WITPAC Crush Zone Safety Procedure Matrix – For Instructor Use Only

Step	Type of trailer/component	Specific scenarios	Personnel	"All clear" before moving	Visual Indicators	Chocks	Lockout	Driver required to be out of cab	Line of sight	INSTRUCTOR NOTES Team = Driver, PEVO(s), steerperson, plus any origin/destination crew. "All clear" process prior to movement = visual check, radio check, horn honk, pause.
At origin										
1	Blade trailer - extendable	Extending or collapsing the blade trailer	Driver and team	Y	Y	N	N	N	N	Extendable trailers used for blades are telescoping. The tractor has to move for this task - so you can't do a lockout or chocks, and the driver has to be in the cab.
2	Blade trailer - extendable	Positioning chains and dunnage when preparing trailer for loading	Driver only	Y	Y	Y	N	Y	n/a	If it's only the driver doing this, the driver cannot move the tractor because they're outside. Visual indicators and chocks are necessary to alert anyone else in the area that there is work going on, and are also a reminder to driver to check around the vehicle before leaving. Chocking wheels when parked ANYWHERE is best practice.
2	Blade trailer - extendable	Positioning chains and dunnage when preparing trailer for loading	Driver and team	Y	Y	Y	Y	Y	N	"Team" means even ONE extra person. In this case, the driver could theoretically move the tractor cab, so they should perform a lockout. Driver may be assisting with placing dunnage or chains and may not be watching the rest of the team.
1	Base tower on self-loading Schnabel	Loading a base tower at origin using a self-loading Schnabel	Driver only	Y	Y	N	N	N	n/a	If the tower is sitting on proper dunnage, the driver can pick up the tower by themselves without any help using a double Schnabel. This takes constant movement and adjustment -- thus no chocks, lockout, etc.
2	Base tower on self-loading Schnabel	Preparing a loaded base tower for transport using a self-loading Schnabel (hooking up air lines, applying flagging, etc.)	Driver and team	Y	Y	Y	Y	Y	N	This happens AFTER hookup -- now they have to connect a bunch of stuff. Driver may be working on hooking up equipment and may not be watching the rest of the team.
1	Machine head (MH) trailer	Team building out a MH trailer	Driver and crane crew	Y	Y	N	N	N	n/a	Machine head trailers are two sets of axles that ride stacked on trailers (stinger + jeep). These are lifted off with cranes, connected together, and then connected to tractor. The visual indicator is to remind driver and others that folks will be in and out of the crush zone while they are building.
2	Machine head (MH) trailer	Driver assisting with MH positioning on trailer during loading at origin	Driver and crane crew	Y	Y	Y	Y	Y	N	The crane crew is loading, the driver is out of the cab, driver's hand may be on the MH while they are making sure that the MH is properly located on the trailer.
3	All	Team preparing the load for transport, doing component lashing/securement, and tarping for any commodity	Driver and team	Y	Y	Y	Y	Y	N	Instructor can ask "How does this change if it is only the driver doing the lashing/tarping?" Ex: it's just a transformer which does not have a team; that makes it more like the examples above where there is only a driver. In which case, no lockout.

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En route										
1	All steerable trailers	Rear steer preparing trailer for a steerable turn (includes unpinning and operating the pony motor)	Steerperson	Y	N	N	N	N	N	This is happening fast and in a roadway situation, so measures are not required. Driver should assess whether roadway situation is safe to exit cab - often it may not be. On a rural/low-traffic road, driver can get out and observe to make sure PEVO is out of the way before movement. Note that on most current equipment, unpinning does not require entering true crush zone -- pony motors differ. *On some non-blade (for instance, machine head) trailers you may have to enter the crush zone; blade/tower trailers - rarely. *Also note that we have a scenario about this.
2	All steerable trailers	Pinning axles and/or turning off pony motor after a steerable turn	Steerperson	Y	N	N	N	N	N	Even if axles don't need to be pinned, the pony motor may need to be turned off.
1	All loads	Routine stops for driver to inspect the load/securement	Driver	Y	Y	Y	N	Y	n/a	Lockout may not be needed/feasible because driver is out of the cab. However, if another team member is checking and driver is not out of the cab, we would want lockout. NOTE: these stops need to be in safe locations, not ad hoc on the side of the road.
1	All loads	Routine stops for team to inspect the load/securement	Team	Y	Y	Y	Y	N	N	
1	All loads	Normal maintenance activities performed by driver	Driver	Y	Y	Y	N	Y	n/a	This is similar to a "routine check" (above)
1	All loads	Team investigating an unexpected mechanical issue while en route	Driver and team	Y	Y	Y	Y	Y	Y	LOCKOUT ESSENTIAL here. NOTE: extra caution must be taken if in a high speed or high-volume traffic area.
1	All loads	Maintenance activities performed by anyone other than the driver	Team or maintenance personnel	Y	Y	Y	Y	Y	Y	LOCKOUT ESSENTIAL here. NOTE: extra caution must be taken if in a high speed or high-volume traffic area.

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1	Schnabel trailers	Driver lowering and then raising (or raising, then lowering) a tower on Schnabel equipment en route to clear overhead or undercarriage obstacle	Driver	Y	N	N	N	Y	n/a	Ex: for going under a bridge. Ask "What else should be done before proceeding?" Re/measure the full load height. Choose a safe location and avoid driver's side (passing traffic). Driver is out of cab and performing raising/lowering, so it's okay not to do chocks/lockout/visual indicator because this is a high speed roadway situation. Visual indicators could help others know that driver is doing work, but may not be necessary or feasible. Driver should NOT get back in the cab until measuring is complete. NOTE: process could be reversed to go over RR tracks or other undercarriage clearance obstacle (raising then lowering/measuring)
1	Schnabel trailers	Raising or lowering a Schnabel, if not done by the load driver	Team	Y	N	N	N	Y	Y	The same applies as on the previous line, but the driver SHOULD get out of the cab and watch whoever is doing the raising/lowering.
At destination										
1	Blade trailer - extendable	Pulling up to pad for blade unloading	Driver and steerperson	Y	Y	N	N	N	n/a	Often the driver must pull out from under the blade while suspended.
2	Blade trailer - extendable	Attaching crane rigging	Crane crew	Y	Y	N	N	maybe	maybe	Often the driver must pull out from under the blade while suspended.
3	Blade trailer - extendable	Pulling out from under suspended blade	Driver and steerperson	Y	N	N	N	N	n/a	Often the driver must pull out from under the blade while suspended.
1	Tower on Schnabel/dolly combo	Driver prepping tractor and Schnabel/dolly combo for lowering Schnabel end of tower onto dunnage		Y	Y	Y	Y	Y	N	Driver is working on Schnabel connection themselves.
2	Tower on Schnabel/dolly combo	Pulling tractor away from Tower after disconnecting Schnabel end of Schnabel/dolly combo		Y	Y	Y/N	N	N	n/a	NOTE: Chocks on tractor must be removed; chocks on dolly remain in place. Also note added caution for team, as tower could shift forward slightly during this process.
3	Tower on Schnabel/dolly combo	Additional steps for unloading a top tower (loaded on a Schnabel/dolly combination) using one crane (at dolly end)		Y	See additional tab	See additional tab	See additional tab	See additional tab	See additional tab	Complicated. See additional tab.
1	Varies	Offloading a generator or a transformer with a crane		Y	Y	Y	Y	Y	Y	Likely won't come up because these are unescorted loads (no WITPAC required)
1	Varies	Offloading a generator or a transformer with a forklift		Y	Y	Y	N	Y	Y	Forklift does not involve site team (riggers) entering the crush zone. So there is no extra crew to do a lockout for.

Schnabel/dolly combo with tower section - offload procedures								
Step	**Description**	**"All clear" process prior to movement**	**Visual Indicators**	**Chocks**	**Lockout**	**Driver required tobe out of cab**	**Line of sight**	**Instructor notes**
1	Hold pre-offload meeting (driver & crew)	Y	Y	Y	N	Y	n/a	
2	After pulling onto pad (stage)	n/a	Y	Y	Y	Y	Y	Driver should ideally be the one to put out visual indicator and chocks. NOTE: Often rear steer will do this before driver is out of cab, i.e., going into crush zone to place the chocks! Teach that rear steer must wait until they visually see the driver out of the cab before entering crush zone to place chocks. Let's make this an overall concept for chocking when PEVOs are involved.
3	Site crew places dunnage under tower front (Schnabel end) with a forklift.	n/a	Y	Y	Y	Y	Maybe	Usually the forklift is ready, idling and waiting to slip the dunnage under the tower.
4	Driver preps for offloading front end	n/a	Y	Y	Y	Y	N	May be disconnecting safety wires to dolly or otherwise doing something that has to do with lowering, but NOTE: driver does not unbolt the Schnabel end/flange at this point.
5	Lowering front end of tower onto dunnage	Y	Y	Y	Y	Y	N	Should do an "all clear" for site crew before lowering. The driver lowers the tower end from outside of the cab (using a lever).
6	Driver unbolts Schnabel from flange and removes any remaining connections	n/a	Y	Y	Y	Y	n/a	
7	Driver pulls away from front end of tower	Y	Y	No front/Yes rear (dolly)	N	N	n/a	During this process it is possible for the tower to settle slightly; this could pull the dolly slightly forward. Crew must be out of the crush zone during this process.
8	Driver parks the cab (if not needed to pull out dolly)	n/a	Y	Y	N	N	n/a	No lockout needed because at this point it is just a parked vehicle.
9	If using forklift to remove dolly: crew pre-positions forklift at rear of dolly (control strap(s) attached)	n/a	Y	Y	n/a	n/a	n/a	Visual indicator and chocks still in place from beginning.
9	If tractor needed to remove dolly: driver connects to dolly (directly or using a pull bar "A")	Y	Y	Y	Y	N	n/a	Driver usually needs a spotter to get positioned (commonly, backed up) to dolly. Visual indicator, chocks, and lockout needed if crane is not immediately ready to lift tower, i.e. more must be done to ready for lifting tower off dolly.

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10	If using forklift to remove dolly: crane lifts back end of tower and forklift pulls dolly out	Y	N	Crew may move chocks to keep dolly from rolling too far	n/a	n/a	n/a	This is the messiest part of the process. Most important is calling an "all clear" before forklift pulls the dolly out. NOTE: in this case, the forklift driver or spotter will likely initiate the "all clear."
10	If tractor needed to remove dolly: crane lifts back end of tower and tractor pulls dolly out	Y	Remove from tractor AND dolly	Remove from tractor AND dolly	Reverse before moving (if applicable)	N	n/a	
11	Site crew positions dunnage under tower end. Crane lowers tower onto dunnage.	n/a	n/a	n/a	n/a	n/a	n/a	Driver and team should be out of the crush zone for this.
12	Forklift or tractor moves dolly to a location and position where the tractor can reconnect.	n/a	Y	Y	n/a	n/a	n/a	This position should be determined in pre-offload meeting BEFORE staging on pad. Crew or driver should reapply visual indicators & chocks to dolly.
13	If dolly parked by forklift: tractor moves to dolly location to reconnect	Y	Remove	Remove	N	N	n/a	Driver removes visual indicator and chocks, and does all clear before moving from parking spot
14	Driver backs up to dolly	Y	On dolly	On dolly	N	N	n/a	Driver should do an all clear to check that no crew are present before backing up to dolly
15	Driver hooks up to dolly (mechanically)	Y	Y	Y	Y if other team members assisting	Y	N	Driver and other team members may be doing different things at this point.