

# Monitoring Bars During Transport

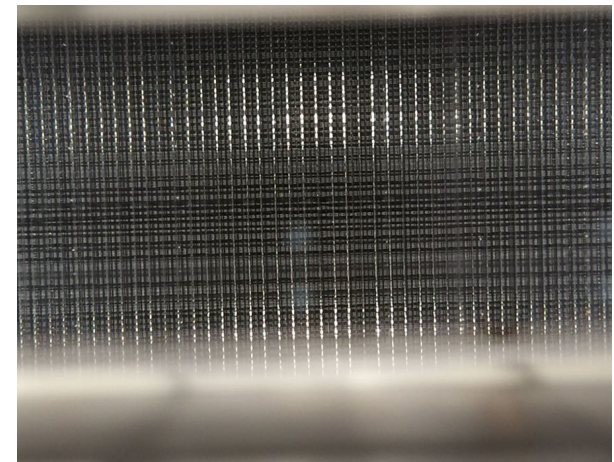
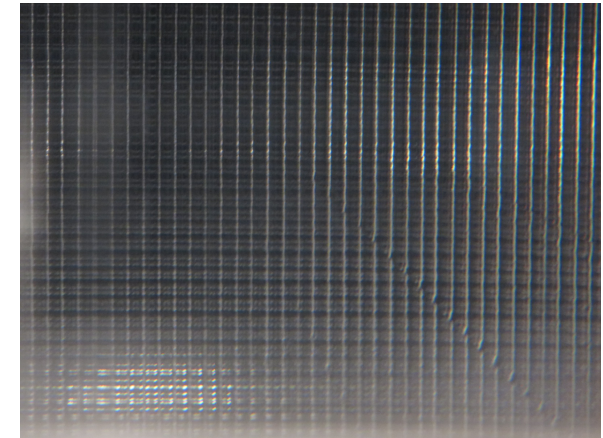
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# Monitoring system

- Most possible damage - a slight bar decoupling at bar corners.
- Best approach to monitor that aspect would be to use camera looking inside individual.
- Maybe using camera with wide angle lens would allow to monitor more than one bar? Have to test it.
- Belle II TOP folks used simple off the shelf models of cameras to monitor the optical joint so we should be able to get something with higher quality if needed.
- The main question is how to fix it and how to take the signal out?

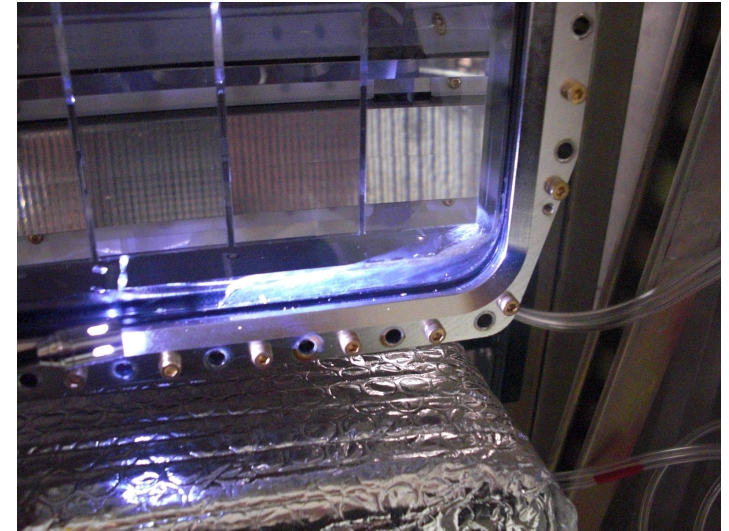
Photos taken by Jerry of single bar in a box using small old cannon camera placed 1-2 feet away from window



# Monitoring system procedure

- Opening boxes to take pictures during travel is rather bad idea (if at all possible)
- Fixing setup inside will require pulling at least 2 cables per camera out (+LED light) to get power and signal out.
- Image could be connected to laptop and monitored from front of the track using reference image to compare.
- I'm in process of trying to schedule trip to SLAC for middle of January to see the boxes, test with some borrowed cameras and shine laser.

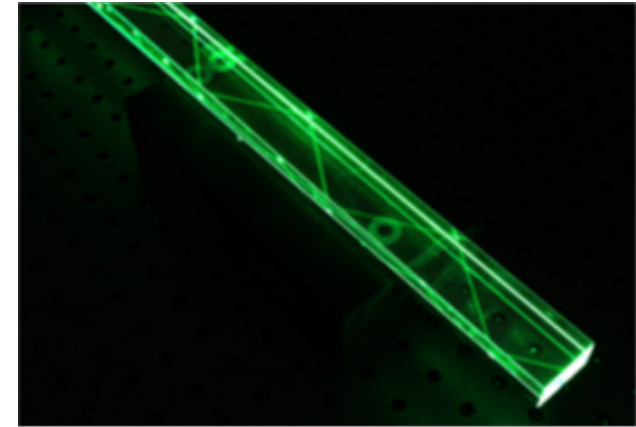
View from front window to the box



# QA system

- Current idea is doing laser scan across bar surface before and after travel.
- Laser can be adjusted parallel to bar box and moved down to shine in to the bar, reflected of the mirror and measured by photo diode.
- Taking measurement with laser bouncing of the bar sides has few challenges and might not provide much information.

Laser bounced of the sides of prototype bar



QA setup for PANDA Barrel DIRC bars in GSI

