Rahul Sable

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CORE COMPETENCIES

- **MRO Engineering & Compliance** – Aircraft systems/components; FAA, Transport Canada, EASA; Airworthiness Directives (ADs), Service Bulletins (SBs)
- **CAD software** – NX, CATIA, SolidWorks, AutoCAD, Inventor
- **Structural Analysis & FEA** – Abaqus, ANSYS, SolidWorks Simulation
- **Prototyping & Testing** – LabVIEW, MATLAB, PX4, Mission Planner; ground and flight test instrumentation
- **Certification & Documentation** – Design report, concession drawings, repair manuals, AS9100/ISO 9001
- **Electronic boards**- Arduino-Uno, Pixhawk flight controller

EXPERIENCE

Production Planner October 2023- Present
3 Points Aviation *Mississauga, ON, Canada*

- Coordinated maintenance, repair & overhaul engineering activities for De Havilland Canada Dash 8 aircraft components (Landing Gear, Brake Assemblies, Hydraulic actuators), ensuring compliance with Transport Canada, EASA, and FAA airworthiness standards.
- Validated compliance with Airworthiness Directives & Service Bulletins, integrating mandatory updates into component maintenance and overhaul workflows.
- Applied ERP software (Quantum Control) to manage configuration control, capacity planning, and maintenance scheduling, aligning with cost, schedule, and scope requirements.
- Maintained configuration management and traceability by reviewing and updating log cards, maintenance documentation, and manufacturing records in accordance with AS9100/ISO 9001 quality standards.
- Conducted supplier capability assessments and conformity evaluations to ensure adherence to Component Maintenance Manuals (Goodrich & Safran), design specifications, and regulatory requirements.
- Generated and controlled Certificates of Conformance (CoC) and supporting compliance documentation to ensure regulatory audit readiness and customer delivery assurance.
- Reviewed and supported Design Approval documentation and concession drawing evaluations during maintenance activities, ensuring compliance with OEM design intent and regulatory approval processes.

System Integration and Flight Test Engineering Specialist (Drone) July 2021- October 2023
SkyX Systems Corp. *Toronto, ON, Canada*

- Coordinated the integration of electronics components, sensor, & RF devices, performed testing, troubleshooting, & resolved the compatibility issue between systems in aerial vehicles.
- Validated DAQ systems and ensured accurate real-time data collection using PX4, Mission Planner, & MATLAB.
- Contributed to preparing detailed test plans, remote site flight test operations, and field reports of aerial vehicles.
- Supported remote site testing and operations for client-specific drone missions across international sites.
- Assisted in design review and engine tuning of propulsion system components, including fuel nozzles, housings, and manifolds, in collaboration with the combustion team for UAV applications.
- Developed & executed ground and flight test plans; prepared detailed reports documenting test results & issues.
- Conducted root cause analysis of test failures & collaborated with design & software teams for corrective action.
- Coordinated across teams including design, stress, and manufacturing for system-level testing.
- Assisted in evaluating thermal behavior of the UAV components under varying environmental conditions for performance optimization.

Aircraft Accessories Overhaul Technician November 2019- July 2021
Q1 Aviation Pvt. Ltd. *Mississauga, ON, Canada*

- Implemented overhaul & maintenance on aircraft wheels & batteries according to Transport Canada Regulations.
- Precisely calibrated mechanical and electronic operational tools.
- Assisted in Non-Destructive Testing on aircraft components such as landing gear, air compressor, & engine mount bolts.
- Conducted flow and leak tests on aircraft engine fuel nozzles to verify functionality, calibration, and compliance with OEM and regulatory standards.
- Created certification reports and test documentation in compliance with ASTM and MIL-STD standards.

Research associate and Operations Team lead (Internship) July 2019- November 2019
B. R. Aerospace *Brampton, ON, Canada*

- Drafted test plans and CAD models for UAV design under National Research Council (NRC) project guidelines.
- Assisted in developing conceptual test workflows for UAV prototype validation.

EDUCATION

Master of Science: Mechanical Engineering, Lakehead University, Thunder Bay, Canada 2016 - 2018

Bachelor of Engineering: Mechanical Engineering, Solapur University, India 2011 - 2015

PROJECTS

Nose Landing Gear Development & Testing (Drone) August 2022
SkyX Systems Corp. *Toronto, Canada*

- Conducted ground impact and dynamic landing simulations to validate nose landing gear structural performance under nominal and off-nominal conditions, including high descent rates, increased MTOW, and simulated cross-wind landings.
- Instrumented the assembly with multi-axis strain gauge load cells (RCbenchmark system) to capture vertical, lateral, drag, and rebound loads, quantifying structural margins and shock absorption characteristics.
- Performed flight test data correlation by analyzing onboard telemetry and load spectra to confirm compliance
- Utilized Autodesk Simulation for finite element-based load path and force distribution analysis, supporting structural verification and design iteration.

Hydraulic Press Structural Frame Design September 2020
Q1 Aviation Pvt. Ltd. *Mississauga, Canada*

- Designed and engineered a welded steel frame for a hydraulic press system used in removal of aircraft main and nose landing gear tires from wheel assemblies, ensuring robustness under high press loads.
- Performed finite element stress and load path simulations to verify structural integrity, safety factors, and compliance with aerospace maintenance requirements.
- Utilized Autodesk Inventor & Simulation for CAD modeling, structural optimization, and assembly design, while streamlining fabrication for ease of manufacturing and maintenance operations.

Designed automated air cooling mechanism using Arduino-based control for semi-truck October 2018
Lakehead University *Thunder Bay, ON, Canada*

- **Brake Cooling System Design**: Designed and analyzed a custom air compressor for brake drum cooling; performed thermal and airflow testing, validating performance through simulations and experiments.
- **Vibration Energy Harvester:** Developed a cantilever-based piezoelectric harvester; conducted vibration and dynamics analysis, simulations, and lab testing to correlate responses with power generation and durability.
- Conducted real-time thermal testing with prototype to monitor heat dissipation and system response

- Tools & Methods: Autodesk Inventor (CAD), Autodesk CFD (conjugate heat transfer simulation), Arduino IDE (embedded systems integration).

PROFESSIONAL DEVELOPMENT

- **ABAQUS/CAE – Udemy**
  Completed training on finite element modeling and simulation using ABAQUS 2019, covering linear static and nonlinear analysis, buckling, thermal (conduction, convection, transient), contact problems, modal/frequency response, and dynamic impact/drop test simulations for real-world engineering applications.
- **Schenck Balancing Certification**
  Schenck Turbine Rotor Balancing Certification – Completed hands-on training in balancing aircraft air cycle machine rotors, including machine setup, tolerance specifications, and instrumentation techniques, applied during overhaul operations
- **CARs for Maintenance Release – Transport Canada (Dueck Aviation)**
  Completed training on Canadian Aviation Regulations (CARs) requirements for aircraft maintenance release, covering regulatory compliance, documentation standards, and airworthiness responsibilities.
- **Applied Control Systems: UAV Drone (3D Dynamics and Control)– Udemy**
  Completed training in UAV dynamics and control, including derivation of 6-DOF equations of motion using Newton–Euler methods, trajectory generation in 3D space, and implementation of advanced control algorithms such as feedback linearization and Model Predictive Control. Gained hands-on experience with Python-based simulation of UAV dynamics and control systems.
- **Make an Open Source Drone – Udemy**
  Completed a hands-on course covering quadcopter design and assembly, including integration of motors, ESCs, flight controllers (Pixhawk, Crius V2), GPS, LiPo batteries, and radio systems. Gained practical experience in soldering, calibration, firmware upload (MegaPirateNG), and drone configuration using Mission Planner for semi-autonomous flight.
- **Formula SAE team member – Lakehead University**
  Designed front wing and nose cone for race car to optimize aerodynamics and reduce drag. Airflow simulations conducted to evaluate the performance of different configurations of the nose cone and front wings. Performed structural analysis of front wing endplates using ANSYS to predict deflection under loading scenario