Extreme Sharpness

It is all about the small stuff

Location Fine Repro

Art School

Be Diligent

- All workflow needs to be performed flawlessly
- Top of our game
- Even one “that’s good enough” shortcut will lower quality a few percent
- And it is exponential
- Let two or three details suffer and now we only achieve perhaps 50% of what is possible.
- Yes we use Zig Align, but just because we do it doesn’t mean that we are using it to our advantage

- For extreme sharpness our camera work must be perfect,
- Choosing a lens optimized for the application is crucial
- Test for your application
- Process lenses will work for close-ups but as soon you move into the realm of 3 foot and larger painting sizes there are better choices
- Process lenses need to be stopped down more. Apo Ronar should be used between f-16 and f-22. This way it behaves like a flat field lens.
- I reserve the Apo Ronars for close up stitching and single or no polarization
- I have several dozen lenses and I can tell you from experience the Apo Sironar S is a good overall performer
- Faster f-5.6 allows for faster line times = less noise
- It is a good choice for polarization

- The Apo Sironar S is still current and available both used and new. It is a great time to acquire glass as there is more and more being dumped on Ebay. Sinaron SE lenses are Apo Sironar S lenses in DB or DBM mounts

- Several enlarging lenses work very well especially the 150mm Apo Rodagon N. Very hard to find as they were only made for a few years. The Rodagon G series and G Componon series were both optimized for very large mural work (20X). They will not behave very well on smaller subjects, however they are brilliant on larger paintings.

- Some older glass performs very well, and it is interesting that really good camera alignment can make more difference than different lenses. My old 300 mm convertible single-coated Sironar consistently performs as well as a newer 210mm Apo Sironar S.

- I have specialized in Fine Art Repro for over 30 years.
- When workflow involved processing film I wouldn't strike a set until I had examined dry film.
- Today, I still scrutinize all my captures before I set up the next painting.
- After I bought the scan back I found that I needed to re-adjust the camera and to rescan.
- Then Better Light sold me on the Zig Align system but I still needed to rescan too much, I took a good hard look at the whole process, and things got very interesting. It always involved re-zig alignment

- My studio rig is built from Norma / P / F2 / P2 pieces.
- It is almost too heavy for the Geared Manfrotto-400 (Canadian) or Bogen 3263(American) head without taking some care. The geared head is only rated for 10 Kg or 22 lbs., but it still works fine.
- By angling the camera down a few degrees I can work the play in the gears. I shoot against a heavy metal clad door leaning up against the wall so I have my desired angle.
- An added bonus is that my larger Zig Align mirror sucks up tight against the metal door instead of dangling loose needing to be pressed up against an upright wall.

- Here is a picture of the weakest part of the whole assembly. The camera balances on this tiny little piece highlighted in red.

- I believe that there is small amount of movement inherent in the gear assembly. This allows it to move and to work in the first place, but this same slack allows a heavier camera to throw out camera to copy board alignment.

My camera is actually a teeter-totter in disguise.

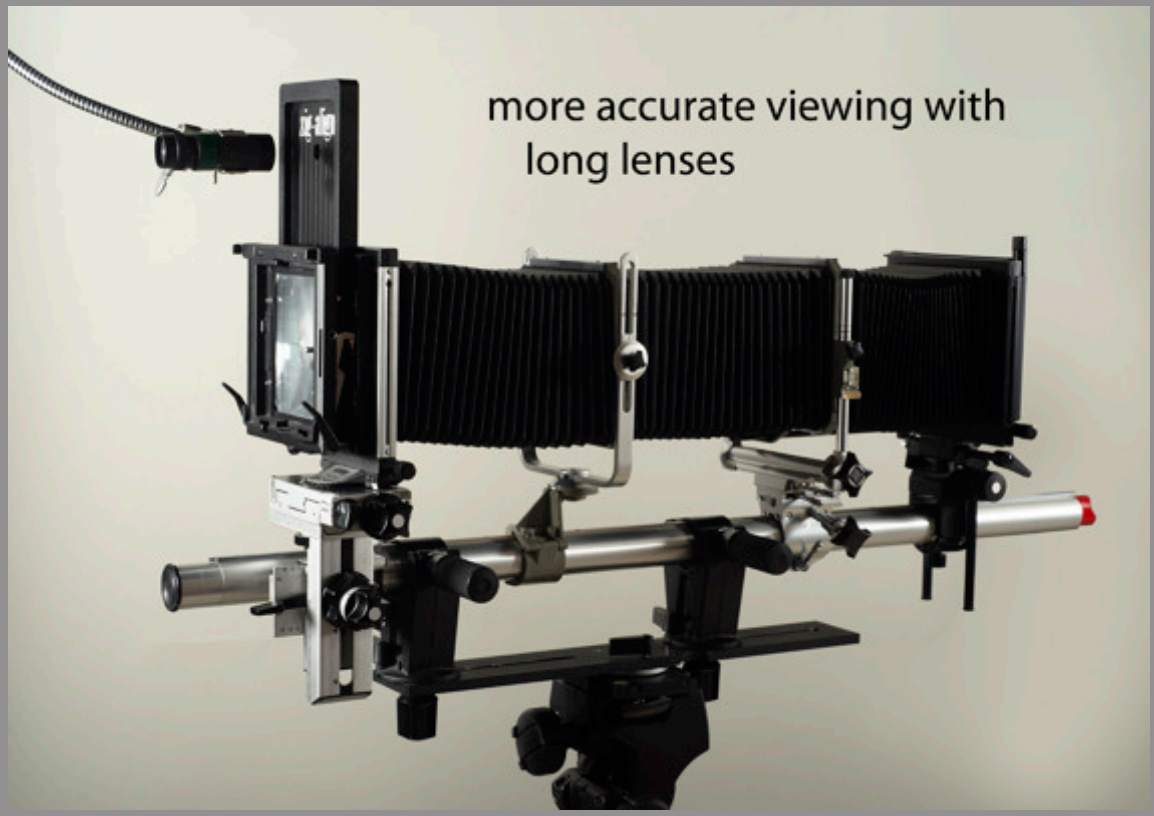
- It is all about balance. Changing the weight distribution over the balance point of the geared head will throw off alignment.
- If I change lenses or if I change the lens position on my monorail there will be a change to the balance of my Teeter-Totter. The rig will exert either a downward or an upward force. Even adding a polarizer, or a compendium lens shade, or adding a second bellows and an intermediate standard will affect alignment.
- Make absolutely sure that your camera is completely dressed up the way you will use it before you zig align. It is the very last step when I make any of these kinds of changes. Even the weight from a Binocular viewer needs to be taken into account. Don't leave the viewer in place when you scan unless you leave it in place when you Zig-align and that is a feat in itself.

- Pola Filter rotates 180 degrees

- This great piece of gear serves several purposes. Preliminary focusing and composing can be done without the filter in place.
- You can view the effect of double polarization without looking through the lens. Since the filter swivels 180 degrees, the exact effect is maintained.
- More important the forward backward balance to my teeter- totter is left unaffected.
- However, be careful. I have found that problems can arise when using a lens with a much smaller diameter than the filter. This occurs when a very light subject with sharp edges has been painted in a black surround. I have seen a ghost reflection from the light subject appear as a secondary image in the dark surround. I believe this is caused because the filter is not exactly parallel to the lens and some light has got in behind on the polarizer.

Viewing Aid

- Use a focusing monocular held in a test tube clamp fastened to a Manfrotto - Bogen gooseneck to view the Zig pattern. This rig is set up on its own light stand and does not come into contact with the camera. The reflected Zig Align image can be difficult to examine when seen from a distance.

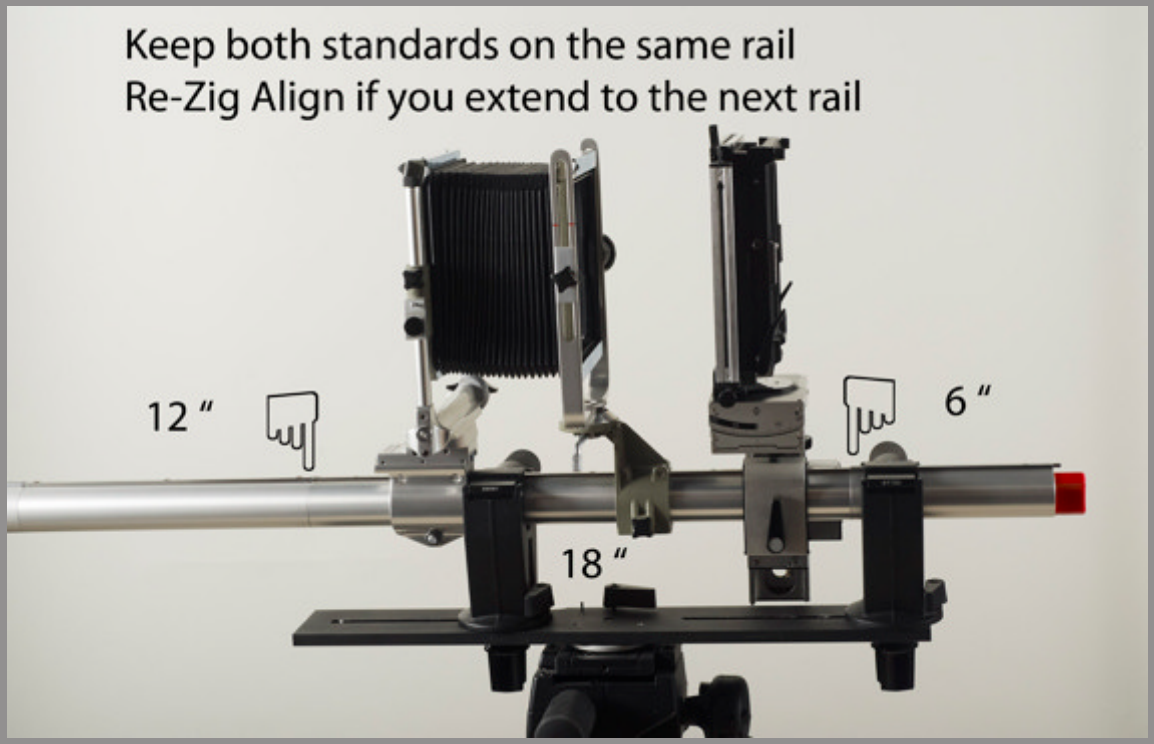


- Doesn’t touch the camera

- Support your cable
- Use a ceiling hook or a spare tripod to support the insert cable up from your rig. This keeps the weight of the cable from dragging the back end down.

Precision Made Monorails?

- You would think that Sinar monorails would be precision made to perform flawlessly.
- Joining several shorter lengths together to make a longer rail, I expected perfection. After all that is what the P stands for… Nope!
- When a standard crosses over to an-add on rail, expect to re-Zig-align again.
- Instead use a single longer rail to keep both standards on the same piece of track. You can't always do this with long lenses or extreme magnifications, so please remember that the camera will not stay in alignment when crossing over to another track. If you do join two rails together make sure that the join resides in the monorail clamp…That way the two rails operate as one rail after Zig-Aligning.



- 12 plus 6 plus 18
- Super close ups and longer lenses

- Sinar made changes to their lens boards making later models thicker.
- The Norma front standard will simply not work with the thicker models. It will be skewed for sure.
- Also be careful with the older Green Norma boards as they can bend easily and then they don't seat properly.
- While we are on the topic of lens boards make sure that the one that your zig align mirror is installed on fits properly. Don't just use (any old board.)
- It might not fit the way your real lens board does.

- That old 8X10 rear standard may work in reverse to hold an 8X10 glass plate in place.

Slide mounted to a lens board

- This lens board has a 35 mm slide mounted into it
- The silver ring is actually a Bronica lens mount recycled from an extension tube
- F2.8 mm 6X6 lenses useful in pano mode
- Even 35mm lenses can be used in reverse for extreme close-ups

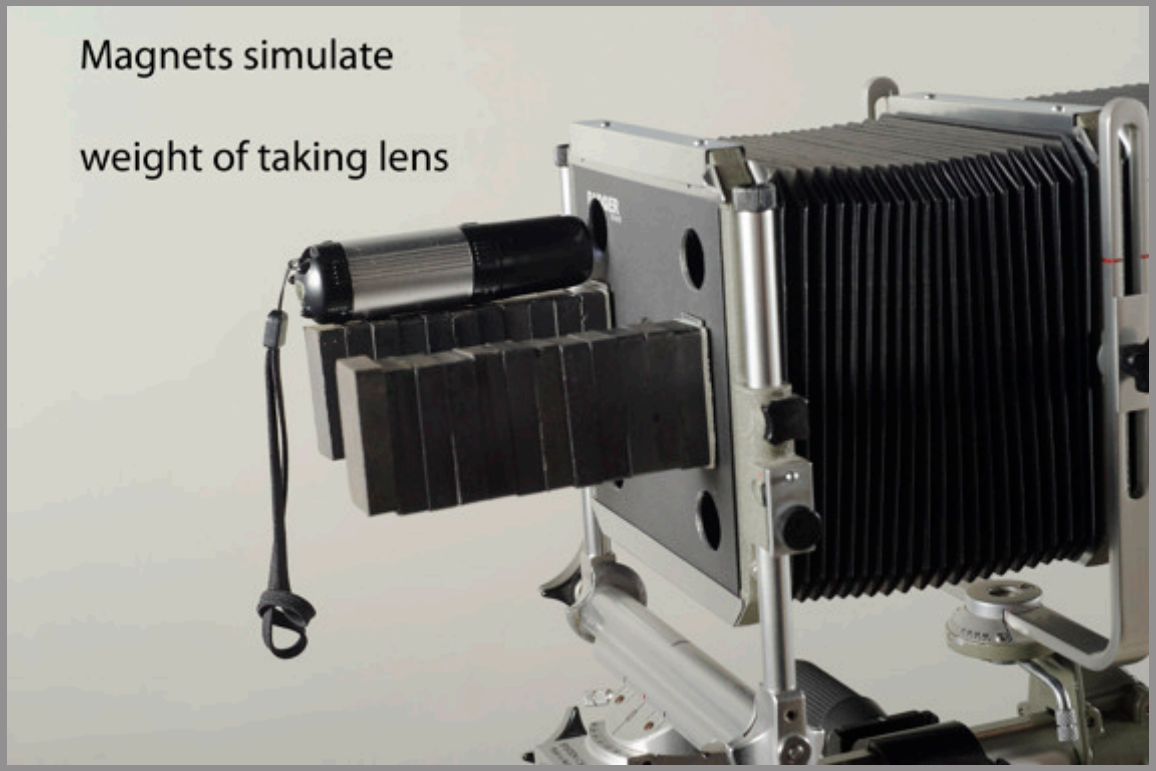
- Mask off all non-imaging light

- 300mm 5.6 Long Lens is front heavy
- Tip force measures 3 lbs
- Even with IR filter mounted in the rear

- It is a brilliant design concept building the ZP4 mirror to the same size and weight as a scanning insert-to exert the same force as the Better Light insert.
- Bill Ziegler of Zig-Align deserves credit.
- This addresses the Teeter-Totter balance for Camera to Copy alignment
- Nothing addresses the downward force that big long lenses exert to the front standard.
- Sinar DBM mounts and barrel mounted lenses all cantilever out the front.
- I add more or less weight to the mirror mounted lens board; then I can align the camera more accurately and equal the cantilever weight and the downward force exerted on the front standard.

- A Digital Fish Scale to measure the downward force

- Measure that downward force with a digital fish scale and then stack magnets onto the surrogate Zig align board to equal that same force. This stresses various components including the steel clips - which hold my lens boards in place .
- Yes there is a difference between adding the magnets and not adding them.
- First I Zig Align without considering the lens weight and then I add equal weight, I can see that I am no longer in perfect alignment.
- Most front standards should be capable of resisting the force from small completely symmetrical lenses, but then there are those big old favorites.



- I took it a couple steps further. I drilled 4 holes into the dedicated Zig mirror lens board. This lets in light and allows me to zig align without the need to disassemble and reassemble my rig, which can nudge things out of alignment. An LED flashlight is figured into the weight and is my light source.

- Hybrid P/Norma …..
- I can use the zero detents on the P back along with its geared shift, rise, and fall with the ability to lock down the Norma Front Standard.
- I have removed the detents from my Norma standard so that I can lock the alignment down tight without it slipping into a detent. I have a PDF on the complete CLA (Clean / lubricant /Adjustment) of the Norma (compliments of Philip Morgan.) for anyone that is interested.

- There are locations that I have had to shoot on carpet. The camera will still be moving after an hour so I merely leave it overnight. Yes; I had to re-Zig align in the morning. Then I was able to get down to business.

- I made an 8 foot by 8 foot wooden copy board to staple and screw nail into. Sometimes warped stretchers and hardboard panels need to be bent back into flat. The only time I have difficulty is when a hardboard panel is warped towards the camera in the middle. I try to get artists to gesso both sides of the panels but artists are frugal. Use the large headed screws made to fasten metal studs together. Their large heads hold down the edges without damage to the painting.

- Hold Downs
- With warped canvases I use long deck screws. To give them a larger head I make use of the rubber and steel washer part of metal siding screws. To prevent damage to the sides of the canvas I use heat shrink tubes around the deck screw to keep sharp threads from grazing the painting.

Thank you for your time