



The International Thespian Festival's Tech Challenge is a fun, high-energy, Olympic-style contest of technical theatre skills and knowledge. The challenge consists of six (6) events that represent basic skills that every theatre technician should possess. The requirements for each event were designed by professionals, educators, and the Educational Theatre Association (EdTA) staff. Use this guide to help your team prepare for competition at ITF.

Teams

Tech Challenge teams can have as few as two (2) and as many as seven (7) members. See the individual event descriptions for details on how many people can participate in each event. Some events are for individuals only; some are for pairs or groups.

Scoring

Scoring is based on the time it takes each team to successfully complete each event. However, overall time is not the only factor in scoring. Time penalties can be added for teams who disregard the recommended procedures outlined in this guide. These penalties ensure that no team can rely on speed alone and still win – care must be taken to follow proper procedures. Teams who show a continued blatant disregard for procedures may be disqualified from the Tech Challenge. Each team will be ranked in each event based on time (including penalties), and these ranks will be tallied to determine the winners.

Equipment

All equipment required to successfully complete each challenge will be provided. Each set of instructions will include a detailed list of equipment for that specific challenge. Where noted, participants may be permitted to bring their own accessories such as gloves or other tools.

Execution of Challenges

EdTA recognizes that there are a variety of methods and materials used to execute the tasks necessary to complete each event. The methods described in this guide have been developed by experienced theatre technicians, and participants are expected to follow the instructions outlined here. Teams will be scored according to these procedures, whether or not their school or theatre program employs alternate procedures.

Sportsmanship

First and foremost, the Tech Challenge is meant to be a fun demonstration of each team's technical theatre skills. All teams are required to show good sportsmanship, which means being respectful and supportive of other teams. Cheer each other on and root for each team's success so that everyone can have a good time. Teams showing good sportsmanship may be rewarded with bonuses (time deductions), while teams showing poor sportsmanship may receive penalties (time additions). If poor behavior becomes an ongoing issue, a team may be disqualified from the challenge.

Safety

All participants must wear closed-toed shoes on the event floor. If the judges determine a student is not wearing appropriate footwear, the student will not be allowed to compete.

Prizes

The top three (3) teams with the fastest overall times will be awarded a trophy for their school. To allow for customization, this trophy will be shipped to the troupe director's attention at the school's address after the conclusion of the event.

Event #1: Lighting

Lighting provides a tool for setting the mood of a scene. The responsibility of hanging and focusing the lights for a show falls on the hang crew, overseen by the master electrician (M.E.). There are many different types of lighting instruments that the M.E. will use in the theatre. Each type of instrument plays an important role in the overall lighting scheme. It is important that the M.E. has a broad understanding of all these instruments, how they are installed, and how they are focused. One of the instruments that you will use the most is the ellipsoidal reflector spotlight. There are many types of ellipsoidal spotlights from different manufacturers and different eras; one of the most common is the ETC Source 4 Ellipsoidal Spotlight.



ETC Source 4

TECH CHALLENGE EVENT: HANG AND FOCUS A LIGHTING INSTRUMENT

- Individual Event: One (1) person per team may execute this task.
- Each team receives only one (1) attempt to complete this event.
- Equipment and tools will be provided, and are as follows:
 - Gloves
 - Apron
 - Light Fixture
 - Batten/hanging frame
 - C-Clamp
 - Safety Cable
 - Wrench
 - Power source
 - Pre-determined focus area
 - Gel and Frame
- Participants may bring their own gloves and adjustable crescent wrench.

Objective

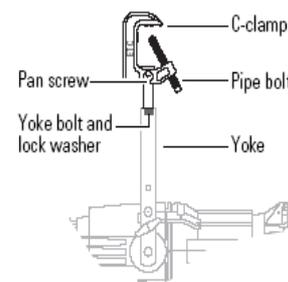
In this challenge, participants will be asked to successfully hang and focus an ETC Source 4 Ellipsoidal Spotlight. Participants must provide the sharpest possible focus of the fixture within the tape outline. When the unit is secured properly to the pipe, powered on, and correctly focused to the shape marked on the wall, the event has been successfully completed.

Event Rules

- Participants may ask questions prior to start.
- Participants must wear gloves on both hands at all times and are allowed to use any adjustable lighting tool (e.g., Mega Combo Wrench, Ultimate Flat Focus Tool, ratcheting wrench). No fingerless gloves are allowed. Participants may wear an apron.
- Items should never be tethered around a participant's neck or over the shoulder. Please note that items that fall from the apron (if the participant chooses to wear one) will be counted the same as dropping an item.
- Participants must not carry gel frames in a pocket.
- The ETC Source 4 Ellipsoidal has a drop-in iris slot on the top of the fixture. The gel chip holder should also be on this side of the fixture. The gel chip holder needs to be on top of the fixture when it is focused to prevent the gel from sliding out of the instrument.
- The maximum allotted time for this event is three (3) minutes.

Event Skill: Hanging the Instrument

1. Place C-clamp over the pipe at the designated hanging location. The opening of the C-clamp must face downstage of the electric pipe and toward the person installing the fixture, enabling unobstructed access to bolts.
2. Finger-tighten the pipe bolt.
3. Attach the safety cable through the yoke and around the electric pipe.
4. Wrench-tighten the pipe bolt and adjust the C-clamp as necessary so that the instrument is secure on the electric pipe. The pipe bolt should be no tighter than one quarter turn past finger tight.
5. Pull all of the shutters in the fixture to their open position.
6. Plug the tail of the lighting instrument into the designated circuit.

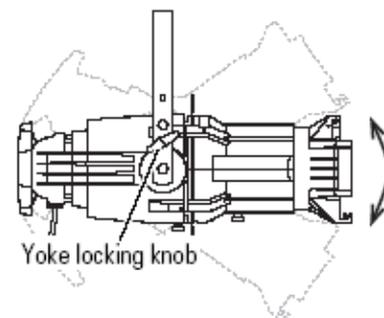


Event Skill: Focusing the ETC Source 4 Ellipsoidal Spotlight

1. Adjust the pan of the unit so that it is set in the desired location.
2. Adjust the tilt of the unit so that it is set in the desired location. (See “Setting the Angle within the Yoke,” below.)
3. Focus the beam to the desired beam edge. (See “Focusing the Beam,” below.)
4. Using the shutters and the rotation knob as necessary, shape the beam to the desired shape and angle. (See “Rotating the Angle within the Fixture,” below.)
5. Make sure all nuts, handles, and knobs are tightened so the instrument does not drop focus.
6. Drop color into the color slot of the instrument.

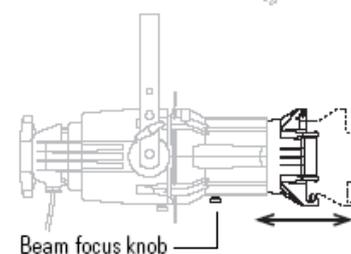
Event Skill: Setting the Angle within the Yoke

1. Loosen the yoke locking knobs. Do not remove them.
2. Tilt the fixture to the desired position.
3. Tighten the yoke locking knobs to secure the fixture in position.



Event Skill: Focusing the Beam

1. Loosen the beam focus knob located under the barrel.
2. Slide the lens tube forward or backward to achieve the desired beam edge.
3. Once the fixture is focused, tighten the beam focus knob.



Event Skill: Rotating the Angle within the Fixture

1. Loosen the rotation locking knob. Do not remove it.
2. Rotate the barrel of the fixture left or right to the desired position.
3. Recheck the focus of the beam for sharp or soft focus and then tighten the rotation locking knob to secure the fixture in position.

Required Event Sequence

1. Leave the starting line after the timer.
2. Locate the fixture.
3. Hang the fixture.
4. Hand-tighten the C-clamp.
5. Install the safety cable.
6. Wrench-tighten the C-clamp.
7. Check and tighten as necessary the yoke bolt on the side and bottom of the C-clamp.
8. Open the shutters on the fixture.
9. Plug the fixture into power.
10. Position the fixture (pan and tilt) to illuminate the shape on the wall.
11. Lock the fixture.
12. Place the fixture in a sharp focus so that the edge is on the tape.



13. Make shutter cuts as necessary.
14. Review fixture focus and make adjustments as necessary.
15. Insert gel frame.
16. Return to starting line, at which point the timer will be stopped.
17. Assist judges in restoring all equipment to pre-event conditions.

Event Penalties

- C-clamp opening not facing installer +5 seconds
- Shutter cut inside/outside of shape +5 seconds
- Focus not sharp +5 seconds
- Placing items in mouth +10 seconds
- Dropping items or placing items on ground +10 seconds
- Gloves not worn (beginning to completion) +10 seconds
- Items tethered around neck +10 seconds
- Gel frame not installed properly or forgotten +10 seconds
- Safety cable not used properly +10 seconds
- Any item not tightened +10 seconds
- Failure to complete a step +10 seconds
- Instrument hung upside down +15 seconds
- Blatant disregard for rules disqualification

Event #2: Rigging

Tying basic knots is an essential skill for a wide range of technicians who use it for everything from hauling equipment to the catwalk to properly rigging scenery.

TECH CHALLENGE EVENT: KNOT TYING

- Individual Event: One (1) person per team may execute this task.
- Each team receives only one (1) attempt to complete this event.
- Equipment and tools will be provided, and are as follows:
 - Pipe stand
 - 2 x Rope

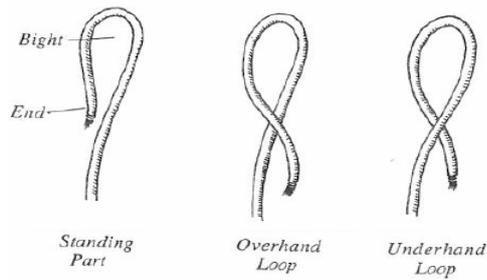
Objective

In this challenge, individuals will be asked to correctly tie a series of commonly used knots for properly rigging scenery. Participants must tie knots correctly with a minimum 6-inch tail on all knot ends. The task is completed when the participant stops the timer.

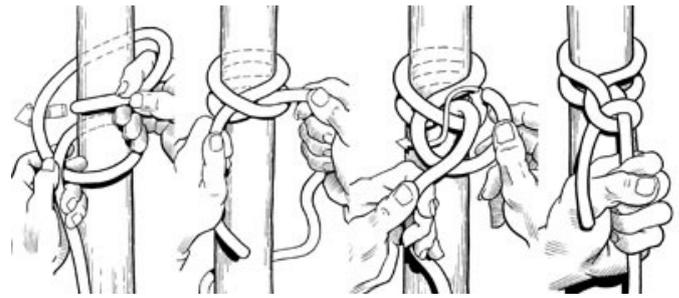
Rules

- All ropes must be on the ground prior to starting the timer.
- The maximum allotted time for this event is two (2) minutes.

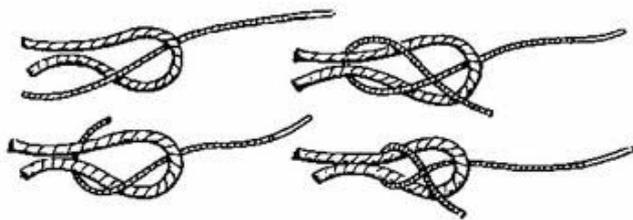
Event Skill: Knot Terminology



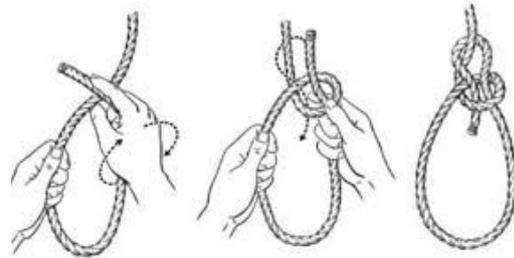
Event Skill: Clove Hitch with Half Hitch



Event Skill: Sheet Bend



Event Skill: Bowline



Required Event Sequence

1. Leave the starting line after the timer begins.
2. Tie a clove hitch on the pipe stand.
3. Tie a half hitch to secure the clove hitch.
4. Tie a second line to the first with a sheet bend. Participants must put the tails for the sheet bend on the same side.
5. Use the end of the second line and tie a bowline. Participants must put the tail for the bowline on the inside of the loop.
6. Return to the starting line, at which point the timer will be stopped.

Event Penalties

- Placing rope in mouth +5 seconds
- Failed or incorrectly tied knots (penalty for each knot) +5 seconds
- Not having minimum 6-inch tail on all knot ends +2 seconds
- Blatant disregard for rules disqualification

Event #3: Costuming

Costuming skills are unique from many other technical theatre skills and are quite varied. One of the most basic skills for any costumer is learning how to properly use a sewing machine, which would be necessary to construct costumes from designs and patterns or to alter existing costumes to fit specific actors.

TECH CHALLENGE EVENT: THREAD A SEWING MACHINE

- Individual Event: One (1) person per team may execute this task.
- Each team receives only one (1) attempt to complete this event.
- Equipment and tools will be provided, and are as follows:

- Sewing machine* with needle in place
- Bobbins wound with thread
- Spools of thread
- Scissors

*Although most standard sewing machines thread the same, the machine supplied for the event will be a Singer 4423 - Heavy Duty Machine with a drop-in bobbin like the one pictured here.



Objective

Each participant will insert a wound bobbin into the bobbin housing of a sewing machine and then properly thread the machine to pull the bobbin thread up through the stitch plate.

Rules

- Participants will receive the items pre-set as follows:
 - Wound (filled) bobbin, spool of thread, and scissors should be placed on the table to the right of the machine.
 - Bobbin housing cover should be in place on the machine.
 - Thread spindle cap should be in place on the machine.
- The maximum allotted time for this event is two (2) minutes.

Required Event Sequence

1. Leave the starting line after the timer.
2. Remove bobbin housing cover.
3. Insert the bobbin into the bobbin housing with thread unwinding counterclockwise.
4. Remove thread spool cap and place thread on spindle.
5. Replace thread cap and thread the machine following the thread guide on the machine.
6. Thread the needle.
7. Turn the flywheel and pull bobbin thread up through the sewing plate on the machine.
8. Pull thread under the pressure foot to the back of the machine.
9. Replace bobbin housing cover.
10. Return to starting line, at which point the timer will be stopped.

Event Penalties

- Careless handling of the equipment +5 seconds
- Incorrect threading sequence equipment +5 seconds
- Incorrect insertion of bobbin into housing +5 seconds

Event #4: Scenery

Scenic construction is a fundamental skill for every young theatre technician. Learning how to properly construct scenery in a safe and efficient manner will serve as a building block for many other tasks and projects that will arise throughout the course of one's education.

TECH CHALLENGE EVENT: LEG A PLATFORM

- Pairs event: Two (2) people per team may execute this task.
- Each team receives only one (1) attempt to complete this event.
- Equipment and tools will be provided, including two (2) adjustable wrenches and two (2) ratchets, bolts, nuts, and a partially assembled 4' x 4' platform.

Objective

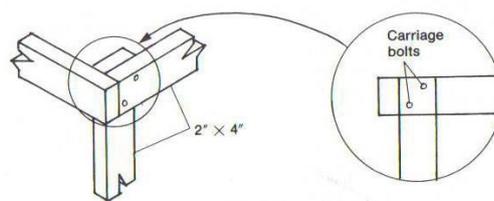
In this challenge, participants must attach and remove legs from a platform using bolts, nuts, and wrenches, leaving it ready for the next team.

Rules

- Platforms are 4 feet x 4 feet, framed with 2x4s, and have a 2x4 leg in each corner. The leg holes have been drilled slightly larger than the 3/8-inch bolts that will be used to attach the legs to the platform.
- Participants must set the ratchet in forward/reverse mode and set the adjustable wrench to the correct width in order to successfully complete the event.
- Bolts must be on the inside of the platform.
- The maximum time allotted for this event is five (5) minutes.

Required Event Sequence: One Platform

1. The participants leave the start line after the timer.
2. Each participant gathers a leg, wrench, ratchet, and hardware.
3. Each participant attaches one leg using a wrench and a ratchet.
4. Each participant uses the same tools to remove one of the legs that was already attached to the platform.
5. The pair returns to the starting line with their tools, hardware, and legs, at which point the timer will be stopped.



Event Penalties

- Bolts attached backwards (nuts on outside) +5 seconds
- Failure to follow correct sequence +5 seconds
- Not set on spike marks correctly (for two-platform event) +10 seconds
- Loose legs
 - Small Wiggle +5 seconds
 - Medium Wiggle +10 seconds
 - Very loose Wiggle +15 seconds
- Placing any items in mouth +10 seconds
- Team member did not completely attach a leg (penalty for each member) +20 seconds
- Blatant disregard for the rules disqualification

Event #5: Costuming

Part of costuming of course goes on backstage during the run of a show, when actors require assistance with quick changes. Quick changes require planning, coordination, accuracy and speed. This challenge tests all three as groups are tasked with transitioning an actor from one costume to another.

TECH CHALLENGE EVENT: QUICK CHANGE

- Group event: At least two (2) and up to three (3) people per team may execute this task. One person should serve as the “actor” and one or two people may serve as the wardrobe crew.
- Each team receives only one (1) attempt to complete this event.



- Equipment and tools will be provided, including all costume pieces and accessories, costume rack, and photo references.

Objective

In this challenge, participants must successfully and completely transition an “actor” from one costume to a second costume. This includes all provided costume pieces and accessories.

Rules

- The participant designated as the actor will don the first costume prior to the beginning of the start time. Dressing in the first costume is not included in the challenge.
- The participant designated as the actor may assist with fasteners and by stepping in/out of garments at the request of the wardrobe crew participants, but they should not otherwise assist with the change.
- All fasteners must be closed and accessories applied to the second costume for the challenge to be considered successful.
- Once removed, the first costume should be hung up on the costume rack. Unless stepping into a garment, at no point should costume pieces be on the ground.
- The maximum time allotted for this event is five (5) minutes.

Required Event Sequence

1. Prior to start of time, actor participant should be dressed in the first costume according to the photo reference.
2. At start of time, the wardrobe crew participant(s) may enter the challenge space to prep the second costume for dressing.
3. When verbally cued by wardrobe crew, the actor may proceed into the challenge space.
4. Wardrobe crew removes first costume with minor assistance from actor only upon request.
5. Wardrobe crew dresses actor in second costume including all costume pieces and accessories and according to the photo reference.
6. Once dressed according to the photo reference, the actor participant must return to the start line.
7. Wardrobe crew must properly hang all pieces of first costume before exiting the challenge area.
8. The participants return to the start line and stop the timer.

Event Penalties

- Actor participant crosses start before cue +5 seconds
- Actor participant excessive assistance +5 seconds
- Costume pieces laid on the ground +5 seconds
- Fasteners not completely closed +5 seconds
- Blatant disregard for the rules disqualification

Event #6: Props

The physical objects used to facilitate story telling often change from scene to scene, and technicians can be integral to the seamless transition. This challenge tests the agility and accuracy of swapping props from one setting to another.

TECH CHALLENGE EVENT: PROP SWAP

- Pairs event: Two (2) people per team may execute this task.



- Each team receives only one (1) attempt to complete this event.
- Equipment and tools will be provided, including onstage table, offstage prop table with taped sections, all props, and photo references.

Objective

In this challenge, participants will shift an onstage table setting from one set up to another.

Rules

- All materials from the first set up must be removed from the table before materials from the second setup may be touched. This includes the tablecloth.
- The second set up must be placed according to the spike marks on the tablecloth provided for the setup.
- All props from the first set up must be placed in the appropriate boxes on the offstage prop table according to tape and labels.

Required Event Sequence

1. At start, participants may cross the start line and remove all props from the “onstage” table including the tablecloth.
2. All props from the first setup should be placed on the “offstage” prop table.
3. Once clear, participants may place props from the second setup on the onstage table. Props should be placed in designated spots according to the spike marks on the tablecloth.
4. Once the second setup is in place, participants should place all props from the first setup in the taped off boxes on the offstage prop table.
5. Participants should return to the start line when all steps are complete.

Event Penalties

- Props incorrectly set on onstage table +5 seconds
- Props incorrectly set on offstage prop table +5 seconds
- Blatant disregard for the rules disqualification