Spartan TDA Cheat Sheet

**General Vehicle Specifications**
- GVWR: 74,500 pounds
- Unit Height: 11’ 3”
- Unit Length: 59’ 3”
- Unit Width: 9’ 11” mirror to mirror
- Brakes: F-Disc, R-Drum, T-Disc
- Auxiliary Braking: Jake Brake and Telma

*Modified trucks will have two placards: the original, and a new one identifying that Spartan changed the Axle weights.*

*Each truck will be weighed and the actual over the road numbers will be published.*

**Ladder Specifications**
- Vertical Operating Height: 100 feet
- Horizontal Reach: 96 feet
- Operating Range: -10 to 75 degrees
- Tip Load: 500 pounds
- Outrigger Spread – Beam Extended
  - With Jacks Up: 17 feet 1 inch
- Outrigger Spread Planted: 16 feet
- Ladder Pipe Rating: 1000 gpm
- Maximum wind speed: 50 mph

**Cab Tilt Location**

**Battery Box and DEF (6 Gallons of DEF)**

**Generator PTO/Tiller Power Steering**
- Always engaged
- Tiller Power Steering uses hydraulic fluid from the aerial system
- Fluid sight glass in compartment behind cab on officer’s side with cab tilt
- 4 Locations to excite Generator

**Locking Differential** - Drive axle has a true locking differential - Makes both sides turn together
**Jackknifing:**

- There are audible and visual jackknife indicators in both the cab and tiller cab.
- Two proximity sensors are located below the 5th wheel.
- The alarms are labeled “Approaching Jackknife.”
- The alarm begins to sound when you are approaching jackknife.
- The alarm continues to sound for the range of the sensor.
- The alarm STOPS when you have passed the sensor.
- Passing the sensor will cause damage to the vehicle.

*The unit MUST come to an IMMEDIATE STOP upon activation of the “Approaching Jackknife” alarm.*

*The unit officer MUST disembark the unit and watch the inside pinch point until the unit has exited the jackknife.*

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**Camera Locations**

**Cab Controls**

**Vista Display**

**Aerial PTO – Switched on Dash – There is no Front Brake Lock**

**Regeneration**

**Scene Lighting and Generator**

12 Volt Scene Lighting

- All but 2 body mounted scene lights are 12 volt.
- Do not require generator power.

10kW PTO driven hydraulic generator

- Generator located on trailer under aerial ladder.
- PTO always engaged.
- Can be excited from Driver’s seat, Officer’s Seat, Tiller Cab, and Pedestal.
- Powers tripod lights on back of cab, 120v outlets on body, cord reels, tiller HVAC.
**Tiller Cab**

Push to Drive Pedal – “Range Inhibit”

Camera Displays

HVAC - Both Air Conditioning AND Heat are run from the generator
**Aerial**

- Park on level surface or with cab facing up hill or downhill. (Cab facing downhill will allow for more front to rear correction)
- Position the tractor (Cab) of the unit so it is within 45 degrees of the centerline of the tiller trailer. Jackknifing of the unit is not required, nor recommended.
- Stay on solid ground like concrete or blacktop. Ground needs to be capable of fully supporting 75 PSI
- ALWAYS use provided ground pads

**PTO Engagement**

- Place Unit in Neutral and Set Parking Brake
- Engage Aerial Power switch
  - Indicator light on switch must illuminate.
  - This indicates that the PTO has engaged.
  - *There is not Front Brake Lock to activate in the cab.*

**Outriggers**

- X-Style Outriggers
- 4 Hex Bolts on top of outrigger - NEVER make any adjustments to any of the bolts on the top of the outrigger

**Deployment**

- Fully extend outriggers
- Run jacks completely down
- Finish by lowering beams
- Jack MUST be lowered before beam
- Improper order will decrease outrigger footprint by over a foot
- Aerial capacity will be reduced

**Manufacturer Recommendations**

- Level truck side to side FIRST
- Level truck front to back LAST
Set outrigger on “working” side first
Completely extend “working” side until light is on
Light is required on “working” side
Once outriggers are out, jacks can be lowered together

Review Points

Inclinometer
- 0 to 5 degrees either side is 100% capacity (Green)
- 5 to 10 degrees either side is 50% capacity (Yellow)
- Above 10 degrees DO NOT OPERATE!!! (Red)
- NOTE - Front to back ranges are different than Pierce TDA’s

5th Wheel Lock
- Four hydraulic pistons that lower to marry the tractor and trailer for stability
  - Press and release switch to deploy
  - Audible alarm while deploying
  - Light will illuminate when properly deployed
  - REQUIRED for aerial operation
  - If contact is lost during aerial operation pistons will automatically adjust
  - Jacks cannot be adjusted once 5th Wheel Lock is engaged
  - When setup is complete both “Extend” and “Jack” deployed lights as well as the 5th wheel lights should be on. (Unless “Short Jacked”)

Short Set – aka Short Jacking
- Outriggers must be fully deployed on working side
- Outriggers can be short jacked on the non-working side
- Short jacked side must have jack slightly extended before lowering beam
- Rotation Inhibit System will stop aerial rotation to short jacked side
  - Rotational overrides exist inside turntable pedestal
  - They are not locked, but should not be used
  - Operator assumes all risk of aerial failure as they are overriding legitimate safety features.
Light on pedestal will indicate which side is short jacked
Override switch on pedestal must be pressed to raise ladder out of cradle

Tip Loads - When properly stabilized
- 500 pounds in any configuration
- 250 pounds when flowing water

Best Practices
- NEVER use hydraulics to push down on objects with the aerial device
- AVOID any type of upward load
- AVOID any type of torsional load
- ALWAYS use high idle when using two aerial functions
- ALWAYS chock both front tires against grade
- When bedding ladder hold in “lower” position until movement stops to lock ladder in cradle

Pedestal Controls
Controls are all true hydraulic valves
- When operating, always feather on and off the controls
- Raise
- Rotate
- Extend

Generator Excite – one of Four Locations to excite
EPU
High Idle
Tracking Lights
Monitor Position Indicator Lights
- If the light is not illuminated, it means that the Monitor is not in the stowed position. **DO NOT** bed the aerial.
Waterway –

- Pinable
- Monitor has Auto Stow feature
- Aerial ladder will not bed until monitor is stowed
- Fog Stream ONLY
- DO NOT keep a smooth bore on
- Damage to trailer will occur from smooth bore
  - There is a smooth bore in the inventory
- If you must retract ladder while flowing water do so VERY slowly to avoid blowing seals on piping
- 2 ½” discharge outlet
- Used for “flying standpipe”
- Has quarter turn ball valve

Rope Roller

- Designed to be used in same configuration as Pierce Lyfe Pulley
- Rated at 500 pounds

Emergency Power Unit – EPU

- Designed as back-up to hydraulic pump in event of failure
- Intended for no-load use to stow aerial and outriggers
- Powered by chassis 12v electrical system
- 1.5 gpm @ 2000 psi
- 2 minutes on, 10 minutes off duty cycle
- While operating the desired aerial or outrigger function the operator must simultaneously press and hold the EPU switch
- Only use 1 function at a time

Emergency Procedures

- Outrigger Manual Controls
  - Used during failure of electric outrigger switches
Located on officer’s side in compartment above outrigger

Corresponding valve for each switch on outrigger panel

Manufacturer recommends that ALL emergency procedures are exercised and tested monthly

Grease Less Ladder

- This DOES NOT mean that the ladder does not need greased
- It is greased less often
- Uses a zinc coating on slides and sheaves
- Grease should be applied to last 4 feet of each section once per year
- Grease to be provided by CMF
- Zinc coating

Inspect sheaves for wobble

- Indicates wear of bearings inside of sheaves
- Very little clearance so early identification is imperative

DO NOT grease planetary gear

- Grease will attract dirt
- Bearing is attached to Vogel lube system

DO NOT pressure wash aerial ladder

- Preservation of zinc coating is imperative