

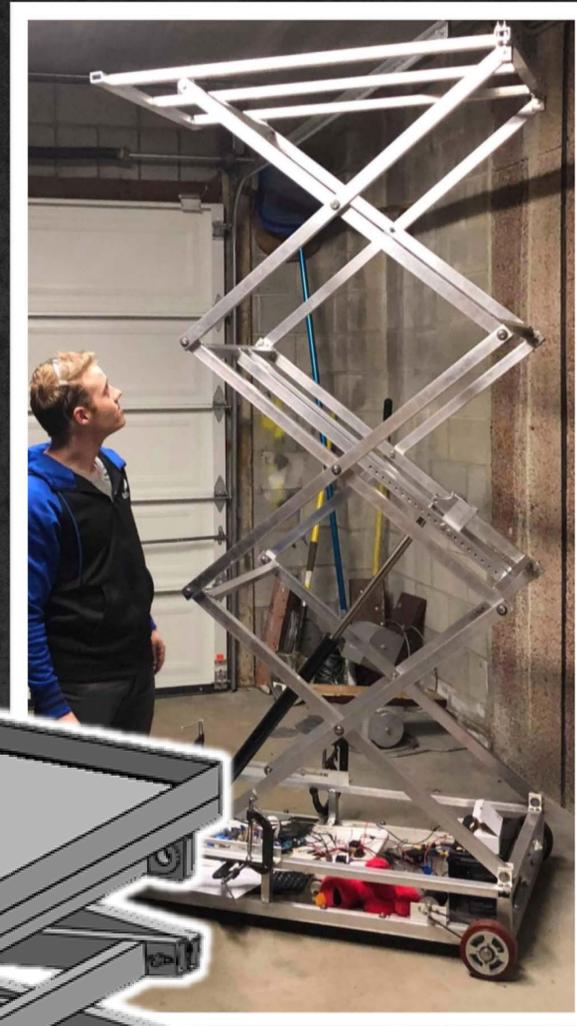
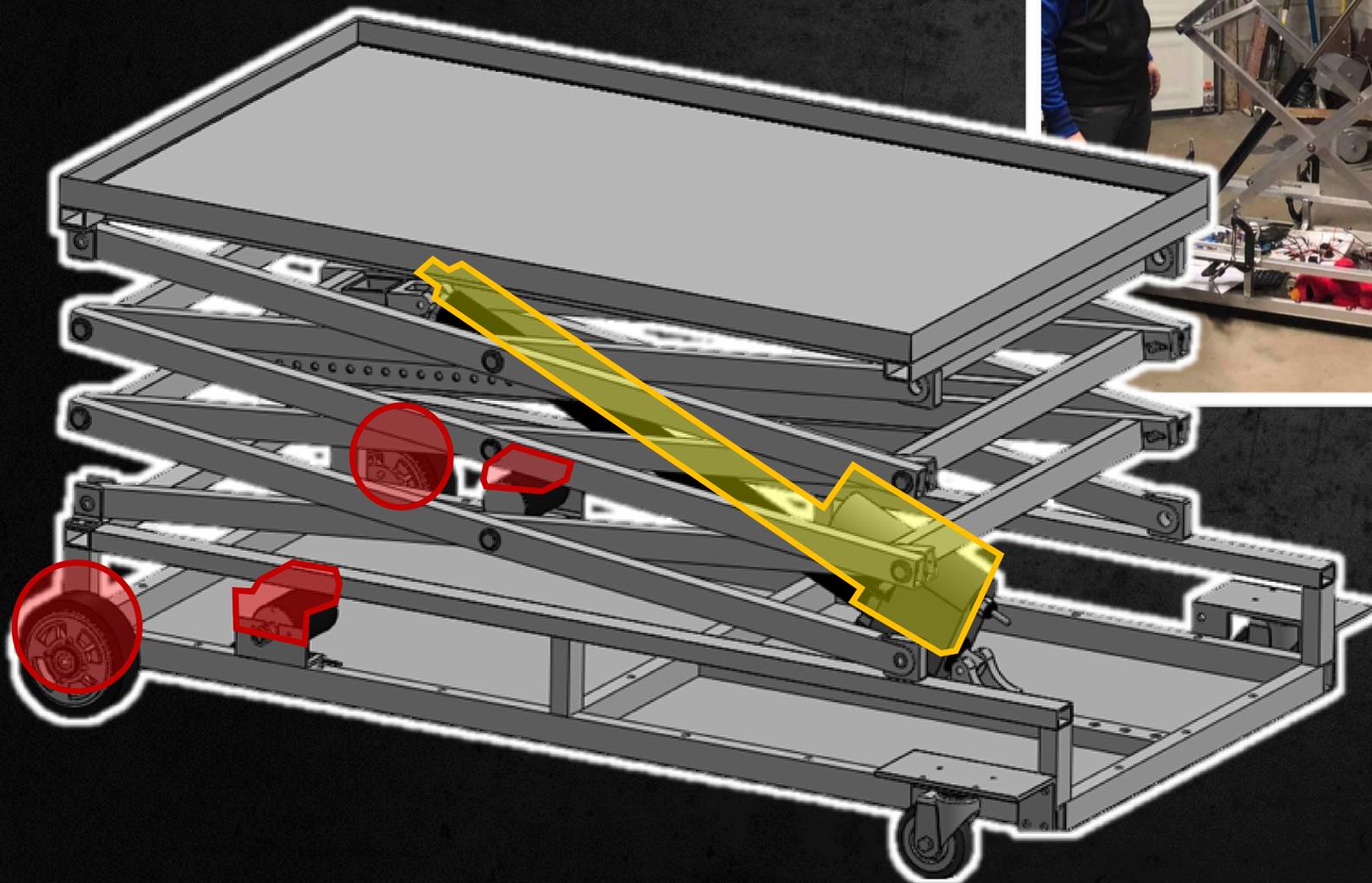
# THE HANDY CART

## USER-TRACKING MULTI-AXIAL CARGO TRANSPORT

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### The Purpose

Of the 2.9 million non-fatal injuries reported in 2016, approximately 725,000 were attributed to overexertion caused by lifting or moving heavy objects. Handy Cart is designed to reduce the number of injuries in a variety of workplaces by preventing workers from having to move heavy cargo up, down, and around a warehouse.



### The Design



**Propulsion (highlighted in red):**  
Two motors, connected to the rear wheels, move the cart at speeds up to 5 mph, even under the max load of 150 lbs. of cargo.



**Lifting (highlighted in yellow):**  
A linear actuator pushes up on the scissor lift and raises the top of the 3-tier system from a minimum height of 3 feet above the ground to a maximum height of 9 feet.



**Tracking System (not pictured)**  
A processor receives information from a full-color camera mounted to the front of the cart, which has been programmed to pick up a specified target color and follow that subject. The processor controls the motors to provide forward movement and turns.



**Power System (not pictured)**  
A 12V battery powers all electrical components in the system, and can run the cart for an estimated 8 hours before needing to be recharged.

