THE TECHNICAL DIRECTION AND ENGINEERING PROVIDED FOR THE 49TH SEASON OF PORTHOUSE THEATRE IN CONJUNCTION WITH KENT STATE UNIVERSITY COLLEGE OF THE ARTS, SCHOOL OF THEATRE AND DANCE 2017

PRODUCTION OF *NEWSIES*

A culminating project paper submitted to the College of the Arts of Kent State University in partial fulfillment of the requirements for the degree of Master of Fine Arts

By
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May 2018

This culminating project paper was written and submitted by

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INTRODUCTION

This paper documents the processes of technical direction and engineering regarding the 2017 Porthouse Theatre production of *Newsies,* located in Cuyahoga Falls, Ohio. The processes were used to realize the scenic design and directorial concept, while balancing the fiscal, physical, and personnel constraints of the theatre company.

Technical direction and theatrical engineering have specific steps or phases that are applied to nearly every production. In this paper, seven steps are introduced and explained. There is an assessment of the challenges and successes of working for the full season of Porthouse Theatre. Additionally, an appraisal of the process and of the finalized production is included along with an evaluation of my personal and professional growth. Figures incorporate construction drafting plates, photographs of the process and realized production, budgets, schedules, and supporting mathematical solutions.

The Production Team:

Director….TERRI J. KENT
Scenic Designer….NOLAN O'DELL
Technical Director….HEATHER R. SINCLAIR
Lighting Designer….T.C. KOUYEAS, JR.
Costume Designer…..BRITTNEY HARRELL
Sound Designer…..NATHAN ROSMARIN
Production Stage Manager…..JOSHUA BROWN
Music Director…..JONATHAN SWOBODA
Choreographer…..MARYANN BLACK
Properties Master…..PATRICK ULRICH
Scene Shop Supervisor…..JASON GATES
Production Manager…..KARL J. ERDMANN

1 Master Carpenter
1 Lead Carpenter
5 Carpenters

CHAPTER 1

INTERPRETATION OF THE SCENIC DESIGN

The Design Concept

The Scenic Designer, Nolan O'Dell, developed a concept that could accommodate multiple locations with a minimal amount of set pieces. The design was modular, industrial, and practical.

Challenges of Realizing the Design

There were a few challenges and concerns with the design of *Newsies*. The first major concern dealt with the engineering and function of the two large towers (see Plate D3). The towers were designed with dimensions of 7'-9" w x 7'-7" d x 17'-6" h. They were comprised of three levels and with swivel casters. The struggles and solutions of engineering will be laid out later in this paper. The second challenge was derived from the modular bridge unit (see Plate D4). During the initial review of the designer packet, I discovered that the unit was top heavy, and this could cause the unit to fall over. This will be discussed in the Drafting and Engineering section of this paper. A third issue stemmed from the movement of the towers and bridge with the choreography. The set pieces were designed to move across the stage during scene changes and musical numbers. This posed concerns with the safety of the patrons, orchestra, and the actors. A final major challenge was that the original design could not fit within the budgetary constraints. Through discussions with the scenic designer and the director compromises were made.

CHAPTER 2

THE PROCESS

Phase I

Breakdown of the Scenic Package

I approached the design similarly to how an actor would approach a script. First, I looked at the whole, purely to understand what the overall theme would be. Secondly, I broke it down by the plates, just like scenes in a play. Designer plates are layouts of individual scenic pieces. What did each plate have, why were the notes necessary, and how would I implement the artistic virtue of the design? From there the breakdown continued into the individual drawings on each designer plate. What was the size and shape of the item, why were they designed that way, and how would I build it? The final step of the breakdown was the rough material and hardware order for the whole. What materials were needed, why were certain construction methodologies used, and how could I explain this to the carpenters?

The first step of the breakdown is looking at the scenic design as a cohesive unit. I looked at it as a puzzle that is complete and that I must disassemble to fit back into the box, or in this case a 24’-0” box truck. The initial concerns about the three modular units. It was clear from this “first read through” that the units would have to be constructed from steel. The design posed a few problems for load in transport. With the first perusal of the package I developed a few key questions for Nolan O’Dell and Terri J. Kent.

The second step of the breakdown was dissecting each plate and creating a rough estimate of the materials used and their cost for the production. It is important to note that the labor costs were taken from a separate personnel budget and not tied to the show carpentry budget. Using typical theatrical construction methods, I envisioned building each unit and calculated an

approximate amount of lumber or steel. This process took about two hours to complete. However, the initial estimates changed as I delved deeper into needs of the design and the blocking, which will be discussed later in this paper. The estimates were written on the plates of the design packet. This allowed me to keep my work in one place and would also allow fluid collaboration between myself, the scenic designer, and the scene shop supervisor; as they could see directly how the budget and materials would be dispersed. The plate breakdown also revealed more specific questions and concerns.

The last step of the scenic design package breakdown was completed by looking closely at each unit as a separate entity. This step is crucial in formalizing a construction plan and predicting any issues that may arise during construction. In my mind, I built the bridge and the two proscenium flats. By doing this, I saw where a carpenter might get stuck and have a solution ready. This pre-planning allows for effective drafting. As I had already built the bridge and proscenium flats, all I needed to do in the drawing phase was placing my mind's eye on paper or in the computer. I stumbled over my normal process; this set was difficult. The two modular towers were not able to be built by standard techniques of construction because of the open and industrial style of the design. Therefore, the engineering and drafting phase was critical to the success of the production.

Phase II

Drafting and Engineering

The second phase, and the most important for this production, was developing the technical drawings of the scenery. I began on paper for this production. The construction of the towers was extremely difficult because of their size and function, and they had to fit into a 24'-0" box truck. I

sketched and worked directly on the designer plates, which were printed on ARCH D paper (24”x36”). I had decided to have the units built of mechanical tube, hereafter called box steel. Steel was the only viable option due to the open concept of the design. The actors and crew would push and pull the units; therefore, I knew that wood would be too elastic and unreliable. The first material that I wished to use was aluminum tubing; however, I did not have a crew that could weld aluminum and little time to teach. Additionally, the units had to fit into the trucks. Realistically, the towers could fit in into the box truck at their designed size, however, the carpenters could not have moved them. So, I had the challenge of engineering a steel structure that could be quickly assembled, easily moved by actors, and structurally sound.

I started with the idea of scaffold engineering. Scaffolding is miraculous in its function; it can hold a surprising amount of weight while being modular, slim, and easy to assemble. The first step was deciding on how many pieces each unit should be and where to make the breaks. The scenic designer was helpful during this step because he added notes to the designer drawings (see Plate D3). He stated what material he would prefer, 2” box steel, and that the units would be built separated into two pieces.

I began by splitting the tower units into a top and a bottom. The bottom would have the first and second landings and the first set of stairs. The top would have the third landing, the brick valence, and the third set of stairs, while the second set of stairs would be an independent piece. To connect the two halves my initial thought was to use a modified coupling pin and spring lock. After playing around with a coupling that was in stock, I discovered that it would be too difficult to precisely drill the holes and weld on the coupling. I moved on from using a spring pin to the idea of using a through-bolt and sleeve technique to attach the pieces. I had used this technique before when designing push sticks and an expandable saw table. However, after further thought I

decided that using a sleeve method would be too difficult during the quick changeover. The idea didn't present itself until later in the season. To make the load in quick and the structure strong, I finally decided to use 2"x2"x1/4" angle iron. The angle iron was engineered to be welded on the exterior of the 2" box tube legs, on opposite sides, and then the two pieces of the tower would nest (see Plate N05).

I used the computer program AutoCAD 2016 to create the draftings. This process begins with downloading the designer files. I was fortunate with this production that the scenic designer used AutoCAD programs as well. After the file was downloaded, I created two copies of the full designer package. This allowed me to modify or adjust one copy while keeping one unadulterated and easy to access. Directly below the designer drawings in model space is a copy that is stripped of any notes, multileaders, or extraneous information or lines. The bare bones version is used as the jumping off point for engineering the units. From there, I created working drawings for the shop carpenters.

This show, because of the complex design, required that I work with virtual 3D modeling. The three main pieces of the design, the bridge and two towers, were moved around the stage and spun at the same time (see Media 1). Instead of drawing every configuration possible in a 2D drafting of AutoCAD 2016, I made a 3D version. I had problems with the 2D and the 3D drawings in the same file, so I created a separate file for the 3D version of the set. The 3D virtual model helped to illustrate any issues that may arise by using the original scenic design. The scenic design color model did not come with a model of Porthouse Theatre. The model pieces were well constructed, and the stage was present, however, the grid and roof were not included. Using AutoCAD 2016 3D, I inserted the set into a rough 3D model of the space. This allowed me to show the production team that the units were too tall and would hit the moving light fixtures and that the

actors would be blocked by the upper section of the towers. This discovery led to a lot of discussion and compromise. The realized design was slightly different from the original. The brick header of the two towers was cut to ensure a clear trim height.

Another engineering difficulty that was resolved with a compromise between myself, the director, and the scenic designer was the size of the modular bridge. As stated earlier in this paper, the bridge posed a threat of tipping over. The original bridge dimensions were 8’-0” w x 3’-10” d x 16’-0” h, with a landing at 8’-0” from the deck. Through my experiences in theatre, I knew that this unit was top heavy and would tip over. In discussions with the director, I discovered that actors would be on the landing as it moved. This additional weight added above the center of gravity only increased the chances that the unit would fall. I studied the bridge and tried to make the original design safe. However, even if I added weight to the base, the unit was too narrow and too tall. I expressed my concerns with the designer and the director and presented my solution. I drew the original design and my proposed modification in 3D. The modifications included deepening the base to 5’-0” from 3’-10”, cutting the upper level valence, and installing stage weights inside the wagon base. The modification was accepted after two weeks of discussions and questions. The final dimensions were 8’-0” w x 5’-0” d x 12’-0” h (see Plate N27).

Another engineering hurdle that I had to jump over was the base of the towers. The towers, as stated earlier, were taller than they were wide. This type of structure can be prone to tipping. To reduce the chance of the units falling over, I decided to over build the wagon base. While the wagon base was overbuilt to counteract the top-heavy aspect of the towers, it also provided better support for the casters. The base began with a 1” x 2” box steel frame (see Photo 1). This portion of the base weighed nearly 100 lbs. (see Weight Table). I then decided to add a 1”x1” box tube frame that ran seams opposite of the 1”x2” box steel frame. Between the two frames, I placed the

¼" steel caster plates. These plates were cut in a trapezoidal shape. The perpendicular seams of the frames helped to catch any forces that may try to break the welds or deform the steel rails, toggles, or stiles. The frames also captured the caster plates and ensured a true and solid connection of the casters to the tower base (see Photo 1). The total weight of the tower bases, with decking, was 480 lbs. (see Weight Table). This weight offset the weight of the landings, legs, and stairs which was 784 lbs. During the testing phase of the units in the Kent State University main campus scene shop, I decided to add five 35 lb. stage weights to the base of each tower. This brought the total dead weight of the towers to 1734 lbs. (this did not include the weight of the medium density fiberboard wrap around on the base level).

The weight of the units caused a concern regarding the structural capabilities of the trap covers. Porthouse Theatre has two trap doors in the stage deck. These doors are built as a stress skin; however, the plywood would not be able to withstand the action required of the scenery. The scene shop supervisor and I decided to reinforce the two trap doors. During the load in of *Newsies*, three pieces of 2x6 nominal were added beneath the trap door to add support. The 2x6 pieces were attached with joist hangers so that the lumber could be removed to access the trap room.

Phase III

Selected Research of Materials and Scenic Function

Many materials and hardware types were researched during the pre-production process. However, I am going to focus on a few. The first material of importance is the box steel. Normally, Porthouse Theatre and Kent State University uses 16-gauge[1] steel but I choose to increase the gauge to 14[2]. I was the technical director for Porthouse Theatre's production of *Footloose* during

[1] 0.0508 in wall thickness
[2] 0.0641 in wall thickness

the 2016 season and I used 16-gauge steel on a similar structure. During the run of *Footloose*, I noticed that the bridge structure that was built sagged between the upright supports. I did not want this deflection to happen with the production of *Newsies*. Although, the thicker gauge steel was more expensive, the deflection was less and the strength of the 2”x2” box tube was higher.

The two towers and the bridge were designed to roll across the playing space. I decided early during the process to purchase casters for the production. New casters guaranteed that the units would be the same height and could be relied upon to support the weight and movement required. Also, I chose to mount six casters to each of the towers and use four casters for the bridge. During my breakdown of the designer packet I estimated the weight of each of the units. The towers were estimated to weigh 1100 to 1400 lbs., while the bridge weighed 600 to 800 lbs. I used this number to find casters with the correct load rating and height. The casters chosen were Stagemaster Junior Advanced Elastomer from Rose Brand and they were zero-throw, also known as triple-swivel (see Photo 2). The casters had a load rating of 900 lbs. and a height of 6”. Although, the load rating for a single caster was less than the total estimated weight of the units, there were multiple casters sharing the weight. The dead load per caster was 289 lbs. The maximum live load per caster was 580 lbs. This only occurred once during the show, during “Brooklyn’s Here” (see Photo 7).

The last part of the show that required research was the hardware. The casters were connected to a ¼” steel plate (see Photo 3). During the run of the show, the casters would be manipulated and the fasteners attaching the plate to the casters would be subjected to torque and sheer forces. Knowing the relationship between the caster plate and the steel plate is crucial in choosing and understanding hardware. I decided to order grade 5 rated hardware for the casters. Grade 5 5/16” bolts have an ultimate sheer capacity of 5750 lbs. Another crucial hardware choice

dealt with the connection of the stairs to the landings of the towers. The stairs were constructed to hold the two vertical halves of the towers together (see Photo 4). Therefore, the sheer and tensile strengths of the hardware were critical to keep the unit from failing. The bolts on the bottom of the stair units were horizontal, resulting in sheer forces acting on the hardware. In contrast, the bolts at the top of the stair sections were vertical, meaning that the bolts were subject to tangential stresses. To be on the safe side, I decided to use grade 8 size 3/8" hardware. This includes grade 8 washers, lock-washers, and nuts. Grade 8, 3/8" hardware has 10050 lbs. sheer capacity and a tension limit of 12360 lbs. The washers, lock-washers, and nuts were rated as well, because the connection on the bottom of the stairs applies direct pressure to the washer and nuts.

Phase IV

Building and On-Floor Modifications

The fourth phase of my technical direction process involves on-the-floor building and modifications due to material constraints, directorial and actor needs, and intuitive construction. *Newsies* was the last production of the summer and so the crew worked well together and became accustomed to my style of drafting and instruction. Because of the bonding and the understanding of their roles, the carpenters were more efficient and worked smarter, not harder. This allowed for a more relaxed building process and real-time engineering on my part.

I knew from the beginning of the process that the towers would be difficult to assemble. So, I purposefully engineered the stair units of the towers to be flexible. After the wagon base and the first landing were built, I worked with the carpenters to attach the first set of stairs. The stair units were built using a jig and the real-time engineering took place when they were installed. The placement and height of the legs and if to weld them took place during the actual build. Using what

I call intuitive construction, I developed a construction process that would be used for both tower units. This construction process involved clamping the stairs at the correct height and then welding or bolting the units to the landings (see Photo 5). This process ensured that the stairs could only be used in a specific place so that set did not change between rehearsal and the run of the show. Additionally, the handrails of the stairs were built during the tower assembly phase. The reason for this day-of building was because the designer and the director were unsure if gates were needed on the exterior edges of the tower landings. In the end, it was decided that gates would be too cumbersome, so they were cut from the design.

Another set piece that was engineered during the building process was the chalkboard. This set piece was delayed because it was added during the rehearsal process. The designer worked with the director and decided to place the chalkboard on the landing of the bridge (see Photo 8). The original idea from the designer was that the crew or actors would carry a slate chalkboard up to the landing of the bridge. I expressed my concerns with this prospect. They included a short scene change and the danger of the slate chalkboard breaking and shattering across the stage. I worked with the designer to come up with a solution. I suggested that the chalkboard "pop-up" from the deck of the landing. To facilitate this idea, I decided to add a layer of ½" Medium Density Fiberboard (MDF) and cut out a rectangular section and then hinge it to the deck. The MDF was then treated with chalkboard paint. This effect worked well and was fast.

The multiple locations caused a few difficulties throughout the pre-production and rehearsal process. One of the main issues came from Medda's theatre. In the story the lead actors are discovered backstage of Medda's theatre and then in the next scene they are in the house watching the vaudeville show. To facilitate the location change, the director chose to spin the two towers around and use prop stage curtains to identify if the characters were backstage or front of

house. The prop curtains were originally designed on a traveler track that would be hung under the landing of the bridge. However, this could not work because of the actor's blocking and the scenery that was already under the landing. The director and the designer compromised and determined that the prop curtains would be hung from the second landing handrails of the two towers (see Photo 9). The prop curtains would also be unrolled and would be on a pivot which would allow the opening and closing of the vaudeville performance.

Phase V

Installation in Stump Theatre

Unlike the first two productions of the summer, the director and choreographer of *Newsies* wanted to rehearse on the set before load in. During the pre-production meetings the production team decided that the set would be used in rehearsal two weeks before the technical rehearsals (tech). This meant that the scene shop had limited time to work on the biggest show of the season. The set that was installed in Stump theatre at Kent State University main campus was functional and safe, but unfinished. While the set was in rehearsal some unforeseen concerns were discovered.

One of the issues was the wear and tear of the towers on the Masonite deck. The weight and movement of the towers ripped away the top layer of painted and sealed Masonite. We discovered this problem after the second day of scenic blocking. The first solution was to use gaff tape over the tears, however, this impeded the movement of the casters. At the end of the third day of rehearsal I decided to replace the sheet of Masonite. The carpentry crew had to replace the Masonite sheet three times. It is interesting that the towers only damaged the deck in one location, which was stage left at the proscenium line. Knowing that the damage was localized, I asked the scenic charge artist to paint two extra floor pieces that could be exchanged during the run of the show, if needed. This posed a problem because the floor was painted as cobblestones in a circular

pattern (see Photo 6). The scenic charge artists solution was to paint the Masonite sheets with the base color and then match the pattern after the piece was installed.

A second issue that presented itself was the slickness of the floor. The practice at Porthouse theatre is to seal the floor with Minwax polycrylic semi-gloss clear paint. This sealed surface causes the deck to be slippery. The choreography and the script call for a tap dancing. The slickness of the floor posed a real concern that the dancers might slip and fall during the number. To help the actors and choreographer become used to the stage floor, I pulled four sheets of sealed Masonite and created a rehearsal dance floor in the wing stage left. While the dance floor aided the actors, it also showed expected damage to the treated deck. Seeing the wear allowed myself, the scene shop supervisor, the stage managers, and the paint charge to create a plan to undermine the issue. We decided that the stage managers would use a Coca-Cola solution to mop the floor before the show to add friction and the scenic artists would create a paint kit for the run of the show. This kit would help to fix any scuff marks made by the action on stage.

The last point I will make in this phase is that the installation in Stump theatre allowed the carpenters to practice assembling the set. While the carpentry crew had built all the different pieces, they did not know how they fit together. By viewing the build in Stump as a practice round for load in at the performance space, the carpenters felt more comfortable working with the units. The draftings and the 3D virtual model attributed to their understanding, but while the units were in paper or virtual form, the carpenters were not able to understand the set.

Phase VI

Installation at Porthouse Theatre

The load in for this set was more difficult than the first two productions of the summer. The main challenges came from the weight of the units and the doorways. Porthouse theatre has a loading dock, however the opening of the doorways varies. I had measured the first door and had assumed that the second door way would be the same size, as is typical of scene shops. However, the second doorway was three inches narrower. Additionally, the box trucks have different sizes for the garage door. While I knew the dimensions of the box trucks and doorways, I had added structural components to the towers that undermined my engineering; causing the pieces of the set to be too large to fit into the box trucks. To fix this issue, I instructed the carpenters to cut the handrails at a certain location and then they would be welded back together at the performance space.

The second challenge from load in was derived from the weight of the units. As stated before the units were very heavy. It took the entire carpentry crew to push the base of the towers and the bridge on to the stage. We assembled the towers upstage right and used block-and-falls to hoist the upper levels and slid them into position (see Photo 10). The block-and-falls carried most of the weight and reduced the change of injury during assembly. Since the carpenters had assembled the set for the rehearsal in Stump theatre, they were able to assemble the towers in three hours. The tear down at the Kent State University main campus scene shop only took one hour for each of the towers and get them ready for transport (see Photo 11). This may not seem like a feat, but the units were heavy, bulky, and dangerous.

The last issue that dealt with load in was the schedule. The set required three truck loads to ship it out to Porthouse theatre. Since this was the case, I decided to take two truckloads to the space before the performance of *Ain't Misbehavin'* began. We left the scenic pieces outside the theatre and then returned to Kent State University main campus scene shop for the third truckload

of scenery. This shipping was only possible because the director and choreographer adjusted the rehearsal schedule to give the scene shop a few more hours to load out. It was known from the beginning of the summer, that the shop and the cast would need the maximum amount of time with this set. The collaboration and compromises between the director and the production crews were vital to the success of the production.

CHAPTER 3

Assessment of *Newsies*

Collaboration

This show, as stated earlier, depended on collaboration and discussions. There were a few moments when decisive action and compromise were prevalent. The first dealt with the merging of the build and rehearsal schedules. I knew that this set would take more time than the production calendar allowed. When rehearsals with the set began, I adjusted the carpentry schedule. I allowed the carpenters to vote on their daily work hours while the set was in rehearsal. The actors used the scenery Tuesday through Sunday 10 am to 6 pm. The two choices given to the carpenters was to either work before rehearsal or after. The crew decided to work in the mornings. This was beneficial to the scenic artists, as they were then able to work unencumbered at night.

The second issue had to do with the safety of the patrons and the actors. As shown in the weight table, the towers weighed over 1700 lbs. When there were actors on the units, they weighed up to 2600 lbs. This is a lot of weight that is rolled around on stage. To stop the units from accidentally rolling off the stage and into the house, I decided to add a 2” x 2” x ¼” steel angle

iron to the edge of the thrust. This angle iron acted as a bumper and would alert the actors or crew members who moved the scenery that they were in danger of falling off the stage. During a production meeting approximately two weeks before the cast would start rehearsal on the set, I stated that the bumper would be added to the stage. This concerned the choreographer. She was afraid that the dancers would kick or hit the bumpers which could cause broken toes, ankles, or bruises. I shared this fear as well and, so I worked with the scene shop supervisor and we decided to add a ½" thick foam to the onstage side of the bumper. While this foam would not prevent injury to an actor, it would reduce the chance of serious damage, while keeping the bumper in place for the scenic units. However, the choreographer remained nervous and requested that the bumper be cut completely from the edge of the thrust. This discussion came to a head in a production meeting. During the meeting I conceded that the center, left, and right downstage bumpers may be removed, but I would have to wait until I saw the units in action in the playing space. The far stage right and stage left bumpers would not be able to be removed, due to patron safety concerns. There was a back and forth where the choreographer kept stating that a dancer would kick the bumper and end their career and I said that I would not risk audience safety. Eventually, the director stepped in and supported my assessment. This exchange with the choreographer was like something I had experienced before at other companies, but at that time I was not in the position to decide. During *Newsies* I had authority and the right to make decisions regarding actor, patron, and crew safety.

Personal Reflection

I have worked on many productions in my professional and academic careers and they all come with their own challenges. This production was difficult in the drafting phase. I used this production to continue my training of 3D drafting. I had used the AutoCAD 2016 3D modeling

program minimally in the past, but this show required the bulk of the work to be done in 3D. However, the program has a glitch that makes printing in 3D extremely difficult. As a result, I hand drew most of the isometric views of the scenery. I also learned a lot about what a carpenter needs to build a unit correctly. Throughout the summer, the lead and master carpenters would come to me and ask for additional information or notes. I then carried over these requests to this production. One of the most often requests was a finished drawing of the unit. Specifically, they requested the assembled view on each build plate. Whenever possible, I added a viewport of the finished product to help them understand what they were building. I realized that this image helped the scenic artists. They were able to understand what pieces went together and in what order without looking through the design packet.

I have worked as a draftsperson in the past for multiple productions at once. This season added to the skills and demands that I have become accustomed. The addition of budgeting and scheduling kept me busy, and did at time, distract me from drawing. However, I believe that there should be, at times, an imbalance in the work load. There were times where I was a manager and others as a carpenter and then as a draftsperson. This balance is not always equal. I think that if the aspects were perpetually level, then, perhaps, one is doing just enough to scrape by. It is a hard thing to learn, when to place one before the others. If the wrong choice is made, it isn't noticed until it is too late. During this production, I feel as though, I executed and balanced the aspects of the job of technical direction well.

Photo 1

Process Photo

Newsies

Porthouse Theatre 2017, Cuyahoga Falls OH

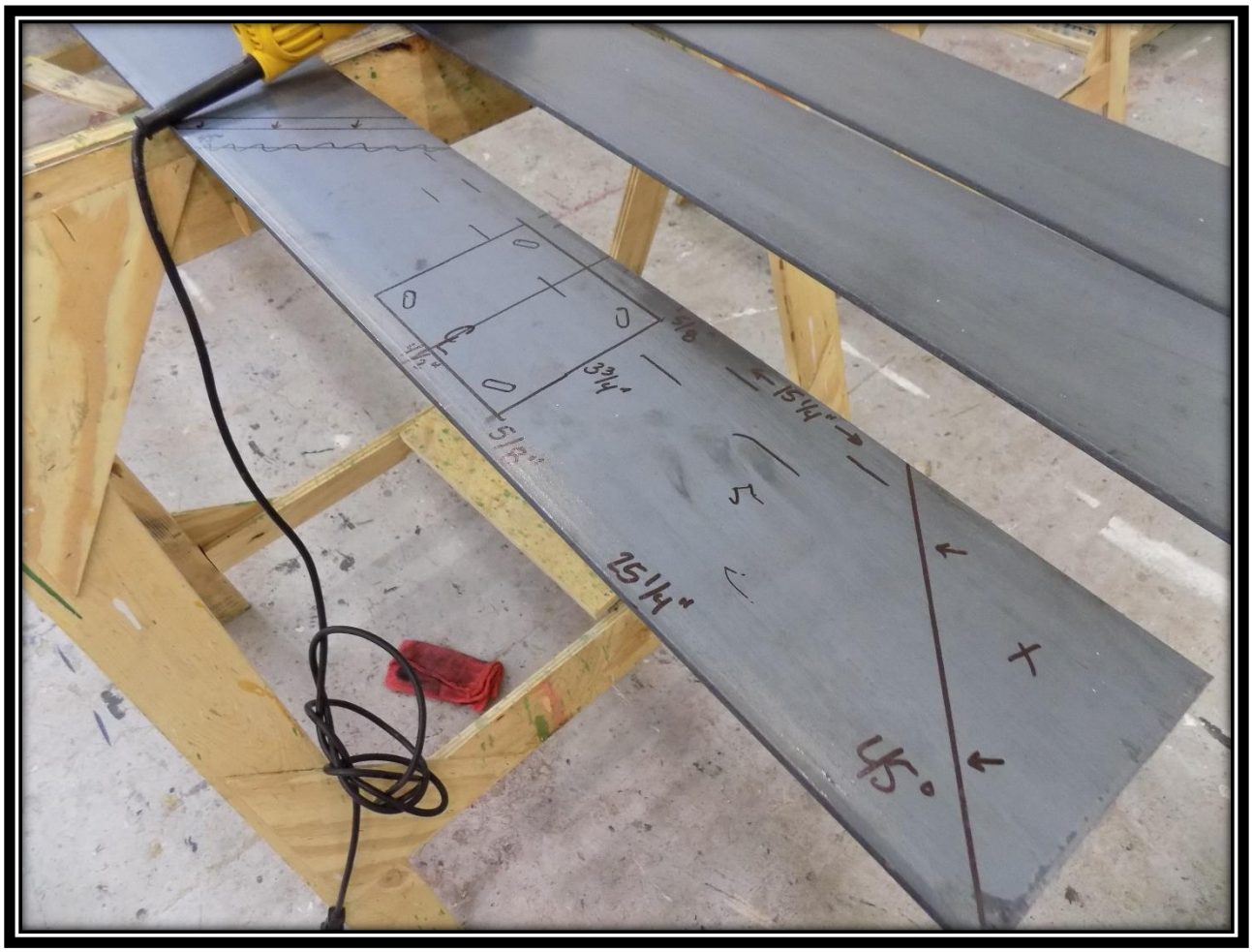
Photo 2

Casters

Newsies

Porthouse Theatre 2017, Cuyahoga Falls, OH

Photo 3



Process Photo

Newsies

Porthouse Theater 2017, Cuyahoga Falls, OH

Photo 4

Process Photo

Newsies

Porthouse Theatre 2017, Cuyahoga Falls OH

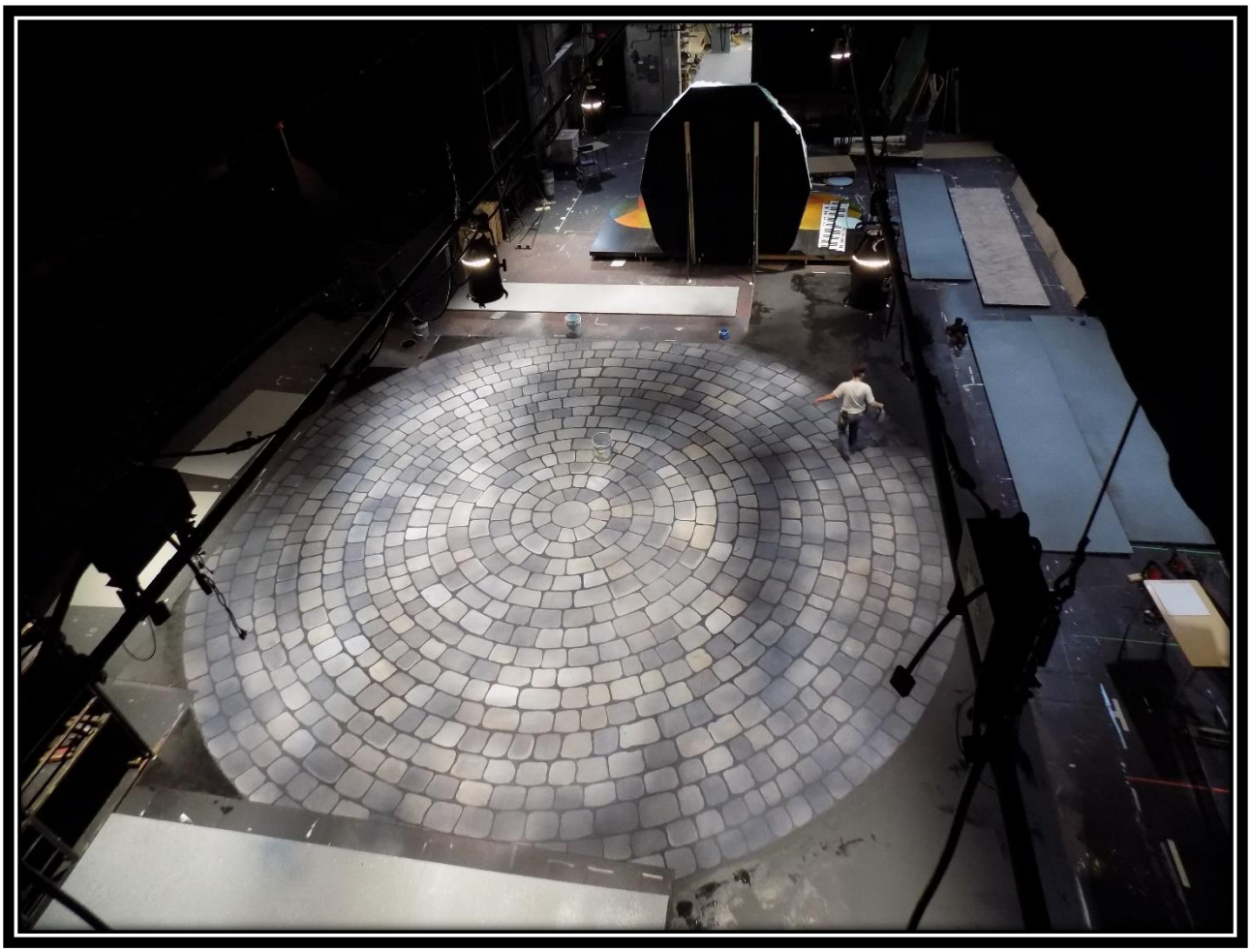
Photo 5

Process Photo

Newsies

Porthouse Theatre 2017, Cuyahoga Falls OH

Photo 6



Process Photo

Newsies

Porthouse Theatre 2017, Cuyahoga Falls OH

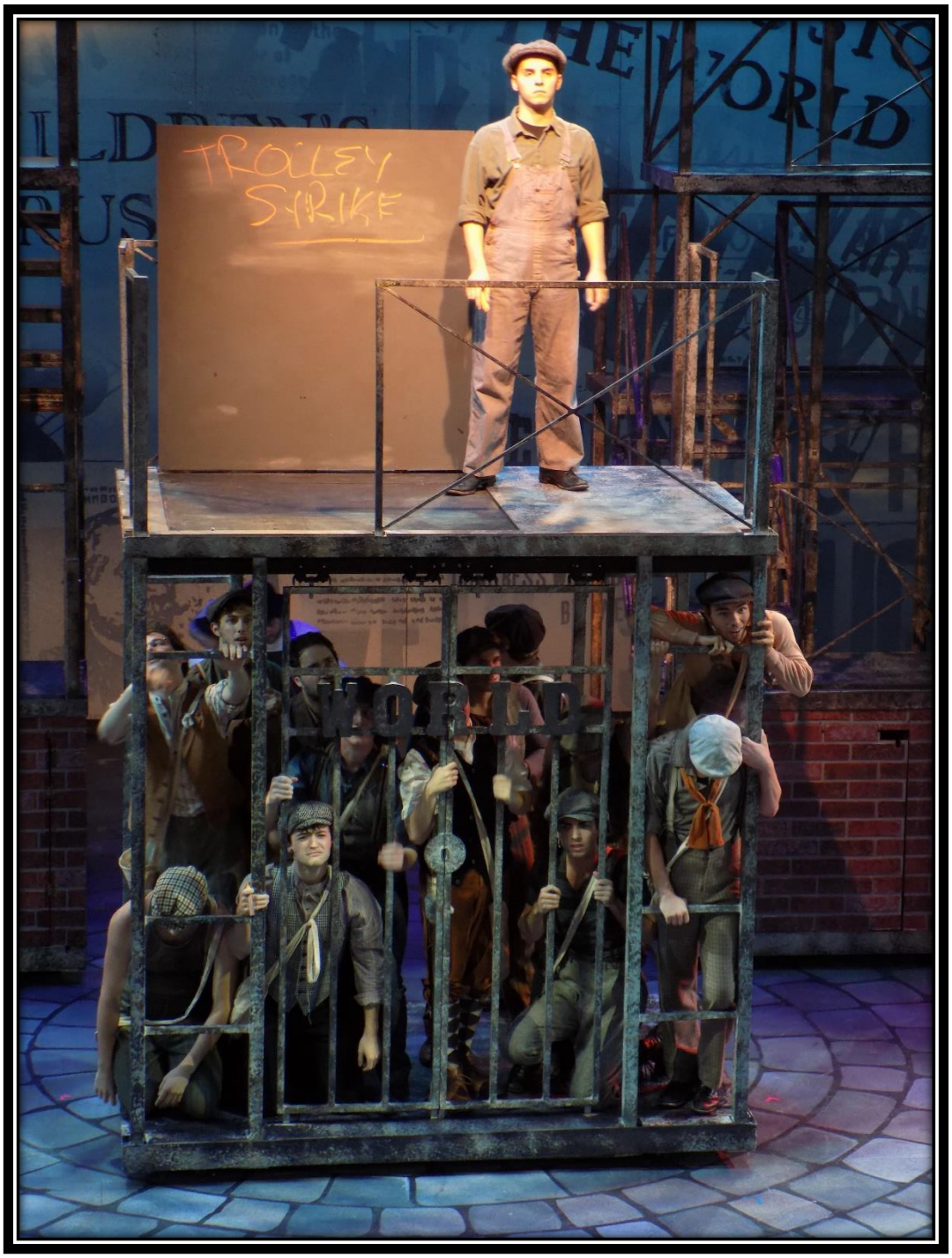
Photo 7

Production Photo

Newsies

Porthouse Theatre 2017, Cuyahoga Falls OH

Photo 8



Production Photo

Newsies

Porthouse Theatre 2017, Cuyahoga Falls OH

Photo 9

Production Photo

Newsies

Porthouse Theatre 2017, Cuyahoga Falls OH

Photo 10

Load In Photo

Newsies

Porthouse Theatre 2017, Cuyahoga Falls OH

Photo 11

Process Photo

Newsies

Porthouse Theatre 2017, Cuyahoga Falls OH

Media List

1. *Newsies* Scene by Scene

   https://www.youtube.com/watch?v=ccesH_anPxw

2. Porthouse Theatre *Newsies* Technical Drafting Time-lapse 1

   https://www.youtube.com/watch?v=z5WLLU9uGOg&t=445s

3. Porthouse Theatre *Newsies* Technical Drafting Time-lapse 2

   https://www.youtube.com/watch?v=6A0QWTnMLEE

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