Giraffe Crane: Assembly instructions

Loading and unloading the crane

The dolly/crane grip or another qualified Grip should always recheck all captive bolts before loading the arm. It's important that loading and unloading be done in a safe sequence. Remember to evaluate hazards even when the crane is not moving. Observe strict protocol and let no one (includes screaming directors, time-pressed ADs, budget-minded Producers/upms) alter the safe loading/unloading and operating procedures! Better to be safe and unpopular than fast and dead!

Loading

1. Load the camera and all accessories that are to be carried onto the platform. Subsequent loading of weights will be easier if the camera platform is raised with apple boxes placed directly below the platform.

2. Load sufficient amount of weights on the weight box just to balance the camera and head- make sure weight rod captivators are in place so weights can't slide off and hit your head! It's also a good idea to remember how many weights it takes to balance just the arm, then with camera and then the head - this way you know how many weights to remove when unloading the crew and camera while still maintaining adequate balance of the arm.

3. Seat the camera crew and insure that they are securely strapped in and their seats and extensions are properly secured. Communicate with the camera crew that they cannot step off the crane platform until the dolly/crane grip has alerted them it is safe to do so.

4. Load sufficient extra weights to counterbalance the crew. Final adjustments can be done with the 1/2 weight and/or by sliding the trim weight to achieve the optimum balance.

Unloading

1. Unload weights used to counterbalance the crew or remote head.

2. Unstrap and unload crew as a grip hold front of the arm (just in case)

3. Unload the camera and head

4. Bring crane to balance so it's ready to move or disassemble completely

Temporary unloading

If it is necessary for one or more of the camera crew to step off of crane, a qualified grip can substitute his own weight by standing on the foot platform while the crewmember leaves temporarily. Alternately, 4 or 5 spare weights can be placed on the foot platform before the crew member steps off.(depending on his/her weight).

It is important that any substitute load be applied on the camera platform and not by holding down the Boom arm. This is because the loads in the upper tie rods are equal and opposite when the camera platform and the weight box are in balance. If the platform is unloaded while the boom structure itself is held down, the forward pull on the front tie rod decreases greatly while the back tie rod to the weight box still exerts a severe backward pull on the top of the pylon. This causes a turning movement around the center of gravity and the dolly develops a tendency to kick out from under the boom. The crane could topple backwards!

Alternately, if the boom structure is held up and the unsupported platform is loaded (with no weights on the weight box) the front tie rod exerts a huge forward pull on the pylon with no opposite pull on the rear tie rod. The crane could topple forwards! Due to the design of this crane there are adequate opposing movements to prevent this from happening under normal circumstances. Dolly/crane grips must avoid these bad loading and unloading techniques that cause instability!

The logic in balancing the loads in the back and the front tie rods also points to a method of fine-tuning the crane in it's various formats.

* a. In the basic form (Booms 1 & 2), the weights should be concentrated at the back of the weight box.

* b. With Booms 1, 2, & 3 in use, the weights can be evenly loaded.

* c. In the longest form, Booms 1, 2, 3, & 4, the weights should be concentrated towards the front of the weight box. This will keep the turning movement at the center of gravity to a minimum. The balance will be more stable and the movement easier.

Track

The Crane normally operates on the 39-inch wide (1meter) lightweight swing fold track, providing maximum stability. Track should always be laid and leveled on a rigid surface capable of holding the intended weight. If used on rough or unlevel ground, sub frames (sleeper track, aluma beams, 2x12's) must be used to provide a solid base to distribute the considerable crane load! Track is connected either with turnbuckles (should never be over tightened) or with the attached connectors in the newer style I-beam track. Track can be made into standard 24" dolly track by attaching the track coupling to the new-style I-beam rails. The 24" standard dolly width is only to be used when crane is in mini-modes with the short post- since it is narrower gauge it's obviously less stable than the standard 39" width. Track should

always be laid by a qualified Grip who is experienced in load ratings of various sub frames (depending on specific mode and weight of the crane)!

Tracking

Take note that two of the Giraffes' track wheels have floating bushings that allow limited sideways movement. This slight motion helps to take out bumps if there is any unevenness in the track. Always make sure the white bushings are fitted to run on the same side of the track! Do not over tighten the track wheels or any of the crane's components. Hand thread every bolt and then firmly snug them!

Ruff Wheels

Filled transport wheels are provided to enable the unloaded crane to be moved from one track position to another. The wheels pop onto the stub axles, and are secured with one captive bolt. Steering handles can be locked on either side by placing the locking sleeve over the crossbar with the wheels straight. Track wheels should always be removed before repositioning crane so they remain undamaged and don't become an impediment to steering. To release the track wheels after loading onto Ruff Wheels, slack the bolt 2 or 3 turns and tap on bolt with the protective hammer, then unscrew track wheels entirely. When hammering, do not unscrew the bolt entirely, as, this will damage the threads of the bolt as well as the ones inside the track wheels. The Ruff Wheels were not designed for tracking, and operators should unload the crew when moving the crane to a new position. Short moves to adjust position are permissible. If radical swinging and jibbing arms are to be made, make sure leveling jacks are down onto a firm and level surface to provide extra stability.

Operating Platform

The operating platform is stored in the trailers with the swivel seat unit attached, ready to be fitted onto the crane arm. The operating platform is designed to be placed on Booms 2 -Boom 4 - any longer mode requires the remote section and is unrideable! The swivel seat unit can be detached and fit directly onto the crane base for a dolly configuration, or left on the platform for use in other modes. The foot platform slides on or off and is secured to the platform with captive bolts. Depending on the unit there are large and small foot platforms to suit the operator's needs. The camera platform must be leveled by adjusting the turnbuckle found on the front of the pylon on the main column. The 4-way leveling head can be attached directly to the swivel seat post or there are two additional posts included (Medium & High). Use depends on lens height, stability, and operator comfort. There are two seat extension units, each consists of a short and a longer square tubing arm connected by a stainless steel pin. They can be placed in a variety of configurations depending, once again, on height of camera, stability, and operator comfort. Always insure that once placed on the platform and fitted with seats, that all safety knobs have been tightened so that the seats are secure from disengaging from the crane. There is also a battery box- make sure it is firmly attached and always secure the

battery and all loose objects to the crane to prevent falling mishaps. Once the operator or assistant are in the seats make sure they are seat belted in and are fully aware that once counterweighted they cannot step off until the designated dolly/Crane grip has signaled that it is safe to do so!

Weight box (porcupine)

The weight box is placed into the slots at the rear of Boom 1 and can hang freely while it is being locked into position with the captive bolts- again, as with all captive bolts on the crane, just snug it with the wrench so as not to strip out the threads, but still making it secure. While the porcupine is still hanging, place Rod 1 into the receiver sleeve of weight box and slip in the 7/16 quick-pin. At this point, place the sliding trim weight onto the rod, making sure to tighten the slider so it doesn't slide and pinch fingers! One grip pick up the weight box while the other places the unattached end of Rod 1 into the sleeve on the center post pylon and secures it with the 7/16 quick-pin. The arm should be close to balanced, and, depending on the mode, the balance should be continually maintained between front and back by evenly adding counterweights as one adds sections of arm. It is always important to control the weight/balance whether assembling, operating or disassembling the crane! All Cranium Giraffes are equipped with the new "quik-release ends for the weight rods"- to insure safety, always make sure the rods are turned so that the sliders are perpendicular to the ground (pointing straight down), because gravity is our friend. When adding weights, it is recommended to always add weights to the upper rods first, as, they are often much harder to reach when loading and unloading operator and assistant! Also, make sure you add weight evenly on both side of the weight box, uneven loading could cause the weight box to disengage from the slots and perform poorly when pivoting crane arm. We recommend to never place an apple box under the weight box to secure the crane arm in a high position, rather, place boxes under the fixed edges of Boom 1 so as to avoid disengaging weight box from crane due to uneven pressures!

Base

The crane base consists of two wheel-crossbars mounted perpendicularly to the dolly base. The wheel crossbars fit into the four cones in the dolly base. The steering tie rods and pneumatic wheels are attached to the steering crossbars. The 4 track wheels are inserted underneath in the cone fittings at the crossbar ends when using the wide crane-base configuration. . Always make sure that the crane base is on a flat, level surface, platform, or track system capable of supporting the intended mode of the Giraffe! The inevitable weight of the grips, other crew, equipment all has to be taken into consideration. If you're building it on track, make sure the base has been secured from rolling in either direction (sandbags, cardellini clamps, mafers, etc.) If you’re building the crane on unlevel ground, always level the base first with the accompanying screw jacks! Use a bubble level to make sure your level in both directions!

Main column

The standard height vertical column attaches directly to the dolly base and must be properly secured by the captive bolts at the bottom of the gusset feet.4 adjusters are provided on the dolly at these bolt-down points. These adjusters allow fine tuning between the level base and the vertical column. Once set, they should be securely locked and should not need further adjustment. The main bearing unit is already secured into the main column by 4 captive bolts. When using mini mode, the bearing must be removed and put into the mini column the same way.

On Vehicle Tracking

The basic crane in mode2 (two sections only!) has also been used for "ON VEHICLE" tracking shots. Because of possible shock loading from road bumps, the crane loading MUST BE REDUCED BY 50% for On Vehicle tracking. Platform loading should be reduced to one crew plus camera, and should not exceed 125kg. 20 weights should be the maximum placed on the weight box.

Cranium TIPS for building the Giraffe Crane

* Build first 2 sections on ground and then mount on crane.

* Never drive crane with bogey wheels as they get damaged when they stick into the ground. Use them only when about to get onto track!

* NEVER move the crane when it is on uneven ground with the arm fully built. Always disassemble the crane and rebuild on a new location. The only time to roll it to another camera position is on flat, even and paved surfaces. Watch out for cable crossovers and mind the screw jacks!

* Always load the weights onto the bucket evenly on either side so the main bearing doesn't get tweaked.

* Don't go crazy tightening the captive bolts on the boom sections, or for that matter, any of the crane's bolts- hand tight works (snug).

* Please don't ever pick up the crane base by the steering rods. Try not to drop the base. The steering mechanism is easily bent.

* Please don't throw the leads onto their own handles. If the handles get crushed they may not fit on the bars.

* Don't ever beat on any part of the crane with your own hammer. I have supplied a plastic-tipped hammer, if a hammer is required.

* Always build a strong sub-platform out of sleeper track (aluma beams) if you're in an unlevel dollying position. The track is lightweight and twists easily. Everyone will be happier (except the guys that have to carry the sleeper track!)

* On fast moves, to prevent the weights from swinging too hard and translating into the arm, throw some rachet straps around them. It helps a whole lot!

* Please read and understand the preceding safety information and conform to the practices put forth therein. Cranes are inherently dangerous pieces of equipment. Utmost care should always be given to staying alert and attentive when operating them.

Leveling

When leveling crane, always crank 2 leveling jacks on same side at the same time (same amount of turns) - This will insure that the other jacks won't get loose and the frame won't twist.

Trailer

If your company is picking up our crane trailer, you will need:

* 2 5/16" ball hitch (high trucks require a drop down hitch!)

* 7-pin standard electrical hookup (standard on most studio rental trucks and studio stake beds.)

* 4-wheel electric brake controller inside truck - Crane 2 only, other crane is surge brake.

* Experienced driver capable of hooking up and safely driving a 5000 lb trailer.

* To fill out and sign a trailer checkout form acknowledging any scrapes or dents that may or may not exist.