

Report on Product Development: Prosthetic Leg for Indian Peafowl

Introduction

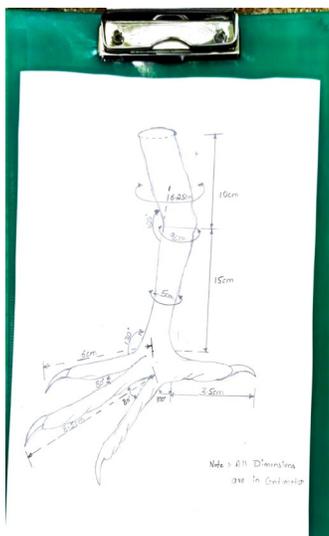
The project aimed to design and develop a functional prosthetic leg for an Indian peafowl in need of mobility assistance. The initiative was carried out in collaboration with Colonel Dr. Navaz Shariff, Ex-DIG of Police and Chief Wildlife Veterinarian & General Manager at PFA Wildlife Hospital. The goal was to create a lightweight yet durable prosthetic that ensures comfort, adaptability, and mobility for the peafowl.

Project Discussion and Initial Requirements

On October 31, 2024, a visit was conducted to discuss the initial requirements for the prosthetic leg. The following specifications were outlined:

- **Lightweight & Durable:** The prosthetic should be easy for the peafowl to maneuver.
- **Comfortable Fit:** The attachment socket must provide a snug yet non-irritating fit around the stump.
- **Adjustable Joints:** The prosthetic should include a hinge mechanism to allow natural movement.
- **Gradual Adaptation Process:** The peafowl will undergo supervised training to adjust to the new limb.
- **Regular Follow-ups & Adjustments:** Continuous monitoring will be done to assess irritation, pressure points, and overall adaptability.

A shared drive link containing reference photos and initial dimensions was provided:
<https://drive.google.com/drive/folders/1m6qCxxpCyFF5jgsSIYbELjmeracl8qW?usp=sharing>





Field Visit for Precise Measurements

Following discussions, Mr. Suprith M was deputed to visit PFA Wildlife Hospital to collect accurate dimensions and gain deeper insights for designing a prosthetic that meets the specific needs of the peafowl. The field visit was conducted on November 19, 2024, where precise measurements were taken, and additional insights were gathered to enhance the design accuracy.

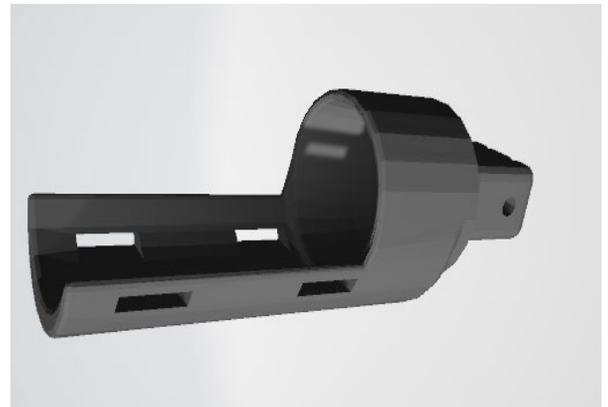
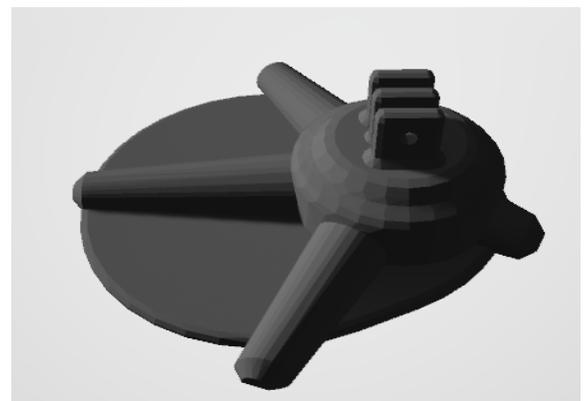
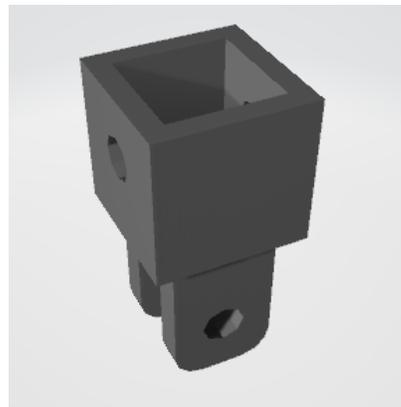
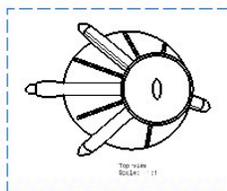
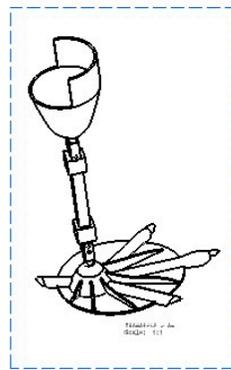
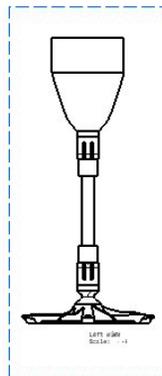
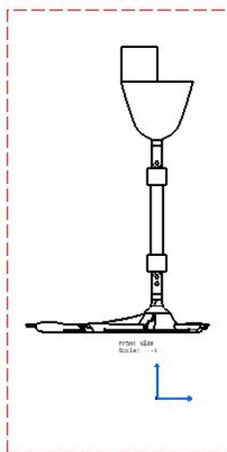




Design & Fabrication Process

After gathering precise measurements, the design process began. The prosthetic leg was initially modeled and 3D printed using Hyper PLA material for testing purposes.

- Material Used: Hyper PLA (for prototype)
- Weight of Model: 100 grams
- Design Features: Hinged joints, lightweight structure, and a comfortable socket fit

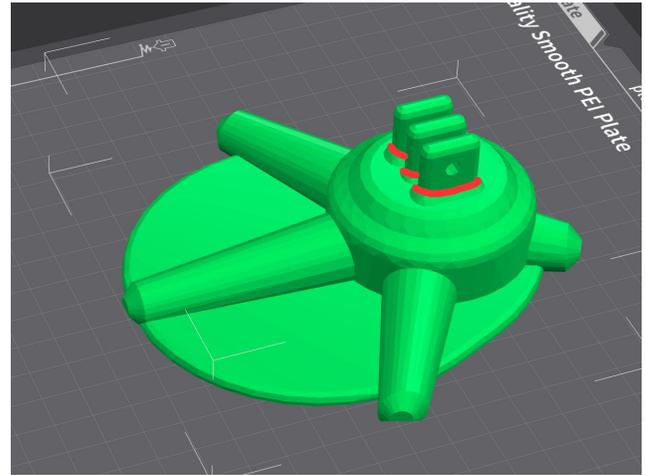
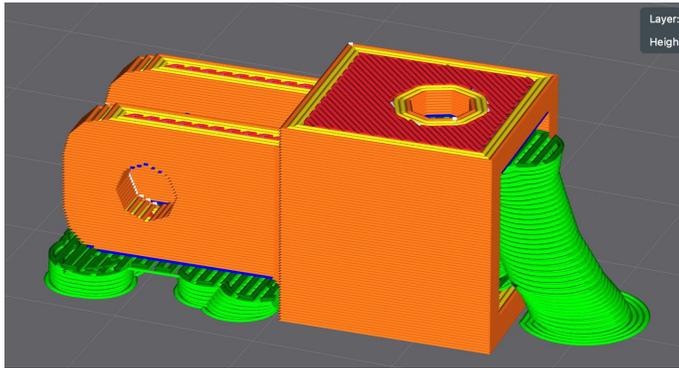




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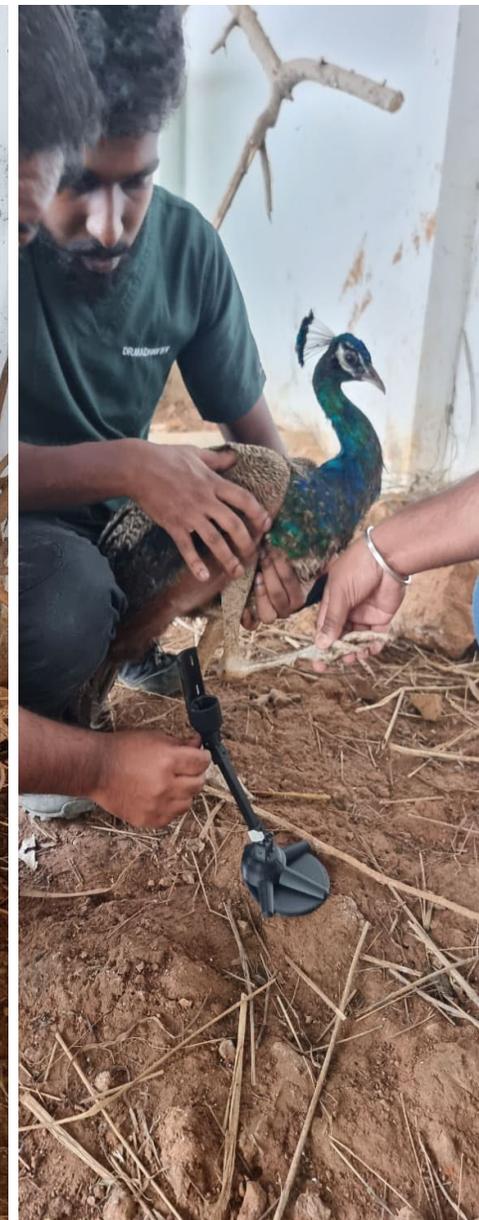
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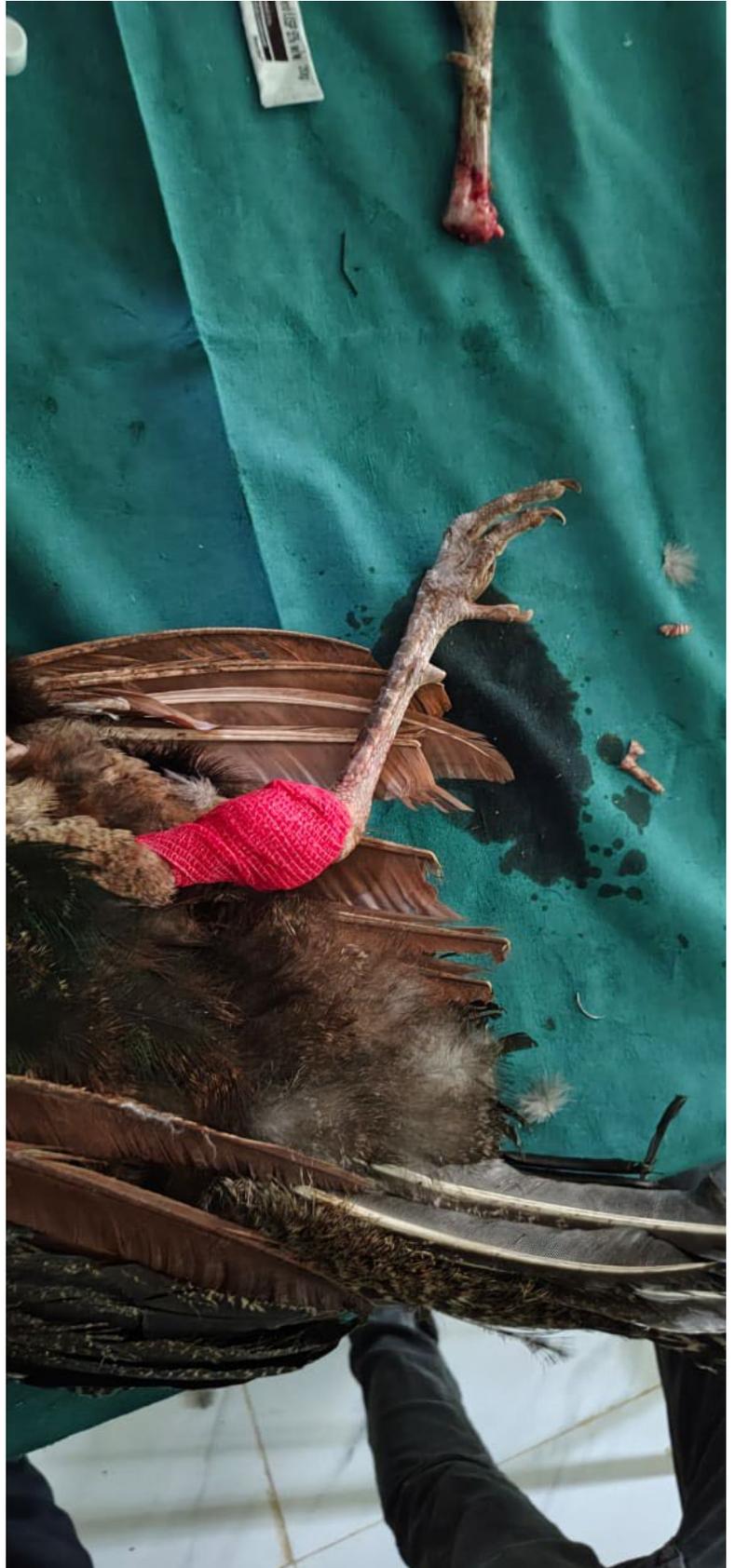


Testing and Final Review

On November 24, 2024, a visit was scheduled at 4 PM to test the prosthetic leg at PFA Wildlife Hospital. The testing session included fitting the prosthetic onto the peafowl and observing its response. The initial model performed satisfactorily, providing the required support and mobility.

"I visited PFA Wildlife Hospital today at 4 PM as per the doctor's appointment. We tested the model prosthetic leg for the peafowl, and it worked fine. The actual prosthetic can now be fabricated using other materials. The current model weighs 100 grams. Sharing pictures for your reference."







Future Steps & Recommendations

- Material Upgrade: Further testing with more durable yet lightweight materials such as carbon fiber or medical-grade silicone.
- Customization & Refinement: Fine-tuning the hinge mechanism for better adaptability.
- Long-term Monitoring: Regular assessment of wear and tear and peafowl's adaptation to the prosthetic.
- Integration with Wildlife Care Programs: Documenting results to aid similar wildlife rehabilitation efforts.

Conclusion

The successful development of a prosthetic leg for the Indian peafowl marks a significant step in wildlife rehabilitation. With proper adjustments and monitoring, the peafowl is expected to regain significant mobility, improving its quality of life. This project highlights the potential of customized prosthetics in wildlife care and sets a precedent for future developments in veterinary prosthetics.

Attachments

- Emails and Communications (Refer to attached emails for detailed correspondences)



Acknowledgements

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