Section 1: Dollies

Chapter One: The Dark Passage Dolly
A very simple-to-make dolly. After all these years (I made my first one in the late '80s), it's still my favorite. You can make different-sized decks. I use my 12” square dolly quite a lot!

Chapter Two: The Killers Dolly
A big traditional track dolly that can easily carry a camera operator and assistant

Chapter Three: The Gun Crazy Camera Pedestal
A great way to use your dolly without a tripod. You can even get the camera as low as a few inches about the dolly deck

Chapter Four: The Naked Kiss Upside-Down Dolly Camera Mount
Yeah, you heard me; upside down. Ever try to lay dolly track over a big rock bed or somebody's garden? Here's the solution!

Chapter Five: The Dark Corner PVC Dolly Track
Very easy-to-make dolly track!

Chapter Six: The Cry Vengeance Dolly Rail Padding
A really great way to support PVC dolly track on level surfaces

Chapter Seven: The Thieves' Highway Angle Dolly Track
Thanks to my wheel design you have a lot of options for dolly track. Here's just one more

Chapter Eight: The Glass Key Pro Dolly Track
Time-consuming to make, but in the end you'll have pro style dolly track. Don't skip this. There are things you need to know!

Chapter Nine: How to Lay Out and Level Dolly Track
Don't skip this either. There are things you need to know! Not only how to lay out track, but how to use your dolly like a pro

Chapter Ten: Troubleshooting Dolly Problems
Even the most high-end dollies have their problems. Here are the solutions
The great thing about the Dark Passage dolly is its versatility. By making the dolly platform any size you choose (within reason, of course), you can adapt it for any situation for the price of a piece of plywood. And because of the unique wheel design and placement, this dolly can be mounted to run on rails overhead! And once your wheel assemblies are made, you can just move them from one size plywood to the other. No need to spend a lot of cash on extra wheels for different-sized dollies! The plans for the Killer’s Kiss Crane later in this book makes it a perfect combination for use with this dolly. Make sure you read about all the dollies and dolly extras in the book so you can decide on the size and style of your dolly. If you want something heavy duty, double up on the plywood, making it twice as thick. Or build the Killers dolly in the next chapter. I use both dollies a lot!
### Materials List for the *Dark Passage* Dolly

- **(8)** in-line skate wheels. It doesn't matter what size, just as long as they're on sale! (Make sure they have the bearings, or pick some up in a separate pack. Each wheel takes two bearings, so that's 16 in all. You'll also need some if you're building the *Shock Corridor Stabilizer*. Also, because of the design of the dolly you can use the larger Razor® scooter-type wheels. Either will work just fine.

  *Note*: If you want to use more than four sets of wheels, you'll need two wheels for each set for each side of the dolly, and expand the number of everything that follows to build each wheel set. This will be clear once you read through the instructions.

- **(8)** 5⁄16” (8 mm) washers. They don't have to have an exact 5⁄16” hole, but pretty close to the bolt diameter.

- **(4)** 5⁄16” (8 mm) bolts × 3” (76 mm) long. This goes through the wheel bearing, so make sure it's a snug fit (all the skate bearings are 5⁄16”). I've never found a bearing that didn't have a 5⁄16” hole, so you should be pretty safe with any wheels you buy.

- **(8)** 5⁄16” (8 mm) nuts. Try to find nuts that are thinner than average. They're called jam nuts.

- **(4)** L-brackets. You won't find these with the rest of the L-brackets. These are made for deck building by Simpson Strong-Tie, model number HL-33, so check that part of the hardware store first. They are really heavy duty and take a ½” (14 mm) bolt to attach to the dolly platform (see next page). If you don't live in earthquake or hurricane country, these might be hard to find. That's OK, simply follow the plans for the *Killers* dolly later in this section.
1⁄2" (14 mm) metal pipe nipples (get one for every two sections of PVC pipe). These are good for screwing the PVC pipe together for longer sections of track. Since I wrote the first edition of this book, there are commercial connectors for PVC used as dolly track. These are expensive and don’t work as well as this simple solution.

(4) 1⁄2" (14 mm) bolts × 2" (50 mm) long. These hold the wheel assembly to the deck of the dolly.

(8) 1⁄2" (14 mm) ID (inner diameter) or larger washers (for the 1⁄2" (14 mm) bolt).

(4) 1⁄2" (14 mm) lock nuts (for the 1⁄2" bolt).

3⁄4" (19 mm) thick plywood. This can be any size you want. I have several sizes: I use a 12" (30 cm) square a lot in tight places, a 24" square, and one big enough for a camera operator that is 26" wide × 40" long. You can make a bigger one, of course, but if you want to dolly through a standard 32" wide doorway, your dolly with its wheels must be narrower than that.

3⁄4" (19 mm) PVC pipe. You'll find this in the plumbing section. This is used for dolly track. You can use other stuff for track depending on the situation. This stuff is good when connecting more than one length. Get ones with the thick core (don’t panic—just look at all the PVC the hardware store offers and get the thickest stuff), as much as you need. Four 10’ (3 meter) lengths is a good start. You can also use 1” (25 mm) PVC if you want. If you use 1" PVC, make sure your plumbing nipples (next) are 3⁄4" (19 mm). We’ll be going more into track in the track section, but it won’t hurt to get two lengths of electrical conduit or PVC while you’re at the store so you can test out your dolly.

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Other Options for Track

We'll be getting into all sorts of track options in individual chapters, but here are just a couple of ideas. Next time you're at a large home center, look around. I think you'll discover tons of things you can use for track! But in the meantime, grab some PVC.

Long lengths of L-shaped aluminum are a good option for dolly track where you might need a lot of strength (going overhead between two ladders, for instance).

Another option for dolly track is 3⁄4" (19 mm) electrical conduit. It comes in 10' lengths, but is difficult to string together so you don't get a bump in your camera move. I'd use it for shots of 10' (3 meters) or less.

Tools List for the Dark Passage Dolly

- A drill. Get one with variable speed ability (don't worry, most drills have this). If you're going to be building other projects that involve drilling into metal, do not buy a cordless drill. They just don't have enough muscle for metal. For this project, though, a cordless drill is fine.
- 5⁄8" (14 mm) drill bit.
- Locking pliers. Get two pairs if you're not going to be using a socket wrench as well.
- An assortment of clamps. Not absolutely necessary on this project, but always handy, and very much needed on other projects in this book and for filmmaking in general.
- Combination square. Get one, get one, get one!
- A big framing square. For this and other projects!
Let's Build It

1 First, we need to figure out where to put our brackets for the wheels. The plywood I'm using for this dolly measures 3’ × 2’ (0.60 × 1 meter), plenty big enough to hold a tripod or small boom arm.

0” to 5” (0–127 mm) from the edge seems about right. Use the framing square to make sure the placement of the bracket is square with the deck, and right on the edge of the board. If we were using a smaller piece of wood for the platform, we might want to go in only a couple of inches (50 mm). Truly, anywhere from right on the narrow edge of the dolly deck to about 5” in is just fine on a dolly this big.

As you can see here, I'm placing the bracket flush to the edge. **Important:** Make sure all the brackets are lined up the same, or they won't fit into the track properly!

Once the bracket is in place, mark the center of the hole in the bracket. This is where we'll be drilling into our deck to attach the bracket. Do this in each corner with the remaining three brackets. In this photo, I'm using a bracket with two holes on a much smaller platform, but the principle is the same. I just want to give you the idea that you don't have to use the exact brackets in the materials list. They just need to be thick enough to hold your weight!

Here I'm using a piece of aluminum that runs the full length of the board as a straight edge against my framing square so I know where to place the bracket on the other end. It might be a good idea to draw a pencil line down the length of the straight edge and line both brackets against that line.

2 Let's do some drilling. Clamp the board to the table and load that big 1⁄2” (14 mm) bit into the drill. Be careful to drill the hole right on that perfect mark you made! Do this to the remaining three corners.
**ATTACH THE BRACKETS**

3 You're going to need that ½” (14 mm) bolt, two washers, and a lock nut (the one with the little nylon ring inside). This is pretty straightforward. Put a washer on the bolt and stick the thing up through the hole. (The head of the bolt should be on the top side of the dolly.) Thread the bracket hole over the bolt, then a washer on top of that, then tighten the whole shebang down with the lock nut.

Before you tighten that nut all the way down, grab your combo square (you did remember to get one, didn't you?) and line it up with one edge against the plywood, and the other against the edge of the bracket. Is the bracket square against the straight edge? If not, and it probably won't be, just muscle it over until it looks like the following:

Now tighten the heck out of it. Finish up the other three corners.

Hey, we're almost done. Pretty easy so far, huh?

**ATTACH THE WHEELS**

4 Grab your ½”x 3” (8 mm x 76 mm) bolt, two jam nuts, two washers, one lock nut, and two skate wheels with the bearings.

Put a washer on the bolt and run it through the hole in the bracket and put a washer on the other side (see, like in the picture).

5 Screw on one of those narrow nuts and tighten the whole mess down. Hey, look at that! You just made an axle! (Make sure you put the bolt at the top of the too-big bracket hole—toward the deck—to keep it from sliding. Also, it looks like there are two washers. Nope. Just a reflection.)

6 Put on one of your wheels and thread another nut on the other side. Not too tight, you still want the wheel to spin without being wobbly.

**Hey Dan! I can't fit the wheel on the axle! What gives?**

You bought the wheels with the bearings already in them, didn't you? No worries. There's a little plastic axle in there. Take a screwdriver and pop out one of the bearings, remove the plastic bit, and pop the bearing back into the wheel hub. Now you're good to go.
7 Slide the second wheel on and screw on that lock nut. Again, not too tight. Sweet!

Repeat the steps on the other three brackets and you're done.

If the hardware store didn't have the right length bolt (like you see in the picture) and you bought some longer ones, that's OK. It's best though, to use a hacksaw to chop off that extra length.

Here's what the bottom should look like when you're done.

Here's a small version with a fluid head bolted to the middle. I use this one a lot. We'll get more into that in later chapters.

When you place the finished rig on the track, make sure it fits in the groove in-between the two wheels.

Here's the dolly up off the ground using electrical conduit for track, ready to dolly though a window. There are tons of shots you can do with a small light dolly!

There you have it. Now go check out the chapter on dolly track later in this section! Because of the unique wheel design (well, not so unique nowadays!), it opens up a whole new world of what you can use for track. If you'd gone with the Hollywood regular skate wheel design, your track options would be extremely limited. You're welcome.