

Supplement to Plan 152

CENTER POLES, RIGGING & GUYING OUT

By Raymond Heim

There seems to be much confusion and I am asked many questions about the rigging of, the gear on and the guying out of center poles on a pull-up type top. Maybe this plan will clear up some of the confusion.

After working two days on Clyde Beatty last year (1957) and a week on Hagen Bros. during vacation this summer, on everything from canvasman to rigger and kid pusher I do not claim to be an expert on rigging, but will try and pass on some of the things I have learned.

First of all let me explain that all main poles are not rigged according to these plans and descriptions. I have seen many with only three guy ropes for instance. Many use no stretch line. In fact this is used on the Big Top only to keep the ridges from sagging due to pulling the center poles together when guying out aerial rigging. Watch the old timers pick this statement apart

Many exceptions to this article will be found on shows. This is the way I have seen two of them and it seems that most of the modern shows use this method. I really should make it three, as Mills Bros. had this guying out arrangement this year. It is more foolproof than the three-guy method and easier to handle with green men. This is very necessary in the days of workingmen shortages and unskilled help, or even help that just does not want to learn as I have seen in some cases.

There is a prevalent idea among model builders, which I have heard from time to time, that the center pole guys are not crossed. This is incorrect as the white guy always crosses over the red guy, for the next pole. More of the meaning of these colors will be explained later.

Let's take a center pole and pick it apart piece by piece from the top down and start naming names:

BANNER POLE: This is a short pole 12 to 14 ft. long. It is usually metal tubing and is placed on top of the center pole to hold the banner (flag). There is a socket on the center pole on one side at the top to accommodate the base of this pole. Never is it inserted in a hole drilled in the top of the center pole. That is if it is a type where the banner is pulled up after the center pole is raised. On smaller tops the banner is sometimes fastened permanently to a metal rod and its end inserted into a hole drilled into the top of the center pole. Thus it is raised with the top itself.

BANNERS: These can be any size, shape or variety. Usually they start out with an American flag on the king pole. My article on Menagerie Tents discusses these quite thoroughly. The only flag on a circus is the cookhouse flag showing meals are being served. All others are called banners.

BANNER ROPES: These are 1/4" or 3/8" lines with an eye reeved in each end. They are attached to a banner either by tying or with harness snaps fastened to the banner. This rope is long enough to start at the banner, pass through the eye on top of the banner pole, then through the bottom eye about 4 ft. down from the top of banner pole, down to the stake line with length enough to tie to a stake in line with the lacing on the canvas, and back to the bottom of the banner.

Right away I forgot something so let's go back to the banner pole a minute. Joe Taggart informs me that prior to 1933 all banners were pulled up with a single block placed in an eye on the banner pole near the top. This always resulted in the lines becoming twisted together by the wind and a lot of work at night untangling them. That year he and Sam Gumpertz got together on Ringling and devised the modern method that seems to now be adopted universally. This consists of two eyebolts. One eyebolt is located near the top of the banner pole and the other about 5 feet down. The rope for pulling up the banners was run directly through one without a block, then through the other and back down to the stake line. This way the ropes were kept separate to where they lay on the canvas and the wind could not twist them together.

BANNER POLE SOCKET: There are two types of sockets used. One is simply a piece of tubing 2 ft. long and large enough to accommodate the butt of the banner pole. These are placed so that they project above the center pole top about 4 inches. The other type is two loops of strap iron. The top one is round and at the top of the center pole. The bottom one is square and is 2 ft. down from the top of the center pole. This takes the very

bottom of the banner pole that is first inserted through the top loop and then into the bottom loop. On this type the bottom end of the banner pole is swaged square and tapered. In either case they are placed on the side of the center pole. Never being in a hole drilled into the end of the pole.

BRACKET: This is the means by which the main falls are attached to the center pole near the top. Again there are two kinds. One is simply a piece of angle iron with one leg bolted to the center pole and the other drilled to accommodate the hook on the top block of the main falls.

CENTER POLE: This name needs no description. However, the first pole to be raised is called the king pole. This is the pole at the front end of the tent nearest the connection to the menagerie. Some maintain that this pole is larger in diameter than the others but I could never find any difference in their size. In models I prefer a good husky looking center pole and use a 5/8" dowel to make them (in 1/2" scale). In big tops their length varies greatly. The wider the top the higher the pole so as to maintain proper pitch. I have seen them in lengths from 33 ft. (Hagen Bros.) to 65 ft. (Ringling) with almost any length in between. They should be tapered so the biggest diameter is in the middle but the amount of taper is so small I cannot see it on a model. Anyway when you start tapering them you are really developing a king-sized headache for yourself. I would rather spend that time on something else that shows.

MAIN FALLS: This is the block and tackle used to pull up the bale ring with the canvas attached. On large tops three sheaves per block are used while on smaller tops only two sheaves per block are used. Combinations are also used such as three sheaves on top block and 2 on bottom block on very small tops.

BALE RING: Every model builder knows what this is but do they know that there are three different kinds?

Split bale ring: This is used on a very small top. These are two pieces each permanently fastened to its proper piece of canvas. When setting up both halves are bolted together. This type of bale ring is placed around the pole after the pole is raised and the canvas spread. I have not seen one of these for thirty years and believe they are obsolete now.

Single bale ring: This is by far the most common type. It is a solid ring made of one inch round steel.

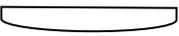
Double bale ring: This consists of two rings of different diameters placed concentrically with each other and have four spokes welded between them. The outer ring has the canvas laced to it and the inner ring is used for aerial rigging. I believe only three shows have used them so far (Beatty, Ringling & Mills). They seem to be gaining in popularity though.

Attaching the bale ring to the bottom block of the main falls is done by two pieces of chain one to two foot long fastened on opposite sides of the bale ring and then into a smaller ring which accommodates the hook on the bottom block. In model work I have never been able to obtain chain that was strong enough for the purpose and which can "take it". I either use two short pieces of model airplane lead out cable or make my own by twisting several strands of copper wire together. This substitutes a short piece of cable for each chain. The rings, which hook onto the bottom block, should either be silver soldered or brazed together as soft solder will not hold. The bale ring should also be brazed, silver soldered, or welded instead of being soft soldered. Soft solder just will not hold.

AERIAL RIGGING: All falls for rigging the props for aerial acts hook onto the bale ring. Some exceptions are pieces that work off of the quarter poles. Falls is the circus name for all block and tackle and will be used from now on throughout this article. Light falls for the chandeliers also hook onto the bale ring.

CROSS PINS: Three feet from the bottom of the pole is a hole drilled transversely through the pole. This is for inserting the cross pin which can be a piece of pipe (steel) or a bar of steel sticking out of the pole 1 foot on each side. The ridge rope and the main falls are tied to this. Also, tied to it are some of the falls for aerial rigging and the lights when the plain mud block is used. The pole is always drilled so that the cross pin is across the tent and not lengthwise.

Some times a top has center poles with two cross pins. They are a foot apart and parallel with each other. The bottom one is used for the ridge rope and main falls while the top one is used for aerial, rigging.

MUD BLOCKS: Again there are two styles. The plain one is a length of wood about 1 1/2 ft. long and shaped like the drawing looking  at it from the end. This drawing is not very detailed but it should have a flat top and round base although I have seen a few which were just a flat plank. I take a dowel the

same diameter as the center pole and- split one third off of the diameter to form the top. In the center and driven in transversely is a steel pin projecting out of the top 8 to 10 inches, This is inserted into a hole drilled into the butt of the center pole. Its function is to provide a base for the pole so that it does not sink into the ground and also, when placed against the toe pins, forms a fulcrum or a lever when raising the pole

The other type of mud block is the same only it is longer (up to 3 feet.) On the top in each end, six inches from the end is an eyebolt and ring. When using this type of mud block all aerial rigging is tied to these rings. On the one side of each mud block are two holes drilled straddling the center of the block. Into the elbow of this "U" bolt is hooked the snatch block. The elbow of the "U" bolt is always placed so that it is on the same (front) side of the mud block as the toe pins. Steel bands are usually formed around each end of the mud block.

SNATCH BLOCK: This differs from an ordinary block (pulley) in that one side is hinged so it may be let down to allow a rope to be placed over the sheave anywhere along the length of the rope. Thus it is unnecessary to pass one end of rope through the block in order to thread it. In this case the snatch block is used first on the ridge rope to pull up a following center pole, After all of the poles are up it is then placed over on the main falls to pull up the bale rings and canvas.

It is used here only to change the direction of pull so that instead of the pull being straight down it is at right angles to the pole allowing the use of bulls, horses, or manpower.

TOE PINS: These are two stakes usually of steel, but I have seen wood used, placed on each side of the pole for the mud block to butt against. This is to hold the butt of the pole from sliding back as it is being raised.

After looking over my notes I find I had skipped a whole page so rather than write this whole article over let's go back to the MAIN FALLS for a moment.

Most model builders in setting up their tops pull the main falls up block to block or so that they nearly meet. This is never done on large top. If you examine one yourself you will find anywhere from three to ten feet between the blocks. This distance will also vary with weather conditions. In wet weather when the canvas shrinks the ridge will not be as high as in dry weather when the canvas is stretched out longer.

Only once have I seen the main falls pulled up as high as the lower block could go. That time the canvas crew did not even bother to "Rag it out." This was about the saddest looking big top I ever saw. You could grab any guy rope and pull the eave over a good foot. A good rule to follow is to make your center poles 3 inches longer than the distance from the baseboard to the ridge of the top.

Note the use of the word top in this and previous articles.

There are no tents on a circus. They are always called tops. The use of the word tent makes a First of May stick out like a green thumb.

This completes the naming and descriptions of the rigging on a center pole except the guys, backstop, jigger, stretch line and ridge ropes. However, before closing this part of this article let's give the quarter poles and the set-up top a going over.

Smaller tops have only one row of quarter poles usually called quarters. Larger tops have two rows and some old timers claim they have seen them with three rows although I have never seen this and they will have to show me as they say in Missouri. The inner row poles are longer than the outer row of poles. The longer poles are called the blue quarters or generally just blues. The short poles are called led the red quarters or just plain reds. This name even holds over in the days of aluminum poles. Here, too, many model builders again vary from the prototype in that they paint 'their poles any and all fancy-colors. Also as many as 2, 3 and even 4 different color combinations. They want to out do the others in dreaming up colors. Show me a large show that does this! The more inconspicuous a pole is the better. One exception to the solid red or blue color is the white band painted around the poles sometimes to show the point of balance. This is so that one man can place it on his shoulder without having to juggle it for balance.

Usually each quarter pole has a transverse hole drilled through it 1 1/2 to 2 feet from the top or pin-end. The jump rope is threaded through this hole as the pole is raised and then tied off at about shoulder height.

This combination of hole' and rope is to enable a worker to pull the pole down without dropping it at night. Lots of times in order to eliminate fooling around with a jump rope with a frayed end one turn is taken around the pole near the hole and then tied off as before. This also is used for lowering the pole.

Of course, each pole has a pin in its top to be inserted in the metal grommet in the canvas. They are also banded with a piece of sheet metal or a metal ring at the top to prevent the pin from splitting out,

Many shows have a transverse hole drilled through the pole 8 to 10 inches from the bottom. A rope (or steel cable) is threaded through this and spliced to form a loop about eight inches in diameter. This is used for raising the poles by bulls, horses or mechanical means. After the pole is set a toe pin is passed through this loop and driven into the ground to prevent the pole butt from shifting if the wind bellies out the canvas. In closing this section let's name the relative positions in a big top that is all set up.

LONG SIDE: This is the side opposite the back door and where the grandstand seats are placed. These may be chairs or bible backs.

SHORT SIDE: The side in which the back door is placed. Seats on both sides of the back door may again be chairs or bible backs. Hagenbeck-Wallace and Barnes carried bible backs on the short side and chairs on the long side in the early 1930s. .

BACK END or LONG END: The side opposite the connection to the menagerie. This has the blue seats or bleachers in a continuous semi circle around the end.

FRONT END or BACK END: The end where the connection to the menagerie is placed. Blue seats or bleachers are placed on each side of the connection in a circular arc. In many cases smaller shows placed (or place) their menagerie in the side show and instead of a connection used the marquee right on the big top. One show has no marquee at all and I think it has the sloppiest front end I ever saw.

Once again I have to retrace in this article, this time to the paragraphs on QUARTER. POLES.

When aerial rigging is placed on a quarter pole two different methods are used. In one the block is permanently fastened to the rope network composing the top proper near the quarter pole grommet in the pin on the pole. This has a hole in one end and the block permanently fastened to the other end. In case of two falls per pole the steel plate is twice as long with the block on each end and the hole for the pole pin in the middle. Only a block containing one sheave is used on the quarter pole. (There are probably many exceptions to this rule.) In the other, the prop boy places a steel plate, over the pin on the pole.

CENTER POLES, RIGGING & GUYING OUT

GUY ROPES – General: All guy lines including the jigger and back stop but not the ridge ropes are actually steel cables. The only reason I can think of for this is that in case the canvas catches fire they will not burn and let the center poles drop. I have never been able to obtain any other reason even from old timers around a show. Cables they are a nuisance as they will tangle more than ropes and much harder to coil.

Guy ropes are made by forming a loop at one end that will drop over the center pole, the loop is secured with two cable clamps. The steel cable is long enough to reach out over the eave of the canvas about four feet. Here a small eye is formed over a metal sleeve and again secured by two cable clamps. Through this sleeve a rope is then passed and with an eye splice is spliced back onto itself. This rope is long enough to extend out and be tied to the stakes.

Two stakes are always used on a guy whether they are metal or wood. One is driven in line with the other and a foot farther out. These stakes are always cut away from the regular stake line for the guys from the eaves. A single loop is placed around the first stake and then tied to the second with a half hitch. On a jigger and backstop several stakes may be driven and tied together to form a ground anchor. Here only two stakes may pull out of the ground.

I have never seen hooks on guy ropes for hooking into the eyes on center poles. As far as I know only loops on the cable end are used. A hook would tend to help snarl up the guy when it is coiled at night more than the loop would and they can get plenty tangled.

All guys are color coded by painting the cable clamps on the rope end. The guys are different lengths and this way a rigger can tell which is which at a glance.

RED (Main) GUYS: These are the shortest ones, and as the name implies, the main guys. After placing the top loop over the pole the other end is run out to two stakes directly in line with the mud block on this same pole. These guys are pulled tight and tied off before the pole is raised from its jack.

On the two end poles (Nos. 1 & 4) on a four pole top two extra red guys are placed on each pole going back to the round end at a 45 degree angle to the center pole line. These two constitute two of the safety guys from the end poles. They are red also as they are the same length as the main guys.

WHITE SAFETY GUYS: These are the longest as they cross the main guys from the next nearest pole. Two are needed for each of the nos. 2 and 3 poles and one each for nos. 1 and 4 poles. Their layout is fully illustrated in the accompanying drawing.

BACKSTOP (BLACK) GUY: This extends from no. 4 pole to a ground anchor in line with the center pole line. It is not a true guy as it does not hold the pole vertical but is part of the stretch line of which more will be discussed later. This may be just a rope and cable or the rope may be replaced with a two sheave block falls for tightening.

JIGGER: This is the cable for raising the no. 1 (king) pole. Again a cable is used with the rope end replaced with a falls of two sheaves per block. The top block hooks into the loose end of the cable and the bottom block is secured to a ground anchor in line with the center pole line. Under this cable an extra long jack is placed just back of the top block to keep the jigger off from the ground when starting to raise the king pole. Of course, the jack drops off the cable as the pole is raised higher.

JIGGER JACK: To a gilly this would be a gin pole or gin jack. It is a collapsible jack used under the top end of each center pole when it is laying on the ground only it is 12 to 14 ft. long. It is used as described under jigger.

POLE JACK: A short jack about three feet long placed under the center pole about 5 feet from the top end when it is lying on the ground. Each center pole has its own jack.

Under the jig jack heading I forgot to add that after the king pole is raised the Jigger Jack is placed outside near the stakes at the end of the jigger. I have also seen it substituted for one of the small poles in the middle of the marquee.

RIDGE ROPES: These are the ropes on a single block used to pull up the nos. 2-3-4 center poles. For no.2 pole a loop of the rope is placed over the top end of the no. 2 pole and the ridge rope is run back to no. 1 pole. Here a single block is hooked to its socket on the top of the pole. The rope then continues down the right side of the pole, is passed through the bale ring, into the snatch block and cut to the source of power. No. 3 pole is pulled up on no. 2 and no. 4 is pulled up on no. 3.

One show is supposed to have raised all the center poles at the same time. To me this is a clumsy and impractical way of doing it. I would term it the hard way.

After the canvas is raised the ridge ropes are always slacked off and real loose unless they are used as part of the stretch line.

STRETCH LINE: I have been mentioning this in this article until I suppose that you could scream every time you see the words. The description of this item has been purposely avoided until the jigger, the backstop and ridge ropes had been described. The jigger and backstop are always part of the stretch line and sometimes the ridge ropes.

First of all let me state that to my knowledge a stretch line is only used on a big top. Here we have aerial rigging inside which, when guyed out, has a tendency to pull the tops of the poles together. This results in a long sagging ridgeline in the canvas. The stretch line is used to prevent this. Let me further add that a stretch line is not always used but seems to be coming into use more and more.

There are three types of stretch line. In the simplest the jigger and backstop are used to keep no. 1 and no. 4 poles vertical while the ropes sewed along the canvas on the ridge line forms the stretch line between no. 1-2, 2-3 and 3-4 poles. This is the most common.

On the second type the jigger and backstop is used as before but the ridge ropes are also pulled up to form the stretch line between the poles. This again is used only on the smallest tops.

On the larger big tops #3 type is used. Again we have the jigger and backstop performing the same duty as before. From No. 1 bale ring to No. 2 and from No. 2 bale ring to No. 3, also from No. 3 bale ring to No. 4 a steel cable is placed. Each end is looped around its respective bale ring and secured by two cable clamps. These cables are put on after the poles are raised and before the canvas is spread. The canvas is laced together over

these cables. This seems to be a fairly new development and is being used more and more on the larger big tops (Beatty - '56.)

That concludes the parts descriptions. Now let's actually rig a center pole.

RIGGING CENTER POLES

For clarity and to avoid repetition the left side of a pole will refer to your left when you are standing at the butt and looking toward the top as it lies on its jack. The right side will be the opposite side. On the top the left side will be the side on your left as you stand at the base of the king pole looking along the center pole line. The right side, of course, is the opposite side. The front of the top will mean the front end which connects with the menagerie and is the king pole end. The back end will be the end around no. 4 pole. Thus, when I say a safety guy will run front, left I will mean towards the front end on the left side.

Let me state that a rigger will always follow this procedure and in this order. This way every pole will be rigged alike.

The rigging bales in the case of the larger tops having much rigging for aerial acts has been dropped from the pole wagon and the pins have been driven for each pole as per the lot Superintendents layout. On a small top the rigging is placed the same only unloaded piece by piece instead of in a bale. The bales themselves were wrapped in a sling or rope cradle, which is now opened. Loaded separate and not in the bales are the toe pins, mud blocks, pole jacks and banner poles. All of these are loose in the stake and chain or possum belly of the pole wagon except the banner poles that are mixed in with the side poles.

As the pole is taken from the pole wagon, butt first, the bale ring is placed over the butt end and the cross pin inserted in its hole under the bale ring. The mud block is next placed on the pole and butted against the toe pins. Next comes off the top of the pole either by falls or human muscle and placed on its jack. Then the pole is aligned along the center pole line and turned so the loop or angle engaging the main falls is on top. Nos. 2-3+ poles are placed the same way and the riggers take over.

NO. 1 POLE: The two red (main) guys are looped over the top of the pole, uncoiled and their end placed on the ground near their respective stakes. These stakes are in line with the mud block of no. 1 pole and opposite each other. Next come the red safety guys (2). One has its loop placed over the pole top and run front left to its respective stakes and laid on the ground. The second guy is run front right to its stakes and laid on the ground. These stakes are on the circular end, out of the stake line about a foot and at a 45 degree angle to the center pole line. The white (safety) guy is run right, rear to its stakes and will cross over the red (main) guys from no. 2 pole and also laid on the ground. The jigger cable is now uncoiled, looped over the pole top and run to the front to its ground anchor. Its fall is then hooked to the loose end, tied to its ground anchor outside the stake line and in line with the center pole line.

Next is the banner pole is placed into its socket so the banner man can run his banner ropes through the eyes and to the long side stake line, to a stake in line with the mud block but not tied yet.

The ridge rope is uncoiled and its loop end run to the top of no. 2 pole and laid on the ground by the top on the right side. It is the duty of the no. 2 pole rigger to place the loop over the top of his pole after the rest of the pole is completely rigged. The single block is hooked to its eye on no. 1 pole and its loose end brought along the right side of the pole, passed through the bale ring, placed on the snatch block and the remainder coiled right front of the mud block.

The main falls is next uncoiled and the top block hooked to its socket on the pole. Now it is pulled out and the bottom block hooked to the ring on the chains attached to the bale ring. Usually a clevis is used for this. The loose end is run alongside the pole on its left, passed through the bale ring and coiled left front of the mud block. No. 1 (king) pole is now ready to raise but will not go up until the rest are rigged.

NO 2 POLE: This is rigged the same as the king pole but the red safety guys are omitted. Instead a white safety guy crosses over the red main guy of no, 3 pole right rear. Another crosses under the main guy of no. 1 pole to left front. The ridge rope block for no. 3 pole is hooked onto this pole and then the rigger loops his own ridge rope coming from no. 1 pole over his pole top. The banner pole will be last.

NO 3 POLE: This is rigged the same as no. 2.

NO 4 POLE: This rigging is about the same as no. 1. After the red main guys come the red safety guys. One runs right rear and the other left rear at an angle of 45 degrees to the center pole line. Then the white safety guy runs left front and crossing under the main left guy of no. 3 pole. Next the backstop is looped over the pole top and run rear along the center pole line to its ground anchor, After the backstop the ridge loop rope-for no. 4 pole is placed over the pole top. Then the banner pole, main falls, etc. as per no. L pole.

There will be no block for a ridge rope on no. 4 pole except when a 5 or 6 or more pole top is being used. Actual rigging is now completed.

NOTE: With the exception of the jigger no rope has been tied to its respective stake so far.

CENTER POLE RIGGING ORDER

No. 1 (King) Pole

Red (Main) Guys (2)
Red Safety Guys (2)
White Safety Guys (1)
Jigger and Jigger Falls
Banner Pole
Banner Rope by Banner Man
No. 2 Pole Ridge Rope Block
Main Falls

No. 3 Pole

Red (Main) Guys (2)
White Safety Guys (2)
Ridge Rope Loop
Banner Pole
Banner Rope by Banner Man
No. 4 Pole Ridge Rope Block
Main Falls

No. 2 Pole

Red (Main) Guys (2)
White Safety Guys (2)
Ridge Rope Loop
Banner Pole
Banner Rope by Banner Man
#3 Polo Ridge Rope Block
Main Falls

No. 4 Pole

Red (Main) Guys (2)
Red Safety Guys (2)
White Safety Guy (1)
Backstop
Ridge Rope Loop
Banner Pole
Banner Rope by Banner Man
Main Falls

Now, let get those poles in the air. To me, outside of the polder on a rail show, the raising and lowering of center poles is about the most dangerous job in the working departments. The boss canvasman grows about 16 extra eyes when this job is being done, as he seems to be able to see all over at the same time. He will personally supervise this job as well as the dropping of the poles at night.

NO. 1 POLE: First two canvasmen get on each main guy and tie them off fairly tight. They are fairly tight but not tight enough to pull the pole off of the jack. If you wish to see a boss canvasman tear his hair and hear some good old-fashioned circus roustabout language, just help tie off one of these guys and pull the center pole from its jack. P.S. I never did this, as I knew better.

While they are tying off the main guys the boss canvasman will take the right rear safety (white) guy and pass a turn around each stake, He will hold it there just short of the pole being raised to the vertical.

The straw boss at the base of the pole will give the signal and the powers on the loose end of the jigger falls will start the pole upward (man, beast or tractor). As the pole reaches a position 10 to 15 degrees from vertical the straw boss gives the signal and the canvasmen hold the jigger falls by hand (about 10 of them), The power on the loose end of the jigger has been cut off at the signal. Now the pole is aligned vertically from right to left, the main guys tied off fairly tight. This is done by taking up or slacking off on one or the other of the main guys. Now the pole is raised to vertical front to rear by manpower on the jigger and the boss canvasman slacking off on the right rear (white) safety guy. When vertical he ties off now fairly slack. When short handed (and when aren't they nowadays) the straw boss goes back and ties off the left front safety guys and then the right front safety guy. All safety ropes are tied off fairly loose at all times.

No. 2 & 3 POLES: No. 2 & 3 poles are raised the same way only the ridge ropes and snatch blocks are used. The ridge rope is left tight at this time until the following poles are raised unless it is part of the stretch line. It as well as the main falls are tied off on the cross pin. Before tying off, the ridge rope is taken out of the snatch block by opening up the side and the main falls end is inserted and also tied loosely on the cross pin.

No. 4 POLE: This is the same as the others except that the boss canvasman works the right rear (red) safety rope. He also ties off the left rear (red) safety rope while the straw boss ties off the safety guy. The backstop is now tied off loosely by the canvasmen to complete the raising of the center poles.

Just about everyone from 8 to 80 knows the steps in erecting the big top it is not necessary to go into it here outside of notes a few notes I believe will be interesting to the reader.

As each pole is raised the prop boys take over and start hooking onto the bale ring the props for raising the rigging for aerial acts. After the canvas is spread the prop boys' job is also to tie it to the bale rings the sparks (electrician) also puts on the falls for the lights. The riggers and canvasmen tie off the cross tics on the canvas and the boy workers from town follow along and lace it up.

The ridges are now raised 1/3 of the way and the banner man has the banners flying in the breeze. The eave guy ropes are also tied to their stakes.

Side poles are raised by starting on the leeward side or and of top. They are "sawbucked" so that they pull against each other instead of all in the same direction with the whole row possibly toppling over. As the side wall is raised the candy butchers get to work raising the sidewall.

After the side poles are placed, the ridges go up the center poles 2/3 of the way. Quarter poles are now inserted into their grommets and the jump ropes tied off. As the quarter poles are being placed, a prop boy goes along ahead of the crews placing any falls for aerial rigging over the pole pin that may be needed. Sparks also places the falls if lights are used on the quarters.

Now the ridges go all the way up and the quarter poles set into position and toe pinned if toe pins are used. Then the stretch line is tightened at the backstop and jigger and the rigging out (guying out) crews takes over.

This completes the scope and purpose of this article. To you old timers this will be useless as it is old stuff but if only one of the newer members learns one small thing which he wants for his model show I will feel amply rewarded for the time and effort needed to write this article.

And so, "Happy Rigging" on your Little Big Tops.