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***

Camera Locations

Cab Controls

Vista Display

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

Regeneration

<u>Scene Lighting and Generator</u>

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