

Appendix L – GAR Rappel Risk Assessment

Interagency Helicopter Rappel Guide GAR Risk Assessment Helicopter Rappel Employing the GAR Model (Green Amber Red)

The GAR model allows for time critical risk assessment and generates communication concerning the mission risks. This communication then helps identify the risk and leads to the appropriate mitigation. The GAR model can be applied in a variety of situations. It can be used to help identify programmatic risk and is efficient enough to be utilized as a pre-mission risk assessment tool. The GAR model is not intended to replace pre-mission planning, briefings and debriefings, or post action follow-up, but to provide an efficient risk management tool for dynamic environments.

Making risk decisions at the appropriate level establishes clear accountability. Those accountable for the success or failure of a mission must be included in the risk decision process. The higher the risk the more mitigation may be necessary. If significant difference in the same rating categories are identified all team members will re-evaluate the mission and address any mitigation prior to continuing with the mission.

It provides a more general analysis of the operational system and provides a qualitative rating scale for each of the categories that correspond to the identified areas of risk. It is important to remember that risk management is a process that continues throughout the mission and each assessment model allows management to set the acceptable risk standards as they apply to each mission.

The GAR model should be applied to helicopter rappel missions as appropriate. All helicopter program managers shall receive training on the GAR model and its use. Helicopter program managers shall be responsible for implementing the GAR model with all members of the team at their base.

Additional information on risk management can be found in Chapter 3 and Appendix M of the Interagency Helicopter Operations Guide.

A GAR Risk Assessment, which creates a GO/NO-GO decision tool, will be conducted individually by each member of the Team prior to initial dispatch on the Operational/Mission Risk Assessment Worksheet. Individual scores will be compiled on the Spotters/Manager Assessment Worksheet and reviewed and discussed by all members of the Team. Mitigation if any will be discussed and documented on the Worksheet. The assessment may be completed at the beginning of an operational period, but must be reviewed and updated if the team or mission changes or other mission-specific information becomes available. The Team is made up of the Pilot, Spotter/Helicopter Manager, and First IC/Lead Crew. While assigned to a Large Incident the Helibase Manager or Equivalent will be considered an essential team member.

Operations that have a total post mitigation score in the amber range can be conducted with pilot and Spotter/Manager concurrence. Rappel operations with a post mitigation score in the red must have the highest level of supervision assigned approval.

Completed GAR's will be kept on file at the host base location either electronically or hard copy for the operational season.

Compute the total level of risk for each hazard identified below. Assign a risk score of zero (0) (No Risk) through ten (10) (maximum Risk) for each element. This is your personal estimate of risk. Add the individual risk scores to come up with a Total Risk Score.

Supervision

Supervisory Control considers how qualified the supervisor is and whether effective supervision is taking place. Even if a person is qualified to perform a task, supervision acts as a control to minimize risk. The higher the risk, the more the supervisor needs to be focused on observing and checking. A supervisor who is actively involved in a task is easily distracted and should not be considered an effective safety observer in moderate to high-risk conditions.

Planning

Planning and preparation should consider how much information you and other resources that you may be interacting with have; how accurate it is, and the amount of time available to plan for and evaluate the existing and emerging conditions.

Contingency Resources

If the plan experiences failure what contingency is in place? Backup resources that can assist if needed. Contingency resource planning accomplished with cooperators. Evaluate shared communications plan and frequencies. Has alternate plan to rappel been evaluated?

Communication

Evaluate how well involved personnel are briefed and communicating (CRM). An evaluation of the communication systems that are available should include; the technical capability, infrastructure, operational reliability, and organizational communication culture.

Team Selection

The selection of individual resources should evaluate the character and competence of the individuals to be used. On occasion individuals may have to be replaced during the operation, which will require an assessment of any new team members and how they will be able to interact with those already engaged.

Team Fitness

Team fitness should consider the physical and mental state of the crew to include the rappellers, spotter, pilot, and helicopter. The amount and quality of duty/rest a team member has had as well as an evaluation of all internal and external stress are important factors to consider.

Environment

Consider factors affecting the performance of personnel, equipment, and the organization, including; time of day, wind and other weather conditions, topography, temperature and altitude. Evaluate specific factors such as narrow canyons, forest canopy, and site selection. However, they should be eyed with caution as the operational environment is very dynamic.

Incident Complexity

Evaluate the experience level of the team. Generally, the longer one is exposed to a hazard, the greater are the risks. The situation includes considering how long the environmental conditions will remain stable and the complexity of the work.

Supervision		
Supervisor has perfect knowledge about the mission, personnel, capabilities and limitations, and is able to apply the appropriate control to minimize risk	< 😊 1 2 3 4 5 6 7 8 9 10 < 😞	Supervisor has little knowledge about the mission, personnel, capabilities and limitations, and lacks skill, knowledge or ability to apply the appropriate control to minimize risk.
Planning		
There is a well designed plan that is reviewed and revised as needed to meet the demands for safety and efficiency and to account for adaption. Time is well managed	< 😊 1 2 3 4 5 6 7 8 9 10 < 😞	There is no plan or the plan doesn't address many current adaptations made in response of demands for efficiency. Time constraints have a strong effect on ability to plan.
Contingency Resources		
Reliable alternative equipment and personnel are available, easily accessed and informed about the mission requirements	< 😊 1 2 3 4 5 6 7 8 9 10 < 😞	The outcome depends on the equipment and personnel assigned completing the mission perfectly. Failure is not an option.
Communication		
Interpersonal communications are clear and there is a high level of trust in the organization. Adequate personnel and technology are available to relay information accurately to those who make the decisions	< 😊 1 2 3 4 5 6 7 8 9 10 < 😞	There is low trust in the organization or the personnel/communication equipment is unreliable based on the expected needs for the mission
Team Selection		
Multiple personnel with skill, knowledge and ability are available to fulfill the requirements of the mission. Selection and preparation are done well in advance so there is plenty of time for personnel to get personal and job related demands addressed.	< 😊 1 2 3 4 5 6 7 8 9 10 < 😞	Only one person is available and the success of the mission depends on that person juggling many responsibilities to squeeze this mission into the work schedule. Additional time will be donated to keep up with the workload.
Team Fitness		
Personnel are trained, proficient, healthy, and rested prior to starting the mission. Personal issues are addressed and little external stress is being exerted.	< 😊 1 2 3 4 5 6 7 8 9 10 < 😞	Personnel lack one or more critical component in their training. These persons have been squeezing in many additional duties as assigned distracting them from their proficiency or personal life.
Environment		
Weather and visibility are conducive to the best possible chance for success in the mission. Operational tempo is appropriate for the mission.	< 😊 1 2 3 4 5 6 7 8 9 10 < 😞	Winds are unpredictable, temperature is extreme, low ceilings and visibilities, precipitation, sun angle creates strong shadows, etc. Mission tempo is too low or high.
Mission Complexity		
A single agency is involved with personnel from the same unit who regularly work together. Mission is straight forward and covered by standard operating procedures.	< 😊 1 2 3 4 5 6 7 8 9 10 < 😞	Multiple agencies are involved in a mission that defies definition or has ever been attempted. Personnel are new to each other and come from different cultures. Many leaders are emerging and working toward different objectives.

- The ability to assign numerical values or “color codes” to hazards is **not** the most important part of risk assessment.
- Team discussion is critical to understanding the risks and how they will be managed

Operational/Mission Risk Assessment Worksheet

	Date										
Mission											
Risk rated 1-10 for each category. (Mitigations should be considered for any category rated higher than 5) Overall Mission Risk	Pilot	Spotter/Manager	IC/Lead Crew	Helibase Manager*	Post Mitigation Score						
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; background-color: #c6e0b4; text-align: center;">1-35</td> <td style="width: 33%; background-color: #fff2cc; text-align: center;">36-60</td> <td style="width: 33%; background-color: #e41a1c; text-align: center;">61-80</td> </tr> <tr> <td style="text-align: center;">Green</td> <td style="text-align: center;">Amber</td> <td style="text-align: center;">Red</td> </tr> </table>	1-35	36-60	61-80	Green	Amber	Red					
1-35	36-60	61-80									
Green	Amber	Red									
Supervision: Presence, accessibility and effectiveness of leadership for all teams and personnel. Clear chain of command.											
Planning: Current SOP/Operational Guidelines, team trained in accordance with same. Adequate mission planning time. Required equipment, training is provided. Briefs/debriefs planned, team input solicited.											
Contingency Resources: MOU's in place with participating cooperators. Planning accomplished with cooperators. Shared communications plan and frequencies.											
Communications: Infrastructure: Radio communications possible throughout area of operations (presence of portable repeaters.) Communications plan established and rehearsed.											
Team Selection: Level of individual training and experience. Cohesiveness and atmosphere that values input/self critique.											
Team Fitness: Level of overall physical fitness of team. Level of crew members' rest/fatigue and overall morale. Team members with major life distractions.											
Environment: Extreme temperatures, elevation, difficulty of terrain (aspect, foliage, slope, etc.,) long approach, remoteness.											
Incident Complexity: Severity and probability of mishap. Potential for incident that would tax the current staffing levels.											
Totals											

Green	Amber	Red
Score: 0-35	Score: 36-80	Score: 61-80
Low Risk Proceed with Mission	Moderate Risk Proceed with Caution	High Risk Implement Measures Prior to Proceeding

Mitigations:
