The following table shows what type of fastener is recommended for specific jobs. It only covers the most common cases you'll face in a put-in. There are many more materials and creative ways of connecting them, some of which even work. This represents current best practice for MIT Gilbert & Sullivan Players, which is not necessarily best for any other theatrical organization.

To use this table: find the column headed by the "top" material (i.e. the material that the fastener passes through first). Then, locate the row for the material you are attaching it to. The box where they intersect tells which fastener to use along with helpful notes.

Table 1: What Fastener Do I Use?

To Fasten: To...	Lumber (e.g. 2x4)	Strapping or 1x3	Facing (1/8" masonite)	Flats	Dexion
Lumber (2x4)	• 3" flat-head construction screw • 10d - 16d nail • 1/4" carriage bolt	#8 1-1/2" washer-head construction screw. Predrill top piece to avoid splitting strapping.	#8 5/8" washer-head construction screw. Drywall screw is a poor second choice.	#8 1-1/2" washer-head construction screw (preferred), or drywall screw	• #10 1-1/2" washer-head construction screw • 1/4" carriage bolt with washer
Strapping (1x3)	*Stop! Fasten the strapping to the lumber.*	#8 1-1/2" washer-head construction screw. Predrill top piece to avoid splitting strapping.	#8 5/8" washer-head construction screw. Drywall screw is a poor second choice.	#8 1-1/2" washer-head construction screw (preferred), or drywall screw	#8 1" super washer head constr screws, and beware of points poking through a bit.
Facing, Masonite	*Stop! Fasten the facing to the lumber.*	*Stop! Fasten the facing to the strapping.*	Not recommended; try glue, pop-rivets.	*Stop! Fasten the facing to the flat.*	*Stop! Fasten facing to Dexion, or reconsider.*
Flats	*Stop! Fasten the flat to the lumber.*	#8 1-1/2" washer-head construction screw. Predrill top piece to avoid splitting strapping.	#8 5/8" washer-head construction screw.	#8 1-1/2" washer-head construction screw (preferred), or drywall screw	#8 1" super washer head constr screws, through corner blocks and toggles.
Dexion	1/4" carriage bolt with a washer under the nut.	1/4" carriage bolt with a washer under the nut.	Put lumber or strapping behind the Dexion.	1/4" carriage bolt with a washer under the nut.	5/16" hex-head bolts and nuts.

See next page for additional notes on fasteners.

Rationale Behind the Fastener Table

1. **Drywall Screws vs. Construction Screws.** Note the lack of recommendations to use drywall screws. This is because they are dangerous. They have little shear strength and will break when used to build load-carrying structures (such as platforms). They are also much harder for amateur builders to use than square-drive screws. The square-drive construction screws we have been buying (from McFeelys, see `www.mcfeelys.com`) are designed to work well in dimensional lumber and have plenty of shear strength.

2. **Washer-head screws**. These are like round-head screws with built-in washers. They hold soft material such as pine and Masonite more securely, since the head of the screw is flat where it contacts the material. It presses downward evenly and holds the material down snugly. In contrast, a "bugle head" drywall screw acts like a wedge to split the material you are screwing through. Strapping and even good 1x3 pine splits easily enough if you just don't pre-drill, and drywall screws almost always split it.

3. **Fastening hardware.** Use care selecting the screws for attaching metal hardware. When you are mounting butt hinges that need to fold all the way closed (e.g. booking flats or hanging a door), use the correct size flat-head wood screws for the hinge. If you use a larger size or drywall screws, the screw heads will protrude above the hinge and prevent butt hinges from closing flush. Sometimes you can get away with using a drywall screw on one side and a correct screw on the other of each pair that meets.

4. **Driving screws**. Some of the little 3/4" #6 or #8 flat-head screws that come with hardware have Phillips heads, but this does not mean it's a good idea to drive them with a power tool! They are made of soft steel and strip very easily. Use a hand screwdriver, or, if you must, the lowest possible torque setting on the power tool, and a fresh clean Phillips bit.

5. **Fastening Dexion.** The holes in Dexion are 3/8" diameter, and most of them are elongated in one direction or the other. Most of our fasteners will slip right through. The very biggest (#10) washer-head screws are safe to use, and the super-washer-head screws (smaller screws with extra-large heads) also work fine. Beware of the #8 washer-head screws that look OK if you don't center the screw perfectly but do easily pull through. This is also why you have to use washers under 1/4" carriage bolt nuts; the nuts are not quite big enough.

6. **Fastening Facing.** MITG&SP uses a lot of 1/8" Masonite for facing and hard covering, because it's cheap and flexible. It's also very hard, and it's difficult to start a screw in. This is why we have short, *drill-point* washer-head screws; the point has a little flute that makes it work like a drill bit and make its own hole very easily. It's very hard to start drywall screws in Masonite. Drill-point screws start *much* more easily.