individual	Unlikely to occur, but possible.
	Fleet	Unlikely, but can reasonably be expected to occur.
Improbable	Individual	So unlikely, it can be assumed it will not occur.
	Fleet	Unlikely to occur, but possible.

APPENDIX 2. EXAMPLES OF TRAINING-WEIGHTED RISK ASSESSMENT AND MANAGEMENT PROCESSES (Continued)

EXAMPLE 2A. RISK ASSESSMENT MATRIX: NIGHT OPERATIONS

RISK ASSESSMENT MATRIX: NIGHT OPERATIONS				
Use this tool to assess the potential for links in the safety chain.				
	Applicable Weather for Flight			
Apply Operational Factors	**WEATHER Well Above Minimums and Stable**	**CEILING Within 1000' of Minimums**	**VISIBILITY Within 3 mi. of Minimums**	**CEILING & VIS Within 3 mi. and 500' of Mins.**
NIGHT Normal ops				
AIRCRAFT Performance near max Back-up or different A/C MEL items				
ENVIRONMENTAL Extreme heat or cold High winds Storms in area				
FATIGUE Late in shift? Consecutive shifts?				

Risk Assessment Value:

	Normal Ops
	Caution
	Extreme Caution
	Critical Safety Decision Required

NOTE: The operator will have to next determine how to manage the identified risk by either transferring, eliminating, accepting, or introducing a mitigating action. The operator may assign different values based on its operating environment.

APPENDIX 2. EXAMPLES OF TRAINING-WEIGHTED RISK ASSESSMENT AND MANAGEMENT PROCESSES (Continued)

EXAMPLE 2B. RISK ASSESSMENT MATRIX: DAY OPERATIONS

RISK ASSESSMENT MATRIX: DAY OPERATIONS				
Use this tool to assess the potential for links in the safety chain.				
	Applicable Weather for Flight			
Apply Operational Factors	**WEATHER Well Above Minimums and Stable**	**CEILING Within 1000' of Minimums**	**VISIBILITY Within 3 mi. of Minimums**	**CEILING & VIS Within 3 mi. and 500' of Mins.**
DAY Normal ops				
AIRCRAFT Performance near max Back-up or different A/C MEL items				
ENVIRONMENTAL Extreme heat or cold High winds Storms in area				
FATIGUE Late in shift? Consecutive shifts?				

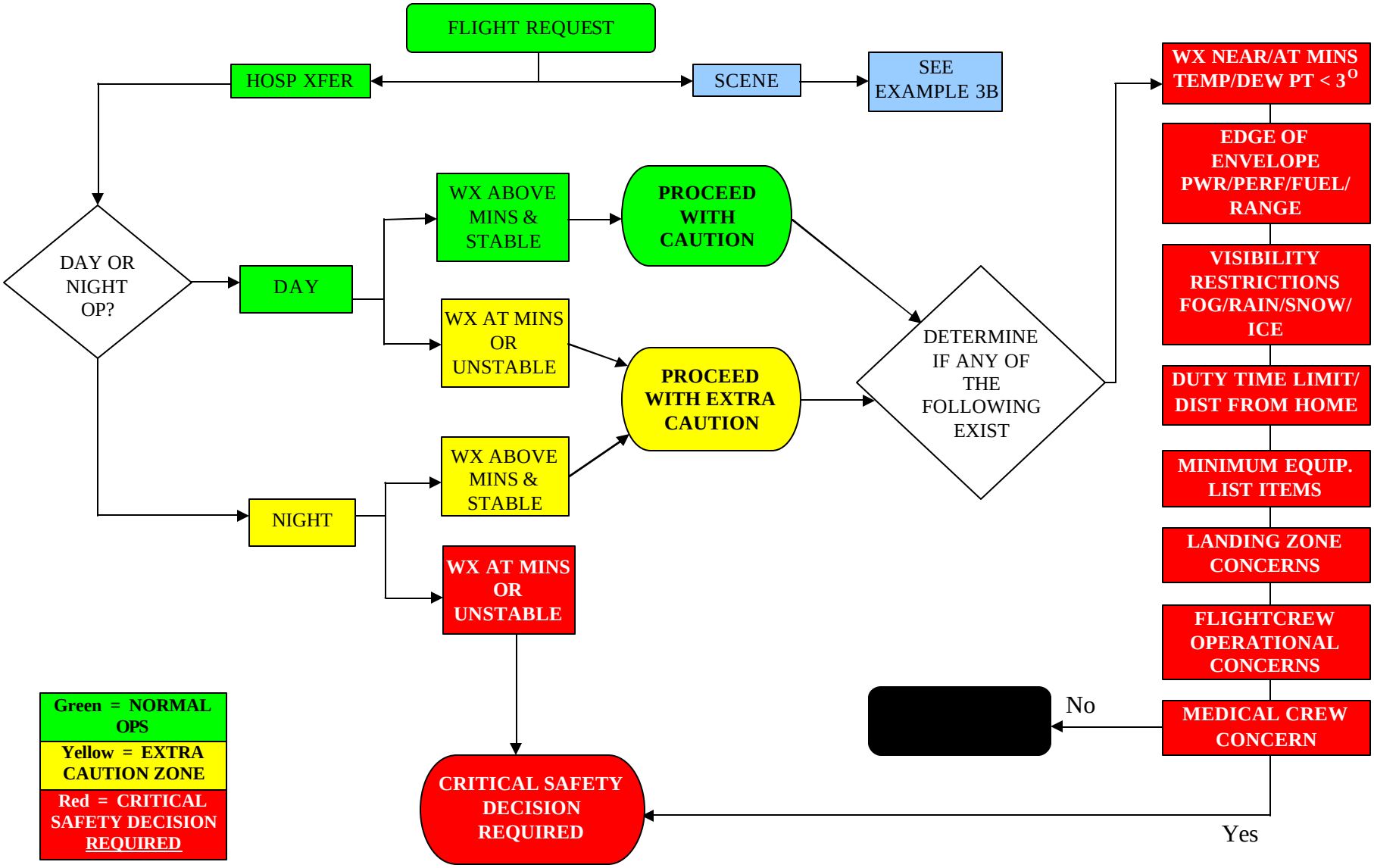
Risk Assessment Value:

	Normal Ops
	Caution
	Extreme Caution
	Critical Safety Decision Required

NOTE: The operator will have to next determine how to manage the identified risk by either transferring, eliminating, accepting, or introducing a mitigating action. The operator may assign different values based on its operating environment.

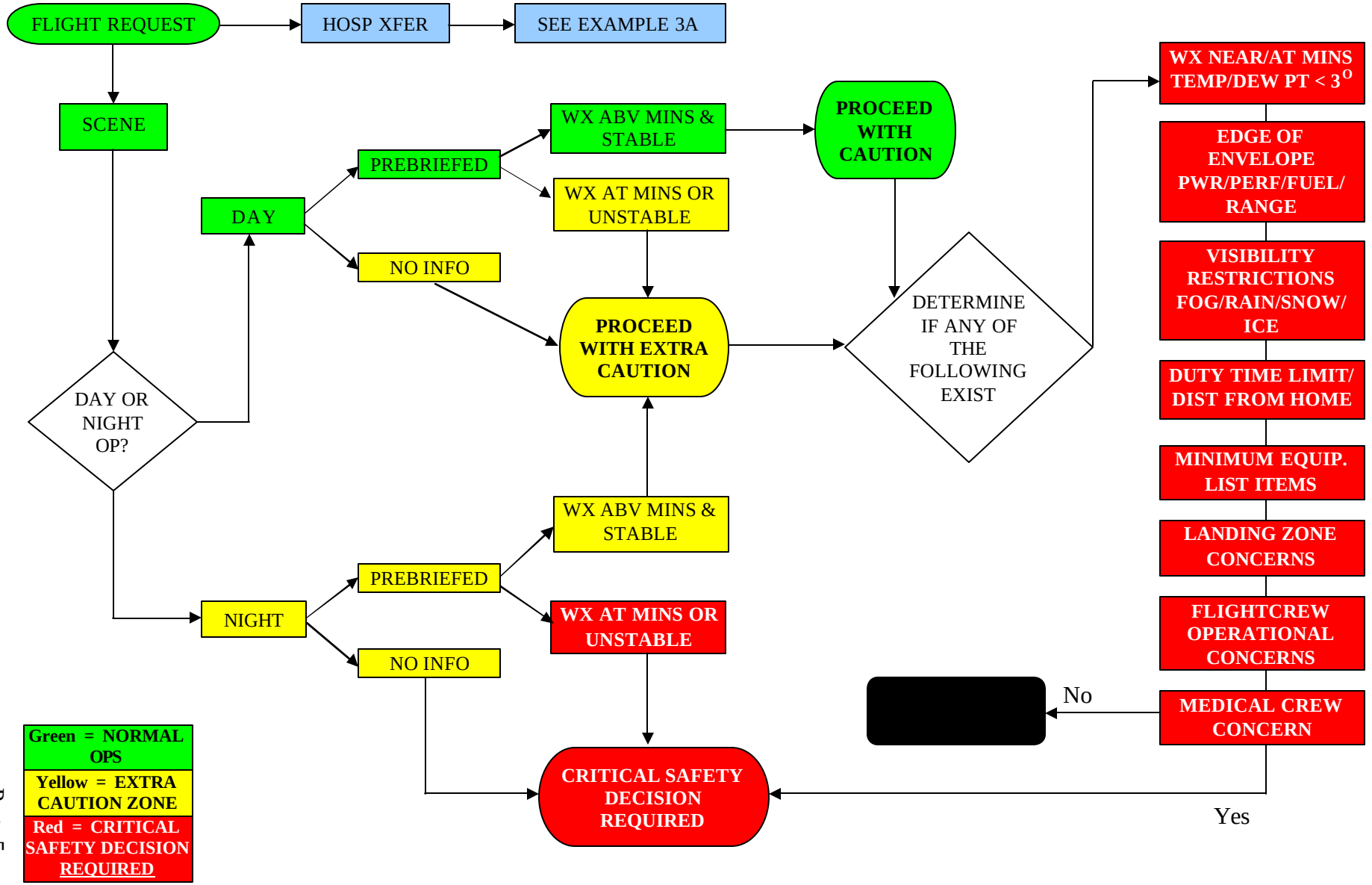
APPENDIX 2. EXAMPLES OF TRAINING-WEIGHTED RISK ASSESSMENT AND MANAGEMENT PROCESSES

EXAMPLE 3A. HOSPITAL TRANSFER



APPENDIX 2. EXAMPLES OF TRAINING-WEIGHTED RISK ASSESSMENT AND MANAGEMENT PROCESSES

EXAMPLE 3B. SCENE PROCEDURES



APPENDIX 2. EXAMPLES OF TRAINING-WEIGHTED RISK ASSESSMENT AND MANAGEMENT PROCESSES (Continued)

EXAMPLE 4. MISSION ASSESSMENT

WEATHER	Improv-ing	Deteri-orating	Yes	No
Starting point				
Ceiling within 500' VFR Wx mins				
WX at VFR Mins				
WX below VFR Mins				
En route				
Ceiling within 500' VFR WX mins				
WX at VFR Mins				
WX below VFR Mins				
Destination				
Ceiling within 500' VFR WX mins				
WX at VFR Mins				
WX below VFR Mins				
IFR				
WX for IAP to be flown < 2000-3				
Alternate airport required				
Forecast WX at alt. <800-2				
WX at or below 400-1				

MISSION PROFILE	Yes	No
Night		
Scene, new LZ or no IAP within 5 miles		
Concerns related to availability of fuel		
Terrain (mountainous)		
WX within 500' of mins at destination/alt		
Pilot not recent on IAP to be flown		
Flight conducted overwater		
Winds > 30 kts, gusts > 15 kts		
Severe WX, icing, thunderstorms		

Overall assessment: Can the mission be completed as requested?

Totals from the Weather Chart: For any more than 6 shaded items checked "Yes," exercise extreme caution and re-brief options.
If "Yes" box and adjacent "Deteriorating" box are checked, VFR flight is not recommended or flight should be rejected.

Combined Totals from the Weather and Mission Profile Charts: For any more than 6 items checked "Yes," exercise extreme caution and re-brief options.
If in excess of 10 items checked "Yes" or shaded, flight should be rejected.

NOTE: This example is for reference only. Each operator should consider its own operational and environmental needs in developing its risk assessment tool(s) and plans.

APPENDIX 3. EXAMPLE OF ALTERNATIVE RISK INTERVENTION POLICY

MEMORANDUM

TO: All Pilots
FROM: Vice President, Operations
DATE: June 22, 2005
RE: The "Official Time Out" Policy

Over the past year, we have achieved some new highs and have seen some new lows in safety and regulatory compliance. A common thread connecting the several incidents and accidents is appearing. In nearly every case we have, as aircraft commanders, been required to take action that most of us would describe as outside the norm. Examples include bird strikes, engine failures, and component failures. In nearly every case we have conducted ourselves in the best traditions of aviation, successfully concluding these flights by doing that which we are trained to do.

It is only after the kettle is removed from the fire that we tend to make decisions that in retrospect seem less than optimal. We would do well to ask ourselves if making a go/no-go decision immediately after concluding an in-flight emergency is in anyone's interest. It is the organization's firm belief that the level of expertise at this air carrier is a standard to which most of the industry can only aspire. With this professionalism comes an inherent desire to complete the mission and consequently we permit ourselves to push on.

Effective immediately, it is the policy of this air carrier that if as a member of a flightcrew you are involved in any of the events listed at the end of this memo, you may be awarded an "OFFICIAL TIME OUT" (i.e., off duty for the remainder of the shift). The Official Time Out is as simple as saying "Nice job—take the rest of the day off."

The awarding of an Official Time Out is at the discretion of the Chief Pilot, but may be granted by the Vice President, Operations, Director of Operations, or Director of Safety in his absence. Any award of an Official Time Out is contingent upon notification of Headquarters and specific direction by the Chief Pilot or any of the above listed personnel. **Site Managers have the Emergency Authority to award an Official Time Out if, in their judgment, waiting for specific direction from the Chief Pilot would compromise operational safety.** The object of this policy is to remove you from the decisionmaking process. There are numerous pilots, maintenance technicians, and support personnel on this team. This is the time to use their knowledge and experience. The following is not an all-inclusive list and your comments are solicited.

EVENTS SUBJECT TO AWARD OF AN OFFICIAL TIME OUT

1. Any aircraft system malfunction requiring a precautionary landing.
2. An in-flight engine failure.

3. Any event for which an NTSB report is required.
   a) An aircraft incident.
   b) A flight control system malfunction.
   c) The inability of a flight crewmember to perform his duties due to injury or illness.
   d) Failure of structural components of a turbine engine excluding compressor and turbine blades and vanes.
   e) In-flight fire.
   f) Damage to property other than the aircraft in excess of $25,000.
   g) Aircraft collision in flight.
   h) In-flight failure of electrical systems requiring sustained use of emergency bus power such as a battery or auxiliary power system.
   i) In-flight failure of hydraulic systems.
   j) Sustained loss of engine power.
   k) An evacuation of the aircraft in which the emergency egress system is used.
4. Any time an emergency is declared.
5. Should there be a question as to whether an event fits the criteria for an Official Time Out, the Site Manager's emergency authority applies until the Chief Pilot, VP-Ops, DO, or DOS can be notified.