# Introduction

The interest in, and enjoyment of, rappelling by climbers of little experience can lead them to undertaking projects that are beyond their ability to handle problems. Most climbing accidents seem to happen during descent -- this often being a rappel. My questioning of climbers has shown that there is a general abhorrence of the rappel! This is indeed unfortunate. It seems to me only logical that a climber should get at least as much descent or retreat practice as climbing practice --- or enough to ensure that they have mastered the techniques so as to prevent trouble. There are things that can happen that are impossible to avoid, and these can be provided for usually.

It is my policy to avoid publicizing rappel routes to avoid encouraging others to rappel them, perhaps without due consideration. However, now that work of the El Capitan rappel has been published, I feel that it is time to publish the facts and details to indicate the preparations undertaken and problems anticipated and actually experienced.

It is perhaps regrettable that 300 foot ropes were used but time, anchors, overhangs, and pendulums indicated that long ropes would be advisable. In the future, 150 foot ropes would be used when anchors are placed at 150 foot intervals in the Gray Bands to Dolt Tower "bypass" route, and possibly the use of the Sickle Ledge descent route. This has been accomplished by the July 1971 trip modified route. Here the problem is to swing left onto Sickle Ledge from Stoveleg Crack --- a problem of unknown magnitude

Six weeks of preparations were required including information gathered over a longer period of time before. Practice sessions on overhangs also helped to handle problems of spinning, pendulum, and pulling onto a ledge. Perhaps the biggest danger is the possibility of falling off the bottom of the rope, especially on an overhang or under conditions of extreme fatigue.

"What am I doing this for? I guess I'll have to go down the rappel -- I don't think my feet will stand the hike back to the car. Besides it's 3,000 feet down or hike eight miles back." Such were my sentiments as I sat by myself repairing blisters beside the trail to El Capitan. Looking back on the weeks of careful planning, training, packing, and study, I wondered if it was going to be a waste. The thought of returning six miles with 90 pound packs proved valuable to urge (!) the completion of the plan.

The idea of rappelling the El Capitan Nose began with a return to climbing from six years of caving. But only recently was it even considered reasonable. The use of a 3,000 foot rope was considered but weight ( 150 pounds ) and cost ( $600+ ) were also considered. Likewise special equipment would be needed. Brake bars are useless under such conditions. The challenge of a Nose Route climb became an idea and why not look over the route "up close" before doing it? And then there was the unfortunate Jim Madsen accident.

Fifteen years of experience in climbing and caving has produced some special techniques and equipment. These were including in the planning. The real thing that set the spark was the Apollo 11 moon landing. "If they could do it, we could do our 'landing.'" The idea of a checkout procedure was included in planning. Many lists were compiled, changed, redrawn, and packing proceeded. Then changes, unpacking, and repacking.

Several problems, or possible problems, along with their solutions were considered in planning. Some of these are:

1. Anchors Available on Route

   Descent was planned via ascent route to avoid setting unneeded anchors, also to replace or improve existing anchors. This would mean using belay points at the ends of climbing pitches. We assumed that no anchors were in place, and that no cracks were reachable. Therefore expansion bolts were the main anchor items taken. To shorten time required and decrease the number of anchors set, we planned on 300 foot intervals. Also, Rich Calderwood told me that a 300 foot rope would enable us to reach the rock on the first overhang rappel.

2. Overhang Rappel and Rope Ending in Space

   The problem of spinning on the rope was anticipated and the technique that an ice skater uses was tried successfully. This prevents disorientation and nausea. Also, an ampoule of spirits of ammonia was quickly available ( in the teeth ). Reaching the rock at the end of 150 feet of the descent of the top overhang was going to be a problem. Practice sessions on overhangs wearing a heavy pack worked out a solution by throwing a weight cord onto a ledge and creating a pendulum with it; or removing the pack, tying it onto the rope bottom, and throwing it onto a ledge, and pulling over. A retreat up, could be done also, then pull up the

pack later. A telescoping camera tripod leg fitted with a sky-hook and sling permitted a long reach of about seven feet. This being called a "cheater". The cheater could also be used to start a pendulum or stop a spinning problem. A special way of hooking up the brake bar for rappel while wearing a heavy pack was developed. This permitted a fairly relaxed rappel on overhangs.

3. To Prevent Running Off the Bottom of the Rope

Two five inch diameter steel rings ( "stop rings" ) were tied with figure eight loop knots on the bottom of the ropes, one on each end. These would not go through any of the "biners" available. They also give a large margin of personal security --- a "morale booster". More recently two inch bongs are center-hole tied with figure eight knots.

4. Dropping a Pack or Haul Bag

All equipment was divided between the two haul bags and two backpacks. Total hardware supplies were figured at 150% to 200% of requirements and distributed accordingly. First man down carried only enough bolt hardware to set two complete anchor assemblies. These supplies were replaced as used. One gallon of water each per day was figured using two days as a target --- based on the day needed to descend the cliff right of the Lost Arrow from the notch. Haul bags were attached to brake bars using chain so that rope friction would not melt attaching slings and drop a bag. Also, a back up biner attachment was used. The bags were then lowered by a brake bar belay controlled from below.

5. Hang-up While Retrieving Ropes

Due consideration was given to this topic as the possibility was raised by Lloyd Price. Since we planned on 300 foot intervals, then two 300 foot ropes were the primary lines. In case of a hang-up, which would most surely happen after the rope had cleared the ring, unless something wasn't carefully prepared, then, one 300 foot rope would be retained, and the other cut off. We planned on two reserve ropes of 300 feet or more each. The two main lines were 300 foot plus, new 3/8 inch goldline. The reserve ropes were used 3/8 inch goldline, 300 feet or more. Seventeen hundred feet of light nylon line was included to pull up equipment such as ropes, hardware, etc. from a support party at the base. A 300 foot parachute line was packed as a pull down line for a single rope rappel on one of the 300 foot ropes. These items would enable us to descend 1200 feet if all ropes hang-up. That is, without using the 1700 foot line. The

1700 foot and 300 foot lines would permit us to get equipment from the bottom then.

6. Communications

The lead man carried a one watt citizens band transceiver, second man carried a one hundred milli-watt citizens bad transceiver and the support party used a five watt citizens band mobile transceiver.

7. Gloves

Gloves were used to prevent blisters while drilling bolt holes. The gloves used on the rappel were ski type rope tow mittens --- also used for bivouac.

8. Anchors and Misc.

Anchors rigged were at least two bolts tied together, or one bolt and several, two to four, pitons --- these pitons were removed at the option of the last man down. Each rappel line was independently anchored so the first man down was using two separate lines. He could then hook an ascender on either line. The ascender was worn on a sling attached to the rappel sling connection. A problem observed several times among climbers is some apparently don't make provisions for hooking onto an anchor rapidly as soon as it is reached. Usually what happens is they hold onto the rope ends while pulling out foot slings and setting these to in before attaching a safety sling to the swami belt. The quicker can hookup the safety sling, the better. The "changeover", probably where most problems develop in dropping off of separate slings were used to attach the brake bars to bars were "satisfied" by an extra carabiner. Thus a effect even if the brake bars failed. A listing of included --- but is not necessarily complete.

stand
that one
here is
the rope. Two
the body -- the brake
rappel was still in
equipment carried is

( 2 ) two way radios plus extra batteries
( 3 ) 570 foot reels of nylon string
( 4 ) 300+ foot by 3/8 inch goldline ropes
50 feet of anchor sling -- to be used doubled
( 40 ) bolts -- 3/8 by 2 inch with hangers
( 15 ) bolts -- ¼ by 1 ¾ inch with hangers
( 12 ) 3/8 inch drills with small holder
( 5 ) 3/8 inch drills with large holder
( 4 ) drill holders -- includes those above mentioned
( 20 ) lap links -- 3/8 by 2 inch ( chain repair links )

( 5 ) sets of epoxy plastic steel to seal bolt holes; we are no longer using silicone or epoxy
Head lamps with batteries ( two sets complete; 10 A.H. rechargeable )
( 5 ) gallons of water
Pitons for cracks:

- ( 3 ) long thin
- ( 2 ) medium
- ( 2 ) “long dong”
- ( 2 ) Cassin long horizontal
- ( 2 ) ½ inch angle
- ( 1 ) 5/8 inch angle
- ( 2 ) ¾ inch angle
- ( 3 ) 1 ¼ inch angle
- ( 3 ) 2 inch angle
- ( 1 ) 2 ½ inch angle
- ( 2 ) 1 inch angle
- ( 3 ) 1 ½ inch angle
- ( 1 ) 3 inch angle

The piton supply proved very adequate though some were left behind. The first ascent party had bolts for anchors in several sites and these were used, or replaced with new ones in the original holes.

The Descent *0700 Hours, September 16, 1969*

I eased over the top and started the descent. Yes, the rope was touching the wall before three hundred feet down ---but off route right of the Nose! The "scenery" was terrific -- complete with small trees and mite sized cars. The use of a doubled goldline rope permits a reasonably spin-free rappel if the right speed is used, but the anticipated stop on the rope and hanging there suggested a slower descent. The special rappel hookup with the back pack permitted a fairly easy position to hang in.

Behold! The ledge -- to the left and about ten feet away! The spinning was starting to accelerate due to no more descent motion. Problem; to reach the wall and pendulum left ten feet -- and stop spinning. My cheater pays for itself. With two touches, I stop spinning, then start a pendulum by alternate pushes of the cheater, then hook into an old fixed piton at the ledge ---- after climbing onto the ledge and setting a couple of pitons, I call Robert Clark on top and tell him the situation --- then set a 3/8 by 2 inch Star Dryvin bolt for the next rappel anchor. A couple of Lost Arrow pitons were also used. When this was completed, I hooked all anchor points together, removed myself from the rappel rope, and let it go.

Horrors! It's out there! Now how so I control the packs? Would you believe the cheater again?

After retrieving the ropes, I call Bob ( Robert Clark ) and he sends the haul bags down one at a time using a brake bar and I control them from my end of the rope. Then he hooks up and descends while I busy myself running a lower brake bar belay on him. Apparently he is a devotee of the upside down rappel! It permits him to see where he is going ( he says ). But what if you don't want to look? When he arrives, I hook in his anchor sling for him, leaving him free to handle the rappel ropes.

The 3/8 by 2 inch lap links really help on rappel rope pulling --- our lines came down, "as the book says." The top anchor, a 3/8 inch Diamond Nail-in ( aluminum ), should be replaced. ( Replaced September 1970 ).

Bob spared our hardware supply by pulling the extra anchor pins just before he started down. They were desirable while both of us and the bags were all together.

We were now really committed! Our line of retreat ( up ) was, for all practical purposes, cut off. And looking down and outward, the situation seemed a bit grim! It appeared to fall back under us and also to our right. Also the easiest way to carry the first spare rope seemed to be to let it dangle below me as I descended.

I started down again and noticed, happily, that the wall didn't overhang, but was really close to it! That dangling rope joined the other two and twisted about like wild snakes in the wind. This problem interrupted the descent as I had to untangle things as I went. The stop rings really looked good on the rope ends. My feet just barely touched when I reached the 290 foot level and the pendulum left into the climbing route crack was rather tough. " There is the rotten bolt I was told about!" I hook into and work on the other bolts nearby replacing one hanger with a ¼ inch Leeper plated hanger and replacing a bad Star Dryvin ( ¼ inch ) with a ¼ inch Rawl

stud. Then I attach myself to the ¼ inch bolts and use my vice grips ( ! ) to remove the 3/8 inch by 1 ½ inch Star bolt. The hole proves undersize and some effort is required to deepen the hole for the 3/8 by 2 inch Star bolts. Vice grips again for a couple of the stuck drills. The anchor is completed with plated hardware, epoxy, and the 3/8 inch lap link, and I call Bob to send the packs down. They came all right --- one bouncing out from the overhang, a very exciting view. Then Bob comes down while I run a movie camera and belay at the same time. A rather tiring job using one hand for each. The packs I hooked on the bolt at the right and the extra rope I threaded through the anchor lap link and let hand down to Triangle Ledge, camp VI.

I hook onto the extra rope and descend to camp VI and receive the packs from Bob. Next time a different method of hanging packs --- as they must be lifted to remove them from lowering.

Bob pulls the upper pair of three hundred foot ropes down and they hang up on a nearby flake! I hook onto the extra rope and pendulum left to reach the end to send it up to Bob, but it is too far left. The cheater again, and the rope is sent up to him to free it from the flake. Another hookup for three hundred foot ropes here at Camp VI --- the anchor could be improved ---a horizontal piton used to hook up a ¼ inch Rawl stud plus a rusty Longware V hanger. I lost my lens cap for the camera here --- down the crack. Another design change planned.

The descent from camp VI included a frustrating effort pulling one of the rappel ropes out from behind a broken "bong" chock stone while rappelling, and the length had to be short, about two hundred feet, because of a ledge and flake which would probably "capture" our rope when we pulled it down, if a three hundred foot drop was tried. An old ring angle piton was found here, just above Camp VI, and a ½ inch wedge angle was set. The sling supply here was decreased rapidly as enough had to be used to get the Lap link ring over the edge. As the bags came down, one had a wet bottom! A water leak?

Another three hundred foot descent planned, started, and halted at the halfway mark, 120 feet above the Great Roof, at another ledge area! At this point, it was decided that darkness would probably catch us on the rope, so we rigged up head lamps before starting. True enough, dark it was a I popped over the lip of the Great Roof and halted waist "high" over it. "Pendulum right to that ledge? Easier said then done!" "Where is it?" A couple of fervent prayers, and a double-flake-grabbin-pull-pendulum got me to the ledge. "Wow, what a one handed effort!" Two bolts, a 3/8 inch and a ½ inch, three feet apart, probably from 1958, were tied together, and the packs were started down. Then came Bob. Time? About midnight at the Great Roof!

How far to the Gray Bands ledges? A ledge of decent size is preferred for a bivouac! The descent here is reminiscent of a cave exploration, with stars above. A large flake, loose, a traverse using the ropes for an upper belay, then I arrive at a small pedestal. This seems good for a night roost. I place a loose piton behind the top to hold my back pack with head lamp batteries and remove the rappel rope. The packs were being lowered one at a time and here difficulty was encountered in getting them to start down. The solution was to pull the upper end up and drag the rope through the brake, then pull on the lower end and pull the bag down this way for the first few feet --- then it would descend by itself.

The first bag was difficult to start, so Bob pulled up through the brake ten feet of rope, and as the bag then started to descend, I proceeded to pull the lower end and slow it. The combined weight proved too much for him and I suddenly had ten feet of rope slack to overcome and take in for tension to stop the bag. Zippp-------zot-------swish!. And I ended up about fifteen feet lower, off the pedestal, and with various items hanging about me --- also hanging from a wrist-lock by one hand. "Did I stay tied to the rappel lines?" I don't know --- but to be sure I hooked up a prussic sling and tied myself on with my left hand.

"Tom...Tom, are you all right?" echoed from above. I'm too busy to answer now --- as I climb back to where I was and pull the bag onto the pedestal. I called Bob on the radio and informed him of the details, receiving a "wow" type of reply from our support, Karen at the car radio. Now, in the dark, she can finally see where we are by our lights.

The next bag comes down, carefully since I don't care to fly too often, and Bob joins me soon for the night. We decide to leave the ropes anchored above to belay us for the night rather then spend time setting more bolts.

the other sloping downward, about three feet by five feet triangular. Dinner? Phooey! It's time to sleep first --- eat in the morning. But we eat some anyway. The 2 ½ gallon water container has lost its contents --- ugh! Wet rope and padding! The down jacket, being enclosed in a plastic bag is still dry and good night seems O.K.

A rat behind the flake to our right blinks at us now and then. "I wonder how he got there and what he eats? He better not sample our ropes!"

Bivouac: a French word (?) here actually means to sit and wait for the sun to come up! Who said anything about sleep? Dawn finally comes, and we look over the situation deciding not to eat but little as eating requires water and we have only one gallon left for the rest of the descent. There is a ledge just thirty feet left of us and it has two bolts! Quite a bit larger and good to "camp" on. But we couldn't see it from above with our lights and chose where we are. The long continued heat of rappelling caused a deep heat burn on my left hip under the leather pad, so I put on some moleskin. This does fine --- I didn't like the idea of continuing the rest of the way down from here without first taking care of the damage already!

I start down on the three hundred foot pair of ropes looking for the fixed rope anchors Rich Calderwood said should be there --- finding none. Probably off route? There is a small ledge at two hundred and eight feet and I place a poor short piton to hang my pack on as I drill two 3/8 by 2 inch holes for anchors. This is without a doubt the best anchor assembly placed to date (1969) on El Cap! Down came the bags, without incident, this time two at once, and Bob joins me again. More filming also enroute. Now to pull down our ropes. They pull fairly easily until shortly after the end frees the ring. Jammed! We rig up an ascender winch and stretch the rope to get back as much as possible. Too bad, but cut it off I did. It had to be the brand new one! Being released, the rope decides that it is time to take its own trip to the bottom --- to get there first? The first reserve rope is called into use now, this leaving us with one remaining reserve rope (wet) in one of the bags.

Our support member, Karen, now has a job and I call her to get our plans straightened out. She is to direct me, via signals through Bob's radio, to the right elevation and location to complete a pendulum far right to Dolt Tower.

My descent ends at about -270 feet as Bob indicates that it is now time to go to the right. I can't see Dolt Tower until I drag the rope around the corner and see another wall and corner to be passed to get to the ledge. Because of the rope dragging around the corner I can't get a decent run and several tries end in failure. I swing back to zero position, tie on with a prussic knot, and rest, doing some thinking. After tying my anchor hardware onto the end of my rope below me, I swing right and throw the hardware onto Dolt Tower. It slips off several times. The problem is that a straight throw goes over the outer edge only. Next, a running grappling hook throw with a curve (!) and the hardware jams around and behind a flake on Dolt Tower. I pull myself onto the ledge and slack off the rappel rope.

It seems that a ranger was watching as he indicates it was a "wild swing". Also he told us that we were the first to do the descent, assuming that we completed it!

The first bag to be lowered to Dolt Tower doesn't cooperate so Bob has to ride it down on rappel and I pull him over onto Dolt Tower. The other bag was set up so as to descend by itself after the weight is taken off the rope. But it also doesn't cooperate. A long three hundred foot prussic and I find it still on the ledge. I ride the bag down while Bob adds tension from below as I approach him. The ropes pull easily without problems. The cut off rope from above is found here on Dolt Tower and we retrieve it to increase our reserves.

We have to wait until a couple of climbers pass us from Stoveleg Crack before going further down. It isn't nice to entangle them with our operations and equipment. I decide to do a lot of filming here as we wait. They don't have a drill holder, so I give them one of ours for their drills. It is bad to try drilling holes using hand held drills! They told me that a 3/8 inch original Star Dryvin anchor bolt pulled out in Stoveleg Crack at a belay point, so I decided to replace it. After seeing it, I can see why! Too shallow a hole.

As I swing over the edge for the rappel, the sky is blackening. The bad bolt location is noticed, an empty hole, and I pound in a 2 ½ inch angle in Stoveleg Crack, tie myself to it, and start to deepen the hole. "Nuts! It's too tight!" So I place a 3/8 by 2 ½ inch Rawl stud and start a 3/8 by 2 inch Star Dryvin hole to the right of it.

The Rawl stud is at least good for packs, and pitons would do to back up the anchor. I tie all points together and call for the packs. In due time Bob is with me. Perhaps I should say we are all on top of each other, along with the packs! Imagine yourself with two large bags and a couple of feet kicking around near your nose, armpit, or elsewhere! Again the ropes pull easily.

Loss of radio contact with the car makes us feel a bit "hollow" and the rangers try to push start and jumper wire etc.---. They contact me on the Bull Horn and explain the situation --- car with a dead battery. Also, by light flashing, I indicate that we will spend the night coming down to arrive on the bottom by 0800 hours ( a wild guess ).

Once more I proceed down. This time my concern is to stay far enough left to avoid the gigantic overhang on my right. And the rock is extremely smooth! Glacial polish! A pendulum

left --- I can't see well enough to try for Sickle Ledge --- isn't too effective, but I manage to pound in the tip of a knife blade and tie it off to hold me here while setting the bolts for the anchor ... there are no suitable cracks here! At last a chance to try my homemade triple-eye hangers! They work O.K. but a better design would be a "T-bar" rather than an angle iron. It now seems like a routine descent, complete with everything piled on each other --- hanging like bats on a ceiling! Our water supply was now growing very low, about one cup. We had one quart at Dolt Tower so we decided to make a night descent to try and reach bottom before the day's heat raised our thirst more. Bob graciously let me take the water since I was doing the bolt work.

The efforts of drilling holes and work involved in the descent have by now really dried me out --- considering twenty hours straight and short on water and no food --- so I call Karen at the car to bring ½ gallon of water to the rock bottom. ( They got the car going again! ) Then I unwound about six hundred feet of the seventeen hundred foot nylon string and lowered some hardware on it to the bottom to pull up the water. It was quite a job pulling it back up and handling the packs at the same time! Bob soon joined me and we had a good drink each. It really makes a difference when your blood isn't like jelly from dehydration!

Now to pull down the rope. Jammed again! We try the winch again and tie it off tight, then cut the tie cord. The rope remains jammed, so we stretch it again and cut off what we can save. Out came the wet final reserve rope. No worries about melting it on hot brake bars!

Still at +600 feet we receive a scare as our feet, braced against each other, slip and balance is lost for a bit. Another descent into the blackness below for three hundred feet, making a "bee line" for the bottom which is still invisible.

I busy myself setting a ¼ inch bolt and hear a loud whistling sound and --- crash! --- below. "It must have really been big!" "Rock fall fever" hits and I "whale" on the drilling for a while. Then a 3/8 by 2 ½ inch Rawl stud and a three eye hanger again and I'm ready to call for the bags.

I finish setting the anchor just as the dawn comes and I am now able to see the bottom --- too clearly! The exposure seems nauseating! And it's only 250 feet or so!

Down come the bags and I transfer them to the anchor, call Bob, and safety him down. I am disappointed that so much was done at night that I couldn't run off very much film!

The wet rope rappels stickily around my waist but now it is so near the bottom, who cares! I finally "land" on rubble at the base, to meet Karen and a motorcyclist who was watching the previous day and returned to greet us. Bob comes sailing gleefully down the last drop after the packs and imparts a gigantic hug to Karen, our faithful "radio man" and morale booster. We head groggily for the car to sort out equipment and so Bob and Karen can make a mad dash to Sacramento for school registration. I find that my "wall legs" don't work too well here on the flats for a while!

It is strange though --- after completing the rappel, it doesn't seem that we have done anything unusual, just a rappel that took longer! We feel perhaps a little sad that the experience is finished, but glad that we were together for it.

Next day after a long sleep, I spend a few hours surveying anchor locations on the face from the roads using a theodolite for angles.

Time: 0800 hours  September 18, 1969

## Conclusion

Our supplies in total proved effective in permitting a successful rappel. But it must be remembered that several problems developed that called for the use of items planned for, and such equipment is not usually considered. The use of four 300 foot ropes due to two hang-ups was significant. Perhaps using shorter descent lengths less problems would develop with hang-ups in retrieving ropes. But this also increases the time required. A safe descent does require time! Here, however, a lot of time was spent in replacing anchors or in setting new bolt anchors. You can imagine how long it takes to set an anchor assembly using two 3/8 by 2 ½ inch bolts if you don't want to overly tire yourself drilling or break, or stick the drills. ( Ten minutes per inch depth ).

An equipment analysis:

Items Taken

a. ( 3 ) 570 foot rolls of nylon string
b. ( 4 ) 300 foot 3/8 inch ropes
c. 50 feet of anchor sling
d. ( 40 ) 3/8 inch bolts, Star and Rawl
e. ( 15 ) ¼ inch bolts, Rawl studs, pitons
f. 5 gallons of water
g. Several pitons as listed previously

Items Used

a. 1 used plus part of another
b. 2 cut off, 1 retrieved, all used
c. supply essentially all used
d. ( 6 ) 3/8 inch Star Dryvins, 2 studs and hangers
e. ( 3 ) ¼ inch Rawl studs set
f. 2 ½ gallons lost, 3 gallons used, used an additional ½ gallon
total used = 3 gallons for 2 people for 2 days plus which equals 3 quarts per day each
g. a ½ inch angle, a 3 inch long horizontal, a 2 ½ inch angle, a ¾ inch angle. Pitons left for anchors: ½ inch angle & a long Cassin horizontal, a 2 ½ inch angle and a ¾ inch angle were used and retrieved.

El Capitan - Nose Rappel No. 2 *July 18 & 19, 1971*

The reactions I received from various sources as a result of the first descent, September 1969, encouraged me to consider a return trip and to install sufficient anchors to permit a retreat from the climbing route. Three old "caving" friends, Robert Carnie, William Brockman, and Ben Robinson had expressed an interest in joining me in the rappel so we undertook a period of training for about 6 months to establish a standard safety procedure. Several multistage rappels and overhang climbs and rappels were included in the practice sessions.

We had decided to take 16mm films on the rappel and a camera box had to be constructed to protect the camera. A Samsonite case was chosen and well padded.

The first descent in September of 1969 found us using 300 foot ropes, so the anchor spacing was questionable on the areas which were not on the climbing route. The increasing interest in climbing the Nose Route has also increased the likelihood of future retreats, so we felt there must be some way down that would be fairly easy for climbing parties; especially those who don't come equipped to do a lot of "bolting" for a retreat. Also, time is sometimes an important consideration.

Consultation with William ( Dolt ) Fuehrer and Wayne Merry about the rappel indicated that a set of anchors permitting the use of 150 foot ropes to retreat with would be very desirable. Equipment to install these on the 1969 route was purchased, at good price! Chrome plated hangers, Cadmium plated short chain sections, epoxy, Star Dryvin bolts ( 3/8" x 2" ), and brass identification tags were the main items to be used. These figured at about $5.00 per anchor to be set. But they should last for a long time and still be quite safe. A plated Longware 3/8 hanger and Rawl Stud placed in Sunny Side Bench in 1968 was still in "mint" condition in 1971.

On July 16th, Ben Robinson and his father, and I, packed in about 100 pounds of gear to the top of El Capitan. We also left a new register box in the rock pile. Amid thunder showers, we hurried back to camp at Tamarack Flat where Ben's wife, child, and mother were waiting. Sabbath was spent enjoying the scenery and resting from the previous hike in. Early Sunday morning we met with Bob Carnie, Bill Brockman, and several of their friends "conscripted" to help pack in the rest of the supplies. Ben's friend Celia, from Curry Co., also helped us. Meanwhile Ben's wife, "Birdie", drove my car down to the valley to be in position to act as radio man-recorder.

A night's sleep, complete with "anticipation thoughts" was needed after the second pack-in. It was just as heavy for us each as the first. Just think what it would have been like without a prior pack-in!

The morning came, in "bivouac" style, and we packed up the haul bags and radioed the contents to Birdie to record. We wanted to know where to find things easily and also to know what is lost if a bag dropped without doing a lot of searching.

I started over the first rappel to the anchor at the lip of the great overhang. Bob Carnie joined me with the camera and I then rappelled down the overhang and pendulumed left and onto the small ledge which I used for the September 1969 descent. Only this time I managed to start the pendulum without the use of a telescoping pole and cliff hanger. Great semicircular arcs they were, and rather interesting when the ledge you clutch has loose blocks on it!

The plan was for us to operate essentially as two teams of two each: Ben Robinson with myself, first, then Bob Carnie next, with Bill Brockman last. The five haul bags were either handled by each group ( 2 for 1 and 3 for the other ) or they were relayed according to the locations, anchors, and ledge spacing. I replaced several anchors enroute and this took considerable time. We arrived at Camp 6, the triangular ledge, at about sunset. My plan was to set up the next anchor below the bivouac site in the evening to save time on the next day.

Bob and Bill bivouacked on the triangular ledge and Ben and I stayed on a ledge about 30 feet below.

Early the next morning I went down 120 feet and received the bags at a small triangular ledge, Ben joined me. I then went down about 80 feet to a ledge, placed a piton anchor for Ben, and continued to the Camp V ledge. Ben came down to his anchor and waited for Bob to start the bags down to me. Ben's job was to push the bags over the ledge, down to me.

After I renewed the anchor at Camp V, Ben joined em and the others came down while I descended to renew the bolt 140 feet above Great Roof lip. After more bag transfers, Ben joins me. Then it's down to the Great Roof anchor which I improve by replacing the poor ¼ inch Star Dryvin with a ¼ inch long Rawl Stud. The next rappel is down virgin country and a pendulum left ends up hanging on sky hooks while I set the anchor bolts. These are typical of the descent route anchors: two 3/8" x 2" Star Dryvins and chrome plated Dolt hangers ( one H and one V ) connected by Cadmium plated 1/4" chain ( 4 links ) and with a 3/8" x 2" Cad plated lap link for the rope ring. The holes were sealed with epoxy and a brass tag installed to identify the descent anchor. The chromed hangers were lightly painted with chrome yellow spray paint to minimize reflection. Ben sends down the pack, joins me, and I proceed to the class 4 ledge at Camp IV. Since Bob Carnie has been quite sick this day, he goes by Ben and down to me. Soon after the others join us and we set up to sit up all night --- a typical bivouac! Who said anything about sleep!

Early the next morning I swing over East, down, and replace one of the anchor bolts at the end of the King's Swing lead. The old one came out surprisingly easy!

When I returned to "camp" I find Bob feeling better, and quite busy with the camera as we prepare to descend. The Contact pills worked well apparently.

To make a connection from the Gray Bands to Dolt Tower, I rappel down to set a midway anchor at about 150 feet. I discover a 1957 old rusty 3-eye hanger off to the right. This is where I decide to set the rappel anchor using the old bolt to hold the packs. It's nice to be able to see some of the historic "markers." Then it's bags, and Ben, and a descent to the small ledge of the previous 1969 descent. The next rappel is a hard swing right and around the "nose" to a point above Dolt Tower. Holding on by friction, I drill a shallow hole, set the tip of a 5/8 inch angle in it to hold me while I drill another slightly deeper hole, and set the tip of another in it to hang on while re-drilling the first hole for the first 3/8 bolt. Then the other hole is deepened and filled with a bolt, hangers, connections and epoxy. Ben comes down, and I go to the bottom at Dolt Tower. We relay bags via Ben down to me and they are hard to swing around the corner. Using a brake bar on the bag to permit control from below for lowering proves easiest except for this kind of a situation. A "sleepy" night here at Dolt Tower was enjoyed by all --- the bed space being ample.

Early next morning I start down Stoveleg Crack and, not wishing to set additional anchors here, find that in 300 feet of distance I need to use two intermediate anchors. This makes the drops about 120 feet, 90 feet, and 80 feet. When I am ready to pendulum into Dolt Hole, I find guess work necessary to tell when to start. A long swing with a double grab and pull left completes it. Getting the bags around the corner into Dolt Hole proves a difficult job also. Bob comes down and I descend 100 feet down the groove and prepare the anchor. The next drop diagonals off right about 110 feet onto the smooth face to the 1969 anchor. We stockpile all bags here and position ourselves from here to the ground.

As we move into position for a bag relay some long intervals between the anchors causes us some trouble. In order to save time, we decide to leave the ropes fixed over the last four intervals to the ground and to return later to set the intermediate anchors. I reached the ground late on the fourth day and met some onlookers. I was able to talk one into controlling the bags down the last rope drop, so I returned up 130 feet to receive and relay bags from Ben.

And then there was the pack back to the car after we all arrived on the ground. Birdie had "conned" some people into taking pack frames up to the base, and Ben returned after his load with some 7up for us.

The next day, Karen Mellinger and I, went up ropes to the +600 feet level to reset anchors at 150 foot intervals and to wipe out the anchors which were too far spread. Likewise on Sunday, Ben and I returned to set the last two anchor pairs.