Training Gaps
Analysis

General Stage Technicians (Stage Hands)

CHRC Cultural Human Resources Council

CRHSC Conseil des ressources humaines du secteur culturel

Cultural Human Resources Council (CHRC)
Stage Technicians
Training Gaps Analysis
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kisquared

226-388 donald street
winnipeg manitoba
canada R3B 2J4
204.989.8002
fax 204.989.8048
ki2@kisquared.com
kisquared.com

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Canada

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Introduction

In December 2005, the Cultural Human Resources Council (CHRC) issued a Request for Proposal to conduct a Training Gaps Analysis with stage technicians in the cultural sector across Canada ("the RFP"). With recent experience conducting research for the CHRC (having just completed two other training gaps analyses, one with automation technicians and the other with record label managers), kisquared was selected by the CHRC Theatre Technicians Steering Committee to undertake the current study also.

The Training Gaps Analysis for stage technicians builds upon earlier work done by the Stage Technicians Expert Working Group (EWG) in compiling a matrix of core competencies that define the skill sets of stage technicians. The primary data-gathering instrument used was an employer and employee survey, based closely on the stage technician core competencies matrix. Interviewing was conducted in French and English from kisquared 's offices in Winnipeg, Manitoba. Additional interviews were conducted using a separate survey with colleges and universities that offer training for stage technicians.

This study has proceeded with the generous assistance of the CHRC staff (Manon Turcotte, Project Manager, and Susan Annis, Executive Director) and the Theatre Technicians Steering Committee (the Steering Committee), who assisted in developing a definition of stage technicians, in refining and pre-testing the data collection instrument, and in developing the sample with which interviews were conducted.

Objectives

Three objectives were identified by the CHRC in the RFP for the current study. These were as follows:

- To assess the training needs for competencies identified in the Stage Technicians matrix of core competencies;
- To survey the current training offerings across Canada; and
- To analyze the training gaps, based on the data regarding training needs and training offerings.

Methodology

The research methods used in this project (discussed in more detail below) were:

- Employer and employee survey
- Secondary research and interviews with colleges and training institutions

Employer and employee survey

The employer and employee survey was developed by kisquared in close consultation with the CHRC, and was designed to gather information pertaining to both training needs and offerings. The 107-question equivalent survey was pre-tested February 6-8, 2006, with six Steering Committee members, and the resulting feedback was used to make several changes in the questionnaire. The questionnaire was then translated into French and pre-tested again.

kisquared conducted **150 interviews** in English and French, in total:

- 71 interviews with **employers**
- 79 interviews with **employees**

The survey incorporated a "snowball" recruit technique to expand the initial sample database and ensure a broadly representative sample of stage technicians in all areas of Canada.

Secondary research and interviews with colleges and training institutions

The secondary research phase consisted of analyzing training offerings for stage technicians. kisquared's executive interviewers contacted formal training institutions (post-secondary institutions, technical colleges, Cégeps, etc.) across Canada identified as providing training in theatre production and/or theatre technology. Interviewers collected data on the curriculum content in theatre production and technology programs for insight into the training available.

After the employee and employer survey was completed, kisquared developed a questionnaire, which was forwarded to the Theatre Technicians Steering Committee for review, feedback, and final approval. A total of 40 telephone interviews were then conducted with program directors of college and university programs offering technical training specific to stage technicians, to validate findings about training offerings gained through secondary research, and to identify any training gaps.

Employer-employee questionnaire design

Stage technician definition

"Stage technicians" are also commonly referred to as "stage hands" and work in a variety of productions including theatre, dance, opera, circus, film / television, and musical concerts. Given the diversity of productions and the potential for a wide range of occupational titles for those performing the tasks of a stage technician, the questionnaire did not rely upon job titles alone, but provided a definition of stage technician to identify the target respondent consistently. The wording of the definition (which varied slightly depending on whether the target was an employer or employee) is given below:

Employer

- Are you someone who is involved with the training, hiring, or supervision of stage technicians, also commonly known as stage hands, for your organization, that is the personnel whose task it is to load in, set up, run, strike and load out the production elements for live entertainment productions?
- Participez-vous, dans votre compagnie, à la formation, l'embauche ou la supervision de techniciens de scène, à savoir les employés responsables de charger, d'installer, de faire fonctionner, de démonter et de décharger les éléments de production d'un spectacle ?

Employee

- Are you someone who works as a stage technician, also commonly known as stage hand, for your organization, that is, someone whose primary tasks are to load in, set up, run, strike and load out the production elements for live entertainment productions?
- Êtes-vous une personne qui, dans votre compagnie, travaille comme technicien de scène, dont les tâches principales consistent à charger, installer, faire fonctionner, démonter et décharger les éléments de production d'un spectacle en direct ?

Matrix of core competencies converted to measurable skills

For the purposes of questionnaire design, the skill sets contained in the matrix of core competencies were converted to the language of skills. These skills contained in the employer-employee questionnaire were pre-tested with Steering Committee members and approved by the CHRC prior to fielding.

The survey measures the following 24 *skills:*

- Troubleshoot production elements
- Use and interpret hand signals
- Set up and strike scaffolding
- Set up and strike props and wardrobes
- Work in unconventional environments such as height, confined spaces, or in the dark
- Load in and load out of production elements
- Maintain and repair production elements and equipment
- Operate material handling equipment and personnel lifts
- Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
- Coil and run cables, wires and ropes
- Set up and strike stage carpentry elements
- Perform pre-show and post-show checks and duties
- Practice stage etiquette in a teamwork environment

- Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
- Dress and mask production elements
- Operate conventional hand and power tools
- Set up and strike audio-visual equipment
- Use wardrobe equipment
- Comply with laws and procedures such as fire codes, electrical codes and WHMIS
- Interpret technical drawings and documents
- Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
- Operate rigging and fall protection equipment**
- Communicate ideas effectively in oral and written form
- Set up and strike lighting elements

**Stage technicians 'use fall protection equipment' and 'operate rigging equipment', but for ease of the language contained in the survey, these were collapsed into 'operate rigging and fall protection equipment.

Reporting

This report is organized under the following headings: *Introduction*, *Executive summary*, *Training needs*, *Chart of competencies – validation*, *Training offerings*, Secondary research and interviews with universities and colleges, *Training gaps*, and *Respondent profile*. *Appendix A* contains survey "marginals" (response percentages for each question asked in the survey). *Appendix B* contains summary descriptions of available training programs specific to stage technician skills across Canada. *Appendix C* contains verbatim responses to the following questions from the employer and employee survey:

- Thinking about all the things that a stage technician does in their job, are there any skills or skills training we have missed speaking to you about, or that you think may be required in future?
- Where did you take this formal training program for stage technicians? What was the name of the institution? What was the name of the program? What was your major or concentration?
- What skill did you learn during your conference or workshop related to professional development as a stage technician? Who offered the training?
- When thinking about stage technician training, what would you say is the most significant training gap?

Executive summary

The objectives of the Training Gaps Analysis for stage technicians are to measure training needs, explore training offerings, and determine training gaps, as well as produce recommendations.

Respondent profile

- Stage technicians and their employers from all ten provinces plus the Yukon and Northwest Territories were interviewed. Almost one-third of survey respondents (32%) are in Ontario, and respondents from British Columbia (19%) and Alberta (15%) make up another third.
- Most respondents (89%) are involved in live theatre or musicals, dance productions being next (42%).
- Most stage technicians (92%) report being hired by the employer directly, and 5% report being hired by a union.
- One-half of stage technicians report working an average of 35 hours or more per week, and just over one-quarter report working less than 17.5 hours per week.
- Slightly more than half of stage technicians (54%) report they are union members. Of those who belong, 74% are IATSE members, and 9% are members of CUPE.
- Most state technician employees (85%) have been stage technicians for more than 10 years, and less than 10% have been stage technicians for five years or shorter.

Training needs

- Most skills in the 24-item list are considered essential to carry out the job of stage technician ("required" according to 81% or more of respondents). The following skills, although still deemed necessary by most respondents, are seen as least essential to do the job:
  - Use and interpret hand signals (53%)
  - Use wardrobe equipment (60%)
  - Set up and strike scaffolding (77%)
  - Operate material handling equipment/personnel lifts (78%)
- Most respondents (84% or more) possess each of the skills assessed in the survey. Almost all possess the following skills:
  - Coil and run cables, wires and ropes (99%)
  - Dress and mask production elements (99%)
  - Operate conventional hand and power tools (99%)
  - Communicate ideas effectively (99%)

- Skills that respondents are least likely to have:
  - Use wardrobe equipment (84%)
  - Use paint equipment such as adhesives, fillers, paints, solvents, and sprayers (88%)
- Although the percentage that already "has" a given skill always greatly outweighs those who still "need" that skill, some noteworthy gaps exist between required and available skills. The largest gaps appear in relation to:
  - Assist in setting up and striking special effects (26%)
  - Set up and strike audio-visual equipment (24%)
  - Operate rigging and fall protection equipment (23%)
  - Use wardrobe equipment (21%)
  - Set up and strike lighting elements (20%)
- The smallest skills gaps appear in relation to:
  - Dress and mask production elements (9%)
  - Operate conventional hand and power tools (11%)
  - Perform pre-show and post-show checks and duties (11%)
  - Coil and run cables, wires and ropes (11%)

Secondary research and interviews with universities and colleges

- Institutions offering training for stage technicians that were interviewed in this study include:
  - The Banff Centre (Alberta)
  - Grant MacEwan College (Alberta)
  - Keyano College (Alberta)
  - Mount Royal College (Alberta)
  - Red Deer College (Alberta)
  - Rosebud School of the Arts (Alberta)
  - University of Alberta (Alberta)
  - University of Lethbridge (Alberta)
  - Capilano College (British Columbia)
  - Douglas College (British Columbia)
  - Langara College (British Columbia)
  - Malaspina University-College (British Columbia)

- Thompson Rivers University (British Columbia)
- University College of the Fraser Valley (British Columbia)
- University of Victoria (British Columbia)
- University of Manitoba (Manitoba)
- University of Winnipeg (Manitoba)
- University of Regina (Saskatchewan)
- University of Saskatchewan (Saskatchewan)
- Cambrian College of Applied Arts and Technology (Ontario)
- Fanshawe College (Ontario)
- Humber College Institute of Technology & Advanced Learning (Ontario)
- Queen's University (Ontario)
- Ryerson Theatre School (Ontario)
- Sheridan College Institute of Technology and Advanced Learning (Ontario)
- University of Guelph (Ontario)
- University of Ottawa (Ontario)
- University of Waterloo (Ontario)
- University of Windsor (Ontario)
- York University (Ontario)
- Bishop's University (Quebec)
- Collège Lionel-Groulx (Quebec)
- John Abbott College (Quebec)
- McGill Univeristy (Quebec)
- National Theatre School of Canada (Quebec)
- Cape Breton University (Nova Scotia)
- Dalhousie University (Nova Scotia)
- University of Prince Edward Island (Prince Edward Island)
- Sir Wilfred Grenfell College (Newfoundland)
- University of New Brunswick (New Brunswick)

- Most skills are taught by a majority of the 40 institutions interviewed. Using and interpreting hand signals, and setting up and striking scaffolding, are skills taught by the smallest number of colleges and universities.

- When asked what they see as the biggest training gaps for stage technicians, 30% of faculty member say keeping up with new technology is the biggest raining gap, and 17% say more hands-on experience is needed.

- Most faculty members (69%) say the lack of funding for staff, equipment and physical infrastructure prevents them from offering more technical training for stage technicians.

Training offerings and training gaps analysis

- An important finding that holds true across all 24 skills assessed is that the skills required by stage technicians are often learned *on the job.* Learning on the job is important for stage technicians to acquire the skills they need.

- Self-teaching, through reading magazines or on-line tutorials, can be used to impart some skills (e.g., operating conventional hand and power tools, and communicating ideas effectively), but not others (e.g., setting up and striking audio-visual equipment).

- Formal training, like self-teaching, plays an important role in educating stage technicians for some skills, but not others. Formal training is favoured for acquiring certain skills, including:
  - Interpreting technical drawing and documents;
  - Setting up and striking lighting elements;
  - Operating rigging and fall protection equipment; and
  - Complying with laws and procedures such as fire codes, electrical codes and WHMIS.

- Less formal training, such as attending a conference or workshop, is another popular method of skills acquisition for many stage technicians. Forty-two percent of respondents say they have attended conferences or workshops related to professional development within the past year. The skills most often learned at these conferences and workshops include:
  - operating rigging and fall protection equipment;
  - setting up and striking lighting elements;
  - setting up and striking audio-visual equipment; and
  - first aid / general safety.

- At 26%, assisting in setting up and striking special effects is the largest training gap of the 24 skills measured in this study. This is followed by setting up and striking audio-visual equipment (24%), operation of wardrobe equipment (23%), operation of rigging and fall protection equipment (23%), and setting up and striking lighting equipment (20%).

Chart of core competencies – validation

- For most respondents, the CHRC chart of core competencies captures the range of skills required by stage technicians. After reviewing the skills list, respondents were asked if there were any additional skills required that not been mentioned. Fifty-nine percent of respondents found the list to be comprehensive or were unable to add more to it; however, the following skills were thought by some to be missing:

- Math/computer skills (18%)
- Team work/interpersonal skills (12%)
- Safety/first aid (5%)
- Welding/steel fabrication skills (5%)
- Time management skills (2%)

Recommendations

- Because stage technicians learn most skills on the job, the implication for training is the need for apprenticeship, internship and/or co-op programs to assist new learners in acquiring those skills in a consistent and systematic fashion. In addition, for new stage technicians who have never attended a formal training institution, informal workshops to impart basic skills (e.g., a weekend workshop) may need consideration from stakeholders.
  - Fifteen percent of stage technicians and their employers and 17% of faculty members perceive a need for more hands-on work experience as the "biggest training gap".
  - Room exists to offer more hands-on learning experiences within formal training institutions. One out of every two formal training institutions interviewed in this study offer apprenticeship, co-op or internship programs for stage technicians. Of those that do not currently offer such opportunities, 40% say they are planning to offer such programs in the future.
- Technology emerged as an important training consideration for stage technicians. This involves keeping up with new technological developments (for example, in lighting and sound), but also learning more general computer skills and being able to work with older/outdated technology that may still be found in production companies today. Developing partnerships with various stakeholders may address this training need.
  - Sixteen percent of stage technicians and their employers and 30% of faculty members perceive keeping up with evolving technologies and learning to work with older technology that is still used today as the "biggest training gap".
  - When asked for skills not covered in the survey, or that might be required in the future, 18% of stage technicians and their employers felt that computer skills are becoming increasingly important.
  - Most training institutions (69%) interviewed in this study say the biggest barrier to offering more training is a lack of funding for staff, physical infrastructure and equipment (especially computerized equipment) – this suggests room to build partnerships with other stakeholders to address this barrier.
- Health and safety issues came out at several places throughout this study, suggesting that these are important considerations for future training. Note that although the survey did address skills such as operating rigging and fall protection equipment and complying with laws and procedures, health and safety was not tested as a separate skill.
  - When asked for skills not covered in the survey, or that might be required in the future, 5% of stage technicians and their employers felt that safety / first aid is important, given the nature of the job.

- Eight percent of stage technicians and their employers and 9% of faculty members perceive first aid and safety as the "biggest training gap".
- Of those who attended a conference or workshop in the past year, 16% attended a conference or workshop that related to first aid / general safety.

- The need for special effects training (for example, atmospheric, mechanical live sound, pyrotechnic or fire and flame) is considerable and should be addressed through formal training coupled with on-the-job coaching.
  - Of all 24 skills assessed in this study, assisting in the setting up and striking of special effects is the largest skills gap (26%).
  - More training opportunities for special effects are available in the West (B.C. and Alberta) and Central Canada (Ontario and Quebec), than in the Prairies and Maritimes. It should be noted, however, that measuring the quality and type of education offerings (e.g. practically-oriented vs. theoretically-based) is beyond the scope of this training gaps analysis.
  - Seven percent of those who attended a conference or workshop in the past year received training related to special effects.
  - Three percent of stage technicians and their employers perceive pyrotechnic skills as the "biggest training gap".
- The need for training in operating rigging and fall protection equipment should be addressed through formal training coupled with on-the-job experience.
  - A skills gap of 23% (third largest in this study) exists in relation to the ability to operate rigging and fall protection equipment.
  - Overall, 86% of respondents expect this skills gap to be addressed through formal training, but regional disparities in the availability of formal training are evident: there is no training in rigging and fall protection provided in Prince Edward Island or Manitoba; and some faculty members from Quebec indicate there is little or no fall arrest training in that province.
  - Twenty-nine percent of those who attended a conference or workshop in the past year report receiving training related to rigging and fall protection, which suggests a significant training demand.
  - Five percent of stage technicians and their employers, and 13% of faculty members, perceive operating rigging and fall protection equipment as the "biggest training gap".
- Communication, teamwork and interpersonal skills emerged as an important training need that should be considered for future training and curriculum development.
  - Twelve percent of stage technicians and their employers, and 6% of faculty members, see communication, teamwork and interpersonal skills as the "biggest training gap".
  - When asked for skills not covered in the survey, or that might be required in the future, 12% of stage technicians and their employers say that it is important to function as a team and display interpersonal skills.
  - A moderate skills gap is apparent in stage technicians' ability to communicate ideas effectively in oral and written form (13%), whereas other skills gaps range from 9% to 26%.

Training needs

All respondents were led orally through the 24-item skills series. Employers were asked, first, to indicate whether each skill is one required for the stage technicians employed by their organization. Employers were then asked to indicate whether their stage technicians *currently have* the skill, or whether they *need to acquire* that skill. Employees were similarly asked to rate for themselves whether each skill was *required* first, then whether they *currently have* or *need to acquire* it.

Skills required for position

Figure 1, below, shows the range of skills deemed to be required of stage technicians in the industry. These do not refer to the range of skills needed by a given individual, but rather to skill sets required by the position of stage technician within the organizations interviewed, i.e., the skills that those organizations require of their stage technicians.

- Fifteen out of the 24-item skills list are required skills for over 90% of respondents, with the most-required skills being: practising stage etiquette in a teamwork environment (99%), loading in and loading out production elements (97%), operating conventional hand and power tools (97%), and working in unconventional environments (97%).
- The least required skills, by far, are: using and interpreting hand signals (53%), and using wardrobe equipment (60%).

Figure 1 SKILLS REQUIRED FOR POSITION

Skill	% of respondents overall
Practice stage etiquette in a teamwork environment	99%
Load in and load out production elements	97%
Operate conventional hand and power tools	97%
Work in unconventional environments	97%
Coil and run cables, wires and ropes	96%
Dress and mask production elements	95%
Set up and strike lighting elements	95%
Communicate ideas effectively	95%
Perform pre-show and post-show checks and duties	94%
Maintain and repair production elements/equipment	94%
Interpret technical drawings and documents	93%
Set up and strike audio-visual equipment	93%
Troubleshoot production elements	93%
Set up and strike stage carpentry elements	91%
Obtain information on cues, record notes, execute	91%
Operate rigging and fall protection equipment	85%
Comply with laws and procedures/WHMIS	84%
Assist to set up and strike special effects	81%
Set up and strike props and wardrobes	79%
Use paint equipment	79%
Operate material handling equipment/personnel lifts	78%
Set up and strike scaffolding	77%
Use wardrobe equipment	60%
Use and interpret hand signals	53%

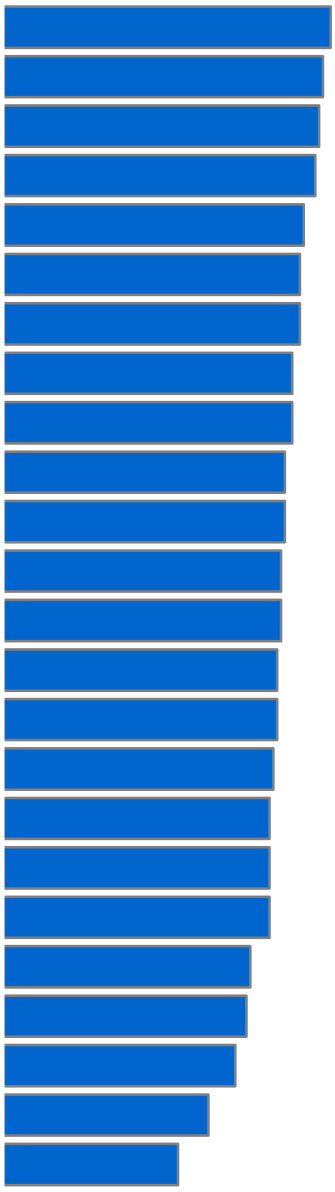
Current skills

Figure 2, below, represents the range of skills already present within the industry.

- Almost all stage technicians (99%) have the skills to coil and run cables, wires and ropes, dress and mask production elements, operate conventional hand and power tools, and communicate ideas effectively in oral and written form.
- Relatively fewer stage technicians, although still a significant proportion, have the skills to use wardrobe equipment (84%) or to use paint equipment such as adhesives, fillers, paints, solvents, and sprayers (88%).

Figure 2 CURRENT SKILLS

Skill	% of respondents overall
Coil and run cables, wires and ropes	99%
Dress and mask production elements	99%
Operate conventional hand and power tools	99%
Communicate ideas effectively	99%
Obtain information on cues, record notes, execute	98%
Load in and load out production elements	97%
Interpret technical drawings and documents	97%
Perform pre-show and post-show checks and duties	97%
Maintain and repair production elements/equipment	97%
Use and interpret hand signals	97%
Work in unconventional environments	97%
Set up and strike scaffolding	96%
Set up and strike stage carpentry elements	96%
Set up and strike props and wardrobes	96%
Troubleshoot production elements	96%
Comply with laws and procedures/WHMIS	96%
Practice stage etiquette in a teamwork environment	96%
Set up and strike lighting elements	94%
Operate material handling equipment/personnel lifts	93%
Set up and strike audio-visual equipment	91%
Operate rigging and fall protection equipment	90%
Assist to set up and strike special effects	89%
Use paint equipment	88%
Use wardrobe equipment	84%



Note: Percentages of current skills combine responses of employees who say they have the skill, of employers who say their stage techs have the skill, and of employers who say that some of their stage techs have the skill while others still need to acquire it, which indicates that the skill is present within the organization.

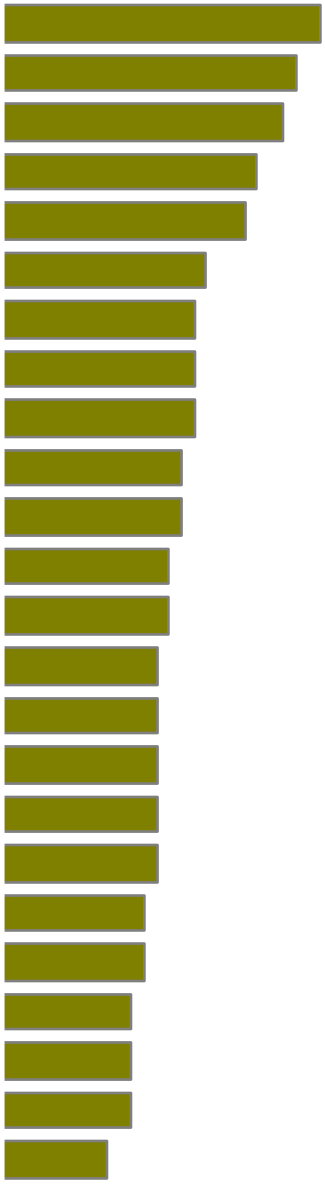
Skill gaps

Out of all skills tested, employers and employees were asked to indicate what skills stage technicians do not have, and need to acquire. Figure 3 illustrates all current skills gaps as calculated.

- Although the proportion that already "has" a given skill always outweighs that of those who still "need" that skill, there are a few noteworthy gaps between required and available skills.
- The largest gaps exist in the areas of: assisting in setting up and striking special effects (26%), setting up and striking audio-visual equipment (24%), operating rigging and fall protection equipment (23%), using wardrobe equipment (21%), and setting up and striking lighting elements (20%).
- The smallest gaps exist in the areas of: dressing and masking production elements (9%), operating conventional hand and power tools (11%), performing pre-show and post-show checks and duties (11%), and coiling and running cables, wires and ropes (11%).
- As a general pattern, skill gaps are higher for specialized and/or high-tech skills, and lower for general and/or low-tech skills.

Figure 3 SKILL GAPS

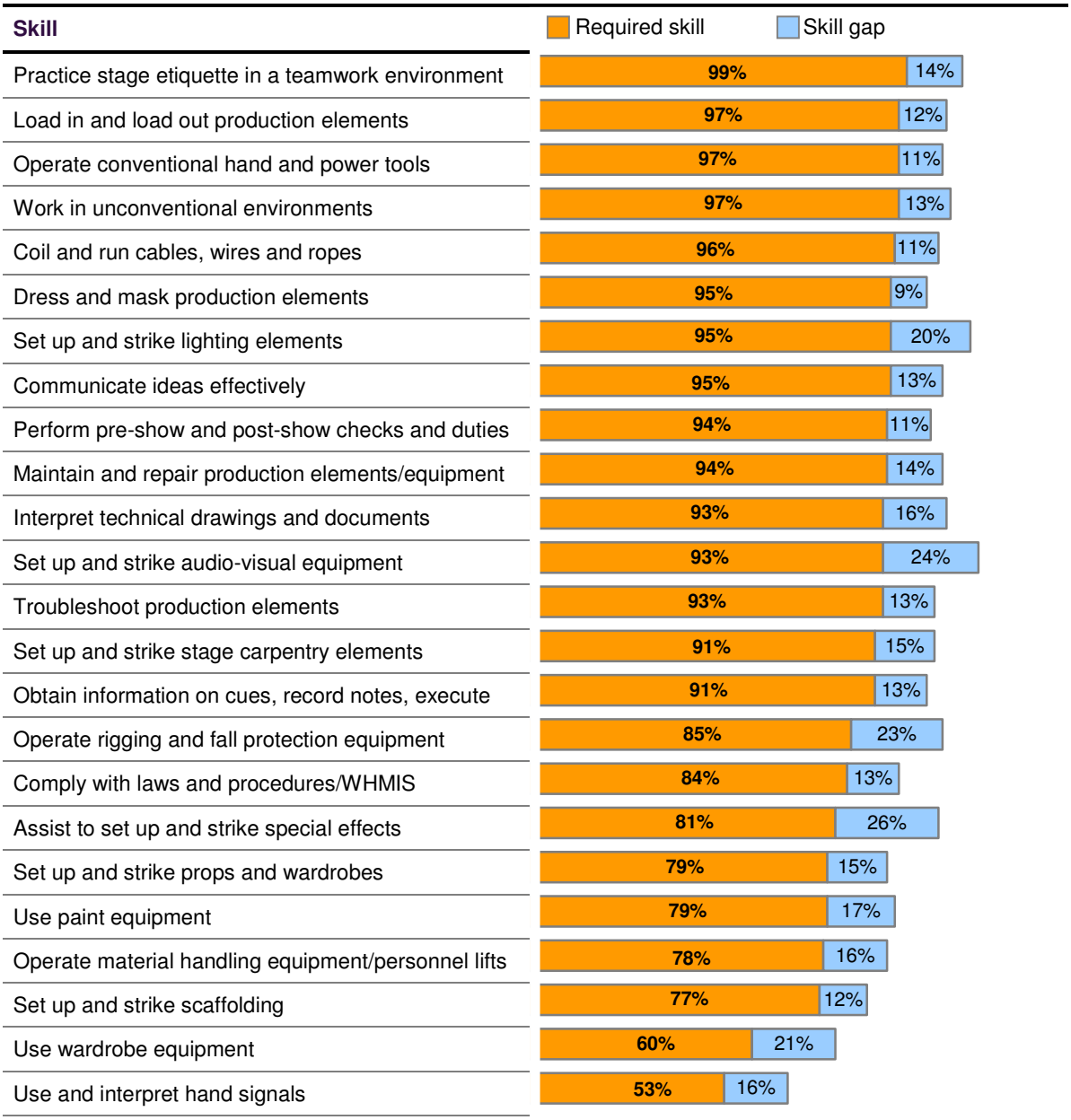
Skill	% of respondents overall
Assist to set up and strike special effects	26%
Set up and strike audio-visual equipment	24%
Operate rigging and fall protection equipment	23%
Use wardrobe equipment	21%
Set up and strike lighting elements	20%
Use paint equipment	17%
Interpret technical drawings and documents	16%
Operate material handling equipment/personnel lifts	16%
Use and interpret hand signals	16%
Set up and strike stage carpentry elements	15%
Set up and strike props and wardrobes	15%
Maintain and repair production elements/equipment	14%
Practice stage etiquette in a teamwork environment	14%
Obtain information on cues, record notes, execute	13%
Troubleshoot production elements	13%
Comply with laws and procedures/WHMIS	13%
Communicate ideas effectively	13%
Work in unconventional environments	13%
Load in and load out production elements	12%
Set up and strike scaffolding	12%
Coil and run cables, wires and ropes	11%
Perform pre-show and post-show checks and duties	11%
Operate conventional hand and power tools	11%
Dress and mask production elements	9%



Note: Percentages of skill gaps combine responses of employees who say they need to acquire the skill, of employers who say their stage techs need to acquire the skill, and of employers who say that some of their stage techs need to acquire the skill although others already have it, which indicates that the skill is lacking within the organization.

Figure 4, below, shows the skills required by stage technicians along with associated skills gaps. Comparison of the two reveals no clear pattern between the most-required skills and the largest skill gaps. This suggested that future measures to address skill gaps will not do so most effectively merely by addressing the most-required skills, because these do not correspond to the most significant existing gaps.

Figure 4 SKILLS REQUIRED VS. SKILL GAPS



Note Skill gaps calculated as per Figure 3.

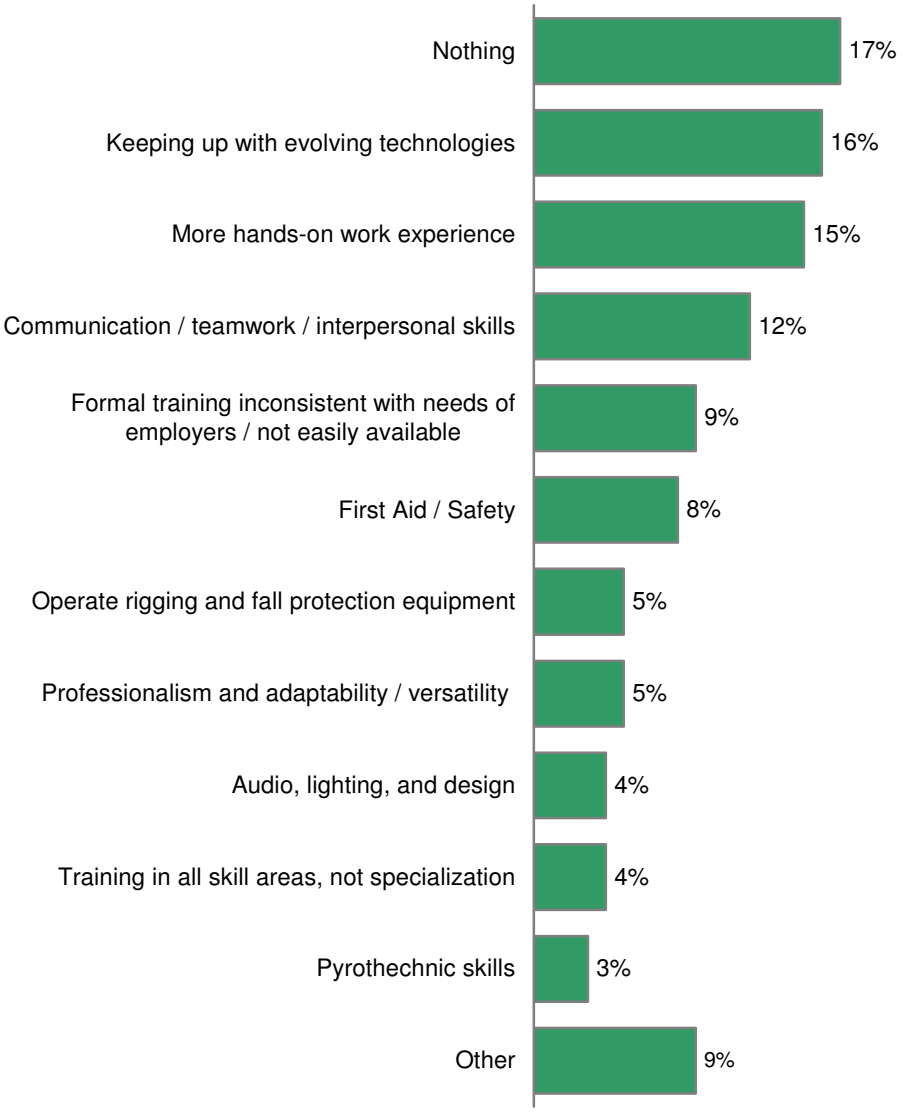
Perceived training gaps

Having reviewing the stage technician skills list, respondents were asked to state what they see as the most significant training gaps for stage technicians now or in the future. Figure 17 presents these findings. Complete verbatim responses to this question are provided in *Appendix C*.

- Although the highest individual response frequency for this question does not identify any training gaps (17% "nothing"), the majority of responses overall (83%) identified a training gap of some sort.
- The largest perceived training gaps are: keeping up with evolving technologies (16%), more hands-on work experience (15%), and communication/teamwork/interpersonal skills (12%).
- Although it received the smallest frequency of responses, at 3%, training in pyrotechnic skills is still perceived to be lacking.

Figure 5 TRAINING GAPS IDENTIFIED BY EMPLOYERS/EMPLOYEES

When thinking about stage tech training, what do you say is the most significant training gap?



Note: Responses of "don't know/refused" have been excluded.

Chart of competencies – validation

The 24 skills assessed by the employer – employee survey were based closely on the matrix of core competencies developed by the CHRC. However, to objectively validate this chart of competencies, respondents were asked if there are any additional skills needed for the job of stage technician that were not covered in the survey, or that might be required in future.

- A majority of survey respondents (59%) said the list of skills was not missing any required for stage technicians to perform their job (47%), or that they could not think of any other skills (12%). See Figure 6 below.

This is an important finding because it basically validates the CHRC chart of core competencies. However, other pertinent skills were identified by some respondents, and are discussed below.

Of those who *did* mention a skill not covered by the initial chart of core competencies:

- 18% say that math / computer skills are important;
- 12% say that being able to function as part of a team/having interpersonal skills is important;
- 5% say that safety / first aid is important, given the nature of the job;
- 5% say that welding / steel fabrication skills are important; and
- 2% mention time management skills as important.

Figure 6 PERTINENT SKILLS NOT COVERED BY SURVEY

Skill	%
No, I cannot think of any other skills	47%
Computer skills	18%
Function as part of a team / interpersonal skills	12%
Safety / first aid	5%
Welding / steel fabrication	5%
Time management	2%
Other	10%
Don't know	12%

Note: Percentages exceed 100% because multiple responses were accepted.

Training offerings

Respondents who identified themselves or their employees as possessing a given stage technician skill or needing to acquire it, were then asked where that skill was acquired or where they expect it to be acquired. Employees were asked: "Where did you learn / do you expect to learn this skill?" For employers, the question was: "Where did your stage techs learn / do you expect them to learn this skill?" Responses were grouped into three categories: "learn on the job," "self-taught," and "formal training".

Learning on the job

Respondents say the skills required for stage technicians are largely learned on the job, as indicated below in Figure 7. Even the skill *least* likely to be learned on the job (setting up and striking lighting elements) was still expected to be gained that way by more than three-quarters of all respondents. On-the-job learning is the most frequently cited training path for stage technicians to acquire essential job skills.

Figure 7 SKILLS LEARNED ON THE JOB

Skills	Learn on the job
Troubleshoot production elements	92%
Use and interpret hand signals	91%
Set up and strike scaffolding	89%
Set up and strike props and wardrobes	89%
Work in unconventional environments such as height, confined spaces, or in the dark	88%
Load in and load out of production elements	88%
Maintain and repair production elements and equipment	87%
Operate material handling equipment and personnel lifts	87%
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers	87%
Coil and run cables, wires and ropes	86%
Set up and strike stage carpentry elements	86%
Perform pre-show and post-show checks and duties	86%
Practice stage etiquette in a teamwork environment	84%
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame	83%
Dress and mask production elements	83%
Operate conventional hand and power tools	82%
Set up and strike audio-visual equipment	82%
Use wardrobe equipment	82%
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)	81%

Continued from previous page

Interpret technical drawings and documents	81%
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues	80%
Operate rigging and fall protection equipment	80%
Communicate ideas effectively in oral and written form	80%
Set up and strike lighting elements	77%

Self-teaching

Self-teaching, through reading magazines or on-line tutorials, for example, is a popular method for learning some skills (operating conventional hand and power tools, cited by 70%; communicating ideas effectively in oral and written form, cited by 69%), but not others (setting up and striking audio-visual equipment, cited by 47%), especially when compared to other skill acquisition paths.

Figure 8 LEARNING SKILLS THROUGH SELF-TEACHING

Skills	Self-taught
Operate conventional hand and power tools	70%
Communicate ideas effectively in oral and written form	69%
Use and interpret hand signals	61%
Use wardrobe equipment	60%
Load in and load out production elements	58%
Practice stage etiquette in a teamwork environment	57%
Work in unconventional environments such as height, confined spaces, or in the dark	57%
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers	57%
Dress and mask production elements	55%
Coil and run cables, wires and ropes	54%
Perform pre-show and post-show checks and duties	54%
Troubleshoot production elements	53%
Interpret technical drawings and documents	53%
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues	53%
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame	52%
Maintain and repair production elements and equipment	51%
Set up and strike props and wardrobes	50%
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System.	50%
Set up and strike stage carpentry elements	49%
Operate material handling equipment and personnel lifts	49%

Continued from previous page

Set up and strike scaffolding	48%
Set up and strike lighting elements	48%
Operate rigging and fall protection equipment	48%
Set up and strike audio-visual equipment	47%

Formal training

In addition to learning on the job and self-teaching, formal training is another avenue for acquiring skills to perform the job of a stage technician. As shown in Figure 9, formal training is popularly cited for certain skills (interpreting technical drawings and documents, and setting up and striking lighting elements, 76% each) but not for others (setting up and striking scaffolding, 56%).

Figure 9 SKILLS LEARNED THROUGH FORMAL TRAINING

Skills	Formal training
Interpret technical drawings and documents	76%
Set up and strike lighting elements	76%
Operate rigging and fall protection equipment	74%
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System.	73%
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues	72%
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame	71%
Set up and strike audio-visual equipment	71%
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers	71%
Use wardrobe equipment	68%
Dress and mask production elements	68%
Set up and strike props and wardrobes	67%
Maintain and repair production elements and equipment	67%
Operate material handling equipment and personnel lifts	64%
Operate conventional hand and power tools	64%
Set up and strike stage carpentry elements	64%
Practice stage etiquette in a teamwork environment	64%
Coil and run cables, wires and ropes	63%
Communicate ideas effectively in oral and written form	63%
Perform pre-show and post-show checks and duties	62%
Troubleshoot production elements	60%
Load in and load out production elements	58%

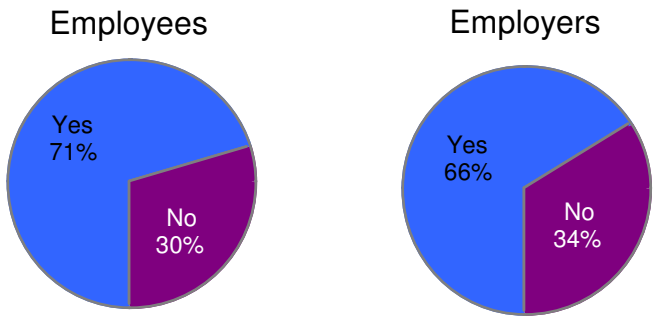
Continued from previous page

Work in unconventional environments such as height, confined spaces, or in the dark	57%
Set up and strike scaffolding	56%
Use and interpret hand signals	51%

Skills acquisition through formal training

Respondents were asked if they ever participated in a formal training program for stage technicians, such as a university or college program. As illustrated below in Figure 10, 66% of employers say they participated in formal training and 71% of employees say they have done so.

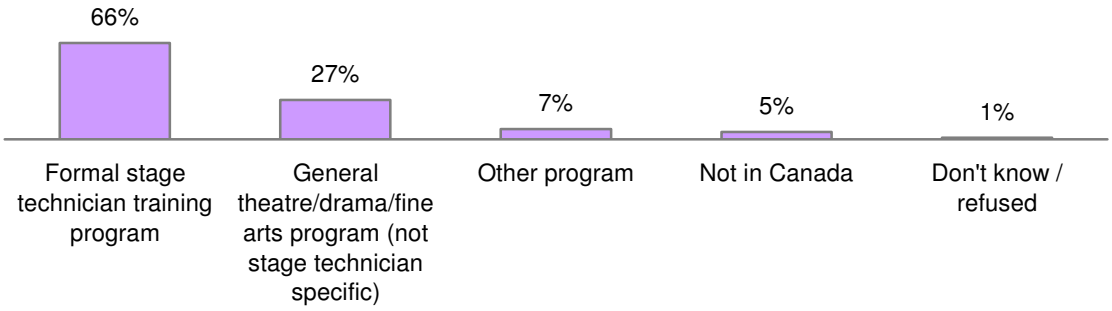
Figure 10 PARTICIPATION IN FORMAL TRAINING FOR STAGE TECHNICIANS



Of those employees and employers who participated in formal training, two-thirds (66%) attended a formal stage technician training program (see Figure 11 below). A formal stage technician training program is defined as a university or college that offers four or more courses in technical theatre. Slightly more than one-quarter (27%) say they attended a general theatre, drama or fine arts program that was not specific to developing stage technicians *per se*. Seven percent of respondents attended another type of program (for example, music, engineering), and another 5% participated in a training program outside Canada. These percentages exceed 100% because multiple responses were accepted (meaning some respondents attended more than one formal training program).

Figure 11 WHERE FORMAL TRAINING AS STAGE TECHNICIAN WAS RECEIVED

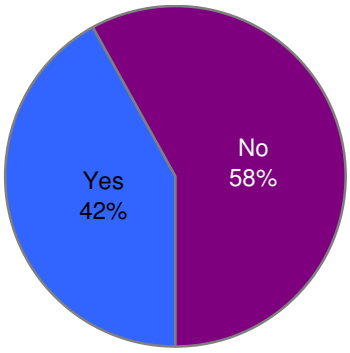
Where did you take this formal training program for stage technicians?



Professional development: conferences / workshops

To gain insight into what alternative training such as conferences and workshops were available to stage technicians, kisquared asked respondents if they attended any conferences or workshops within the past year related to professional development as a stage technician. Figure 12 below shows that 46% of respondents overall have attended conferences or workshops within the past year.

Figure 12 PROFESSIONAL DEVELOPMENT AS STAGE TECHNICIAN – CONFERENCE OR WORKSHOP ATTENDANCE



Respondents who indicated they had attended such a conference or workshop were asked what skill or skill set it pertained to. Figure 13 below shows their responses, coded to match the list of skills used in this study for easier comparison (where possible). Verbatim responses to this question are given in Appendix C.

The topics most often learned at such conferences or workshops include: operating rigging and fall protection equipment (29%), setting up and striking lighting elements (17%), setting up and striking audio-visual equipment (17%), and first aid / general safety (16%). Interestingly, 45% report pursuing a topic that generally related to the protection of human life (operating rigging and fall protection equipment, 29%, and first aid / general safety, 16%).

Figure 13 PROFESSIONAL DEVELOPMENT – SKILL SET

Skills	%
Operate rigging and fall protection equipment	29%
Set up and strike lighting elements	17%
Set up and strike audio-visual equipment	17%
First aid / general safety	16%
Production / administration / management	10%
Comply with laws and procedures	7%
Assist and set up and strike special effects	7%
Technology	7%
Communicate ideas effectively in oral and written form	4%
Set up and strike props and wardrobes	4%
Operate handling equipment and personnel lifts	3%
Work in unconventional environments	1%
Practice stage etiquette in a teamwork environment	1%
Set up and strike carpentry elements	1%

Note: Percentages exceed 100% because multiple responses were accepted.

Conference and workshop attendees were also asked who offered this professional development training. Figure 14 below shows their responses as categorized. Verbatim responses to this question are given in Appendix C.

Figure 14 PROFESSIONAL DEVELOPMENT – WHO OFFERED THE TRAINING?

Organization	%
CITT or USITT	44%
Other organizations	32%
Corporate training	12%
IATSE	10%
Banff Centre	6%
Do not know / not specified	4%

Note: The total percentage does not equal 100% due to rounding.

- Figure 14 shows that 44% of respondents participated in professional development training through either CITT- or USITT-sponsored events, representing a major portion of professional development training.
- Almost one-third (32%) of respondents participated in professional development training sponsored by various other organizations.
- Another 12% of respondents participated in corporate training, which denotes training through workshops, conferences, or seminars offered by manufacturers and suppliers to the sector.

- One in ten respondents recall attending a conference or workshop sponsored by IATSE, and more than one in twenty (6%) say they attended a conference or workshop at The Banff Centre.
- Only 4% could not recall or did not state the source of their professional development training, only the type of training received.

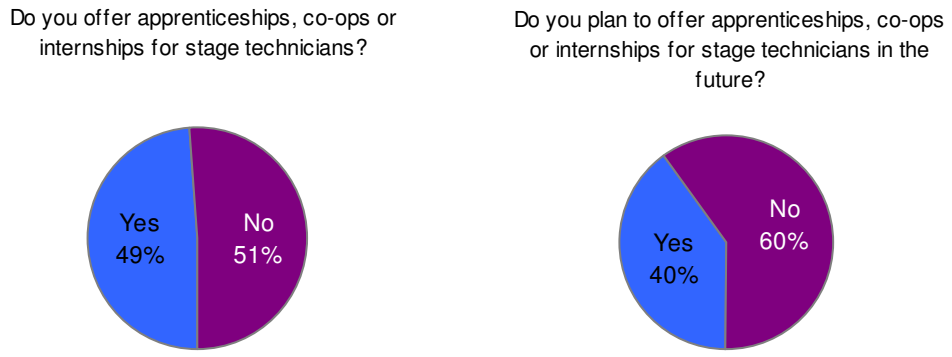
Secondary research and interviews with universities and colleges

Forty interviews were conducted with colleges and universities that offer training for stage technicians. Wherever possible, these interviews were conducted with faculty members who were highly familiar with the content of the programs offered at their institution. These findings are intended to provide a very general overview of training offerings, but evaluating the quality and type of education (e.g. practically-oriented vs. theoretically-based) is beyond the scope of this training gaps analysis.

Apprenticeships, co-op placements and internships

Almost half of the colleges and institutions (49%) offer apprenticeships, co-ops or internships for stage technicians. Of those colleges and universities that do *not* currently offer such opportunities, 40% say they are planning to offer apprenticeships, co-op placements or internships in the future (see Figure 15).

Figure 15 APPRENTICESHIPS, CO-OP PLACEMENTS AND INTERNSHIPS



Skills covered in curriculum

The colleges and universities were then asked whether their program offered training for each of the 24 skills examined in the employer and employee survey, and if so, approximately how many hours are dedicated to its coverage. Figure 16 below lists each skill with the number of institutions that offer training in that skill, and the average number of hours dedicated to its teaching across those institutions.

The average number of hours provides an estimate of the time devoted to learning each skill across all institutions. Caution should be exercised, however, when reviewing these averages, for two reasons. First, respondents say that the actual number of training hours for each skill may vary greatly from year to year, depending on whether their student productions require students to use certain skills. For example, one faculty member indicated that one year there was little training offered to students in setting up and striking scaffolding because none of the student productions required the use of scaffolding; the next year, however, students received considerably more training because setting up and striking scaffolding was required for some of the student productions. Second, some faculty members note the difficulty of quantifying the number of hours dedicated to a certain skill, especially if another faculty member is teaching it.

Figure 16 reveals that some skills are taught by most or all of the 40 colleges and universities, with a substantial number of hours dedicated to covering these skills in the curriculum. These skills include learning about hand and power tools, and setting up and striking stage carpentry and lighting elements.

Other skills, however, are not taught by many of the colleges or universities. Using and interpreting hand signals is only taught at 13 of the 40 colleges and universities, with an average of only seven hours dedicated to covering this skill. Setting up and striking scaffolding is taught at only 22 of 40 institutions, with an average of 24 hours allocated to teaching.

Figure 16 SKILLS COVERED IN CURRICULUM

Skills	Count of institutions offering (of 40)	Average number of hours dedicated to covering skill in curriculum
Operate conventional hand and power tools	40	114 hours
Set up and strike stage carpentry elements	40	97 hours
Set up and strike lighting elements	40	91 hours
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues	39	92 hours
Set up and strike props and wardrobes	39	68 hours
Coil and run cables, wires and ropes	39	59 hours
Interpret technical drawings and documents	38	74 hours
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers	38	46 hours
Comply with laws and procedures such as fire codes, electrical codes and WHMIS	38	33 hours
Practice stage etiquette in a teamwork environment	37	77 hours
Dress and mask production elements	37	61 hours
Perform pre-show and post-show checks and duties	37	60 hours
Work in unconventional environments such as height, confined spaces, or in the dark	36	78 hours
Set up and strike audio-visual equipment	36	66 hours
Communicate ideas effectively in oral and written form	35	116 hours
Maintain and repair production elements and equipment	35	45 hours
Troubleshoot production elements	35	37 hours
Use wardrobe equipment	33	71 hours

Load in and load out production elements	30	63 hours
Operate rigging and fall protection equipment	30	40 hours
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame	27	32 hours
Operate material handling equipment and personnel lifts	25	47 hours
Set up and strike scaffolding	22	24 hours
Use and interpret hand signals	13	7 hours

Note: The average hours are approximations only and may vary from year to year.

Figure 19 through to Figure 25 (below) summarize training offerings for each skill, grouped by region, and broken down within each region by institution.

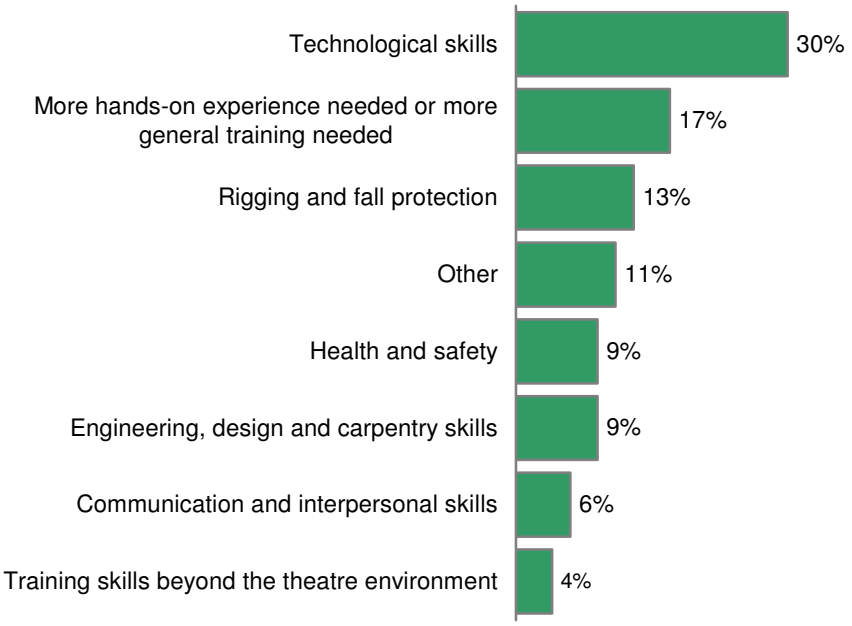
Training gaps

Faculty members were asked what they see as the biggest training gaps for stage technicians now or in the future. As illustrated in Figure 17 below, almost one-third of faculty members (30%) cited keeping up to date with new technology and automation for sound, lighting and in general (for example, specialized high-tech equipment) as the biggest training gap for stage technicians. This echoes results from the employer and employee survey, in which stage technicians and their employers identified setting up and striking lighting (20%) and audio-visual elements (24%) as important skills gaps (see Figure 26 on page 48).

Next to the gap in technological skills training is a need for more hands-on training or more general training overall, cited by 17% of faculty members. Rigging and fall protection is the third biggest training gap, identified by 13% of faculty members. Stage technicians and their employers also ranked rigging and fall protection as an important skills gap (23%, as shown in Figure 26 on page 48).

Figure 17 TRAINING GAPS IDENTIFIED BY INSTITUTIONS IN CURRENT STUDY

What do you see as being the biggest training gaps for stage technicians?

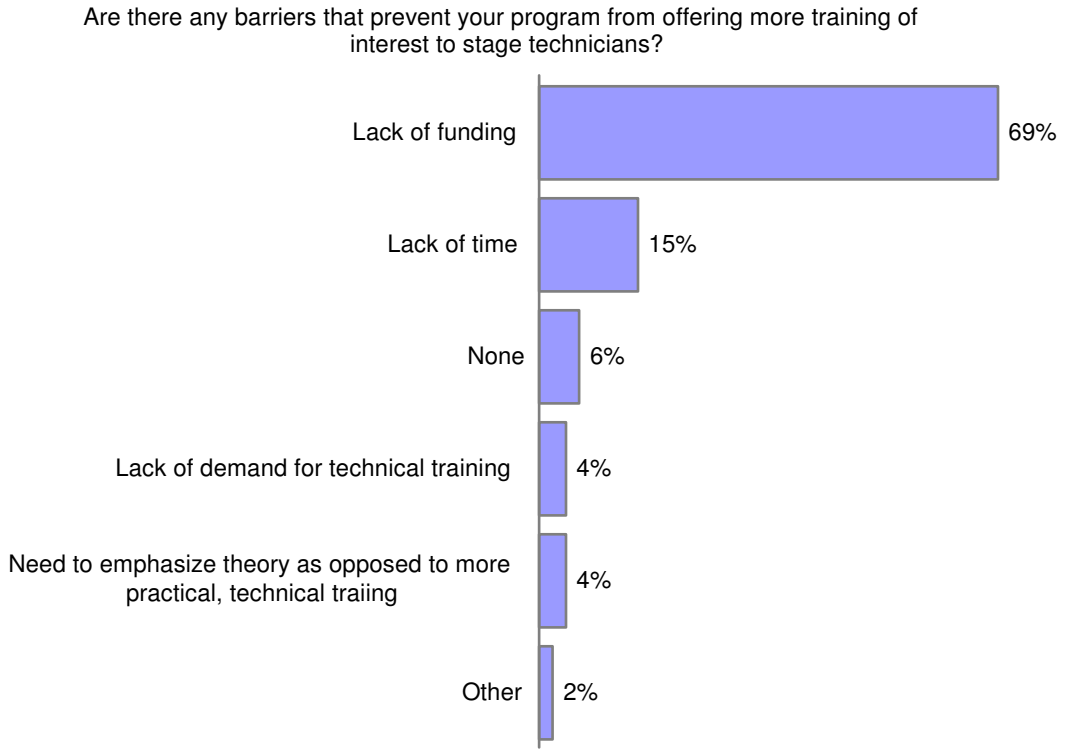


Note: Responses of "don't know/refused" have been excluded.

Training barriers

Faculty members were then asked whether any barriers prevent their program from offering more technical training of interest to stage technicians. Figure 18 reveals that most respondents (69%) say the biggest barrier to offering more training is a lack of funding for staff, physical infrastructure and equipment (especially computerized equipment). A smaller share of faculty members (15%) say lack of time prevents more technical training, which may be related to funding issues as well.

Figure 18 BARRIERS TO OFFERING MORE TECHNICAL TRAINING



Note: Responses of "don't know/refused" have been excluded.

Figure 19 BRITISH COLUMBIA – FORMAL SKILLS TRAINING OFFERED

	Capilano College	Douglas College	Langara College	Malaspina University College	Thompson Rivers University	University College of the Fraser Valley	University of Victoria
Load in and load out production elements	✓	✓		✓	✓	✓	
Interpret technical drawings and documents	✓	✓	✓	✓	✓	✓	✓
Set up and strike scaffolding	✓			✓		✓	✓
Coil and run cables, wires and ropes	✓	✓	✓	✓	✓	✓	✓
Dress and mask production elements	✓	✓	✓	✓	✓	✓	✓
Set up and strike stage carpentry elements	✓	✓	✓	✓	✓	✓	✓
Set up and strike lighting elements	✓	✓	✓	✓	✓	✓	✓
Set up and strike audio-visual equipment	✓	✓	✓	✓	✓	✓	✓
Set up and strike props and wardrobes	✓	✓	✓	✓	✓	✓	✓
Assist in set up and strike special effects		✓	✓	✓		✓	✓
Obtain information on the execution, timing and context of cues	✓	✓	✓	✓	✓	✓	✓
Perform pre-show and post-show checks and duties	✓	✓	✓	✓	✓	✓	✓
Troubleshoot production elements	✓	✓	✓	✓	✓	✓	✓
Maintain and repair production elements and equipment	✓	✓	✓	✓	✓	✓	✓
Operate material handling equipment and personnel lifts	✓	✓		✓		✓	✓
Operate rigging and fall protection equipment	✓	✓		✓		✓	✓
Operate conventional hand and power tools	✓	✓	✓	✓	✓	✓	✓
Use wardrobe equipment		✓	✓	✓	✓	✓	✓

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Use paint equipment	✓	✓	✓	✓	✓	✓	✓
Comply with laws and procedures	✓	✓	✓	✓		✓	✓
Communicate ideas effectively in oral and written form	✓	✓	✓	✓	✓	✓	✓
Use and interpret hand signals		✓					
Practice stage etiquette in a teamwork environment	✓	✓	✓	✓	✓	✓	✓
Work in unconventional environments such as height, confined spaces, or in the dark	✓	✓	✓	✓	✓	✓	✓

Figure 20 ALBERTA - FORMAL SKILLS TRAINING OFFERED

	The Banff Centre	Grant MacEwan College	Keyano College	Mount Royal College	Red Deer College	Rosebud School of the Arts	University of Alberta	University of Lethbridge
Load in and load out production elements	✓	✓		✓	✓	✓	✓	
Interpret technical drawings and documents	✓	✓	✓	✓	✓	✓	✓	✓
Set up and strike scaffolding	✓				✓	✓	✓	
Coil and run cables, wires and ropes	✓	✓	✓	✓	✓	✓	✓	
Dress and mask production elements	✓	✓	✓	✓	✓	✓	✓	✓
Set up and strike stage carpentry elements	✓	✓	✓	✓	✓	✓	✓	✓
Set up and strike lighting elements	✓	✓	✓	✓	✓	✓	✓	✓
Set up and strike audio-visual equipment	✓	✓	✓		✓	✓	✓	✓
Set up and strike props and wardrobes	✓	✓	✓	✓	✓	✓	✓	✓
Assist in set up and strike special effects	✓	✓*			✓	✓	✓	
Obtain information on the execution, timing and context of cues	✓	✓		✓	✓	✓	✓	✓
Perform pre-show and post-show checks and duties	✓			✓	✓	✓	✓	✓
Troubleshoot production elements	✓	✓		✓	✓	✓	✓	
Maintain and repair production elements and equipment	✓	✓		✓	✓	✓	✓	
Operate material handling equipment and personnel lifts	✓			✓	✓		✓	✓
Operate rigging and fall protection equipment	✓	✓		✓	✓		✓	✓**
Operate conventional hand and power tools	✓	✓	✓	✓	✓	✓	✓	✓
Use wardrobe equipment	✓			✓		✓	✓	✓

Does not offer pyrotechnic training.** * Does not offer fall arrest / protection training.**

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Use paint equipment	✓	✓	✓	✓	✓	✓	✓	✓
Comply with laws and procedures	✓	✓	✓	✓	✓	✓	✓	✓
Communicate ideas effectively in oral and written form	✓		✓	✓	✓	✓	✓	
Use and interpret hand signals	✓	✓					✓	
Practice stage etiquette in a teamwork environment	✓		✓	✓	✓	✓	✓	
Work in unconventional environments such as height, confined spaces, or in the dark	✓	✓	✓	✓	✓	✓	✓	✓

Figure 21 PRAIRIE REGION – FORMAL SKILLS TRAINING OFFERED

	University of Manitoba	University of Winnipeg	University of Regina	University of Saskatchewan
Load in and load out production elements	✓	✓	✓	
Interpret technical drawings and documents		✓	✓	✓
Set up and strike scaffolding		✓		✓
Coil and run cables, wires and ropes	✓	✓	✓	✓
Dress and mask production elements		✓	✓	
Set up and strike stage carpentry elements	✓	✓	✓	✓
Set up and strike lighting elements	✓	✓	✓	✓
Set up and strike audio-visual equipment		✓	✓	✓
Set up and strike props and wardrobes	✓	✓	✓	✓
Assist in set up and strike special effects		✓		
Obtain information on the execution, timing and context of cues	✓	✓	✓	✓
Perform pre-show and post-show checks and duties	✓	✓	✓	✓
Troubleshoot production elements	✓	✓	✓	✓
Maintain and repair production elements and equipment	✓	✓	✓	✓
Operate material handling equipment and personnel lifts		✓	✓	
Operate rigging and fall protection equipment			✓	✓
Operate conventional hand and power tools	✓	✓	✓	✓
Use wardrobe equipment		✓	✓	✓
Use paint equipment	✓	✓	✓	✓
Comply with laws and procedures	✓	✓	✓	
Communicate ideas effectively in oral and written form	✓	✓	✓	✓
Use and interpret hand signals		✓	✓	
Practice stage etiquette in a teamwork environment	✓	✓	✓	✓
Work in unconventional environments such as height, confined spaces, or in the dark			✓	✓

Figure 22 ONTARIO – FORMAL SKILLS TRAINING OFFERED (1 OF 2)

	Cambrian College of Applied Arts and Technology	Fanshawe College	Humber College Institute of Technology and Advanced Learning	Queen's University	Ryerson University	Sheridan College Institute of Technology and Advanced Learning	University of Guelph	University of Ottawa
Load in and load out production elements	✓	✓	✓	✓	✓	✓		✓
Interpret technical drawings and documents	✓	✓	✓	✓	✓	✓	✓	✓
Set up and strike scaffolding	✓	✓	✓	✓	✓	✓		✓
Coil and run cables, wires and ropes	✓	✓	✓	✓	✓	✓	✓	✓
Dress and mask production elements	✓	✓	✓	✓	✓	✓	✓	✓
Set up and strike stage carpentry elements	✓	✓	✓	✓	✓	✓	✓	✓
Set up and strike lighting elements	✓	✓	✓	✓	✓	✓	✓	✓
Set up and strike audio-visual equipment	✓	✓	✓	✓	✓	✓	✓	✓
Set up and strike props and wardrobes	✓	✓	✓	✓	✓	✓	✓	✓
Assist in set up and strike special effects	✓	✓	✓	✓	✓	✓	✓	✓
Obtain information on the execution, timing and context of cues	✓	✓	✓	✓	✓	✓	✓	✓
Perform pre-show and post-show checks and duties	✓	✓	✓	✓	✓	✓	✓	✓
Troubleshoot production elements	✓	✓	✓	✓	✓	✓	✓	✓
Maintain and repair production elements and equipment	✓	✓	✓	✓	✓	✓	✓	✓
Operate material handling equipment and personnel lifts	✓		✓		✓	✓		
Operate rigging and fall protection equipment	✓	✓	✓	✓	✓	✓		✓

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Operate conventional hand and power tools	✓	✓	✓	✓	✓	✓	✓	✓
Use wardrobe equipment	✓	✓	✓	✓	✓	✓	✓	✓
Use paint equipment	✓	✓	✓	✓	✓	✓		✓
Comply with laws and procedures	✓	✓	✓	✓	✓	✓	✓	✓
Communicate ideas effectively in oral and written form	✓	✓	✓	✓	✓	✓	✓	✓
Use and interpret hand signals	✓		✓		✓	✓		✓
Practice stage etiquette in a teamwork environment	✓	✓	✓	✓	✓	✓	✓	✓
Work in unconventional environments such as height, confined spaces, or in the dark	✓	✓	✓	✓	✓	✓	✓	✓

Figure 23 ONTARIO – FORMAL SKILLS TRAINING OFFERED (2 OF 2)

	University of Waterloo	University of Windsor	York University
Load in and load out production elements	✓	✓	✓
Interpret technical drawings and documents	✓	✓	✓
Set up and strike scaffolding	✓		
Coil and run cables, wires and ropes	✓	✓	✓
Dress and mask production elements	✓	✓	✓
Set up and strike stage carpentry elements	✓	✓	✓
Set up and strike lighting elements	✓	✓	✓
Set up and strike audio-visual equipment	✓		✓
Set up and strike props and wardrobes	✓	✓	✓
Assist in set up and strike special effects	✓		✓
Obtain information on the execution, timing and context of cues	✓	✓	✓
Perform pre-show and post-show checks and duties	✓	✓	✓
Troubleshoot production elements	✓	✓	✓
Maintain and repair production elements and equipment	✓	✓	✓
Operate material handling equipment and personnel lifts		✓	✓
Operate rigging and fall protection equipment	✓	✓	✓
Operate conventional hand and power tools	✓	✓	✓
Use wardrobe equipment	✓	✓	✓
Use paint equipment	✓	✓	✓
Comply with laws and procedures	✓	✓	✓
Communicate ideas effectively in oral and written form	✓	✓	✓
Use and interpret hand signals		✓	
Practice stage etiquette in a teamwork environment	✓	✓	✓
Work in unconventional environments such as height, confined spaces, or in the dark	✓	✓	✓

Figure 24 QUEBEC - FORMAL SKILLS TRAINING OFFERED

	Bishop's University	College Lionel-Groulx	John Abbott College	McGill University	National Theatre School
Load in and load out production elements	✓			✓	✓
Interpret technical drawings and documents	✓	✓	✓	✓	✓
Set up and strike scaffolding	✓				✓
Coil and run cables, wires and ropes	✓	✓	✓	✓	✓
Dress and mask production elements	✓	✓	✓	✓	✓
Set up and strike stage carpentry elements	✓	✓	✓	✓	✓
Set up and strike lighting elements	✓	✓	✓	✓	✓
Set up and strike audio-visual equipment	✓	✓	✓	✓	✓
Set up and strike props and wardrobes	✓	✓	✓	✓	✓
Assist in set up and strike special effects	✓	✓		✓	✓
Obtain information on the execution, timing and context of cues	✓	✓	✓	✓	✓
Perform pre-show and post-show checks and duties	✓	✓	✓	✓	✓
Troubleshoot production elements	✓	✓	✓	✓	✓
Maintain and repair production elements and equipment	✓	✓	✓	✓	✓
Operate material handling equipment and personnel lifts	✓			✓	✓
Operate rigging and fall protection equipment	✓		✓		✓*
Operate conventional hand and power tools	✓	✓	✓	✓	✓
Use wardrobe equipment	✓	✓	✓	✓	✓
Use paint equipment	✓	✓	✓	✓	✓
Comply with laws and procedures	✓	✓	✓	✓	✓
Communicate ideas effectively in oral and written form		✓	✓	✓	
Use and interpret hand signals					✓
Practice stage etiquette in a teamwork environment	✓	✓	✓	✓	
Work in unconventional environments such as height, confined spaces, or in the dark	✓	✓	✓	✓	

*** Does not offer fall arrest training.**

Figure 25 ATLANTIC REGION - FORMAL SKILLS TRAINING OFFERED

	Cape Breton University	Dalhousie University	University of Prince Edward Island	Sir Wilfred Grenfell College	University of New Brunswick
Load in and load out production elements	✓		✓		✓
Interpret technical drawings and documents	✓	✓		✓	✓
Set up and strike scaffolding	✓			✓	
Coil and run cables, wires and ropes	✓	✓	✓	✓	✓
Dress and mask production elements	✓	✓		✓	✓
Set up and strike stage carpentry elements	✓	✓	✓	✓	✓
Set up and strike lighting elements	✓	✓	✓	✓	✓
Set up and strike audio-visual equipment	✓	✓		✓	✓
Set up and strike props and wardrobes	✓		✓	✓	✓
Assist in set up and strike special effects				✓	✓
Obtain information on the execution, timing and context of cues	✓	✓	✓	✓	✓
Perform pre-show and post-show checks and duties	✓	✓		✓	✓
Troubleshoot production elements	✓				✓
Maintain and repair production elements and equipment	✓				✓
Operate material handling equipment and personnel lifts	✓	✓		✓	✓
Operate rigging and fall protection equipment	✓	✓		✓	✓
Operate conventional hand and power tools	✓	✓	✓	✓	✓
Use wardrobe equipment	✓		✓	✓	

Continued from previous page

Use paint equipment	✓	✓		✓	✓
Comply with laws and procedures	✓	✓	✓	✓	✓
Communicate ideas effectively in oral and written form	✓	✓		✓	✓
Use and interpret hand signals					
Practice stage etiquette in a teamwork environment	✓	✓	✓	✓	✓
Work in unconventional environments such as height, confined spaces, or in the dark	✓	✓		✓	✓

Training gaps analysis

Training gaps were analyzed, based on the training needs expressed by stage technicians and those who employ them. Figure 26, below, shows the skills gap, which is the percentage who say a specific skill is *needed* (required and still to be acquired). Expectations as to where that skill will be acquired are shown in the three right-most columns.

For every skill assessed, at least two-thirds of respondents (66%) cited on-the-job training as a means by which they expect skills to be acquired. The overall finding is that on-the-job training is important for the development of all skills for stage technicians.

The role of formal training also appears to be quite important for some skills and not important for others. Formal training is most commonly expected for interpreting technical drawings and documents (91%), operating rigging and fall protection equipment (86%), and coiling and running cables, wires and ropes (80%). Conversely, formal training is least commonly expected for learning to communicate ideas (50%), troubleshooting production elements (50%) and operating material handling equipment and personnel lifts (53%).

Self-training also appears to be extremely important for some skills and not important for others. It is most commonly expected for dressing and masking production elements (92%) and communicating ideas (89%), and least commonly expected for safety-related skills such as operating rigging and fall protection equipment (41%), and assisting with special effects (52%).

Figure 26 SKILLS GAPS AND PERCEPTION OF HOW GAPS WILL BE FILLED

Skills	Skills gap	Expectation of how skills gap will be filled		
		On the job	Self-taught	Formal training
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame	26%	68%	52%	72%
Set up and strike audio-visual equipment	24%	82%	61%	73%
Operate rigging and fall protection equipment	23%	66%	41%	86%
Use wardrobe equipment	21%	77%	63%	68%
Set up and strike lighting elements	20%	78%	63%	74%
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers	17%	74%	53%	79%
Interpret technical drawings and documents	16%	71%	57%	91%
Operate material handling equipment and personnel lifts	16%	84%	58%	53%
Use and interpret hand signals	16%	92%	67%	58%
Set up and strike stage carpentry elements	15%	80%	65%	55%
Set up and strike props and wardrobes	15%	100%	71%	71%
Practice stage etiquette in a teamwork environment	14%	80%	55%	65%
Maintain and repair production elements and equipment	14%	80%	60%	65%
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System.	13%	75%	56%	75%
Communicate ideas effectively in oral and written form	13%	83%	89%	67%
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues	13%	94%	77%	77%
Troubleshoot production elements	13%	100%	61%	50%
Set up and strike scaffolding	12%	100%	64%	50%
Work in unconventional environments such as height, confined spaces, or in the dark	12%	83%	67%	67%
Coil and run cables, wires and ropes	11%	87%	80%	80%
Perform pre-show and post-show checks and duties	11%	93%	87%	60%
Operate conventional hand and power tools	11%	81%	75%	63%
Load in and load out production elements	10%	94%	65%	65%
Dress and mask production elements	9%	92%	92%	77%

Note: Percentages shown under "Expectation of how skills gap will be filled" are derivations of the percentage shown under "Skills gap" (i.e., those identifying the skill as one that they need). The three right-hand column percentages, when summed across the row, may exceed 100% because multiple responses were accepted.

Figure 27 below shows, for each skill, the skills gap and the percentage of those expecting the gap to be addressed through formal training (the same data shown in Figure 26 above); and also shows, for each skill, the number of educational institutions providing training or programs to meet that training need (out of a total of 40). Comparing skills gap percentages and formal training expectations with the prevalence of formal training for each skill allows us to assess whether educational institutions are offering the formal training needed to fill skills gaps.

Most skills measured in this study are taught by a large majority of the 40 institutions interviewed, with several exceptions: only 13 institutions cover using and interpreting hand signals, 22 deal with scaffolding skills, 25 teach the use of material handling equipment and personnel lifts, and 27 teach handling special effects. Assisting in the set up and strike of special effects is the largest training gap of all the 24 skills measured in this study, but only 27 (or 68%) of institutions offer formal training in this area. Since 72% of stage technicians and their employers say they prefer formal training to close this skills gap, more formal training offerings should perhaps be considered.

Figure 27 ANALYSIS: SKILLS GAPS, TRAINING WANTED, INSTITUTIONAL OFFERINGS

Skills	Skills gap	Address through formal training?	Count of institutions offering (of 40)
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame	26%	72%	27
Set up and strike audio-visual equipment	24%	73%	36
Operate rigging and fall protection equipment	23%	86%	30
Use wardrobe equipment	21%	68%	33
Set up and strike lighting elements	20%	74%	40
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers	17%	79%	38
Interpret technical drawings and documents	16%	91%	38
Operate material handling equipment and personnel lifts	16%	53%	25
Use and interpret hand signals	16%	58%	13
Set up and strike stage carpentry elements	15%	55%	40
Set up and strike props and wardrobes	15%	71%	39
Practice stage etiquette in a teamwork environment	14%	65%	37
Maintain and repair production elements and equipment	14%	65%	35
Comply with laws and procedures such as fire codes, electrical codes and WHMIS	13%	75%	38
Communicate ideas effectively in oral and written form	13%	67%	35
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues	13%	77%	39
Troubleshoot production elements	13%	50%	35
Set up and strike scaffolding	12%	50%	22
Work in unconventional environments such as height, confined spaces, or in the dark	12%	67%	36
Coil and run cables, wires and ropes	11%	80%	39
Perform pre-show and post-show checks and duties	11%	60%	37
Operate conventional hand and power tools	11%	63%	40
Load in and load out production elements	10%	65%	30
Dress and mask production elements	9%	77%	37

Note: Percentages shown under "Formal training" are derivations of the percentage shown under "Skills gap".

Training gaps: skill by skill

Below, each of the 24 skills measured in this study are discussed covering the following points in sequence:

- The size of the skills gap;
- The percentage of respondents who say the skill is required to perform the job of a stage technician;
- How stage technicians and their employers expect a given gap to be addressed (for example, on-the-job training, formal training or self-teaching);
- The number of colleges and universities that offer training for each skill. A total of 40 interviews were conducted with colleges and universities (see Figure 19 through to Figure 25 on pages 36-45 for a summary of colleges and universities that offer training for each skill). Readers should note once again, that evaluating the quality and type of education (e.g. practically-oriented vs. theoretically-based) is beyond the scope of this training gaps analysis. Therefore, some of these training offerings may be based more on theory than practical, hands-on learning;
- The percentage of employer-employee respondents who attended a conference or workshop in the past year offering professional development in a skill (if applicable); and
- The percentage of all respondents (employers, employees, and faculty members, if any) who considered this to be the "biggest training gap."

Assist in set up and strike special effects

The skills gap regarding the ability to assist in set up and strike special effects (for example, atmospheric, mechanical live sound, pyrotechnic, or fire and flame) is 26%, the largest for any skill measured in this survey. Most stage technicians and their employers (81%) say this skill is required to perform the job of a stage technician.

Nearly three-quarters of respondents (72%) say this skills gap should be addressed through formal training, and more than two-thirds (68%) think it should be met through on-the-job training. Only 52% say it should be met through self-teaching.

Only 27 colleges and universities offer training in special effects, and regional differences are apparent. More training opportunities for special effects specific to stage technicians are available in the West (B.C. and Alberta) and Central Canada (Ontario and Québec). Only one institution in the Prairie region and two institutions in the Atlantic region offer formal training for this skill. This concentration of formal training opportunities means that stage technicians in the Prairies and the Maritimes do not have the same access to formal training.

Seven percent of those who attended a conference or workshop mentioned they received training regarding special effects. When asked what is the "biggest training gap," 3% of stage technicians and their employers say pyrotechnic skills are at the top of their list.

Set up and strike audio-visual equipment

The skills gap regarding the ability to set up and strike audio-visual equipment is 24%, the second largest gap of the 24 skills measured in this study. A large proportion of stage technicians and their employers (93%) say this skill is required to carry out the duties of a stage technician.

Seventy-three percent indicate formal training as their preferred route to address this skills gap, compared to 82% who prefer on-the-job training and 61% who prefer self-teaching. Most colleges and universities (36 out of 40) offer training for this particular skill, and no regional differences are evident.

Seventeen percent of those who attended a conference or workshop mentioned they received training regarding audio-visual equipment.

Almost one-third (30%) of college and university respondents say the "biggest training gap" involves keeping up with technology related to sound, lighting, and in general. Likewise, 16% of stage technicians and their employers say keeping up to date with technology in general and as it relates to audio-visual technology is the "biggest training gap." Another 4% say that general audio, lighting and design skills constitute their "biggest training gap."

Operate rigging and fall protection equipment

The skills gap in ability to operate rigging and fall protection equipment is 23%, the third largest in this study. According to 85% of stage technicians and their employers, this skill is essential to perform the job of a stage technician.

Eighty-six percent say formal training would address their training needs, compared to 66% who prefer on-the-job training and 41% who prefer self-teaching. Although formal training is viewed as an important method of closing this skills gap, only 30 (out of 40) institutions offer such training, with no training provided for it in Manitoba and Prince Edward Island. Also, although three of the five institutions in Québec offer training in this area, some faculty members indicate there is little or no fall arrest training.

Almost one-third (29%) of those who attended a conference or workshop in the past year received training related to rigging and fall protection. This suggests that, with some awareness of the skills gap, some are seeking to close it through less formal training offered at professional development events.

When asked what they see as the "biggest training gaps," 13% of faculty members and 5% of stage technicians and their employers say the operation of rigging and fall protection equipment tops their list of training gaps.

Use wardrobe equipment

Although the gap for this skill is substantial (21%), only 60% of stage technicians and their employers say this skill is required to carry out the duties of a stage technician. This suggests that for some stage technicians the skill is not essential, but for others it is one important to acquire – hence the existence of the skills gap.

Seventy-seven percent expect to acquire this skill through on-the-job training, 68% through formal training and 63% through self-teaching. Thirty-three colleges and universities offer training for this skill, with no noteworthy regional differences. As such, on-the-job training or more informal training may need to be considered to close this skills gap.

Set up and strike lighting elements

The fifth largest skills gap concerns the ability to set up and strike lighting elements (20%). A very large proportion of stage technicians and their employers (95%) say this skill is required of stage technicians.

Seventy-eight percent prefer on-the-job training to address this skills gap, 74% prefer formal training, and 63% prefer self-teaching. All 40 colleges and universities interviewed for this study provide training for this skill, and 17% of stage technicians and their employers who attended a conference or workshop in the past year learned about lighting elements. This suggests that stage technicians are seeking informal methods to close this skills gap.

Almost one-third (30%) of faculty members say the "biggest training gap" involves keeping up with technology related to sound, lighting, and in general. Similarly, 16% of stage technicians and their employers cite keeping up to date with technology (for example, learning about developments in lighting technology as they happen), and 4% specifically cite general audio, lighting and design skills, as their "biggest training gap".

Use paint equipment

The sixth largest skills gap (17%) involves using paint equipment such as adhesives, fillers, paints, solvents and sprayers; nearly four-fifths of stage technicians and their employers (79%) say this skill is required of stage technicians.

Seventy-nine percent believe that formal training should address this skills gap, and 74% expect training to take place on-the-job. Of the 40 colleges and universities interviewed, all but two offer training for this skill.

Interpret technical drawings and documents

A 16% skills gap (mid-range for this study) exists in connection with interpreting technical drawings and documents. This becomes more important when considering that 93% of stage technicians and their employers say this skill is required to perform a stage technician's job.

Ninety-one percent of stage technicians and their employers say that formal training is the way to acquire this skill. Thirty-eight colleges and universities offer such training, with no noteworthy regional differences.

Operate material handling equipment and personnel lifts

A skills gap of 16% also exists in connection with the ability to operate material handling equipment and personnel lifts. Over three-quarters of stage technicians and their employers (78%) say this skill is required to perform a stage technician's job.

Most respondents (84%) feel this training need should be addressed through on-the-job training. This compares to just 58% who feel it should be addressed through self-teaching, and 52% who feel it should be met through formal training.

Only 25 out of 40 colleges and universities offer training in the operation of material handling equipment and personnel lifts. Although fewer institutions provide training in this skill than do so for most other skills, training is available in all regions across Canada.

Three percent of those who attended a conference or workshop mentioned they received training on the operation of material handling equipment and personnel lifts.

Use and interpret hand signals

Another middling 16% skills gap exists in connection with stage technicians' ability to use and interpret hand signals. However, this skill is least frequently cited as essential to the job of stage technician by stage techs and their employers (53%).

Most respondents (92%) say the need for training in this skill should be met through on-the-job training. About two-thirds (67%) think it should be addressed through self-teaching, and 58% say it should be handled through formal training.

Only 13 colleges and universities offer training in using and interpreting hand signals, making it the skill for which formal training is least available. Regional differences in availability are evident: more institutions offer training in B.C. and Ontario, and fewer in Alberta, the Prairie Region, and Quebec. None of the institutions interviewed in the Atlantic Region offer training for this skill.

Set up and strike stage carpentry elements

The skills gap in connection with stage technicians' ability to set up and strike stage carpentry elements is a mid-range 15%, but most stage techs and their employers (91%) say this skill is essential to perform the job.

Four-fifths of respondents (80%) say this training need should be handled on-the-job, compared to 65% who think it should be met through self-teaching, and 55% who think it should be addressed through formal training.

All 40 institutions interviewed offer training in setting up and striking stage carpentry elements, making formal training opportunities for this skill widely available across Canada.

Set up and strike props and wardrobes

Another mid-range skills gap of 15% exists for stage technicians in connection with their ability to set up and strike props and wardrobes. Most stage techs and their employers (79%) say this skill is required to perform the job, although this is a relatively low proportion compared to other skills assessed.

All respondents (100%) expect this training need could be addressed through on-the-job training. A sizable proportion (71%) feels equally that it should be met through either self-teaching or formal training.

All but one of the institutions interviewed offer training in setting up and striking props and wardrobes, making formal training opportunities for this skill widely available across Canada.

Practice stage etiquette in a teamwork environment

A 14% skills gap is evident in relation to the ability to practice stage etiquette in a teamwork environment. The gap is mid-range for this study, but the skill itself is considered by virtually all stage techs and their employers (99%) to be essential to do a stage technician's job.

Most respondents (80%) say this training need should be met through on-the-job training, compared to 65% who think it should be handled through formal training, and 55% who feel it should be met through self-teaching.

Most of the institutions interviewed (37) provide training in the ability to practice stage etiquette, making formal training opportunities for this skill fairly widely available across Canada.

Only 1% of those who attended a conference or workshop say they received training in practising stage etiquette in a teamwork environment.

Maintain and repair production elements and equipment

Another mid-range skills gap of 14% appears in relation to the ability to maintain and repair production elements and equipment. A large proportion of stage techs and their employers (94%) say this skill is needed to perform a stage technician's job.

Most respondents (80%) say this training need should be met through on-the-job training, compared to 65% who think it should be handled through formal training, and 60% who feel it should be addressed through self-teaching.

Thirty-eight colleges and universities offer such training, with no notable regional differences.

Obtain information on the execution, timing, and context of cues, record notes for cue sheets, and execute cues

A 13% skills gap (also mid-range for this study) appears in connection with the ability to obtain information on the execution, timing, and context of cues, record notes for cue sheets, and execute cues. Most stage techs and their employers (91%) say this skill is required to do a stage technician's job.

Most respondents (94%) feel this training need should be met through on-the-job training. More than three-quarters (77%) feel equally that it should be handled through either self-teaching or formal training.

All but one of the institutions interviewed offer training in this skill, making such formal training opportunities widely available across Canada.

Troubleshoot production elements

At 13%, this skills gap is moderate in comparison to others in this study. Most stage techs and their employers (93%) say the ability to troubleshoot production elements is essential in a stage technician's job.

All respondents (100%) say this training need can be met on the job, compared to 61% who say it should be met through self-teaching, and only 50% who say it should be handled through formal training.

Most institutions interviewed (35 out of 40) offer training in troubleshooting production elements. Fewer training opportunities are available in the Atlantic Region, only two of the five institutions offering such training there.

Comply with laws and procedures

Thirteen percent of stage technicians lack know how in complying with laws and procedures such as fire codes, electrical codes and WHMIS. Most stage technicians and their employers (84%) say this skill is required to do the job of a stage technician.

Equal proportions of respondents (75% each) feel this training need should be addressed through on-the-job training and formal training, and only 56% feel it should be met through self-teaching.

Of the institutions interviewed, 38 offer training in complying with laws and procedures such as fire codes, electrical codes and WHMIS. Seven percent of those who attended a conference or workshop mentioned they received training on complying with these sorts of laws and procedures.

When asked what they see as the "biggest training gap," 9% of college and university respondents refer to health and safety issues.

Communicate ideas effectively in oral and written form

Another mid-range (13%) skills gap also appears in relation to the ability to communicate ideas effectively in oral and written form. Most stage techs and their employers (95%) say this ability is essential to do a stage technician's job.

Most respondents (89%) expect this skill to be learned through self-teaching, 83% expect it to be learned on the job, and 67% expect it to be acquired through formal training.

Most institutions interviewed (35 out of 40) offer training in communicating ideas effectively with no obvious regional differences in availability.

Four percent of those who attended a conference or workshop mentioned they received training pertaining to communication.

When asked what they see as the "biggest training gap", 12% of responses given by stage technicians and their employers refer to communication, teamwork, or interpersonal skills, and 6% of college and university faculty responses refer to communication and interpersonal skills.

Set up and strike scaffolding

A 12% skills gap appears in relation to the ability to set up and strike scaffolding. More than three-quarters of stage technicians and their employers (77%) say this skill is needed to do a stage technician's job.

All respondents (100%) who need it expect this training will be obtained on the job, and 64% further expect the skill could be self-taught. Half of those who indicate they need to acquire the skill expect it to happen through formal training.

Only 25 out of 40 colleges and universities train students in setting up and striking scaffolding. Formal training for this skill is available in all regions, but only two institutions each in Quebec and Atlantic Canada offer such training.

Work in unconventional environments

A 12% skills gap also appears in relation to the ability to work in unconventional environments (for example, height, confined spaces, or the dark). A great many stage techs and their employers (97%) say this skill is needed to do a stage technician's job.

Of those who lack this skill, 83% believe the gap should be filled through on-the-job training, and 67% feel equally that it can be addressed through self-teaching and formal training.

Some 36 out of 40 institutions interviewed train students to work in unconventional environments. The Prairie region offers limited opportunities for formal training in this skill, since no institutions in Manitoba offer it.

Just 1% of those who attended a conference or workshop mentioned they received training that pertained to working in unconventional environments.

Perform pre-show and post-show checks and duties

The gap for this skill is relatively low, at 11%, but a large proportion of stage techs and their employers (94%) say this skill is essential for stage technicians to do their job.

Most respondents (93%) who need it say their lack should be handled through on-the-job training, and 87% say it should be met through self-teaching. Only 60% prefer to address it through formal training.

Most institutions (37 out of 40) offer formal training in performing pre-show and post-show checks and duties. This type of training is not available at two Alberta institutions and one Atlantic region institution.

Operate conventional hand and power tools

Compared to other skills gaps (ranging from 9% to 26%), the gap reported in relation to the ability to operate conventional hand and power tools is fairly modest (11%). Faculty members reinforce this finding (9%). However, a large percentage of stage technicians and employers (97%) say this skill is required for stage technicians to do their job.

A majority of respondents (81%) expect the gap to be addressed through on-the-job training, 75% prefer self-teaching, and 63% say it should be remedied through formal training.

All 40 institutions interviewed offer training in the operation of conventional hand and power tools, meaning that formal training in this skill is widely available across Canada.

Coil and run cables, wires and ropes

A similar skills gap of 11% is apparent in connection with the ability to coil and run cables, wires and ropes. Again, a large majority of stage technicians and their employers (96%) say this skill is required to do a stage technician's job.

Most respondents (87%) who need this skill expect that training on the job will suffice, but almost as many (80% each) would prefer to handle it through self-teaching and formal training.

All but one of the institutions interviewed (39) train students in coiling and running cables, wires and ropes, making formal training for this skill widely available across Canada.

Load in and load out production elements

A modest skills gap of 10% is apparent in connection with the ability to load in and load out production elements. A large proportion of stage technicians and their employers (97%) say this skill is required to do a stage technician's job.

Most respondents (94%) expect the gap to be addressed through on-the-job training, compared to 65% who equally expect it to be handled through self teaching and formal training.

Training in this skill is available at 30 out of 40 institutions interviewed, with no noteworthy regional differences.

Dress and mask production elements

The smallest skill gap appears in relation to dressing and masking production elements (9%). Again, a large proportion of stage technicians and their employers (95%) say this skill is required to do a stage technician's job.

Most respondents (92%) who need it expect to acquire this skill either on the job or through self-teaching, and 77% expect to do so through formal training.

Most institutions (37 out of 40) offer formal training in dressing and masking production elements. Only two of four Prairie institutions offer formal training in this skill, however, which creates some regional disparity.

Respondent profile

Rather than relying upon occupational titles to define stage technicians, this training gaps analysis uses a functional definition of stage technicians. For employees, the definition used was worded as follows:

- *Are you someone who works as a stage technician, also commonly known as stage hands, for your organization, that is, someone whose primary tasks are to load in, set up, run, strike, and load out the production elements for live entertainment productions?*

For employers, the definition was worded as:

- *Are you someone who is involved with the training, hiring, or supervision of stage technicians, also commonly known as stage hands, for your organization, that is, the personnel whose task it is to load in, set up, run, strike, and load out the production elements for live entertainment productions?*

This section is a profile of the respondents who participated in this research study, and should not be considered a "count" of stage technician populations or subsets

Respondent profile: province of origin

Figure 28, below, shows the province-by-province distribution of respondents who participated in the survey. Stage technicians from all ten provinces, plus the Yukon and Northwest Territories, were interviewed. Almost one-third of survey respondents (32%) are in Ontario, and an additional one-third are from British Columbia (19%) and Alberta (15%).

Figure 28 RESPONDENT PROFILE: DISTRIBUTION BY PROVINCE

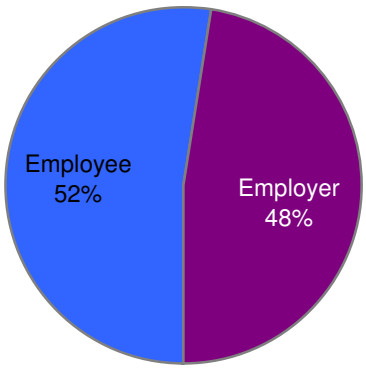
Province	%
Ontario	32%
British Columbia	19%
Alberta	15%
Quebec	12%
Saskatchewan / Territories	7%
New Brunswick	5%
Manitoba	5%
Nova Scotia	4%
Prince Edward Island / Newfoundland	1%

Note: Percentages may not total 100% exactly due to rounding.

Respondent profile: employer / employee status

Respondents indicated whether they were a stage technician employee, or an employer of stage technicians (see Figure 29). Distribution was fairly even, with just under half (48%) of respondents identifying as employers, and slightly over half (52%) as an employee.

Figure 29 RESPONDENT PROFILE: RESPONDENTS BY SECTOR



Respondent profile: production classification

Employees and employers provided data on the type of productions with which they are involved (see Figure 30). Most respondents (89%) are involved in live theatre or musicals. The next-largest cohorts are employed in dance (42%) and in other productions (33%).

Figure 30 RESPONDENT PROFILE: TYPE OF PRODUCTION

Production	%
Live theatre or musical	89%
Dance	42%
Other	33%
Rock / Pop / other music concerts	30%
Opera	26%
Film / television	20%
Circus	4%

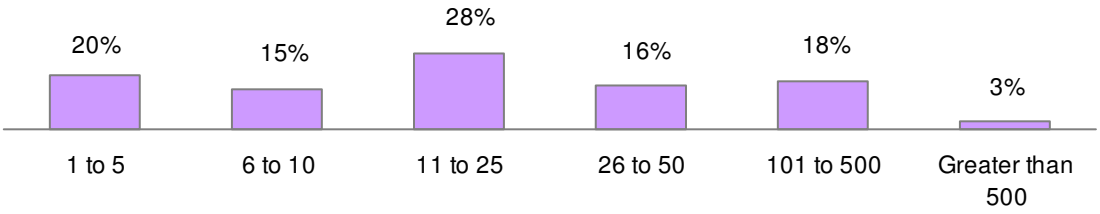
Note: Percentages exceed 100% because multiple responses were accepted.

Respondent profile: company size

kisquared asked employers to report how many employees on average have worked in their company in the past year. As shown in Figure 31 below, the largest cohort of employers (28%) are companies employing 11 to 25 workers; another 20% are companies with 1 to 5 employees.

Overall, the average number of employees per company is 124. The median (middle-most) is 15 employees.

Figure 31 RESPONDENT PROFILE: NUMBER EMPLOYED PER COMPANY

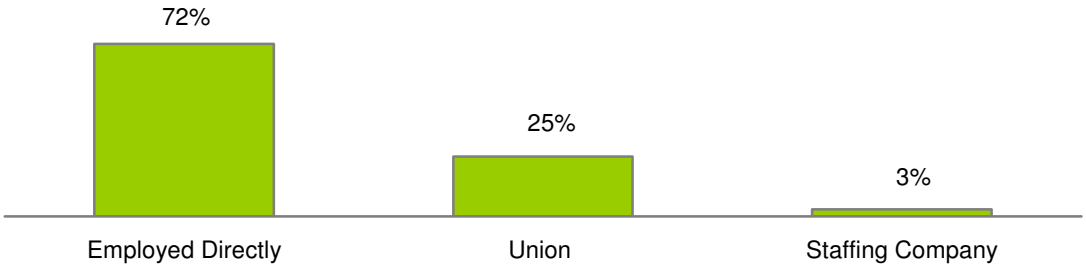


Respondent profile: hiring procedures

Employers

Employers were asked to indicate whether they hired staff through external agencies or whether they employed directly. Most report that they hire stage technicians directly (72%), a smaller percentage hiring through the union (25%) or staffing companies (3%).

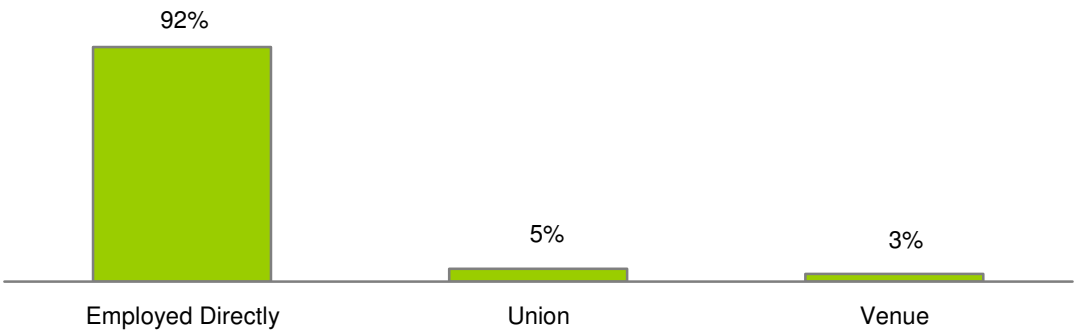
Figure 32 RESPONDENT PROFILE: EMPLOYMENT HIRING RESOURCES



Stage technicians

Most stage technicians in this study report being hired directly by the employer (92%) while a small percentage of stage technicians say they are hired through a union (5%) or venue (3%). These figures are generated from the responses of stage technicians who participated in this survey and may not necessarily reflect the industry overall.

Figure 33 RESPONDENT PROFILE: EMPLOYMENT HIRING RESOURCES



Respondent profile: employment status

Based on their previous answers, employer respondents were then asked about the primary employment status of their company's stage technicians – permanent full-time, permanent part-time, seasonal returning, contract-by-contract, show-by-show, on-call, on tour, or some other arrangement.

The functional definition of stage technicians used in this research study captures a broader range of qualified respondents than job titles alone would. Thus, employers were asked about the employment status of those employees who *perform the role* of a stage technician – also commonly known as a stage hand, that is, someone whose primary tasks are to load in, set up, run, strike, and load out the production elements for live entertainment productions. Results appear in Figure 33.

Almost half of employers (48%) reported contract-by-contract or show-by-show employment for stage technicians. A smaller percentage is hired as permanent part-time (20%) or seasonal employees (11%), and fewer still have permanent full-time (7%), on-call (9%), or other (6%) positions.

Figure 34 RESPONDENT PROFILE: TERMS OF EMPLOYMENT FROM STAGE TECHNICIAN EMPLOYERS

Employment	%
On a contract-by-contract basis	48%
Permanent part-time	20%
Seasonal returning	11%
On-call	9%
Permanent full-time	7%
Other	6%

Note: Percentages may not total 100% exactly due to rounding.

Stage technician employees were also asked to describe their employment status – whether permanent full-time, permanent part-time, seasonal returning, on a contract-by-contract basis, show-by-show, on-call, on tour, or some other arrangement.

Most stage technician respondents, nearly three out of every four, report being employed in permanent full-time positions. Of the rest, 12% are employed on a contract-by-contract basis.

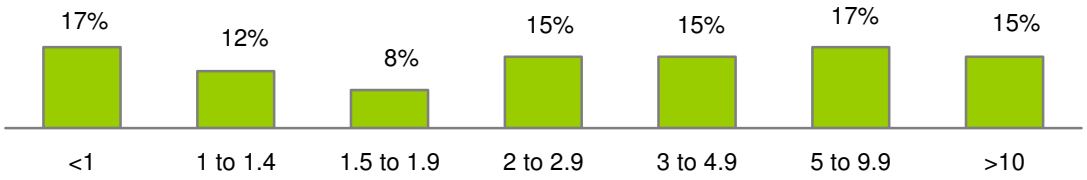
Figure 35 RESPONDENT PROFILE: TERMS OF EMPLOYMENT FROM STAGE TECHNICIAN EMPLOYEES

Employment	%
Permanent full-time	71%
Contract-by-contract	12%
Permanent part-time	7%
Seasonal returning	1%
On-call	1%
Other	8%

Note: Percentages may not total 100% exactly due to rounding. Data derived from Q9.

Employers provided information on the number of full-time-equivalent (FTE) positions within their organizations (see Figure 36). The number of FTE positions is fairly evenly distributed across all groupings.

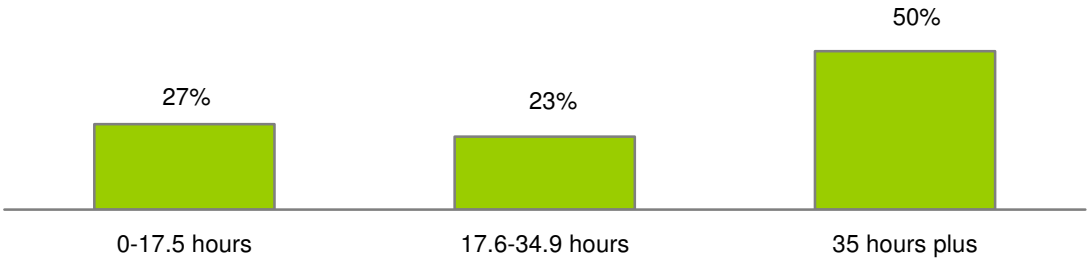
Figure 36 RESPONDENT PROFILE: FULL-TIME-EQUIVALENT POSITIONS



Note: Data derived from Q7

Stage technicians were asked to report the average number of hours they worked per week in the past year. Half of stage technicians (50%) reported working 35 or more hours a week (approximately full time). Just over one-quarter (27%) reported working 17.5 hours or less.

Figure 37 RESPONDENT PROFILE: AVERAGE NUMBER OF HOURS WORKED PER WEEK



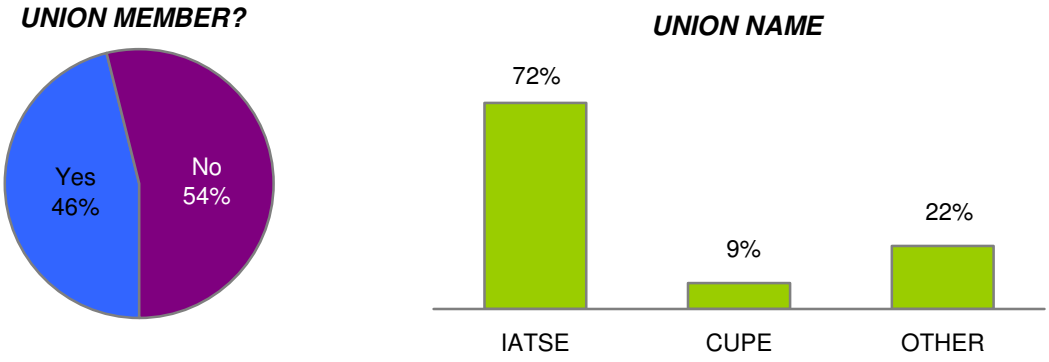
Respondent profile: union membership

Employers and stage technicians were asked a number of questions related to union membership. Employers were asked whether they hired workers from a union and which union their employees belonged to. Employees were asked whether they belonged to a union, and (if so) which union they belonged to.

Employers

Slightly more than half of employers in this survey (54%) indicated they employ workers from a union, whereas 46% indicated they do not employ unionized workers. Most who do say their stage technicians belong to IATSE (72%), another 9% belonging to CUPE (see Figure 38)

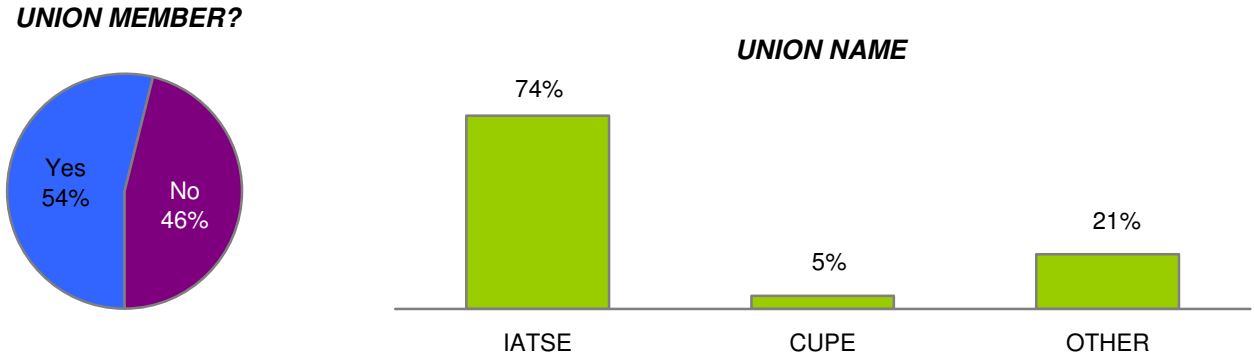
Figure 38 EMPLOYERS WHO HIRE UNIONIZED WORKERS



Stage technicians

Slightly more than half of the employees in this survey (54%) say they are members of a union, versus 46% who say they are not. Almost three-quarters (74%) who are members say they belong to IATSE, whereas 5% belong to CUPE (see Figure 39)

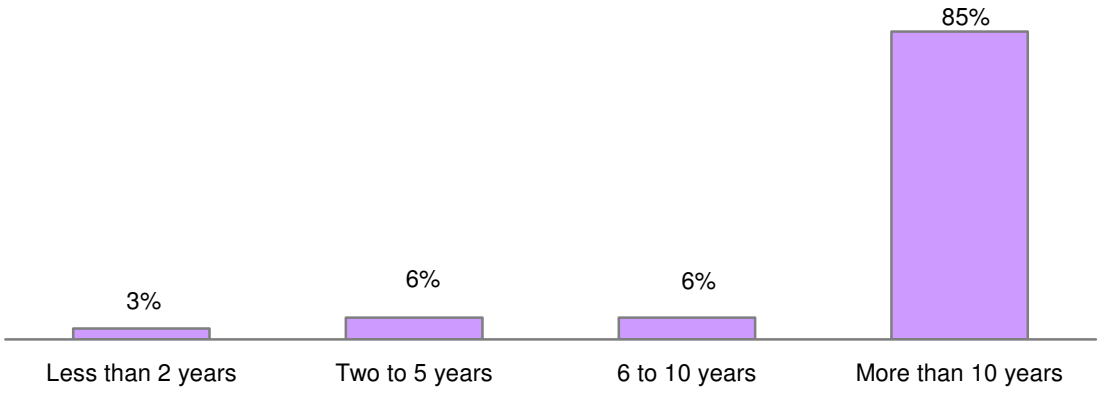
Figure 39 EMPLOYEES WHO ARE UNION MEMBERS



Respondent profile: length of active participation in the industry

Employees were asked how long they have been stage technicians. Most (85%) report being stage technicians for over ten years, with less than 10% having been stage technicians for five years or shorter (see Figure 40).

Figure 40 RESPONDENT PROFILE: LENGTH OF TIME AS STAGE TECHNICIAN



Note: Percentages may not total 100% exactly due to rounding.

Appendix A: Marginals

N = 150

INTERVIEWER: __ __ __ SURVEY # __ __ __

SECTOR: Employee ..... 53% Employer..... 47%

PROVINCE: ..BC .. ...19% AB .....15% SK/Terr ....7% MB .....5% ON.....32%

PQ .....12% NB .....5% NS .....4% PEI/NF 1%

EMPLOYEE NAME: _____ _____

EMPLOYER NAME: _____

COMPANY NAME: _____

PHONE: (__ __ __) __ __ __ - __ __ __ __ EXT: __ __ __ __

May I please speak to _____ _____?

ANSWERING MACHINE MESSAGE: Hello, my name is _____, and I'm calling on behalf of CHRC – the Cultural Human Resources Council – about participation in the national stage techs study. It's important that I reach stage techs, also commonly known as stage hands, in your organization. Please return my call. Again, I'm conducting the national stage technicians study on behalf of the CHRC. The number is 204-989-8002, or toll free at 1-888-950-8002. Thanks!

Hello, my name is _____ and I'm calling on behalf of the Cultural Human Resources Council, about the national stage techs study. We need to speak to employers of stage techs, also commonly known as stage hands, to talk about their experience about stage technician skill building and training. Would you be the correct person? **IF YES, CONTINUE. IF NO, ASK WHO WOULD BE APPROPRIATE RESPONDENT AND RECORD CONTACT INFO.**

We also need to speak to stage technicians themselves to learn about their individual experiences with skill building and training. May I please speak to a stage technician also commonly known as stage hands? **IF NO, ASK WHO WOULD BE APPROPRIATE RESPONDENT AND RECORD CONTACT INFO.**

IF YES… This survey should only take about 10 minutes of your time – do you have time right now to complete this survey? **IF NOT, ASK IF THERE IS A BETTER TIME AND ARRANGE TO CALL BACK**

Before we begin I would like to assure you this information will never be shared with any government agency. All the information gathered is strictly confidential. We guarantee your anonymity. We will be asking questions about your own experiences, but no individual or business names will be attached to the research findings, and the report submitted to the CHRC will only discuss the results of the survey as a whole.

Q1 **[EMPLOYER QUALIFICATION]** Are you someone who is involved with the training, hiring, or supervision of stage technicians, also commonly known as stage hands, for your organization, that is the personnel whose task it is to load in, set up, run, strike and load out the production elements for live entertainment productions?

Yes	47%	**GO TO Q3**
No	52%	
Don't know / refused	1%	

Q2 **[STAGE TECH QUALIFICATION]** Are you someone who works as a stage technician, also commonly known as stage hands, for your organization, that is someone whose primary tasks are to load in, set up, run, strike and load out the production elements for live entertainment productions?

Yes	100%	
No	0%	**TERMINATE**
Don't know / refused	0%	**TERMINATE**

Q3 Can you please tell me what ***type*** of productions ***your company is*** [**EMPLOYER**] / ***you are*** [**EMPLOYEE**] involved with? **CIRCLE ALL THAT APPLY. IF NECESSARY –** For example, theatre, opera, dance, rock shows, etc?

Theatre or musical	89%
Dance	42%
Other	33%
Rock / Pop / other music concert	29%
Opera	25%
Film / television	19%
Circus	4%
Don't know / refused	1%

EMPLOYEES SKIP TO Q8

Q4 [**EMPLOYER**] In the past year, how many employees, on average, work in your company?

1 to 5	20%
6 to 10	14%
11 to 15	16%
16 to 20	11%
21 to 50	16%
51 to 200	13%
201 to 500	4%
Greater then 501	3%
Don't know / refused	4%

Q5 [**EMPLOYER**] Do you hire stage techs through union, a staffing company such as Nasco, through a venue, or do you employ them directly?

Employed directly	72%
Union	25%
Staffing company	3%
Venue	0%
Don't know / refused	0%

Q6 [**EMPLOYER**] Would you say the stage technicians hired by your organization work on a permanent full-time basis, permanent part-time basis, on a seasonal returning basis, on a contract-by-contract or show-by-show basis, on call, on tour, or some other arrangement?

Permanent full-time	7%
Permanent part-time	20%
Seasonal returning	11%
Contract by contract / show by show	48%
On-call	9%
On tour	0%
Other	6%
Don't know / refused	0%

Q7 [**EMPLOYER**] Thinking about the stage techs that work in your organization, how many full-time equivalent (FTE) positions are there?

.1 to .5 FTE	11%
.6 to 1.0 FTE	8%
1.1 to 1.5 FTE	13%
1.6 to 2.0 FTE	8%
2.1 to 2.5 FTE	4%
2.6 to 3.0 FTE	8%
3.1 to 4.0 FTE	7%
4.1 to 5.0 FTE	4%
5.1 to 7.0 FTE	3%
7.1 to 10 FTE	13%
10.1 to 15 FTE	7%
15.1 to 50 FTE	3%
Greater then 51 FTE	1%
Don't know / refused	8%

GO TO SKILLS CHART NOW

Q8 [**STAGE TECH**] Are you hired through a union, a staffing company such as Nasco, through a venue, or are you employed directly?

Employed directly	90%
Union	5%
Venue	3%
Staffing company	0%
Don't know / refused	3%

Q9 [**STAGE TECH**] How would you best describe your employment status? Are you employed on a permanent full-time basis, permanent part-time basis, on a seasonal returning basis, on a contract by contract or show-by-show basis, on call, on tour, or some other arrangement?

Permanent full-time	68%	**GO TO CHART**
Permanent part-time	6%	
Seasonal returning	1%	
Contract by contract / show by show	11%	
On-call	1%	
On tour	0%	
Other (Freelance)……	8%	
Don't know / refused	4%	**GO TO CHART**

Q10 [**STAGE TECH**] In the past year, how many hours per week, on average, did you work as a stage tech?

1 to 5 hours	14%
6 to 10 hours	9%
11 to 20 hours	9%
21 to 30 hours	18%
31 to 40 hours	32%
41 to 50 hours	9%
Greater then 51 hours	9%

GO TO SKILLS CHART NOW

Q11 Thinking about all the things that a stage technician does in their job, are there any skills or skills training we have missed speaking to you about, or that you think may be required in future? **PROBE**

Q12 Have you ever participated in a formal training program for stage technicians, such as a university or college program?

Yes	67%	
No	31%	**GO TO Q15**
Don't know / refused	1%	**GO TO Q15**

Q13 Where did you take this program? **IF NECESSARY** What was the name of the institution?

Q14 What was the name of the program? **IF NECESSARY** What was your major or concentration?

Q15 In the past year, have you attended any conference or workshops related to professional development as a stage technician?

Yes	46%	
No	53%	**GO TO Q18**
Don't know / refused	1%	**GO TO Q18**

Q16 And what skill or skill set did you learn?

Q17 Who offered the training? **CONFIRM NAME AND SPELLING**

Q18 When thinking about stage tech training, what would you say is the most significant training gap, that is what are the greatest training needs for stage technicians now or in the future? **PROBE**

Q19 **[EMPLOYER]** Does your company employ workers from a union?

Yes	45%	
No	52%	**GO TO Q24**
Don't know / refused	3%	**GO TO Q24**

Q20 **[EMPLOYER]** Which union do your stage techs belong to?

IATSE	72%	**GO TO Q24**
Other (specify):_____	22%	**GO TO Q24**
CUPE	9%	**GO TO Q24**
Don't know / refused	0%	**GO TO Q24**

Q21 **[STAGE TECH]** Are you a member of a union?

Yes	54%	
No	46%	**GO TO Q23**
Don't know / refused	0%	**GO TO Q23**

Q22 **[STAGE TECH]** Which union do you belong to?

IATSE 74%
Other (specify):_____21%
CUPE 5%
Don't know / refused 0%

Q23 **[STAGE TECH]** How long have you been a stage tech?

Less than 2 years 3%
Two to 5 years 6%
6 to 10 years 6%
More than 10 years 85%

Q24 Finally, one of the goals of this study is to ensure we speak to a representative sample of stage technicians across Canada. Can you provide us with the names and contact numbers of stage technicians, OR companies that may employ stage technicians, that you think should be included in this study? **CHECK DATABASE AND ENTER ANY CONTACTS NOT ALREADY LISTED.**

Name _____Ph: ___ ___ ___ - ___ ___ ___ - ___ ___ ___ ___
Name _____Ph: ___ ___ ___ - ___ ___ ___ - ___ ___ ___ ___
Name _____Ph: ___ ___ ___ - ___ ___ ___ - ___ ___ ___ ___

Companies

Name _____Ph: ___ ___ ___ - ___ ___ ___ - ___ ___ ___ ___
Name _____Ph: ___ ___ ___ - ___ ___ ___ - ___ ___ ___ ___
Name _____Ph: ___ ___ ___ - ___ ___ ___ - ___ ___ ___ ___

That concludes this survey, thank you very much for taking the time to participate in this study. My supervisor may phone you just to verify that you did participate.

[EMPLOYER] Now let's turn to job skills. For each one of the following, please tell me if stage technicians *in general* require this skill to perform their job. Please think about the stage techs *currently employed* by your organization and if they currently have this skill, or whether your stage techs need to acquire this specific skill. Then I will ask where your stage techs learned this skill – on the job, are they self taught, or through formal training.

[STAGE TECH] Now let's turn to job skills. For each one of the following, please tell me if this skill is required *in general* to perform your job. Next, please think about your personal situation, and whether you currently have this skill, or whether you need to acquire this specific skill. Then I will ask where you learned this skill – on the job, was it self taught, or through formal training.

	Do they need the skill?			Already have, still need or some have, some still need				Where did they learn this skill / Where do you expect them to learn this skill?			
Skill	**Yes**	**No**	**DK REF**	**Have**	**Need**	**[EMPLOYER ONLY] Some have / some need**	**DK REF**	**On the job**	**Self-taught**	**Formal training**	**DK REF**
SS1 - Load in and load out production elements	97%	3%	0%	85%	3%	9%	1%	86%	57%	57%	3%
SS2 - Interpret technical drawings and documents	92%	7%	1%	83%	3%	13%	1%	78%	51%	74%	3%
SS3 - Set up and strike scaffolding	76%	23%	1%	66%	3%	7%	1%	85%	46%	54%	4%
SS4 - Coil and run cables, wires and ropes	96%	4%	0%	89%	1%	9%	1%	83%	53%	61%	3%
SS5 - Dress and mask production elements	94%	5%	1%	90%	1%	8%	1%	81%	53%	66%	3%
SS6 - Set up and strike stage carpentry elements	91%	9%	1%	85%	4%	10%	1%	83%	47%	63%	3%
SS7 - Set up and strike lighting elements	95%	5%	1%	80%	6%	14%	1%	74%	46%	73%	4%
SS8 - Set up and strike audio-visual equipment	92%	7%	1%	75%	9%	15%	1%	78%	45%	68%	4%
SS9 - Set up and strike props and wardrobes	79%	21%	1%	85%	4%	10%	1%	86%	48%	64%	4%
SS10 - Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame	80%	19%	1%	74%	11%	15%	0%	79%	50%	68%	4%
SS11 - Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues	91%	9%	1%	87%	2%	10%	1%	77%	52%	70%	3%
SS12 - Perform pre-show and post-show checks and duties	93%	6%	1%	89%	1%	9%	1%	84%	53%	60%	3%

	Do they need the skill?			Already have, still need or some have, some still need				Where did they learn this skill / Where do you expect them to learn this skill?			
Skill	**Yes**	**No**	**DK REF**	**Have**	**Need**	**[EMPLOYER ONLY] Some have / some need**	**DK REF**	**On the job**	**Self-taught**	**Formal training**	**DK REF**
SS13 - Troubleshoot production elements	92%	7%	1%	86%	4%	9%	1%	89%	51%	59%	3%
SS14 - Maintain and repair production elements and equipment	93%	6%	1%	86%	3%	12%	0%	85%	50%	65%	3%
SS15 - Operate material handling equipment and personnel lifts	77%	22%	1%	84%	7%	10%	0%	84%	47%	62%	3%
SS16 - Operate rigging and fall protection equipment	84%	15%	1%	77%	10%	13%	0%	77%	46%	71%	3%
SS17 - Operate conventional hand and power tools	96%	3%	1%	88%	1%	10%	1%	80%	68%	62%	3%
SS18 - Use wardrobe equipment	59%	39%	1%	79%	6%	16%	0%	79%	57%	65%	5%
SS19 - Use paint equipment such as adhesives, fillers, paints, solvents and sprayers	78%	21%	1%	82%	5%	12%	1%	83%	55%	68%	4%
SS20 - Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System.	83%	16%	1%	86%	4%	9%	1%	79%	49%	71%	2%
SS21 - Communicate ideas effectively in oral and written form	95%	5%	1%	87%	1%	12%	1%	78%	67%	61%	3%
SS22 - Use and interpret hand signals	51%	45%	3%	82%	3%	13%	3%	87%	58%	49%	4%
SS23 - Practice stage etiquette in a teamwork environment	97%	1%	2%	86%	4%	10%	1%	81%	55%	62%	3%
SS24 - Work in unconventional environments such as height, confined spaces, or in the dark	97%	3%	1%	86%	3%	9%	1%	82%	53%	57%	6%

Appendix B: Formal training offerings

This Appendix contains information on programs offering training in stage technician skills. Training offerings are organized by province, beginning with British Columbia and ending with Newfoundland and Labrador. Within each province, entries are organized alphabetically by the name of the post-secondary institution offering training. A summary table listing the skills for which training is offered is included wherever an interview was completed with a given institution.

British Columbia

Capilano College

The Theatre Department at Capilano College offers a two-year Diploma program in Technical Theatre. The program provides students the opportunity to work behind the scenes in the theatre and some areas of film and television. Courses in the Technical Theatre Diploma include elements of theatre, production and design, technical theatre practicum, stage grip, theatre shop skills, senior production responsibilities, lighting and sound, scenic art and stage properties.

http://www.capcollege.bc.ca/future/calendar/current/career/theatre/theatre-tech.html

Skills offered at Capilano College
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form

Continued from previous page
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Capilano College.

Douglas College

Douglas College offers a two-year part-time and full-time Stagecraft Program, which specializes in production. Students in the program study theatre history, production, lighting, CAD, props, scene painting/construction, technical direction and stagecraft for film, and TV and audio techniques.

http://www.douglas.bc.ca/programs/theatre-stagecraft/index.html

Skills offered at Douglas College
Load in and load out production elements
Interpret technical drawings and documents
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Use and interpret hand signals
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Douglas College.

Langara College

The Department of Theatre Arts (Studio 58) offers a two-year Diploma, providing students with the options of pursuing an acting stream or a production stream. The production stream consists of class work, practicum and directed studies. Courses offered in this stream include movement, theatre skills, acting, voice, production practicum, and theatre practicum.

http://www.langara.bc.ca/courses/subj/THEA.html

Skills offered at Langara College
Interpret technical drawings and documents
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Langara College.

Malaspina University College

The Department of Theatre at Malaspina University College offers a two-year Technical Theatre Diploma Program. Comprised of in-class instruction and hands-on experience, this program builds skills in the areas of props, costumes, sound, stage management, carpentry, running crew, front-of-house management, production management, technical direction, publicity, theatrical make-up, scene painting, special effects, and lighting.

http://www.mala.ca/theatre/

Skills offered at Malaspina University College
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Malaspina University College.

Thompson Rivers University

As part of its undergraduate offerings, the Department of Visual and Performing Arts at Thompson Rivers University offer individual courses related to technical production.

http://www.tru.ca/ae/vpa/theatre/newtheatreindex.htm

Skills offered at Thompson Rivers University
Load in and load out production elements
Interpret technical drawings and documents
Coil and run cables, wires and ropes

Continued from previous page
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Thompson Rivers University.

University College of the Fraser Valley

The Theatre Department at University College of the Fraser Valley offers several programs including a two-year Theatre Diploma, a two-year Associate of Arts Degree (Theatre Option) and a four-year Minor and Extended Minor in Theatre Arts. Individual courses on technical theatre are offered by the Theatre Department.

http://www.ucfv.ca/theatre/Programs/Programs_at_a_Glance.htm

Skills offered at University College of the Fraser Valley
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, execute cues
Perform pre-show and post-show checks and duties

Continued from previous page
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with University College of the Fraser Valley.

University of Victoria

The Department of Theatre at the University of Victoria offers a Bachelor of Fine Arts Degree and in the third year of study; students may choose either a "generalist option" or a "specialized option." Seven specializations are available to students: acting, applied theatre, design, directing, production and management, theatre history, and theatre/writing.

http://finearts.uvic.ca/theatre/index.html

Skills offered at University of Victoria
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools

Continued from previous page
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with University of Victoria.

Alberta

The Banff Centre

The Banff Centre offers Theatre Production, Design and Stage Management Work Study Programs. Students enrolled in these programs intern one-on-one with experienced professionals in their desired area of interest. Work study programs for the 2006-7 year include internships in production management, production stage management, production administration, arts administration, technical direction, lighting, sound, stage carpentry, props, scenic carpentry, scenic painting, wigs and make-up, wardrobe, design and stage management.

http://www.banffcentre.ca/programs/program.aspx?id=500&p=detail

Skills offered at the Banff Centre
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools

Continued from previous page
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Use and interpret hand signals
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with The Banff Centre.

Grant MacEwan College

Grant MacEwan College offers a full-time, two-year Diploma in Theatre Production, although some courses in Theatre Production may be offered on a part-time basis. Core courses include drafting and model making, technical theatre, audio, footings, communications, applied theatre history, stagecraft, lighting, painting, costumes, riggings, model making, management, prop making, and practicums.

http://www.macewan.ca/web/pvca/production/home/index.cfm

Skills offered at Grant MacEwan College
Load in and load out production elements
Interpret technical drawings and documents
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, execute cues
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Use and interpret hand signals
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Grant MacEwan College.

Keyano College

The two-year Diploma in Technical Theatre program at Keyano College is currently under review, but still offers several courses that relate to the development of stage technicians (stagecraft and sound).

http://www.keyano.ca/prospective_students/programs/certificate_diploma/technical_theater.htm

Skills offered at Keyano College
Interpret technical drawings and documents
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Operate conventional hand and power tools
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Keyano College.

Mount Royal College

The two-year Diploma in the Theatre Arts – Technical Stream, offered at Mount Royal College, provides hands-on, practical experience working behind the stage. Courses offered for the Theatre Arts – Technical Diploma cover stagecraft, production practicum, lighting, sound, costumes, drafting and design, stage management, early theatre, properties, scenic painting, stage carpentry, modern theatre, professional development, and film and television set etiquette.

http://www.mtroyal.ab.ca/academics/diplomas/TADT.shtml

Skills offered at Mount Royal College
Load in and load out production elements
Interpret technical drawings and documents
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike props and wardrobes

Continued from previous page
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Mount Royal College.

Red Deer College

Red Deer College offers several programs including a two-year Costume Cutting and Construction Diploma, a one-year Costume Construction Certificate and a two-year Acting or Technical Production Diploma. Courses in the Technical Production program include play analysis, sound, props, lighting, stagecraft, drafting and drawing, stage management and production, theatre design, practicums, and electives.

http://www.rdc.ab.ca/programs_and_courses/

Skills offered at Red Deer College
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties

Continued from previous page
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Red Deer College.

Rosebud School of the Arts

Rosebud School of the Arts offers a one-year Certificate in Theatre Foundations, which includes an introductory course to technical theatre. A three-year follow-up program, the Mentorship Training Program, is available to students who complete the Certificate in Theatre Foundations. The Mentorship Training Program offers several specializations including acting, dramatic arts, musical performance and technical theatre. In the technical theatre specialization, students study lighting, scenic painting, sound, scenic carpentry, design, props, costumes, and stage management.

http://www.rosebudtheatre.com/

Skills offered at Rosebud School of the Arts
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate conventional hand and power tools

Continued from previous page
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Rosebud School of the Arts.

University of Alberta

The University of Alberta offers a four-year Bachelor of Fine Arts in Technical Theatre. Taught in a hands-on learning environment, this program covers scenic carpentry, stage carpentry, lighting, sound, properties, and technology such as Computer Aided Drafting and Design.

http://www.uofaweb.ualberta.ca/drama/index.cfm

Skills offered at University of Alberta
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form

Continued from previous page

Use and interpret hand signals
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with University of Alberta.

University of Lethbridge

The Department of Theatre and Dramatic Arts at the University of Lethbridge offers several undergraduate degrees; students may specialize in Stagecraft and Design. Courses related to this specialization cover stagecraft, design, production techniques, technical theatre, costumes, and a production practicum.

http://www.uleth.ca/ffa/sectiondrama.htm

Skills offered at University of Lethbridge
Interpret technical drawings and documents
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Obtain information on the execution, timing and context of cues, record notes for cue sheets, execute cues
Perform pre-show and post-show checks and duties
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with University of Lethbridge

Saskatchewan

University of Regina

The University of Regina offers a four-year Bachelor of Fine Arts Degree in Stage Management / Technical Theatre. This degree-granting program first graduated students in 1972 and aims to prepare students to mount and run a production.

http://www.uregina.ca/finearts/theatre/about.html

Skills offered at University of Regina
Load in and load out production elements
Interpret technical drawings and documents
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Use and interpret hand signals
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with University of Regina.

University of Saskatchewan

The Drama Department at the University of Saskatchewan offers a four-year Bachelor in Fine Arts in two areas: acting and design. Courses that develop skills for stage technicians include scenic construction, stage properties, costume construction, stage management and theatre design.

http://www.arts.usask.ca/drama/index.php

Skills offered at University of Saskatchewan
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Set up and strike stage carpentry elements
Set up and strike lighting elements

Continued from previous page
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with University of Saskatchewan.

Manitoba

University of Manitoba

The University of Manitoba offers an undergraduate Bachelor of Arts degree with a major in drama or a minor in theatre. One six-credit survey course in technical theatre is offered to students in this program.

http://www.umanitoba.ca/faculties/

Skills offered at University of Manitoba
Load in and load out production elements
Coil and run cables, wires and ropes
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike props and wardrobes
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate conventional hand and power tools
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)

Continued from previous page
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment

Note: Data derived from interview with University of Manitoba.

University of Winnipeg

Students can obtain a B.A. (General) or a B.A. (Honours) at the University of Winnipeg through the Department of Theatre and Film. The Department of Theatre and Film offers six streams for students to specialize in: acting/directing (screen acting and musical theatre), design, drama in education, filmmaking, playwriting, and stage management and production. In the stage management and production stream, students have the option of concentrating on stage management, and/or production, which is a mix of class and hands-on production.

http://www.uwinnipeg.ca/theatre/index.html

Skills offered at University of Winnipeg
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Use and interpret hand signals
Practice stage etiquette in a teamwork environment

Note: Data derived from interview with University of Winnipeg.

Ontario

Cambrian College of Applied Arts and Technology

Cambrian College offers a two-year Diploma in Technical Theatre Production through the Department of Business, Media and Creative Arts. Through practical experience, students learn skills in lighting, sound, wardrobe, stagecraft, set painting, properties, special effects rigging, and stage management.

http://www.cambrianc.on.ca

Skills offered at Cambrian College of Applied Arts and Technology
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Use and interpret hand signals
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Cambrian College of Applied Arts and Technology.

Fanshawe College

At the St. Thomas / Elgin Campus, students can take a two-year Theatre Arts – Technical Production Diploma. Students learn both in the classroom and by working on live productions. Topics covered in this program include lighting, sound, carpentry, scenic painting, computers and theatrical applications, history of theatre, properties, rigging, special effects, and stage management.

http://www.fanshawec.on.ca/techtheatre/default.asp

Skills offered at Fanshawe College
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Fanshawe College.

Humber College Institute of Technology and Advanced Learning

The School of Creative and Performing Arts at Humber College offers a two-year Technical Production Diploma. The curriculum for this Diploma includes production applications and management, lighting and electricity, stagecraft, stage management, computer applications, costumes, safety, drafting, props, rigging, theatre history, visual communications, scenic painting, set design, and theatre effects.

http://creativeandperformingarts.humber.ca/theatreprod/home.html

Skills offered at Humber College Institute of Technology and Advanced Learning
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Use and interpret hand signals
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Humber College Institute of Technology and Advanced Learning.

Queen's University

The Drama Department at Queen's University offers undergraduate degrees to students that blend both practical and theoretical knowledge. Courses related to technical theatre cover design, technical production and applied technical production, and creative production.

http://www.queensu.ca/drama/

Skills offered at Queen's University
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding

Continued from previous page

Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Queen's University.

Ryerson University

Ryerson's Theatre School offers a four-year Bachelor of Fine Arts Degree in its Performance Production Program, which consists of rigorous academic and studio training both. The program provides students with two years of general study and two years of focused study, in which students can stream themselves into a particular area of interest.

http://www.ryerson.ca/~rytheatr/

Skills offered at Ryerson University
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes

Continued from previous page

Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Use and interpret hand signals
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Ryerson University.

Sheridan College Institute of Technology and Advanced Learning

Sheridan College offers a two-year program in Theatre Arts – Technical Production over the course of four terms in a practical, hands-on environment. Courses offered in the Theatre Arts - Technical Production Diploma cover carpentry, drafting, lighting, properties, rigging, scene painting, sound, stage management, wardrobe, technical production, stagecraft, career management, English for technical theatre, technology, presentation skills, and design.

http://theatretechnical.sheridaninstitute.ca/index.cfm?catg_id=0

Skills offered at Sheridan College Institute of Technology and Advanced Learning
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame

Continued from previous page
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Use and interpret hand signals
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Sheridan College Institute of Technology and Advanced Learning.

University of Guelph

The Department of English Studies at the University of Guelph offers undergraduate programs in Theatre Studies to students. Courses offered in the program that relate to the development of stage technicians include technical theatre, design, and technical production.

http://arts.uoguelph.ca/sets/theatre_ba.php

Skills offered at University of Guelph
Interpret technical drawings and documents
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate conventional hand and power tools
Use wardrobe equipment

Continued from previous page
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with University of Guelph.

University of Ottawa

The Theatre Department at the University of Ottawa offers courses in both English and French at the undergraduate and graduate level. Several courses are offered by the Theatre Department that emphasize technical theatre.

http://www.uottawa.ca/academic/arts/theatre/eng/department.html

Skills offered at University of Ottawa
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Use and interpret hand signals
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with University of Ottawa.

University of Waterloo

The Department of Drama and Speech Communication at the University of Waterloo offers two undergraduate level technical courses of interest to stage technicians. These two courses cover such topics including painting, rigging, construction, lighting, and sound equipment.

http://drama.uwaterloo.ca/

Skills offered at University of Waterloo
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with University of Waterloo.

University of Windsor

The School of Dramatic Art at the University of Windsor offers several programs including a Bachelor of Arts Degree in Drama and Communication Studies, Bachelor of Fine Arts Acting Degree and a Certificate in Arts Management. Courses related to technical theatre include stagecraft, scenic design, lighting design, and costume design.

http://www.uwindsor.ca/units/drama

Skills offered at University of Windsor
Load in and load out production elements
Interpret technical drawings and documents
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike props and wardrobes
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Use and interpret hand signals
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with University of Windsor.

York University

The Department of Theatre at York University offers a four-year Bachelor of Fine Arts Degree in performance or production. The curriculum encompasses stagecraft, production practicums, lighting, drafting, CAD, rigging, drawing, costumes, design, and stage management.

http://www.yorku.ca/web/futurestudents/programs/template.asp?id=554

Skills offered at York University
Load in and load out production elements
Interpret technical drawings and documents
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes

Continued from previous page
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Use and interpret hand signals
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with York University.

Quebec

Bishop's University

The Department of Drama at Bishop's University offers a Bachelor of Arts Degree with a major in Theatre. Several technical theatre courses are offered to students pursuing a degree.

http://www.ubishops.ca/ccc/div/hum/dra/

Skills offered at Bishop's University
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame

Continued from previous page
Obtain information on the execution, timing and context of cues, record notes for cue sheets, execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Bishop's University.

Cégep de Saint Hyacinthe

The *Cégep de Saint Hyacinthe* offers the equivalent of a three year *Diplôme d'études collégiales* (DEC) spread out over a four year schedule. The option *Théâtre – Production* introduces students to the theatre professions and offers a specialization in stage management and technology (*gestion et techniques de scène*) to develop competencies in lighting, sound, production direction, and technical direction. The program consists of both in-class instruction as well as hands-on production experience.

http://www.cegepsth.qc.ca/section02/02_1_2_12.html

Centre d'études collégiales de Montmagny

Beginning in autumn 2006, the *Centre d'études collégiales de Montmagny* will offer a two year DEC in stage management and technology (*gestion et techniques de scène*). The program is aimed at developing specialists in technical production including design, sound, and lighting, and will consist of in-class instruction as well as hands-on production experience.

http://www.cec.montmagny.qc.ca/cecm/

College Lionel-Groulx

The *Collège Lionel-Groulx* offers a four year program in *Théâtre – Production* that introduces students to the theatre professions, and offers a specialization in stage management and technology (*gestion et techniques de scène*) to develop competencies in lighting, sound, production direction, and technical direction. The program consists of both in-class instruction as well as hands-on production experience through participation in four theatre productions per year.

http://www.clg.qc.ca/for/index.html

Skills offered at College Lionel-Groulx
Interpret technical drawings and documents
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with College Lionel-Groulx.

École du Show-Business

The *École du Show-Business* in Montreal offers a program entitled Production d'événements culturels et corporatifs. The program grants a diploma called an *Attestation d'études collégiales (AEC).* The total program duration is 750 hours, spread out over four 15-week sessions. The program is currently available in French only. The program consists of both in-class instruction as well as hands-on production experience through on-site experience at production venues in Montreal.

Students are taught a range of technical skills related to production, technical direction, and stage management including lighting design/operation and sound design/production (in studio and on-stage), as well as the skills to integrate into a production team.

http://www.ecoledushowbusiness.com/

École supérieure de théâtre

The *École supérieure de théâtre* at the *Université de Québec à Montréal* (UQAM) offers a three year B.A. in Theatre with a specialization in Scenography (*scénographie*). The total program duration is 3915 hours. The program has a technical component introducing students to production, sound and lighting design, costume and set design, and stage management, and consists of both in-class instruction as well as hands-on production experience.

Although the Scenography stream has a technical component, there is also an emphasis on creative and artistic development, which means this program is likely more of interest to artists and performers than those looking to become stagehands.

http://www.estuqam.ca/pages/programmes_cours/bacc_theatre.aspx

John Abbott College

John Abbott College offers a certificate program in Professional Theatre with three specializations: acting, design and technical theatre. In the technical theatre specialization, students learn technical and management skills through hands-on production experience in areas of sound, lighting, sets, props, costumes, and stage management.

http://www.johnabbott.qc.ca

Skills offered at John Abbott College
Interpret technical drawings and documents
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Obtain information on the execution, timing and context of cues, record notes for cue sheets, execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with John Abbott College.

McGill University

The Drama and Theatre option in the Department of English at McGill University offers an undergraduate degree to students with a specific course offered in technical theatre, covering stage scenery and lighting.

http://www.arts.mcgill.ca/programs/english/english.html

Skills offered at McGill University
Load in and load out production elements
Interpret technical drawings and documents
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with McGill University.

National Theatre School of Canada

The National Theatre School of Canada, located in Montreal, offers several programs in Acting, Playwriting, Directing, Set and Costume Design, and Technical Production. The Technical Production option is a three-year, full-time program that provides students with skills to pursue careers in production, management, technical direction, stage management, and sound or lighting design. In-class instruction is provided to students; however, most of the student's time is spent learning technical production skills in a hands-on environment.

http://www.ent-nts.qc.ca/nts/techproduction.htm

Skills offered at National Theatre School of Canada
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Use and interpret hand signals

Note: Data derived from interview with National Theatre School of Canada.

New Brunswick

University of New Brunswick

The Department of English at the University of New Brunswick offers a B.A. major in English with a specialization in Drama, in addition to a Fine Arts minor in Drama. Two courses are offered that develop the skills for stage technicians. These two courses examine stage management, carpentry and set construction, scenic painting, sound design, costume design, props rendering, producing, directing, acting, stage management, publicity, set and props building, and makeup.

http://www.unbf.ca/arts/FineArts/Theatre/

Skills offered at University of New Brunswick
Load in and load out production elements
Interpret technical drawings and documents
Coil and run cables, wires and ropes

Continued from previous page
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with University of New Brunswick.

Nova Scotia

Cape Breton University

Students at Cape Breton University can enroll in the Certificate in Theatre Arts program that is jointly administered by Extension and Community Affairs and the School of Arts and Letters. Two courses in this certificate program that are of interest to stage technicians cover scenery, painting, sets, lighting, and sound, and FINA 217 “Stage Management for the Theatre” which introduces the fundamentals of managing a production in a hands-on approach.

http://www.capebretonu.ca

Skills offered at Cape Breton University
Load in and load out production elements
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements

Continued from previous page
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Troubleshoot production elements
Maintain and repair production elements and equipment
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Cape Breton University.

Dalhousie University

The Department of Theatre at Dalhousie University offers a four-year Bachelor of Arts Degree with a specialization in Technical Scenography, which encompasses both academic and practical study. Topics included in the curriculum for the Technical Scenography program include set construction, props, lighting, sound, stage management, and design.

http://theatre.dal.ca/

Skills offered at Dalhousie University
Interpret technical drawings and documents
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Obtain information on the execution, timing and context of cues, record notes for cue sheets, execute cues
Perform pre-show and post-show checks and duties
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers

Continued from previous page

Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Dalhousie University.

Prince Edward Island

University of Prince Edward Island

The Department of English Language and Literature at the University of Prince Edward Island offers a minor undergraduate degree in Theatre Studies that integrates both analytical and practical skills building. Core courses include introduction to theatre, advanced theatre studies and a theatre practicum.

http://www.upei.ca/english/html/theatre.html

Skills offered at University of Prince Edward Island
Load in and load out production elements
Coil and run cables, wires and ropes
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike props and wardrobes
Obtain information on the execution, timing and context of cues, record notes for cue sheets, execute cues
Operate conventional hand and power tools
Use wardrobe equipment
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System.
Practice stage etiquette in a teamwork environment

Note: data derived from interview with University of Prince Edward Island.

Newfoundland and Labrador

Sir Wilfred Grenfell College

Students in the Theatre Program at Sir Wilfred Grenfell College can obtain a four-year Bachelor of Fine Arts Degree in Acting or Stagecraft. This Degree includes a six-to-eight-week trip to Memorial University's campus in Harlow, England to learn about British theatre. Courses in the Stagecraft option cover a variety of topics including wardrobe, lighting, painting, props, audio-visual, stage management, scenic carpentry, wardrobe, sound, crewing, drafting, and model-making.

http://www.swgc.mun.ca/theatre/program.htm

Skills offered at Sir Wilfred Grenfell College
Interpret technical drawings and documents
Set up and strike scaffolding
Coil and run cables, wires and ropes
Dress and mask production elements
Set up and strike stage carpentry elements
Set up and strike lighting elements
Set up and strike audio-visual equipment
Set up and strike props and wardrobes
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic, or fire and flame
Obtain information on the execution, timing and context of cues, record notes for cue sheets, and execute cues
Perform pre-show and post-show checks and duties
Operate material handling equipment and personnel lifts
Operate rigging and fall protection equipment
Operate conventional hand and power tools
Use wardrobe equipment
Use paint equipment such as adhesives, fillers, paints, solvents and sprayers
Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHMIS)
Communicate ideas effectively in oral and written form
Practice stage etiquette in a teamwork environment
Work in unconventional environments such as height, confined spaces, or in the dark

Note: Data derived from interview with Sir Wilfred Grenfell College.

Appendix C: Verbatims

Figure 41 Q11. THINKING ABOUT ALL THE THINGS THAT A STAGE TECHNICIAN DOES IN THEIR JOB, ARE THERE ANY SKILLS OR SKILLS TRAINING WE HAVE MISSED SPEAKING TO YOU ABOUT, OR THAT YOU THINK MAY BE REQUIRED IN FUTURE?

I don't know (18 responses)
None / there are no other skills
Nothing. (30 responses)
No. (11 responses)
None.
First aid / general safety
Safety training on how to pack equipment properly.
First aid (2 responses)
Health and safety training. (2 responses)
Health and safety.
Ability to safely lift and move heavy and dangerous materials using equipment.
Safety.
Computer skills
New equipment training.
Computers and networking will play a large role for sound and lighting.
Computer skills because tech equipment is becoming more and more computerized.
Computer skills such as drafting or using Autocad.
Keeping on top of evolving technologies.
Computer literacy.
Familiarity with applicable software on both Mac and PC.
Computerization of equipment for lights, cues, music and moving equipment.
Computer skills in general. (5 responses)
Computer assisted directing.
How to operate the newer computerized sound equipment.
As the equipment becomes more digital they will need training to deal with these changes.
Computer networking.
Computer literacy is very important.
Drafting, computer literacy and artistic ability.
Drafting, computer literacy.
Software applications.
Software on Apple computers.
General computer skills.
Drafting, computer skills.

Computer programming.
Knowledge of digital equipment and computer use.
Computers, software.
Function as part of a team / interpersonal skills
The most important skill is to be able to adapt to new situations.
Human relations and general people skills.
Teamwork and general people skills.
The ability to think on your feet, the ability perceive and understand directions as well as working in a team.
General people skills. How to deal with people who have fragile egos.
General interpersonal skills, how to deal politely with clients.
Customer relations.
People skills. (2 responses)
Teamwork skills.
Being able to work with volunteers and school groups with no experience, being able to understand what they need.
People skills in general, being able to interact productively with the public.
Being friendly and flexible when working with people who are not familiar with theatre etiquette.
Being able to interact positively with public and clients. People skills in general.
Working well with others, teamwork skills.
Being professional, good attitude, being punctual and knowing how to work well.
Working with multi-faceted groups.
Respecting the different specializations.
How to work in a team and be adaptable.
Welding skills / steel fabrication
Welding skills are also an asset.
Steel fabrication.
Welding skills. (4 responses)
Welding can be very helpful.
Other
The ability to work alone or independently.
Supervising skills.
Physical strength is required for many tasks.
Administrative tasks.
Operating giant puppets.
Assist in equipment purchase decisions.
General problem solving skills.
Office management.
Truck driving.
Ability to run a small business as a freelance tech.

More basic training is required for entry level positions that are inexpensive, flexible and short.
Technicians need to have all of their skills, not just one.
Electronic and automated stage equipment and décor.
Change calculations and the evaluation of structure potential.
Intellectual stamina; ethic and moral conduct.
Time management
Time management.
Scheduling and time management.
Working against deadlines.
Already mentioned previously in skill chart
Effects work, like hair punching and doing eye lashes.
Communication skills among staff, asking questions about their tasks and expressing their needs.
Sound mixing and recording.
Communication etiquette.
Cross departmental co-operation and communication.
Make-up.
Handling weapons such as knives, swords and firearms because of new firearms legislation.
Some employers require pyrotechnics.
Operating lighting consoles.
Operating sound consoles.
Highly advanced rigging skills.
Formal electrical lighting training.
Fall arrest systems, certification for area platforms.
Work rigging equipment, operating and inspecting rigging.
Firearms handling skills.
The ability to communicate with the public or clients.
Working with communications equipment such as headsets, microphones, etc.
How to maintain and repair electronics, sound equipment, audio visual equipment.
Audio and visual as separate tasks. They are not always related skills.
Makeup and costumes.
There is more and more demand for sound and drivers.
Advanced rigging.
Electrical skills.
General communication skills (2 responses)
Video training operation.
Separate audio and visual in training.
Ensuring good communication.
Technical drawings.

Figure 42 Q13 AND Q14. WHERE DID YOU TAKE THIS FORMAL TRAINING PROGRAM FOR STAGE TECHNICIANS? WHAT WAS THE NAME OF THE INSTITUTION? WHAT WAS THE NAME OF THE PROGRAM? WHAT WAS YOUR MAJOR OR CONCENTRATION?

Formal stage technician training program	
Location / institution	**Program name / major or concentration**
Banff Centre	Stage craft intern.
Banff Centre for Fine Arts	Arts Administration
Banff Centre for Fine Arts	Stage Management
Banff Centre for Fine Arts	Theatre Crafts and Design
Banff Performing Arts Centre	Wig making and apprenticeship
Cègep Lionel Groulx	Technique de scène (5 responses)
Cègep Lionel Groulx	Theatre Production (2 responses)
Dalhousie University	BA in Technical Scenography.
Dalhousie University	BA in Theatre
Douglas College	Stagecraft (4 responses)
Douglas College	Theatre Technician
École de théâtre de St Hyacinthe	Theatre Production
Fanshawe College	Technical Theatre, Practical Productions
Grant MacEwan College	Audio Technician
Grant MacEwan College	I don't remember
Grant MacEwan College	Theatre Production (4 responses)
Grant MacEwan College	Theatre Technology
John Abbott College	Professional Theatre Technician program
John Abbott College	Theatre Arts
Malaspina College	Theatre
Malaspina Community College, Vancouver Community College	Theatre Arts, Studio 58
Malaspina University	Diploma in Technical Theatre Production
Malaspina University	Theatre and Drama programs
Mount Royal College	Theatre Arts
National Theatre School of Canada	2 year technical program
National Theatre School of Canada	Production
National Theatre School of Canada	Technical Production (3 responses)
Northern Alberta Institute of Technology	Theatre Technology.
Red Deer College	Technical Theatre.
Red Deer College	Theatre Arts (2 responses)
Ryerson College	Theatre
Ryerson University	BA
Ryerson University	Technical and Theatre Production

Ryerson University	Technical Production program
Ryerson University	Theatre Arts Technical program
Ryerson University	Theatre Production
Ryerson University	Theatre Technical Production (2 responses)
Sheridan College	Music Theatre Technical program.
Sheridan College	Theatre Production
The National Theatre School	Production Program
The National Theatre School	Technical Theatre
The National Theatre School of Canada	Production Management
The National Theatre School of Canada	Technical Production
The National Theatre School of Canada	Theatre Production (2 responses)
University of Alberta	Technical Theatre
University of Lethbridge	Fine Arts.
University of Lethbridge	I don't remember
University of Winnipeg	Theatrical Production
York University	The Fine Art of Theatre Design
York University	Theatre

General theatre/drama/fine arts program (not specific to stage technicians)

Location / institution	**Program name / major or concentration**
Acadia University	Theatre program.
Bishop's University	Theatre program, acting with a tech component.
Concordia University	Scenography
Langara College	Theatre Arts
Niagara College	Theatre
Niagara College	Theatre program
Queens University	Drama program
Simon Fraser University	BA major in Geography, minor in theatre
University of BC	BSA Technical Theatre
University of BC	Lighting design
University of Calgary	BFA
University of Guelph	Drama (3 responses)
University of Guelph	Fine Arts (2 responses)
University of New Brunswick	A minor in Drama and Theatre Production
University of Ottawa	BA in Theatre and a Bachelor of Education
University of Regina, University of Alberta	BSA, MFA
University of Saskatchewan	Drama and Technical Theatre
University of Toronto	BA Drama, Acting
University of Toronto	Theatre Specialist
University of Victoria	Lighting and Lighting Design

University of Victoria summer school and University of Texas	Master of Fine Arts
University of Windsor	BA Honours in Drama
University of Windsor	Theatre program
Whitman University	BA Theatre
Other program (non-theatre)	
Location / institution	**Program name / major or concentration**
Art Institute Burnaby	Sound Recording
HEC	MBA
Manchester University	Technical Theatre, Scenic Construction
University of Ottawa	BA Music
University of Toronto	Arts and Science program
University of Toronto	Engineering
University of Waterloo	Geography with a minor in Drama
Not in Canada	
Location / institution	**Program name / major or concentration**
Carnegie Mellon	Theatre Acting and Directing
Chicago Rockford College	BA Fine Arts
Pacific Lutheran University	Communication Arts
Royal Academy of the Arts in London, England	Stage Management
Yale University, Columbia University	Theatre program
Refused (1 response)	

Figure 43 Q16 AND Q17. WHAT SKILL DID YOU LEARN DURING YOUR CONFERENCE OR WORKSHOP RELATED TO PROFESSIONAL DEVELOPMENT AS A STAGE TECHNICIAN? WHO OFFERED THE TRAINING?

Operate rigging and fall protection equipment	
Skill / skill set	**Who offered the training**
Aerial lifts	SHAPE
Fall Arrest Certification	IATSE
Fall protection	CITT
Fall protection	IATSE Local
Ground rigging and arena rigging.	IATSE local 680
Lighting	CITT
Rigging	A local rigging company
Rigging	CITT (7 responses)
Rigging	CITT in Calgary
Rigging	I don't know
Rigging	IATSE union
Rigging	Las Vegas IATSE (2 responses)
Rigging	Xavier Forget, Ottawa
Rigging and fall arrest	IATSE Local 168
Rigging, Management	CITT
Work in unconventional environments such as heights, confined spaces or in the dark	
Skill / skill set	**Who offered the training**
Working at heights	La Ville de Montrèal
Set up and strike lighting elements	
Skill / skill set	**Who offered the training**
Automated lighting	Lighting by Monty
Lighting	CITT (3 responses)
Lighting	CITT conference
Lighting	Confederation Centre in PEI
Lighting board operation	Strand lighting (manufacturing company)
Lighting design	CITT
Lighting techniques	CITT
Lighting techniques	IATSE Local
Stage Lighting	USITT
Use of wireless dimmers	CITT
Set up and strike audio-visual equipment	
Skill / skill set	**Who offered the training**
Advanced audio engineering	York Region Music Centre.
Audio-visual	National Systems Contracting Association

Live sound reinforcement	CITT
Projection	USITT conference at the Banff Centre
Projection Design	Banff Centre for the Arts
Sound	CITT (3 responses)
Sound	CITT conference
Sound Equipment	Manufacturing companies
Sound reinforcement	USITT
Video projections	Banff Centre
Set up and strike props and wardrobes	
Skill / skill set	**Who offered the training**
Hair colours and cuts as well as team building.	Possibly Matrix of Canada
Props	CITT
Staged sword fighting	Algonquin College
Assist in set up and strike special effects such as atmospheric, mechanical live sound, pyrotechnic or fire and flame	
Skill / skill set	**Who offered the training**
Pyrotechnics	The federal government
Pyrotechnics	Banff Centre
Pyrotechnics	CITT
Pyrotechnics	Simcoe
Special Effects	USITT
Operate material handling equipment and personnel lifts	
Skill / skill set	**Who offered the training**
Forklift operation	WCB
Operation of lift equipment	Banff Centre
Set up and strike stage carpentry elements	
Skill / skill set	**Who offered the training**
Stage carpentry	Banff Centre for the Fine Arts
Communicate ideas effectively in oral and written form	
Skill / skill set	**Who offered the training**
Communication skills	CHRC
Writing scripts and plays	I don't know
Written communication	CITT
Practice stage etiquette in a teamwork environment	
Skill / skill set	**Who offered the training**
Set etiquette	USITT conference at the Banff Centre
First aid / general safety	
Skill / skill set	**Who offered the training**
CPR	Fanshawe College

First Aid	CITT
First aid	CITT conference
First Aid	CSST – Provincial Government
First aid	IATSE Local
First aid	SHAPE (2 responses)
First Aid	The Workman Theatre Project
Safety seminar	The Hummingbird Centre
Safety training	CITT
Work Safety Issues	Banff Centre

Comply with laws and procedures such as fire codes, electrical codes and Workplace Hazardous Materials Information System (WHIMS)

Skill / skill set	**Who offered the training**
Electrical	I don't know
Electrical Hazards	Dalhousie University
Fire prevention and safety	CITT
Fire protection	CITT conference
Fire Safety Standards, Fire Proofing	JD International

Production / administration / management

Skill / skill set	**Who offered the training**
Administration	PACT and GVTTA
Management	Simcoe
Management	The Workman Theatre Project
Office management	CITT
Production	CITT
Production Management	CITT
Stage managing the arts in Canada	Winston Morgon, Theatre Ontario

Technology

Skill / skill set	**Who offered the training**
Computer literacy	The Banff Centre for Fine Arts
Information Sharing	CITT
Modern Technologies	CITT
New technology	USITT
Theatre Technologies	Q1 Production Technologies

Other

Skill / skill set	**Who offered the training**
Broad range of topics	CITT conference
Chain motors	CITT in Calgary
Design and construction	Design West
Marketing, promotions	CCI, PACT

Rural presenters (basic technical requirements to put on a show or concert)	Theatre Alberta tech workshops
Touring	Siminovitch Awards
Vector	CITT
Working with Pneumatics	CITT

Figure 44 Q18. WHEN THINKING ABOUT STAGE TECHNICIAN TRAINING, WHAT WOULD YOU SAY IS THE MOST SIGNIFICANT TRAINING GAP?

Operate rigging and fall protection equipment
Fall protection and restraint.
Technicians have to go to the USA to get rigging training.
Fall arrest.
Safety issues such as rigging or fall arrest.
Updating on rigging and fall protection equipment and operation.
Rigging,
First aid / safety
Significantly more formal health and safety training through theatre schools.
Health and safety training such as working with heights, using man-lifts and working with chemicals.
Hands on experience regarding safety.
Health and safety issues.
Safety issues when moving heavy or dangerous items.
Safety issues.
Most basic entry level skills.
Knowledge of theatre safety.
Theatre safety.
Keeping up with evolving technologies and learning to work with older technology that is still used today
Technical and computer engineering apprenticeships would make the situation much better.
Students are not trained to use older, less computerized equipment that most theatres still have.
People need more hands-on experience and the ability to use less computerized equipment.
Use of specialized computer equipment.
Knowledge of old equipment and how to use it.
To learn about developments in lighting and sound technology as they happen.
Lighting software.
Technicians are no longer being trained to use older, non-automated equipment.
General Computer Literacy
Computer skills and awareness of responsibilities.
Keeping up with audiovisual technology as it becomes more computerized.
How to use the newer automation equipment.
Computer Drafting.
Troubleshooting older equipment.
Emerging technology regarding video and stage animation.
Keeping up with technology developments and new systems.
Information technology.
Computer technology.

Training needed to impart basic skills of a stage technician or have more hands-on work experience in general
Basic skills are often overlooked within standard training programs such as: how to plug equipment together properly, how to focus a light bulb and how to use the different technical systems.
No gap in training as such, but new technicians do not always have the experience that employers expect.
Basic skills such as how to pack a truck or how to roll a case down a ramp.
Formal training programs are too theoretical, need more hands-on training.
Hands on experience, primarily with material handling.
Apprenticeships might provide the experience that would help them land jobs.
Hands on experience, artistic aspects like screen painting and apprenticeships.
Apprenticeships.
Technicians need more hands on training before entering the workforce.
Technicians need hands on experience, perhaps through apprenticeship.
Lack of hands on experience.
Hands on experience.
Real life experience.
Apprenticeships would help technicians to understand their job better.
Hands-on training is in short supply which makes finding work difficult.
The new stage technicians don't have the most basic skills such as how concerts work, loading equipment, and safety.
Work experience in a real work environment.
Pyrotechnic skills
It's expensive to get training for some fields such as pyrotechnics.
Pyrotechnics.
The pyrotechnic classes lack hands on experience.
Communication or teamwork and interpersonal skills
Interpersonal skills, how to deal with people.
Communication skills, many people lack technical vocabulary and the general ability to express their questions.
Human relations and communication skills, how to think on your feet and adapt to changes in industry.
Teamwork, communication skills.
People skills and problem solving skills.
Training is too focused on pre-programmed, easy-to-use computers, need more focus on people skills and problem solving skills.
Institutions are not training people for subject areas that are needed in industry such as working in a team.
Communication skills, between stage hand groups and stage managers.
General people skills and teamwork skills.
General ability to communicate with other people.
Human interactions and interpersonal skills.
Problem solving skills. Being able to work alone or in groups effectively and dealing with unexpected situations.

Be able to adapt to the environment depending on the type of production. Technicians need to be good listeners and observers.
Communication and civic responsibility.
Formal training is inconsistent with needs of employers or is not easily available
Training not available locally. We have to go out of province for training.
Biggest problem is that there are not enough trained stage technicians.
Training is often not local so many people can't get to the training locations.
People trained in schools would not necessarily be familiar with a venue's equipment.
It's difficult to find technicians who are trained to our specifications. Training differs wildly from school to school.
You don't know what a technician can do because training differs from school to school.
Most of the best training is in the USA.
There are very few updating workshops for general stage craft.
Depends on school. Some are heavy on audiovisual design, while others are heavy on carpentry.
It's hard to find out where training is. The certification only lasts 2 years.
Technicians need training in all areas as opposed to specialization
If a person can't be a specialist, they have to do everything.
The training should be less specialized. They should be able to do everything plus one specialized field.
Students need to be more knowledgeable in all aspects of stage work rather than specializing.
Technicians need training in all areas.
Training is too specialized. Technicians need to be able to do everything well.
Professionalism and adaptability / versatility
Standard protocol and etiquette.
How to adapt to new and different environments, like different theatres.
Theatre etiquette
Technicians aren't professional enough.
Technicians need to be versatile.
Work stamina and versatility, especially with knowledge on a variety of materials.
Audio, lighting and design
Technicians need better lighting colour skills.
Use of multimedia operations and the setting up of videos or slides.
General lighting design.
Audio training is not always covered by schools.
Advanced Structural Design and Engineering.
Other
Wig making.
How to set-up and strike a show depending on where you are.
General management and organization skills.
Because jobs in this field are not posted, technicians need to learn to network to find jobs and work up the ladder.

Welding.
There is a general lack of funding for theatres to do their own training.
Rope handling, knot tying.
A stagehand has so many tasks it's not worth having formal training except for specialists like electricians.
Knowing how to negotiate a contract.
Being able to manage stress.
Nothing / there is no significant training gap
Nothing. (18 responses)
No.
None.
I don't know (35 responses)