Springfield Facility Tour Stops Outline

Time: (9:00AM – 11:00AM)

1. Lobby (10 min)
    - **Matt Fox (Chassis Operations Manager)**
        - Welcome Sutphen Chassis/DCT
        - Introduction to Haley Dick…..Receptionist (Initial Face of Springfield)
        - Key Players/Roles within Division
        - Check in Process & visitor badge explanation/distribution
        - Safety of our Visitors & Safety Glass distribution

2. Customer Inspection & Acceptance (5 min)
    - **Jason Haulman (DCT Operations Manager)**
        - Hydrostatic pump test.
        - 3rd party pump and generator tests.
        - Graphics install.
        - Final inspection/Delivery
    - Bulletin points for signage at this stop
        - Dedicated Support for Overall Truck Review
        - All the Necessary Tools Available for a Thorough Inspection
        - A World Class Team Assisting Every Step of the Way
        - Expect nothing less than a Sutphen

3. DCT Body Prep (5 min)
    - **Jason Haulman (DCT Operations Manager)**
        - Remove & catalog all treadplate, fender, dividers & hosebed floors.
        - Drill all specialty light holes & custom options.
        - Pre-drill for roll-up doors.
        - Deburr all trim prior to installation.
        - Need talking dialog/talking points here
        - At this point the chassis will be in the final stages, rear fenders are being assembled & Chevron panels are having graphics applied.
    - Bulletin points for signage at this stop
        - Program 1 Custom Pumpers
        - Premium 6061-T6 3/16” Aluminum Material
        - Sutphen Designed Program Module
        - Custom Extrusions Designed for a Solid Framework
        - Functional Final Testing
    - Processes going on outside of this area
        - Chassis, Pump, and Body all Come Together for Assembly and Testing

4. DCT Body Assembly (10 min)
    - **Jason Haulman (DCT Operations Manager)**
        - Install doors.
        - Install front body tread plate and steps.
        - Install rear chevron panels and steps
        - Install compartment Uni-strut
        - Install fender assemblies
        - Install rear discharges
    - Bulletin points for signage at this stop
        - One sign for DCT Body Prep / Assembly / Finish – reference points above
    - Process going on outside of this area
        - Chassis is having pump and rear drop installed.

5. DCT Body Finish (5 min)
    - **Jason Haulman (DCT Operations Manager)**
        - Set body on chassis.
        - Connect all plumbing.
        - Install generators.
        - Install all shelving
    - Bulletin points for signage at this stop
        - One sign for DCT Body Prep / Assembly / Finish – reference points above
    - Processes going on outside of this area
        - Pump test and graphic installs are being scheduled.

6. Cab Operation 1 (15 min)
    - **Keith Ackerman (Quality Engineer)**
        - All special configurations are added/modified. Including upper and lower compartments, overhead storage and external side EMS compartments.
        - 6061-T6 aluminum extrusion and 1/8”-3/16” 5052-H32 aluminum panels.
        - Contoured cab front and roof for greater strength and rigidity.
        - Stainless Steel Door panels.
        - Roof bows and extruded radiuses are all welded in for the sides of each cab.
        - For optimal consistency in the assembly process fixtures are utilized. Including the heater, grab handles, window cutouts, door flange seals, seat box doors and side EMS cabinets.
        - Currently fabricating and assembling four cabs a week.
        - Throughout the assembly process there are over (70) quality inspection points completed by the operator, Supervisor and Quality Engineer.
    - Bulletin points for signage at this stop
        - Cab Structural Integrity Never Compromised
        - Installation of Major Cab Components
        - Seam Seal All Welds
        - Custom Crafted Compartments Installed
    - Processes going on outside of this area
        - All Major Components Have Been Ordered For Assembly.

7. Frame Shop (15 min)
    - **James Maddy (Project Engineering Manager)**
        - Frame rails are treated with Catha-coat 302H zinc rich primer, and a high-quality chemical and solvent resistant top coat, for superior corrosion protection.
        - Frame rails, cross members, and suspension hangers are Huck Bolted for strength, and all serviceable items are fastened with Grade 8 bolts for ease of repair or replacement. (These are standard on all Sutphen chassis. Used in the aircraft industry).
        - All chassis frame rails are double thick at pump module and suspension mounting locations. Options for single, double, and Domex 110,000 psi frame rails.
        - To ensure alignment accuracy each frame rail is tested via the Protrak QCT laser alignment tool. Measurements are captured and saved within HS documentation.
        - Lifetime frame rail warranty.
        - Currently building four to five frames a week.
        - Throughout the assembly process there are (75) quality inspection points completed by the operator, Supervisor and Quality Engineer.
        - *Huck bolt demonstration (Steve Stairwalt).*
    - Bulletin points for signage at this stop
        - Single and Double Frame Rail Options
        - Rails are bead blasted and sealed with Catha-coat 302H
        - Huck Bolted Fasteners in Frame Rails
        - Air Ride and Spring Suspension Options
        - Assembly holes and flange reliefs precision laser cut
    - Process going on outside of this area
        - Cab returning from paint.

8. Cab Operation C02 thru C04 (10 min)
    - **Scott Benton (Cab Line Operator)**
        - All fasteners are coated with thread lock and nyseal. Providing a self-locking, self-sealing and corrosion resistant application.
        - Application of MT-DTA insulation coating to the underside of the cab and to the interior, Officer seat box provides for up to 400 degrees of protection.
        - All wiring is numbered & color-coded for ease of installation and serviceability in the field.
        - Single piece forged Stainless Steel grab handles for wear resistance.
        - Large, full width egress cab steps. Aluminum, non-slip surface.
        - Durable, urethane coated dash, switch console, and engine hood.
        - Engine hood insulation is rated for 220 degrees and provides a sound barrier for a comfortable acoustic environment inside the cab.
        - 14-gauge 304 Stainless Steel Polished Headlight Housings.
        - Extreme duty A/C system mounted low on the engine hood, and can withstand mounting of equipment such as hand lights, etc. The A/C and heat system features multiple vents, heat and A/C to feet, and a defroster that covers the entire width of the cab.
        - Currently processing five cabs a week.
        - Assembly process accounts for well over (200) quality inspection points completed by the operator, Supervisor and Quality Engineer.
    - Bulletin points for signage at this stop
        - Multiple Different SS Headlight Configurations.
        - Counter sunk nut zerts.
    - Processes going on outside of this area
        - Frame starts the same time the cab is started in C02. By the time the cab gets to C04 (HVAC), the frame is moving into brakes. The breaker panel assembly would be in process as well.

9. Brakes / Engine prep (5 min)
    - **Paul Snapp (Engineering Manager)**
        - Brake and electrical harnesses are coded, covered in high temperature loom, and secured within the frame rail, protecting them from debris and damage.
        - Plastic loom is applied over brake chamber hoses, instead off galvanized springs.
        - Utilize compression fittings instead of push to lock style. Compression fittings can withstand heat and prevent air leaks better than push style.
        - Frame components or bracketry are sand blasted, Catha-coated, primed and painted.
        - All wiring and hoses are all suspended off the lower flange and secured via insulated stainless clamps.
        - Area produces 4-5 frames a week.
        - Frame build process accounts for (65) quality inspection points completed by the operator, Supervisor and Quality Engineer.
    - Bulletin points for signage at this stop
        - Certified Cummins Engine Installers.
        - Built-in Compression fittings & insulated frame clamps.
        - Wiring harnesses are loomed for protection.
    - Processes going on outside of this area
        - The engine & transmission are being matched up at the same time the frame is in brakes. Body & pump module should be starting.

10. Engine Set / Exhaust (10 min)
    - **Nick Maddalena (Sr. Design Engineer)**
        - Radiator can be removed in sections through face of cab.
        - Air intake is at the top of the radiator to eliminate water from entering engine during flooding or high water.
        - Air is pulled over the cooling package to provide direct flow.
        - Intake 48” above ground level to allow fording deep water.
        - System exceeds ISO 5011 standards for cleanliness and dirt holding capacity.
        - Fully wrapped stainless steel exhaust for reduced heat reduction.
        - Power steering, transmission & fuel are all cooled through the radiator.
        - Batteries are mounted in a vented 304 stainless steel box, removable aluminum protective cover, on a Dry Deck mounting bed.
        - Offer steal and 304 Stainless Steel Fuel Tanks coated with an anti-corrosion solution (Corsol) and then wet painted. Tanks are FMCSA certified.
        - Area is currently producing 4-5 cabs a week.
        - Assembly process accounts for (120) quality inspection points completed by the operator, Supervisor and Quality Engineer.
    - Bulletin points for signage at this stop
        - Wiring Harness labeled every 3”.
        - All major electrical connections use Deutsch connectors.
        - Removable aluminum battery cover.
    - Processes going on outside of this area
        - Cab would be moving up into (C06 & C07) and the Body & Pump module would begin construction.

11. Cab Set (5 min)
    - **Brian Wilson (Chassis Line Supervisor)**
        - I-beam subframe that raises the cab compared to the competitors not having a separate subframe.
        - The under-cab substructure is a steel box tube design constructed with 5" structural I-beams joined to a 4" tube. The cab is mounted on isolators and the separate heavy-duty pivoting substructure for improved ride, stronger cab, and reduced sub-frame stress.
        - Rubber isolators are installed between the cab & subframe to eliminate electrolysis.
        - All wiring is routed through a 4" tube to eliminate pinch point opportunities.
        - Air operated cab tilt safety latch.
        - Area is currently producing (4-5) cabs a week.
        - Assembly process accounts for (75) quality inspection points completed by the operator, Supervisor and Quality Engineer.
    - Bulletin points for signage at this stop
        - One sign for Electrical / Cab Set / Cab Interior – reference points above
    - Process going on outside of this area
        - Body in entering shop for paint.

12. Electrical (5 min)
    - **Dan Rahn (Electrical Engineer)**
        - Engineering team reviews all lighting & amp draw configurations per customer specification.
        - Reprogrammable Load Manager. Easily transfer files if options are added at any time.
        - Key Points: LED Lights for inputs/outputs. USB Port for troubleshooting.
        - All relays & breakers are readily available at a local parts store.
        - All gauges are individual, not cluster, for ease of repair if needed.
        - All functional testing and programming are conducted prior to the mandatory (60) mile road test.
        - Each Chassis is accompanied by a Test Drive checklist that is completed by the operator, is verified by the Supervisor and then is checked in/documented by the Quality Engineer. The document verifies: gauge readings, alignment, required re-torqueing, fluid checks, operation of special equipment (ABS, Retarders, Jake Brakes), brake calibration and tire pressures.
        - A 2nd level post test drive alignment is conducted with the Protrak QCT laser alignment tool. Measurements are captured and saved within HS documentation.
        - Area is currently producing (4-5) cabs a week.
        - Assembly process accounts for (100) quality inspection points completed by the operator, Supervisor and Quality Engineer.
    - Bulletin points for signage at this stop
        - One sign for Electrical / Cab Set / Cab Interior – reference points above
    - Processes going on outside of this area
        - Body should be close to completion. Pump module should be ready.

13. Bumpers (5 min)
    - **Dennis Collier (Production Control Manager)**
        - All reinforcements are sand blasted, Catha-coated, primed & painted just like the frames.
        - Bumpers are constructed with a ¼" thick steel reinforcement behind a 10-gauge stainless steel, ¼" thick outer skin.
        - Over (300) different configurations of bumpers have been designed and are available.
        - Area is currently producing (4-5) bumpers a week.
        - Assembly process accounts for (30) quality inspection points completed by the operator, Supervisor and Quality Engineer.
    - Bulletin points for signage at this stop
        - Stainless Steel and Formed Steel Bumper Options
        - Bumper Lengths from 6" – 30"
        - Reinforced ¼" steel bumper plate
        - Plate bead blasted and sealed with Catha-coat 302H
        - Ease of Install/Maintenance
    - Processes going on outside of this area
        - Cab should be in C09 being trimmed out (Fenders, surround, ground lights and heater hose covers. Body should be close to completion.

14. Cab Interior (5 min)
    - **Dave Marx (Sr. Operations Supervisor)**
        - Ample room for driver, officer, and crew with custom seating options.
        - Seat mounting allows for maximum visibility through the windshield.
        - Easy access to service related items (i.e.: window regulators, dedicated radio power, 12-volt auxiliary fuses, circuit breaker panel, relays)
        - To ensure consistency of application several fixtures are being utilized within the cell. For example: all seat configurations, insulation and headliner panels, EMS cabinet placement and grab handle locations.
        - Cab fenders are polished stainless steel, and mounted spaced away from the cab side to avoid collection of dirt, debris, and moisture build-up.
        - 14 gauge 304 Stainless Steel Polished Grill.
        - Area is currently producing (5) cabs a week.
        - Assembly process accounts for (100) quality inspection points completed by the operator, Supervisor and Quality Engineer.
    - Bulletin points for signage at this stop
        - Under cab/hood thermal and noise/vibration absorbing material.
        - Rubber isolators between cab and frame rails.
        - Independent Sub Frame for Cab.
        - Up to 8 seating positions.
        - Reprogrammable Load Manager.
    - Process going on outside of this area.
        - Chassis would be ready to receive cab and the body is entering shop for paint

15. Electrical C05 (5 min)
    - **Clayton Korte (Cab Line Supervisor)**
        - Utilize a point-to-point electrical system with color coded wiring labeled with function every 3”.
        - Heat resistant loom and electrical connections terminate with Deutsch connections preventing water intrusion. We also use GXL high heat rated wiring.
        - All harnessing has additional wiring for future option integration. Anything not being used is capped off.
        - Kussmaul/IOTA Battery Charger/Conditioner/Pump, mounted under rear facing Driver seat box, and Shoreline/Auto Eject behind Driver door.
        - Auxiliary Fuse Block is mounted under rear facing Officer seat box, with 6 battery outputs and 6 ignition outputs, 10 amp each / 50 amp maximum.
        - For consistency and accuracy, fixtures are used. Including light bars, tele lights, warning lights and power/ground locations.
        - Area produces 5 cabs a week.
        - Assembly process accounts for (95) quality inspection points completed by the operator, Supervisor and Quality Engineer.
    - Bulletin points for signage at this stop
        - One sign for Brakes / Engine prep / Electrical – reference points above
    - Process going on outside of this area
        - The chassis should be at engine set at this stage of the build.

Urbana Facility Tour Stops Outline

Time: (11:30AM – 12:00PM)

Lunch in Sutphen University Training Room

Time: (12:00PM – 12:45PM)

1. Welcome everyone in the training center for lunch.
    - Increased capacity & focus on refurbs
    - Improved training facility & expand education
    - Increase staffing for parts & service to improve customer service
2. Walk into the lobby area
    - Have everyone walk around support staff area
    - Show the small conference room / customer lounge
3. Walk into the parts warehouse.
    - Increased storage capacity to improve projects & service to customers
    - Show the Customer acceptance area for refurb trucks
4. Walk into the main shop and let them see the Oneida truck in there for a refurb, Q/A on the new facility.
    - Service area has almost tripled in size
    - Increase volume and throughput
    - Increased security for trucks and parts.

Dublin Facility Tour Stops Outline

Time: (2:00 – 3:45)

1. Lobby (10 min)
    - **Drew Sutphen (President)**
        - Point out the location of the:
            - Sign In Book
            - Safety Glasses
            - Badges to be obtained here
        - Talk about the significates of the leather hose on display in the front lobby
        - Talk about family history, and the 4 pictures located in the fish bowl around the corner of the main entrance
            - First Photo – C.H. Sutphen
            - Second Photo – Harry Sutphen (C.H. son)
            - Third Photo – Robert (Bob) Sutphen (Harry's Son)
            - Forth Photo – Thomas (Tom) Sutphen (Harry's Son)
        - Next to fish bowl is the recent family photo
        - Demonstrative the twisities display located outside of the sales office
        - Things to point out to customers
            - Customer photos along the way to the production floor
            - Admin Office located behind entrance.
            - Sales / Sale Territory Managers Office
            - Project Coordinator Offices
            - Operations Control Center / BOM
            - Facilities Photos (Dublin, Chassis, Old Service, Hilliard, & East)
            - 3D model pictures on BOM office – Walking down the main hallway
            - New Patch / Challenge Coin Board
            - Drews & Shelbys Office
            - Colin Kerrigan GM Office

2. Body Build / Fabrication (10 min)
    - **Dan Kibbey (Supervisor)/Joe Scott (Engineering Manager)**
        - 3/16 Laser Cut Aluminum Pumper Construction on a 6” Channel x 1.5” x 3” Box Tube Heavy Duty Subframe
        - Continuous Aluminum Weld Process Behind All Pumper Compartments
        - Custom Extrusions Designed for Compartment Framework Fully Huck Fastened to the Subframe. All compartment bodies are huck bolted to the aluminum or stainless steel sub-frame
        - Total of five fixtures for all aluminum pumper, tanker, and some stainless steel bodies.
        - Body fixtures are designed to mimic our Extreme Heavy Duty Custom Chassis.
        - We also have a break and shear on sight to cutting and bending large metals.
        - Explain the basic flow of material (Body Package, Body Frames, Compartments, Water tanks, Through Tank Plumbing)
        - We use rubber Isolation pieces under water tank to separate the water tank and the sub-frame
        - Pre-Wiring of Main Body Harnesses and Breaker / Disconnect Boxes
        - Down at the other end of this area is where the body compartment starts.
            - It starts with welding the exterior frame work then inserts laser cut formed aluminum into the custom extraction slots. Then welded in place.
        - Just remember no matter the price point of the truck all aluminum bodies finished in Dublin start right here. Selling point to talk about with the customer that your mid-level pumper is build right beside the fully custom pumpers.
    - Bulletin points on signage
        - Aluminum and Stainless Steel Construction
        - 3/16” & 12 Ga. SS Precision Laser Cut Materials
        - Continuous Weld Process Behind All Compartments
        - 3D Modeling of All Body Designs
        - Custom Extrusions Designed for a Solid Framework
    - Process going on outside of this area
        - Pump is in Assembly, Chassis is Complete, and Truck Specific Purchases are onsite.

3. Plumbing / Paint (10 min)
    - **Gene Maharg (Field Engineer)/James Waite (Engineer)**
        - Sutphen Designed Program Modules Accommodating Most Department Applications
        - Akron / Elkhart Valves using Large Diameter Rods and Linkage for ease of use and function. Can also accommodate electric valve configurations as well.
        - Custom Pump Modules Built Starting with the Raw Pump and Housed Inside Your Uniquely Specified Pump Enclosure
        - Another line for pre-built module from Hale/Waterous
            - Advantage of program module over custom
                - Simplicity
                - Price
                - Production and Delivery Times
        - Need to hit on time frame on how long the process takes for program module from the time it comes in this area
        - All Stainless-Steel Plumbing ready for a Variety of Foam Options
        - Need to hit on time frame on how long the process takes for custom module
        - Aerial pumps are started in this area as well. Then set on chassis, and frame is built around it
        - 2 full paint booths that are capable of painting multiple items at once, and can fit all body styles.
    - Bulletin points on signage
        - Sutphen Designed Program Modules
        - Custom Modules Built Starting with the Raw Pump
        - Engineered Plumbing with Top of the Line Valves
        - All Stainless Steel Welded Plumbing
        - Full Line Paint Area for Bodies & Modules
    - Process going on outside of this area
        - Pump is in Assembly, Chassis is Complete, Truck Specific Purchases are onsite

4. Custom Pumper Finish & Test (10 min)
    - **Jon Corsetti (Interim Production Supervisor. Manager)/Aaron Davis (Engineer)**
        - Heavy Duty Single and Tandem Axle Monarch Chassis
        - Tankers, Heavy Rescue Pumpers, and Custom Pumpers up to 3,000 Gal.
        - Talk about the new layout – 4 Finish Units In Process at 1 Time, and how this improves flow and function of such a small area.
        - Raw chassis rolls in from Springfield, and then the pump module is set, then follows the body. Once secured to the chassis the rolling unit gets positioned in line for final assembly.
        - Talk about how Building 6 ties into this area – Body Prep.
        - Point out engineering offices located in the upper mezzanine
        - Talk about the Pump Pad – Just outside the roll up door – Up to 3 Units at a time
        - Comprehensive Corrosion Prevention Package
            - Point out the types of coating we using on the screws
            - The lengths we go to preventing corrosion on our chassis, bodies, and pump modules.
        - Stainless Steel Front Suction and Discharge Configurations for Every Situation
        - Talk about other unique custom others that has come thought this area. That sets us apart from others.
    - Bulletin points on signage
        - Heavy Duty Custom Pumpers/Tankers
        - Comprehensive Corrosion Prevention Package
        - Heaviest rear body sub-structure in the industry
        - Compartment interiors are maintenance free
        - Serviceability Access Points Provided in Pump and Body
    - Process going on outside of this area
        - Chassis, Pump, and Body all Come Together for Assembly and Testing

5. Aerial Body Set (10 min)
    - **Jon Wood (Department Supervisor)/Jim Holland (Engineer)**
        - 14 Ga. 304 Stainless Steel Precision Laser Cut Aerial Body with 6” x 1.5” x 3” Stainless Steel Channel & Tubing
        - 304 Stainless Steel Hucked, and Bolted Body
        - Truss Bar Design for Aerial Whole Chassis Torque Control
        - Triple Frame Thickness at the Turntable
        - Low to Ground Accessible Compartments
        - Center of Gravity designed for maximum usability
        - Twin Rotational Drives for Smooth, Precise, and Reliable Operation
        - All trucks are third party tested (Mistras or UL)
        - All trucks are DOT inspected and sent to third party for wheel alignment.
        - Metal slam doors are made in-house, and roll-up doors are purchased.
        - Hydraulic fluid is filtered multiple times throughout our assembly process.
        - Typical order of the build: install pump, body, hydraulic compartment, water tank, upper assembly, and the aerial.
        - Stainless steel bodies for the SPH are 2 piece bodies. Which allows for flexibility, and would be too heavy to lift as a single unit.
        - All compartments are huck bolted to the stainless steel sub-frames
        - Turn table is a 1” solid piece of steel
        - Boom assembly is taking place once the chassis rolls in for prep.
        - Purchasing offices are located above this area
        - The Aerial body fixture has now moved from up front of the facility to this area to allow better flow & due to the body not needing to go to paint
    - Bulletin points on signage
        - 304 Stainless Steel Material
        - Stainless Steel Bolted Compartment Design
        - Truss Bar Design for Whole Chassis Torque Control
        - Low to Ground Accessible Compartments
        - Low Center of Gravity Design
    - Process going on outside of this area
        - Chassis is in getting Body Set, Hydraulics Run, and Pump Completion

6. Aerial Final Finish & Test (10 min)
    - **Tony Sicilian (Department Supervisor)/Tim Lett (Engineer)/Tim Heinlein (Engineer)**
        - Single Out and Down Jack System for Maximum Stability
        - Parapet Ladder System for Easy Roof Access
        - Integrated Stokes System on the Front of the Bucket for Functional and Safe Rescue Situations
        - Largest Mid Mount Compartment Compliment in the Industry
        - Short Wheel Base Allowing for Tight Quarter Maneuverability and Set Up.
        - This area is where the truck pulls in after the boom is set
        - Platform is mounted for SP units
        - Pump Panel is Finished
        - Last 3-4 weeks in production when it hits this area (Including Testing)
        - In and out of this area for testing, graphics, etc.
        - Talk about testing – Brief explanation on the 3rd party process
    - Bulletin points on signage
        - Single Out and Down Jack System for Maximum Stability
        - Inverted Waterway
        - Bucket Designed with Rescue Ops in Mind
        - Largest Mid Mount Compartmentation in the Industry
        - Short Wheel Base Allowing for Tighter Maneuverability
    - Process going on outside of this area
        - Ladder is Set and Ready for Final Assembly and 3rd Party Testing/NFPA Compliance

7. Customer Inspection & Acceptance (6 min)
    - **Richie Miller – (Lead Project Coordinator)**
        - This will be the final inspection area for all units produced out of this facility.
        - Talk about the customer lounge, and will need to contact a STM for the code to room
        - Talk about the gear headquarters located upstairs as well.
        - Point out where the customer cabinet is located, and what supplies are located in them for final inspections.
        - Make sure to point out the two rooms down here are the meeting rooms used for pre-cons
    - Bulletin points on signage
        - Dedicated Support for Overall Truck Review
        - All the Necessary Tools Available for a Thorough Inspection
        - A World Class Team Assisting Every Step of the Way
        - Customer Lounge, Business Center and Gear Store
        - Expect nothing less than a Sutphen

8. Program 2 Finish & Test (12 min)
    - **Jim Parrott Jr. (Assistant Plant Manager and Program 2 Department Supervisor)/ Nick Jewson (Engineer)**
        - Program 2 Build Area
        - Heavy Duty Monarch Chassis on a Single Axle
        - Utilizes the Sutphen Designed Program Modules with Optional Foam Systems, Roll Up Doors, and Pre-Connect Offerings
        - Easily Configurable Pumper with Many Common Offerings including a state of the art Pump Module Electronic Control (PMEC) for waterproof electrical connections and an "At A Glance" Status Center
        - Triple Bottle Storage Available on All Program 2 Bodies
        - Low Hose Bed Options Available
        - Wash Bay located at the end of the building
    - Bulletin points on signage
        - Program 2 Custom Pumpers
        - Sutphen Pump Module Electronic Control Center (PMEC)
        - All major electrical connections use Deutsch connectors
        - Heaviest rear body sub-structure in the industry
        - Compartment interiors are maintenance free
    - Process going on outside of this area
        - Chassis, Pump, and Body all Come Together for Assembly and Testing

9. Pumper Body Prep (Building 6) (7 min)
    - **Colin Kerrigan (General Manager)/Jaime Roberts (Engineer)**
        - Installation of Rear and Front Steps
        - Custom Fitted with Compartment Tops, Roll Up or Slam Doors, and Emergency Lighting
        - Interior Compartment Lighting, Shelving, Tool Boards, Reels, and Power Control Center
        - Slide Out Shelf Installation, Rub Rails, Grab Handles, and Rear Chevrons all installed before Setting the Body
        - Ladder Racks and Other Specialty Body Components Custom Fit for Optimal Use
        - Installation of roll-up or hinged doors.
        - Installation of all compartment Uni-strut
    - Bulletin points on signage
        - Custom Fitted Compartment Tops
        - Interior Compartment Components Fitted To Spec
        - Custom Shelving Installation
        - Other Specialty Body Components Custom Fitted
    - Process going on outside of this area
        - Chassis is in the Chassis Preparation area of the Final Finish Process

10. Ladder Fabrication & Assembly (15 min)
    - **Mike Lemaster (Team Member) / Matt Williams (Engineer)**
        - Aerial sections are assembled by hand on the yellow fixture.
        - Talk about Huck bolt advantages vs. weld.
        - It is easier to replace the damaged lacing in the field by replacing the Hucks instead of cutting welds.
        - Use of 6061-T6 and 6005-T651A aluminum for strength and weight reduction
        - Our tolerance is ½ of industry standard deviation from perfect. Standard allows 3 degrees of twist over the length of the rail. We require no greater than 1 ½ degrees, and give our vendors grief when it's that close.
        - Extrusions are made in the USA
        - After the sections are build, then these items are installed: side plates, sheave beams, waterway.
        - The design of the box boom allows for everything to be protected. Waterway, electrical cable track, and other major components.
        - One style of ladder: box boom (platform).
        - The sections are slid together to ensure proper fit.
        - The aerial is extended via an auxiliary hydraulic system and electric is installed up the ladder.
        - Monitor, lights and communication devices are installed at the end of the ladder.
        - Aerial is lubed and mounted on the truck. The aerial is attached with large pins which are secured with bolts.
        - There is no aerial zone restriction in relationship to the maximum tip load on all Sutphen aerials.
        - Huck bolts are used to assemble the ladder which provide strength and flexibility.
        - Demo the Huck Bolt if an employee is present.
        - Not having to paint the boom saves on paint maintenance cost. That other manufactures have to deal with since they use steel ladder assemblies.
        - Talk about Buckets
            - Advantages in general
            - Monitors off to the side
            - Size of overall platform
    - Bulletin points on signage
        - Heavy-Duty Box Boom Design with 3-1 Safety Factor
        - 4 and 5 Section Systems for Unique Applications
        - Aluminum Huck Bolted Ladder Assembly
        - Independent Self Leveling Hydraulic Bucket System
        - Dual Monitor Capabilities with Fully Protected Waterway
    - Process going on outside of this area
        - Chassis, Body, and Turntable/Jack System are being set in Aerial Body Set

Hilliard Facility Tour Stops Outline

Time: (4:15 – 5:45)

1. Lobby (8 min)
    - **Julie Phelps (President)**
        - Sign In Book
        - Safety Glasses
        - Family History
        - Facility Photos
        - Average tenure of Sutphen employee is 17 years.
        - Several employees are related to another employee
        - Several employees are in the fire service (fire fighter or EMS unit)
        - Engineering Office upstairs (Engineering model on display)
        - Purchasing Office
        - Accounting Group
        - Julie and Kevin's Offices

2. Cab Fabrication (Building 1 / 10 min)
    - **Kevin Kuszmaul (General Manager)/Randy Sheets (Cab supervisor)**
        - Available cabs lengths: 56", 62", 73" from the center of front axle to the rear of the cab.
        - Available cabs heights: flat (arched), 10", 15" and 20 raised roof.
        - Cab frames main structure is all 6061-T6 aluminum.
        - Cab skins are 5052 aluminum. Typically, 3/16" thick for flat surface.
        - Currently fabricating four to five cabs per week.
        - Sub-assemblies are built concurrently with the cab line for Just-In-Time assembly.
        - Throughout the assembly process, there are 70 quality inspection points performed and signed off.
        - For consistency and accuracy, several fixtures are being used. For examples: sub frame, side frame, nose bow, etc.
        - Cab structure has successfully passed the crash test to meet NFPA requirements (ECE R29, SAE J2422, SAE J2420).
        - State of the art Lincoln MIG welders. Clean weld with low amount of smoke.
    - Bulletin points on signage
        - Premium 6061-T6 3/16" Aluminum Material
        - Cab structure successfully passed NFPA crash testing
        - Various Cab Length and Height Options
        - Standard Interior Panels Brush Stainless for durability
        - Door latch system completed 30G and 100,000 cycle tests
    - Process going on outside of this area
        - Sub-assemblies are built concurrently with the cab line.

3. Cab Door Assembly (Building 1 / 7 min)
    - **Kevin Kuszmaul (General Manager)/Randy Sheets (Cab supervisor)**
        - For a flat door skin with no weld marks, we adhere the exterior door skin to the frame.
        - We use acrylic adhesive which contains glass beads for controlling the perfect spacing in between the pieces.
        - Interior panels are brush stainless for wear resistance.
        - There is barrier tape in between any dissimilar metal to prevent electrolysis.
        - Stainless steel cable and rods with anti-rattle clips and sheathing.
        - Cab windows are offered in clear as a standard, tinted as an option.
        - Door latch system has successfully completed 30G and 100,000 cycle tests for safety
        - Our door latch system is designed with smart latch system where the fire fighter cannot lock himself out of the vehicle.
    - Bulletin points on signage
        - One sign for Cab Fabrication/Cab Door Assembly - reference bullet points above
    - Process going on outside of this area
        - Cab is rolling down the line at the same time

4. Building 8 (2 min)
    - **Kevin Kuszmaul (General Manager)**
        - Overflow inventory and HS inventory storage.
        - Storage for bulk items such as lower and upper assembly.

5. Pump Sub-Assembly (Building 3 / 5 min)
    - **Mark Knisley (Production Supervisor)/Chris Minor (Project Engineer)**
        - Standard manifolds and valves are inventoried. Custom manifolds are made in house to meet the customer requirement.
        - Pump Module Frame and plumbing manifolds are stainless steel.
        - For consistency and accuracy, fixture is used to fabricate the pump module.
        - Pump support angles (saddles) are Catha-coated primer and painted.
        - To insure quality of the weld, all manifolds are pressure tested.
        - Upon the completion of the pump sub-assembly, hydrostat and vacuum tests are performed.
        - Our experience plumbers will custom lay out each pump to meet each customer's requirements.
        - Our mix is 90% Hale and 10% Waterous.
        - The body for the truck is typically being assembled at this time.
        - When chassis is available, we also install body sub frame, lower assembly, jack tubes and perform pre-wiring.
    - Bulletin points on signage
        - Engineered Plumbing with Top of the Line Valves
        - All Stainless Steel Welded Plumbing
        - Custom Power Distribution box for aerial and pump are made.
        - Custom wiring harness for body is assembled.
        - Stainless Steel Bolted Compartment Design
        - Graphic design software is used to create customer proof.
    - Process going on outside of this area
        - Chassis has arrived, installing body sub frame, lower assembly, jack tubes and perform pre-wiring.

6. Pump and Body Wiring (Building 3 / 5 min)
    - **Mark Knisley (Production Supervisor)/Chris Minor (Project Engineer)**
        - Custom Power Distribution box for aerial and pump are made in house.
        - Custom wiring harness for body is assembled in house.
        - LED pump inspection light is now used (change from Halogen light)
        - Deutsch connector used for quality connection and ease of maintenance.
    - Bulletin points on signage
        - One sign for Pump & Body Sub-Assembly / Wiring / Graphics - reference bullet points above
    - Process going on outside of this area
        - The body and pump for the truck are typically being assembled at this time.

7. Body Sub-Assembly (Building 3 / 5 min)
    - **Mark Knisley (Production Supervisor)/Chris Minor (Project Engineer)**
        - Body assembly is custom engineered to fit the customers need.
        - Body parts are modeled in 3D software and laser cut at our local supplier.
        - All aerial and custom pumpers built in Hilliard have stainless steel bodies.
        - For consistency and accuracy, fixtures are used to assemble the bodies.
        - Water test are performed on all the bodies upon completion for leaks.
        - All warning lights on the body are tested.
        - Install stainless steel water tank sub frame.
        - All bodies are bolted together for ease of repair in the field.
        - Non-painted body is our standard. Painted body is an option.
    - Bulletin points on signage
        - One sign for Pump & Body Sub-Assembly / Wiring / Graphics - reference bullet points above
    - Process going on outside of this area
        - Pump sub assembly is being built at this stage.

8. Graphics (Building 3 / 3 min)
    - **Mark Knisley (Production Supervisor)**
        - Graphic design software is used.
        - We work with the customer to get the sign off for the proof early in the process.
        - Ability to print most of the graphic in house.
        - Ability to print over gold paper.
        - Cut and paint the boom sign in house.
        - Install chevron in house. You can add lettering to the chevron.
    - Bulletin points on signage
        - One sign for Pump & Body Sub-Assembly / Wiring / Graphics - reference bullet points above
    - Process going on outside of this area
        - The truck is typically in the final assembly area when the proof is generated.

9. Final Truck Assembly (Building 2 / 10 min)
    - **Kevin Palmer (Production Manager)/Jim Garver (Engineering Manager)**
        - Recent improvement in this area:
            - Rack along the west wall for specialty items and organization.
            - New Air lines and electric cord reels to improve efficiency.
        - We have five bays. In each bay, there are a plumber, body builder and electrician, one of which is the crew leadsmen.
        - Review of shop order by the crews and the project engineer at the beginning of the build.
        - All trucks are third party tested (Mistras or UL)
        - All trucks are DOT inspected and sent to third party for wheel alignment.
        - The crew will sign off and complete testing book which includes: hydrostat, hydraulic system pressure set, vacuum test, hi-pot test, aerial cable adjustment.
        - The lead man is responsible to communicate with the supervisor of parts needed and his team member schedule.
        - Project engineer reviewed the truck vs. shop order prior to final inspections.
        - We use white board to communicate milestone or due dates.
        - Metal slam doors are made in-house, carbon fiber and roll-up doors are purchased.
        - Hydraulic fluid is filtered multiple times throughout our assembly process.
        - Typical order of the build: install pump, body, hydraulic compartment, water tank, upper assembly, and the aerial.
        - Each truck takes 6-9 weeks to assemble in each bay.
    - Bulletin points on signage
        - Single Axle Mid-Aerials / Tandem Axle Rear Mount Aerials
        - Stainless Steel Sub-Frames
        - All major electrical connections use Deutsch connectors
        - Compact Under Slung Jack System on Single Axles
    - Process going on outside of this area
        - Pump sub assembly is completed
        - Body sub assembly is completed
        - Aerial is being built or completed
        - Striping and lettering are installed at the end of the build.

10. Aerial Sub-Assembly (Building 4 / 10 min)
    - **Yoseph Setiadi (Operations Manager)/ Carl Jude (Production Supervisor).**
        - Aerial sections are assembled by hand on the blue fixtures.
            - Talk about Huck bolt advantages vs. weld.
            - It is easier to replace the damaged lacing in the field by replacing the Hucks instead of cutting welds.
            - Use of 6061-T6 and 6005-T651A aluminum for strength and weight reduction
            - Our tolerance is ½ of industry standard deviation from perfect. Standard allows 3 degrees of twist over the length of the rail. We require no greater than 1 ½ degrees, and give our vendors grief when it's that close.
            - Extrusions are made in the USA
        - We offer both mid mounted aerial and rear mounted aerial from 70'-108' at Hilliard location. After the sections are build, then these items are installed: side plates, sheave beams, waterway.
        - Two different styles of ladder: box boom (platform) and climbing (stick).
        - The sections are slid together to ensure proper fit.
        - The aerial is extended via an auxiliary hydraulic system and electric is installed up the ladder.
        - Monitor, lights and communication devices are installed at the end of the ladder.
        - If it is a platform, the yoke and bucket will be installed. (after aerial installed on truck)
        - Aerial is lubed and mounted on the truck. The aerial is attached with large pins which are secured with bolts.
        - Two different styles of ladder:
            - Box boom: typically have a platform although we offer a SA model with monitor at the tip. The box boom provides fully protected waterway. The same box boom design is used for our industrial model, which can flow up to 4,000 GPM out the tip of the ladder.
            - Climbing ladder: It is designed to provide a safe pathway with high handrail and width to accommodate transporting a stoke basket.
        - There is no aerial zone restriction in relationship to the maximum tip load on all Sutphen aerials.
        - Huck bolts are used to assemble the ladder which provide strength and flexibility.
    - Bulletin points on signage
        - 3 Sided and 4 Sided Ladder Assemblies with 3-1 structural safety factor
        - All aluminum parts are 6061-T6 and 6005-T651A for strength.
        - Aluminum Huck Bolted Ladder Assembly
        - Dual Monitor Capabilities with Fully Protected Waterway
    - Process going on outside of this area
        - Typically, the aerial is being built when the truck is in final assembly.

11. Service and Paint Department (Building 6 / 5 min)
    - **Steve Rideout (Service Manager) and Yoseph (Operations Manager)**
        - Paint Booth
            - Paint all slam doors in house.
            - Steel parts are catha-coated, primed and painted in house.
            - Use of new clear: harder to scratch.
            - Touch up prior to final inspection.
            - Down Draft Paint Booth
            - Our booth can bake up to 145 degree for fast cure.
            - It can fit the whole fire truck in the booth.
            - It can also be divided up to multiple booths for different colors.
            - Washing and detailing in this building.
        - Service Area
            - We currently have 4 people in service.
            - We carry specialty items inventory for older generation trucks.
            - Service truck for repair around the country.
            - We do service contracts or/and general repair.
    - Bulletin points on signage
        - Full Line Paint Area for Bodies & Modules
        - Extensive Service and Refurbishment Capabilities
        - Specialty item inventory for older generation trucks

12. Customer Inspection & Acceptance (5 min)
    - **???**
        - We have created a new customer acceptance area
        - The floor is painted
        - Cabinet with inspection supplies
        - There is a new conference room for customers with kitchenette and AC
        - A new restroom beside conference room
    - Bulletin points on signage
        - Dedicated Support for Overall Truck Review
        - All the Necessary Tools Available for a Thorough Inspection
        - A World Class Team Assisting Every Step of the Way
        - Expect nothing less than a Sutphen

Toy Barn (5:30)

- **Kevin Kuszmaul (General Manager)**
    - Everyone will convene in the customer acceptance area and the Toy Barn for A BEER !!