

## Risk Calculation Worksheet - Calculating Risk Using GAR Model (GREEN-AMBER-RED)

- Standardized Risk Assessment “New” to the Tacoma Mountaineers
- Used for EVERYTHING
- Tool for Identifying Risk as Accurately as possible

### Mountaineers Risk Principles

- Accept No Unnecessary Risk
- Accept Necessary Risk... Benefit>Costs
- Make Risk Decisions at Appropriate Level
- Use Risk Assessment in Executing AND Planning
- A method for Identifying Risk(s) is NEEDED!

### GAR Assessment

Give each element a score of 1-10 (10 being max risk)

To compute the total level of risk for each hazard identified below, assign a risk code of 0 (For No Risk) through 10 (For Maximum Risk) to each of the six elements. This is your personal estimate of the risk. Add the risk scores to come up with a Total Risk Score for each hazard.

- 0-23: Green – Low Risk
- 24-44: Amber
  - Moderate Risk: Consider adopting procedures to mitigate
- 45-60: Red
  - Should mitigate before starting event/activity/evolution

### Completing an Effective GAR Assessment

#### Procedures:

Are you Alone or in a group?

Everyone gets to speak, gets a say?

What are the Limits/Restrictions?

Make your decisions base on facts not assumptions

## **LEADER**

Supervisory Control considers how qualified the supervisor is and whether effective Leader is taking place. Even if a person is qualified to perform a task, Leader acts as a control to minimize risk. This may simply be someone checking what is being done to ensure it is being done correctly. 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 (doing something) 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 have, how clear it is, and how much time you have to plan the task, activity or evaluate the situation.

## **TEAM SELECTION**

Team selection should consider the qualifications and experience level of the individuals used for the specific task/event/activity. Individuals may need to be replaced during the task/event/activity and the experience level of the new team members should be assessed.

## **TEAM FITNESS**

Team fitness should consider the physical and mental state of the group. This is a function of the amount and quality of rest a group member has had. Quality of rest should consider the where, potential sleep length, and any interruptions. Fatigue normally becomes a factor after 18 hours without rest; however, lack of quality sleep builds a deficit that worsens the effects of fatigue.

## **ENVIRONMENT**

Environment should consider factors affecting personnel performance as well as the performance of the asset or resource. This includes, but is not limited to, time of day, temperature, humidity, precipitation, wind and overall conditions, proximity of navigational hazards and other exposures (e.g., oxygen deficiency, toxic chemicals, and/or injury from falls and sharp objects).

## **ACTIVITY/TRIP/TASK COMPLEXITY**

Activity/Trip/Task complexity should consider both the required time and the situation. Generally, the longer one is exposed to a hazard, the greater are the risks. However, each circumstance is unique. For example, more iterations of an task a hand can increase the opportunity for a loss to occur, but may have the positive effect of improving the proficiency of the team, thus possibly decreasing the chance of error. This would depend upon the experience level of the team. The situation includes considering how long the environmental conditions will remain stable and the complexity of the work.

Assign a risk code of 0 (For No Risk) through 10 (For Maximum Risk) to each of the six elements below.

Supervision: \_\_\_\_\_  
Planning: \_\_\_\_\_  
Team Selection: \_\_\_\_\_  
Team Fitness: \_\_\_\_\_  
Environment Event/Activity Complexity: \_\_\_\_\_  
**Total Risk Score:** \_\_\_\_\_

The mission risk can be visualized using the colors of a traffic light. If the total risk value falls in the GREEN ZONE (1-23), risk is rated as low. If the total risk value falls in the AMBER ZONE (24-44), risk is moderate and you should consider adopting procedures to minimize the risk. If the total value falls in the RED ZONE (45-60), you should implement measures to reduce the risk prior to starting the event or evolution.

**GAR Evaluation Scale**  
**Color Coding the Level of Risk**

0	23	44	60
<b>Green</b> <b>(Low Risk)</b>	<b>Amber</b> <b>(Caution)</b>	<b>Red</b> <b>(High Risk)</b>	

The ability to assign numerical values or “color codes” to hazards using the GAR Model is not the most important part of risk assessment. What is **critical to this step is team discussions leading to an understanding of the risks and how they will be managed.**

It is vital to the safety of the group and to the success of the activity/trip that the leader and members understand and evaluate the full impact of risk versus gain for each activity/trip/task. This must be a continuous, systematic process of identifying and detecting hazards, assessing risk, and implementing and monitoring risk controls.

1. Using the worksheet, review each of the Risk Factors and assign a numerical score as indicated. Score each element according to currently available information. Score items according to the examples given and your instincts. Absence of data automatically sets the score to maximum point value. To identify hazards, consider:

Planning

Event Complexity

Asset Selection (including Personnel and Equipment)

Communications (and Supervision)

Environmental Conditions

2. Activity/trip/task, both internal w/members and external. Consider the condition of the group and associated equipment as factors in the environment.
3. If Risk Assessment is determined to be excessive, review the Control Options and determine if the risks can be reduced or controlled.

Below are Control Options to assist in risk control or reduction. Review the options and reassess the risks as appropriate.

**Spread-out** – Disperse the risk by increasing the time between events or using additional assets.

**Transfer** – If practical, locate a better-suited asset to conduct the activity/trip/task (i.e. different type of asset or members).

**Avoid** – Circumvent hazard: Wait for risk to subside (i.e. wait until daylight or weather passes).

**Accept** – In some cases the benefit might justify the assumption of risk. In these cases a decision to accept risk may be made with the stipulation that risk is reevaluated as the activity/trip/task progress. (No adjustment to Risk Assessment)

**Reduce** – Reduce or limit risk exposure, use of Personal Protection Equipment (PPE), additional training or rest, stress reduction.

**4. Although one could selectively evaluate Risk Factors with a mind toward achieving an acceptable Risk Factor score, doing that would subvert the intent of this tool. This is intended to help everyone in the group shift their thinking from a urban based mindset, to the hazards of the outdoors environment. All members of the group should participate in the Risk Assessment scoring. This Risk Assessment process should continue throughout the Activity/Trip as conditions evolve.**

- Pros:

- Simple / Easy to Understand – Multiple Perspectives
- Covers the “Big Picture”
- Allows Discussion

- Cons:

- ‘Climate’ can influence / render ineffective
- Can be cumbersome