Sub -Part E

1.0 MANAGEMENT PLAN OVERVIEW

OIW's plan for the development of the prototype Streetcar is to use a teaming approach throughout the entire design, manufacture, assembly, and testing phases of the vehicle. The Streetcar Program Team will include OIW as the manufacturer and integrator, Skoda as the technical/engineering expert, and the customer (and/or their representatives) as the end user. During the streetcar development OIW would invite input and participation from all members of the team so that all decisions and directions taken are in accordance with the contract requirements, meet our customers' desires, reflect our partners' technical expertise, and leverages experience with the current product. Each organization brings a unique and valuable perspective, outlined below, that will be critical to the streetcar team's success.

OIW Contract Management / Prototype Experience

As the prime contractor and project point of contact for the City, OIW will leverage its prior experience managing the development of licensed foreign prototype products for government agencies. Existing management / project control systems will be employed to monitor and report project status, maintain rigid quality control standards, and assure the streetcar is delivered on time and exceeds requirements.

Skoda Technology / Engineering Expertise

OIW elected to partner with Skoda and utilize their design of the existing Portland streetcars in order to minimize the technical development risk inherent in a domestically produced streetcar. Skoda will be directly involved throughout the development effort so that their engineering expertise will be applied in the design, manufacture, and assembly of the streetcar prototype.

City of Portland End User Requirements / Operational Knowledge

The City's operational knowledge gained from the existing streetcars can be applied to the development of the prototype to assure that it is fully compatible with the existing system and to help identify desirable improvements in the design.

OIW feels that a key element of the Streetcar Program success will be excellent communciation between all parties and particiaption from each member during each phase of the Program. OIW intends to create an interactive environment with OIW, Skoda, and the City of Portland, where the customer is able to actively monitor and participate in the design, manufacture, assembly, and test phases of the streetcar construction. This interactive environment will be achieved through weekly working project meetings, on-site City representation, regular detailed project reporting, and quarterly project review meetings.

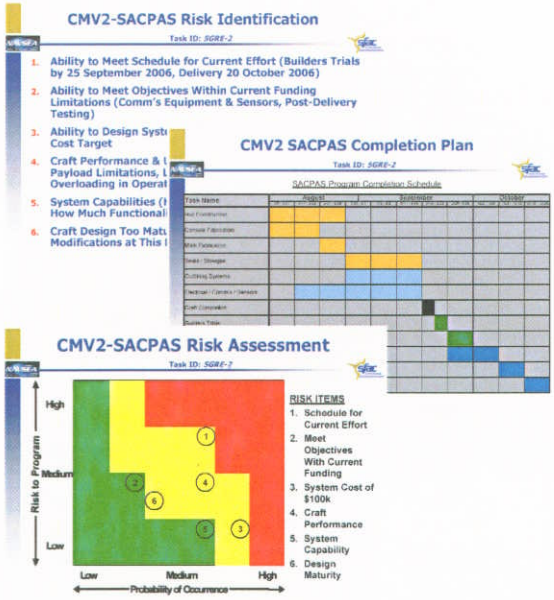
Weekly Action Item List

Item no.	Description	Date Logged	Date Closed	Current Status	Responsible	Rationale for Need and Comments	Due Date	Meeting Notes
4	Skoda to provide production flow chart illustrating fabrication and assembly sequence	2/28/06	3/8/2006	Closed	Zdenek C.	Needed for OIW production planning/setting and layout and for bidding process. 3/8/06: Completed flow-chart received. Work will continue on modifying/improving the chart. 3/16/06: Detailed flow chart item by Zdenek.	3/15/2006	
38	Speed sensor proposed by Knorr Bremse to be reviewed	6/6/06		Open	Pavel R./Allan S.	Skoda Electric and Transportation to provide feed back regarding the speed sensor proposed from Knorr Bremse	6/15/2006	

All of OIW's manufacturing facilities and offices are located a short distance from the City of Portland, which would allow for the weekly working project meetings at the City's or OIW's offices. OIW would like to invite the City to appoint a permanent Owner's representative to attend the Streetcar Program meetings (if available) and be present throughout all phases of the prototype development effort. The weekly project meetings would allow for regular technical interchange between the City's representative, OIW and Skoda throughout the prototype development to identify technical issues and bring them to resolution. The events of each meeting would be recorded on meeting minutes that would include a maintained list of action items to be tracked at each meeting.

The action item list will assure that no issues are left open, and they will also serve to assist the topics for each meeting's agenda.

Shop Tour at OIW's Facility

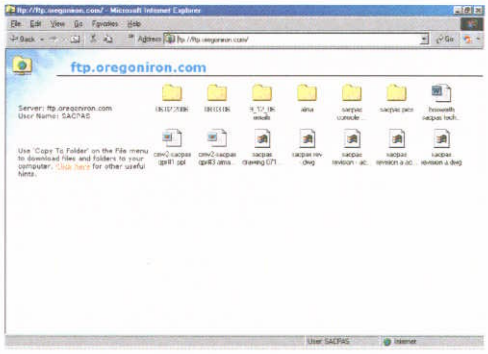


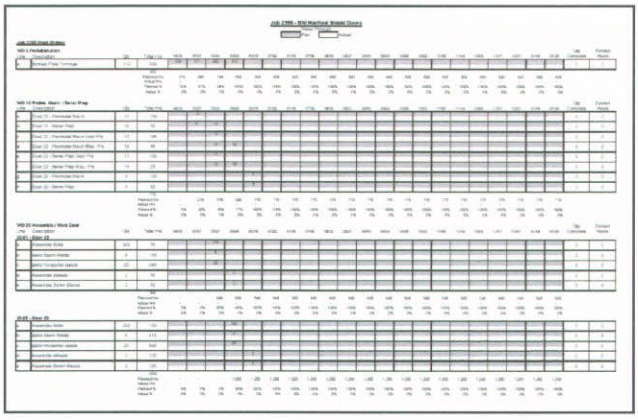
OIW would also host quarterly project review meetings that would serve as an opportunity to bring all of the key management and technical personnel from each organization together for a higher-level project status and review. OIW's vicinity would also allow further facility visits to be accommodated at the City's request. All the above proposed approach to program management will result in excellent communication and interaction between the key participants on the Team.

In addition to the weekly project meetings, OIW would also provide detailed monthly management reports that summarize the key technical and programmatic elements of the project. The technical portion of the report would include issues related to design, materials, manufacturing, and testing. Items related to schedule, cost, delivery, and quality would be discussed in the programmatic section.

The report would provide a status of the progress to date related to each item and would identify and address elements of risk in the project. Each risk item would be categorized as either low, medium, or high based on their probability of occurrence and their overall potential impact to the project's success. This regular risk identification and assessment would be integral to the risk mitigation strategy that OIW would maintain throughout the project. Technical items identified as high risk in the design process could not proceed in their development until the issue had been addressed and downgraded to a medium or low risk status.

OIW would also establish a secure, project specific file transfer protocol (FTP) site where all of the project design documents, meeting minutes, status reports, etc. could be uploaded and saved. This would allow the City and its representatives easy access to project related documents at any time and would facilitate documents to be viewed prior to their formal delivery. This would also maintain a level of configuration control on the design drawings and documents through maintenance of data submittal logs available on the site.





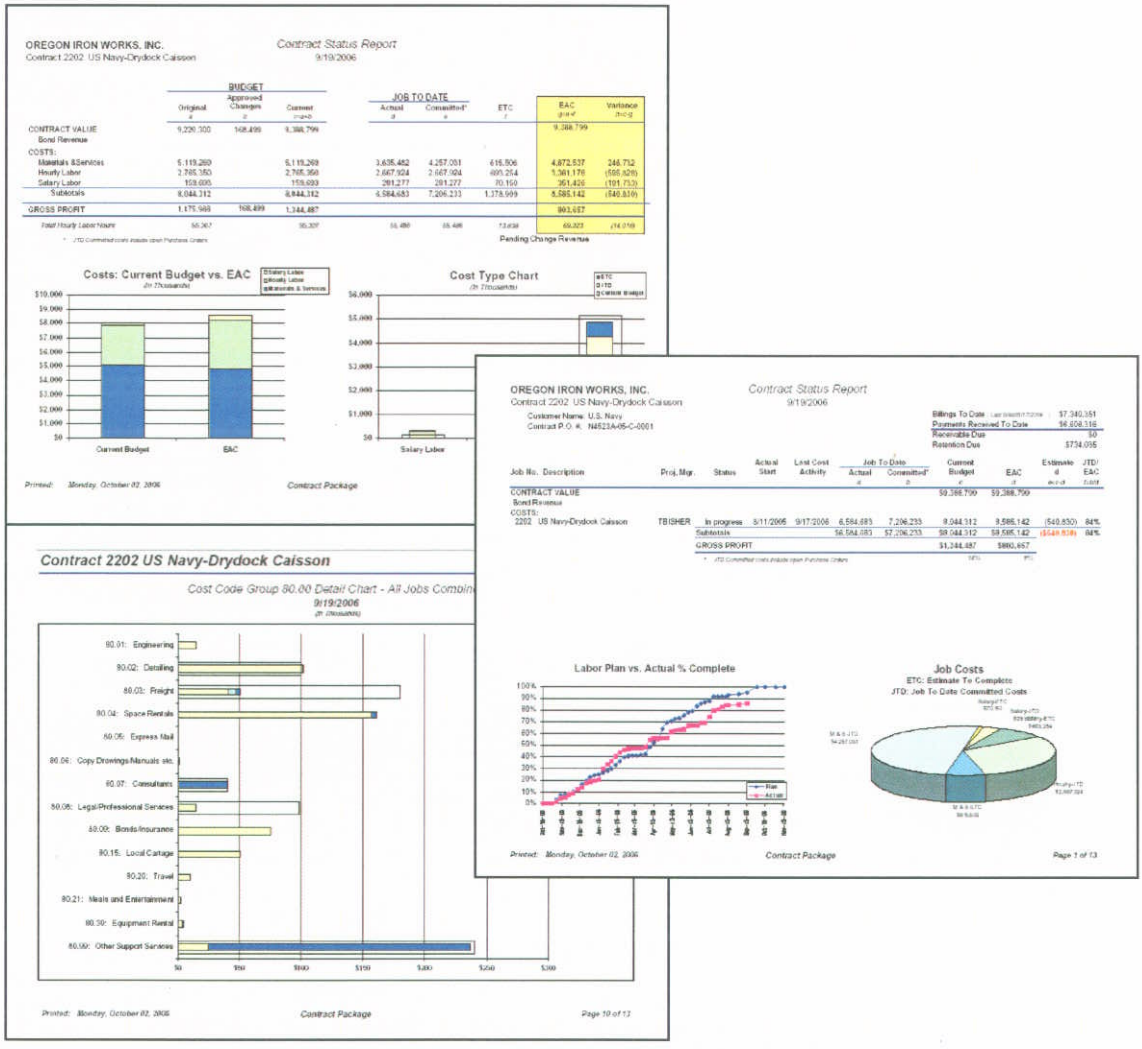
The project quality, schedule, and cost will be managed through an earned value management system (EVMS) approach. The EVMS approach starts by breaking the project down into numerous discreet, measurable work tasks and milestones. These tasks and milestones are developed in conjunction with the project build plan and they are used throughout manufacturing processes to assure that the build and quality plans are adhered to.

Additionally, the breakdown can incorporate work hold points where critical design and quality aspects must be verified before subsequent work can progress. Once the project plan has been broken down into discreet work items, the project budget and baseline schedule are spread proportionately against each item, resulting in a baseline cost and time expenditure schedule.

This data is used to develop project scorecards that the project engineers will use continuously throughout the project to record the actual cost and time expended to complete each task and achieve each milestone. The scorecards allow a real-time, finite comparison of the actual expenditures versus the planned expenditures so that progress can be accurately assessed.

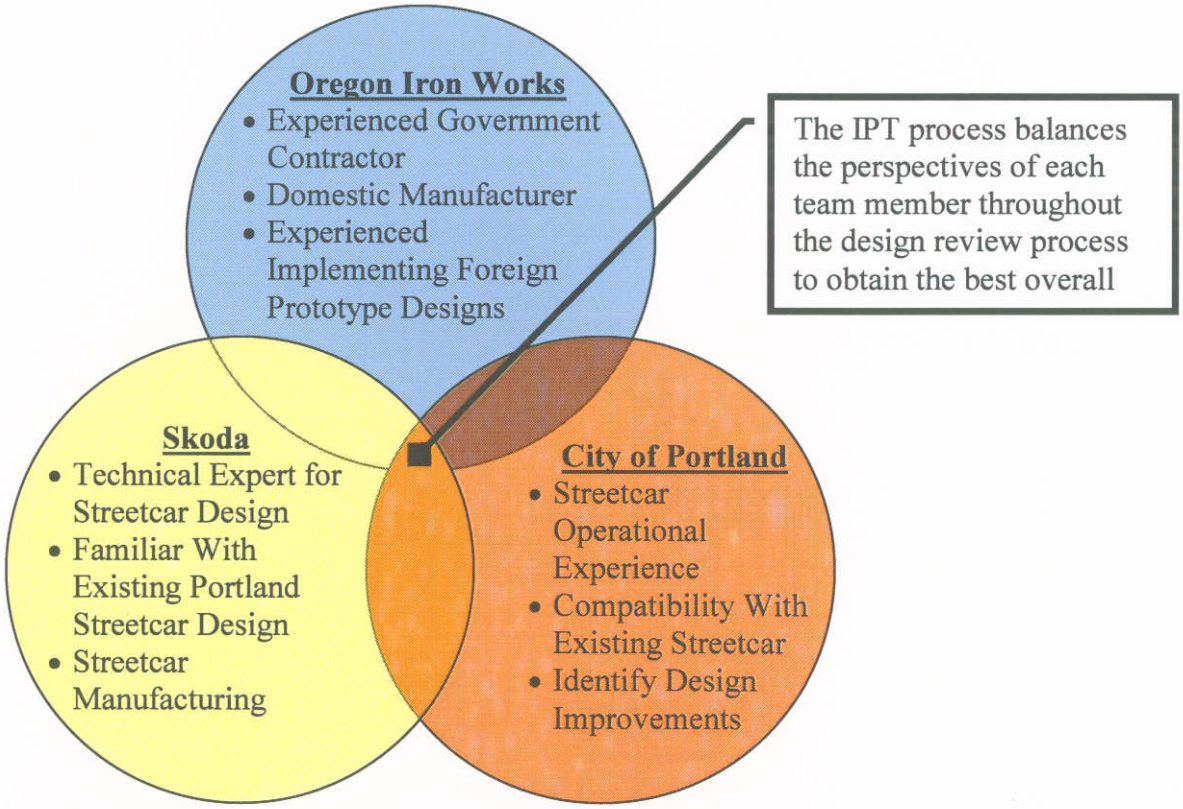
This baseline to actual assessment is then used throughout the project to forecast the actual project cost and schedule at completion. The result is a completely unbiased and objective assessment of the project's progress that allows work tasks that are falling behind schedule or exceeding budget to be quickly identified so that the appropriate action can be taken in time to correct potential schedule or cost issues.

This also allows critical schedule items that might be accelerated in order to shorten the overall project duration to be identified and monitored.



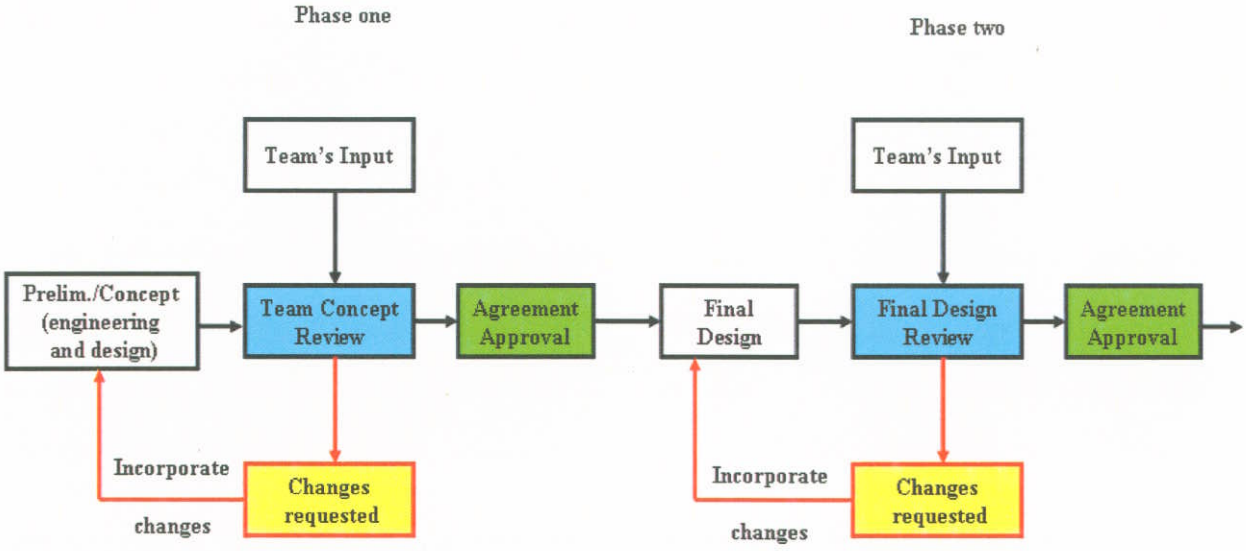
2.0 PROCESS FOR DESIGN DEVELOPMENT, REVIEW AND APPROVAL

OIW will use the existing Portland vehicle design with slight changes as described previously. In addition to the slight changes from the electrical system, the design of the prototype streetcar will focus on converting the existing, proven European streetcar design to a design that incorporates U.S. standards and components that is compatible with the existing Portland streetcars, and fully compliant with the Buy-America act. The success of this development effort is dependent on the successful interface between OIW/Skoda, and the City. In order to facilitate this interface, OIW is proposing an Integrated Product Team (IPT) design review and feedback process where members from each organization will provide input into the design review process. The IPT design review process consists of members (or representatives) from each organization participating in the design review and development of the prototype streetcar. In this environment, critical issues would be addressed and key design and development decisions would be made with input from each member of the team and specifically from the City's representative.



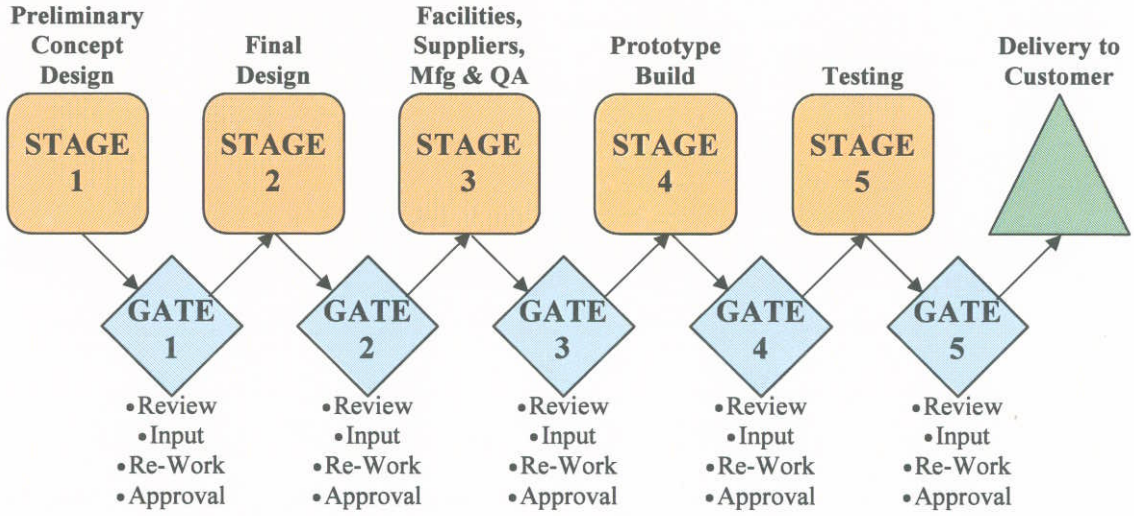
OIW has already developed a close working relationship with Skoda and has started on the design of a Buy-America compliant streetcar based on the design of the existing Portland streetcars. As soon as the contract is awarded, the OIW Street car Program Manager will add the City's representative to the Team and will schedule design review meetings, where the concepts and design will be reviewed with the City's representative and the other members of the Team. The City representative will be asked for input and changes, and upgrades will be incorporated, if desired. Based on the input received, the OIW-Skoda team would then incorporate any identified modifications into the design and again review the design with the Team for approval.

This process would take a phased approach where each phase of the Project will be reviewed by the Team and will move forward to the next phase only when the Team and City's representative agree and approve the outcome of a specific phase of the Project. The concept of design, review, receive input, changes (if required), apply changes, review, approval and the move to the next phase will ensure that no decisions are made without review and approval from the Team members and specifically from the City's representative. This concept will minimize the risk and will ensure that no phase in the development of the product will be passed without approval by the City's representative and the Team. Every major system will be reviewed separately using the described process so that the overall design is not hindered by this process in order to assure that the project schedule is met.



The concept of Development, Review and Approval process will be applied not only to the design and engineering phase of the Program but to all activities included in the main program schedule (manufacturing plan, quality control, testing, etc.). At specific milestone dates identified in the overall Program development schedule each activity /phase of the Program will go thru the same process. In this way our Team will ensure that all critical phases of the Program are being reviewed and that the objectives are met and subsequent phases will only occur after approval. This system, known as the Stage-Gate Process, is frequently used in the vehicle industry to minimize risk while assuring a fully compliant and high quality product.

Stage-Gate Process for Streetcar Project



Additionally, the Program will not move to another phase without completion of all requirements of the previous phase (nothing will be "forgotten"). If the "loops" of the Review-Approval-Re-design process will have a timing impact on the overall schedule, the Program Manager will make the appropriate adjustments so that the overall Program schedule will not be affected and the delivery date will not be changed. From this phased approach, the Program Manager is planning for contingency for the development of the prototype street car by running an "accelerated" schedule that will allow time for (potential) changes in direction.

3.0 ORGANIZATION

Oregon Iron Works, Inc. (OIW) will dedicate an entire project team to work full time only on the Portland Streetcar Project, and OIW will continue to add people to this project team as necessary.

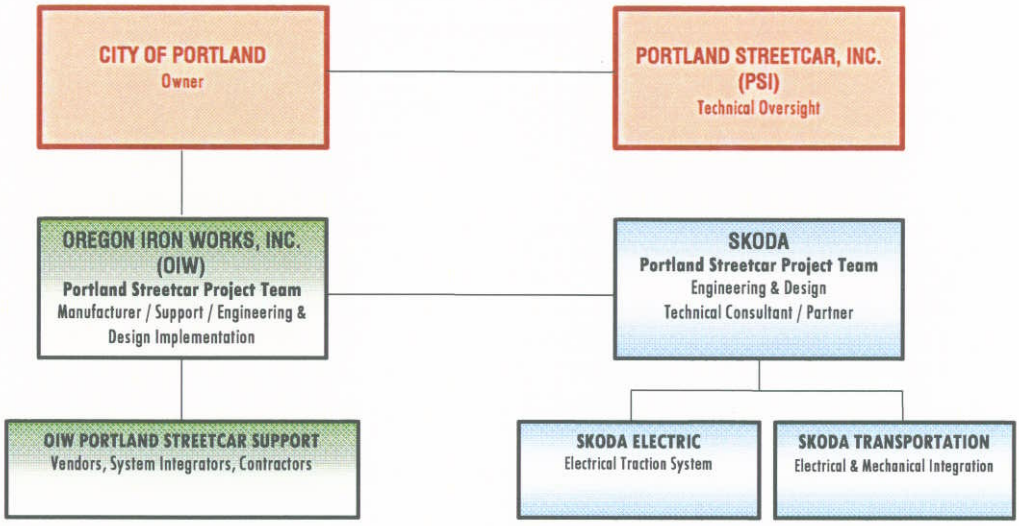
OIW has signed a partnership with Skoda S.R.O. to jointly produce the Streetcar Prototype using the existing technology, experience and design from Skoda. As a result of our partnership, Skoda has also assigned a team of individuals who are fully dedicated to the Portland Streetcar Project.

In addition to the program teams, both OIW and Skoda have the ability to "draw" additional resources from the company's main organization. The permanent team members have the possibility to add resources to the team by involving several additional departments to the projects, as required by the program development.

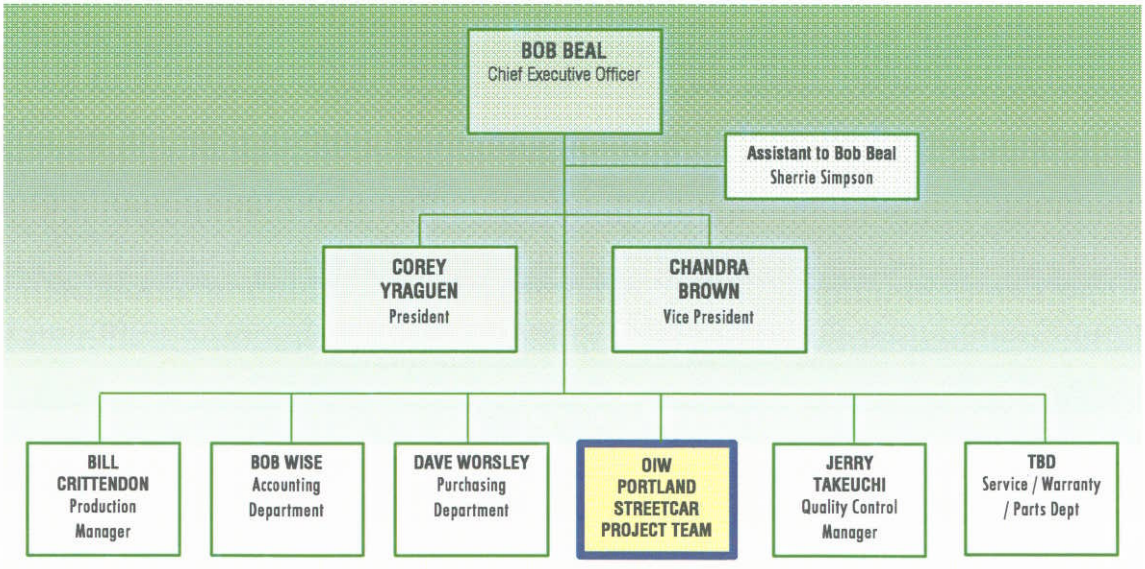
A similar model is used at Skoda where the permanent members of the Portland Streetcar Team could add resources to their work from the Company's main organization.

This organizational system (with a fully dedicated team and using the company resources for work over-flow or when needed) has proven to be very efficient. The system does not constrain the Company to a limited number of resources for the specific project, but the concept still allows flexibility on the project work.

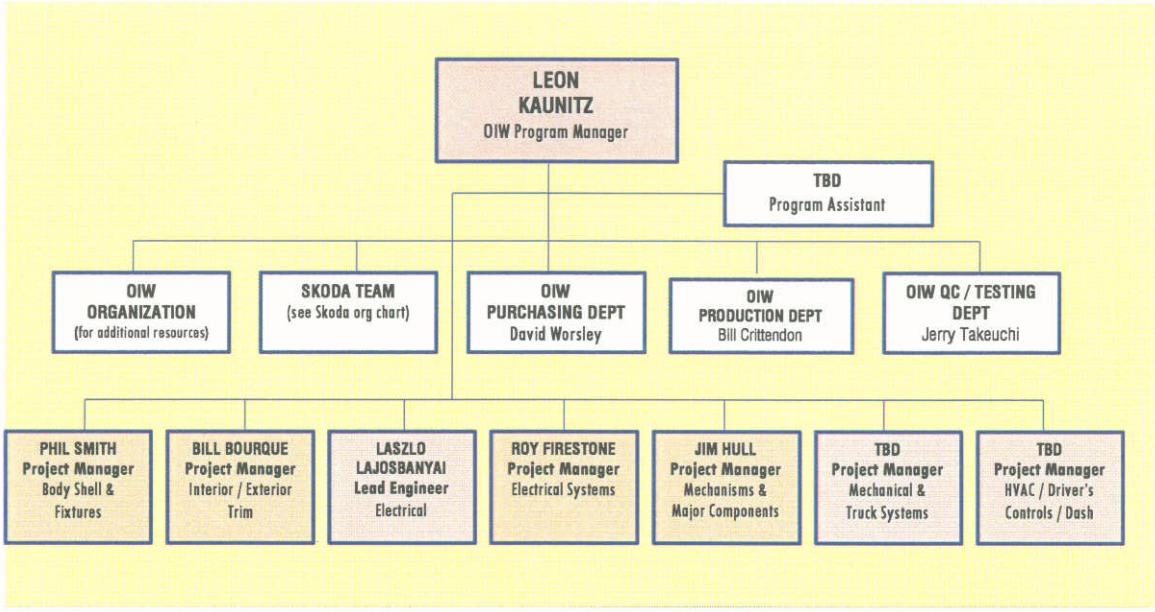
OVERALL PORTLAND STREETCAR PROJECT RESPONSIBILITY CHART



OREGON IRON WORKS, INC.

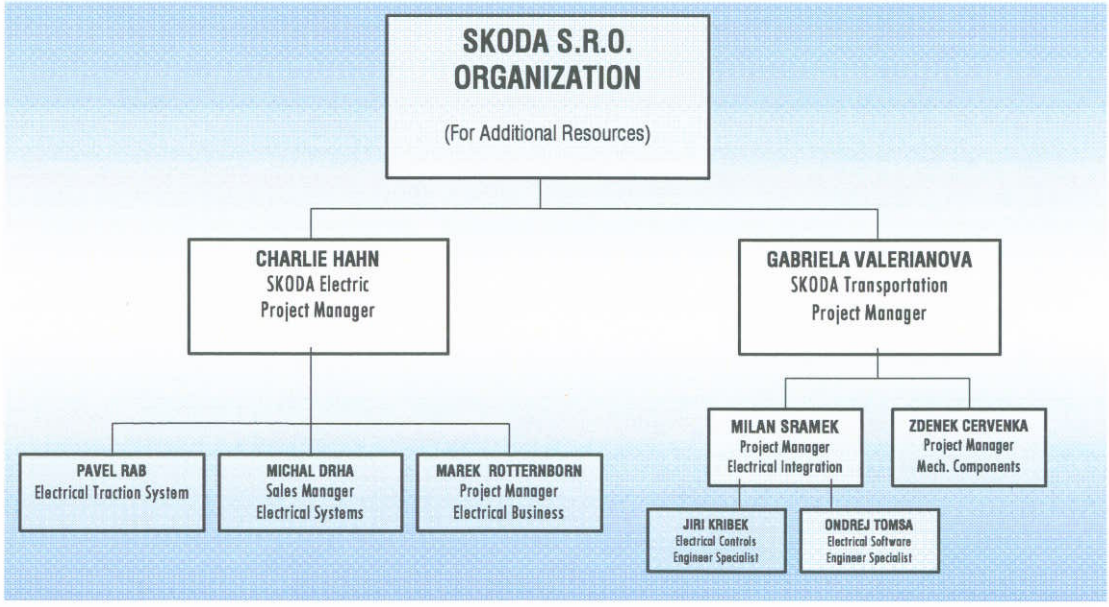


OREGON IRON WORKS, INC.
PORTLAND STREETCAR PROJECT TEAM



Resumes Provided for Key Members of OIW Portland Streetcar Project Team

SKODA
PORTLAND STREETCAR PROJECT TEAM



Resumes provided for all Skoda Portland Streetcar Project Team Members

RESUMES OF KEY PERSONNEL

LEON I. KAUNITZ — PROGRAM MANAGER

BACKGROUND

Project Manager and Mechanical engineer experienced in all phases of product design, manufacturing and project management, from new product research/development, concept and economical analysis to following designs through final production implementation and customer satisfaction. Knowledge and experience with the following processes:

- For metal: stamping, metal forming and machining, casting, forging, extrusion.
- For composite materials: FRP (fiber reinforced plastics or fiberglass) SMC, RTM, RIM, preform, spray-up/lay-up and "sandwich" type materials (honey-comb core), also, injection molding and other specific processes for thermo plastics.
- For joining technology: riveting, welding, hucks, bolting, SPR (self-piercing-rivets), FSW (friction-stir-welding), structural bonding and flow drilling.
- For surface preparation, treatment and finishing: heat-treatment, e-coat, prime-painting, powder coating, chroming, painting and polishing.

RELEVANT EXPERIENCE

2005 – Present OREGON IRON WORKS, INC.
Program Manager – Portland Street Car Prototype Program
Responsible for the street car program: schedule, cost, manufacturing, engineering, customer satisfaction, compliance quality. Manages the program from the OIW side to meet and exceed the customer expectations. Manages the program activity to meet or exceed all deliverables and requests from the customer.

1997 – 2005 FREIGHTLINER LLC – Daimler Chrysler Co.
(Dual assignment: Engineering Design Manager and Project Manager)

- 2002 – 2005 Sr. Project Engineer – Engineering Design Manager

Responsible for the design of the new cab system and components. Managed, supervised and trained group of 19 engineers, designers and contractors for the new truck cab design and development. Responsible for the concept and design of the cab structure and stampings, door, hinges and check mechanism, glazing, seals, roofs, baggage and access door and vent systems mechanism. Responsible for installation and interfaces with the electric/electronic equipment, pneumatic system, HVAC, heating and cooling, power train (engine and transmission), exhaust, pedals and controls, steering and cab suspension.

Researched, defined and developed the new truck concept including overall architecture, main dimensions, cab – chassis interface, ergonomics, structural integrity of the cab targeting "best in class". Established cab specific performances: structural performances and safety, cost, aerodynamics, weight and warranty reduction, including selection of new/advanced materials and joint technologies. Determined man-power requirements and organized the design team.

Defined with the Analysis and Test Departments the FEA and Test program for the new cab.

Worked with Manufacturing Team and suppliers to define the new cab manufacturing concept, including stampings, composite roofs as well as automatic assembly line, robots and plant layout. Created and coordinated the cab technical and functional specifications.

Extensive experience with designing mechanical, electro-mechanical and heavy duty systems, Aluminum and steel stampings, structures, use of composite materials and non-conventional joining technology (FSW, TWB, bonding, SPR), body systems and specific components. Used new/advanced structural analysis (topology optimization thru optistruct) to achieve optimum design architecture, NVH performance and weight reduction.

- 2002 – 2005 Sr. Project Engineer – SDT Project Leader/Manager

Managed the Cab SDT Team (system development team) for a new "on highway"/premium truck program – class 8. Responsible for capital investment in excess of $ 160 M.

Coordinated and managed multi-departmental team (Engineering, Manufacturing, QA, Service,

Finance, Purchasing, Marketing and Test) to achieve the new tuck program goals: cost, performance, timing, quality, reliability, service. Set-up targets, defined cab program schedule, benchmarked current products relative to the competitors, selected suppliers and ensured profitability for the new cab. Coordinated the prototype build phase.

Extensive work with customers, suppliers, dealers and maintenance/service personnel

- 1997 – 2002 Project Engineer – Engineering Design Manager

Responsible for the design of the new cab system and components. Managed and led Team of 32 engineers, designers and contractors to design and implement in production the new mid duty truck cab, systems and components. Fully involved in designing mechanical systems (door mechanism, cab suspension, steering column) and the electro-mechanical, electronic actuation equipment (SAM Cab & Chassis, door module, multiplexing, wiper electric motor, ICU, etc.). Coordinated the installation and interfaces with the engine, transmission, exhaust, HVAC, heating and cooling, pneumatic and hydraulic systems

Responsible for vehicle concept, packaging, ergonomics, exterior and interior and overall cab architecture. After completing vehicle concept phase responsible for BIW structure, stampings, doors, hinges, sealing and glazing systems and roofs. Coordinated the design to accommodate the electric/electronic, chassis, interior trim, seats, and safety/restraint systems.

Managed the design of a fully Aluminum stamped cab assembled with a state of the art automatic assembly line. Fully supported the production implementation of the new truck cab.

- 1997 – 2002 Project Engineer – SDT Project Leader/Manager

Managed the Cab SDT Team for a new mid duty truck program – class 5 to 8 ("M2 Business Class"). Responsible for capital investment in excess of $ 100 M. Coordinated and managed multi-departmental team to achieve the new tuck program targets. Coordinated the prototype build and testing phase. Successfully implemented in production. Followed-up with corrective action and cost reduction initiative where applicable. Extensive work with suppliers, dealers, field service personnel and customers.

1991 – 1997 PETERBILT MOTORS – PACCAR Inc. Co., Denton, TX and Newark, CA. (Dual assignment: Engineering Design Manager and Project Manager)

- 1995 – 1997 Sr. Project Engineer – Group Leader Cab and Sleeper Design

Managed and coordinated the design of the new Peterbilt class 8 heavy duty truck ("PB 387").

Established the cab concept and overall architecture, main dimensions and packaging, vehicle dynamics, interfaces between cab systems, cab – chassis and cab – electric/electronic systems.

Responsible for the BIW structure, stampings, composite materials parts, door systems including structure, mechanism, mirrors, electric, interior trim and hinges, roofs and roof aerodynamic devices, glazing, seals, wiper and washer systems, horns, grab handles and rocker panels. Managed, supervised and trained group of engineers, designers and contractors. Managed the design of one of the most innovative cab concept: combination of metal (steel and Aluminum), composite and fully bonded structure. Defined with Manufacturing and suppliers the main cab assembly line including automation, use of robots and plant layout. Implemented successfully in production. Coordinated the design of auxiliary systems installation and actuation for specialty vehicles (power take-off, etc.).

- 1993 – 1995 Project Engineer – Group Leader HVAC System (R134A Project)

Coordinated and designed the new R134A HVAC installation, the ducting and heater A/C installation system for the sleeper area. Redesigned the sleeper cab to accommodate the new HVAC installation including sleeper structure, interior trim, bunk and restraint and electric/electronic systems, controls and actuation. Implemented successfully in production.

- 1991 – 1993 Senior Design Engineer – Hoods and Power-Train Groups

Redesigned the components of the hood tilt mechanism and suspension with weight reduction, improved durability and approximately $ 300,000 saving/year. Tested and implemented in production new design solutions to resolve hood warranty issues. Design work in the engine and power-train groups as part of rotation program.

1984- 1991 ICSITTA (Scientific Research & Technological Engineering Institute for Tractors & Heavy Vehicles) the Bus Division – a MAN, Germany Franchise Co., Bucharest. Romania.

- 1988 – 1991 Manager Engineering - Body Design Department

Managed/coordinated the development, research and design work on several major projects:

- A new high-decker tourism bus/coach, 12 m long.
- A new city bus with integrated/space frame structure, lowered floor level, 12 m long.
- A new articulated city trolleybus, four axles, 18 m long. Coordinated the design installation of the electric and electronic equipment.

Responsible for vehicle dynamics, performance and calculation. Responsible for body structure, interior, exterior systems and interfaces with the chassis and electric components.

- 1986 – 1988 Project Engineer – Body Structure Group

Designed and implemented in production various body systems and components (side walls, front and rear wall, roofs, trolleybus articulation mechanism, floors).
Cooperation with MAN and Sutrak, Germany and CUMMINS, USA.

- 1984 – 1986 Designer – Chassis Group

Designed components for chassis structure, power train and axle installation.

PROFESSIONAL INFORMATION

- Developing New Products in Half the Time, Advanced Supervision, Resolve and Manage Conflict, PACCAR Institute for Managerial Leadership, Project Leadership, PACCAR Technical Institute, Truck Fundamentals, Engineering Training Program (rotation in different groups).
- Member of SAE, SIAR, ASME with publications and research work.

PHIL SMITH **PROJECT MANAGER**

BACKGROUND

Mr. Smith's Project Management and manufacturing experience began in 1971, when he began work as an Engineer for Hyster Co., manufacturing forklift trucks in Portland, Oregon. He was responsible for design of various forklifts and other equipment. He was reassigned within Hyster as Maintenance and Manufacturing Engineering, and was responsible for resolving manufacturing and assembly problems.

Mr. Smith has a varied background involving the manufacturing, installation, and delivery of fabricated metal products and structures.

Mr. Smith has been employed at Oregon Iron Works, Inc. (OIW) since 1976. His duties have included a full range of management, engineering, and production activities including estimating, bid preparation, contract negotiation, project management, and project engineering.

RELEVANT EXPERIENCE

- **HVFC (High Speed Variable Freeboard Craft) - Project Engineer, OIW**
  As Project Engineer, Phil directed the detail design effort and detail shop drawings. Phil established build plans for the structure, and was responsible for the designing and fabrication installation of fixtures for building the structure. Phil was also responsible for procurement of all structural materials throughout the project.

- **Shasta Dam Water Temperature Control System – Project Engineer, OIW**
  As Project Engineer and the primary mechanical engineer for the Shasta Dam Water Temperature Control System he was responsible for managing the design and manufacturing activities required to deliver the gates shutter control gates and the hoisting equipment. For this contract, he had complete project responsibility including development of working drawings, design and fabrication of manufacturing and assembly jigs and fixtures, contract administration, and production management.

- **Buffalo Bill Dam Montana, Steward Mountain Dam Arizona – Project Manager, OIW**
  Mr. Smith has managed a variety of projects for the Bureau Of Reclamation and the Army Corps of Engineers, these projects include Radial Gates Manufactured by OIW, for Buffalo Bill Dam Montana, Steward Mountain Dam Arizona and several other projects for other US Government Agencies.

- **Seven Oaks Dam, CA – Project Manager, OIW**
  OIW manufactured two sets of Out Flow Control Gates. The Gates included two operating gates and two emergency gates. Also included in this system, were two bypass gates which allow for maintenance to be performed on either the operating gate or the emergency gates. This contract also encompassed fabrication and machining of hoist systems at OIW. Mechanical hoists were assembled and tested in OIW's shop.

- **Carraizo Dam Radial Gates– Project Manager, OIW**
  OIW was responsible for the fabrication and delivery of eight radial gates. This required fabricating leaf sections in five sections each, complete trial assembly for dimensional tolerance verification, then truck/barge to Puerto Rico jobsite.

- **Other Projects Include:**
  High Pressure Slide (jet flow) gates for Deerfield Dam
  Double outlet Slide Gates for Seven Oaks Dam
  Montana Power - Milltown Radial Gates
  Folsom Dam Radial Gate Emergency Repair
  Thompson Falls Roller Gates

WILLIAM BOURQUE **PROJECT MANAGER**

PROFESSIONAL EXPERIENCE

6/06- Present OREGON IRON WORKS – Project Manager, Interior / Exterior Fitout
Responsible for the management, technology transfer and design, as well as supplier selection and procurement of the interior and exterior fitout components and systems of the new streetcar. Deeply involved in the "Buy America" strategy for this area. Work with production and assurance departments to develop and establish the manufacturing, testing, checking and compliance processes for the streetcar' interior and exterior effects.

10/97- 3/06 DAIMLER / FREIGHTLINER TRUCK CORPORATION – Design Engineer
Engineering responsibility (from concept to final production) on two truck cab programs. Engineered and managed full front wall module; including engine tunnel and front wall assembly, windshield support assembly, cowl, and windshield glass and seal systems. Interacted with suppliers and other engineers, using both explicit CATIA and GSM. Located and tracked reference components, created Bills of Material, and released complete production design packets to documentation.

12/91-10/97 CHRYSLER CORPORATION – Senior Designer – Small Car Platform
Responsible for design of production (Body in White) parts and panels, in addition to various surfacing and feasibility studies on the Neon, Sebring and PT Cruiser Programs.

1/90-12/91 BARTECH / SATURN – Senior Designer (CATIA) – Vehicle Eng & Assembly
Responsible for 1994 domestic and export feasibility studies and designs derived from preliminary scan data including decklid, rear fascia and bumper, fuel filler door and belt moldings.

12/84-1/90 AERO DETROIT / CHRYSLER – Senior Cad Designer
- Dash Panel and Plenum
- Exterior Ornamentation and Moldings
- Interior Trim – Door and Quarter
- Liftgate Inner and Reinforcement
- Floor Pan, Cowl and Cowl Support
- Decklid, Trough and Seals

PROFESSIONAL INFORMATION

Engineering Design Consultants, Ltd: Catia V5 - 2005
Daimler / Freightliner Corp: CATIA Generative Shape Modeling (GSM) – 2003
Technical Consultants, Inc: Geometric Dimensioning & Tolerancing – 2002
Chrysler / Marisa CATIA Parametric Solids Modeling – 1997
Chrysler / DECS CATIA Class A Surface Design – 1994
Chrysler / Marisa CATIA Advanced Surfacing – 1992
Chrysler / Aero CATIA Basic Program – 1990
Oakland University, Plastics Technology Program – 1989
Edgard DeSmet Freeform Surface Design –1986
Chrysler / Aero CAD Surface Design – 1985
Philpot School of Body Design - 1982
Macomb Community College – 1981
CAD/CAM Auto Body Applications
Miami University of Ohio – 1973

LASZLO LAJOSBANYAI **LEAD ENGINEER**

PROFESSIONAL EXPERIENCE

10/2000- Present **Senior Engineer, Neoplan USA Corp. Lamar, Co. USA (Heavy Duty Transit Bus Production), (Electrical Department) (R & D Division)**

Product **Low floor and standard floor rigid and articulated CNG and Diesel Transit buses. Low floor rigid electric trolley bus. Low floor articulated dual mode bus.**

Driver's Area Design (electrical components and ergonomic layout of the driver's area).
Installation of electric units in buses (battery tray, main power box, J-boxes, PA system etc.)
Planning and designing harnesses, multiplex ladder diagram, electrical circuit diagram etc.
Ergonomic study and statistical survey in optimize the driver's workstation, regarding the positioning of instrumentation of dash board.

Supervising personally the installation of electronic equipment and components maintaining their function and reparability in the most targeted view.

Oversee installation, operation, maintenance, and repair of such items in a manufacturing setting.
Design and engineering responsibilities in the electrical trolley and hybrid trolley (DMA) bus electric and electronic system building-up and analysis.

Communication and consulting with suppliers and subcontractors for various test procedures.
Support of subcontractors in the engineering work of various electrical and electronic programming.

1998 - 2000 **FORD HUNGARY LTD. Budapest, Field Engineer ,Hungary (Customer Service Division), (Diagnostic and Survey)**
Product: **Passenger cars and up to 3-ton transit coaches.**
Experience and practice on diagnostics and functional system.
Organize service network.
Getting involved in marketing activity mainly in car industry and in the After Sales market analyzing the distribution network.

1991 - 1998 **RENAULT HUNGARY LTD. Budapest, Technical Hot Line Engineer Hungary, (Customer Service Division), (Training Programming and Demonstrations)**
Product: **Passenger cars and up to 3-ton transit coaches.**
Mechanical engineering (engine, transmission, ABS, A/C, safety and comfort electronic).
Detailed field service experience mainly in areas of fuel management for engine, in transmission control, and general trouble shooting of car system.

1990 - 1991 **MERCEDES BENZ HUNGARY LTD. Technical Advisor Budapest, Hungary, (Customer Service Division), (Certification, Market Surveys)**
Product: **Passenger cars and up to 3-ton transit coaches.**
Experienced in multiplex system with high tech. Trouble shooting system.

1987 - 1990 IKARUS BODY AND COACH BUILDING WORKS BUDAPEST, Hungary, Senior Engineer, (R & D Division), (Temporary Assignment in USA on Transit & Articulated Buses)

Product: Standard floor rigid and articulated Diesel buses for US market.

Using CAD system for releasing and developing the documentation of electric components, circuits diagram, harnesses and their routing.

Supervising personally the installation of harnesses, electric components, instruments and interior-exterior lights.

Driver's workstation and its optimization according to the European
standards modifying for the US market.
Testing of prototype regarding the full electric system.
P.C. board application in the process of electric system optimization.
Survey and studying the US market in regard of the requirements and service conditions.

1983-1987 IKARUS BODY AND COACH BUILDING WORKS BUDAPEST, Senior Engineer, Hungary, (R & D Division), (R & D of Buses for US Market)

Product: Luxury, 16 ton tour and executive coach for the European market.
Standard floor rigid and articulated Diesel buses for US market.

Developing and prototyping of the electric system focusing on the electronic instrument and equipment applied to vehicles targeted to the American market.

Specifying the application of integrated main and sub control circuit board for simplifying the diagnostic and repair work processes.
Optimalize function boxes regarding harness routing and accessibility.
Developing complete harnesses, instrument panels, electric main and sub control boxes.
Supervising the electric installations.

RECENT EXPERIENCE:

Working over 5 years in full time employment for Neoplan USA Corporation, a city bus manufacturer using Cadkey and PRO-E Wildfire CAD systems.

I performed engineering duties focusing on complete electrical/electronic system of vehicles including control programming and designing components such as provisions and installation of electrical harnesses, instrument panels, including the complete

driver's area, lighting system and application of multiplexing system for incorporation into transit buses.
In addition to the above, during the latest special contract, I had an opportunity to gather an experience in the high voltage and the dual mode propulsion system as well. In combination with the latest contract, I also collected information on the hybrid vehicle control and propulsion systems.

Full understanding of the Dinex multiplexing system, including the programming and its application.

ROY FIRESTONE **PROJECT MANAGER**

RELEVANT EXPERIENCE

- Met extremely tight delivery goal for fast-paced, advanced military hardware system component.
- Start-up and debug of $1.8M automated project as sole controls resource.
- Designed and developed automated commercial truck washing system controls architecture that eliminated need for extensive ground crew in operation.
- Profitably resolved challenging systems integration applications when others have abandoned those Same situations as untenable.
- Created extensive process control flowchart program and DeviceNet fieldbus dual network with MMI controls and web enabled monitoring / data acquisition system.
- Developed proficiency in SolidWorks 3D solids modeling software package.
- Identified and resolved potential failure points in hardware/software for controls package.
- Self-directed learning and knowledge in NEC, JIC, OSHA, CSA, ANSI standards.
- Sole inventor, US Patent 6,921,027 for automated chemical proportioning device.
- One of designers US Design Patent D510,901 for drop-in marine vessel module.

PROFESSIONAL EXPERIENCE

2002 - Current **OREGON IRON WORKS, INC., Project Engineer**
Responsible for managing the fabrication, assembly and testing of a sophisticated defense system component on a very aggressive build-out schedule. Worked advanced systems technology integration for US Navy application on secure program. Organized testing for airborne laser rangefinder altimeter device. Developing interface for unmanned sea vehicle control.

1998 - 2002 **ULTRA EXPRESS TRUCK WASH &MANUF LLC, Chief Engineer**
Responsibilities included developing controls architecture for new generation of automated commercial truck washing and water recycling equipment, creating the programming and applying PC-based control, VFD/soft-starts, HMI panels and fieldbus communications in an aggressive environment. One patent granted and one patent-pending on inventions for project.

1997 - 1998 **HANNA-SHERMAN INTERNATIONAL, INC., Senior Project Engineer**
Dedicated, short-term design director of new product design with goal of integrating new technologies into automated roboticized equipment. Directed small, focused engineering team using PTC Pro/E solid modeling software through development and production of prototype.

1990 - 1997 **TRANSCO INDUSTRIES, INC., Fleet Wash Division, Chief Engineer**
Designed, developed, directed construction of several successful new machine designs, with innovative approaches to reducing controls costs. Responsibilities included vendor and component selection, electrical design, authoring extensive PLC programs, extensive use of AutoCAD and writing O&M manuals. Designed all but one of the standard machines now sold by this company.

1983 - 1990 SUNSET COMPANIES, INC., Engineering Director

Helped start up new company to import and distribute equipment from Finland. Created technical support areas for service, parts, engineering and field installations, wrote all new O&M manuals, functioned as factory liaison in Finland. Developed replacement electrical motor control panel to allow imported machinery to be rewired to NEC standards; During later expansion helped establish business relationship with *Istobal, S.A.* of Llalcudia, Spain for strategic equipment distribution.

PROFESSIONAL INFORMATION

Automation and controls engineering, machinery design
PLC and PC-based controls programming; sensors, drives, process and motor controls
MMI/HMI and fieldbus application: design, development and implementation
Project management, team building and supervision
Troubleshooting and process analysis, extensive travel and field work experience
CAD/CAE applications: 3D solids modeling, fab/assy drawings, BOM generation, schematics
Documentation and technical writing: O&M manuals, tech briefs, bid specs, P&IDs
Logistical planning and oversight, use of GANT and flow charts in attaining schedule goals

JAMES HULL **PROJECT MANAGER, COMPONENTS**

RELEVANT EXPERIENCE

Marine Systems Project Manager at OIW for the SEALION 2 project in conjunction with CCD. The SEALION is a fast, low-signature craft designed for multiple mission profiles for the U.S. Navy.

20 meter high speed, semi-submersible, low signature craft for the Israeli Navy. Responsibilities include managing engineering and production, material procurement, testing and trials. Worked with the Combatant Craft Division (CCD) of NSW in the development this vessel.

Research and Development of future projects and technologies; Development of advanced composite integration with present manufacturing processes and products; Development of advanced control system communication / integration utilizing Device-Net and similar technologies.

PROFESSIONAL EXPERIENCE

2003 – Present OREGON IRON WORKS, INC., Project Manager - Components

Currently Mr. Hull's responsibilities include Marine Systems and Outfitting Manager for the US Navy's SEALION II. The SEALION II is a special operations vessel and technology demonstrator that will be delivered in the Fall of 2006. Mr. Hull managed system design in a systems level IPT environment and managed all mechanical system construction and outfitting during vessel construction. To assure the vessel meets all requirements, he worked directly with the U.S. Navy civilian engineers and the SPECIAL OPS groups that will operate the boat after delivery. Responsible for developing the ships system risks and mitigation program to scrutinize all designs and equipment selections.

Mr. Hull held the above position throughout the design and construction of the five special operations vessels built for the Israeli Navy (HVFC – High Speed Variable Freeboard Craft). This program is considered a huge success as the first two boats have been delivered and now have several hundred hours of operation without any design or construction problems. Currently the last boat to be delivered is in the final stages of testing with delivery scheduled June of 2006.

1995 – 2003 CHRISTENSEN SHIPYARDS, LTD., Mechanical & Marine Engineer

Engineer responsible for design and engineering of all mechanical systems onboard custom composite yachts ranging from 110 to 157 feet built to ABS and MCA classification. Designed many custom and unique products and systems such as hydraulic and pneumatic operated doors and hatches, multi-deck elevators, hydraulic cranes, tender bays, anchor systems, fire suppression systems, engine room ventilation systems. Lead engineer for noise and vibration suppression systems applied to equipment throughout vessels. Responsibilities also included design and engineering of hull, deck and house structures. Has a very good knowledge of ABS regulations and requirements for various types of craft. Lead Sea-Trial engineer for all new yachts; Responsibilities included testing all systems, troubleshooting and producing performance data documents.

1985 – 1995 IPSWICH OUTBOARD MOTOR AND BOAT, INC., Outfitting Technician

Responsible for equipment and machinery layout design in motor vessels as well as install of such equipment. Responsibilities also included conducting river trials on various vessels and trouble shooting and repair of electronic and mechanical systems.

CHARLES W. HAHN III **MANUFACTURING ENGINEER**

BACKGROUND

Senor level Manufacturing Engineer with extensive Project Management and Operations Management experience. Responsible for overall contract performance including, subcontractor performance, project schedule, materials planning, direct management of technical and engineering staff, and customer interface.

The diverse experience base developed during my carrier, I am extremely comfortable working in an atmosphere where change in normal, and the identification of opportunities to produce a positive effect on the bottom line is a requirement. I have a mature discipline where I am able to work through the details of a project or multiple projects while not loosing sight of the larger purpose.

Virtual office, field operation, or formal office is part of the operation situations in which I am proficient at working in. I am a strong team leader, as well as team member and mentor.

RELEVANT EXPERIENCE

08/2005 – Present **SKODA ELECTRIC USA, Manager of US Operations**
Contracted to develop sales network for Rail Transit Equipment, and manage service support of delivered equipment. Report directly to Director of SKODA ELECTRIC s.r.o. PLZEN CZ. Operating remotely from home office with extensive travel to customer facilities as required. Liaison between existing and future customers and Czech based engineering. Project management as required

04/2001 – 04/2006 **NEOPLAN USA, Project Manager**
Recruited to manage transportation vehicle procurement as a project manager for City of Boston. Responsible for development of technical specifications, cultivating customer relationships, proposal preparation, pricing, project overall performance, and direct project management.
Manage a team of engineers and manufacturing professionals that satisfy technical specifications. Conduct design reviews with the customer. Qualify vendors to procure specific products and services that impact the profitability of the product while complying with regulatory systems, published standards, customer specifications, and government regulations.

Develop budgets and schedule to provide visibility during project reviews

Maintain an open line of communication with internal and external customers ensuring contract compliance and acceptance of finished product. Coordination and management of technical trade subcontractors as required by contract

12/1994 – 03/2001 **ETI/AAI, Oversight Manager**
Final Assembly Operation San Francisco (Apr 1999-Mar 2001)
Responsible for development and performance of selected Disadvantaged Business Enterprise (DBE) Subcontractor. Consult of staffing development in support of the production of Electric Buses in San Francisco.

Developed and implemented production processes and quality acceptance plan.

Managed operation budgets of $10M and production schedules. Directly managed and coordinated construction trades to renovate the production facility.
Conducted mentoring program directed at developing DBE staff and business operations.
Directly interfaced with customers regarding product acceptance and delivery.

Field Operations – Final Assembly Electric Trolley Coach Dayton (Dec 1998-Mar 1999)
Directed all aspects of the Dayton Final Assembly facility.
Controlled operation, budget, product delivery and final buy off.
Communicated with customer daily regarding project status including warranty, training, and customer support.

Manager – Mechanical Design Engineering (Apr -Nov 1998)
Reported to chief engineer while managing international team of designers producing electric trolley coaches.
Manufacturing Engineering Liaison to Materials Management Organization with responsibility for to vender qualification, benchmarking, quality audits, and technical evaluations.

Project Manager – Electric Trolley Bus Development (12/94-04/98)
Instituted modern management techniques governing a series of manufacturing, technical and procurement assignments.
Recruited, developed, and directed staff in an offshore operation producing a vehicle with a technical data package.
Maintained prototype quality, and established timely delivery.
Consistently met tight delivery schedules.
Oversaw new product development from design, engineering through production.
Coordinated purchasing management, systems engineering and cost-effective manufacturing.

8/1980 – 12/1994 **AAI, HUNT VALLEY, MD, (DEFENSE CONTRACTOR)**
Manager of Manufacturing Technology – AAI Transportation Systems (12/92-12/94)
Managed start-up and marketing of new splinter group for AAI.
Developed technical marketing strategies in support of business objectives.
Provided direct technical support to unit president.
Established cost-eliminating techniques.
Qualified and developed vendors and product sourcing

Advanced Manufacturing Engineering (05/86-12/92)
Extensive classified travel in U.S. designing processes for emerging materials.
Managed team of senior level engineers.
Authored several manuals for procedures and processes.

Mechanical Manufacturing Engineering (05/80-05/86)
Accelerated cost reduction programs.
Upgraded and assisted in establishment of computer-based process planning system
Developed standard cost estimating for manufacturing operations

GABRIELA VALERIANOVA **PROJECT MANAGER**

RELEVANT EXPERIENCE

2005 - Present SKODA TRANSPORTATION S.R.O., Project Manager
Responsible for: US market projects, special projects and legal causes.

2006 –2006 SKODA TRANSPORTATION S.R.O. Project Lead Engineer
Project and design of power transmission and brake assembly for narrow-gauge double-axle truck type 6 Ev for Italy/Switzerland line Dommodosola-Locarno.
Cooperation on mechanical project of narrow-gauge five-section streetcar type 06 T for Italian city of Cagliari.

2001 - Present SKODA OSTROV / TRANSPORTATION S.R.O. Project Manager
Responsible for: EU benchmarking, US market projects, special projects and legal causes.

1999 - 2001 NEJDECKA CESARNA VLNY A.S., Purchasing Manager
Working in an international team in a company with British ownership and management. Responsible for: Material flow, payments, costs, and management of stores. Implementing CIS - ICL MAX.

1994-1999 WESTERN BOHEMIA REAL ESTATE AGENT
Responsible for the WB real estate market, knowledge of law connected to the branch.

- Project and design of power transmission of double-axle truck for metro end-car type 6 Mt
- Project and design of motor-gearbox assembly of double-axle truck for high-speed passenger double-deck Electric Multiple Unit type 4 Ev
- Mechanical project of machine room for refurbishment of diesel-electric shunting locomotive MaK DE 1002
- Cooperation on mechanical project of narrow-gauge five-section streetcar type 06 T for Italian city of Cagliari

PAVEL RAB **PROJECT ENGINEER**

RELEVANT EXPERIENCE

2003 – Present	SKODA ELECTRIC s.r.o. , Project Engineer / Electrical Tract
2001 – 2003	INEKON s.r.o., Project Engineer / Electrical Tract
1998 – 2001	SKODA DOPRAVNI TECHNIKA, Project Engineer / Electrical Tract

PROFESSIONAL INFORMATION

2006 – Present **SKODA ELECTRIC s.r.o., Project Engineer**
US Streetcar 10T3 / Electric equipment for streetcar

2003 – 2006 **SKODA ELECTRIC s.r.o., Project Engineer**
Italian Streetcar 06T/ Electric equipment for streetcar

2003 – 2005 **SKODA ELECTRIC s.r.o., Project Engineer**
EU 12m and 18m Trolleybuses– Irisbus France
/ Power, command and control system

2003 – 2006 **SKODA ELECTRIC s.r.o., Project Engineer**
Czech Streetcar 14 / Electric equipment for streetcar

2001 – 2003 **INEKON s.r.o, Project Engineer**
Czech Streetcars Inekon TRIO / Power, command and control system

1999 – 2001 **SKODA DOPRAVNI TECHNIKA, Assistant Project Engineer**
US Streetcar 10T / Power, command and control system

MICHAL DRHA **SALES MANAGER**

RELEVANT EXPERIENCE

2004 - Current ŠKODA ELECTRIC s.r.o, Sales Manager

1999 - 2004 ŠKODA TRAKČNÍ MOTORY s.r.o. Sales Exec/Project Mgr Auditor

PROFESSIONAL EXPERIENCE

Year	Description	Place of destination
2006 – Present	Electric drive system for Wroclaw streetcar	Worclaw, Poland
2004 - 2006	Boston DMA & ETB trolleybus electric equipment	Boston, MA, USA
2004 - 2005	Electric drive system for Prague streetcar	Prague, Czech Republic
2005 – Present	Electric drive system for Cagliari streetcar	Cagliary, Sardinia, Italy
2002 - 2004	AC stators for speed train Pendolino (Alstom)	Milano, Italy
2002 - 2003	AC motors for tramcars Philadelphia	Philadelphia, PA, USA
1999 - 2001	DC motors for trolleybus	San Francisco, CA, USA

MAREK ROTTENBORN **PROJECT MANAGER**

PROFESSIONAL EXPERIENCE

2003 – Present	SKODA ELECTRIC s.r.o.	Project Manager
2000 – 2002	SKODA ENERGO s.r.o.	Salesman / Project Manager
1999 – 1999	SIEMENS AT s.r.o.	Maintenance Manager
1997 – 1999	SKODA Energo s.r.o.	Control Electronics Sales
1996 – 1997	SKODA Controls s.r.o.	Control System Development Designer

PROFESSIONAL INFORMATION

2006 – Present	**10T3 STREETCAR** Electric equipment for streetcar	**Sales Admin, Project Mgr**
2003 – 2006	**BOSTON DMA** Electric equipment for dual trolley bus	**Sales Admin, Project Mgr**
1998 – 2003	**DUKOVANY NUCLEAR POWER PLANT** Drive/control system for reactor rods	**Project Manager - Sales**
1996 – 1998	**STRAKONICE HEAT PLANT** Complete control system delivery	**Assistant Project Mgr**

MILAN ŠRÁMEK — ELECTRICAL PROJECT ENGINEER

BACKGROUND

Milan Šrámek is en employee of Technical Department of Škoda Transportation, Plzeň, Czech Republic. He works as an electrical project engineer of electric traction vehicles.

PROFESSIONAL EXPERIENCE

2006-Present **ŠKODA TRANSPORTATION, Electrical Project Engineer**
Participation on Type 10 T3 low-floor bi-directional streetcar prototype – cooperation with Oregon Iron Works, Inc., circuit diagrams, electrical schemes and electrical circuits components.

2005-2006 **ŠKODA TRANSPORTATION**
Participation on Type 6 Ev driven and non-driven trucks for OFV Verona, Italy – circuit diagrams of electrical circuits of trucks

2004 **ŠKODA TRANSPORTATION, Head of Vehicle Electrical Project Dept.**

2004-2006 **ŠKODA TRANSPORTATION**
Participation on Type 06 T low-floor five-sectional bi-directional streetcars for Ferrovie della Sardegna, Cagliari, Italy – complete electrical part incl. vehicle control, adoption of Italian UNI norms.

2002-2003 **ŠKODA TRANSPORTATION**
Participation on Type 05 T low-floor five-sectional streetcar prototype – power circuit diagrams.

2001-2003 **ŠKODA TRANSPORTATION**
Participation on Type 10 T1 low-floor bi-directional streetcars for Sound Transit, Tacoma – vehicle control and safety interlocking as well as maintenance personnel training and service duties.

2000-2002 **ŠKODA TRANSPORTATION**
Participation on Type 10 T low-floor bi-directional streetcars for Portland Streetcar Inc. – electrical part, vehicle control, SHA/FMECA and maintenance personnel training.

1998-2000 **ŠKODA TRANSPORTATION**
Participation on Type 21 TrACI dual-mode trolleybus with a new electrical equipment for Hradec Kralove Transport Authority, Czech Republic – power circuits, vehicle control and adopting diesel auxiliary power unit; project was realized in cooperation with Škoda Trakční motory s.r.o.

1998-1999 **ŠKODA TRANSPORTATION**
Participation on Type 82 E9 express locos for Russian Railways - electrical equipment and its connection with new safety interlocking

1997-2000	**ŠKODA TRANSPORTATION** Participation on Type 66 Em 8000 kW express locos refurbishments for Russian Railways – complete electrical part
1996-1997	**ŠKODA TRANSPORTATION** Participation on Type 03 T low-floor tramcars prototypes for Plzen Transport Authority – vehicle electrical schemes and vehicle control
1996-1998	**ŠKODA TRANSPORTATION** Participation on Type 01 T a 02 T refurbishment of tramcars for Plzen and Liberec Transport Authorities, Czech Republic – vehicle electrical schemes
1997	**ŠKODA TRANSPORTATION, Vehicle Electrical Project Dept.**
1994	**ŠKODA TRANSPORTATION, Mechanical and Electrical Designer** Traction converter blocks, converter blocks electrical schemes. (Oct 1994 – Sept 1995 = 1 year army service)

ZDENEK CERVENKA **PROJECT MANAGER**

RELEVANT EXPERIENCE

1/2006 – 8/2006	**SKODA TRANSPORTATION s.r.o - Project Lead Engineer** Project and design of power transmission and brake assembly for narrow-gauge double-axle truck type 6 Ev for Italy/Switzerland line Dommodosola-Locarno Cooperation on mechanical project of narrow-gauge five-section streetcar type 06 T for Italian city of Cagliari
1/2002 – 12/2005	**SKODA TRANSPORTATION s.r.o - Mechanical Project Engineer** Project and design of power transmission of double-axle truck for metro end-car type 6 Mt. Project and design of motor-gearbox assembly of double-axle truck for high-speed passenger double-deck Electric Multiple Unit type 4 Ev. Mechanical project of machine room for refurbishment of diesel-electric shunting locomotive MaK DE 1002. Cooperation on mechanical project of narrow-gauge five-section streetcar type 06 T for Italian city of Cagliari.
12/2001 – 12/2001	**SKODA TRANSPORTATION s.r.o, Mechanical Engineer** Refurbishment of gearbox for power transmission of three-axle motorized truck of Russian diesel-electric locomotive type BR 233 of German Railways. Refurbishment of motor-gearbox assembly of double-axle truck for passenger double-deck Electric Multiple Unit type 1 Ev.
12/2000 – 12/2000	**MILITARY SERVICE, Commander of Squad**
9/1998 – 12/1999	**SKODA TRANSPORTATION s.r.o., Mechanical Engineer** Design of narrow-gauge carbody underframe for streetcar typ 07 T Cooperation in design of piping system in drivers cab of metro end-car type 2 Mt. Project of gearbox for power transmission in double-axle truck for ANF Bombardier, Crespin, France. Project of low-floor streetcar motorized no-gearbox truck with wheel-mounted traction motors type TFM. Refurbishment of gearbox for power transmission of three-axle motorized truck of electric locomotive type 53 Em for Russian Railways.

JIŘÍ KŘÍBEK **SYSTEM ENGINEER**

RELEVANT EXPERIENCE

2006 - Present **ŠKODA TRANSPORTATION s.r.o., Electrical System Engineer**
Participation on Type 10 T3 low-floor bi-directional streetcar prototype – cooperation with Oregon Iron Works, Inc., calculation, circuit diagrams, electrical schemes and electrical circuits components

2005 – 2006 **ŠKODA TRANSPORTATION s.r.o., Electrical System Engineer**
Participation on Type 6 Ev driven and non-driven trucks for OFV Verona, Italy – circuit diagrams of electrical circuits of trucks

2004 - 2006 **ŠKODA TRANSPORTATION s.r.o., Electrical System Engineer**
Participation on Type 06 T low-floor five-sectional bi-directional streetcars for Ferrovie della Sardegna, Cagliari, Italy – calculations, complete electrical part incl. vehicle control, adoption of Italian UNI norms.

PROFESSIONAL INFORMATION

9/2005 University of West Bohemia in Pilsen, Faculty of electrical engineering – postgradual study– Theme of thesis: EMC of the rail vehicles

1998 – 2004 University of West Bohemia in Pilsen, Faculty of electrical engineering – the field of traffic electrical engineering - Electric traction
Theme of thesis: Tramtrain on 25kV, 50Hz
graduated on Electrical Engineer, a university diploma

ONDŘEJ TOMŠA **ELECTRICAL PROJECT ENGINEER**

BACKGROUND

Ondřej Tomša is employed in Technical Department of Škoda Transportation, Plzeň, Czech Republic. He works as an electrical project engineer of the electric traction rail vehicles.

RELEVANT EXPERIENCE

2006-Present **ŠKODA TRANSPORTATION, Electrical Engineer**
Participation on Type 15 T low-floor unidirectional tramcar for Brno Transport Authority, vehicle control system design and SW control algorithms design.

2004-2006 **ŠKODA TRANSPORTATION, Electrical Engineer**
Participation on Type 06 T low-floor five-sectional bidirectional tramcar for Ferrovie della Sardegna, Cagliari, Italy, traction calculus, electrical circuits design, vehicle control system design and SW control algorithms design.

2003-2006 **ŠKODA TRANSPORTATION, Electrical Engineer**
Participation on Type 14 T low-floor five-sectional unidirectional tramcar for Praha Transport Authority, traction calculus, electrical circuits design, vehicle control system design and SW control algorithms design.

2002-2003 **ŠKODA TRANSPORTATION, Electrical Engineer**
Participation on Type 05 T low-floor five-sectional unidirectional tramcar prototype, electrical circuits design, vehicle control system design and SW control algorithms design.

2001-2002 **ŠKODA TRANSPORTATION, Electrical Engineer**
Participation on Type 03 T low-floor three-sectional unidirectional tramcars for Brno Transport Authority, electrical circuits design.

2001 **ŠKODA TRANSPORTATION, Electrical Engineer**
Vehicle Electrical Project Dept., electrical project engineer; electrical schemes, control system software algorithms design, vehicle traction characteristics calculus and vehicle tachograms simulation.

4.0 MANUFACTURING PLAN

a. General – Strategy

The key element of the overall Streetcar Program success is the manufacturing process. OIW is a very experienced Company and is planning a manufacturing process which will result in an excellent product, at the highest quality, performance and finish level.

The main strategy of the manufacturing plan consists of manufacturing in house (at OIW) all components or systems and major assemblies that are the core competencies for OIW (proven on every new program) and to outsource the components/systems where the main competency can be found at a highly reputable supplier. This strategy will not only ensure a good and compliant product, but it will also minimize the risk of implementing the new product and will also utilize the best processes/technology with the most experienced manufacturer for each component/system.

During the course of the prototype production, OIW will leverage its experience transitioning prototype designs to production and incorporate domestic manufacturing considerations in order to simplify future streetcar procurement demands. OIW will also establish a domestic supply chain that is capable of supporting these demands as well. It is OIW's intent to develop a manufacturing capability for domestically produced streetcars during the course of this work.

b. Brief Description of the Manufacturing Process

The body shell assembly will be manufactured at OIW. The individual components, sub-systems and major structural components are steel welded constructions. This is the core competency for OIW. We will manufacture "in house" all of the structural components and then assemble them together into the final body shell assembly. The truck frame, which is a steel welded structure, will also be manufactured at OIW and then shipped to the system integrator (Penn Machine) who will integrate it into the final assembly of the truck. In addition to large structural components, OIW is capable of manufacturing small brackets and mounting frames as well.

The pre-priming, priming and painting will be done at OIW's, Vancouver painting facility. All specific operations for priming, painting and anti-corrosive protection will be done at our specialized facility in Vancouver. The final priming, structure sealing, adjusting and surface hand work and sanding, and final top coat will be done at this location.

The interior and exterior trim installation will be done at OIW. We are planning to install the interior and exterior trim components at our facility in Clackamas. Outfitting is a process very familiar to and frequently used at OIW on other projects; very similar components are used for other products (boats, control rooms, etc.). All major interior and exterior components will be supplied from specialized vendors and will be installed in house with assistance from the manufacturer (when required).

The electrical traction system will be manufactured at Skoda Electric and installed on the vehicle at OIW. All major components of the traction system will be produced by Skoda Electric. These components will be sent to OIW for installation on the vehicle and to Penn Machine (traction motor) for installation on the bogie. OIW will install the electrical components on the body and will make all the necessary electrical connections.

The truck assembly will be manufactured at Penn Machine, tested and then sent to OIW for installation. As previously mentioned in our reply, OIW is using Penn Machine, an experienced system integrator and manufacturer of mechanical components (axles, gear boxes, etc.). The truck assembly received from the supplier will be verified and then installed/assembled with the rest of the vehicle body.

c. Facilities

OIW currently has several manufacturing facilities that can accommodate the prototype build as planned. The majority of the work will be done in Clackamas, Oregon in several existing bays. The pre-fabrication and body structure work will most likely be done in our Bay 1 and 2 facilities, which are fully equipped and suitable for these types of operations. Bays 4 and 6 also have the needed capabilities to accommodate this type of manufacturing process and could be utilized on an as-needed basis.

The electrical components installation, trim outfitting and truck and under body installation are planned to be performed in Bay 4. This bay also has an under vehicle access pit that will be used for installation and checking under the vehicle. As back-up, Bay 6 also has similar capabilities.

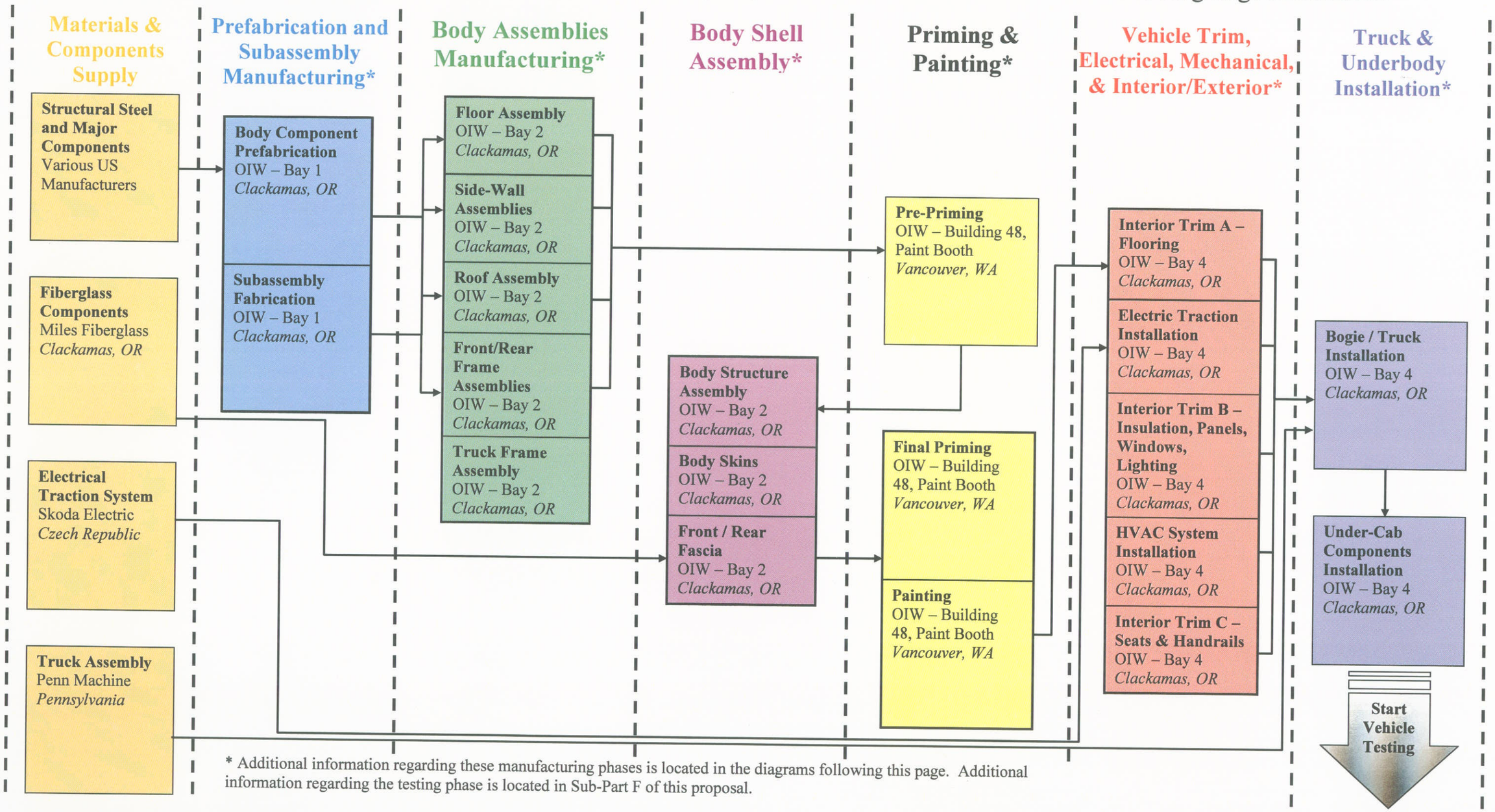
d. Quality Control

After completion of each major manufacturing task, OIW's Quality control and assurance program will be applied before allowing the project to move to the next station. The control will be done in accordance with the assurance and quality plan.

Please refer to the following diagrams (pages 163 – 168) for an overview of the prototype streetcar manufacturing plan and work flow.

Prototype Streetcar Manufacturing Work-Flow Diagram

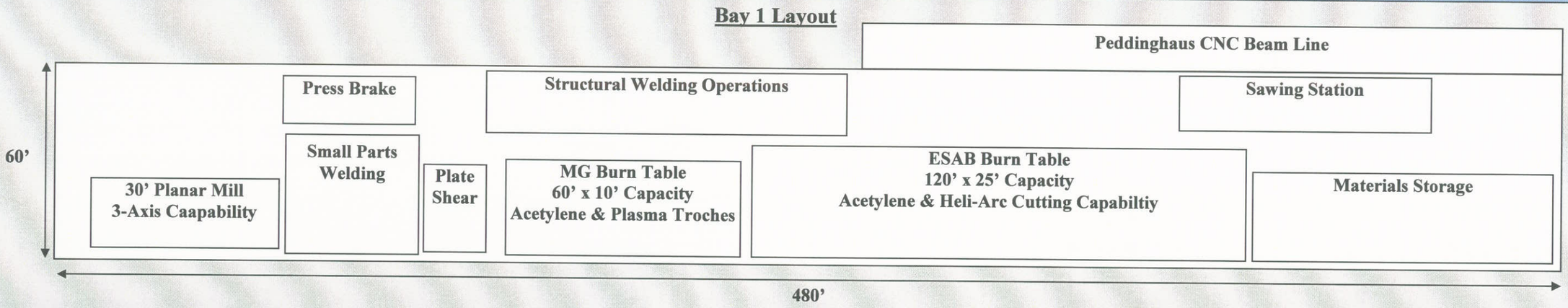
Each manufacturing stage is followed by quality control & quality assurance verifications before the following stage commences.



* Additional information regarding these manufacturing phases is located in the diagrams following this page. Additional information regarding the testing phase is located in Sub-Part F of this proposal.

Prefabrication and Subassembly Manufacturing – Bay 1, Clackamas, OR

Bay 1 Layout



Bay 1 Capabilities

- Structural Fit & Welding Capability
- Small Parts Fabrication
- CNC Plate Burning
- CNC Structural Shapes Cutting / Coping / Drilling
- Miscellaneous Metal Working (Punching, Shear, Cope)
- CNC Machining
- Metal Forming
- 50 Tons of Lift Capacity
- 3-Shift Operation

Operations Summary

Body Component Prefabrication

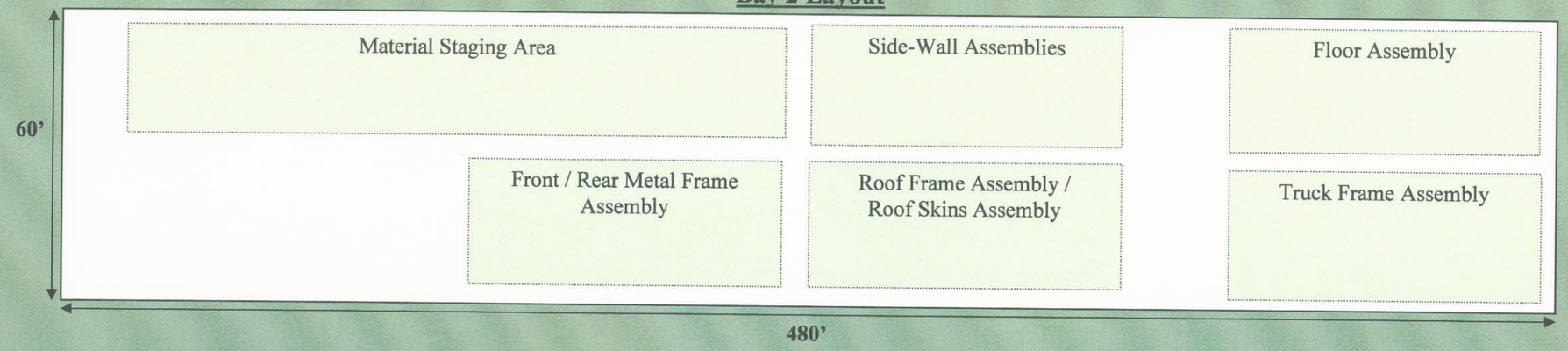
- Plate Parts Burning
- Metal Forming
- Structural Shapes Prep
- Piece Machining

Subassembly Fabrication

- Fitting and Welding of Various Small Subcomponent Sub-Assemblies for Main Body Assemblies
- Welding Body Shell
- Machining Truck Frame Mounting Surfaces

Body Assemblies Manufacturing – Bay 2, Clackamas, OR

Bay 2 Layout



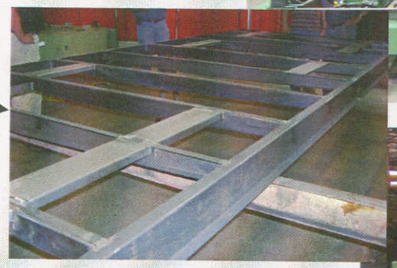
Bay 2 Capabilities

- 50 Tons of Lift Capacity
- Complex & Heavy Part Fit / Rotate / Weld Capability
- Automatic Servo Controlled Weld Machines
- Open-Floor Plan Allows Easy Reconfiguration for Various Phases of Streetcar Production

Operations Summary

Floor Assembly
Fabricate Floor Body Assembly.

Side-Wall Assemblies
Fabricate Side-Wall Body Assemblies.



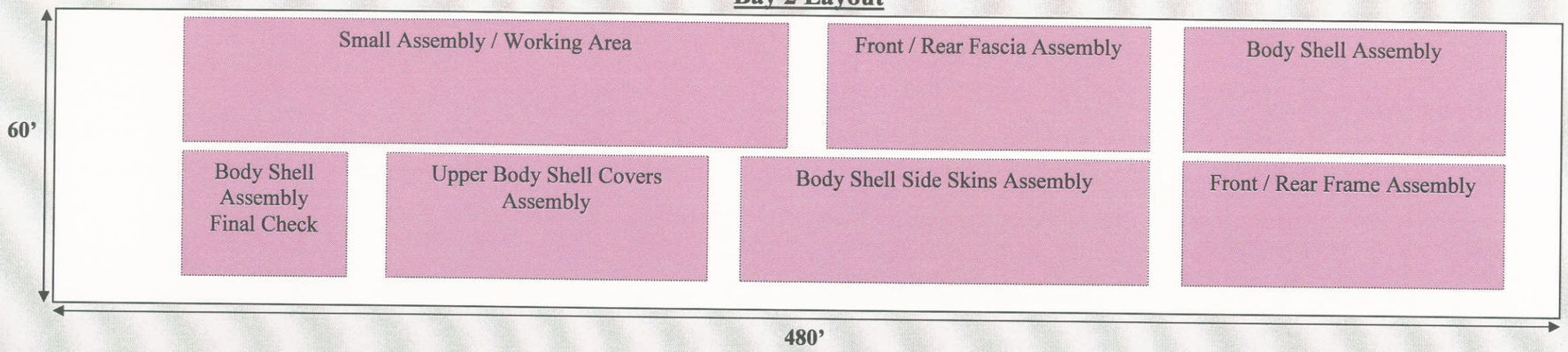
Roof Assembly
Fabricate Roof Body Assembly.

Front/Rear Frame Assemblies
Fabricate Front/Rear Frame Assemblies.

Truck Frame Assembly
Fabricate Truck Frame Assemblies.

Body Shell Assembly – Bay 2, Clackamas, OR

Bay 2 Layout



Bay 2 Capabilities

- 50 Tons of Lift Capacity
- Complex & Heavy Part Fit / Rotate / Weld Capability
- Automatic Servo Controlled Weld Machines
- Open-Floor Plan Allows Easy Reconfiguration for Various Phases of Streetcar Production

Operations Summary

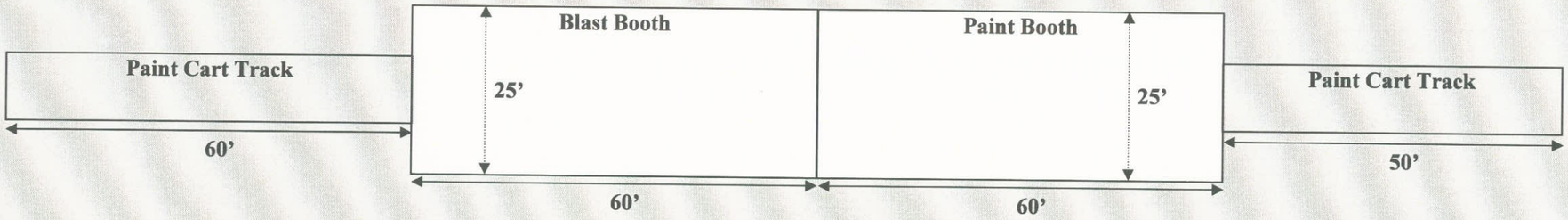
Body Structure Assembly
Final Assembly Body Sub-Assemblies.

Body Skins
Fit Body Skins to Body Structure.

Front / Rear Fascia
Install Front & Rear Fascia.

Priming & Painting – Building 48, Paint Booth, Vancouver, WA

Paint Booth Layout



Paint Booth Capabilities

- Surface Preparation & Coating
- Modular Wall Between Blast & Paint Booths Allows for Pieces up to 25'w x 14'h x 120'l
- Full Environmental Controls for Controlled Cure Periods
- 3-Shift Operation

Operations Summary

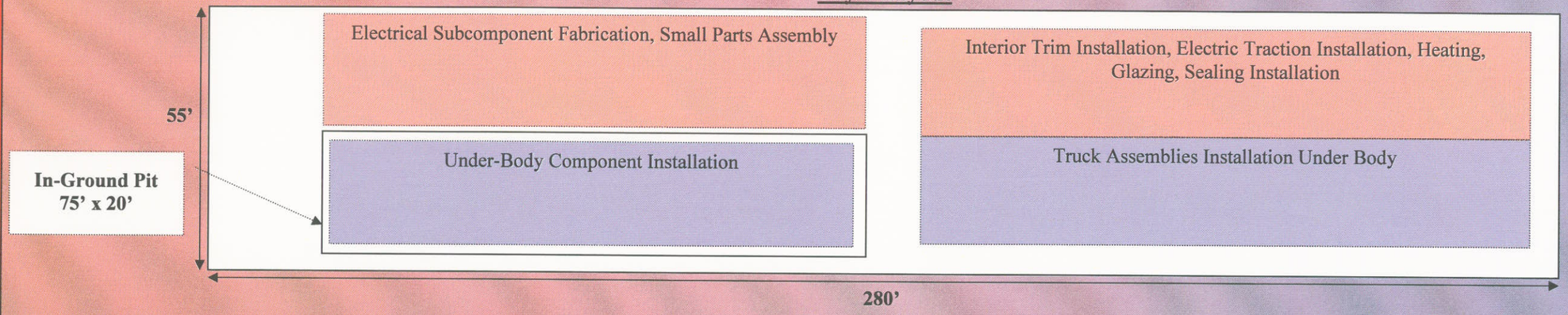
Pre-Priming
Prepare surfaces and primer coat body structural assemblies prior to final body assembly.

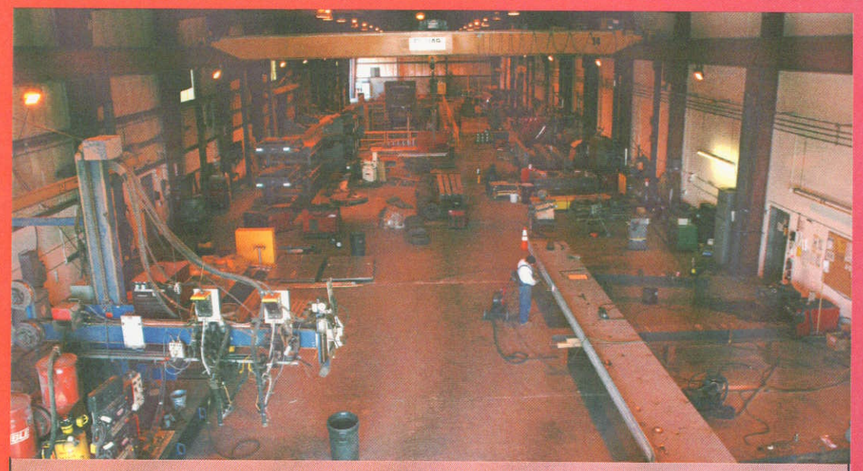
Final Priming
Apply primer to remaining surfaces after final body assembly.

Paint
Apply final coat to body assembly.

Vehicle Trim, Electrical, Mechanical, & Interior / Exterior and Truck & Underbody Installation – Bay 4, Clackamas, OR

Bay 4 Layout





Bay 4 Capabilities

- 35 Tons of Lift Capacity
- Complex & Heavy Part Fit / Rotate / Weld Capability
- Final Assembly, System Installation, & Testing
- Open-Floor Plan Allows Easy Reconfiguration for Various Phases of Streetcar Production
- In-Ground Pit Allows Fixture for Access to Vehicle Underbody

Operations Summary

Interior Trim A, B, & C
Plywood Floor, Insulation, Panels, Windows, Lighting, Seats, & Handrail Installation

Electric Traction Installation
Fabricate Electrical Subassemblies and Install Electrical System Into Vehicle.

Heating Installation
Install Heating System Into Vehicle.

Bogie / Truck Assembly Installation
Install Truck Assemblies and Connect Vehicle Systems.

Under-Body Assembly Installation
Install Under-Body Parts and Connect Vehicle Systems.

5.0 COMPREHENSIVE SCHEDULE WITH KEY MILESTONES

a. General

OIW has developed a preliminary Program schedule that includes all significant activities and is enclosed as part of the RFP reply. While this schedule is a preliminary summary version of the overall Program schedule, we have also developed a detailed schedule that addresses, in detail, every major activity. This detailed schedule will be provided to all Team members upon start of the Street car Development Program.

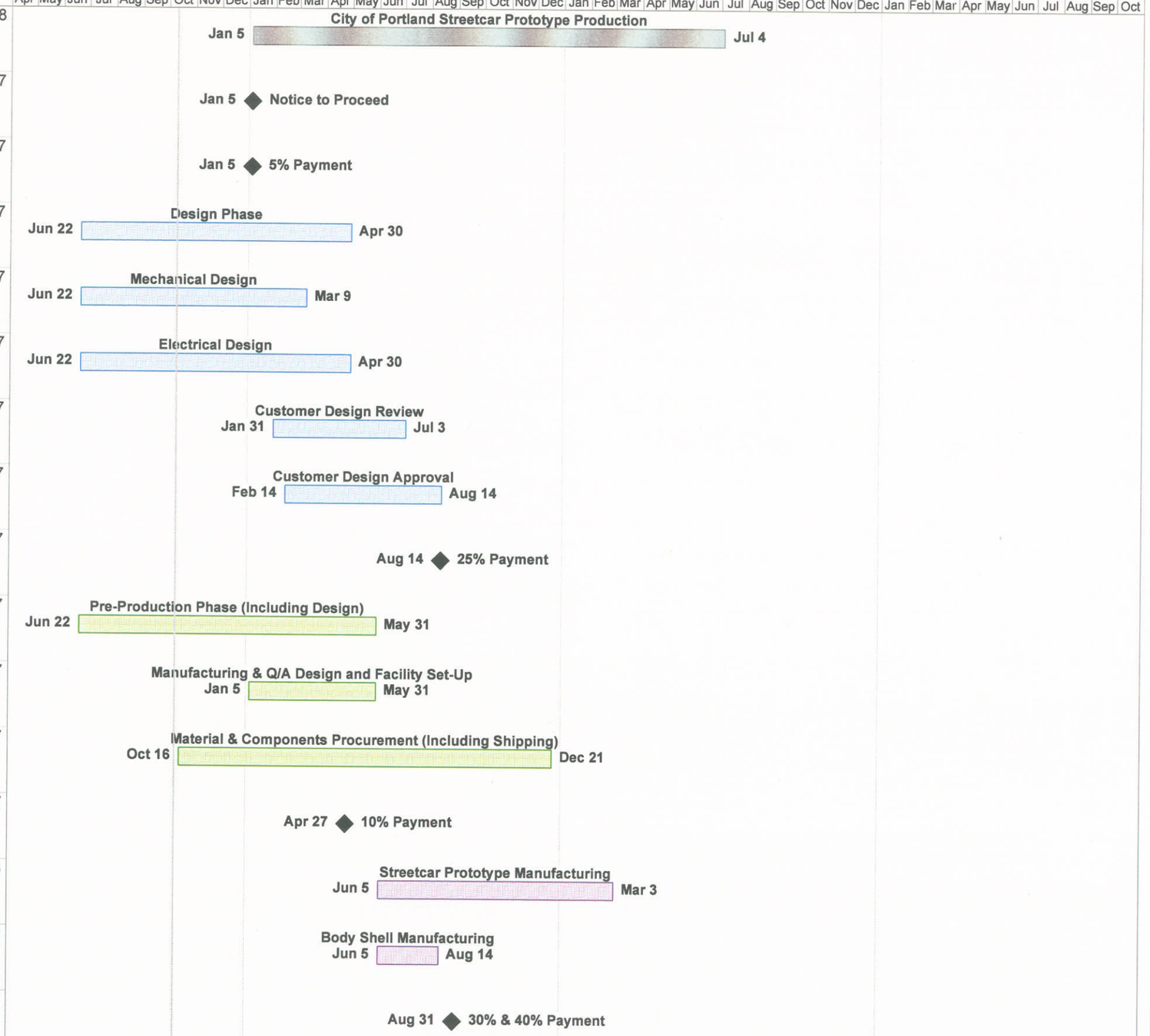
For clarity, all major activities that have a multitude of tasks have been addressed on a separate schedule for that specific activity (i.e. the truck assembly to be manufactured and final assembled at the system integrator (Penn Machine) has its own schedule; the supply of the major components have their own schedule that outlines the lead time for each of them; the Skoda Electric traction equipment and design, manufacturing and testing has its own schedule; the vehicle testing phase has its own schedule – see sub-part F, etc.). Yet, the main Program schedule incorporates the result from individual/detailed system schedules in the summary.

b. Strategy

The summary schedule that follows this page (pages 170 - 171) presents a prototype program that uses almost the entire allowable time specified on the RFP (18 months). The strategy applied by the OIW Management Team is to actually develop the prototype street car on an accelerated schedule with earlier completion (3 months earlier completion). The accelerated schedule will allow the Program Manager to compensate for any un-expected delays in the Program and to plan for contingency in case any activities are delayed achieving the desired results.

City of Portland Prototype Streetcar Production Schedule

ID	Task Name	Duration	Start	Finish
1	City of Portland Streetcar Prototype Production	17.75 mo	Jan 5 '07	Jul 4 '08
2	Notice to Proceed	0 mo	Jan 5 '07	Jan 5 '07
3	5% Payment	0 mo	Jan 5 '07	Jan 5 '07
4	Design Phase	44.5 wks	Jun 22 '06	Apr 30 '07
5	Mechanical Design	37.4 wks	Jun 22 '06	Mar 9 '07
6	Electrical Design	44.5 wks	Jun 22 '06	Apr 30 '07
7	Customer Design Review	22 wks	Jan 31 '07	Jul 3 '07
8	Customer Design Approval	26 wks	Feb 14 '07	Aug 14 '07
9	25% Payment	0 mo	Aug 14 '07	Aug 14 '07
10	Pre-Production Phase (Including Design)	49.2 wks	Jun 22 '06	May 31 '07
11	Manufacturing & Q/A Design and Facility Set-Up	21 wks	Jan 5 '07	May 31 '07
12	Material & Components Procurement (Including Shipping)	62 wks	Oct 16 '06	Dec 21 '07
13	10% Payment	0 mo	Apr 27 '07	Apr 27 '07
14	Streetcar Prototype Manufacturing	39 wks	Jun 5 '07	Mar 3 '08
15	Body Shell Manufacturing	10.2 wks	Jun 5 '07	Aug 14 '07
16	30% & 40% Payment	0 mo	Aug 31 '07	Aug 31 '07



City of Portland Prototype Streetcar Production Schedule

ID	Task Name	Duration	Start	Finish
17	Priming & Painting	2.2 wks	Aug 14 '07	Aug 28 '07
18	Electrical System & Interior Installation	14.2 wks	Aug 28 '07	Dec 4 '07
19	Trim & Major Components Installation	7.2 wks	Dec 4 '07	Jan 22 '08
20	Truck & Under Body Installation	3.2 wks	Jan 22 '08	Feb 12 '08
21	Finish Work / Final QA Verification	3 wks	Feb 12 '08	Mar 3 '08
22	Conformance & Design Qualification Testing Phase	36 wks	Aug 13 '07	Apr 18 '08
23	Vehicle Testing Phase	10 wks	Mar 3 '08	May 9 '08
24	Move to Portland Track	1 wk	May 12 '08	May 16 '08
25	50% Payment	0 mo	May 9 '08	May 9 '08
26	Customer Acceptance Testing	4 wks	May 26 '08	Jun 20 '08
27	Customer Approval	2 wks	Jun 23 '08	Jul 4 '08
28	65% Payment	0 mo	May 16 '08	May 16 '08
29	75% Payment	0 mo	Jan 5 '09	Jan 5 '09
30	90% Payment	0 mo	Jul 6 '09	Jul 6 '09
31	100% Payment	0 mo	Aug 7 '09	Aug 7 '09