There are climbers who were raised on bouldering pads, micro crimps and the technique of boinging who would argue that Tricams are poised for extinction. For every one of these, three trad junkies or alpinists will emerge in ardent opposition to such a preposterous claim. Tricams, they will say, are the greatest piece of gear around. The sentiment will grow stronger the closer you are to areas like the Gunks.

Why do Tricams face such a love-hate predicament? The point of this article is partially to tout the advantages of the Tricam's simplicity, but also to validate and address some of the negative connotations some climbers associate with them. As the exclusive manufacturer of Tricams, C.A.M.P. is overjoyed with the passion and emotion climbers have given to the Tricam. It is our opinion, after having been involved in this conversation more times than we can count, that it is right to be passionate about climbing, especially when it comes to gear.

LESS IS MORE

The Tricam is a gloriously simplified piece of climbing engineering. There are no springs, the cam lobe is the cam head, the webbing is the cable, and the piece is naturally designed for use either as a passive chock or an active cam. The adage about 'less is more' might as well originate from the Tricam. Its construction is not unlike that of the simplest pro of all, the nut or chock. Attach a sling or cable to a head, wedge it in a constricting crack and clip your rope to it as you climb past. The major difference with the construction of the Tricam, of course, is that the head is designed as both a cam and a chock and the sling is attached in such a way that it has the ability to rotate in order to engage the camming action (fig. A, D). Without active camming motion, nuts and other passive pro require an especially precise fit and extra attention to factors like setting, directional pull and loosening. Cams have their own inherent drawbacks as well. They require near parallel sidewalls for full engagement, and because the lobes can shift as the piece moves from rope drag, they have a tendency to walk into cracks where they might find a flare and become unseated or track themselves so deep they become difficult to extract. Both nuts and cams are spectacular inventions and are critical components of any modern rack. But what fills the gap between them? We have nuts and hexes for constricting cracks and cams for parallel cracks. But what fits inside a pocket? Or what kind of camming device can we place in a crack that flares wider as it grows deeper? Is there something better than a traditional cam for horizontal cracks or shallow grooves?

The answer, of course, is the Tricam. Its unique design allows it to engage in ways traditional cams cannot, fit where traditional cams will not, and stay put where other gear will walk or rattle loose.

PUTTING THEM IN

Tricams are designed for use both actively and passively. As such, they can function in constricting and parallel cracks. They are also uniquely suited for horizontal cracks because of their flexibility, and pockets and shallow cracks because of their narrow head width and short head length.

In passive mode, all you need is the right constriction. Select a placement just like you would a nut, slot the Tricam and give it a good tug (fig. A). You will notice that a Tricam set this way has very little tendency to rattle loose because the fulcrum point has created a solid lock against the opposing cam rails. Traditional nuts set this way do not allow such pinpoint accuracy in setting since they do not have a point like the fulcrum point that can be positioned for a more precise and solid lock.

Active mode is where things can get tricky, though it is also where the Tricam can be put to its highest and best use. A typical active placement is similar to a traditional cam. Find a spot in a crack with parallel sidewalls and place the cam so both cam rails and the fulcrum point make solid contact (fig. B). Give the Tricam a tug to set it. While the

Tricam is designed for use in this position, it is common to find solid placements for traditional cams in such situations as well. Both have their advantages. The traditional cam will typically place more quickly and extract with greater ease. The Tricam is not as easy to place with one hand and extraction often requires a nut tool, so they can be difficult to remove if the second is unable to use both hands. What the Tricam does offer in this situation that traditional cams do not is the ability to be set and a tendency to remain in place rather than walking. Tugging on a Tricam when placed in active mode often has the same kind of locking effect as tugging a nut. As the fulcrum point bites into the rock, the cam rails lodge themselves against the opposing sidewall creating enough friction to keep the cam in place even with some rope drag. Being able to set the Tricams in active mode is one of the primary reasons they are far more likely to hold in slightly flaring placements that traditional cams. With just the strength of the springs to hold the cam in place, traditional cams will walk out of flared placements as easily as they walk into others. Additionally, because there is not a stiff stem, the head of a Tricam is less affected by rope drag since the sling tends to handle the motion independently of the head. This is the other main reason Tricams are less likely to walk … a welcome feature when running it out on alpine terrain.

While Tricams have these distinct advantages over traditional camming units in perfect parallel cracks, it is common in these situations for the disadvantages (less efficient placement and extraction) to outweigh the advantages. Or really, it is uncommon for the benefits of a Tricam to beat the benefits of a traditional cam (fast, one-handed placement and extraction). For this reason, it is not until we get to the less traditional placements that Tricams really shines. Because Tricams have such a narrow head, they often provide the most secure placements in shallow cracks. Consider a crack 0.75 inches deep. A traditional cam will bottom out before it can engage and even if it does just make it, it can only go in straight, so the downward pull of a fall is not pulling on the cam head at the optimal angle. Tricams, on the other hand, will place vertically in shallow cracks so the pull perfectly engages the camming action making them far less likely to shear or get mangled in the event of a fall (fig. D).

The same is true in horizontal cracks. There are three common types of placements for Tricams in horizontal cracks: sling up, sling down and opposing in shallow cracks (fig. C, G). Use the sling up orientation when you can. It will not expose the webbing to sharp edges or abrasion so it will increase the lifespan and engages solid camming action whether the sling is being tugged upward (as with rope drag during upward progression) or downward (in the event of a fall). Sling down will perform best in the middle of true traverse where the climber continues past the piece in a horizontal progression. Place the cam so the webbing comes out of crack on the same side of the cam as the direction of the continued progression. There are no hard and fast rules for sling down versus sling up in horizontal cracks. Things to watch for include sharp edges, flares and the ability to set the cam.

The more traditional horizontal placements discussed above require cracks with sufficient depth to hold the entire length of the cam head. But what about cracks or grooves that are not so amenable? These are scary cracks because they can go on forever and will spit cams and nuts the entire way. Fortunately, Tricams can often be rigged to protect these features. The narrow head width of the Tricam allows it to be placed in a shallow crack running parallel to the crack itself (fig. G, H). This is something traditional cams cannot accomplish because the head is too wide. The trick with this kind of placement is to ensure that the cam remains set in this position even when it is weight. To do this, use another Tricam facing the opposite direction and position it so carabiners attached to the ends of the slings are positioned about 2-3 inches away from each other. To do this with the least amount of gear, girth hitch a runner to the first piece, then attach one strand of the runner to the opposing piece using a clove hitch. This will produce the constant tension required for keeping the primary piece in its horizontal orientation. Clip the rope through the open loop hanging down. The other option, if you intend to employ this technique regularly, is to carry several loops (about 3-4 inches) of lightweight bungee cord and clip them between the opposing pieces to create constant tension (fig. H). Equalize the two Tricams with a runner using a sliding X between and clip the rope into the master point. Needless to say, this set up requires more time and takes more practice than the simple action of slotting a single piece, clipping it and moving on. But these tend to be the very circumstances under which Tricams can offer a solution where no other gear is an option.

Two other great examples are pockets (slot the tricam in active mode in the much same way you would a horizontal crack, fig. Test C) and icy placements. Because the fulcrum point on a Tricam comes to a virtual point, it bites into softer surfaces more aggressively than the rounded lobes on cams. For this reason Tricams are more suitable in wet or icy cracks. Situate the Tricam so the cam rails are on solid rock, then tug hard enough on the sling while setting the cam to force the fulcrum point into the ice. If it shatters the ice and hits the rock, great. If not, make sure it has been set with enough force to remain embedded in the ice during upward progression (the larger sizes 5, 6 and 7 feature a sharper fulcrum point so these are the best options for these types of placements). Tricams have even been test in cracks formed by a rock wall on one side and waterfall ice on the other (fig. Test A). In a well-formed crack with solid water ice, the ice broke at 11.2 kN!

GETTING THEM OUT

We've heard it said that the Tricam is the most common piece of perma-pro after bolts and pitons. Experience tells us this is not actually case. We tend to see more stuck cams from walking and fixed nuts from being placed deep in a flare than we do fixed Tricams. But there is certainly truth in the complaint that Tricams are not the easiest protection to extract. Fortunately, there is a method that might help you with the madness.

First, think about extraction at the same time you are thinking about the placement. Keep the head close enough to the outside of the crack that it is visible and touchable by the cleaner. Also, rather than shoving the cam head into the tightest possible spot, consider a placement with some wiggle room. For instance, in a horizontal crack, use a pod that catches the Tricam near the middle of its range and set it with a good tug. Pick a size that accomplishes the same thing when working with pockets. In a vertical crack, look for a slight downward constriction rather than the perfectly parallel areas. This will allow the cleaner to slot the head up to a slightly wider gap so it can release with less finagling. Also try to place Tricams straight in rather than slotting them. It is easier to remove them if they only have to come out rather than up and out or sideways and out.

Second, use the nut tool. Especially once a Tricam has been set, it is rare to be able to clean a Tricam without a nut tool (especially smaller sizes). By keeping this in mind, you will avoid the frustration of trying to remove the gear by hand in the first place. On more than one occasion, we have seen climbers push a Tricam back into a crack and out of reach by trying to remove it with their fingers. Cleaning a Tricam with a nut tool is usually a two-part process. First, reach behind the fulcrum point and give it a tug to release the camming action. Second, use the nut tool to hold the fulcrum point in as you wiggle the Tricam out of the crack. With passive placements, pop the head like you would a regular nut, but hit it first underneath the fulcrum point. This is usually where the most friction is from setting it. The larger sizes also feature a hole in the cam head. This is primarily to shave weight, but it can also be useful for extraction. Grab the hole with the tip of the nut tool and pull towards the sling to keep the cam disengaged while you wiggle it loose.

TRICKS OF THE TRADE

Finding the Range

Unlike other gear which requires a good imagination or built-in vision calipers, it is easy to eye-ball the range of a Tricam for active placements. The minimum range is the distance between the tip of the fulcrum point and the highest point on the rounded cam rails. The maximum range is just shy (2-5 mm depending on the size) of the overall length of the cam head.

The Perfect Placement

Tricams will perform very well in perfectly horizontal cracks, but the fastest and most secure way to place a Tricam is to find a slight downward constriction in an otherwise parallel crack (fig. D). Not so constricted that a nut would work, but slightly constricted so the head both locks and chocks at the same time when it's set. Not only will this make the Tricam easier to place, it will also make it a breeze for removal.

Stiffen the Sling

One way to help make Tricams easier to place and remove is to stiffen the upper part the slings. Over the course of the Tricam's history, we have seen many solutions for this, but one remains superior. It is important to consider that while stiffening can help, it can also reduce the flexibility of the sling and render the unit ineffective by taking away its ability to adapt to various directions of pull. The solution: use a material with some rigidity that also bends easily when needed. Like a soda straw. As with spit balls, McDonalds straws are the best. They are thick and well built. Cut a length that fits perfectly in the upper sling loop and hold it in place with a thin layer of athletic tape. It's cheap and it works.

The Weight Game

The three largest Tricams feature hollow construction and have monster range. Consider carrying these in place of large cams to both gain versatility and reduce weight.

Maintenance

We often remember to check our webbing, but we rarely ever consider checking the integrity of cam heads or chocks. With Tricams, take some time periodically to inspect the fulcrum point and cam rails. If they are gnarled, even them out with a bit of filing. Sharpen the fulcrum point to its original shape and round the cam rails so they are even and parallel. Often times, this can even be done with emery cloth … it doesn't take much!

Pulling the Rabbit Out of the Hat

This is more of a summary, but it is meant to serve as a reminder of all the placements Tricams can accommodate where other gear fails. Look to your Tricams for pockets, shallow cracks, horizontal cracks and icy cracks. Chances are you will find a more secure placement more quickly than you would by futzing with a cam. The other magical place for a Tricam is on wandering terrain that tends to produce rope drag. Nuts have a tendency to rattle loose with excess rope movement and cams will walk. Setting a Tricam in active mode with a solid tug is the best gear in these types of situations. For just this reason, we know many climbers who carry the black, pink, red and brown on the back of their harness anytime they climb in places like the Wind River Range, Squamish or the Sierras.