Ground Rigging

Overview of concept

Terms (diagram)

Steel- "aircraft cable"
3/8 and 1/2 inch in lengths from 2' to 50'

Shackles
Bell and pin
5/8, 3/4, and 1/2

Deck chain
Magic making adjusting chain in 3' lengths (10 links)

Baskets
The basket wraps the beam itself and is the anchor of the bridle leg

2 shackles!!!

The basket shackle connected by the pin to the bridle leg

The "loose", "free", or "down" shackle

Bridle Leg
The "length" from the basket to the apex

Apex
Where the bridal legs come together

Where the motor is hooked on

Pythagorean Theory: A2 + B2 = C2

Distance to the beam from the apex

Height of the hook of the motor in relation to the floor

How it works

2 upside down right triangles

90 to 120 degrees

What it looks like on the ground (written)

Basic bridle
1/2 ton, 1ton, 2ton.

High steel and high low

Sound and Video (triangle/square).

Implementation

Building the point

Steel lengths

Red = 5'
White = 10'
Blue = 20'
Green/Yellow = 30'
Yellow = 50'

Start at the apex

Build the bridle from longest to shortest. The last piece before the basket should be the shortest (deck chain is always closest to the basket).

Coil as you go.

Keep the steel as compact as is reasonable. Each leg of the bridle should have its own coil.

Finish with the basket

Don't fuck the up riggers! Assembling the basket correctly is the deal maker for the point. Do it the same way every time!!!

Hold the shackle by the thread side, pin out, opening up.

Place the "free", "loose", or "down" shackle first (through the bell!!).

Place the basket thimble over the shackle next.

Pin through the thimble (link) of the bridle leg.

Don'ts

- Over-tighten shackle pins
- Pin up on the bridle leg
- Pinch links

Do's

- INSPECT EACH ITEM!!
  - Broken wires in cable
  - Sprung cable
  - Crosby/Chicago shackles. NEVER rig with Chinese shackles!!!!
  - Frayed ends
  - Damaged swedges
- **Double check your work.**
  - Are the legs the right length?
  - Is the orientation correct?

The arena floor is a very noisy place, and most of the noise rises into the steel and bounces around. Keep your calls simple and precise. The fewer words the better. This is no time to carry on a conversation. You, as the ground rigger, have the potential to cause or prevent a tremendous amount of harm. Pay attention to what's going on, both around you with the rest of the crew as well as overhead. The only acceptable knot is a bowline. Period. No exceptions, regardless of what you think or how much you know.

Tying in

Call up "what do you want?" (call down "Three footer no bag!")

Use your body to measure out the loop in the knot.

Always tie into the pin side of the basket shackle. Period, no exceptions.

Have at least a 6 inch tail on your bowline.

Have the rigger take weight, "Hold that", when the opposite rigger has the same weight, call out "together!!"

Watch the steel out, looking for turned shackles, knots in the steel, the facing of the hook, the pull on the chain.

Make sure the area is clear before calling "together". You have the responsibility to protect your fellow crew members from swinging steel and chains. They have their own job to do and you have yours. That job is part of yours.

Lowering

Listen and watch

Listen for a call from the steel, such as "Deck rigger up right!!!

Watch for a shaking chain (the rigger will wiggle the point to help you find it)

Position yourself to effectively get the chain in the box AS IT COMES IN.

Pull gently on the chain as it comes in, countering the friction of the rope on the beam

Remember, you are responsible for the safety of the crew around you: CONTROL THE ACTION

When the hook is chest high, stop the drop and remove the hook (drop it in the box)

Pull in one bridle leg at a time, the safest first

> The safest leg is the one furthest away from the activity on deck.

If you have to, pull the entire bridle to an empty spot on the floor, away from the crew.

IF YOU CAN'T CONTROL THE BRIDLE BY YOURSELF, GET HELP!!!

> It takes seconds to stop the descent, get a person on each leg of the bridle, and protect the crew.

Things to know

Three sizes of beams on the "low" (65') steel.

Main- the big "H" beams running across stage
- Mains are 50' apart
- Use a 10' basket or split (5/10) basket
- There is 3 1/2 feet of "layback" (distance to the basket shackle) from the beam with a 10' basket

Secondary- the "double angle" beams running up and down stage.
- Secondary's are 50' apart
- Always use a 5' basket

Tertiary- the smallest beam in the arena, running parallel to some mains
- 25' from the main
- Always use a 5' basket

High steel

There are two size beams at the high steel

High Main
- Directly above the low mains
- Mains are 50' apart
- Use a 10' basket or split (5/10) basket
- There is 3 1/2 feet of "layback" (distance to the basket shackle) from the beam with a 10' basket

High
- Run up and down stage
- The beams are 25' apart
- Always use a 5' basket
- Always use a "zero" bowline

The rigger is hanging from the harness when working high steel, lacking leverage

Split baskets

A split basket is used on the upstage mains where there is no "low safety"

To build

Hold the basket shackle tread side, bell down
Place the 10' steel, then the 5' steel.
Pin the last thimble (link) on the bridal leg
Place the open thimble of the 5' (FIVE FOOT!!!) basket leg in the bell of the "loose" shackle.

To tie in

Tie into the thimble of the 5' basket leg behind the loose shackle
A bowline is the only acceptable knot. Period.
Take tension against the rigger when going out over the seats, to prevent the steel from getting caught between them

Dead hangs

A dead hang is simply a one legged bridle
Build the dead hang the same way
Be careful not to hook into the basket!!!
Never place the chain directly under the point, it tangles the rope and chain

Layout

Most shows pull every motor out of the box near the point.

Grab the chain near the motor and pull straight up and out (if there are handles, use them)
NEVER pull from the cable
Lay the motor on its long axis, with the bag side down (where the chain goes into the bag)
Pull the chain to the motor from the box

The chain should pile up with the hook last, so there's no additional weight and the rigger's not pulling from under the pile.

In a perfect world, you have the point, the diagram, the coiled steel (in the right orientation), the chain pile and the motor, in that order

2 tons

A 2ton is a really heavy 1ton and should be treated as such but for the following exceptions

The bridle and basket are assembled out of 1/2 inch steel cable (as opposed to 3/8 we normally use)

Each bridle will use 3 (three) 3/4 shackles along with the regular 5/8, everywhere there is more than one pull

The apex
Each basket shackle (NOT the loose shackle)

The chain must be "evened out" before being put in the box.