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303 Bagot Street, Suite 501 Tel: (613) 545-3303 jhparker@parker-inc.com
Kingston, ON, K7K 5W7 Fax: (613) 545-1154 www.parker-inc.com

Parker & Associates, Inc.

RAYMOND SMITH

EDUCATION

Honours Degree, Applied Mathematics, Manchester University ,England

Commission - Royal Electrical and Mechanical Engineers, United Kingdom

Summer Graduate Schools:

- Aero-Elasticity - Massachusetts Institute of Technology, Boston, United States
- Structure Design – Cranfield Aeronautical College, United Kingdom

PROFILE

Twenty-five years engineering experience in transit systems specification, design, and development, systems engineering, RAMS, light weight vehicle design, automated unmanned transit system development, safety, reliability and maintainability, planning, analysis, system integration and commissioning.

EMPLOYMENT RECORD

1996 – present **Associate, Parker & Associates, Inc.**, Ontario, Canada

1991 – present **Independent Consultant**, Ontario, Canada

1977 – 1991 **Director of Engineering, Urban Transportation Development Corporation (UTDC)**, Ontario, Canada

EXPERIENCE

<p><i>2003 to 2004</i></p>	<ul style="list-style-type: none"> • Safety analysis for Vancouver platform protection systems. • Operational and Safety analysis for New York AirTrain related to test accidents. • Safety and failures modes analysis and preparation of a safety plan for Sidetrack tunnel advertising display systems. • Operational Reliability and Cost Model analysis for South African Railways related to a proposal for the supply of new locomotives. • Preparation of commentary on the operational and design issues for a potential High Speed Train between Quebec City and Toronto. Review of the suitability of the Bombardier Jet Train for this application. • Evaluation of subsystems specification for the Taipei HST including, HVAC, Structure and test requirements. • Support to the preparation of proposal for the supply of Rolling Stock to SCRRRA Metrolink and PATH, including Coupler, Friction Brakes, HVAC and Door Operator.
<p><i>1999 to 2002</i></p>	<ul style="list-style-type: none"> • Preliminary Design studies for applications of Aeromovel technology (Air Propulsion) to automated light rail transit systems. • Review Operations and safety reports for Personal Rapid Transit system for North East Illinois RTA (Chicago). • Preparation of supporting analysis and documentation for Technical Proposals for New Transit Systems, including, Miami International APM; Singapore Marino Line automated LRT, Singapore C810. • Review of vehicle design for compliance against specification and standards, preparation of technical documentation for NYCT Division B Rolling Stock (R143, R160), WMATA 6000 series rolling stock, NJT bi-level rolling stock Bids. • Preparation of supporting analysis and documentation for Technical Proposals for New Transit Systems, including, Miami International APM; Singapore Marino Line automated LRT, Singapore C810. • Vancouver 2000 extension of the Existing Sky Train System extension: System Assurance, RAMS, Documentation Audit
<p><i>1997 to 1998</i></p>	<ul style="list-style-type: none"> • Korean High-speed train: Preparation of on board computer specification. • Manila HRT: Preparation of technical requirements for vehicle and vehicle subsystems. • New York City Transit: Preparation of proposal documentation for R142A for Division B rolling stock, including system design analysis, traction and

	<p>braking, cab systems, and systems assurance requirements.</p> <ul style="list-style-type: none"> • Korean Very High Speed Rail System: Design analysis in support of System Preliminary Design. • Singapore MRT System Extension: Preparation of systems engineering documentation, RAMS, and safety analysis report.
<i>1996 to 1997</i>	<ul style="list-style-type: none"> • Design auditor, for Malaysian Owner, of Kuala Lumpur Linear Motor automated transit system supplier. • Bangkok MRT (underground): Preparation of systems assurance and safety requirements and vehicle specification. • Montreal/Toronto High Speed Rail Link: Analysis of operational requirements and system specifications. • Manila LRT: Evaluation of alternative light rail vehicles. • Bangkok MRT: Proposal documentation for vehicle, platform gates and fare collection systems.
<i>1994 to 1995</i>	<ul style="list-style-type: none"> • Guangzhou Metro: Preparation of vehicle specification. • Shanghai Metro: Vehicle design and specification compliance review. • Aeromovel (Brazil) transit system: Evaluation of conceptual design and performance. • Chicago PRT: Preparation of operational requirements and vehicle design review. • Kuala Lumpur LRT 2 automated transit system: Preparation of vehicle specification, safety, reliability, maintainability RAMS plans, performance analysis and bid documents. Technical evaluation of bids.
<i>1991 to 1993</i>	<ul style="list-style-type: none"> • Bangkok Metro System (BERTS, Hopewell elevated system): Preparation of complete system specification, systems engineering plans, RAMS and performance analysis. • Heathrow Express: Evaluation of system verification and test plans.
<i>1977 to 1991</i>	<ul style="list-style-type: none"> • Director of Engineering and Systems Engineering for UTDC, Kingston, Ontario. • System development, production design, qualification, delivery and commissioning of new concept systems including Mark II Sky Train system. • Design development and implementation for Vancouver Sky train, Detroit Downtown People Mover, automated, unmanned systems and Scarborough LRT.

1975 to 1977	<i>Manager of Advanced Systems Design, Canadair</i> , Quebec, Canada <ul style="list-style-type: none">• Technology research and development of new concepts for specific operational requirements.
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PROFESSIONAL AFFILIATION

Member of Professional Engineers Ontario