

# NYLON HIGHWAY #44





# #44

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# Nylon Highway

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# Message from the Editor

***Wm Shrewsbury, NSS #22677RL (Chattanooga, TN)***

This issue marks the end of my material. I have one article and this year's Vertical Section report. Nothing else. Nada Zip.

We are asking you, the reader, to keep an eye out for articles or ideas for articles. This publication thrives on user input. Without input, the next issue slips further and further into the future.

If you have an article or photo that you think we could use, send it to us. I know there are some cavers out there working on new gear. What better way to introduce it than through the *Nylon Highway*? Send your articles and photos.

In the past few years, I devoted an enormous amount of time chairing the 1998 NSS Convention. This, along with other things in my life, has kept these last two issues out of your hands for an unreasonably long time. However, now that we have no more material, the next issues will be held up by our faithful readers. Please, take some time out to put your thoughts to paper. We would all like to read them. Thank you.

Keep that *Nylon Highway* warm! May your rack bars sing and you always be safe!

Cave Softly and Carry a Long Rope,

Wm Shrewsbury, Editor



# THE "UAYCEF" KNOT SYSTEM: THE "KNOTTED FROG"

*By Chris Nicola. Edited by Robert Zimmerman*

## **INTRODUCTION:**

Why can't a Knots system be made using two, rather than three, Helical knots and a single strand of rope? It can, and I will now describe both the development and construction of such a system: the UAYCEF [pronounced U-AY-CEF] system.

The UAYCEF system is a lightweight compact system making use of just one strand of rope, connected to the main rope by two Helical knots and works just like a Texas or Frog system.

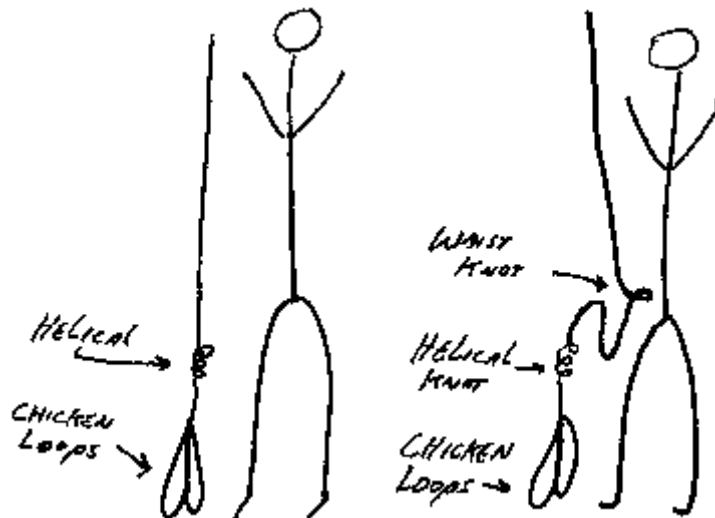
It should be noted that this paper presupposes a familiarity with conventional knots systems and is not intended as a beginners guide to climbing with knots.

## **BACKGROUND:**

About one year ago I found myself in West Virginia's Mott Hole using a Texas system which I had recently modified by connecting the top and bottom ascenders to one another via way of a bungee cord. It was while climbing up to a ledge that I thought to myself "I wonder if it would be possible to do this with Helical knots in place of the mechanical ascenders? The rest of the trip was now devoted to not only exploring Mott, but to also thinking about how I would go about designing a new knot system.

In designing this system, I first bought a 30-foot piece of 6mm accessory cord. I then tied two Chicken Loops at one end, of sufficient lengths as to allow for the wearing of caving boots, but at the same time, with enough slack that both feet could be removed easily in an emergency.

Next, a Helical knot was tied at crotch level to the main rope (Fig.1). A figure 8 knot was then used to attach the loose end of this Helical to the screw link of a diaper seat made out of webbing (Fig. 2).

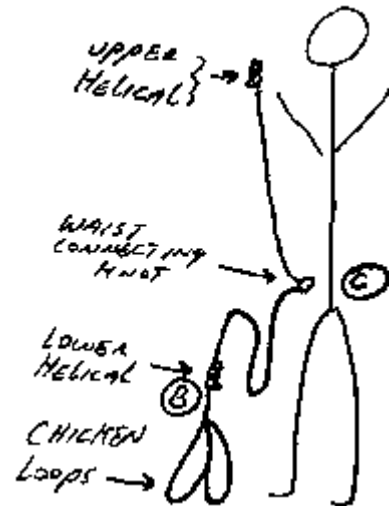


The length of the cord from the Helical to the waist attachment (i.e. screw link) was found to be extremely crucial to both the overall efficiency and safety of the system. If tied too

short , the lower helical prevented the climber from standing completely upright, thereby limiting the height gain during each climbing cycle. In other words, the cord running between the lower helical and the waist connecting knot (points B and C in Fig. 3) has to be long enough to allow for slack in the line whenever the climber stands upright. Otherwise the distance in each standing cycle will be limited.

Using the loose end of the cord attached to the waist harness, an upper Helical was then tied to the main rope just below the climber's Adam's apple (Fig. 3).

Having now successfully used the system in caves , under a variety of conditions, over the course of the last few months, the writer is now ready to publish step-by-step instructions.



**SYSTEM CONSTRUCTION:**

In making the system, remember to allow for the wearing of boots, coveralls, etc. in determining the lengths of all cords and webbing. In addition, allow a minimum of six inches at the end of each knot so that once the system has been used for awhile, you will have the necessary cord to fine tune the system.

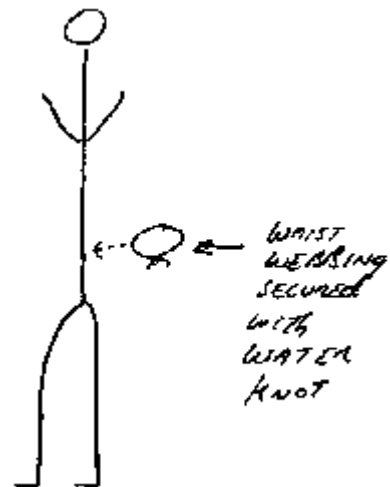
The items needed to construct your system are the following:

- 30 feet of 6mm accessory cord
- 1 screw link
- 30 feet of 1 inch webbing

**I. The Webbing Components:**

Step 1: The Waist Section (Fig.4).

Take the 30 feet of webbing and wrap it 3.5 times around your waist, and then cut it. Next, use a Water knot to connect the loose ends together. Finally, twist this waist webbing around you so that the knot is behind you, and out of the way.



Step 2: The Diaper Seat (Fig. 5)\*.  
 Take the remaining uncut length of webbing and make a loop. Now, place the loop behind you by holding your hands to your side while making sure the topside of this loop is flush against the small of your back. Next, reach under between your legs and pull the lower segment of the loop forward and up over your crotch area. Using a screw link, connect this part of the webbing to the waist section made earlier. Then pull the webbing in from both sides, wrapping it around you until it also can be connected to the just mentioned screw link. Finally, while in a squatting position, eliminate all slack until the seat sling feels snug and then tie a Water knot (Fig. 5b) to secure the ends of the loop together.

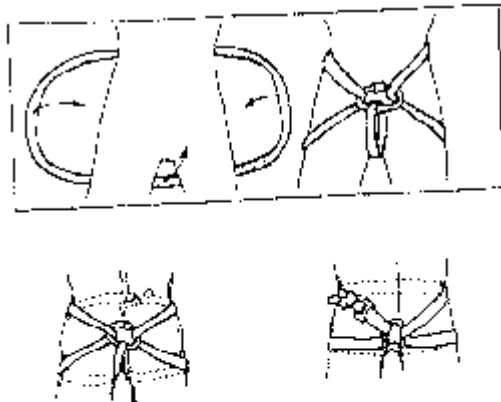
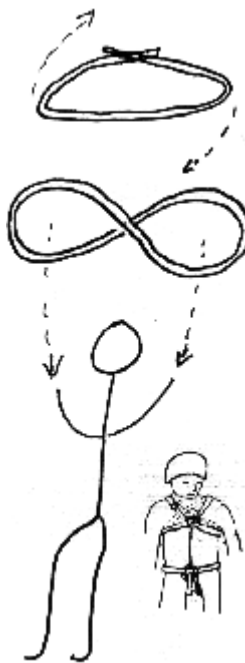


Fig. 5.

**NOTE:** Although not shown, a piece of webbing running around the waist should also be connected to the carabiner.

Step 3: The Optional Chest Harness (Fig. 6)\*:  
 Make a webbing loop, twist it once, creating a large figure "8" design. Place this loop behind you while sliding one arm through each of the two smaller arm openings of the "8" shaped loop. Finally, use a locking carabiner to connect the opposite ends of the loop across the front of your chest, taking out all slack in the process, and then tie off the ends by the means of a Water knot.



through each of the two smaller loop. Finally, use a locking carabiner to the loop across the front of your chest, process, and then tie off the ends by

[Note: Once the cord next section, the just mentioned accessory cord segment leading from the waist to an upper Helical knot (Fig. 6)\*].

components are constructed in the carabiner will then be slipped over the



Bring Loop "A" back through "B" by about 4". Then slip the new resulting loop back over point "A" and the entire knot, finishing up at pt. C.

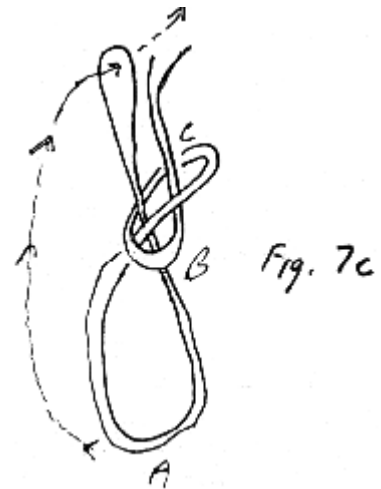
## II The Cord Components:

### A). The Chicken Loops (Fig 7a).

Step 5: Take an end of the uncut 30-foot cord in one hand, and then wrap it four times around your bent arm (i.e. 8 lengths as measured from elbow to hand). Of course, if you prefer a system with only one chicken loop, you would wrap the cord only half as many times around your arm.

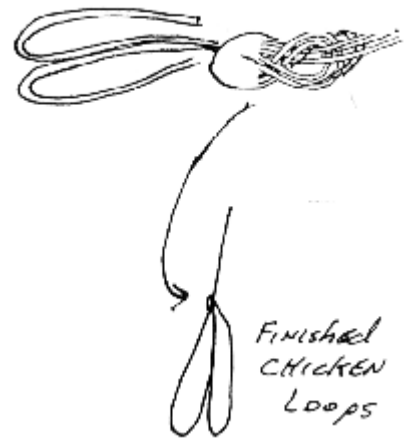
Step 6 (Fig. 7b): Tie the resulting loop off by means of a LOOSE figure "8" knot (You will shortly have to thread cord back through this same knot).

Step 7 (Fig. 7c): Take the bottom end of the resulting loop and trace it once through the figure "8" knot, only bringing through about 2.5 to 3 inches of the end of the loop.



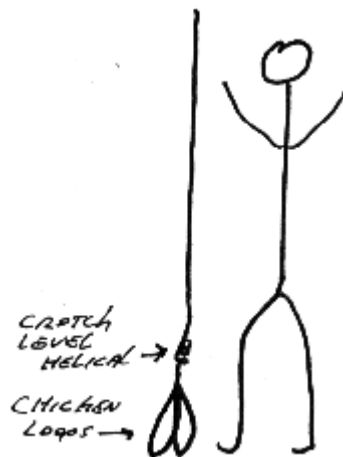
Step 8 (Fig. 8): Pull the bottoms of each of the two resulting large loops through the upper smaller loop, which you just made above. Continue pulling these loops through until the figure "8" knot also passes through this same smaller loop. Finish by dressing the resulting Double Figure Eight knot such that both chicken loops are of equal lengths.

Fig. 8.



B). The Attachment Helicals:

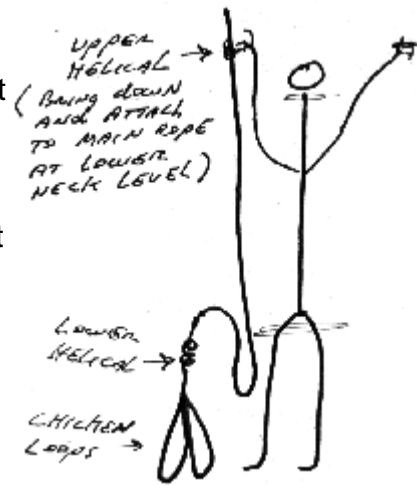
Step 9 (Fig. 9): With the chicken loops now attached to your feet, and standing erect, pull the cord upward to remove off that point on the cord which crotch. Next, attach the cord to by way of a Helical knot. Keep you wrap the accessory cord greater the resulting friction have too many wraps, then too 162 lb., finds it necessary to use Helical on standard 11mm



all slack. Then, mentally mark comes up just level to your the main rope at this location in mind that the more times around the standing rope, the when you climb-- better to few. (Note: the author, being 4 to 5 wraps in making a rope).



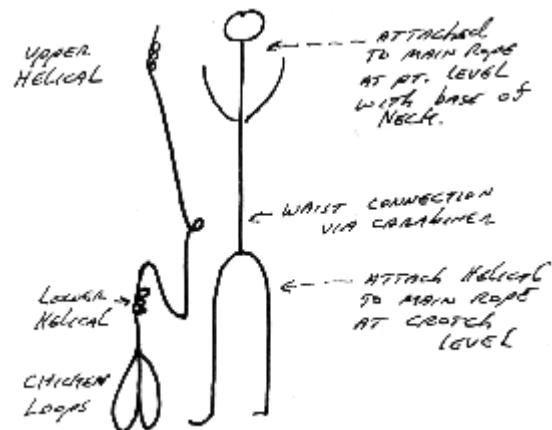
Step 10 (Fig 10): With all the slack taken out between the foot loops and first Helical (i.e. the lower one), and standing erect, take the loose end of the cord and trace out a length going down to one knee and then looping back up to a point above your head. Continuing to hold the cord above your outstretched arm at this point, so as not to lose the length just measured off, bring the cord down to a point on the main rope level with the base of your neck. A second Helical is now attached to the main rope at this point (Fig. 10).



[Note: at some time in the future you will more than likely have to shorten this particular length as you fine tune the system].

### C). The Waist Connection Knot:

Step 11 (Fig. 11): Standing upright, with the second Helical now attached to the main rope at a point level with the hollow at the base of the neck, and the lower Helical pulled up to its highest point, level with your crotch, hold the top Helical firmly in place with one hand as you use the other hand to pull downwards so as to remove all slack leading to down to the waist. Next, use a figure "8" to connect this cord, which should now be free of any slack above, to the screw link of the diaper seat.



As a final step, in the event you chose to use a chest harness (e.g. being top heavy), slide the line going from your waist to the upper helical into the previously mentioned chest carabiner.

Your system is now finished and you are ready to climb. I recommend, however, that you add a prusik and extra carabiner for emergencies, passing lips, knots, or other covers on the rope.

### USING THE SYSTEM:

You climb much like any frog system. You climb by standing up, putting your weight on the lower knot and simultaneously raising the top knot. Then you sit, putting your weight on the top knot so that you can raise the lower knot. The cycle is then repeated. When raising either knot always lift them from below the knot.

Since this article presupposes a familiarity by the reader of conventional knots systems, the writer will decline from a further discussion on the basics of knots systems. Should the reader require such information, I recommend the NSS publication *On Rope*, selected back issues of *Nylon Highway*, and Bob Zimmerman's article in the August 1992

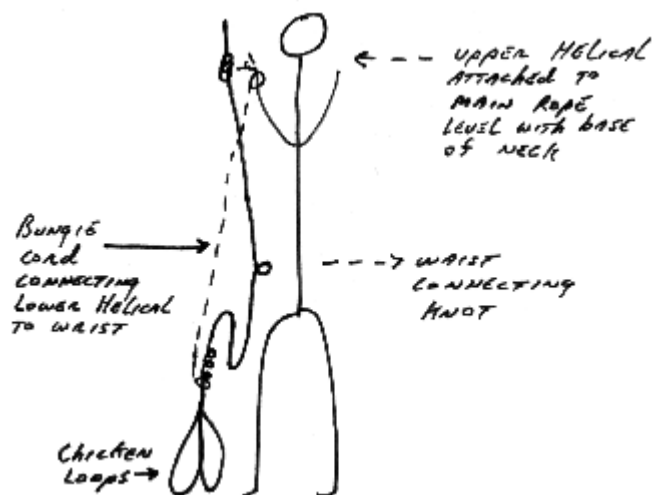
[Note: Bob was the one who taught me Knots, what now seems like so many years ago - Thanks, Bob].

### SPECIAL CIRCUMSTANCES:

With the basics out of the way, we can now discuss system modifications. The system as designed is good for straight climbs on a rope free from waterfalls, intruding walls, or other obstacles. Faced with these problems, however, you can do the following;

- 1). Fending off a wall can be handled by placing only one foot in a chicken loop, leaving the other foot free.
- 2). Short climbs of 10 to 20 feet may just call for use of only one open foot loop instead of two full chicken loops.
- 3). Climbers who are naturally top-heavy, or who have a heavy back pack, might find it necessary to use a chest harness in combination with a carabiner. This will keep them vertical.

A final special circumstance is that of competitive racing. Although not fully tested yet, the writer has discovered that climbing speed can be increased by use of a bungee cord connecting the underside of the lower Helical to one of the climber's wrists (Fig. 12). While a small screw link can be used to connect the bungee cord below the lower Helical, a Velcro strap of some sort can be used to connect the bungee cord to the climber's wrist. The velcro is necessary because it allows for quick removal of the wrist strap in an emergency.



### CONCLUSION:

There you have it; a single rope knot system, which can be easily put together from the type of 30-foot handline some routinely carry in their caving pack. It is not only more compact than the conventional three knot system, but safer because of the safety line running from the lower helical knot to the waist. Because a conventional system lacks this extra feature, a failure of the upper knot will cause a heel hang.

Good luck with your new UAYCEF Knot System.

Oh, I almost forgot to answer the question of "What is the derivation of the word

"UAYCEF"? While it was Bob Zimmerman who introduced me to Knots, it was Ukrainian caver Valeriy Rogozhnikov, co-founder, along with Ed Sira and myself, of the Ukrainian American Youth Caver Exchange Foundation (UAYCEF) who, over the course of many hair raising hours in the deep pits of the Crimea, taught me the finer points of the principles and techniques of vertical work. Thus, I could think of no more befitting tribute than to name a new vertical system after an organization dedicated to the new cavers of the world, kids who participate each year in UAYCEF's student exchange trips to both the U.S. and Ukraine.

[Note: Donations for the UAYCEF (NSS # IN 45732) graciously accepted; made payable to "UAYCEF", C/O Ed Sira at 37 Woodmere Street, Raritan, NJ, 08869].

\* These diagrams were copied from an article of Robert Zimmerman's which appeared in *Met Grotto News*, "The Lightweight Simple Knots System" August 1992 (Vol. 42, No. 8).

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# RAPPEL SAFETY HITCHES REVISITED

*By Brady Robinson*

Dr. Gary Storricks made a compelling case against the conventional use of the prusik as a rappel belay method in his article "Prusik Rappel 'Safety'" in the No. 42 issue of *Nylon Highway*. While citing an impressive array of accident reports, Storricks argued that when something goes wrong with a prusik belayed rappel, the natural human reaction is to grasp the prusik knot ever more firmly - exactly the wrong thing to do. The "negative action" required to effect the prusik belay is completely counter-intuitive. Even experienced cavers were largely unable to force themselves to let go of the prusik in a simulated out of control rappel.

I agree with Dr. Storricks on many of his points. Clearly, placing a prusik above the rappel device provides a marginal backup at best. However, there are other options. Dr. Storricks described the use of a friction hitch below the rappel device, but then rejected the idea, since there is a possibility that the hitch could enter the rappel device, rendering the backup ineffective. While no technique is foolproof, I think this latter, "friction hitch below" method deserves some more attention before we categorically reject all forms of friction hitch rappel backups.

To set up this type of backup the rappeller clips the friction hitch onto a leg loop of the harness, so that the friction hitch is below the rappel device, right near the brake hand. As the rappeller descends the rope, he or she must keep the brake hand on or just above the hitch to keep it from grabbing. This method is superior for several reasons. If the rappeller loses control, the friction hitch only needs to apply the same amount of friction as the brake hand, since the brunt of the friction is still provided by the rappel device. This greatly reduces the risk of the hitch melting out. Another advantage is that the hitch keeps the rope on the rappeller's brake side, so the rope can't easily get away from the rappeller's brake hand. This seems to have been a contributing factor in a number of rappel accidents. And perhaps most importantly, grasping the knot tighter - the very action that was so disastrous in the old method - will stop the rappeller. If you panic and hold the hitch really tight, your hand provides friction, and you stop. If you let go, the hitch provides friction, and you stop. Idiot proof, right? Well, not exactly.

In the December 1997 *NSS News*, American Caving Accidents (p414-5), there is an account of an accident involving the use of the "friction hitch below" method. The group involved had marked their ropes at various intervals with duct tape. As one man descended, his prusik caught on the tape and became stuck. The man was unable to rescue himself, and a dangerous hour long epic ensued. Clearly, this man's inability to rescue himself from such a relatively benign predicament was a contributing factor. However, had the prusik (or the tape!) not been there in the first place, this incident wouldn't have happened. There is a solution. Aside from removing any globs of tape from your rope, it's a good idea to use a

Penberthy or an auto-block instead of a prusik. The prusik provides too much friction and can lock up, causing unneeded hassles. A Penberthy or auto-block with several wraps provides adequate friction and is easy to release, even when weighted. Experiment and see how many wraps work best for you. (To make a Penberthy, take a strand of cord (5- 7mm), tie overhand bights on both ends, wrap the cord around the main rope in a flat spiral several times, and clip both overhand loops to a carabiner. To make an auto-block, take a closed loop of cord, wrap it around the main rope several times in a flat spiral, and clip both bights of the looped cord to a carabiner.)

Another concern is the length of the safety hitch. It should be short enough so that there is no way it could get pulled up to the rappel device. Obviously a Penberthy sucked into a rappel rack isn't going to do anybody any good. So either make your friction hitch cord short, or do what a lot of AMGA (American Mountain Guides Association) guides do and extend your rappel device. To do this, take a standard 1 1/2 ft loop of webbing, pass it through your harness, and clip it into your rappel device, doubled up. In addition to keeping your device clear of the friction hitch, some people appreciate being able to get their brake hand further underneath the rappel device to create more friction, since their hip is no longer in the way. Try it.

The "friction hitch below" technique isn't perfect, but I have found it to be a valuable tool, especially on exploratory rappels. As I'm descending, looking for another station, or perhaps just enjoying the view, I can stop at any time with my hands free. It is also an effective backup to the brake hand. The consequences of losing control on a rappel can be dire. It only has to happen once in your career to be significant. Rocks can fall and experienced people can make mistakes. There is no shame in redundancy when your life is on the line, be it a friction hitch, a fireman's belay, or a friend checking your harness.

I believe the "friction hitch below" technique is a useful tool, but like any tool, it has limitations and can be misused. Experiment with it and make your own judgments. As Dr. Storrack wrote, "safety is not given by any gadget but is the property of one's attitude and experience."

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# Information and Rules of the NSS Rope Climbing Contest

*By Bill & Miriam Cuddington - AL (2177RL & 13078RL)*

## I. **ROPE:**

- A. The rope should be 600 feet of Kernmantle Nylon, 7/16<sup>th</sup>'s diameter.
- B. **MEASUREMENT:** A 30 meter tape is required since the metric system is now used. Place the starting mark about 15 meters from the beginning end and mark this end red. The bottom of all the red marks will be the "Chaining" point. Flat chain all distances measured.

The next red mark is at 30 meters. Pull the tape and rope 'snug' only. Between the starting red and 30 meter red, catch 15 meters and 22 meters, mark them in black.

From the 30 meter mark, measure another 30 to the 60 meter point. Mark this with two red bands. Measure 30 more meters which will be 90 meters, put three red bands here. Measure 30 more meters to reach the 120 meter point, which may be marked with 4 red bands or one large red band. Go to the half way point on this last 30 meters, pull and mark in black, which will be 105 meters.

- II. **CONTEST SITE:** Must be a clean indoor facility with air conditioning or fans. Restrooms and water should be nearby. Ceiling "rigging beam" should be at least 20 feet high.
- III. **ROPE CLIMBING PROCEDURES:** Prior to getting on the rope, the climber specifies the category and distance he will climb. Getting on the rope constitutes a try. If time allows, 3 tries will be given. The climber will start with all ascenders and rollers below the starting mark. Split times may be given at intermediate marks. At the finish, the climbers top-most-device must be beyond the bottom of the designated red mark, which would be the 30 or 120 meter mark. No device will be thrown over the mark.
- IV. **AGE GROUPS:** 12 under; 13-16; 17-19; 20-29; 40-49; 50-59; 60-69; 70-79, etc. etc. Women and men have their own age groups.
- V. **ROPE CLIMBING RECORDS:** The best overall time ever set is considered a World Record. Whereas the best time within an age group is an Age Group World Record. In order to qualify for a World or Age Group Record, the climb must be done at the NSS National-International Convention.

## CLIMBING RULES

- I. Mechanical Class
  1. There will be a 20 minute time limit for the 120 meter climb (Judges may make allowances for "special situations").
  2. There will be a time limit of 10 minutes for 30 meters, in case there is a "special" situation.
  3. A 1-1 mechanical ratio must be used.
  4. All "rigs" should be safe and caveable.
  
- II. 3-Knot Classic:
  1. Only "rope knots" may be used. No hardware allowed within the knot. Usable examples: Prusik and Helical.
  2. Nothing allowed to touch rope but hand and knots. Nothing is allowed such as carabiners or rollers that would help hold the climber upright.
  3. Only one knot may be moved at a time. Each individual knot must be capable of holding the climber's weight.
  4. Acceptable 3-knot rigs: A. Top knot chest connection and 2 foot knots. B. Top knot into chest and seat with two foot knots. C. One knot from seat with two foot knots.
  5. Time limits for 3-knots: 120 meters- 25 minutes. 30 meters- 10 minutes (Judges may make allowances for "special" situations.)
  
- III. Special Category:
  1. A climbing rig that don't fall into the knot or mechanical categories may fall into this category. However, this is now an "open" no age category. All rigs must be safe and caveable.

## GENERAL RULES

1. Climbers must sign up at designated area. Sign ups will be stopped when it becomes apparent that it will take up the daily allotted time with current sign in. Sign up early!
2. ALL climbing "rigs" should be safe for coming and not damage the rope. This will be determined by the Contest Chairman.
3. No Smoking in facility of contest. No dirty boots and or clothes.
4. There should be 3 official stop watches for timing each climb. Times are averaged for one final time. If one watch shows a big discrepancy, that time will not be used.
5. Stay clear of climbing area so timers, belayer and all helpers can see and feed rope properly. This also help the "Book Keepers" keep accurate information.
6. The Contest Chairman reserves the right to disqualify any climber for unsafe practices and or disorderly conduct.
7. A contestant will be allowed up to 3 tries if time allows, in each class: mechanical; classic 3 knot; special class and perhaps others.
8. The time will be to the tenth of a second or hundredth, if need arises.
9. Climbers are responsible for being in designated area ready to climb when name is

- called.
10. Climbers should try to bring someone to hold rope under them.
  11. Climbers should make adjustments in equipment on static lines, not on the contest rope.
  12. Certificates will be given to first, second and third places in each age group. If there are numerous entries in one age group, more may be given.
  13. Prizes will be allocated as directed by the Contest Chairman and committee.
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## Climbing Contest World Records

compiled by Bill & Miriam Cuddington, updated August 1998

[Editor's Note: Check Section's "Contest" webpage for current status of all records.]

### Men's Mechanical 30m

Age Group	Time	Name	Year Set
0-12	0:54.6	<b>Jeremy Brown</b>	1992
13-16	0:32.4	<b>Jeremy Brown</b>	1995
17-19	0:30.8	<b>Dan Gruss</b>	1990
20-29	0:25.7	<b>Rossano Boscarino</b>	1987
30-39	0:24.6	<b>Jon Brown</b>	1992
40-49	0:29.5	<b>Chuck Henson</b>	1995
50-59	0:35.5	<b>Dick Graham</b>	1995
60-69	0:43.5	<b>Bill Cuddington</b>	1995
70 - up	0:45.4	<b>Darrell Tomer</b>	1985
<b>OVERALL</b>	<b>0:24.6</b>	<b>Jon Brown</b>	<b>1992</b>



### Men's Mechanical 120m

Age Group	Time	Name	Year Set
0-12	8:26.0	<b>Bill Stucklen</b>	1984
13-16	4:06.7	<b>Jeremy Brown</b>	1995
17-19	4:33.0	<b>Dan Gruss</b>	1990
20-29	4:10.7	<b>Rossano Boscarino</b>	1987
30-39	4:32.1	<b>Jon Brown</b>	1994
40-49	5:01.8	<b>Dick Graham</b>	1992
50-59	5:36.3	<b>Dick Graham</b>	1995
60-69	6:11.0	<b>Bill Cuddington</b>	1994
70 - up	7:24.2	<b>Darrell Tomer</b>	1985
<b>OVERALL</b>	<b>4:06.7</b>	<b>Jeremy Brown</b>	<b>1995</b>

### Men's 30m Open Sit Stand

<b>OVERALL</b>	<b>1:04.9</b>	<b>Doug Bruce</b>	<b>1992</b>
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### Men's Classic 3-knot 30m

Age Group	Time	Name	Year Set
0-12	1:54.8	<b>Nate Brown</b>	1989
13-16	1:18.4	<b>Jeremy Brown</b>	1991
17-19	1:42.7	<b>Ken Honebrink</b>	1991
20-29	1:18.6	<b>Mark Hughes</b>	1989

30-39	1:21.6	<b>Bill Bussey</b>	1995
40-49	1:23.9	<b>Dan Brown</b>	1994
50-59	2:04.6	<b>Marion O. Smith</b>	1995
60-69	2:25.2	<b>Bill Cuddington</b>	1989
70 - up	2:59.0	<b>Roy Barton</b>	
<b>OVERALL</b>	<b>1:18.4</b>	<b>Jeremy Brown</b>	<b>1991</b>

### Men's Classic 3-knot 120m

Age Group	Time	Name	Year Set
0-12	9:56.4	<b>Nate Brown</b>	1995
13-16	7:34.4	<b>Jeremy Brown</b>	1995
17-19	10:51.9	<b>John Bassett</b>	1970
20-29	9:39.2	<b>Trick Howard</b>	1985
30-39	8:07.5	<b>Bill Bussey</b>	1994
40-49	8:54.7	<b>Dan Brown</b>	1994
50-59	13:59.3	<b>Bill Cuddington</b>	1992
60-69			
70 - up	15:02.2	<b>Roy Barton</b>	1997
<b>OVERALL</b>	<b>7:34.4</b>	<b>Jeremy Brown</b>	<b>1995</b>

### Men's 120m Open Sit Stand

<b>OVERALL</b>	<b>8:06.8</b>	<b>Harry Burgess</b>	<b>1994</b>
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### Women's Mechanical 30m

Age Group	Time	Name	Year Set
0-12	1:03.7	<b>Rachel Savvas</b>	1994
13-16	0:33.4	<b>Trudy Henson</b>	1991
17-19	0:29.4	<b>Trudy Henson</b>	1995
20-29	0:33.4	<b>Berta Kirchman</b>	1989
30-39	0:32.9	<b>Berta Kirchman</b>	1995
40-49	0:47.3	<b>Martha Clark</b>	1994
50-59	0:53.8	<b>Miriam Cuddington</b>	1995
60-69	1:27.4	<b>Avis Van Swearingen</b>	1992
70 - up	4:30.9	<b>Jane Fisher</b>	1985
<b>OVERALL</b>	<b>0:29.4</b>	<b>Trudy Henson</b>	<b>1995</b>

### Women's Mechanical 120m

Age Group	Time	Name	Year Set
0-12	9:15.9	<b>Irene Stucklen</b>	1989
13-16	6:34.7	<b>Trudy Henson</b>	1991
17-19	7:05.8	<b>Susan Medville</b>	1991
20-29	4:16.3	<b>Berta Kirchman</b>	1989
30-39	4:07.1	<b>Berta Kirchman</b>	1995
40-49	7:01.5	<b>Martha Clark</b>	1994
50-59	8:37.7	<b>Miriam Cuddington</b>	1995

60-69	12:26.5	<b>Avis Van Swearingen</b>	1989
70 - up			
<b>OVERALL</b>	<b>4:07.1</b>	<b>Berta Kirchman</b>	<b>1995</b>

### Women's 30m Open Sit Stand

<b>OVERALL</b>	<b>1:16.7</b>	<b>Susan Setzler</b>	<b>1992</b>
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### Women's Classic 3-knot 30m

Age Group	Time	Name	Year Set
0-12	2:08.1	<b>Leah Brown</b>	1995
13-16	4:25.1	<b>Emily Graham</b>	1988
17-19	2:42.2	<b>Dena Hawes</b>	1973
20-29	1:46.9	<b>Susan Setzler</b>	1992
30-39	1:54.7	<b>Martha Clark</b>	1988
40-49	2:04.0	<b>Martha Clark</b>	1994
50-59	3:34.5	<b>Miriam Cuddington</b>	1996
60-69			
70 - up			
<b>OVERALL</b>	<b>1:46.9</b>	<b>Susan Setzler</b>	<b>1995</b>

### Women's Classic 3-knot 120m

Age Group	Time	Name	Year Set
0-12	9:45.5	<b>Leah Brown</b>	1995
13-16			
17-19			
20-29	11:04.7	<b>Susan Setzler</b>	1992
30-39	12:29.3	<b>Martha Clark</b>	1984
40-49	12:21.6	<b>Martha Clark</b>	1994
50-59	36:02.7	<b>Chris Southam</b>	1996
60-69			
70 - up			
<b>OVERALL</b>	<b>9:45.5</b>	<b>Leah Brown</b>	<b>1995</b>

### Women's 120m Open Sit Stand

<b>OVERALL</b>	<b>9:16.5</b>	<b>Ruth Dianiont</b>	<b>1994</b>
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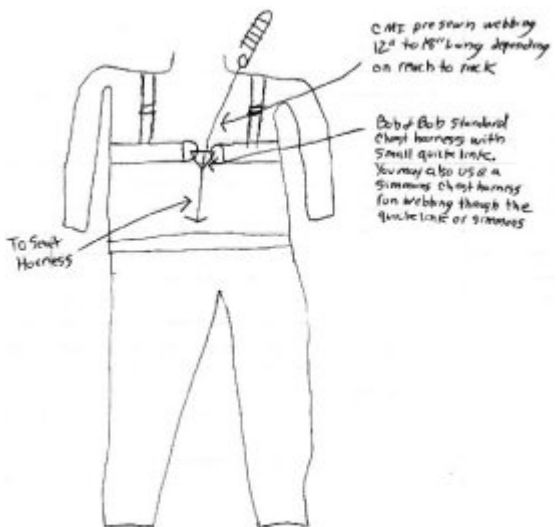
# Alternative Rappel Set-up

By Jeff Cody, NSS#23961 (Indianapolis, IN)

One problem that I have encountered while on rappel has always been that I tend to lean back in an uncomfortable position. I had never heard any of my vertical caving friends complain of the same situation. On longer rappels I would waste arm strength trying to keep myself parallel to the rope. It was my opinion that this was due to either the nature of the rack attachment to the seat harness or my build of being large in the chest area, therefore being top heavy. This article explains my remedy to this situation.

In the past I would hook my rappel device directly to my seat harness via a triangle quicklink on the seat, then a locking carabiner to the rappel device. In my opinion, this does two bad things: 1) it gives a low attachment point and makes top heavy people lean back while on rappel, and 2) it does not provide a good angle to grasp the rope with your braking hand. For me, this made my muscles hurt in my braking hand and forearm, even on short rappels.

To remedy this I did the following: I Attached a pre-sewn webbing piece about 12" to 18" long to the rappel device, attaching the other end to the seat harness, this way my weight pulls me closer to the rope and provides a much more comfortable rappel. This puts my rappel device higher than normal, enabling me pull down with the braking hand instead of out and away from my body. This gives me much greater control with my braking hand.



One thing to look out for is that you don't want to get your rack too high where you can't properly reach the bars while on rappel. Work with different lengths of webbing to have the proper reach on the rack. If using a Figure 8 for smaller drops (I still do), it can be higher than a rack due to the fact that the Figure 8 isn't touched while on rope. Be careful not to get either device too high which could make it difficult to maneuver around rock projections on rappel.

I resolved this problem by using a standard B&B chest harness off my Frog system on shorter drops. With this harness attached together by a screwlink, I run the webbing through the link. For longer drops I use a Simmons chest box off my Rope walker system. I run the webbing through the roller, either way works fine. I have two similar length pieces of webbing for safety.

As with any new piece of equipment, I advise using it in a controlled setting above ground to get the right webbing length and feel for the new set up. You will notice a lot more control with your braking hand when using this alternative rappel set-up. I have used this method for a long time and feel safe and more comfortable doing so.

**Minutes of the  
1997 NSS Vertical Section Meeting  
June 24, 1997**

The 1997 NSS Vertical Section meeting and papers session was held Thursday, June 24, 1997 at the Sullivan Fire House in Sullivan, Missouri. Executive Committee (EC) members present were Chairman Bruce Smith, Contest Coordinator Bill Cuddington, Vertical Techniques Workshop Coordinator Allen Padgett, Training Coordinator Gary Bush, Acting Secretary/Treasurer Bill Bussey, Editor Wm. Shrewsbury, and Miriam Cuddington. Executive Committee member Tray Murphy was absent. Approximately 40 Vertical Section members were in attendance.

Chairman Bruce Smith called the meeting to order at 12:13 PM.

Secretary's Report: Bill Bussey announced we have 744 voting members. With about 25 in attendance at the moment, we have a quorum. Total number of Nylon Highway's to be mailed as of May 31, is 831. Wm. Shrewsbury mailed 1146 issues of Nylon Highway's 41 & 42 in February. We have \$5825 of encumbered dues for future issues we owe members. Answering a question by a member, Bill noted that we will continue to give participants of the Vertical Techniques Workshop a year of Vertical Section membership.

Treasurer's Report: As of May 31, 1997 we had a net income \$4824.22. Total Expenses were \$6850.35. Because of the incomplete Treasurer's report from last year, we did not have the Ending Balance from last year to serve as a beginning balance for this year. However, we have Account Balances of \$3165.56 in the Cincinnati, OH account, \$4221.25 in the Durham, NC account, approximately \$1383.00 in the Chase Manhattan account, and \$372.67 in the GMAC "high-interest-earning" account. This totals \$9142.48. Because of a larger balance than anticipated in the Cincinnati account, we are in better shape than thought. See the itemized report for more info.

A member asked about the unexplained check #335 for \$334.29. This was later determined to be reimbursement for overseas postage of Nylon Highways 39 & 40.

An amount of \$5825 of the Total Cash on Hand figure of \$9142.48 is committed to future years' issues. Gary Bush is owed \$765 for printing of the Vertical Training Course materials. Bruce is owed \$103 for printing of the Vertical Techniques Workshop workbook, and ordered mugs will cost approximately \$1200. This leaves approximately \$1250 cash available for use.

Editor's Report: Wm Shrewsbury Nylon Highway 41 & 42 were printed in February. He has enough articles for an issue and a half. He is looking for more articles! (*Nylon Highway* is only as good as membership makes it!) We should print at least *Nylon Highway* #43 in late July for publication in August. He will also start working on a CD-ROM compilation of the contents of *Nylon Highway's* 1-40.

Bruce noted that Gary Taylor hauled dozen or so boxes of Section back issues, records and fans he had to this convention. We are looking for a new home and a way to get it

the many boxes there. Several suggestions were made on how to deal with this material. Note: As it turned out, the new Secretary/Treasurer took all of the back issues home with him.

There was discussion on what to ultimately do with large number of the more recent back issues.

Allen Padgett moved that: For one year we sell back issues of *Nylon Highways* for \$1 each. After that time we will consider what to do with any significant numbers of issues remaining. The motion passed unanimously.

Bruce also added that we need articles which revisit earlier written material. "The Basics" are very much in demand right now. Many members don't have the older issues. Articles from other publications are also welcome. There is material on the Internet, which if illustrated and edited could be utilized.

Contest Chair Report: Bill Cuddington thanked the Missouri Convention for the gym and facilities, which were among the best the contest has ever had. He thanked the all the help in setting up and running the contest. Twelve hundred feet of PMI Anniversary rope will be divided into eight 150-foot lengths for prizes. We need more people trained to operate the long racks. We need to purchase three more stopwatches.

There was discussion about shortening the contest from two days to one long day. We had 26 attempts the first day and 52 the second day. More people delay and wait to run the second day. With two ropes, we can run a lot more people. Most records are set fairly early on the first day. This would hurt those people who wanted to run more than one or two events, as it would not allow time for personal recovery. It was noted that this is a smaller convention, and the smaller numbers from this year might not be applicable for other years.

A compromise might be a half day on Monday, then a full day on Tuesday. The rope could be rigged Monday, and climbs made on Monday afternoon, then a full day on Tuesday. We might gauge the time the contest runs based on the convention conditions. It will be up to the Contest Chair to determine the appropriate time the contest runs.

Vertical Techniques Workshop Report: Allen Padgett was thanked for picking up the ball on this years' Workshop. He thanked his staff for the great hands-on experience they gave workshop participants. As usual, the convention signed up many more people than we had slots for. However with no-shows, most who came were allowed to participate.

Rebelay Workshop Report: Gary Bush reported that the Rebelay Workshop had 28 climbers. It was moved indoors due to the heat, as well as concerns about damage to the trees. He felt that climbing suffered a little, but basically all went well.

Basic Vertical Training Course: Gary Bush said that 750 Instructor Manuals printed along with 1000 Student sets. We have sold 155 Instructor Manuals, and 97 student sets. We have made \$593.47 back on an investment on \$1869.00 . Gary is concerned that they aren't selling well. We urge Vertical Section members to spread the news about the availability of this course. It was suggested that an article describing the course be written



for the *NSS News* and the *NSS Administrative Memo*. Bruce noted that training is a "bottoms up" demand, where it is the new members are demanding it. The grotto chair and old-timers already are trained. We need to get word of this course to the new members so they will convince the old-timers to teach the course. Liz Shrewsbury volunteered to write articles on the course for the *NSS News* and *Administrative Memo*.

Intermediate Vertical Training Course: Gary said he would have the proposed Intermediate Training Course ready for review by the end of the summer. It will then go for review, and depending on finances, it will be published by convention next summer. Roger Haley volunteered to assist in reviewing material for this Intermediate Course.

David Klinger moved and Terry Clark seconded that: The Executive Committee will publish the Intermediate Vertical Training Course after review at such time the Section finances are in shape to publish it. The motion passed unanimously.

On Rope II Update: Bruce Smith said sales of the book have been brisk. There are over one thousand new illustrations, not the seven hundred plus the NSS uses in their advertising. Kudos went to Barb Ritts for her tough proofreading, Bill Boehle for his stellar review for each chapter, and the rest of the Vertical Section Executive Committee for their help.

Symbolic Devices Chair Report: Bill Bussey reported for Tray Murphy that no T-shirts were made for convention. We now have some great-looking reflective stickers and mugs as promised last year. The mugs are not what we ordered, but they still make bad coffee taste great! Bill Boehle has volunteered for the position of Symbolic Devices Chair, and the Executive Committee approved him.

## **Business**

**Elections Explained:** Bruce Smith reported that in last years' elections we initiated two-year terms for Vertical Section Executive Committee members. The top two vote-getters got two-year terms, and the next two got one-year terms. Bruce and Bill Bussey were elected to two-year terms with Tray Murphy and Miriam Cuddington elected to one-year terms. Tray and Miriam's terms are up today and their positions will be up for two-year terms. Wm. Shrewsbury was elected Editor for a one-year term. Bill is Acting Secretary/Treasurer, which is a one-year term. Both positions are up for election

***Nylon Highway* Publishing Dates Changed:** Wm Shrewsbury proposed that the *Nylon Highway* printing schedule be changed to a December or January issue, with another printed shortly after the NSS Convention. Bill Cuddington mentioned he could expand the Contest records for publication in after convention *Nylon Highway*.

**Stopwatches:** Ed Sira moved and Miriam Cuddington seconded that: The Vertical Section purchase three stop watches for the Climbing Contest. It passed unanimously.

**Membership Based on Volume:** As a train passed by outside, Allen Padgett moved and Bill Bussey seconded that: The Vertical Section membership move from a yearly membership to a volume of two issues per \$5.00 membership. Members would receive two issues of *Nylon Highway* for their five bucks. This is in effect what we are currently doing. The motion passed unanimously.

### **Other Business**

In discussion, membership directed the Secretary/Treasurer to accept pre-paid Section memberships to a maximum of three years, or six issues in advance of the current year.

There was discussion of what to do about keeping up with membership constantly changing their address. Moved members who fail to tell us where they are cost the Section over \$200 each mailing. The best thing for members to do is to inform the Secretary/Treasurer when they move.

Bruce Smith announced that earlier that week Gary Taylor had apologized to him for not fulfilling the duties of Secretary/Treasurer. In a gesture of goodwill, Gary donated \$500 to the Section.

A member asked about Jeffrey Power who as Editor two years ago took \$2400 of Section funds. David Klinger who lives in Washington state, the last known whereabouts of Power, has volunteered to attempt to do what he can find Jeffrey Power. Section membership agreed to assist him.

**Elections:** In elections, David Joaquim of Scottsdale, Arizona was elected Secretary/Treasurer with direction not to go in any more horizontal caves! Wm Shrewsbury was elected Editor. In Executive Committee elections Miriam Cuddington and Bill Boehle were elected to the Vertical Section Executive Committee. Later in the week, Bruce Smith was re-elected Chair of the Vertical Section.

**Papers:** In the papers Session, Skip Withrow showed his rope washer to a favorable audience. Bruce Smith discussed that it is a fine line between damage and no damage to ropes due to friction. From discussion, it was determined that the key to avoiding damage to the rope on long rappels was to keep moving. By keeping constant motion, heat generated from brake bar friction will not be in contact with any one area of rope for long enough to damage the rope.

Respectfully Submitted,

Bill Bussey

## TREASURER'S REPORT NSS VERTICAL SECTION

For Period Beginning December 1, 1996 and ending May 31, 1997

### INCOME:

Memberships and Subscriptions (Feb 1, 1997 to Present) .....	\$744.50
Memberships and Subscriptions (Aug. 1, 1997 to Jan. 31, 1997) ....	2905.18
Vertical Training Course Sales .....	162.47
Symbolic Item Sales .....	283.50
Vertical Techniques Workshop (96).....	540.00
Bank Interest (BB&T).....	42.23
Bank Interest (GMAC).....	146.34
<b>Total Income</b> .....	<b>\$4824.22</b>

### EXPENSES:

Mailing Nylon Highway #41 & 42 .....	\$374.28
Remail Nylon Highway #41 & 42 .....	40.92
Returns of Nylon Highway #41 & 42 due to improper address ....	250.00
Printing Nylon Highway #41 .....	1294.00
Printing Nylon Highway #42 .....	1456.00
Envelopes and Printing .....	371.10
Unexplained Check #335 .....	334.29
Print Craft (Vertical Training Course Printing) .....	1098.87
UPS (Shipping for Vertical Training Course Printing) .....	31.24
Vertical Techniques Workshop 97 Gear .....	249.50
Reflective Stickers (Symbolic Item .....	920.00
Contest 96 Prizes .....	122.00
Vertical Techniques Workshop 96 Expenses .....	216.80
Mug Deposit .....	50.00
NC Sec. Of State (to move principal office) .....	5.00
Bank Service Charge ..(too many checks deposited in one month)	10.00
Back Issue Postage .....	16.12
Tapes for 1996 Meeting Minutes .....	10.23
<b>Total Expenses</b> .....	<b>\$6,850.35</b>

### ACCOUNT BALANCES:

Cincinnati (OH) Account .....	\$3165.56
Durham (NC) Account .....	4221.25
Chase Manhattan Bank Symbolic Item Account .....	1383.00
GMAC Account .....	372.67
<b>Total Cash on Hand</b> .....	<b>\$9142.48</b>

Notes:

1. Records reflect scans of checks and statements Emailed from Gary Taylor to me on June 20, 1997. With the exception of an unexplained check #335 for \$334.29, they appear complete.
  2. We have no Treasurer's Report from last year to present a Previous Balance.
  3. There were the following transfers of funds between Section accounts: \$2000 on 8/1 from GMAC to Cincinnati; \$500 on 12/21 from Durham to Chase Account; \$11.50 on 2/24 from Durham to Chase account; \$4000.00 on 3/6 from GMAC to Durham; \$100.00 4/8 from Durham to GMAC.
  4. We still owe approximately \$1200 for ordered but undelivered mugs.
  5. We still need to remail approximately \$60 in Nylon Highway's 41 & 42 returned with the wrong address.
  6. Tray notes that we are completely out of Large and X-Large T-shirts as well as some sizes of sweats. He has several outstanding orders for these shirts. He will reorder in last half of June.
  7. The balance for the Chase Manhattan account is approximate.
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Respectfully Submitted,

David Joaquim

# SECRETARY'S REPORT NSS VERTICAL SECTION

May 31, 1997

Number of Single Members .....	696
Number of Family Members (number of people).....(2 x 49).....	<u>98</u>
Total Number of Vertical Section Voting Members .....	744
Number of Nylon Highway Subscribers .....	42
Number of Nylon Highways Sent Free (ex. libraries) .....	11
Number of Nylon Highways Exchanged .....	34
Total Number of Nylon Highways To Be Mailed .....	831
Number of Members or Subscribers Paid up to 1994 .....	986
Number of Members or Subscribers Paid Through 1995 .....	1126
(This number of members were mailed Nylon Highways 41 & 42 in February)	
Number of Members or Subscribers Paid Through 1996 .....	832
(This number will be mailed Nylon Highways 43 & 44 this summer.)	
Number of Members or Subscribers Paid Through 1997 .....	546
Number of Members or Subscribers Paid Through 1998 .....	318
Number of Members or Subscribers Paid Through 1999 .....	172
Number of Members or Subscribers Paid Through 2000 .....	86
Number of Members or Subscribers Paid After 2000 .....	43

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Respectfully Submitted,

David Joaquim