



[FIRE PROTECTION FOR DEVELOPING COMMUNITIES]

SCHOOL OF SCIENCE, ENGINEERING, & HEALTH SYMPOSIUM
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PROBLEM STATEMENT



- High temperatures and highly flammable construction materials in underdeveloped countries create dangerous conditions that can easily result in uncontrollable fires.
- In these areas there is rarely access to adequate firefighting resources.
- Small fires can have devastating effects on the people's homes and livelihood.
- Current methods for fighting fires are both dangerous and relatively ineffective.

SPECIFICATIONS

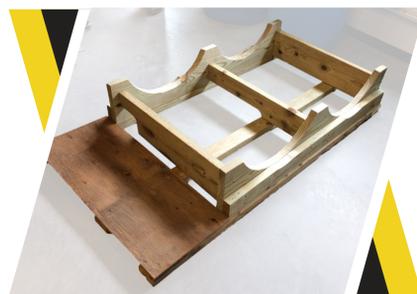
- Insert must be able to be quickly set up / installed into the BUV.
- Total weight must not exceed 1050lbs (when filled with water).
- Insert must conform to dimensions of the BUV bed.
- Insert must be inexpensive relative to commercially available options.
- Insert must be able to extinguish small fires in rural African communities.

GOAL

Our team aims to create a cost-effective and easy-to-use solution that can safely extinguish fires and aid in agricultural applications in underdeveloped areas.



FEATURES



- The skid has been designed to be durable and light, while hindering barrel rotation to prevent damage to the plumbing system.

- The pump has been carefully chosen to have a balance of output pressure and flowrate to allow the pump to be used for both firefighting and agriculture.



- A 3-way valve is incorporated into the intake plumbing to allow easy transition between use of the on-board water supply and an external water source (such as a pond or stream).

CURRENT DESIGN

BUV:F PROTOTYPE



- This is the first complete prototype of BUV firefighting insert. The modular design allows the emptied skid to be loaded and unloaded from the BUV with ease.

- This prototype uses materials that are inexpensive and readily available in rural African areas to ensure easy construction and maintenance.



CONCLUSIONS

We currently have a working prototype that is ready for extensive testing, which in turn will provide valuable feedback necessary to optimize our current design. We aim to deliver a final product which includes the firefighting insert, use manual, and manufacturing documentation by May 2019.

We are hopeful that the success of this project can create opportunities for furthering the uses and support for the BUV platform.

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- Jacob Film – Student Project Manager
- Austin Kratz – Project Team Member
- Noah Armistead – Project Team Member
- Michael Davie – Project Team Member

ADDITIONAL INFO

The Institute for Affordable Transportation (IAT) is a not-for-profit public charity devoted to improving the lives of the world's poor by providing simple, low-cost vehicles in order to facilitate community transformation.



www.drivebuv.org

