

THE SYSTEM TRAINING

by Alex Huber

Warning: The following training regimen is intended for the already highly trained, high-end sport climber. Attempting these exercises, even with sufficient preparation (which can take years), can result in injury.

At one point, no one trained. It seemed uncool to train. "Good climbers don't need to train to be good," was the message of the gurus. And, quite honestly, at that time, it was often enough to have good footwork and a good head on slabby routes. But times changed, routes became more overhanging, and people started to wonder how to train for them. Then the best option was a simple boulder gym, which remains one of the best ways to obtain or improve power. Another well-known method for maximizing power became training on the campus board, the brainchild of the mythic training professor, Wolfgang Gullich.

While the campus boards worked well on training the upper body, climbing is a sport in which you have to use your fingertips *and* feel. In our flat in Munich, with Rudi Klausner, a German climbing-team trainer, my brother Thomas and I developed a training tool we dubbed the system board. Though similar to a campus board (holds are placed on the board, in repeating rows), the system board doesn't just train the upper body but trains the whole chain of muscles, from toes to fingertips.

the board Our system board is a wall overhanging 40 to 50 degrees, 2.3 meters high, 3 meters long and 2.5 meters wide. The first meter contains only large edges spanning its full width. They are 20 centimeters apart — optimal for foot placement. The upper part of the wall contains all of the hand holds. These should cover the full range of shapes and sizes - one-finger pockets, two-finger pockets, first-phalanx edges, tiny edges, slopers, pinches and, most importantly, one big hold.

We decided that the one- and two-finger pockets should be open (not crimps), without edges, and the surfaces of all holds should be completely smooth. Ideally, there should be a total of ten holds, five for each hand. The horizontal spacing between the holds should vary from 1.5 meters (for slopers) to one meter (for one-finger pockets).

How you create your own system board is highly individual. However, it's important to use all types of holds, so that you cannot avoid your weak points - a mistake many climbers make in conventional boulder gyms.

training My training rhythm is based on my regular climbing rhythm: two days of training, one day of rest. The first day of the period, I start with a combination of system board and powertraining, which - in my opinion - 90 percent of climbers lack. On the second day, I prefer to go climbing in a conventional boulder gym. It's easier to get motivated on the second training day there. Another reason to visit the gym is to avoid relentlessly repeating the same type of training. Your body becomes used to repetitive training, and the effect is lessened.

warming up Everybody has his or her own method of warming up. Some climbers avoid it completely, out of laziness. But nobody's body is perfect, and injuries can occur. To warm up, I do pull-ups and some easy moves on the wall in combination with stretching.

power training My power training consists of one-arm pull-ups, front levers (holding onto bars or rings, hang face up, keep your body straight, parallel to the floor) and back levers (holding bars or rings, with arms behind you, bring your body into horizontal position, with your body straight, parallel to the ground), bar dips and several types of handstands. You will feel how much muscle your body actually has after you do this circle-gymnastic training. (If you are unable to do these exercises under your own power, get your training partner to assist.) Do:

- Five sets of one-arm pull-ups, as many as you can each time, with a minimum of three.
- Three sets of front levers and back levers, six to ten seconds each.
- Three sets of bar-dips, ten to fifteen each.
- As many handstands as you can.

training on the board

hypertrophic training In the first six weeks of any three-month training period, you should aim for muscle-weight gain. To accomplish this, the intensity of the exercises should be around 75 percent, for 30 seconds each; rests should be two to three minutes; and sets, six. The board should be overhanging 40 degrees.

- **ONE-FINGER POCKETS:** Start with both hands in adjacent one-finger pockets and move one hand to the next highest. Grab it and drop the lower hand. Wait two seconds in this position on a straight arm, grab the adjacent pocket with the hand you had dropped without the assistance of the second hand. Place your feet so that your body is in balance with the wall.

Follow this move sequence: 0>L1>R1>L2>R2>L3>R3>L4>R4—and, after resting: 0>R1>L1>R2>L2>R3>L3>R4>L4.

- **TWO-FINGER POCKETS:** This exercise is performed like the one-finger-pocket exercises, but using these combinations:
a) second and third finger
b) third and fourth finger
c) second, third and fourth finger configuration in two-finger pockets.

- **FIRST-PHALANX EDGES:** These are like the one-finger-pocket exercises, except they require a variation in body and foot position. Place your feet as high as possible and simulate a mantel move. Hold this position for two seconds, then grab the next edge.

- **TINY EDGES:** Again, repeat the one-finger-pocket exercise.

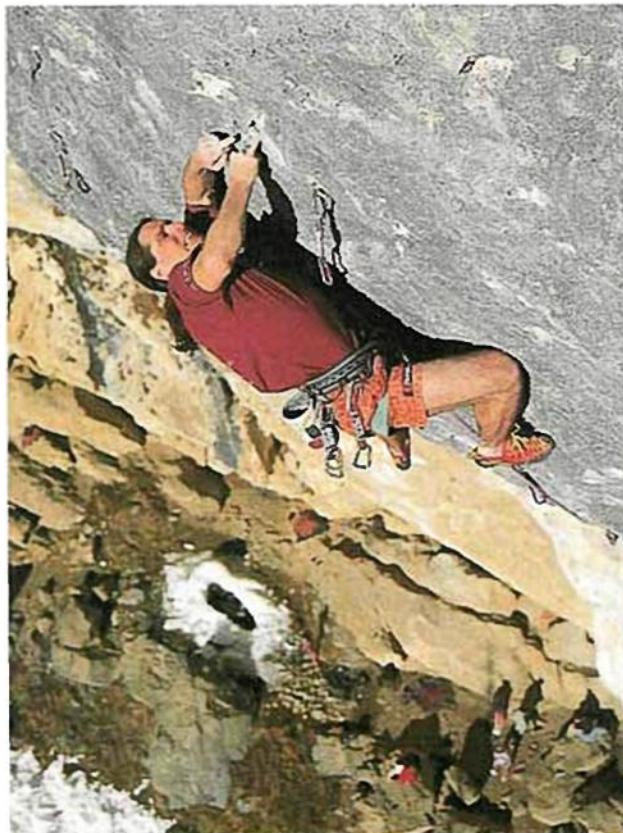
- **SLOPERS:** Grab the first two slopers, place your foot, then move to the next higher sloper. Drop your foot, and let your body swing out. Bring it into balance to move farther, following the same sequence as shown with the one-finger pockets.

- **PINCHES:** Like in the one-finger-pocket exercises, now using only the pinch holds.

- **BIG HOLD:** Place the big hold as low as possible on the wall. Grab the hold with one hand and place your foot as high as possible, as close to your hand as possible. Do a block/ mantel move and touch the top of the wall. Then go back to your starting position and repeat the move three times without assistance from your other hand. (Time: 15 seconds, same rest period, six sets, each hand.)

max-power training Gradually increase the steepness of the board until it is at a 50-degree incline. Each individual move of these exercises should be so hard that it's impossible to hold any of the various positions for two seconds, as you did in the hypertrophic training. The duration of each repetition now should be 12 seconds, with three-minute rests. Repeat each exercise listed under hypertrophic training six times.

Alex Huber is putting up some of the hardest sport climbs in the world. He lives — and trains — in Munich, Germany.



Alex Huber putting his system-board training to use on Open Air, his 9a (5.14d) redpoint at Schleier Wasserfall, Austria.



Hypertrophic training on slopers.



Alex does one-arm pull-ups while brother and training partner Thomas awaits his torture.

Neil Gresham's Guide to System Training

by Neil Gresham on 14 June 2002

Introduction

Powerful bouldering was the discovery which enabled the eighth grade to be achieved and Campus boarding enabled the ninth. So where do we go now in the search for training methods which are yet more specialised and of even higher and intensity? A recent article by Alex Huber exposed 'System training' as the new, in-vogue strength and power training method designed to help you climb 9a, provided that is, that you can already do at least 4 or 5 one-armers and can rattle off several front-levers. The good news for the rest of us mortals is that system training does not have to be so elitist that you need to be climbing 8c in order to join in. In fact, regardless of your current grade and ability, System training can be used as an effective device for working weaknesses and achieving specific goals, as well as being fun and providing a refreshing change from conventional bouldering sessions.

What is System Training?

System training applies simple theories of training structure to bouldering in order to help you, not so much to train harder but to obtain maximum productivity from a particular session. The idea is that, instead of tiring-out all your muscles simultaneously and at random as you would when bouldering, you isolate them into specific groups, or types of move, and tire each group out separately. Most of the boulder problems which we set in training have a random variety of different moves and hold types; for example, you start by pulling straight-down on a sloper, then catch a crimpy undercut and then go out to a side-pull pocket, and so on. Each move requires the muscles to be used in a slightly different way and at differing degrees of overload, thus preventing any one particular range of muscles from being stressed maximally but tiring all muscles to a diluted extent.

We tend to create problems like this when bouldering indoors because they feel, at first, to be more specific to crag climbing. But are they really? If you think about it, most crags have moves and holds which adhere to definite themes or patterns, ie: Malham is mostly on crimpy side-pulls & undercuts, Buoux is mainly pulling down on pockets, Volx is steep with big locks on big slopers. Clearly the routes at these crags will place massive emphasis on certain specific muscles whilst demanding relatively little effort from others. For this reason it is possible to fatigue yourself at one type of crag and still perform relatively well at a different type of crag shortly afterwards. It is this principle upon which system training is based.

System Boulder Problems

The first step in system training is to work out a series of specialised boulder problems, each which has its own common type of move and hold. For example you will have a problem which uses purely crimps in a side-pull position, a problem which only uses

pinches in a straight down-pull position, a problem which uses big, rounded undercuts with poor footholds, and so on. It usually works best if the moves are of a similar degree of difficulty and the handholds and footholds are of a similar type. You can use the specificity list given below for moves and holds to help you construct your 'system problems'. Remember that the potential for different combinations is considerable and you should choose in accordance with your goals or weaknesses.

Specificity variables for 'System' boulder problems

Finger/hand hold	Arm orientation
Full-crimp	Straight down
Half crimp	Side-pull
Sloper	Reverse side-pull / gaston
Pocket	Undercut / undercling
Pinch	
Jam	

The Matrix System

Your primary aim in constructing your system problems should be to make the moves as 'basic' as possible almost as if you were climbing a ladder or campus board, but with footholds. The reason for this is that, once you have wired them, you will know that further improvements can only come from gains in strength power. The critical point is that you use the *same* problems and make them progressively harder over time, rather than scrapping them and inventing new ones. To help you do this, it pays to use a board which has a dense matrix of T-nutted holds so that you can simply move the holds slightly further apart or replace them with slightly smaller ones. It also helps to have a dense covering of one or two types of standard-sized footholds. Ideally one type should be fairly positive so that they can be used with really small fingerholds and the other type should be much poorer so that they can be used with jugs. The important thing is that there are enough footholds of the same type so that the problems are balanced and unaffected by reach.

Training Tips

In a typical system training session, you will start by working your first designated system problem until you go past your peak on it. You must then move onto the next problem after a short break and, if you have gauged correctly, you will feel almost up to full strength, purely because it is so different in nature to the first. The same will be true when you attempt the third problem and so on until the session is complete. Remember that no matter how different you make your problems, you will still notice a degree of cumulative fatigue as the session progresses, although the idea is that it won't be as debilitating in comparison with conventional 'random' bouldering sessions. For this reason it is still vital not to over do it and completely burn-out on any one problem or your performance on the next will be impaired. For the same reason it is also important to try the problems which work your weaknesses at the beginning of the session.

Bouldering Exercises

A further refinement which can be added to system bouldering is to make rules which force you to climb problems in a certain way in order to emphasise a particular movement or position. For example, Didier Raboutou and Robyn Erbesfield developed a useful bouldering exercise for training body tension and the ability to keep your feet on steep rock. The idea is to construct a steep but relatively easy system boulder problem, of approximately 6-8 moves in length, which has reasonable handholds and fairly poor footholds. After performing each move you must deliberately take your feet off and 'cut-loose' using as much control as possible to minimise the swing, and then try to replace them again. Repeat until you fail to get your feet back on.

Use the same principles of adding weight and repeating three times before making the problem harder.

Isometric Recruitment Bouldering

Neuromuscular Recruitment training is the term given to exercises in strength and power sports which require absolute maximum contractions for minimum time durations. For complex physiological reasons which cannot be described in this article, this type of training doesn't so much make you stronger but it teaches your body to tap more deeply into its potential store of strength. As such, neuromuscular recruitment has much relevance to bouldering and strength training to climbing and is ideally incorporated with your system training sessions.

Within bouldering movements it is possible to isolate breaking points and train them specifically by holding static positions. You may wish to train these breaking points to work a particular weaknesses or to develop the strength for a particular crux move. With Isometric recruitment bouldering you should aim to pull-on, then hold a specific position for 3-8 seconds of extreme effort. Your set should finish because you fail to hold-on rather than deliberately letting go. The positions which you find to be your greatest weaknesses should always be trained first within the session. Use one arm as opposed to two, in combination with either one or both feet. Make a maximum of 3-4 attempts (for each arm) at each recruitment exercise although the more experienced can make good improvements with just one all-out contraction per exercise. This will increase the efficiency of time and energy in your training sessions. Rest 2-5 minutes between exercises depending on how far you get on them. Use a maximum of 4 different exercises per session each accentuating different finger, arm and body positions. Note that isometric bar work (for the arms) and deadhanging (for the fingers) can also be used for recruitment purposes.

Always train recruitment at the beginning of a session after warming up thoroughly and when feeling fresh. Then move onto your longer system boulder problems after a break of 10-15 minutes or so.

Sample System Training Session

Isometric recruitment exercise

Thorough & progressive warm-up

- 1) Static lock on flat undercut (3-8 secs)
- 2) Static lock on 2-finger pocket (at 90 degrees + then full-lock) (3-8 secs)
- 3) 1-arm lock on a jug or bar (using assistance if necessary) (3-8 secs)
- 4) Deadhang on finger edge (using assistance if necessary) (3-8 secs)

15 minute rest

System problems

- 1) Pinches ladder problem 3-5 attempts / as much rest as required
- 2) Crimpy side-pull ladder problem 3-5 attempts
- 3) Flat undercuts problem 2-3 attempts (note: less attempts at this)
- 4) Pocket ladder problem 2-3 attempts (note: less attempts at this)

Bouldering exercise

eg: 'Body tension' / cut-loose exercise

Warm-down

Summary

System training has been known of, in some form or another, since bouldering on boards first began. Climbers like Moon, Moffatt and Smith have experimented with basic ladder problems and recruitment exercises to great success but most regard them as a tool to be used occasionally as a supplement to more conventional bouldering. Like Campus boards, system training is no miracle cure to the commonly experienced problem of weakness, but it can be used as a system shocking device to help you target weaknesses or achieve specific goals.