

Appendix G – GAR Rappel Risk Assessment

I. GAR (Green-Amber-Red) Model

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 Appendix H of this Guide.

A GAR Risk Assessment model, 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 Spotter, IC, Pilot, and Base Manager. 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 concurrence. Rappel operations with a post mitigation score in the red will need line officer or IC approval to proceed with the mission.

II. Risk Control Categories

Supervision

Supervisory Control considers how qualified the supervisor is and whether effective supervision is taking place. 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 Communication should consider how much information you, your team, and other resources with whom you may be interacting have: Does everyone have the same information? How accurate is the information? Is there adequate time to plan for and evaluate the existing and emerging conditions? What is the availability of contingency resources and how reliable is the communication infrastructure? Can effective CRM be established with this information?

Team Selection

Team selection for the stated mission should consider the knowledge, skills, proficiency, and competence of the individuals. 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 area of operation that would influence performance of the aircraft to include but not limited to; density altitude, temperature, wind, topography, etc. Known factors such as terrain, forest canopy, site selection 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. Potential for large fire growth or medical response and multiple resources responding to incident both ground and air.

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

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. CRM is in place and well versed on with all parties. Adequate personnel and technology are available to relay information accurately to those who make the decisions. Contingency personnel, resources, and equipment are readily available.

1 – 2 – 3 – 4 – 5

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. CRM is poor or not utilized. Communications are poor between personnel. Communication equipment is lacking efficiency and coverage of response area. No contingency personnel, resources, or equipment.

Team Selection

Multiple personnel are trained, proficient, healthy, and rested prior to starting the mission. Personal issues are addressed and little external stress is being exerted. 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

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. Personnel lack training. Personnel 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

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. Fire activity is at a minimum. Non-medical emergency operation.

1 – 2 – 3 – 4 – 5

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. Fire activity and numerous resources responding. Immediate response medical emergency.

Rappel Base Daily Operational/Mission Risk Assessment Worksheet							
GREEN 0 - 11	AMBER 12 - 19	RED 20 - 25	SPOTTER	IC	PILOT	BASE MANAGER	*TEAM-MITIGATION SCORE
Risk rated 1-5 for each category. Mitigations should be considered for any category rated higher than 3. If 1 or more categories' rate higher than 3, a team-mitigation needs to be completed for that category. A team-mitigation will also have to be completed if the total of the individual score is greater than 12.							
Supervision: Presence, accessibility and effectiveness of leadership for all teams and personnel. Clear chain of command.							
Planning: Adequate briefings and mission planning time available. Shared communications plan. Radio communications available throughout area of operations.							
Team Selection: Level of individual training and experience. Level of team member's rest/fatigue, physical fitness, morale, and absence of outside distractions. All team member's current in required qualifications and standardized procedures.							
Environment: Extreme temperatures, elevation, difficulty of terrain (aspect, canopy, slope, etc.), long approach, remoteness.							
Incident Complexity: Potential for incident that would tax the current staffing levels. Potential for large fire growth or medical response. Severity and probability of mishap.							
Total							

GREEN	AMBER	RED
0 - 11	12 - 19	20 - 25
LOW RISK Proceed With Mission	MODERATE RISK Proceed With Caution	HIGH RISK Implement measures Prior to Proceeding

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.

*The team-mitigation column would be used if any one team member's overall score goes into the amber or red, or if an individual rates any category higher than a 3. Mitigation measures will be documented on the following page. If the team's consensus mitigation score stays in the red, they will need Line Officer or IC approval to proceed with the mission.

This GAR model should be completed daily during morning operational Briefing

- **Crew/Team Mitigations:**

IC/Line officer Signature:
