

CLIMBING WALL ASSOCIATION, INC.

ROUTESETTING GUIDE

**A GUIDE TO SUCCESSFULLY MANAGE YOUR
ROUTESETTING OPERATIONS**

FIRST EDITION



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ROUTESETTING GUIDE

A GUIDE TO SUCCESSFULLY MANAGE YOUR ROUTESETTING OPERATIONS

**FIRST EDITION
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OVERVIEW

Mission of the Climbing Wall Association

The mission of the Climbing Wall Association is to support the growth, health, independence, and professionalism of the climbing wall industry.

Routesetting Guide Overview

This Routesetting Guide's purpose is to raise awareness of current practices for those operating recreational climbing facilities and those working as routesetters in these facilities. It is intended to assist the climbing industry and climbing facilities in defining, understanding, and implementing a risk-conscious and successful routesetting program.

This guide will help owners and operators recruit and train individuals to work in the field of routesetting. By making this information more accessible, we will see an increase in the diversity and background of routesetting professionals. Routesetting is a critical area of gym operations and can have a significant impact on a climbing facility's success.

This is not a rigid guideline that mandates compliance under all circumstances.

The Routesetting Guide does not purport to provide specific solutions to climbing management issues. Judgment is a crucial element in any recreational program or activity; climbing or otherwise.

The Routesetting Guide represents an industry effort to outline responsible and effective routesetting practices. Professional judgment, in particular circumstances, justifies a deviation from the guide.

The Routesetting Guide has been developed through a collaborative effort by members of the climbing industry and reviewed by industry experts. As such, it is a dynamic document that will be periodically reviewed and revised as practices evolve.

The following is divided into seven chapters. Each chapter includes numbered and bolded topics. At the end of the guide is a glossary of common routesetting terminology.

Limitations of the Routesetting Guide & Disclaimer

The Routesetting Guide is intended for use by experienced professionals in the climbing industry. Misuse or improper interpretation of the Routesetting Guide may result in serious injury or death. The CWA reserves the exclusive right to issue or not to issue official interpretations of any of the practices listed herein. Requests for interpretations must be made in writing to the CWA.

Following the Routesetting Guide does not guarantee that a climbing facility will be completely free from harm, that clients' use of facility's equipment or participation in facility's climbing activities or programs will be free from harm, or that any routesetting program will be successful.

All owners, operators, employees, clients, participants, or others using or accessing a climbing facility must understand that climbing, whether indoors in a climbing facility, or outside, is a technical sport involving inherent and other risks, hazards, and danger that can lead to damage to equipment or property and injury, or death. Many work duties performed by routesetters such as working at height, using tools, and setting routes involve inherent and other risks.

Owners, operators, and employees of climbing facilities must also understand that the evaluation, success, and profitability of a routesetting program is linked to the individual culture, clientele, and facility. Without understanding a particular facility's exact needs no guidance can guarantee the business success of a routesetting program.

Climbing and working in a climbing facility is dangerous! In choosing to engage in activities in a climbing facility, participants understand that they assume responsibility for their own actions, and for any losses or injuries they suffer, resulting from the inherent and other risks of these activities.

CWA disclaims all duty, responsibility, or liability to climbing wall owners, operators, employees, clients, participants, and other parties for any injury, death, or other loss resulting from any cause, including any cause claimed to be a result of a person's or organization's adherence to, or failure to adhere to, the Routesetting Guide.

Chapter 1: ROUTESSETTING DEFINED

1.01 The Routesetting Profession

The routesetting profession is a dynamic craft that is constantly evolving as the needs of the industry, the goals of a facility, and composition of the community change. Routesetters should be trained in work at height techniques, are well versed in a variety of climbing movement and styles.

In commercial climbing facilities, routesetters create an ever-changing array of climbs, routes, problems, and challenges that are the lifeblood of the facility.

For competitions, routesetters design climbs to create a fair and equitable field of play that separates competitors and is entertaining for the spectators. They must have intimate knowledge of the competitors' abilities but also the presence of mind to ensure impartiality in the results, despite any differences between competitors.

The two main paths for the routesetting profession are commercial routesetting and routesetting for competitive climbing. While there are overlapping skills in these two areas, this document will focus on commercial routesetting.

1.02 Ideal Characteristics of a Routesetter

Routesetters are individuals that design and install materials onto a climbing surface for the purpose of human interaction. They are a mix of industrial athlete, craftsperson, artisan, choreographer, and product designer.

The following is a non-exhaustive list of some key characteristics that routesetters must either have or learn to be proficient in the field.

Must Have:

- Passion and willingness to work hard physically and mentally.
- Teamwork and collaboration Understanding of climbing movements.
- Expert-level problem solving skills.
- Deep understanding of climbing holds

Willing to learn:

- Professionalism.
- Risk assessment and evaluation.
- Craftmanship and proficiency with power tools.
- Open and able to receive feedback.
- Communication skills Comfort with working at height.

Chapter 2: ROLES AND JOBS IN ROUTESETTING

2.01 Routesetting Department Responsibilities

The following describes common duties assigned to individual routesetters or entire departments. Depending on the size of the operation, tasks may fall on one or many people.

- **Routesetting Management**
 - Oversee the routesetting staff, schedule, and budget.
 - Coordinate with and support other gym operations.
 - Oversee the quality and performance of the routesetting program.
 - Reviewing work at height systems and managing risk.
- **Routesetting**
 - Providing the core product of the climbing facility by installing holds and volumes.
 - Managing and tracking customer expectations and needs.
- **Forerunning**
 - Providing feedback on routes.
 - Assisting with adjustments to improve the climb.
- **Hold Stripping**
 - Removing climbing holds and volumes from the wall.
 - Cleaning and preparing the area for routesetting.
- **Hold Washing**
 - Dirty holds are washed, sorted, and stored prior to routesetting days.
- **Maintenance**
 - May include wall repairs, t-nut repairs, rope checks, draw checks, anchor checks, gear inspections, auto belays, etc.
 - Some of these responsibilities may be assigned to a maintenance department or other gym employee.

2.02 Routesetting Department Roles

The following roles describe the potential career path for many professional routesetters. When hiring a new routesetting team you should have a head routesetter to manage the program and routesetting team. The routesetting program manager (head routesetter or director of routesetting) should help identify the number of routesetters needed to perform the responsibilities outlined above.

- **Trainee**
 - Introductory position for someone interested in becoming a setter.
 - Goals:
 - Learn routesetting skills.
 - Assist routesetting crew.
 - Work towards joining routesetting crew as a regular setter.
 - Potential structures:
 - **Internship/volunteers**
 - Interested persons who can spend small or varying amounts of time with the routesetting team forerunning and slowly learning information and skills.
 - **Apprentice**
 - Direct hire who works on a regular schedule.
 - Works closely with a mentor on the basics of routesetting position skills.
 - Assists routesetting crew with necessary tasks.
 - The apprentice's goal is to adhere to standards of normal routesetting crew while continuing to learn.
- **Routesetter**
 - The person who puts holds and/or volumes on a wall.
 - Can be responsible for:
 - stripping, washing, maintenance as listed above.
 - Is responsible for:
 - creating quality routes and boulders that cater to the needs of the membership base.
 - Pays close attention to risk mitigation in routesetting and forerunning process.
 - Foreruns routes and provides feedback to other routesetters.
- **Assistant Head Routesetter**
 - Assists head routesetter.
 - Manages team when head setter is not present.
 - May help with administrative or other tasks of the head routesetter.

- **Head Routesetter**

- Responsible for oversight of the routesetting team including routesetting, maintenance, forerunning and grading.
- Works closely with director of routesetting, gym managers, and other departments.
- If no director of routesetting, head routesetter assumes all necessary duties to run routesetting department.
- Tasks may include:
 - Providing reviews to the routesetting team.
 - Hands-on teaching new routesetters.
 - Plans for gym rotation and needs of number of boulders or routes and grades based on routesetting department specifications.
 - Scheduling.
 - Keep in communication with the director of routesetting to budget for tools, hardware, holds, etc.
- Management skills:
 - Understanding how to communicate with routesetters and management.
 - Noticing and confronting conflict between routesetters or other staff; reaching out to upper management or director of routesetting if issues escalate or more guidance is needed.

- **Director of Routesetting**

- Quality control at all facilities.
- Creating and maintaining the routesetting handbook for your facility.
- Organization of climbing competitions / working with upper management to have the event happen.
 - Communicating with sponsor(s) for the event.
 - Working with head routesetters to determine the grade spread for the competition.
 - Putting together the routesetting team for the event
 - Guest routesetters.
 - Score cards, placards, etc.
 - Preparing desk staff and other necessary parties.
 - Website updates.
 - Setting up and maintaining registration.
 - Communication with USA Climbing and regional coordinators when managing with USAC sanctioned events.
 - Running competitions.
 - Submitting a profit/loss report to upper management.
- Lining up professional development for routesetting teams.
 - Internal professional development.
 - External professional development.

- Providing clinic opportunities to routesetting department
- Hiring and interview process.
- Giving reviews to the head routesetter(s) and being available to the head routesetter(s) if they need help with the reviews of their subordinates. This includes all management communications for the entire routesetting team.
- Conducting quarterly audits of the facility.

DISCLAIMER

What if you do not need/have a Director of Routesetting?

- The responsibilities that are described above for the Director of Routesetting should be distributed between the head routesetter and the upper management at the facility, ensuring there is clear communication between everyone.

What if you do not need/have an Assistant Head Routesetter?

- The responsibilities that are described above for the Assistant Head Routesetter should be distributed between the head routesetter and the routesetters at the facility making sure there is a clear line of communication between everyone.

Chapter 3: ROUTESSETTING MANAGEMENT

3.01 Leading A Routesetting Team

A routesetting manager should have experience routesetting in a commercial environment and have experience managing staff. Routesetting experience is more important than management experience if the candidate is both excited about learning how to manage and willing to be assisted by other gym management and/or by specific training as they develop their management skills.

3.02 Program Management

Managing a routesetting team's product means identifying the gym's member groups and creating a routesetting program that balances the needs of those groups with the amount of time and resources available to the routesetting team.

A routesetting program is the structure that the routesetters work within. The structure of these programs can vary depending on the individual needs, goals, and resources of the facility. A good leader will look at their routesetting program holistically with the other needs of the gym and always place the needs of the members and facility over their personal goals.

Every routesetting program will need to recruit, train, and manage a diverse team. The program needs to provide a system that determines direction and success, reasonably mitigate risks associated with climbing and routesetting, and expose the craft to a broad audience.

A successful program will also provide professional development and growth opportunities, build a team incorporating D.E.I. (diversity, equity, & inclusion), care for the mental and physical wellbeing of its routesetters, and partner with other departments to meet the business needs of the climbing facility.

When a program is successful in these areas, it will create an enjoyable member experience that leads to member conversion, retention, and progression leading to greater success for the entire business.

3.03 People Management

Managing a routesetting team means interpersonal management as well as scheduling, delegation, skill assessment, teaching, and cultivation of skills within your program to help each routesetter be the best they can be. As employees, they must be given room to express their creativity to create the best product while also being given guidance to help that product fulfil the needs of the business.

Because routesetting requires personal creativity and understanding of movement, it is an artistic craft, and so giving and accepting feedback can be challenging, but it is necessary.

3.04 Professional Development

Management training is important for directors of routesetting and head routesetters. Routesetting managers need to be able to step out of the peer-to-peer relationship and into a manager-employee relationship when necessary, and in a way that maintains respect for both parties as any issues are resolved. Respectful interactions centered on helping the employee learn and improve are vastly superior to authoritarian styles.

The following is a list of professional development opportunities for routesetting staff and routesetting managers.

Routesetter level

- WAH – CWA
- Competition routesetting
- Guest routesetting
- Routesetter swaps
- USAC Routesetting Courses
- Routesetter competitions and showdowns
- Routesetting Clinics

- Gear inspection/rope access clinics
- Climbing industry tradeshow and events

Manager Level

- Management courses
- Executive coaching
- Emotional Intelligence training
- Leadership courses
- Mentoring
- Emergency and crisis management
- Media training
- Communications
- Conflict Resolution
- DEI training
- Hiring/Interviewing

3.05 How Routesetting Affects Other Gym Operations

A successful routesetting program will be coordinated with all other facility operations to ensure gym members have a positive experience and other facility departments have the resources they need.

A special emphasis should be placed on coordinating with the coaching department as they need routes and problems to use for teaching their programs. Below is a general, non-exhaustive list of the departments and responsibilities that routesetting programs should consider:

Facility management

- Shared resources – spaces, tools, equipment
- Impact to the facility i.e., wall panels, flooring, equipment
- Space, area, and zone closures when routesetting
- Use of shared spaces
- Hold, volume, tool, and equipment storage
- Hold washing, drying materials, timing, space, and impact
- Maintenance of gym hardware i.e., Hangers, quickdraws, ropes

Legal and risk management

- Clean and safe workspaces

- Creating written gym routesetting work policies
- Assisting with inspections and development of inspection protocol

Gym operations

- Financial and budget input
- Eye to overall needs and direction of gym

Membership programs

- Interactions with members
- Optimizing routesetting turnover for member retention
- Routesetting for regular members and new members
- Being considerate of space, noise, and impact

Programs, coaching, and training

- Routesetting for all levels of coaching including parties, programs, and member events
- Lessening the impact of programs on members through traffic flow

Chapter 4: LOGISTICS AND MATERIAL MANAGEMENT

4.01 Managing Holds and Hardware

The items used to create climbing routes include climbing holds, wooden volumes, fiberglass features, and other tools and items. A climbing facility should have a dedicated storage space for everything used in routesetting. The size and location of this space will vary based on the space available at each individual facility, but some common things should be considered for any hold room or routesetter's closet. Properly organized, stored, and maintained holds and tools allow for greater efficiency when routesetting which reduces costs, increases routesetter output, and reduces workplace liability.

1. Ease of access: An ideal hold storage room should:
 - a. Have uncomplicated and easy access.
 - b. Have ample space to house all the climbing holds, volumes, supplies that are located on the same floor as all, or the bulk, of the climbing walls.
 - c. Have sufficient lighting.
2. Many facilities may not have much free space and either opt to or must store holds, volumes, and routesetting supplies behind their climbing walls. If you must use back-of-wall space for hold and tool storage:
 - a. Install sufficient lighting.
 - b. Only use back-of-wall space if there is adequate standing room and that walkways or floor space comply with local fire codes.
 - c. Make sure that doorways, hatches, and entrances are large enough to comfortably and safely move large items such as volumes, carts, or hold buckets.
 - d. It is best to have a level transition from back-of-wall space to the climbing floor.
 - e. Depending on the space available within a facility, a hybrid of front and behind-the-wall spaces may need to be used to adequately house all of the routesetting equipment. If a split is necessary, consider housing like items together for ease of organization and sorting (i.e. - all holds in a room and all volumes behind the wall, etc.).
3. Method of Organization: Most hold rooms employ some manner of shelving or racking system on which holds are arranged. Holds are commonly stored in bins on these racks and sorted by color, with all holds of a given color stored on the same or immediately adjacent racks (space permitting). Wooden volumes are often stored in a similar manner.
 - a. More detailed organization by hold type or size is also commonly used by many organizations.

- b. For taller shelving, a stable and reasonable step stool or ladder should be available for routesetters to access items more readily.
 - c. For operations that utilize multi-color or swirl holds, consider organization by similar combinations, hold size, or type.
- 4. Means of Transport: Routesetters will need a means of carrying or transporting holds to the area where they will be routesetting. For bouldering, this may be as simple as plastic bins or commonly available five-gallon buckets. For full-service facilities and routesetting for roped routes, this will typically employ a routesetting bucket. There are fabric liners/covers with attachment points for pockets and other organization that include a plastic bucket (sizes vary). Using buckets helps routesetters haul their holds up to them while routesetting.
 - a. Facilities should invest in some manner of wheeled cart or dolly for routesetters to transport their loaded bins or buckets. This will allow routesetters to save strength and time.
- 5. Bolt Storage: Along with climbing hold storage, facilities need to store and organize fasteners.
 - a. Methods commonly seen in most facilities include custom built wooden carts on casters, wheeled metal racks with plastic bins, and a variety of hand-carried bins and buckets. The right solution for a given facility may vary based on their storage space available, but a characteristic common to any good method would be organization of fasteners by their type, size, and/or length.
 - b. Dispose of stripped and damaged bolts or keep them separate from usable fasteners. Some bolts can be rethreaded with a die.

4.02 Hold Cleaning

Pressure washing is the most common method for cleaning holds, but water use can be a concern depending on where your facility is located, due to climate. Vinegar bathing is efficient but less effective at removal of some kinds of grime like shoe rubber. Odor can be an irritant. Muriatic acid is not recommended due to the additional hazard that it poses to workers, along with disposal issues and environmental concerns. A parts washer can work well if maintained properly.

The following list covers the most employed methods for cleaning climbing holds, along with considerations to be made for each.

- 1. Cleaning with a pressure washer
 - a. Proper PPE (Personal Protective Equipment) should be used when cleaning holds:
 - i. Goggles and eye protection
 - ii. Rubber gloves

- iii. Plastic suits or aprons
 - iv. Rubber boots
 - b. A room with a designated wash area and basin that is waterproofed and sealed is best.
 - c. Pressure washing outdoors is also possible.
 - i. Check local water regulations and laws.
- 2. Submersion in a surfactant or acidic cleaning bath followed by a rinse. NOTE: This method is not recommended due to inherent risk.
 - a. Proper ventilation should be considered if this method is employed.
 - b. Due to the materials involved and their inherent hazard, care is needed in proper disposal.
- 3. Use of a dedicated washing machine.
 - a. Purpose built hold washing machines are available.
 - b. Repurposed industrial parts washers.
 - c. Some facilities have used repurposed dishwashers for hold cleaning as well. If this is done, be mindful that the heating implements for drying in some devices can permanently damage polyurethane climbing holds.

Consider washing holds away from items and materials that can be negatively affected by moisture or chemical exposure. These can include bolts, fasteners, wooden volumes, soft goods, PPE, and more. If hold washing cannot be performed in an area separate from these items, consider storage for hold washing equipment that is water and chemical resistant.

Specific tips for unique hold types:

- Wooden volumes can be cleaned with a light brushing and/or soap or vinegar solution. Some wooden volumes can be briefly pressure washed as well.
- Rubber scuffs can be removed from dual texture holds using a magic eraser.
- Some wooden holds can be cleaned with light brushing and/or soap and water.

4.03 Gear Management

Routesetters use many different types of gear and tools. An inventory of these items should be kept so routesetting teams can replace gear and parts as needed.

Facilities should have some manner of dedicated storage space, typically within the hold room or immediately adjacent to it, where routesetting gear can be arranged and stored.

Due to the high dollar value associated with routesetting gear, consider some manner of locking storage. Most gear should be stored in a cool, dry, and dark area away from any chemicals. Check with manufacturers recommendations for the optimal storage environment.

There are multiple methods commonly used for arranging and grouping routesetting gear. The first is by grouping like items together (Ex. - locking carabiners in one bin, ascenders in another, etc.). If a facility has enough gear for each routesetter to have their own set of items, some facilities also sort and store gear in kits. Each kit would contain all the gear that any individual routesetter might need on a typical day of routesetting.

The following are considerations for creating an inventory.

NOTE: Many vendors have applications that can make this process more automated, but we recommend using a spreadsheet in lieu of using outside parties.

1. Name of item
2. Serial number (if none is given, consider creating an in-house identifier)
3. Date of purchase (for warranty purposes)
 - a. Date put into service (some items may be purchased and only put into use sometime after the initial purchase date)
4. Condition / level of wear (consider keeping language general)
5. Date of last inspection
 - a. Date of next scheduled inspection / inspection interval

Many modern facilities provide all the routesetting gear used on their premises (and any operators looking to open a new facility should consider this methodology), but it is a reality that not all climbing facility operations currently provide their routesetting teams with all of the gear that they will use for routesetting.

For those operations that have their routesetters provide some aspects of their own routesetting gear, consider applying an inspection protocol to whatever gear is used for routesetting purposes within the facility. Whenever a piece of gear leaves the facility and is exposed to conditions outside of the facility's control, consider reinspection of that piece prior to allowing it to be used for routesetting purposes again.

4.04 Resetting Schedules

As part of any routesetting program, the order and frequency with which a gym sets / resets its walls must be considered and managed. Consideration of these items should be a collaborative discussion between the routesetting program administrator and the ownership and/or other management of the facility, as the decisions made will have a direct

impact on members. As part of this conversation, the number of times each week that routesetting will occur should also be discussed.

There is no one time interval that is industry standard for resetting areas of the gym, but some commonly seen intervals run anywhere from 4 to 8 weeks (about 2 months) for boulders, and 6 to 10 or more weeks for sport climbs. The right number for each facility should come down to weighing what interval or frequency of routesetting best meets the desires and needs of its member base, compared against the financial means that the facility has budgeted to routesetting operations for the decided upon interval.

Some of the factors that can inform the resetting schedule in a facility are:

1. Total traffic that a gym has daily
2. The size of a facility
3. The frequency of visits for the average customer
4. Facility budget

The frequency of resetting can have an impact on customer visitation and can support a gym's marketing or business goals. Resetting can vastly influence the flow and direction of traffic within a facility. New routes often draw heavy traffic immediately after going up. Knowing this, facilities should consider how they want to steer traffic when determining their resetting schedule. To facilitate that, the facility should also consider how it would like to divide subsections of its climbing walls for such planning.

Given the potential for increased traffic and visitation, facilities can take advantage of resetting an area of the gym to assist in marketing efforts. Problems-of-the-week, pictures of reset areas, and announcing that a reset is coming up on a particular date are all tools that can be used on social media and in direct marketing efforts.

Additional considerations might also include if the facility utilizes competition-themed or "World Cup" sets that may have a shorter interval than normal commercial offerings in the facility, or if the facility plans to host any events that would otherwise disrupt the normal sequence and timing of sets.

Different areas of the facility may have different schedules depending on the use and goals of those sections. For example, walls used for birthday parties, training, or instructional areas may be reset at longer intervals.

Depending on the desired amount of climbing and frequency of turnover, routesetting program administrators need to calculate the amount of routesetting hours that they will require to achieve those goals.

1. The people involved in this work will vary depending on how responsibilities are managed at each facility.

2. Developing additional metrics like average cost per route or per boulder, average time spent per route per or boulder, etc., can help routesetting program administrators with managing the scheduling and budgetary aspects of their programs.
3. Include forerunning and routesetter climbing, and review sessions in your analysis. It is best for routesetters to climb at the gym regularly after routesetting to check the quality and consistency of the routes from the customer's perspective. Initial forerunning after resetting an area may take a third to half of a routesetter's workday.

4.05 Route Management

Part of any routesetting program should also include a means by which the climbs can be planned for and tracked. Ideally, the routesetting program administrator should plan for upcoming sets in advance and track what is on the wall. Many facilities use in-house spreadsheets to perform these functions. There are also purpose-built services that provide these capabilities in different capacities, as well as other routesetting associated functions.

At a minimum, any tracking system can include data points like:

1. Physical location of the climb (either within a zone or in a subsection of a zone).
2. Name of the setter for a given climb.
3. Hold color (or tape color) selected.
4. Target grade of climb to set.
5. A space for notation (either for specific climbs, for the set as a whole, or both).
6. Date climb was set.

More advanced items to track could include, but are not limited to:

1. A method of tracking the level of progress for a set / how close to completing a climb is.
2. Fields for capturing notation on movement styles, hold types, or traits of a climb.
3. A method of capturing whether a climb came out at the intended target grade.
4. The lifespan or date of reset / turnover interval of routes and boulders.
5. User generated content such as video, ratings, or comments.
6. The intended user group for the climb (climbing ability, age, experience, etc.).

Paying for and utilizing a purpose-built service will capture nearly all the above without the facility having to create its own system, but facilities should consider their own situations and decide on the method that best suits their needs.

4.06 Wall Maintenance

Every climbing facility operation will require regular wall maintenance to be performed throughout the lifespan of the facility and should have a maintenance plan that delineates which teams or departments will be responsible for individual inspections and tasks. Wall maintenance is a broad term that can encompass the inspection and servicing of a variety of different items, which include but are not limited to:

1. Quickdraws
2. Bolt hangers
3. Anchors (top-rope, lead, or combination)
4. The climbing wall surface itself
5. Climbing wall panels
6. Back-of-the-wall fasteners
7. Auto belays
8. T-nuts

All staff should be trained in the proper methods for accessing the site where the work will be conducted (referring to relevant work-at-height and industry guidelines) if they are performing these duties.

Since much of these items take place at-height and routesetters are the de facto employees working at-height at most climbing facilities, the routesetting department often performs some combination of managing, scheduling, and carrying out the at-height inspection and maintenance items. Despite that precedent, each organization should still consider what solution is the best for them. Some items like back-of-wall structural inspection may potentially be outsourced to the manufacturer. Always follow manufacturer's instructions for maintenance.

Given the multitude of wall maintenance items, a climbing facility should have a method for tracking and documenting inspection items (like tracking routesetting gear). This system should include similar data, such as:

1. The name of the item that is being inspected.
2. A serial number (if none is given, consider creating an in-house identifier).
3. The date of purchase (if applicable, for warranty purposes).
4. The date put into service (some items may be purchased and only put into use sometime after the initial purchase date).
5. Condition / level of wear (consider keeping language general).
6. The date of the last inspection.
7. The date of the next scheduled inspection / inspection interval.

Chapter 5: MANAGING THE ROUTE AS A PRODUCT

5.01 What Makes a Good Route

Good routes and boulder problems help members enjoy and improve climbing so they are motivated to come back. Poorly designed routes and boulder problems can turn people away from your facility by frustrating them, injuring them, or otherwise giving them an unpleasant experience.

Individually, routes should be:

Functional, Compelling, User Group Appropriate, and Assessed for Risk

- **Functional** – Set with intention. Provide good flow or challenging moves that are achievable. Allows climbers to learn or progress. Meets the needs of the facility.
- **Compelling**– Appealing and/or enjoyable to climb. The route has moves the climber wants to do or holds the climber wants to touch. Varied movement and/or holds that require thought and/or are aesthetically pleasing or appealing.
- **User Group Appropriate** – Moves and holds are targeted for and fall within physical and mental abilities for the intended user group for the climb. Designed to help climbers of the ability range enjoy climbing and progress.
- **Assessed for Risk** – Assessed for risk relative to expected mental and physical tolerance of climbers. Consider move type, terrain, grade range and climber ability and take precautions to reduce potential for injury. Neither the moves nor the holds ask too much of climbers of the grade and expected experience level. Routes should not be tweaky, unnecessarily scary, or insecure for the desired ability level.

When evaluating routes consider:

- **Aesthetic Appeal** – Do the routes draw people in?
- **Intention** – What will the climbers learn from these climbs?
- **Quality** – Do the routes have clean modern holds and interesting thoughtful movement?
- **Variety** – Do the routes provide a wide range of styles and grades?
- **Integration** – Do the routes fit the facility's overall business goals?

Well set climbs flow well, are not uncomfortable or tweaky, introduce minimal and appropriate risk, are grade appropriate, and help create progression for climbers of the target grade range.

Well set problems can help your climbers learn more about climbing. They learn more movement, those movements become easier for them, and they become stronger, and the combination makes them better climbers. This improvement and goal-reaching is fun. This

applies to every difficulty level. These climbers are engaged and want to continue improving. They stay members.

Well set problems are also fun for people who are happy to climb at the same level for a long time but want an interesting way to get their exercise in. These people may be perfectly happy surfing a plateau for an hour or two a week during lunch. They want to climb routes that appeal to them, so they do not get bored of the facility or their workout.

A grade spread should include variety in movement, variety in holds, variety in terrain, variety in difficulty.

5.02 Grading Routes

Systems such as difficulty grades, groupings, or circuits are used by facilities to communicate:

- Difficulty: expected challenge level of climb
- Style: identify specific aspects and features of climbs
- Expectations: provide a consistent experience to members
- Metrics: tool members can use to find appropriate challenges and track their progress

Grades and other systems are used by climbers to:

- Identify: The key characteristics of routes
- Locate: Climbs to warm up on, climb, and train on
- Curate: choose climbs that match their goals and desired experiences
- Track: see their progression over time

Grades, circuits, or groupings are not mutually exclusive. A facility may use one or multiple systems. Individual routes or boulders can be graded and included in several different circuits or groupings as well. Regardless of the systems used, effective communication is critical to create value for the member. A key element of grading or grouping routes is staying consistent within a routesetting program.

Route grades are a sum of many different criteria and can be assigned during the forerunning process, and/or by observing members climbing routes and/or asking for member's feedback. Individual experiences on a route are subjective and any system is just a guideline.

Common Grading Systems

Indoor climbing facilities may use grading systems also seen at outdoor climbing areas. These grading scales can communicate the difficulty and style of an indoor climbing route,

but they do not necessarily correlate to outdoor grades. Climbing facilities' can add more to their grading scale by adding "+" or "-" to a grade or by adding slash grades for routes that are right between two grades, e.g., "V1/V2"

Some of the common grading scales used are:

- Yosemite Decimal System (5.0-5.15d)
- French (4a-9c)
- UIAA (I – XII)
- Hueco/Vermin/V-grades (V0-V17)
- Fontainebleau (4B-8C+)

Common Grading Criteria

When matching a route to a particular grade consider the following elements:

- Hold and foothold positivity, security, and difficulty
- Movement complexity and difficulty
- Wall angle
- The level of insecurity a climber must commit to
- The number of distinct climbing techniques a climber must know to complete a route
- Length of route

Common Groupings and Circuits

Gyms may have custom circuit markings or grouping indicators, which may include: colors, numbers, words, symbols, or things like food items or animals.

The criteria for a circuit/grouping should be clearly understood by the routesetting program to maintain consistency over time.

Common Grouping and Circuit Criteria

The grading criteria can be used to group routes by difficulty. Creativity in grouping the difficulty of climbs is welcome, and can be organized in ways such as:

- Movement style.
- Skill building goals.
- Hold type.
- Training goals.
- Climber demographics.

5.03 How to Mark Routes

Climbs should be marked or otherwise designated so members can identify which holds are included on each climb.

Common Marking Systems:

- Hold color – all holds on the climb are the same color.
- Labels - Labels are often mounted on the wall next to or under each hold. Some gyms use laminated (reusable) colored paper strips and pin them under the holds so the tail sticks out.
- Tags - Some gyms have metal tags that are bolted or screwed onto the wall next to each hold.
- Tape – colored tape and/or tape marked with symbols is placed under each hold with a tail sticking out for the climber to see.

Whatever you use for marking should stay visible and on the wall while not interfering with the climber's experience or causing a safety hazard.

Volumes and natural features of the facility may have rules specific to each problem or the rule may be facility wide.

Start and Finish Marking:

Starts and finishes should be marked with info about the climb including grade and/or circuits the climb is included on and/or any climb-specific rules. This tag may also include a date and/or setter initials.

Some gyms name their climbs, which can be fun for setters and customers.

5.04 How to Evaluate Routes

Risk Assessment

When evaluating the risks of a route consider the following elements:

- Movement styles
- Size, type, and spacing of the holds
- Body positions during climbing and while falling
- Wall angles
- Wall height
- Nearby routes
- Fall zones

- Other potential hazards

Lower risk routes are created to avoid members getting themselves into positions or situations that they are not aware of or cannot control.

Some risk is acceptable if it is appropriate for the grade and relative ability of the members on it.

Risk and danger are not the same thing - danger should be avoided.

As necessary, changes should be made to routes during setting and forerunning to make the risk decisions asked of the members appropriate for the difficulty of the climb.

Empathy

Visualizing a climber who is at a certain grade is a way to empathize with climbers of that level and grade more accurately. Attempt to personally connect with a version of yourself that was still learning to climb.

Observation

Learn how your members interact through observation and communication.

Not only watching your members on the walls but talking to them about the routes is a helpful tactic. Consider a paid hour of observation for the routesetting crew once a month, or more.

Members do not like routes that 'feel' as though they are graded poorly or put them in unnecessary danger for that grading. The aim is to improve your routesetting team's ability to set routes for your members, no matter what level they are setting.

5.05 Forerunning

In forerunning, routesetters can change climbs to suit a specific focus, whether the climb is meant to provide a challenge in movement, angle, or hold type (or some combination therein), or whether it is a more middle-of-the-road climb for the grade. Some climbs focus on common, comfortable movements that will flow for climbers of the correct experience level. Other climbs are set to get people out of their comfort zone and teach them something new. A well-designed program will provide both.

In forerunning, the movements of a climb must be tailored to and appropriate for climbers of the target difficulty range the climb has been set for. If a V10 forerunner easily skips moves on a V4 by doing bigger or harder moves than a V4 climber could do, then they are not providing useful forerunning. Routesetters should forerun climbs with empathy and attention to the target user group of the climb.

For example, a circuit might include technical-style movements on volumes, tension climb on crimps, compression climb on slopers, power pinch climb, jumpy climb on volumes, power climb on crimps, straight-forward sloper mantle, a heel hook, and flowy mini-jugs movements.

Tracking the number of climbs of these various styles will help make sure that there is a good amount of variety in the gym. Refer to section 4.05 (Route Management) for other elements to track and a discussion on various management tools.

Chapter 6: MOVEMENT

6.01 Movement in Routesetting

Routesetting is a study of movement, and a good routesetting program will provide a variety of movements for climbers of all ability levels. Climbing is made up of millions of different movements and micro-movements. This endless possibility is one of the things that makes climbing fun and continually interesting.

Muscle engrams, or muscle memory, are memories of movement that are stored in a person's body. As a climber learns and practices movement, those moves get easier for the climber both mentally and physically. The body remembers how to do the moves and they become more reflexive, making them less taxing on the body and mind. This helps people climb better.

Muscle engrams allow climbers to move more efficiently and adapt more quickly to variations or similar movements found on other climbs. Familiarization with climbing on different wall angles and with holds of different shapes and styles will allow the climber to problem solve quicker when they encounter future challenges. It even helps with brand new challenges. With wall angles, movement, and holds, the more experience the climber has, the easier it will be to adapt their mind and body to new experiences.

Routesetting in a gym is an opportunity to fast track this learning cycle by offering thousands of different moves, angles, and hold types in a small space. To take advantage of this, routesetters must conscientiously create variety in each difficulty range by creating different types of moves using a variety of holds and angles. This should be done with each reset so each difficulty range continues to present variety.

Each member group should have climbs to warm-up on, circuit on, and project. A good program will create a path to progression for all users of any skill level. This means considering the facility's terrain and holds available and setting climbs for each difficulty range plus bridge climbs to help users transition into or out of a difficulty level for different skills. Each difficulty level should test and teach both physical and mental strengths and technical ability.

Creating these paths to progression for all climbers meets the needs of member groups by allowing them to have positive challenges and a cycle of feedback. This inspires members to continue visiting the climbing facility whether their goal is to progress through the grades or just have a good work out and/or social experience which will help the facility retain members.

6.02 Movement Trends

Routesetting experiences trends, with influences from media like Instagram and coverage of big competitions, IFSC World Cup events, and the Olympics where routesetters see moves they want to try and set.

It is meaningful for a routesetting crew to take time to experiment with and understand different movement trends. It's also important to make sure to keep balance in the routesetting program, so not all the routes are focused on, for example, big parkour problems that require a movement type many members may not want to focus on. An organized routesetting program will allow space for experimentation while still taking care of each circuit's core needs.

6.03 Experimentation

Questions to ask when routesetting and forerunning:

- What happens if?
- What happens if we take that foothold off?
- What happens if we rotate that hand 10°?
- What happens if we move that volume up?

"What happens if?" questions can assist teams in learning about routesetting and movement that will both help with the current problem and will add knowledge to each routesetter's lexicon for the future.

If you have a lot of long-time climbers adding new styles of climbing can help broaden their appreciation of climbing and help them learn new skills as well. Adding new movement or more variety can also help keep customers engaged.

6.04 Developing a Deeper Understanding of Movement

Games and Challenges:

Head routesetters may devise games and challenges to help their routesetters learn to set climbs outside their normal wheelhouse. These can include co-setting, speed routesetting, slow routesetting, routesetting with pre-chosen holds or with a specific goal move, etc.

These can be done during regular routesetting if the head routesetter plans to allow the extra time in forerunning that may be needed to work out a specific problem or move. It's usually best if this is limited to 1-2 routesetters/special problems a day to avoid extensive forerunning needs and a sub-par product. Plus, if the whole team is putting extra time into

thinking out one problem or route in forerunning, it can create a good learning opportunity for the team as different solutions are tried and the end form is ultimately decided on.

Spending extra time may be seen as a no-no for commercial routesetting, but it should be seen as a future investment as these sessions will allow the routesetters to learn and progress by expanding their movement libraries and inspiring new ideas.

Clinic Days:

Head routesetters may hire outside teachers or put on mini-clinics for their own team. Clinics can focus on different setting goals from working on team communication and forerunning to identifying and meeting the needs of a facility's core member group to routesetting a specific type of move or style of climb. Even experienced routesetters can benefit from clinics to share new ideas and experiment with new movements.

Local Comps:

If routesetters are allowed a reasonable period to set the competition, redpoint competition routesetting is a very fun way to both experiment with circuits (as each category should be its own varied circuit) and experiment with indulgent movements, space, and hold use. Because the walls are stripped and reset with competition problems, more holds are available, so problems can take up more space and explore new ideas. Focusing on setting special competition problems is enjoyable and a learning experience for the routesetters - and can help your team improve.

Routesetter Trades:

If allowed, routesetter trades allow your team to send team members to other facilities and have other routesetters guest set with your team. This naturally promotes growth through sharing of ideas and seeing new perspectives and methods. Though facilities may be competitive, routesetter trades are a great way to raise the overall level of routesetting at all involved facilities.

Chapter 7: RISK MITIGATION

7.01 Worker Safety

Climbing facilities and routesetting programs must be free from serious recognized hazards and comply with standards, rules, and regulations. Routesetting programs should consider local and national health and safety organizations, local and national labor laws, the CWA Industry Practices, and CWA's Work at Height standards.

Some of the general elements found in most health and safety standards are:

- PPE worn when routesetting, such as:
 - Safety glasses
 - Ear protection
 - Closed toed shoes
 - Other PPE specified in JHAs
- Additional PPE worn during other maintenance duties, such as:
 - Gloves
 - Face shields
 - Respirators
 - Other PPE specified in JHAs
- Training on use and maintenance of power tools, such as:
 - Drills
 - Impact drivers
 - Angle grinders
- Power tools should be in a safe condition and used in accordance with local and national health and safety rules.
- Hand tools such as taps, wrenches, or screwdrivers should be maintained in safe condition.
- Hazard and work zones should be marked off and the routesetting program should have policies on:
 - Size of zones, such as:
 - Bouldering
 - Rope climbing
 - Barriers.
 - Lighting.
 - Keeping a clean workspace.
- Routesetters should be aware of their environment while working and adapt to changing conditions such as the presence of customers or shifting workspaces.
- Routesetters should know their facility's risk assessment policies, especially:

- Qualifications for routesetting risk assessment.
 - Knowing how to voice concerns.
- Routesetters should have knowledge of what documentation is required in their facility and be prepared to complete all necessary documentation.

Some key elements of the Work at Height standard that routesetting programs can implement are:

- Requiring helmets and other PPE for specific areas and jobs.
- A Qualified Climbing Wall Worker, or other qualified person, shall conduct a hazard assessment at the workplace to determine if fall hazards, or other hazards associated with work-at-height, exist.
- For bouldering areas:
 - When ladders are not placed on stable level surfaces they must be secured or stabilized to prevent accidental displacement in accordance with the code of local adoption.
 - Maintain a clean workspace in fall zones.
 - When forerunning the worker must not be exposed to fall distances greater than the fall distances experienced by recreational climbers.
- For rope climbing areas:
 - Fall arrest anchors shall be capable of supporting the lesser of 22.2 kN, or twice the anticipated load, in the direction of loading per user.
 - Mobile elevated work platforms must be of the appropriate type and rating for the environment and work to be performed.

7.02 Member Safety

Routesetters should minimize introducing hazards and risks that the members may not be aware of or are not able to control.

Holds, volumes, and macros should be attached to the wall so they can sustain the forces of all normal use.

When attaching holds consider:

- When using set screws:
 - If using set screws without a bolt make sure there are a sufficient number for the feature being used.
 - Set screws should be countersunk, fully embedded, and not introduce a cutting hazard.
 - Set screws should be placed through the appropriate part of the hold/volume.

- Do not place a set screw through a section of the hold that is too thin. Contact the hold manufacturer for suggestions.
 - Set screws should not crack the hold or cause excessive wear.
 - Drive set screws in at an appropriate angle to ensure proper countersinking and holding power.
 - Use an appropriate length and type offset screw.
- Lonestars and other bolt replacements should not be used without additional set screws.
- Ensure that the section of climbing wall a hold is being attached to is in good condition.
- Ensure that the hold is in good condition.
- Holds should be placed as intended by the manufacturer with the entire mounting surface of the hold contacting the climbing wall or volume that it is being placed on.
 - The mounting surface of the hold should not hang over the climbing wall or volume creating a sharp edge.

As holds are placed be sure to avoid potential entrapments that could cause a climber's fingers, feet, or body to be caught by holds. Some elements to consider are:

- Various body/appendage sizes
- Various types of entrapment such as:
 - Heel toe cams
 - Jams
 - Hand jams
 - Finger locks
 - Constrictions created by touching holds.
 - Larger radiused holds.
 - V-shaped constrictions

Routesetters should have good environmental awareness and consider how falls, missed dynamic moves, or overlapping routes could introduce additional hazards for members.

Consider:

- The impact on the safety of existing routes
- Nearby fall hazards such as furniture, the edge of mats, features or sections of climbing walls.

When routesetting during open hours, have a plan in place to set up work zones, analyze hazards and risks, and how to minimize the impact on any members in the facility.

It can be helpful to have:

- Separate JHAs for open vs. closed routesetting
- Information at entrance and signage for areas with active routesetting

- Work-ahead signage
- Signage for work-adjacent routes
- Construction barriers
 - From the pendulum point block off a 15-foot area in all directions
 - Stanchions should be far from the wall and the fall zones of both workers and members
 - Ensure that barriers do not introduce additional risks such as:
 - Falling hazards in the landing zone
 - Tripping hazards
 - Allowing holds to bounce out of the work zone
 - Restrict climbing on routes adjacent to construction barriers

Continue to review the use of routes and make improvements after routes are open to the public when necessary.

It is best to:

- Make ongoing observation and risk analysis after routes are open.
- Revise or replace routes that have safety concerns, such as:
 - Unforeseen fall hazards.
 - Excessive rope drag.
 - Poor clipping stances.

7.03 Risk Mitigation for Bouldering Routes

Bouldering has some unique objective hazards that routesetters should consider, such as:

- Wall height.
- Fall zone: the area underneath and surrounding a route where a member may land.
- High profile holds and volumes down low on vert and slab.
 - These holds can change the fall zone.
 - These holds can introduce hazards for insecure climbing above.
 - Routes with large holds can be set by themselves to avoid some risks.

When routesetting bouldering routes some things to consider are:

- How a climber will exit a bouldering route.
 - Some facilities will limit routesetting to a maximum height on tall walls.
 - Using downclimb holds.
 - Differentiation in color and shape helps to communicate these hold's purpose to members.
 - Using escape or bail holds and routes.

- Strategically placing an easier climb next to a harder route gives an escape or rest option for climbers.
- Risk of movement.
 - Relative to height of climber.
 - Relative to skill and experience level.
 - Sideways dynos that could introduce a larger fall zone.
 - Awkward or twisting falls that could make a fall harder to control.

7.04 Risk Mitigation for Rope and Auto Belay Routes

Routes where PPE such as ropes, or auto belays, have additional considerations to ensure that the protection systems in place can be used properly by members and that routes do not introduce unnecessary risks.

A routesetter should consider:

- What happens when a climber falls.
 - The risk of a ground fall should be minimized.
 - Routes that can be climbed simultaneously should not have conflicting fall zones.
 - Free Space – all areas around a route that should be devoid of hazards.
 - Fall zone: the area underneath and surrounding a route.
- The path of the rope
 - Minimize ropes running over holds and volumes.
 - Do not introduce large pendulums or swings by creating excessive traverses.
 - Pay attention to overlapping routes when adding new routes in an area.
- How a member will clip into anchors on a lead route
 - At least the first three quickdraws can be clipped according to the grade.
 - Traversing routes can introduce awkward clipping stances.
 - Minimize fall hazards at clipping stances.
- How hold placement can affect anchors and quickdraws.
 - Quickdraws should not hang over holds.
 - Holds should not block or limit the movement of quickdraws.

When forerunning and evaluating a roped climbing route consider all the ways that the route could be climbed (auto belay, top rope, and lead) and check for any hazards unique to each climbing style. It is also best to consider how members of different sizes or abilities might make choices or be forced to deviate from intended movement, clipping positions, or falls.

CLIMBING WALL ASSOCIATION, INC. (CWA)
CONTACT INFORMATION
& RESOURCES

The Climbing Wall Association (CWA) has many resources available for climbing equipment and wall manufacturers, retailers, sales representatives, and climbing facilities. The CWA has an informative consumer information program titled ClimbSmart!® that is designed to promote responsible climbing. The ClimbSmart!® Program is CWA's principle national public awareness campaign addressing risk in climbing sports, climbers' safety, and personal responsibility.

Contact the CWA Team and visit cwapro.org for more information.

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