

Driving Innovation Moped Restoration



The SME Chapter 396S

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Abstract

The SME chapter at SUNY Canton embarked on an ambitious moped restoration project, transforming a non-functional 50cc vehicle into a fully operational machine. This initiative provided members with practical experience in mechanical repair, electrical troubleshooting, and bodywork restoration. It successfully bridged theoretical knowledge with hands-on application, reinforcing SME's mission to prepare students for engineering careers. The project culminated in a restored moped, achieving a top speed of 40 mph, and demonstrated the value of teamwork and problem-solving in experiential education.

Introduction

The SME SUNY Canton Chapter initiated the moped rebuild project to provide members with hands on learning experiences. The 50cc moped, initially non-functional, required extensive mechanical, electrical, and cosmetic work. This project aimed to enhance members practical skills while promoting community engagement and the chapter's visibility.



Methodology



Disassembly and Frame Preparation

- Fully disassembled the entire moped frame.
- Cleaned and prepped the frame for painting.
- Painted the frame to protect against wear and corrosion.

Engine Rebuild

- Completely rebuilt the engine, including replacing components such as the **Carburetor, Spark Plug, Ignition wire, and the Top End assembly.**
- Ensured internal engine components were cleaned, repaired, or replaced for optimal performance.



Electrical System Restoration

- Rewired the majority of the **wiring harness** to ensure reliable electrical connections.
- Installed and tested the wiring needed to get the motor running efficiently on a basic configuration.



Bodywork and Aesthetic Refinishing

- **Fiberglass Repairs:** Addressed damaged body
- **Surface Preparation:**
 - Sanded, primed, and wet-sanded the body
- **Painting Process:**
 - Mixed paint.
 - Applied using Spray gun



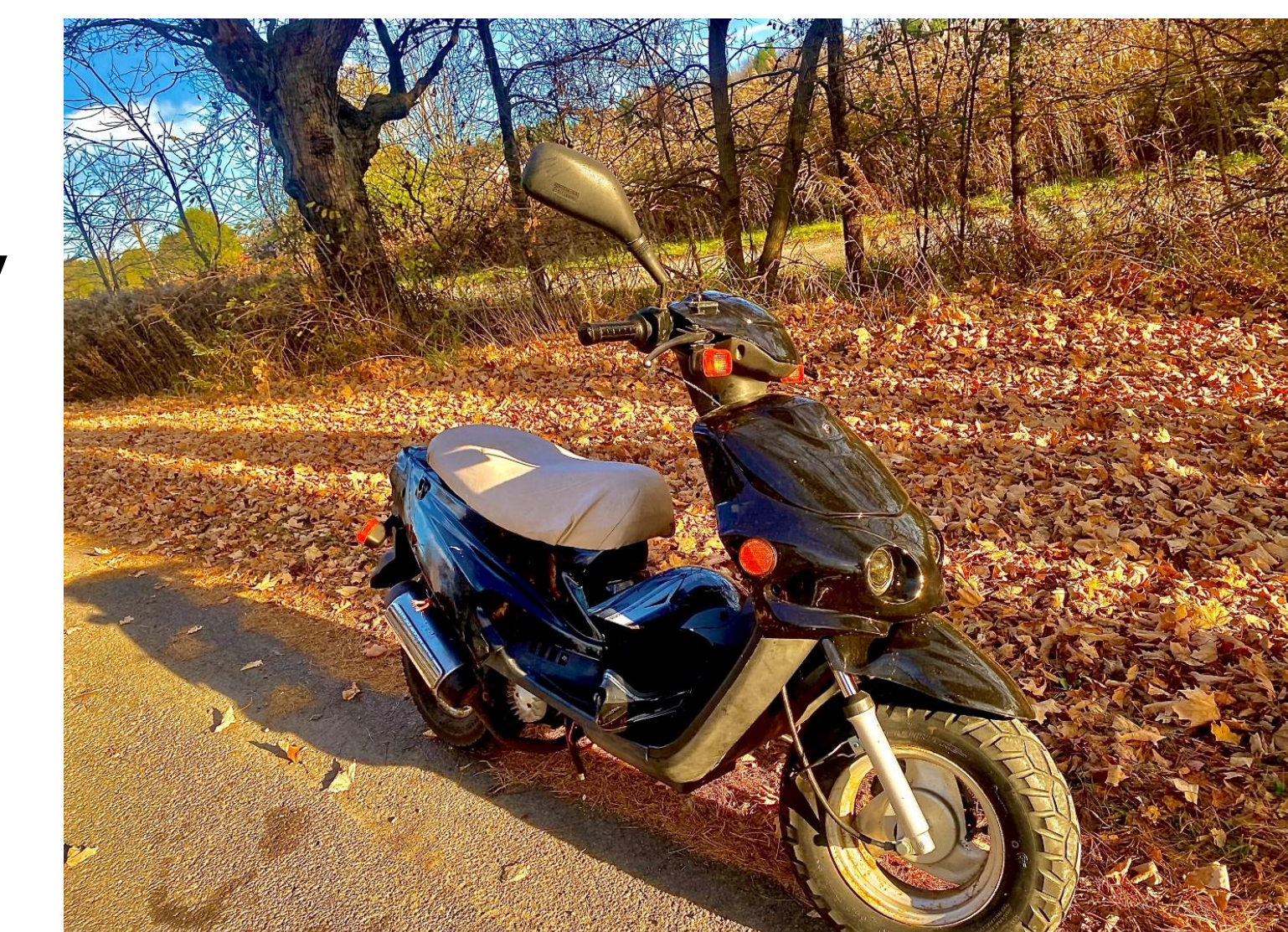
Results

Full Restoration:

The moped was transformed from a non-functional state into a fully operational vehicle.

Performance:

- Achieved a top speed of 40 mph after mechanical and electrical repairs.
- Successfully tested for drivability and safety.



Aesthetic Improvements:

- Professional grade bodywork was completed, including:
 - **Sanding** and priming the body.
 - Wet sanding for a **Mirror finish.**
 - Painting with oil based black paint using a spray gun, achieving a professional look



Mechanical Repairs

- Completed an engine rebuild, addressing internal components to ensure optimal performance and reliability.

