

South Jordan Pulpit Lift Project

The existing South Jordan Chapel pulpit is unique and requires a custom pulpit lift design.

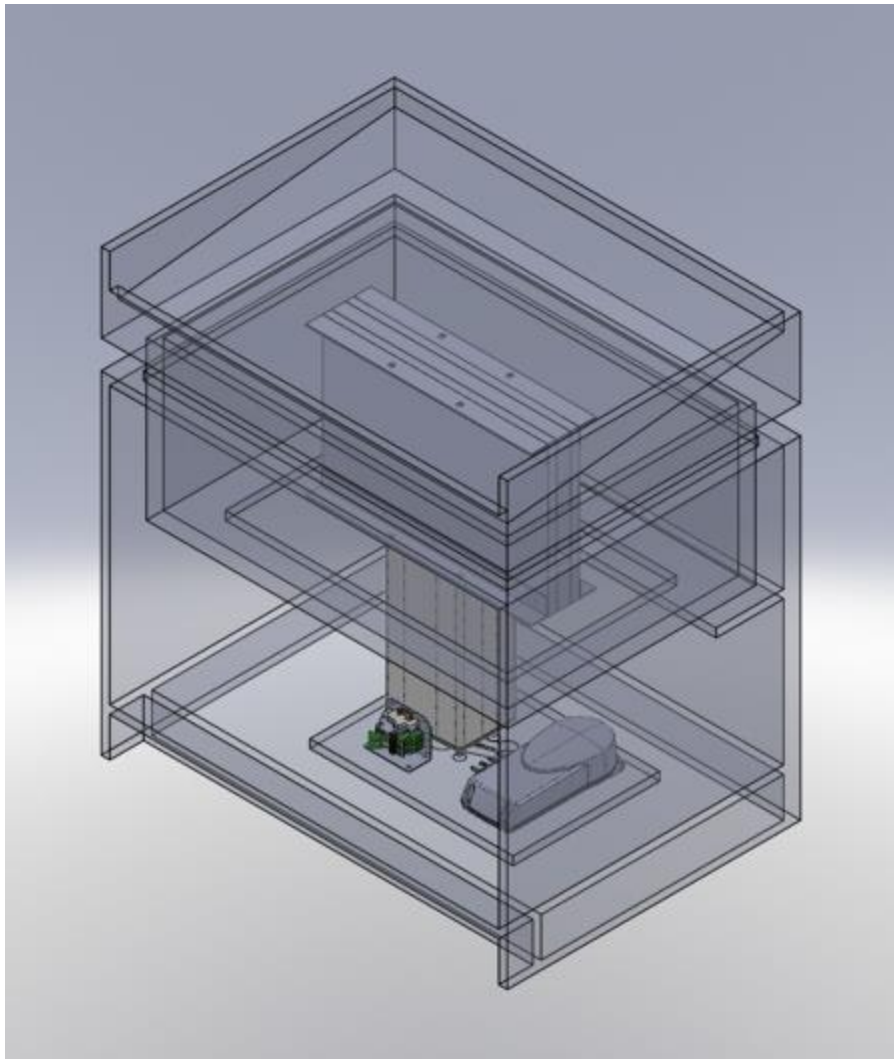
Here are some pictures taken prior to upgrading the lift:





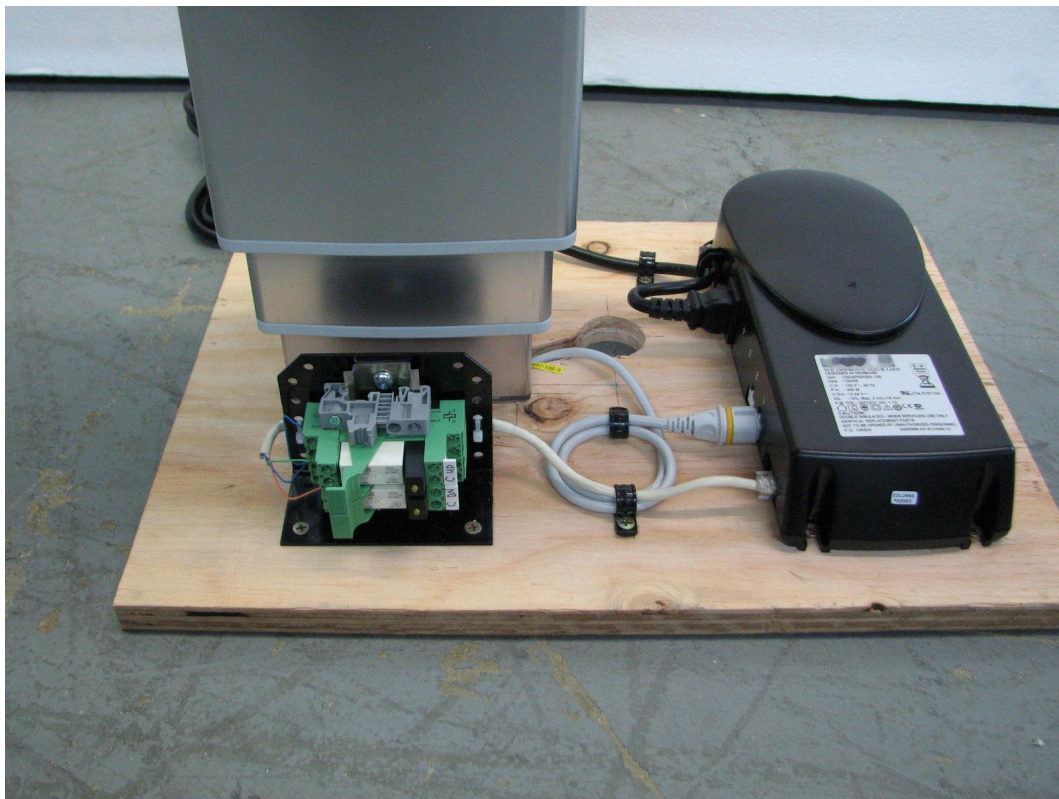
The original lift was an electric motor with a right-angle gear box and multi-lead acme screw. The lift only features an upper and lower limit switch with no overload or pinch features.

Measurements were taken on site from the original cabinet and 3D drawings were created using SolidWorks. This illustration shows a transparent cabinet with the new lift concept drawn in place.



The new lift system was built around a three stage lifting column connected to a programmable control box. The speed and stroke of the control box are programmable. This system incorporates a collision detection system. While the lift is moving downward, if the lectern contacts an object, such as a book, it will stop and rise up automatically. The same will happen if the lift is rising and contacts an obstruction, the lift will automatically lower. The speed is programmable as well as the upper and lower stroke limits.

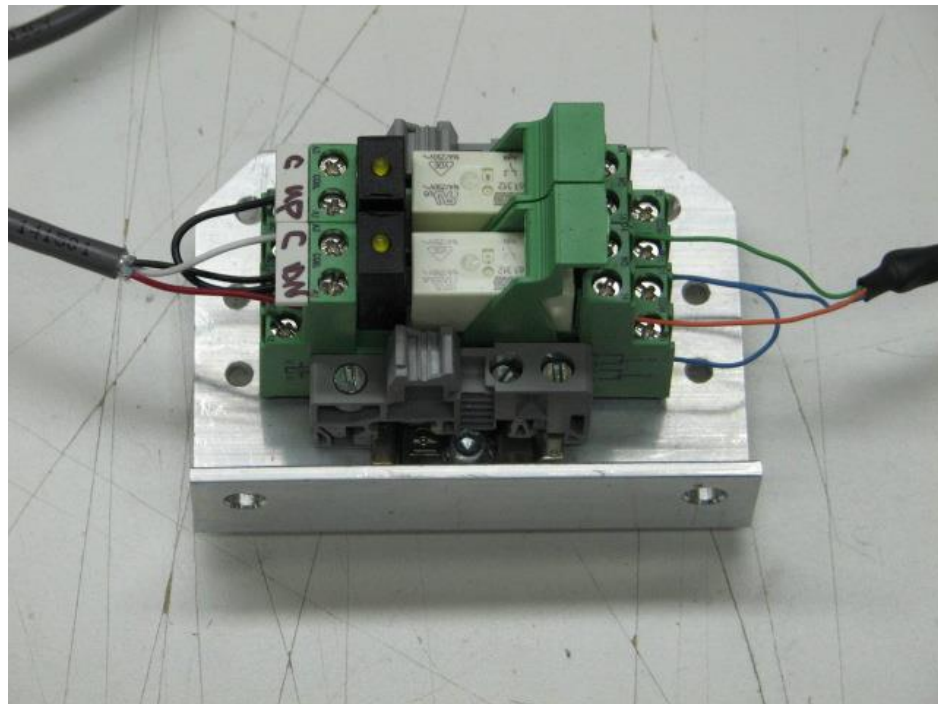
Custom mounting parts were fabricated for the project:



The Bishop's Control Panel shown on the left is connected to the Control Box in the upper right via a relay interface panel and patch cable, lower center:



Relay Interface Module Details:



A 3-conductor 24 AWG cable connects the Bishop's Control panel to the relay interface module on the left side. Show here the Black connects to screw terminal A2 on the lower relay (C) and loops up to screw terminal A2 on the upper relay (C). C=Common.

The Red wire connects to screw terminal A1 on the lower relay (DN). DN = Down.

The White wire connects to screw terminal A1 on the upper relay (UP).

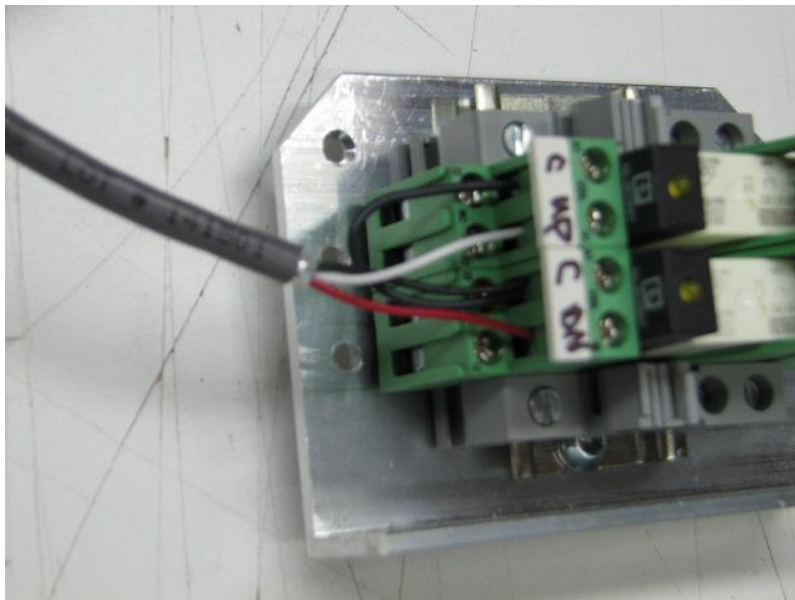
The CAT5 patch cable connected to the pulpit lift control box (CBD4) connects to the relay interface module on the right side. The Blue (Common) wire connects to screw terminal 11 on the upper relay and loops down to screw terminal 11 on the lower relay.

The Green (Up) wire from the patch cable connects to screw terminal 14 on the upper relay.

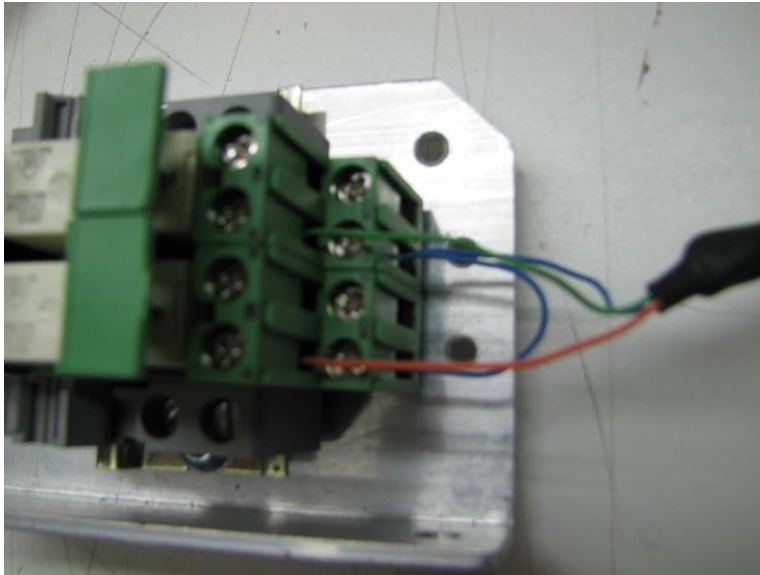
The Orange (Down) wire from the patch cable connects to screw terminal 14 on the lower relay.

See the following photos for clarification of the electrical connections described above:

Bishop's Control Panel Connections:

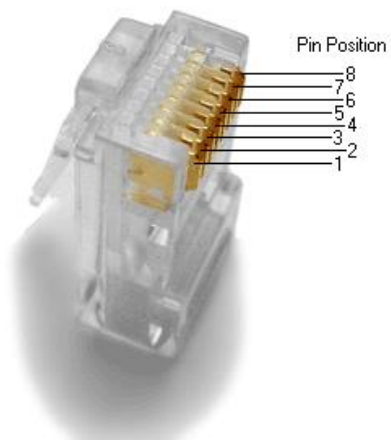


Control Box Connections:

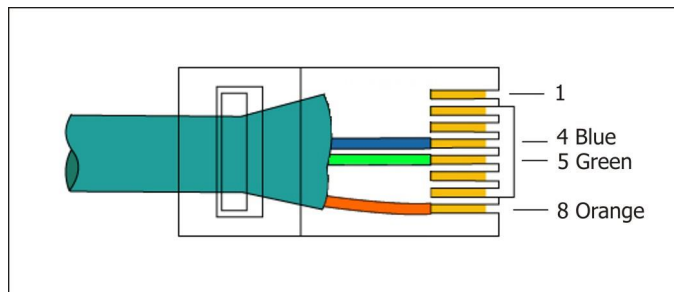


The control box connects via a patch cable to the relay interface. The patch cable is fabricated with CAT5 wire and an RJ45 modular connector.

Patch Cable / Control Box connection diagram:



RJ45 Plug		
Pin No.	Wire Color	Function
1	n/c	
2	n/c	
3	n/c	
4	Blue	Common
5	Green	UP
6	n/c	
7	n/c	
8	Orange	DOWN



The following pictures show the new lift installed.

This picture shows the lectern removed, the old lift removed, and the new lift installed in the same location:



This picture shows the lift installed with the lectern.



A video posted on YouTube and linked to <http://www.markeatonllc.com> shows the final product in action.