

## JASMEET SINGH



### SUMMARY

Seasoned engineer with 25+ years of experience in project management and product development, I have capably managed significant projects with budgets totaling in excess of \$125 million. Additionally, I have overseen a team of 70 engineers in various teams, ensuring their efficient collaboration and successful execution of projects. My expertise lies in managing vehicle/engine maintenance, vehicle builds, manufacturing, servicability, fuel economy programs, and diesel engines, where I have supported various vehicle/engine platforms and collaborated with core teams, design engineers, software engineers, diagnostics, procurement, lead technicians, and mechanics. Additionally, I have supervised and trained new engineers in troubleshooting engines, planning/executing dyno/field tests, and evaluating engine hardware. My leadership skills have also been essential in leading cross-functional team meetings aimed at providing effective customer solutions.

### EDUCATION

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**January 2002 - August 2004**                      **Wayne State University, Detroit, MI.**  
*M.S (Mechanical Engineering **with Thesis**), GPA~3.75/4.0.*

**June 1998 - December 1998**                      **National Maritime Academy, Singapore.**  
*Graduated from specialized setup in Marine Diesel Engines and Management.*  
**Certificate of Endorsement in Diesel engines, Issued by Maritime Port Authority, Singapore. (E5-00200)**

**July 1993- July 1997**                      **GNDEC, India.**  
*B.S (Mechanical Engineering) with Distinction*

### Interests

Product Development, Project Management, Diesel Testing, Performance & Emissions.

### Professional Experience

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**May2010 – Present**                      **Navistar Inc., Lisle, IL**

#### **Engineering Program Manager**

- o Cross functional team interaction with engineers, procurement, Build team, program management team to complete the tasks on time.
- o Managing and communicating the program deadline and tasks to team of 70 engineers and ensuring task completion on time.

- o Extensively working and resolving the issues that cause delays to the program by providing alternatives.
- o Risk Management and mitigation actions.
- o Budget planning and keeping program on track. Working in dynamic and agile environments.
- o Weekly updates to VP level. Leading a recurring program Configuration Change Board

### **Technical Specialist Vehicle Performance Integration**

- o Cross functional team interaction with external customers and internal teams to address field issues. Presented data with recommended solutions to numerous customer fleets.
- o Managing smart accessories integration for future products and fuel economy improvement on Navistar trucks. Extensive working with software team to develop smart algorithms.
- o Managing smart accessories project with Cummins providing both technical details and aligning design leads to provide integration help.
- o Controls and software requirements setup with internal and external teams. Challenged smart accessories manufacturers to improve software algorithms based on Navistar needs.
- o Continuous fuel economy improvement projects based on customer issues and assigning projects to specific teams within organization.
- o Managed HVAC improvement project regarding vehicle fuel economy improvement by implementing solutions for customer fleet vehicles. Interaction with various cross functional teams like controls, electrical, HVAC, thermal, calibration, body control module software, feature development and end of line programming.

### **Engineering Group Lead**

- o Led cylinder deactivation from concept evaluation to calibration/controls development/truck demonstrator with 12.4L - A26 engine.
- o Interacting with Fuel economy group to run truck with Base Vs CDA calibration at New Carlisle proving ground and Chassis dyno.
- o Supertruck program hardware selection, new technologies implementation, testing and calibration.
- o Calibrating big bore 12.4L engine to meet greenhouse gas (GHG) emission compliance.
- o Cross functional development and interaction with controls. Conversion of Supertruck engines to run on updated MX1 ECM and controls by updating sensors/harnesses.
- o Aftertreatment DPF calibration, soot loading validation, regen profile evaluation, DTI test validation and engine calibration development for I6 engines.
- o Hardware optimization and cost reduction to improve the fuel economy.
- o Led Navistar technical memory process development, DVP&R requirements.
- o Test facility lab optimization and planning. Outside test cell support.
- o Mentoring, training and providing direction to junior engineers.
- o Data presentation to the higher management and troubleshooting tough technical issues.

### **Engineering Manager**

- o *Managed advanced team for successful delivery of implementation ready engine to platform teams.*
- o *Organized cross functional technical meetings for program updates.*
- o *Managed timecard approvals.*

### **Technical Specialist**

- o *Mentoring and training new engineers.*
- o *Expertise in resolving tough field issues.*
- o *Medium duty combustion, hardware, calibration & after treatment development.*
- o *Fuel economy improvement across all engine platforms.(hollow camshaft, extrude honed cylinder head, swirl ratio, lug curve shaping, combustion optimization and engine weight reduction)*
- o *Truck testing and performance improvement across all platforms.*

### **Product Dev Engineer, Sr. Team Lead**

**13 L Big Bore** 0.2 NOx In cylinder emission and Advanced combustion development.

Travelled more than 50 % and spent extra long hours to achieve the below mentioned goals

- o *Successfully conducted DOE's, developed the IR (implementation ready) calibration and demonstrated the 0.2 BSNOx emissions over the FTP and RMC within short time span.*
- o *Successfully calibrated 0.2 BSNOx at South West Research Institute meeting the tight deadline.*
- o *Analyzed the data and engaged with cross functional teams to identify the issues with fuel system, controls, combustion and software bugs.*

Sept2006 – May2010

Caterpillar Inc. Peoria, IL

### **Technical Lead – C9 and C15**

- o *Responsible for mentoring engineers, managing the program velocity, resolving tough issues and act as backup analyst.*

### **Engineer**

- o *Responsible for test cell planning, writing the test cell contract, test cell troubleshooting, sorting the hardware, writing the test instructions, analyzing the data, **rating development (calibration)** of different engine platforms, populating the ECM maps and final documentation before the product release.*
- o *Developed **Tier III** and **TierIV** proto ratings.*
  - C9 D6R dry turbo – Tier III*
  - C9 D6R wet turbo – Tier III*
  - C9 D7R dry turbo – Tier III*
  - C9 D7R wet turbo- Tier III*
  - C9 725 Articulated truck for Less regulated countries.*

C9 Lexion- Combine 305Kw – **TierIVi**

C9 Lexion – Combine 269 Kw – **Tier IVi**

- o Handled and documented, **Tier III** certification for non-road and **Canmet** witness certification for machine and underground mining engines.
- o As a member of CRS SWAT team troubleshooted Caterpillar regeneration system validation and performance issues for 2007-truck program.
- o Planned, executed and analyzed the data for sorting the SCR dosing unit for 2010 Truck program.
- o Handled research and development projects for fuel system team identifying the impact of injector spool spring and its impact on performance and emissions, extensively used **AVL Indicom** to analyze the heat release traces and injector current signal.
- o Expertise in **troubleshooting** wide variety of engine field instability issues, engine wiring harness issues, test cell and technician issues.
- o Won “Voice of the Customer” **award** for valued contribution and dedication to achieve the goals and strategies of Caterpillar-Global Engine Development, North America.
- o Won “Multiple hands and multiple minds” award for handling four different test cells and meeting the project deadline on time in the time of need.

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**Jan. 2005 – Sept2006 International Truck & Engine Corp. Melrose park, IL.**

#### **Engine Development Engineer**

Hardware evaluation, Combustion development, Performance and emissions development of current and next generation V-8 **FORD** Diesel Power stroke engine, V-8 **NISSAN** Diesel engine and I-6,V-6 **INTERNATIONAL** engine. Responsible for planning the tests, analyzing the results and communication with core engine development integration team, Design engineers, Calibration team, Technicians & Mechanics.

#### **Developed and executed test plans to evaluate:-**

- o Involved in various engine platforms for combustion and hardware evaluation.
- o Hardware and Software DOE techniques for combustion optimization & **Bowl/nozzle/swirl** match. Combustion robustness evaluation.
- o Single/Dual stage Garrett & Borg Warner **turbocharger**/compressor match, performance evaluation & recommendations. Designed a test to find the actual surge line of turbocharger over the lug line of engine and high EGR test points.
- o EGR cooler, Interstage cooler effectiveness and performance evaluation. Recommended design change to improve bank to bank EGR distribution.
- o Planned, executed and proposed the hardware design change based on engine durability tests.
- o **ECU / ETAS / INCA/OBD**feedback sensor signal testing and robustness..
- o Hardware configurations selection (Pistons, injectors, turbochargers) for **2007 emissions, 2010 calibration, emissions, combustion optimization and cost reduction.**
- o Training new engineers to design, execute and analyze the data effectively and efficiently.
- o **Project lead** for coordination and trouble shooting of International engines running over in AVL and Ricardo.

- o *Developed a calibration and saved **millions of bucks** to company by deleting the interstage cooler between two stage BorgWarner turbocharger within safe compressor outlet temperature limits.*

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*Jan. 2002 – Jan. 2005      Center for Automotive Research, Wayne State University, Detroit, MI.*

***Graduate Research Associate.***

- o *Diesel Engine Emission Test Cell for Dr. N A Henein (Distinguished professor and leader in Thrust Area of engine performance & emissions for DOE, Sandia National Lab), at Wayne State University for **Performance and Analysis in Diesel Engines.***
- o **Planned & Organized Tests**, *Analyzed the engine data for PNGV (Partnership for New Generation Vehicles) project funded by DOE (**In cylinder Emission reduction techniques to reach EPA 2007-2010 goals**).*

Setup has been established to facilitate the following research areas:

- o **Diesel Engine Testing and Performance, Data analysis and Evaluation of Test results.**
- o **Emissions Root Cause & Reduction Analysis**, strategies in diesel engines.
- o Effect of operating parameters on Engine Performance & Emissions (**Pressure, EGR, Injection retard, Swirl, Turbo charging, Intake temperature, Post injection and Speed**).
- o Literature Comparison and evaluation of Low temperature combustion regime **MK NISSAN** system with the Conventional diesel operation.
- o Particulate mass, mass rate measurement and influence of high injection pressure on nanoparticles.
- o Calibration, Troubleshooting and repair of Horiba emission Test bench.
- o Responsible for overall maintenance of Test Cell.
- o Presented Papers at Annual CRADA meetings.
- o **Instrumented and Installed** the PNGV, High Speed Direct Injection Diesel engine (.422 L) for Test lab at WSU independently, facilitating the lab with Dyno, Data Acquisition system (32 Channel), various Transducers and flow measurement devices, Fiat ECU, Bosch injectors, Mini/Micro dilution tunnel, Bosch smoke meter, Scanning mobility particle sizer, Tapered element oscilloscope microbalance and Horiba Emissions Analyzers.
- o **Team Leader Formula SAE racing (Engine setup)**, Wayne State University.

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1998 – 2002.

***(American Eagle Tankers) NOL, Singapore.***

### **Marine Engineer.**

*In addition to authorizing, bidding and budgeting, alliance point of contact for engine installations for various projects, Instrumental in successful completion of projects, in capacity of Team Leader, And Team Member on accelerated schedules for the following:*

- o *Sailing officer in full charge of the operation, performance, maintenance and complete overhauling of diesel engines.*
- o **Several Full Decarburization/ Installation / Research and development for following Engines:**
  1. **MITSUI B&W 7S 60 MC** (17,850 bhp)
  2. **SULZER 7 RT A 62** (16,600 bhp)
  3. **Yanmar T240L** (600KW )
  4. **Ricardo** (0.422L)
- o **Overhauled / Maintained / Repaired & Calibrated Diesel engine accessories** (Piston, Cylinder Heads, Pumps, Injectors, Fuel system, Turbocharger, Controls and Pneumatics), **Air Compressor & Boiler Injectors.**
- o *Diesel performance and determination of proper engine configuration to meet specific engine system requirement.*

### **Honors Awards and Affiliations**

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- Awarded Graduate Study Scholarship (2002-05) from Graduate School WSU for MS Degree in Mechanical Engineering.
  - Awarded Scholarship by NOL for Year 2002 for Professional Up gradation.
  - Awarded Scholarship by NOL for Year 1999 for Professional Up gradation.

### **Professional Training.**

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- Crew Resource Management In house by NOL Singapore.
  - Diesel Propulsion Management In house by NOL Singapore.
  - Anti harassment, Business of doing business, Climate for performance, Ethics & compliance training by International Trucks & Engine Corp., IL, USA.
  - Diesel engine performance & combustion, University of Wisconsin, USA.

### **Computer Skills**

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Microsoft: Office (Word, Excel, PowerPoint), MS Projects.

### **Publications**

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Jasmeet Singh, NaeimA. Henein, Walter Bryzik “An Investigation of the Low Temperature Combustion Regime (LTC) in a Small Bore HDI Diesel Engine” ASME paper no. ICES2005-1033.

Matheaus,A., Singh, J., Sanchez, L., Evans, D. et al.,  
"Evaluation of Cylinder Deactivation on a Class 8 Truck over Light Load Cycles," SAE Technical Paper 2020-01-0800, 2020, <https://doi.org/10.4271/2020-01-0800>.