

SAVE THE TIGER

Team Project TIGER

Benson Chen, Antony Kwok, Priscilla Wong, Viet Doung, Shunsuke Matsuyama

Supervisor: Dr. Adam Wojcik



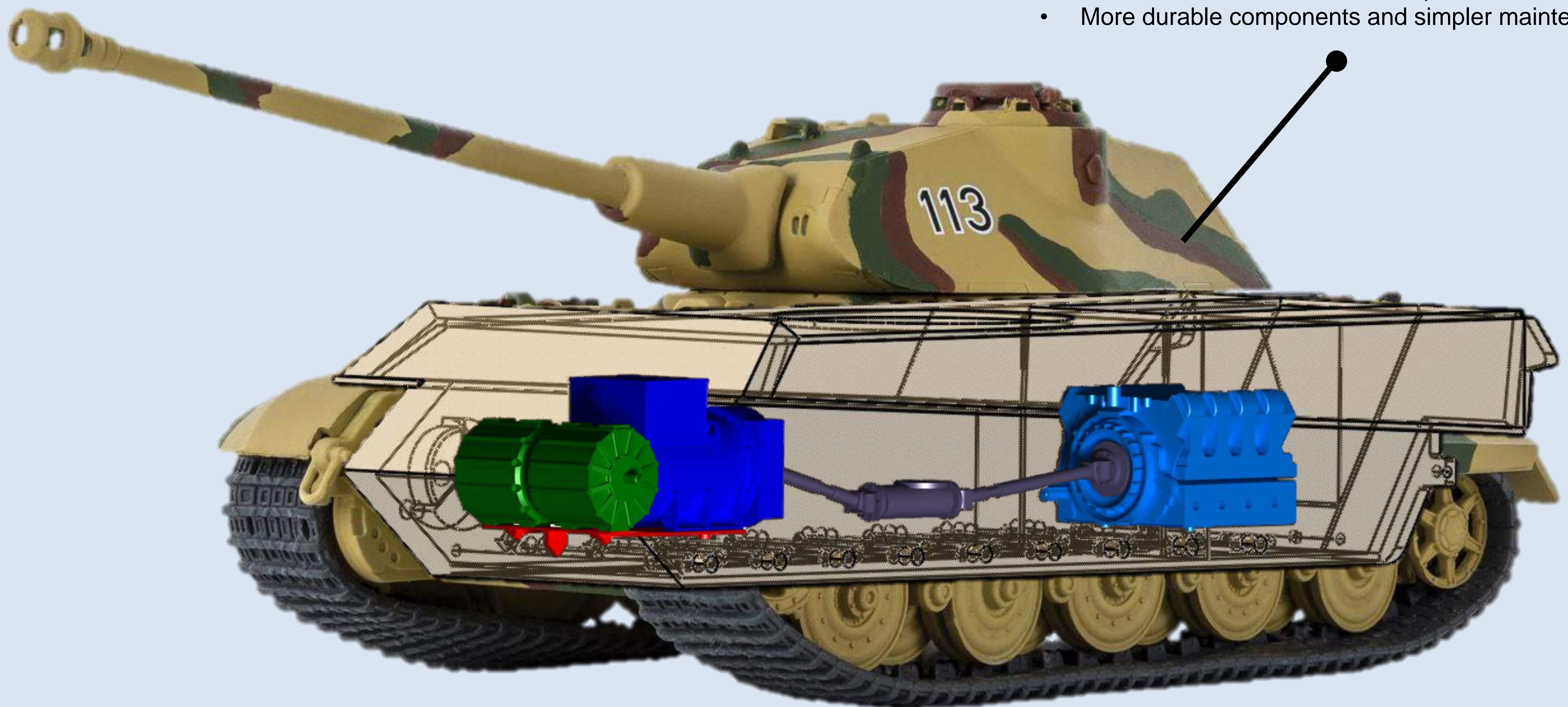
Preservation through Modern Engineering – this project was aimed at designing a multifaceted preservation strategy to prolong the running life of the famous Tiger tanks in the Bovington Tank Museum. The design strategies preserve the vehicles in the following ways:

- **Operating Preservation** – proposing an operating strategy that protects the current running Maybach HL230 engine .
- **Storage Preservation** – storage strategies for original engine components to be mothballed and preserved in optimal condition.
- **Preservation of Form** – a digital archive that uses digital media to preserve the design and form of original engine components instead of the physical form.
- **Modern Integration** – a design plan to run the Tiger tank with modern components if original historical components are not available.



Running a future Tiger – a design that restores and powers the Tiger II tank with modern diesel-electric hybrid system. Retrofitting has to be carried out without alteration to the original tank chassis.

- Enhanced performance with modern engine and motors.
- Operates without wearing historical relics
- Modern fuel and lubrication compatible
- More durable components and simpler maintenance



Inside the Tiger – Measurements were taken inside the original tank chassis for retrofitting.

Component Replacement – Digital Archive can be converted into technical drawings for manufacturing replica replacement parts.



Operating Strategy – Corrosion behaviour was studied inside combustion engines to propose an operating strategy to prevent corrosion-propagated mechanical wear damage of the current operating Maybach HL230 engine.

Digital Archive – 3D digitization that aids to preserve the design and form of the original Maybach HL230 engine components with Computer Aid Design.

Digital Archive has multiple applications such as 3D print prototyping, visual illustration and virtual component interaction that adds variety to the museum's display. Simulation of piston motion was displayed in the museum's tank running exhibition "Tiger Day IX".

Storage Strategy – Assessing the current museum storage condition and proposing storage strategy to mothball the relics with engineering research.