

NEW!

DramaTech

MANUAL

Volume 2.0

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Technical support for sound, lighting, sets, backdrops & props for the Church Techies and organizers



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INTRODUCTION

WELCOME! This is DramaShare's DramaTech Technical Manual, 2.0. We really never intended to try and make a newer version, but the requests were too many to be ignored. I still wish I could say that all the answers to all your problems are here, but they probably aren't. The manual starts off with a new section on designing sets. It's main goal is to get you to start thinking and visualizing in a new way. The section on lighting and the section on microphones have been expanded somewhat, as has the section on set building. There is more on how to use lighting and how it affects what's onstage. The sound section has a more detailed discussion of microphone types and how to use them in your drama. We added a section on makeup, because makeup and lighting go hand in hand. There is also a section on the basics of costuming. It isn't a how to sew tutorial, but it deals more with why costuming is helpful, and tips on designing ideas. There is however, a fairly detailed how to tutorial on painting cardboard. The principles carry over to any other substrate, but folks don't think about what can be done with cardboard. We added a section on props, and hopefully it can get you started. There is some good information on some Biblical period props in there, so check it out.

Hopefully this expanded manual will serve as a basic understanding of how to do some things, and a handy reference tool for planning some of your productions. What we wanted to do was to try and put a lot of general material in one place. You won't have to wade through 300 pages of information for the 10 on what you need and want to know. Again, please understand that the concept of this manual has always been to understand the basics. As I said, there is a fair amount of detail on some subjects, and on others it will just serve to educate. You can at least understand how a basic sound or lighting system works, and what some of the components are, and what they do. There is also a little on designing with lights, and their effect on makeup. Nothing but trial and error and lots of sweat and work and practice will make you good at anything. Throughout there are some references to books by title and author, and hopefully you will invest in one or two of them.

For backdrops and flats, and building set pieces, there is more information and some better illustrations. Materials to use, steps involved, and some hopefully helpful diagrams and illustrations. There is a very brief introduction to scale drawings, perspective, and creating depth and 3-D with paint. At the end of this booklet, is a long list of Terminology. Acting, Stage, Sound, Lighting, and even Script Writing terms are here. Is it conclusive? Not hardly. But there should be enough to keep you from feeling totally ignorant.

We appreciate you, the membership, and will continue to try and serve you better. And as a special bonus, we have added a tutorial on the Armor of God, fully illustrated. You'll find it right after the section on **BUILDING A MODEL**, near the back of the manual. God bless you all.

Thank you.

Karl Wagner
Toccoa, GA



TABLE OF CONTENTS

SECTION I	BASICS OF SET DESIGN	
	WHAT KIND OF SET	PAGE 13
	PRINCIPLES OF COMPOSITION	PAGE 15
	HOW TO START	PAGE 16
	CHANGE YOUR THINKING	PAGE 18
	NO RULES	PAGE 22
SECTION 2	BACKDROPS AND SCRIMS	
	MATERIALS	PAGE 23
	SEWING	PAGE 24
	STAPLING AND SIZING	PAGE 26
	DRAWING THE ART	PAGE 28
	SCALE DRAWINGS	PAGE 32
	ARCHITECT'S SCALE	PAGE 32
	PERSPECTIVE	PAGE 35
SECTION 3	THE THEATRICAL FLAT	
	CONSTRUCTION	PAGE 38
	WINDOW & DOOR	PAGE 40
	ATTACHING FABRIC	PAGE 40
	STRENGTHENING & STANDING	PAGE 42
SECTION 4	BUILDING SETS	
	BASICS	PAGE 44
	THIS AIN'T YOUR HOUSE	PAGE 44
	3-D TREE TRUNK	PAGE 46
	3-D WALL-HILL SIDE	PAGE 48
	FOAM/ROCKS, ETC.	PAGE 50
SECTION 5	PROPS AND SET DRESSING	
	WHAT IS A PROP	PAGE 52
	MAKING YOUR PROPS	PAGE 53
	VISUALIZING	PAGE 54
	BUYING PROPS	PAGE 55
	BIBLICAL PERIOD PROPS	PAGE 56
	SET DRESSING	PAGE 59
	RUNNING THE SHOW	PAGE 60

TABLE OF CONTENTS (CONTINUED)

SECTION 6	PAINTING	
	TYPES OF PAINT	PAGE 61
	PAINTING TECHNIQUES	PAGE 62
	PAINTING CARDBOARD	PAGE 64
SECTION 7	SPECIAL EFFECTS	
	BASIC THOUGHTS	PAGE 70
	FIRE	PAGE 70
	SMOKE (OR FOG)	PAGE 73
	SNOW	PAGE 78
	RAIN	PAGE 81
SECTION 8	LIGHTING	
	BASICS	PAGE 82
	HANGING POSITIONS	PAGE 83
	DIMMING	PAGE 83
	INSTRUMENTS	PAGE 84
	BASIC TIPS ON USE	PAGE 90
	DESIGNING LIGHTING	PAGE 92
	MODELING WITH LIGHT	PAGE 93
	LIGHT AND MAKEUP	PAGE 95
SECTION 9	MAKEUP	
	BASICS	PAGE 97
	TYPES OF MAKEUP	PAGE 99
	STRAIGHT MAKEUP	PAGE 100
	OLD AGE MAKEUP	PAGE 102
	WIGS BEARDS	PAGE 105
	PROSTHETICS / PUTTY	PAGE 106
SECTION 10	COSTUMES	
	PURPOSES	PAGE 108
	HISTORIC ACCURACY	PAGE 108
	PATTERNS	PAGE 110
	SEWING BASICS	PAGE 113
	BIBLICAL CLOTHING	PAGE 114
	MAINTAINING	PAGE 116

TABLE OF CONTENTS (CONTINUED)

SECTION 11 COLOR-LIGHT AND PAINT

BASICS	PAGE 117
COLOR MIXING	PAGE 118
MIXING CHART	PAGE 119

SECTION 12 SOUND SYSTEMS

BASICS	PAGE 121
USE IN DRAMA	PAGE 125
MICROPHONE TYPES	PAGE 126
MIKING YOUR DRAMA	PAGE 127
TROUBLESHOOTING	PAGE 132
WIRELESS TIPS	PAGE 133
MIXER CONTROLS	PAGE 134

SECTION 13 BUILDING A MODEL OF THE SET

PAGE 135

BONUS TUTORIAL-THE ARMOR OF GOD

PAGE 146

SECTION 13 TERMINOLOGY

ACTING	PAGE 157
LIGHTING	PAGE 163
STAGE	PAGE 175
SOUND	PAGE 180
WRITING	PAGE 184

LIST OF ILLUSTRATIONS

FIGURE 1	PAGE 14	REPRESENTATIONAL SET
FIGURE 2	PAGE 14	PRESENTATIONAL SET
FIGURE 3	PAGE 16	DRAWINGS
FIGURE 4	PAGE 17	SKETCH/MODEL/SET
FIGURE 5	PAGE 18	NAPKIN SKETCH
FIGURE 6	PAGE 19	LEVELS & SHAPES
FIGURE 7	PAGE 19	ARCHITECTURAL OPENINGS
FIGURE 8	PAGE 20	SUSPENDED WINDOWS/STANDING DOOR
FIGURE 9	PAGE 20	SUSPENDED WINDOWS PHOTO
FIGURE 10	PAGE 21	PLATFORMS/STAIRS/STEPS
FIGURE 11	PAGE 21	FALSE PROPORTIONS
FIGURE 12	PAGE 23	MUSLIN
FIGURE 13	PAGE 23	SHARKTOOTH SCRIM
FIGURE 14	PAGE 24	PIPE POCKET
FIGURE 15	PAGE 24	WEBBING & GROMMETS
FIGURE 16	PAGE 25	PIPE POCKET VARIATION
FIGURE 17	PAGE 25	STAPLING DOWN THE DROP
FIGURE 18	PAGE 26	GETTING AIR UNDER THE DROP
FIGURE 19	PAGE 28	PAINTING ON THE FLOOR
FIGURE 20	PAGE 29	VINE CHARCOAL
FIGURE 21	PAGE 29	GRID METHOD OF ENLARGING ART
FIGURE 22	PAGE 30	POUNCE WHEELS
FIGURE 23	PAGE 31	FLOOR STRAIGHTEDGE
FIGURE 24	PAGE 33	ARCHITECT'S SCALE
FIGURE 25	PAGE 34	VARIOUS SCALES
FIGURE 26	PAGE 35	PERSPECTIVE ON FLOOR CLOTH
FIGURE 27	PAGE 36	ONE POINT PERSPECTIVE
FIGURE 28	PAGE 37	2 POINT PERSPECTIVE
FIGURE 29	PAGE 38	TYPICAL FLAT
FIGURE 30	PAGE 39	CONSTRUCTION JOINTS

LIST OF ILLUSTRATIONS (CONTINUED)

FIGURE 31	PAGE 39	TYING OFF FLATS
FIGURE 32	PAGE 40	WINDOW & DOOR FLATS
FIGURE 33	PAGE 42	HOMEMADE STAGE JACK
FIGURE 34	PAGE 43	STRENGTHENING FLATS
FIGURE 35	PAGE 45	USE SHAPES TO CREATE ILLUSION
FIGURE 36	PAGE 47	3-D SET PIECE-TREE TRUNK
FIGURE 37	PAGE 48	PHOTO-RAGGING 3-D SET PIECE
FIGURE 38	PAGE 49	3-D SET PIECE-CAVE WALL/HILLSIDE
FIGURE 39	PAGE 49	DUTCHMAN
FIGURE 40	PAGE 50	WAYS TO CARVE FOAM
FIGURE 41	PAGE 53	VICTORIAN COUCH & ANTIQUE PIANOSTOOL
FIGURE 42	PAGE 53	ROMAN COUCH & FOLDING STOOL
FIGURE 43	PAGE 54	LUMIERE BROADWAY
FIGURE 44	PAGE 54	LUMIERE LOCAL THEATER
FIGURE 45	PAGE 55	SLEEPING FITTY
FIGURE 46	PAGE 56	OIL LAMP ABRAHAM'S TIME
FIGURE 47	PAGE 56	OIL LAMP 1ST CENTURY ROMAN
FIGURE 48	PAGE 56	EXCAVATED STONEWARE/MASADA
FIGURE 49	PAGE 57	SHEKEL TYRE OBVERSE
FIGURE 50	PAGE 57	SHEKLE TYRE REVERSE
FIGURE 51	PAGE 57	WIDOW'S MITE
FIGURE 52	PAGE 58	TRIBUTE PENNY/DENARIUS
FIGURE 53	PAGE 58	REED & QUILL PENS
FIGURE 54	PAGE 58	PAPYRUS
FIGURE 55	PAGE 58	DEAD SEA SCROLL
FIGURE 56	PAGE 59	INKWELLS
FIGURE 57	PAGE 59	WAX TABLET
FIGURE 58	PAGE 60	PROPS TABLE
FIGURE 59	PAGE 62	SHADOWS & HIGHLIGHTS ON SHAPES
FIGURE 60	PAGE 63	LIGHT & DARK TO CREATE DEPTH

LIST OF ILLUSTRATIONS (CONTINUED)

FIGURE 61	PAGE 63	TYPICAL DOOR PANEL
FIGURE 62	PAGE 64	GETTING READY TO PAINT
FIGURE 63	PAGE 65	CUT CARDBOARD TO SHAPE
FIGURE 64	PAGE 65	REPRESENTATIVE PROFILE
FIGURE 65	PAGE 65	TRANSFER PROFILE LINES
FIGURE 66	PAGE 66	PAINT THE BACK
FIGURE 67	PAGE 66	CARDBOARD CURLS
FIGURE 68	PAGE 66	PAINT THE FRONT
FIGURE 69	PAGE 67	DRAWN LINES BLEED THROUGH
FIGURE 70	PAGE 67	LET'S PAINT!
FIGURE 71	PAGE 67	TAPE OR NOT TO TAPE PAINT
FIGURE 72	PAGE 68	PUT DOWN COLORS
FIGURE 73	PAGE 68	SCRUB TOGETHER
FIGURE 74	PAGE 68	LINING DETAILS
FIGURE 75	PAGE 68	TRICK OF THE TRADE
FIGURE 76	PAGE 69	ALMOST THERE
FIGURE 77	PAGE 69	DONE PAINTING
FIGURE 78	PAGE 71	GAMTORCH
FIGURE 79	PAGE 71	FAKEFIRE TORCH
FIGURE 80	PAGE 71	FAKEFIRE VULCAN'S FIRE
FIGURE 81	PAGE 72	LEMAITRE'S LEFLAME
FIGURE 82	PAGE 72	ROSCO'S FLICKER CANDLE
FIGURE 83	PAGE 72	CANDLE LITE
FIGURE 84	PAGE 73	TECHNIFEX FIRE EFFECT
FIGURE 85	PAGE 73	TYPICAL SMOKE MACHINE
FIGURE 86	PAGE 76	DIAGRAM DRY ICE FOGGER
FIGURE 87	PAGE 77	DIAGRAM TYPICAL FOGGER
FIGURE 88	PAGE 77	FOG CHILLER
FIGURE 89	PAGE 78	ULTRASONIC WATER FOGGER
FIGURE 90	PAGE 78	SNOW BAG

LIST OF ILLUSTRATIONS (CONTINUED)

FIGURE 91	PAGE 79	DECK CLEAT
FIGURE 92	PAGE 79	TIM'S SNOWMAKER
FIGURE 93	PAGE 80	SNOW FX AT RADIO CITY MUSIC HALL
FIGURE 94	PAGE 81	RAIN FX SECTIONAL VIEW
FIGURE 95	PAGE 81	RAIN FX CONFIGURATION
FIGURE 96	PAGE 89	BASIC LIGHTING SYSTEM
FIGURE 97	PAGE 93	DOWN LIGHTING
FIGURE 98	PAGE 94	SIDE LIGHTING
FIGURE 99	PAGE 94	BACK LIGHTING
FIGURE 100	PAGE 94	FRONT LIGHTING
FIGURE 101	PAGE 94	UP LIGHTING
FIGURE 102	PAGE 95	SIDE LIGHT/BACKGROUND COLOR
FIGURE 103	PAGE 96	VARIOUS COLORS LIGHT ON MAKEUP
FIGURE 104	PAGE 96	WARM/COOL LIGHT MIXED ON MAKEUP
FIGURE 105	PAGE 98	REMBRANDT SELF PORTRAITS
FIGURE 106	PAGE 99	SPECIAL EFFECT CONTACT LENS
FIGURE 107	PAGE 99	USES GREASEPAINT
FIGURE 108	PAGE 99	CREAM MAKEUP
FIGURE 109	PAGE 100	FOUNDATION
FIGURE 110	PAGE 101	SHADOWS & HIGHLIGHTS
FIGURE 111	PAGE 101	BLEND THE MAKEUP
FIGURE 112	PAGE 101	TRANSLUCENT SETTING POWDER
FIGURE 113	PAGE 102	STRAIGHT MAKEUP COMPLETE
FIGURE 114	PAGE 102	SHADOWS & HIGHLIGHTS (OLD AGE)
FIGURE 115	PAGE 103	FINAL LINES (OLD AGE)
FIGURE 116	PAGE 103	BLEND MAKEUP (OLD AGE)
FIGURE 117	PAGE 103	STIPPLE SPONGES
FIGURE 118	PAGE 104	OLD AGE COMPLETE –MALE/FEMALE
FIGURE 119	PAGE 105	WITH BEARD & WIG
FIGURE 120	PAGE 105	BRUISE BEGINNING

LIST OF ILLUSTRATIONS (CONTINUED)

FIGURE 121	PAGE 106	BRUISE COMPLETE
FIGURE 122	PAGE 106	NOSE PUTTY NOSE
FIGURE 123	PAGE 110	COSTUMING GRID PATTERN
FIGURE 124	PAGE 112	MEASUREMENTS CHART
FIGURE 125	PAGE 113	FABRIC GRAIN
FIGURE 126	PAGE 113	CLIPPING SPECIFIC HEMS
FIGURE 127	PAGE 114	MODERN DAY TALLIT
FIGURE 128	PAGE 115	ANCIENT HEBREW CLOTHING
FIGURE 129	PAGE 116	HIGH PRIESTS CLOTHING
FIGURE 130	PAGE 117	COLOR WHEEL
FIGURE 131	PAGE 118	ADDITIVE COLOR PROPERTIES OF LIGHT
FIGURE 132	PAGE 123	BASIC SOUND SYSTEM
FIGURE 133	PAGE 125	MICROPHONE PICKUP TYPES
FIGURE 134	PAGE 127	SENNHEISER BOUNDARY MICROPHONE
FIGURE 135	PAGE 127	TYPICAL C/OFF MICROPHONE
FIGURE 136	PAGE 127	SHURE STUDIO MICROPHONE
FIGURE 137	PAGE 128	TYPICAL ROOM MICROPHONE
FIGURE 138	PAGE 128	AUDIO TECHNICA SHOTGUN MICROPHONE
FIGURE 139	PAGE 128	COUNTRYMAN ASSOC. EARSET MICROPHONE
FIGURE 140	PAGE 128	SENNHEISER LAVALIER MICROPHONE
FIGURE 141	PAGE 129	COUNTRYMAN ASSOC. LAVALIER MICROPHONE
FIGURE 142	PAGE 129	MICROPHONE PLACEMENT, <u>WICKED</u>
FIGURE 143	PAGE 129	DIY OVER THE EAR PLACEMENT
FIGURE 144	PAGE 130	MICROPHONE PLACEMENT UNDER WIG
FIGURE 145	PAGE 131	MICROPHONE, <u>BEAUTY AND THE BEAST</u>
FIGURE 146	PAGE 131	MICROPHONE, <u>PHANTOM OF THE OPERA</u>
FIGURE 147	PAGE 135	SANCTUARY USED FOR MODEL
FIGURE 148	PAGE 135	PROPOSED QUICK SKETCH FOR SET DESIGN
FIGURE 149	PAGE 136	DRAWING FOR PROPOSED SET DESIGN
FIGURE 150	PAGE 136	FOAMCORE

FIGURE 151	PAGE 137	TOOLS TO BUILD MODEL
FIGURE 152	PAGE 137	MEASURING WITH THE SCALE
FIGURE 153	PAGE 137	FLOOR PLAN CUT OUT
FIGURE 154	PAGE 138	LAYOUT STEPS
FIGURE 155	PAGE 138	CUTOUT STEPS
FIGURE 156	PAGE 138	MARK PIECE FOR FRONT
FIGURE 157	PAGE 138	SQUARE UP MARKS
FIGURE 158	PAGE 138	NOTCHING FRONT PIECE
FIGURE 159	PAGE 139	GLUE ON FRONT
FIGURE 160	PAGE 139	FRONT COMPLETED
FIGURE 161	PAGE 139	LAYING OUT BACK WALL
FIGURE 162	PAGE 139	DRAWING LINE FOR GLUE
FIGURE 163	PAGE 140	CUT OUT BAPTISTRY
FIGURE 164	PAGE 140	GLUE ON BACK
FIGURE 165	PAGE 141	BACK WALL GLUED IN PLACE
FIGURE 166	PAGE 141	BAPTISTRY FLOOR GLUED IN
FIGURE 167	PAGE 142	TREAD/RISER
FIGURE 168	PAGE 142	STEP TEMPLATE
FIGURE 169	PAGE 142	GLUE STEPS TO BAPTISTRY BACK WALL
FIGURE 170	PAGE 142	STEPS GLUED IN PLACE
FIGURE 171	PAGE 143	BAPTISTRY BACK WALL GLUED IN PLACE
FIGURE 172	PAGE 143	HALF WALLS ON PLATFORM GLUED IN
FIGURE 173	PAGE 143	PLATFORM SIDE STEPS GLUED IN PLACE
FIGURE 174	PAGE 143	STAIR STRINGER /STEPS UP TO BAPTISTRY
FIGURE 175	PAGE 143	STAIR UNIT GLUED ON PLATFORM
FIGURE 176	PAGE 144	DOORS CUT OUT
FIGURE 177	PAGE 144	LANDINGS BEHIND DOORS GLUED IN
FIGURE 178	PAGE 144	HALF WALLS AND STEPS BEHIND DOORS
FIGURE 179	PAGE 145	WALLS BY STEPS UP TO BAPTISTRY GLUED IN
FIGURE 180	PAGE 145	PLAN VIEW FINISHED MODEL
FIGURE 181	PAGE 145	PERSPECTIVE VIEW FINISHED MODEL

PROLOGUE: THE FORGOTTEN RULES OF DESIGN

I wanted to introduce everything with these Forgotten Rules. These rules will apply to set design, costumes, set dressing, props, special effects, and may even carry over to some sound and lighting. Please take these into consideration to try and save yourself some aggravation, money, and maybe even embarrassment. Think them through, or at least have someone involved who is willing to play the “devil’s advocate” and speak up about it. It doesn’t have to be confrontational (though often it is) but it does need to be a realistic concern

RULE 1: TECHNICAL ASPECTS RARELY “MAKE” THE SHOW

An elaborate set, fantastic costumes, dramatic lighting, or wonderful visual effects, or whatever, very rarely make the show a success. Invest in good writing or well-written dramas. Invest in training and rehearsing with your actors. They make the show. Good actors with good material, led by wise directors are a nearly “can’t miss” combination. All the technical aspects can make the show better, but they can never save the show. If you are relying on the technical, then become a theme park.

RULE 2: DO WE NEED IT

This is of utmost importance. When a script is being analyzed for Technical aspects, you have to be able to distinguish between what you *need* and what you would *like*. Never, ever, confuse the two. The technical people along with the Director need to make lists and compare, and then decide. Do you need to make elaborate sets for a Garden scene, or can a few plants and some lighting be enough? Do you need a complete living room with walls and wall coverings, doors, windows, and carpeted floors, or will a couch and a lamp and a few chairs with an area rug do the same thing? Is this a one-time need? Will it be worth the extra expense, and what are the real chances that they will ever be used again?

RULE 3: WHAT WILL IT REALLY COST

Read Luke 14:28-31. “For which of you, intending to build a tower, does not sit down first and count the cost, whether he has *enough* to finish *it*...”

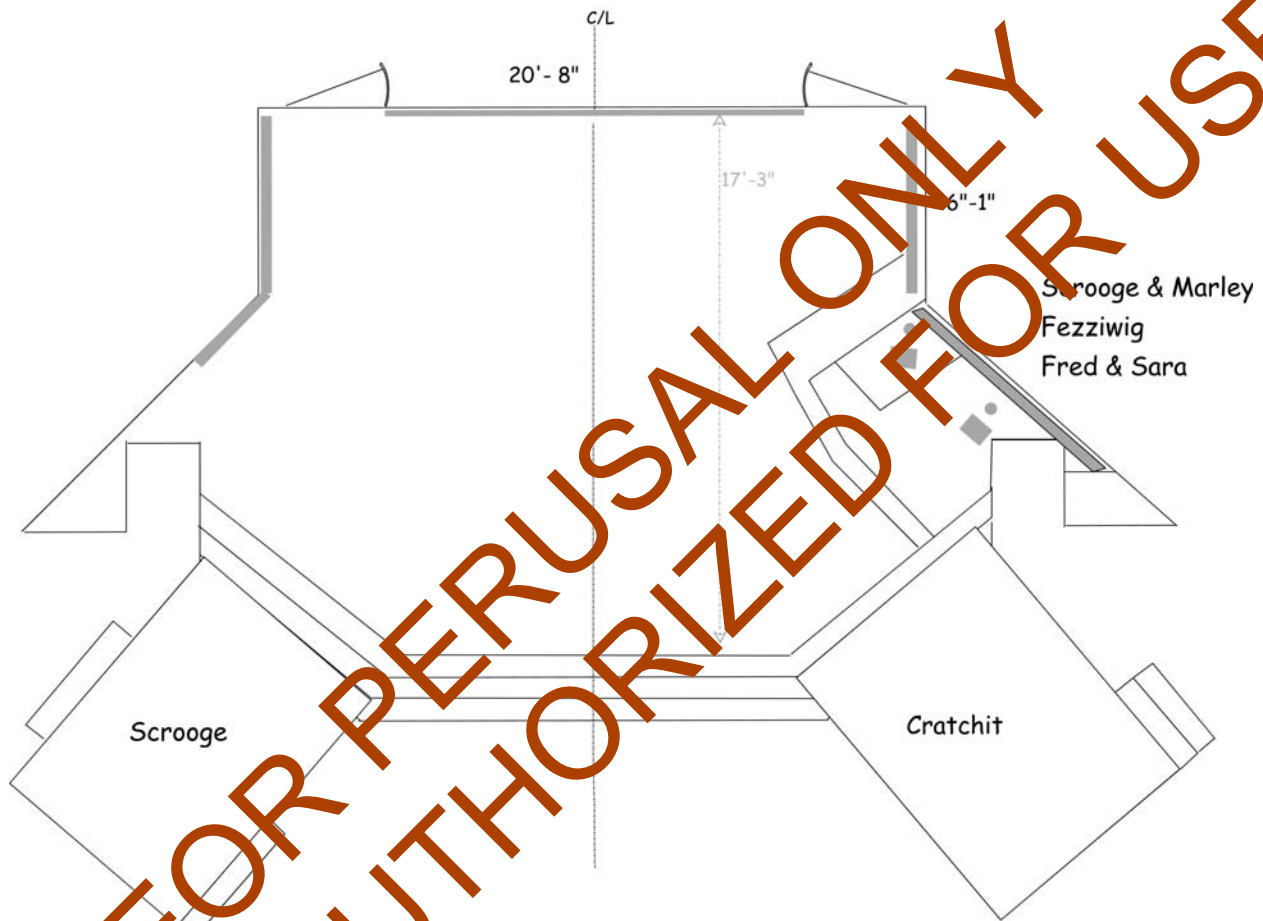
Sit down and figure the cost. Don’t guess. Check on the prices of building materials and fasteners, paint, etc., and calculate how much you will need. In order to do that, you’ll have to make drawings and sketches of everything, or else you won’t have the foggiest idea. Estimates are okay, but guesses are not. How many costumes will you need? How much fabric? If you rent the costumes what will that cost, as well as costs for shipping? Do not underestimate the costs involved in a million trips to WalMart for the “Oh, I forgot’s.”

Budget is such a large issue for something that is often so small. Determine where your money is best spent. Think about everything involved, especially the after keep of the props, set pieces and costumes, and figure that into the cost as well. Will you need to invest money on storage, even temporarily?

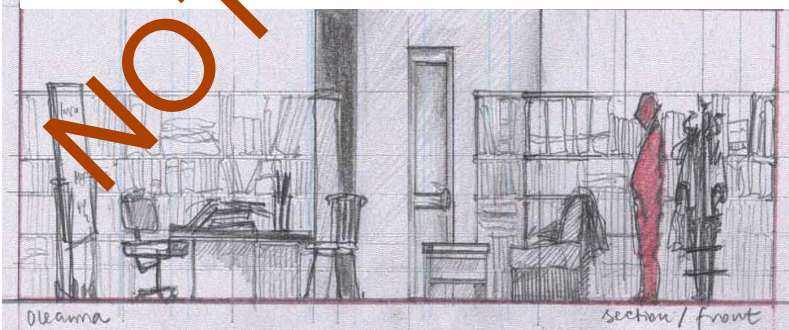
HOW TO START

Having analyzed the set and discussed the feel of the show with the Director, start out with sketches. Make a series of sketches both in plan and in elevation. When those are approved, then create finished drawings, to scale, in plan and elevation (See the chapter on **SCALE DRAWINGS**, in **SECTION 2 BACKDROPS AND SCRIMS**).

Plan means as you're looking down on it from above, you know, like floor plans. Elevation means drawn as if you were looking at it from the front.



(Figure 3) Set floor plan (above) and (below) an elevation from a different show

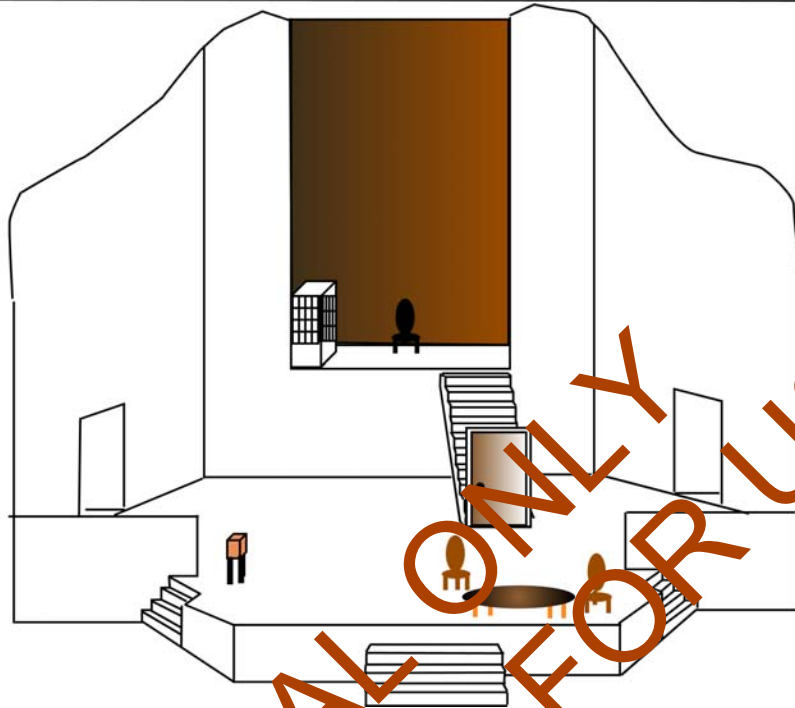


These drawings, will help everyone involved to better visualize the whole set. Scale drawings can allow you to see if there is room for people to move around onstage, and whether the set allows for the business the Director has in mind.

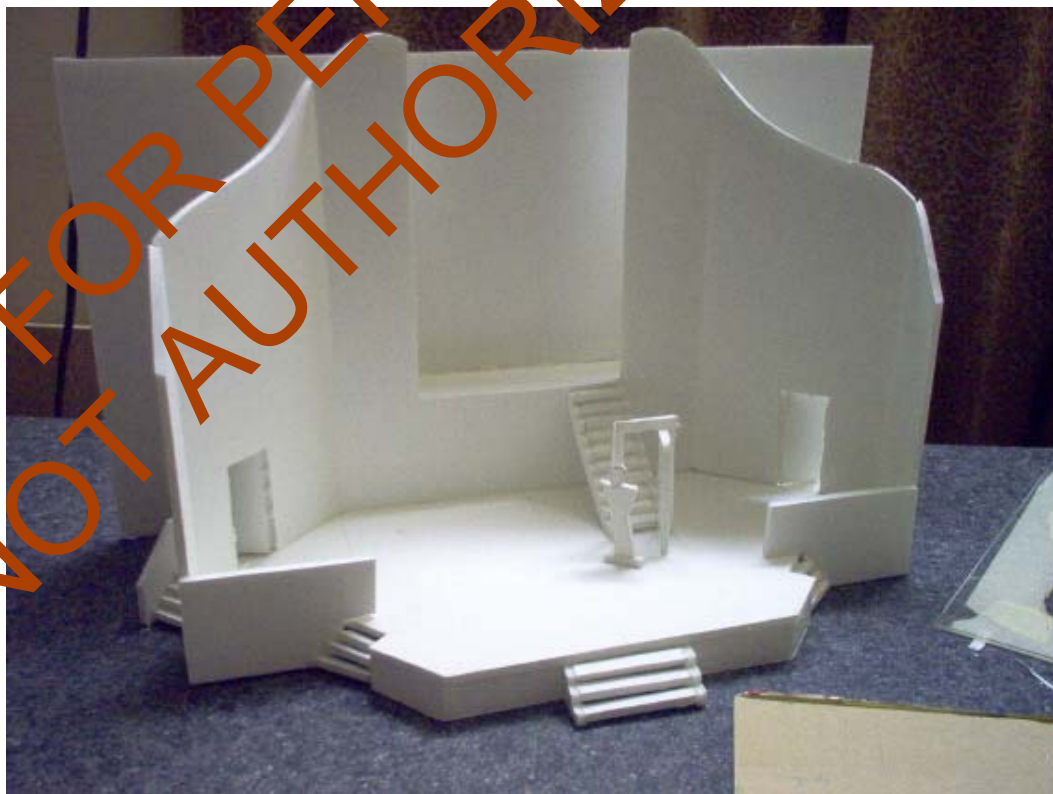
However, without doubt the most useful item that a

scenic designer can create is a model of the set, to scale. This puts it all into a real perspective, and is nearly indispensable. That way everyone knows what it looks like from any angle. Those who have trouble understanding and visualizing from drawings can see the real deal.

After that, if someone else will execute the design, there are usually painted artist's elevations to help facilitate the final product. These are the art to be created, and should be followed as closely as possible. Using the sketches and models can make life very easy.



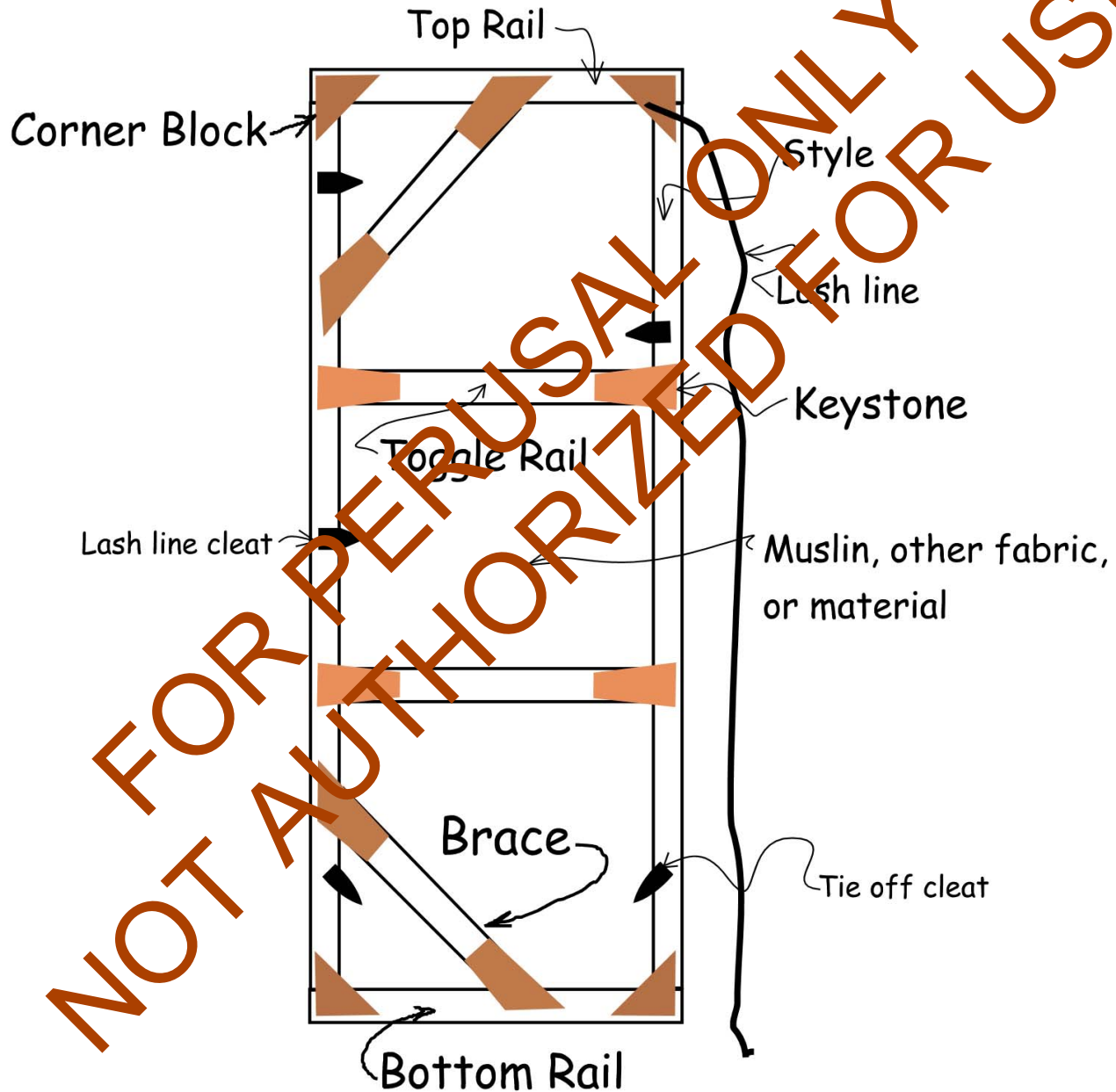
(Figure 4) Steps to execute; Sketch (above) Model (below)



SECTION 3 THE THEATRICAL FLAT

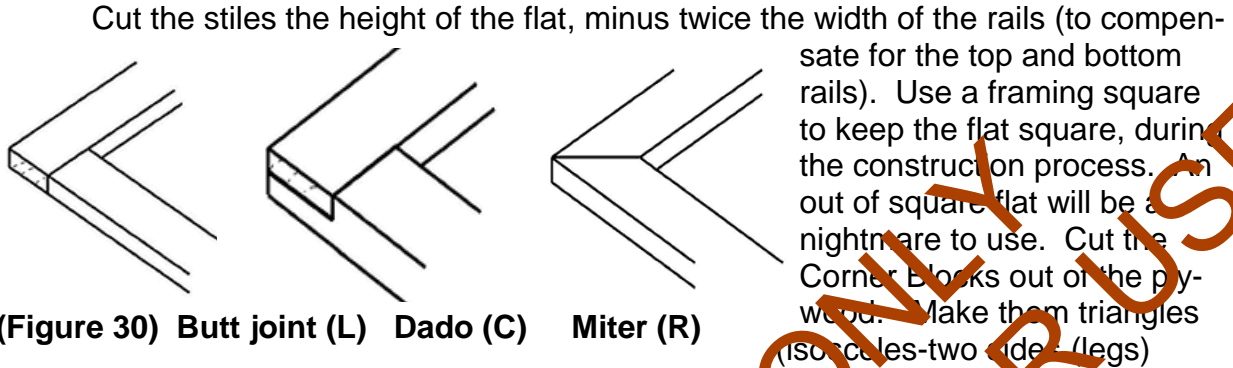
CONSTRUCTING THEATRICAL FLATS

The flat has been a theatrical standby for generations (see **Figure 29**). There are just about as many opinions on how to build them as there are people. We will describe one, and touch on others. The flat is a single section, which may be a wall piece, or a door piece or even a window piece. Construction will be basically the same. Dimensions are inconsequential at this point. A typical flat is 1'-5' or 6' wide, and used to be 12 feet high. The height will depend on your usage, and stage.



(Figure 29) Typical Theatrical Flat

Use 1"x4" lumber, 3/8" plywood, and screws to fasten it. First of all, cut the top and bottom rails to the exact length of the flat's width. The stiles will sit on top of the bottom and under the top. This allows you to slide the flat along the floor without splitting the wood of the stiles. There are many ways to join wood, but the three easiest are butt joints, dado, and mitered joints (see **Figure 30**).

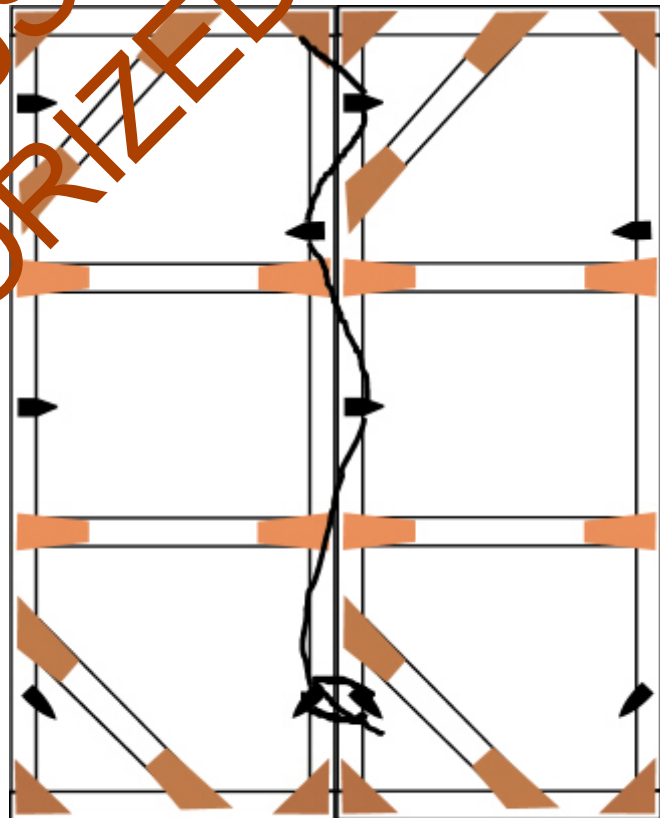


(Figure 30) Butt joint (L) Dado (C) Miter (R)

equal in length). Their legs will be about 9". Square up the top rail and one stile and then attach the corner block using screws (sized to NOT go through all the pieces of wood, 3/4" screws). Continue on attaching the four corner blocks, squaring it continually as you go. ***NOTE:** When attaching anything to the back of the flat, keep it 3/4" from the edge, so that when the sections are attached side by side, there will be no possibility of them not being flat together.

Next attach the Toggle Rails. Cut the toggle rails the width of the flat, minus two times the width of the lumber used (to make up for the two stiles). You may have to force the toggle rails in, because the long stiles may be warped or bowed slightly. Square them up, and attach them with the Keystones.

Next attach the corner braces. Notice that the braces are only placed on one side (typically the left). If they are on both sides it will make the flat warp. Once this is done, the frame needs to be flameproofed. Check with your local supply house for the proper flameproofing for both wood and for fabric. After this, attach the lash line cleats and the tie off cleats. Attach the lash line after the fabric has been put on. The lash line cleats are placed as they are because most stage hands are right handed, so they can hold the flat with their left hand, reach the lash line and wrap it and then tie it off.



(Figure 31) Typical flat tie off

Next, try to troubleshoot in advance. Every show has one or two props that will present unexpected challenges or that will be difficult to find or buy. For example, how about a two-foot high tomato aspic that has to be dropped on the floor and fall apart every night? Or an office safe that has to be light enough to maneuver quickly on and off stage in a seven-set show? Or a six-foot high martini glass? Or a cigar-store wooden Indian? I have encountered all of these and more, and for each one eventually found a solution or an accommodation.

MAKING YOUR PROPS

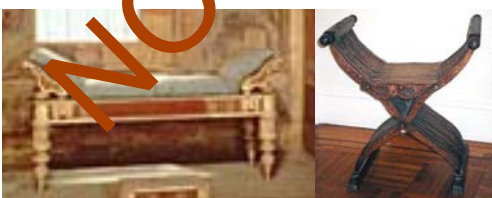
“Where do you get props?” is another question I hear all the time. That, and, “Where did you find that?” All too often the answer is, “I made it.” Or “I found on the street. Someone was throwing it out.” In short, props come from wherever and however you can get them. If you’re *deeply* involved in theater at your church, or school, or community there are some things I already know about you.

1. Your living room furniture has appeared onstage more times than you.
2. You’ve driven around looking for discarded furniture or boxes to make sets.
3. You are a frequent shopper at your local Thrift Store.
4. You buy your work clothes at Goodwill so you can afford to buy that new maglite, and a new tool kit.
5. Because of you, sales of Duct Tape and Hot Glue have skyrocketed.

Okay, back on track. Just as we discussed learning to *rethink* in set design, props is even more of that. You have to learn to train your mind so that you can “see” what you need to have. But before that, you have to study what historically existed. Now, I know that very few of you have tremendous amounts of time, but there are many things we can learn. If you’re a church, you will more than likely do a Biblical piece. That can mean 1st century Roman, Hebrew, or other Middle Eastern. (Ephesus, etc..) If it’s old testament, then it’s possibly Paleo-Hebrew, or Egyptian. Study those types of items, and keep them in your mind. That way, when you need it, you can find it. You have to always be thinking ahead, way beyond right now.

Here’s a “for instance.” I heard about a woman who wanted to give away some old furniture. I went, and I saw these two things (**Figure 41**). Now, in my mind, what I

(**Figure 41**) Victorian couch and an antique piano stool



(**Figure 42**) Roman couch and a folding field stool

saw them become were these two things (**Figure 42**). Was it a perfect match? No, but it was close, and after some doctoring and removing the back of the couch, it was very close.

Is it a talent and a gift? Yes, but 90% of it was learned. I learned it from studying, and making mistakes, and masterpieces, and everything in between. I once made the lath in a set for an antebel-

lum house vertical. Now how in the world would the plaster stick to that? It would slide right off and into a big mess on the floor. What was worse, I lived in an antebellum home that I had replaced plaster in, so I had first hand experience. I don't know what was going on in my mind other than we had 9 more hours to be done, and we were 16 hours away from being finished. Believe it or not, it got on film (and no, I will *not* admit to what film it was). It's okay. The world did not end. I did "work in this town again"... for many, many years. You've just got to try.

RULES ABOUT PROPS

1. **Safety:** Safety is always primary. If you build it, it must be safe. The safety of the cast, crew, and yes, the audience must be primary. If it's a prop that is a breakaway, make sure it doesn't break everywhere and scatter to the four winds.
2. **Recognizable:** If it is a hand prop, the actor's use of it can make it recognizable. But if the audience has no idea what it is, then it's of no use. This isn't a movie, so you can't have a closeup of the object.
3. **Appropriate:** First, it must fit the time period. If it is 1st century, then the choices for writing substrates are papyrus and parchment. The choice for a pen is most likely a reed pen, not a quill. If a quill it would be goose, not ostrich or peacock. Second, it needs to have the look and appearance of real. If it should be wood, it should look like wood, but it doesn't have to be wood. The early Star Trek props were salt and pepper shakers that underwent a transformation to look "other worldly." This is where the idea of image over reality comes into play.

THINK ABOUT SHAPE

Look for a picture of what you want, and go from there. Learn to see the shapes you need. Break it up into those shapes and try to find what will fit in that category. Then beat it to fit and paint it to match. I mean, paint it to look appropriate for the time period. (See **Figure 43**) This is Lumiere from a major production, but now look at **Figure 44**. See the shapes at the end of Lumiere's arms,



(Figure 44) Lumiere from a smaller production.

the ones that make up the candelasticks? What can make those shapes?

How about these items? Popcorn tubs or plastic pails. See where I'm going with this? Learn to see what you need and want. Visualize what it can be, not necessarily what it is.

If you're making a set piece that needs a look similar to stainless steel, you can use luan or ¼" plywood, and cover it with



(Figure 43) Lumiere from the Broadway production of Beauty and the Beast

See this URL: http://www.technifex.com/pages/products/products_fauxfire.html



(Figure 84) Technifex Fire effect (steam and lights)

SMOKE (OR FOG)

Well, it used to be that in the US it was fog machines or foggers, and in the UK and most of Europe it was smoke machines. A dictionary would tell us that fog is "... droplets of water vapor suspended in the air." Smoke is, "...cloud of fine particles suspended in a gas." Actually, in the business either term refers to the same thing. A special effect (s) (FX) produced in one of several different ways, but still producing an FX that looks pretty much the same. A cloud and/or haze onstage, whether dense or not. For the sake of ease we will use smoke throughout, even though what we have is a fog... confused yet?

A very important thing to remember is this: Smoke FX take a lot of practice and rehearsal. The person working the FX needs to be thoroughly knowledgeable about not only the operation of the machine, but needs to have worked with it enough to know its little quirks, strengths, and weaknesses. Every machine is different and works differently depending on fluid used and time in use, etc.

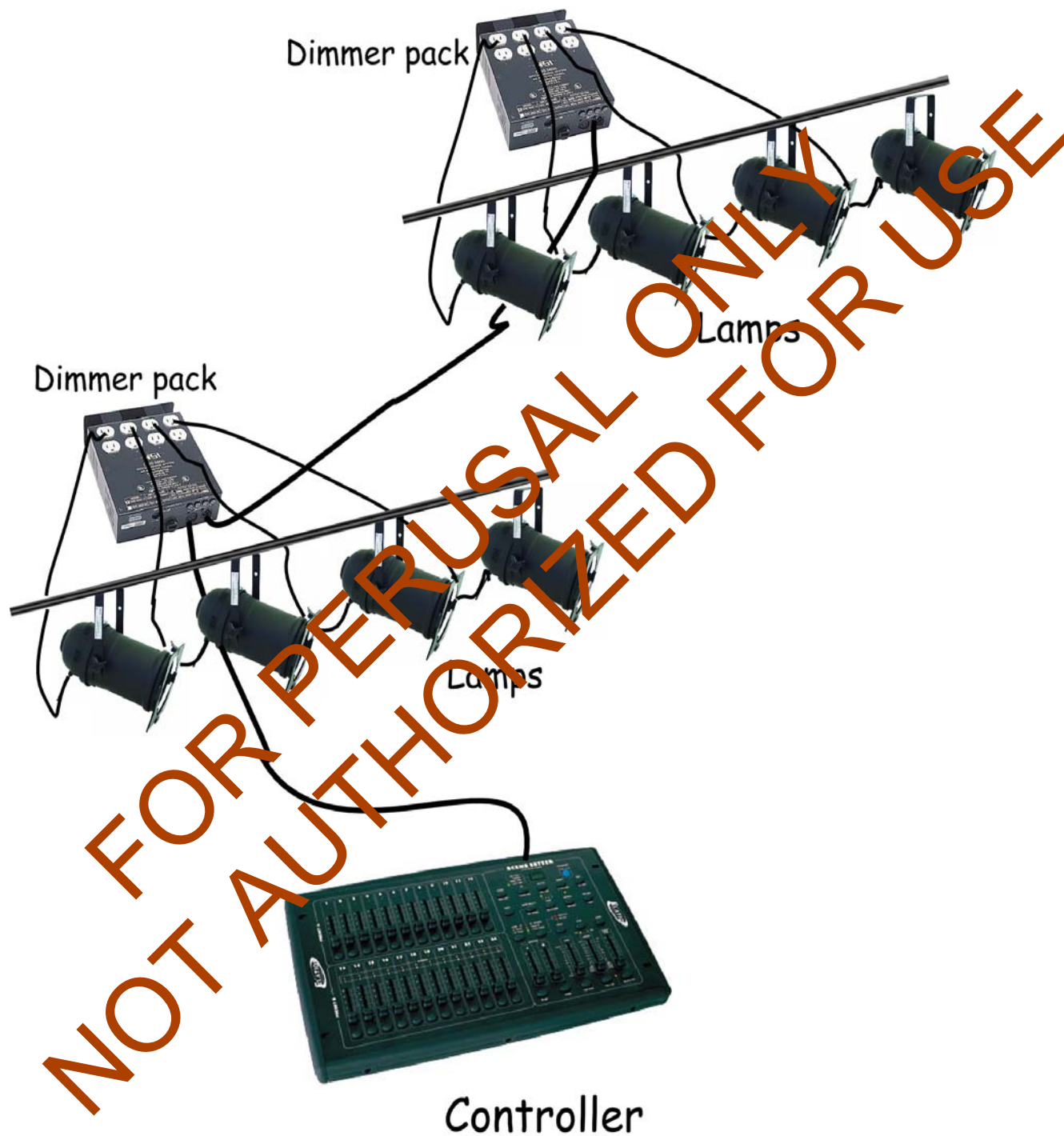
LET'S START AT THE VERY BEGINNING...

A very good place to start. What exactly is a smoke machine? It's a thingamajig that you plug into the wall and push a button and/or turn on, and white smoke comes out the end. If that isn't technical enough for you, I'm sorry. Whether the device uses dry ice, liquid nitrogen, glycol-



(Figure 85)
Typical smoke machine

***NOTE:** The information from the preceding section on lighting was compiled by Steven Haworth, a freelance lighting designer and theatre lighting consultant in the Chicago area, and a founding member of the Vineyard Center for Artists. This information is posted on the Dramashare website as well.



(Figure 96) Basic Lighting System

can do just about anything with it.

The Makeup Kit

Before we get into some basics of applying, let's try and figure out what we need to have to do the job:

Foundations (the undercoat or primer, so to speak), **multiple colors of makeups**, **contour wheels** (four or five accent colors in one container, depending on the skin tone chosen), black pencil, **lipcolor**, velour **powder puff**, **rouge**, **latex sponges** (for applying makeup), **highlight** (a light color to highlight bone prominences, etc.), flat **brushes #2 & #5**, **eye shadow** many variations), **eyebrow pencils** (varying colors, but lots of them), **stipple sponge** (for old age effects), **dry rouge brush**, **rose & scab wax**, **dry rouge**, **makeup remover** (can be special products or cold cream), **lip pencils**, **translucent face powder** (to set the makeup, so you'll need a lot), **spirit gum** or **liquid latex** (or something similar as a prosthetic adhesive, **hair color**, **4 color liners**, **eyebrow/lash comb**, **mascara**, and anything else you'll find you'll need.

I also have in my kit varying colors of **crepe hair** (for facial hair etc.), baby oil, Q-tips, **prosthetic adhesive remover**, special **stage blood** effects (capsules and mint flavored stage blood for that punched in the mouth look), **bloody scab** (a heavy, waxy, blood looking makeup), **tattoo cover** (a special formulation that is heavier pigmented), scissors, bobby pins, safety pins, a **bruise wheel** (similar to the contour wheel but it's all the colors you need to create bruises), and a ton of makeup sponges.

Okay, we have some knowledge, and some tools, let's play!

BASICS OF MAKEUP APPLICATION



(Figure 109) foundation applied

We will start with what is generally called straight makeup. It's not some caricature or say old age. It's pretty much just making you look better under the lights. The first order of business is to start with a clean face, and if necessary hair pulled up and away from the face. Maybe put back or just the use of a headband. Also, do not put on makeup with your costume on, and wear something like a smock or even just an old t-shirt.

Foundation

Take an makeup sponge and a foundation that is very close in color to your natural skin tone. Apply it evenly around the entire face, ears, and neck (whatever will be exposed).

Shadow color

Using a brown (or whatever is applicable to your skin tone) start by putting on the shadow color on the cheeks (below the bone), and along the outside edges of the nose ridge. You'll also need some just above the eye but below the brow bone (just below the eyebrows).



(Figure 110) Shadows and Highlights

Highlights

After the shadows are roughed in, then put in some highlights (nearly white) in under the brow bone, under the eyes, on the cheek bones, along the nose ridge.

Blend

Now using a sponge or a brush, blend the highlights and shadow with a brush to even it out and make it less obvious. Try not to smear the colors and make the highlights muddy looking. This takes a bit of time to even it out and make it all smooth. Try to

get it nice and smooth, but don't end up "erasing" all the shadows and highlights.



(Figure 111) Blend the shadows and highlights

Powder

Once you gotten it all blended, sprinkle some translucent face powder on a velour puff and apply the powder to the entire area covered with foundation. The powder sets the makeup and makes it to where it won't run, or rub off too easily.



(Figure 112) Velour Puff and loose translucent setting powder

Brush

Using a powder brush, brush off the excess powder.

Eyeliner

Now take an eyebrow pencil and use it to line the eye. An interesting trick is to make sure that at the outside edges of the corner of the eye, that the upper and lower lines don't touch each other. They should flare away just a fraction. In that area add some whitish highlight. It looks a little unusual up close, but on stage it helps to open up the eye.

Lips

Lips are usually done with a lip pencil or brush (not just lipstick).

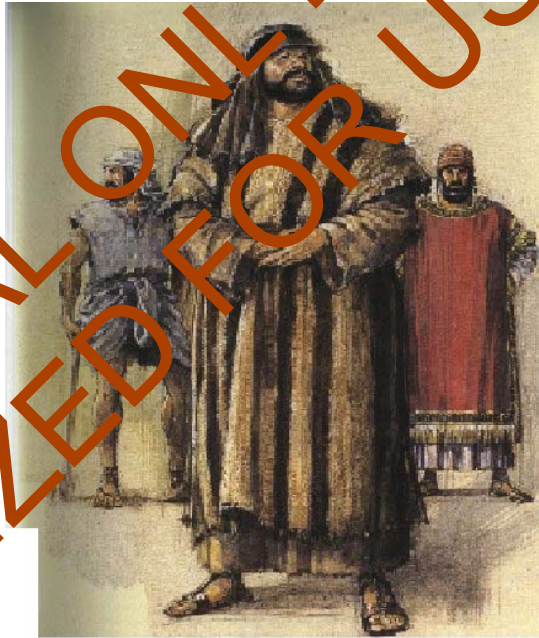
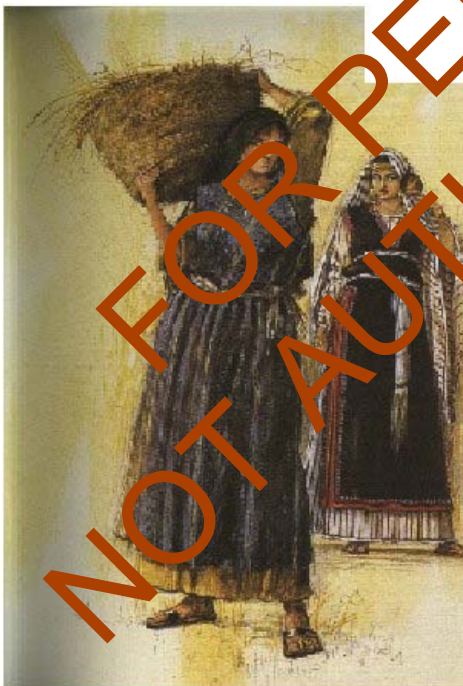
Blush

Dry blush is added to the cheekbones with a powder brush. Men use it sparingly.

robes were worn in Jesus' time helps us to understand his statement in Matthew 5:40: "If any man will sue thee at the law, and take away thy coat [*haluk*, tunic], let him have thy cloak [*tallit*, *himation*, *pallium*] also." It was better in Jesus' mind for one to appear immodest than to be a contentious person.

As time progressed, many of the Jewish people found themselves wearing clothing that had no distinctive corners to which they could attach fringes; therefore, the traditional *tallit* gradually came into disuse. Anxious to maintain fulfillment of the commandment, however, the Jews decided to retain the robe, not as a main garment, but as a shawl or surplice worn as a religious garment: the prayer shawl. The name *tallit* was maintained through the centuries for this liturgical garment.

By wearing this surplice during the day, the Jewish people could continue to wear the *tzitzit* (fringes), which were essential to the fulfillment of the commandment. Again, as fashion changed and the wearing of a fringed surplice became an incongruity, the Jewish people came to wear the *tallit* only for prayer, in both home and synagogue. Until well after the destruction of the Temple and the Roman occupation, the Jews in Israel continued to wear the *tallit* as a simple outer garment with *tzitziot* attached in the four corners. The transition from *tallit* and *tzitzit* that were worn throughout the day to *tallit* as a praying shawl was not complete even for Jews in the Diaspora until centuries later. The modern "prayer shawl" is much more recent, dating only to the time of Medieval Europe.

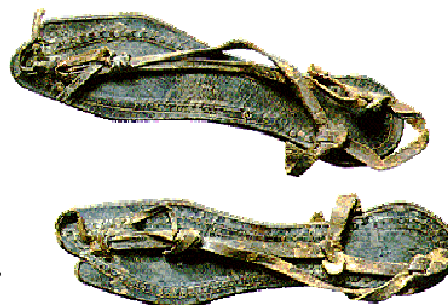


(Figure 128) Ancient Hebrew clothing

Images from: Gower, Ralph, *The New Manners and Customs of Bible Times* (Chicago: Moody Press)



Some costuming help comes from the scriptures. The description of the clothing the High Priest must wear is helpful, but even with the description, some of it is simply up to interpretation. There have been period sandals discovered at both Masada and Qumran in Israel.



(Figure 129) Sandals from Masada (above right) and the High Priest (artist's conception, left)

MAINTAINING COSTUMES

Costumes require constant maintenance during shows. During the run of a show, the costumes should be hung in a specific location, a separate one for each character. It is a good idea to have a supply of straight pins and small pieces of brightly colored paper, and several ink pens in the dressing rooms for the actors to draw your attention to any mending or costume needs. You cannot remember everything, and usually, the one thing you forget is the one that is most important or requires the most from you. Instruct the performers to write the problem on the paper, and then to pin the piece of paper to the damaged or problem area of the costume. Then hang the costume so the paper is sticking out.

Make the rounds after the performances or rehearsals, and then deal with whatever needs have arisen. Costumes should always be cleaned before being stored. I think it would be wise to create some sort of "check-out" form for all costumes and their accessories. If the costume is loaned or rented, these can be invaluable.

During performance keep a good supply of safety pins, and a needle and thread handy. You never know when you'll need it. I can remember the costumers at the Met, standing in the wings covered with safety pins, and a pocket full of a small kit with about a dozen threaded needles of various colored threads, just waiting, in case. They also wore headband lights, with red gels. Many productions also keep a hot glue gun handy. Trust me, you can do wonders with hot glue. Good things to have on hand are an iron, and maybe a small steamer to help get out wrinkles.

It is a good idea to keep an inventory of all the costumes, and especially with the advent of digital cameras, you can more easily keep a photographic inventory as well. Take the pictures and create an electronic inventory complete with all photos, and a written description. That will become invaluable a few years down the road when you're trying to remember what you have and what the colors are, etc.

crophone cord.

3. We've plugged all the snake cables into the mixer, and just to be weird, we started at #4 on the mixer. (It doesn't matter where you start.) So, channel #1 on the snake is controlled by channel #4 on the mixer (you'll see why later). So if the snake cables are plugged into channels #4-11 on the mixer, then the mixer channel #8 controls snake channel #5, and consequently, our microphone.
4. We've connect the outputs (**sends**) of the mixer into the **amp**.
5. We've connected the amp to the speaker.
6. We've plugged the mixer and the amps into the electrical outlets.

BASIC SOUND SYSTEM DIAGRAM



(Figure 132) Basic Sound System

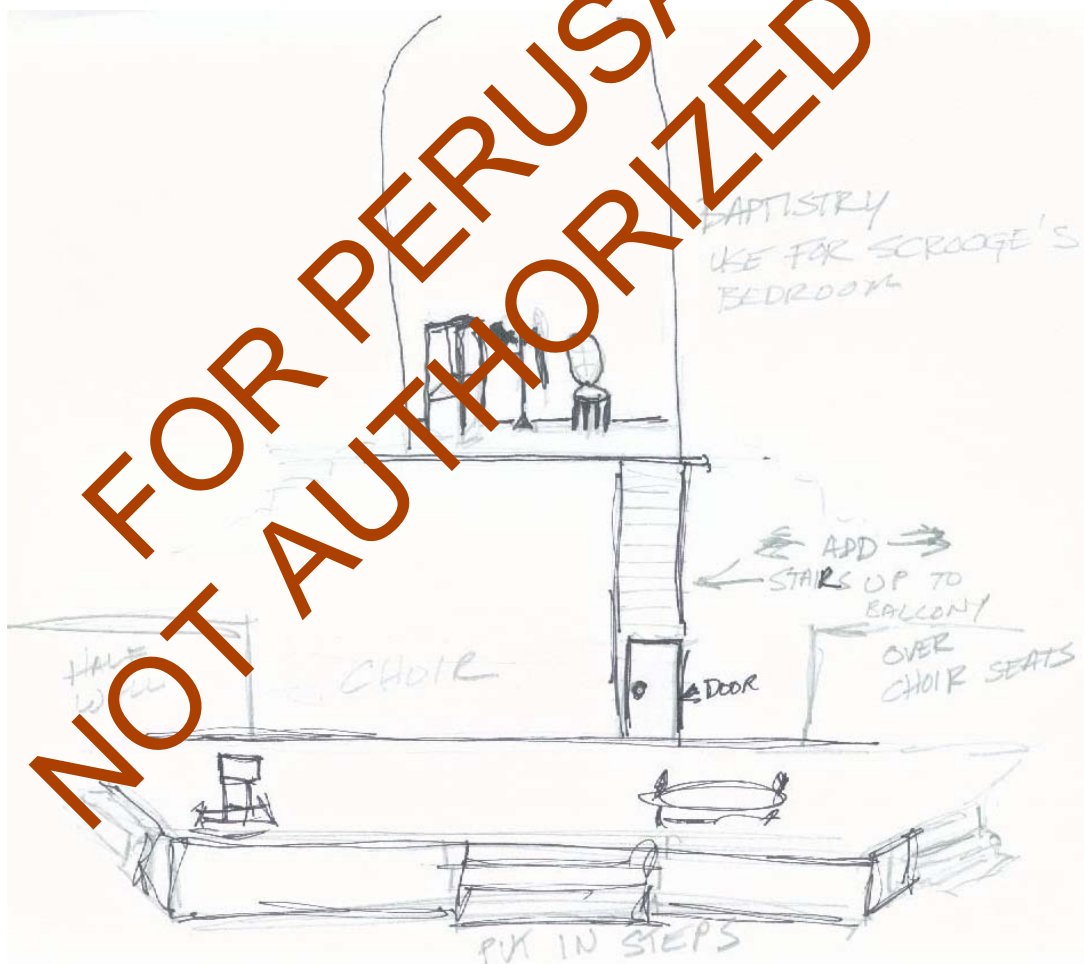
Speaker

SECTION 13 BUILDING A MODEL OF THE SET

I opted to use a church as the location because many of you may have that as your only option, and the script I am using is A Christmas Carol, from DramaShare's website. For all intents and purposes this is pretty much A Christmas Carol. I used my home church, and this is what it looks like. The pulpit will be removed, and the baptistry will be the location for Scrooge's room.

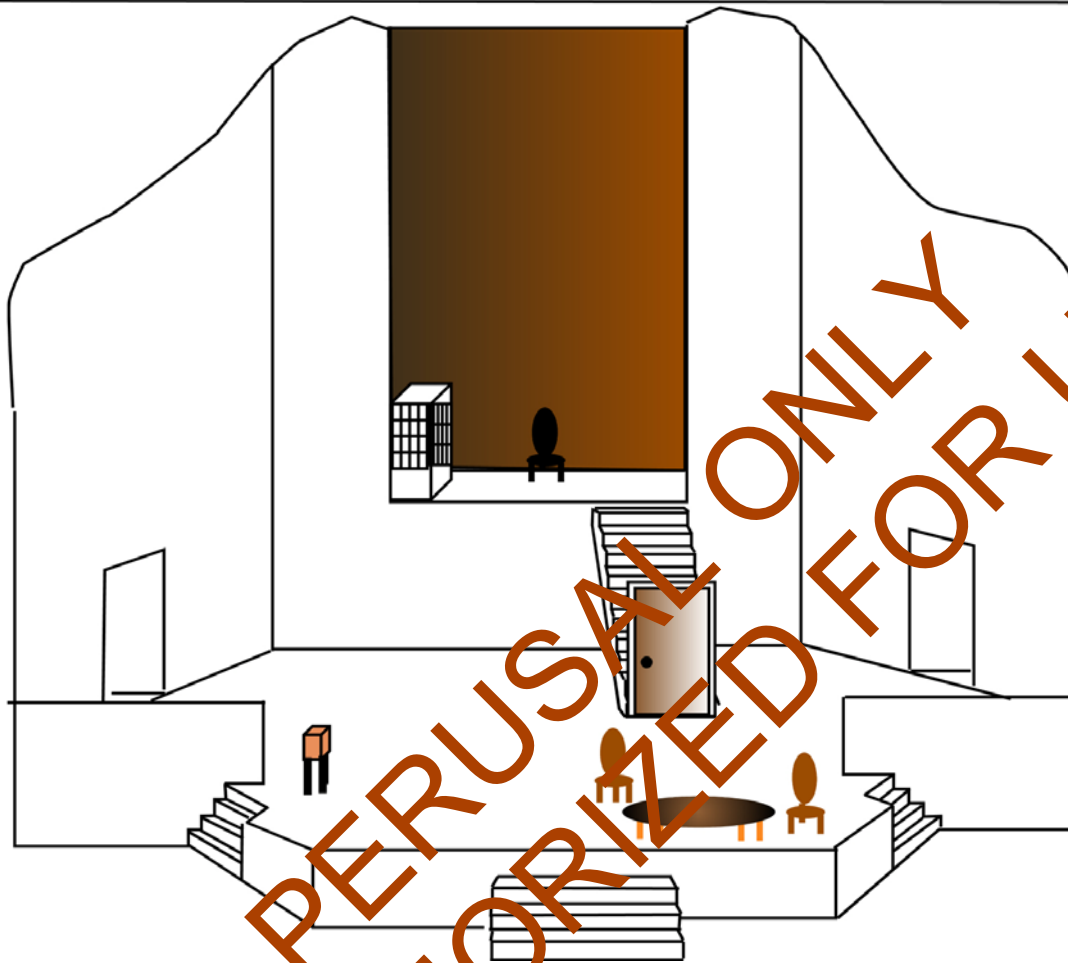


After coming up with an idea I cranked out a really rough sketch.



After getting the quick sketch approved, I went to the computer and drew up a set design sketch that was pretty much to scale. I used a free draw-

ing software I have been working with, and after a little work I came up with the concept drawing for the set.



This is a little clearer, and it makes visualizing easier. However, there is still a lot of work to try and figure out if there is enough room, and what type of blocking will work. So the next step would be to build a model of the set.

I set out to build the model and decided to use Foamcore, which is a stiff art board that has two sides made of paper over a styrofoam center. The really important fact is to make it to scale. Scales and scale drawing is covered in **SECTION 2**. There are scales available for whatever your unit of measure is (metric, or inches). If your drawing is not made to scale you're just guessing as to whether furniture will fit and people can move around it. If you have a floor plan that is to scale, you could print it out and glue it to the Foamcore (or cardboard, or whatever), and then cut it out. I chose to draw it out.



Choose a scale large enough to make it feasible to put in set pieces, people, etc., at least $1/4" = 1' 0"$. I chose to use $3/8" = 1' 0"$. The tools needed will be the Foam-

First of all, the Roman Legionnaire:

Here we see a fairly typical legionnaire. He is wearing a Gallic type G style helmet, and for his body armor, the Lorica Segmentata. On his feet are the Caligae, or boots. There were many variations on these, but they were not really a sandal.

He is carrying the Scutum, or shield. By his right side is the Gladius, or short sword, and it is held to his waist by the Balteus, or belt, often called a cingulum. The tunic he is wearing is red, although there is much evidence for a white tunic instead. He is also wearing leather trousers. These trousers offered extra comfort and protection, but were not necessarily the norm.

If there are any historical re-enactors out there, you will know that there is just as much likelihood of wearing chain mail (Lorica Hamata). And they may have worn Lorica Squamata, a woven shirt with metal scales attached. The Lorica Segmentata could have been leather as well. Although there were many types of chest armor, the least typical is the so-called muscle armor most costumer's sell.

There were many variations on the helmets as well, with some being all brass, but the style was very close.



Centurion from

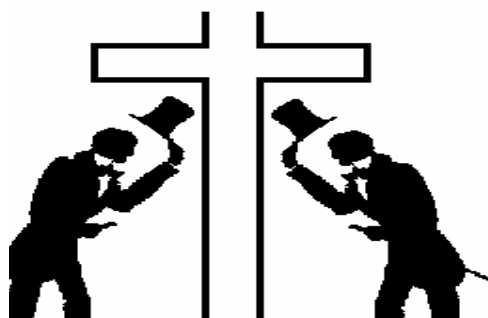
<http://www.roman-empire.net/diverse/reenactment.html>



The least likely is a helm with a

crest. The crests were worn by Centurions, and although many legionnaires' helms may have had the ability to attach a crest, it is generally considered that these would not have been worn in battle by the average legionnaire. One reason could be the need to locate the Centurion, who did wear a crest. Their crest was from side to side, though.

So now let's look closer...



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