

CONSTRUCTING FLATS

FOR STAGE AND STUDIO

TWO PRIMARY TYPES

BROADWAY or SOFT FLAT

- Common for stage.
- It lays flatter making storage easier.
- Uses more wood.
- Often faced with muslin/light canvas like materials and painted.

HOLLYWOOD or HARD FLAT

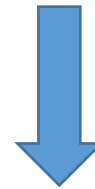
- Common for film.
- Takes up a little more storage space.
- Uses less wood (not including the facing sheets).
- Often faced with plywood and painted.

SOFT FLAT CONSTRUCTION CONSTRUCTION

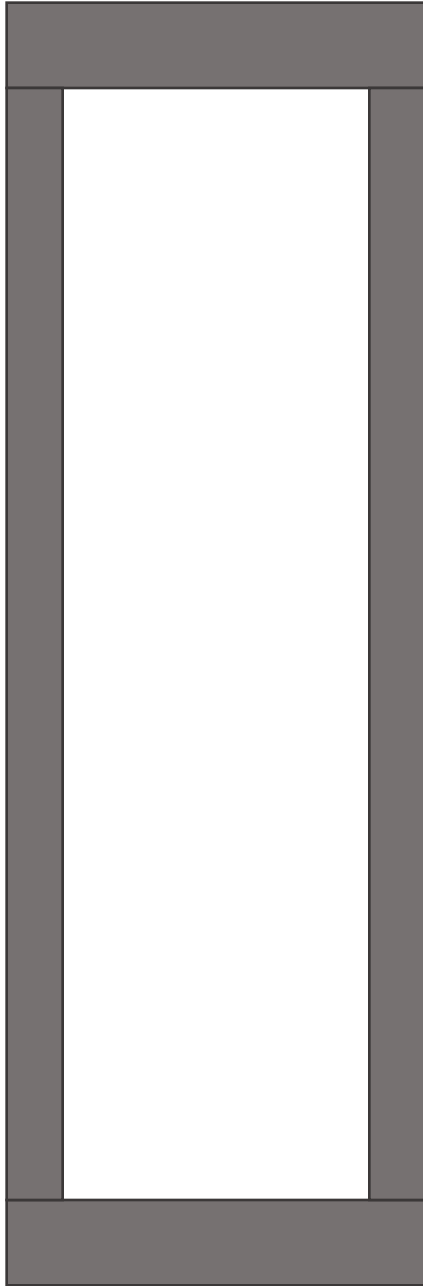
Measure and cut two 7'5" sections of pine 1x4

← These become the **STILES**

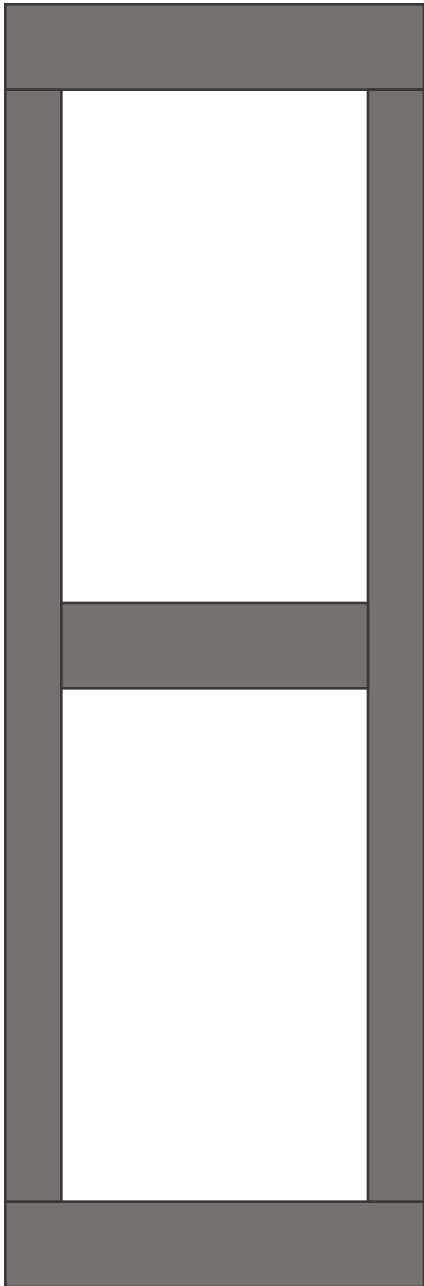
And two 4' sections of pine 1x4



These become the **RAILS**



Lay the pieces out on the floor in a rectangle



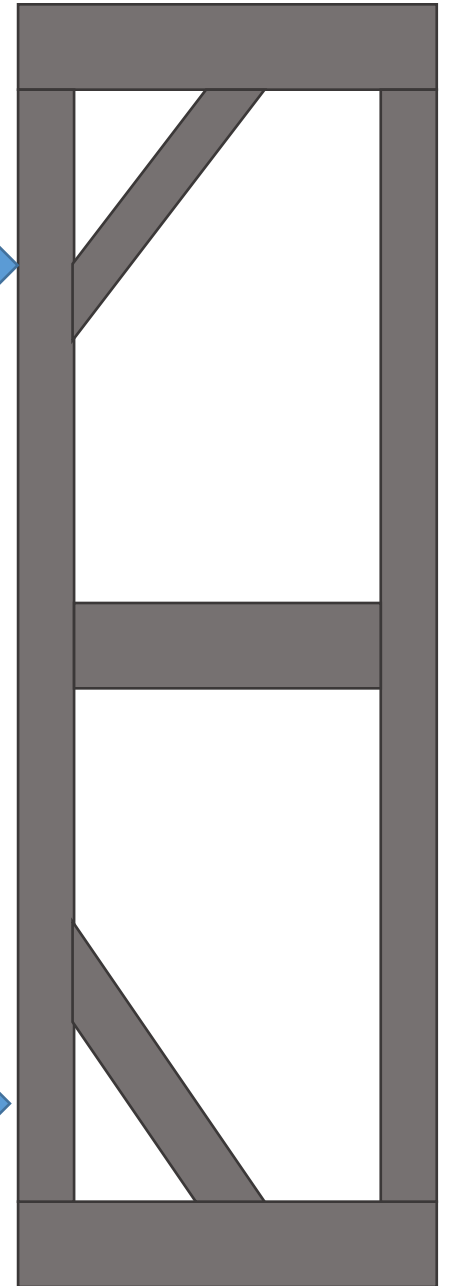
Measure and cut another piece of 1x4 at 3'5" to put in the center of the rectangle between the two stiles.

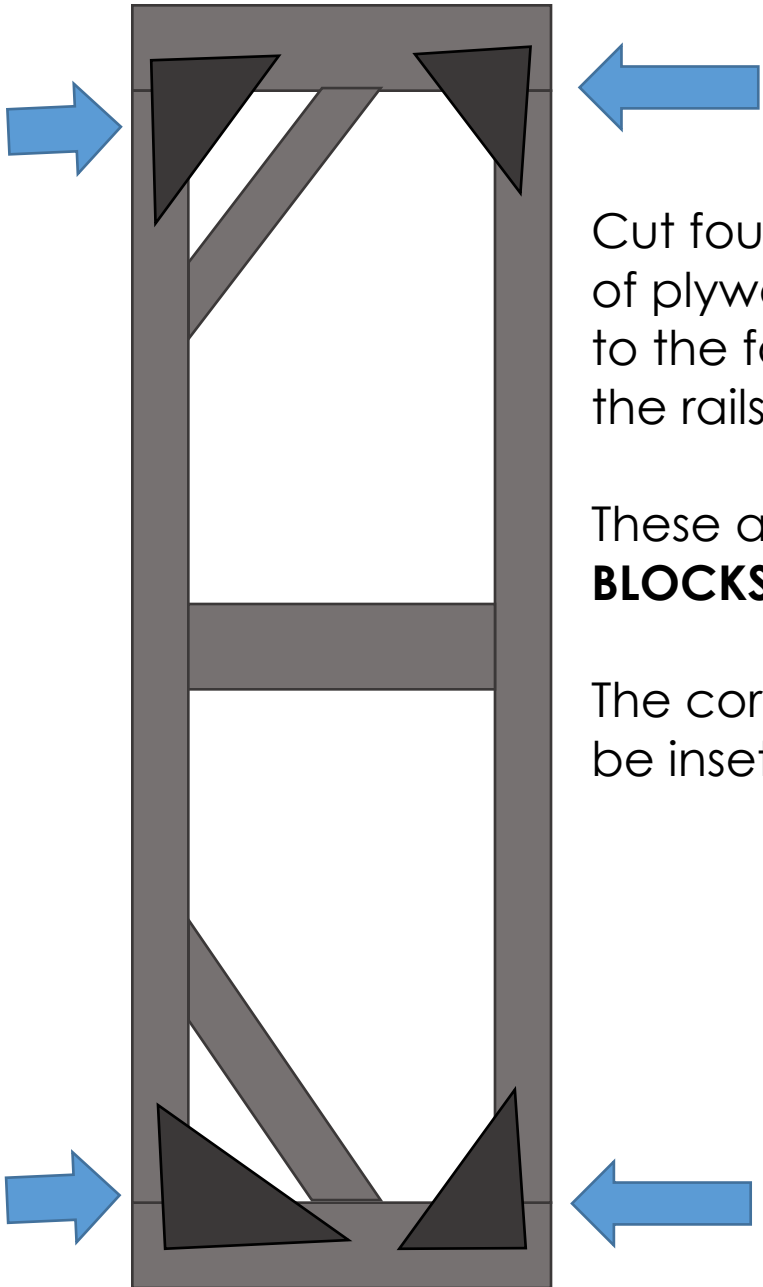
This is called the **TOGGLE**
Toggles should be placed every 4 feet (i.e. on a 12 foot flat you would have 2 toggles)



Measure and cut two pieces of 1x4. Angle the ends with a miter saw to put in the left corners.

These are called **CORNER BRACES**





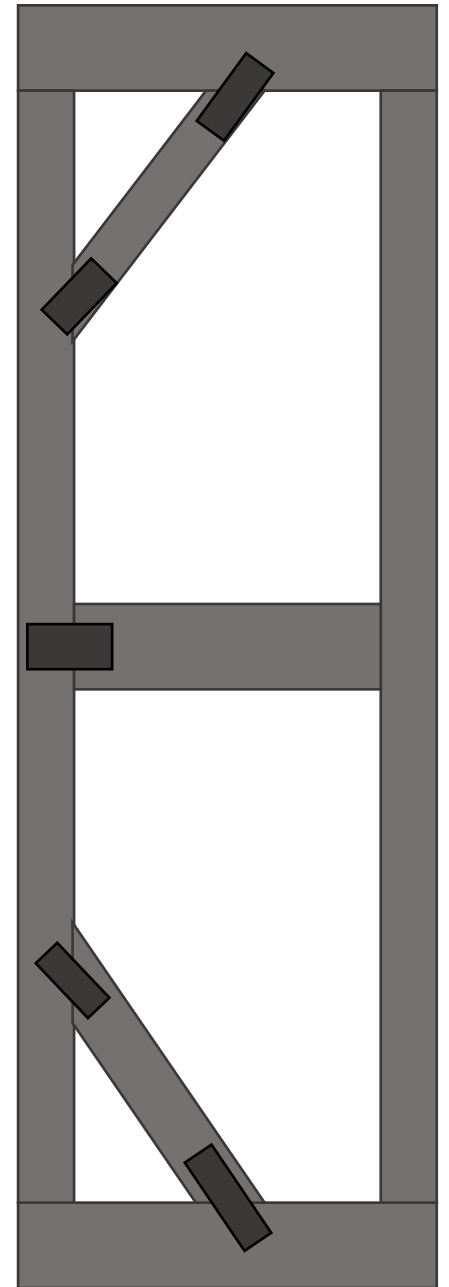
Cut four triangular pieces of plywood. Attach them to the four corners where the rails meet the stiles.

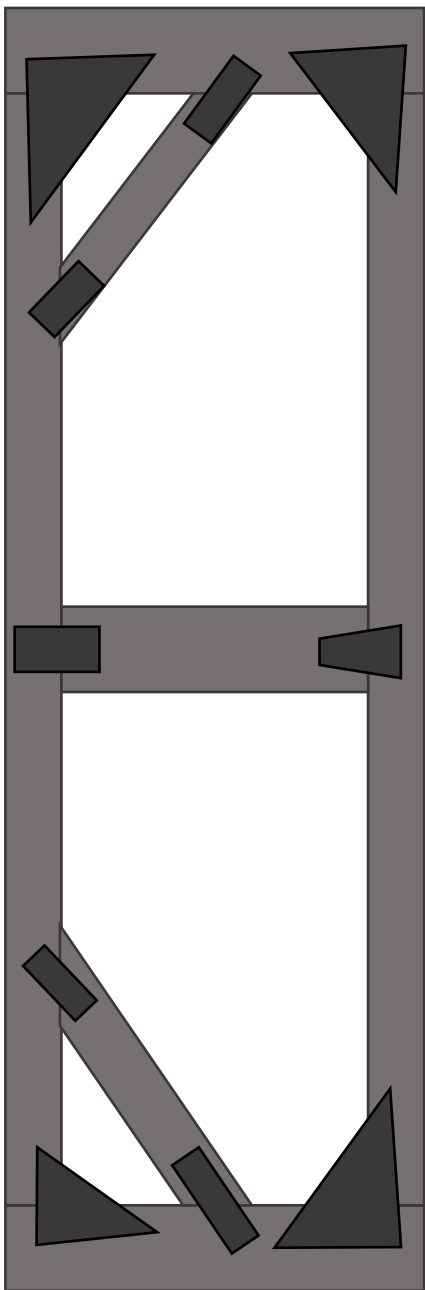
These are called **CORNER BLOCKS**

The corner blocks should be inset on both sides

Measure and cut five strips of plywood. Use them to attach the corner braces to the rails and stiles and the right side of the toggle to the right stile.

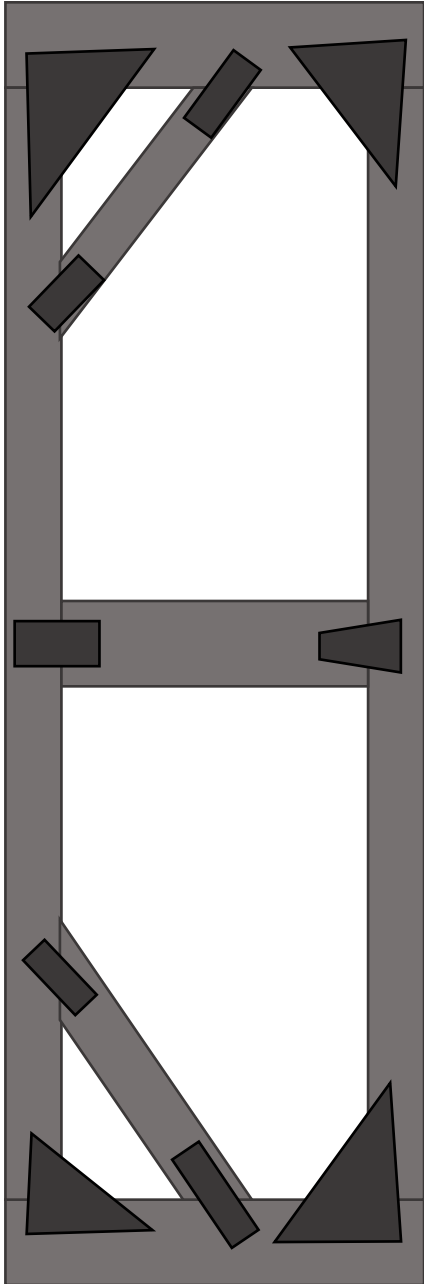
These are called **STRAPS**





Measure and cut a trapezoidal piece of plywood. Use it to attach the right side of the toggle to the right stile

This is called the **KEYSTONE**



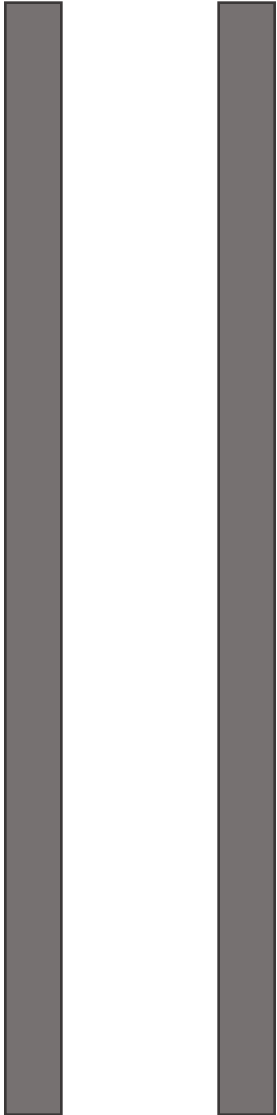
← This is the back of the flat.

To finish the flat, it is traditionally covered with muslin (canvass) and stapled to the frame. When the muslin is painted and dries it shrinks and tightens around the frame.

The flat can also be made a "hard flat" by using a thin sheet of plywood typically between $\frac{1}{8}$ " and $\frac{1}{4}$ "



HOLLYWOOD FLAT CONSTRUCTION



Measure and cut two 7'10.5" sections of pine 1x4

← These become the **STILES**

And two 4' sections of pine 1x4

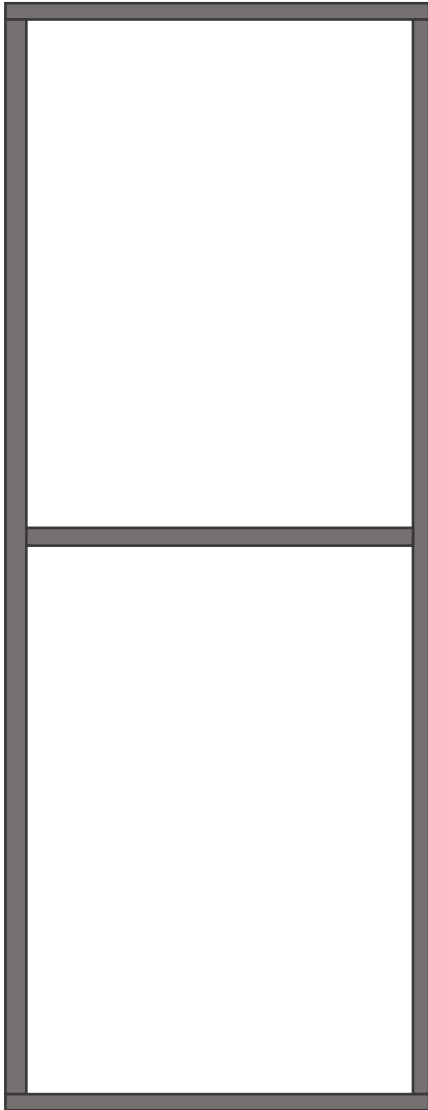


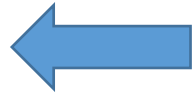
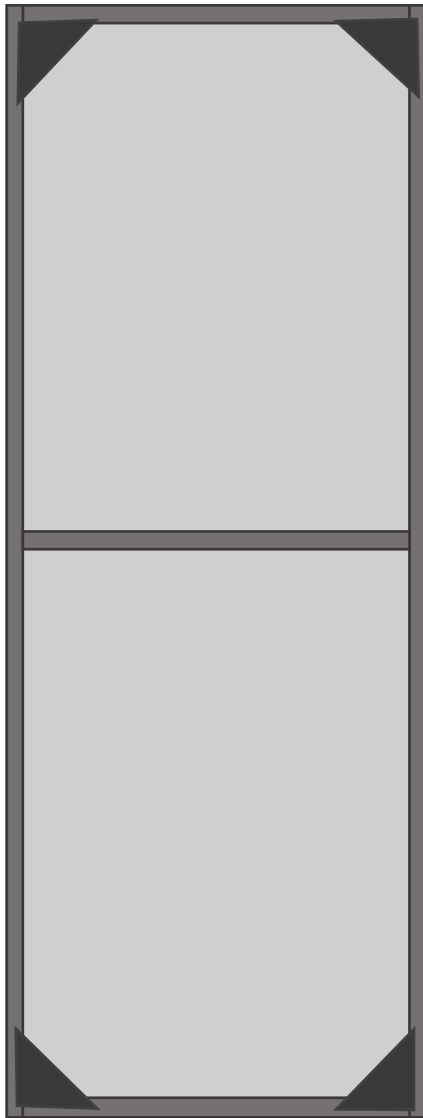
These become the **RAILS**

HOLLYWOOD FLAT CONSTRUCTION

For a Hollywood flat, the stiles and rails lay on their edge (i.e. the $\frac{3}{4}$ " side)

Hollywood flats still use a toggle (3' 10.5"), however, instead of using straps to attach it to the stiles, they are nailed or screwed directly to each other.



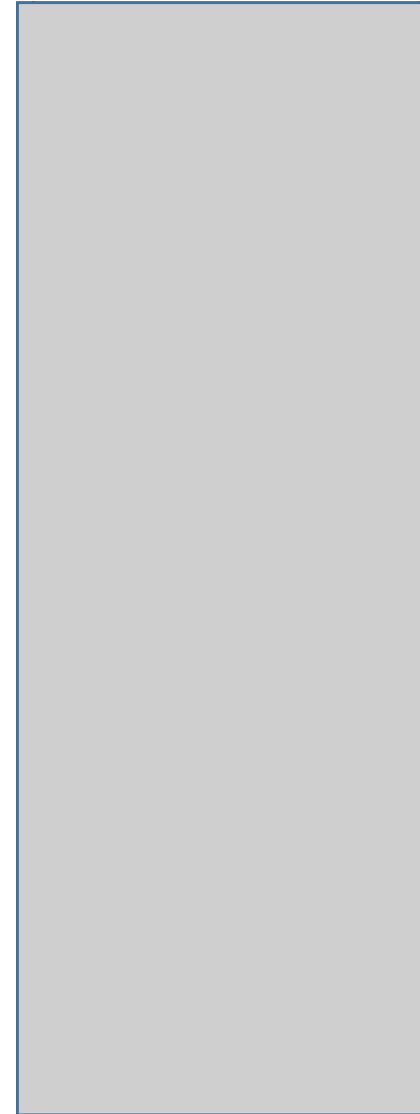


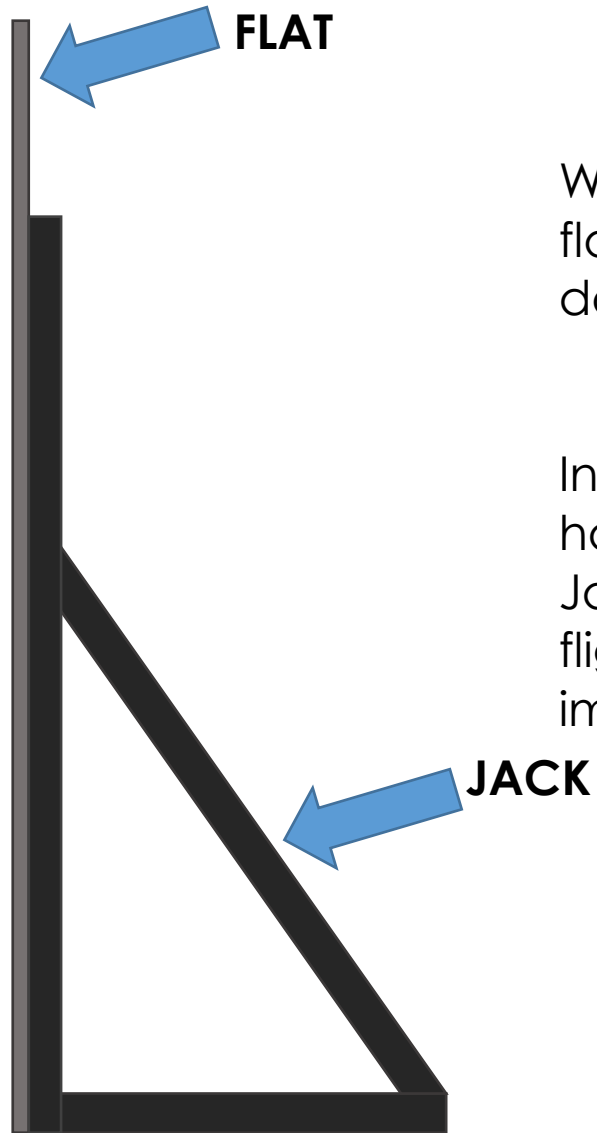
For added support corner blocks can be added, however, the rigidity of the plywood typically makes this unnecessary

The other side is then faced with plywood luan.



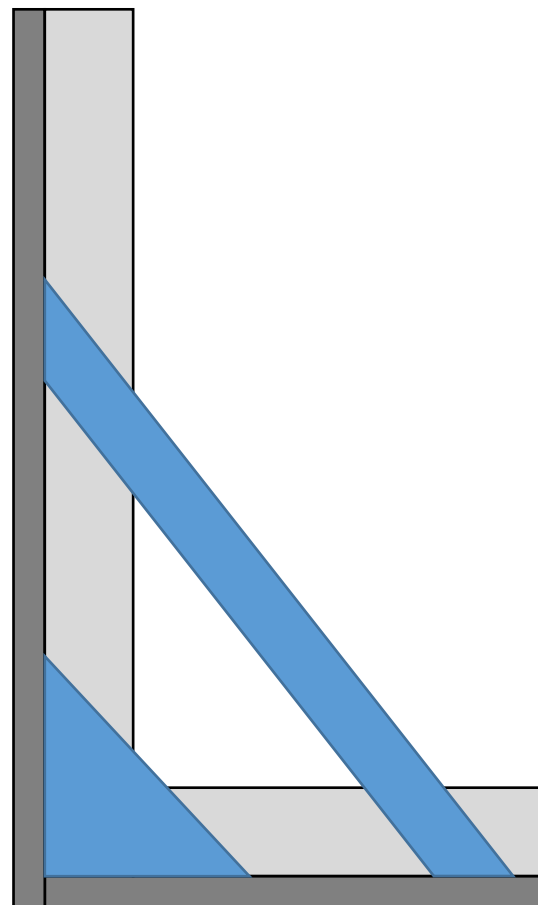
Alternately, both sides can be faced with luan to have a reversible flat.





While Broadway flats are typically flown in on battens, Hollywood does not often have that luxury.

Instead, they created a stand to hold the flat up called a **JACK**. Jacks are also used on Broadway flights when flying is impossible or impractical

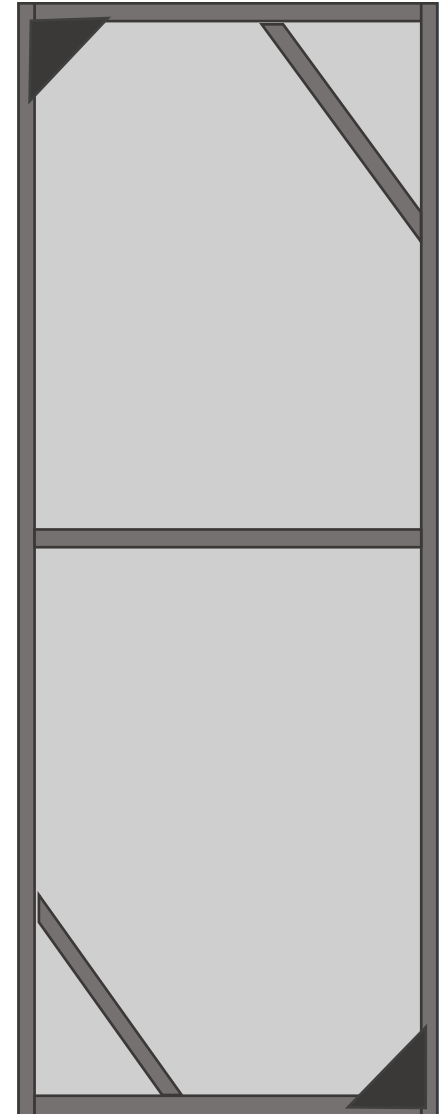


“NIGHTHAWK FLAT” CONSTRUCTION

IRHS uses a hybrid construction for it's flats.

It is essentially a Hollywood flat in it's construction but uses alternating corner braces and corner blocks.

Again, rather than using straps, the braces are screwed/nailed directly to the stiles.



MINI-FLAT PROJECT

For this project you will randomly select a BROADWAY or HOLLYWOOD FLAT w/ JACK

TECH 1's will use screws

TECH 2's will use glue and staples

