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EVALUATION OF SOUTH DAKOTA COLLEGIATE

PROSCENIUM ARCH THEATRES

BY

KENNETH W. STOFFERAHN

A thesis submitted
in partial fulfillment of the requirements for the
degree Master of Arts, Major in
Speech, South Dakota
State University

1979

EVALUATION OF SOUTH DAKOTA COLLEGIATE

PROSCENIUM ARCH THEATRES

This thesis is approved as a creditable and independent investigation by a candidate for the degree, Master of Arts, and is acceptable for meeting the thesis requirements for this degree. Acceptance of this thesis does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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Thesis Advisor

Date

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For their confidence in me over the years, my parents, Marvin and Barbara Stofferahn deserve my deepest love and appreciation. Thanks to the other members of my family for their encouragement.

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To all those that helped and gave me the needed support during this undertaking: Nancy, J.D., Laurie, Tom, David, Kate, John, Holly, Mort, and Bob--thank you.

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Ila Asmus, thank you.

KWS

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CHAPTER I

INTRODUCTION

Statement of Purpose

The purpose of this study is to determine the adequacies of the proscenium arch theatrical facilities for a comprehensive¹ educational theatre program in the four-year degree granting institutions in the state of South Dakota. More specifically, answers to the following questions were sought:

1. What are the minimum requirements for a proscenium arch theatre in a comprehensive educational theatre program?

A. What are the minimum requirements for a proscenium arch stage?

B. What are the minimum requirements for a seating facility (house area)?

C. What are the minimum requirements for a lighting facility?

D. What are the minimum requirements for a box office and foyer?

E. What are the minimum requirements for dressing rooms and green room?

F. What are the minimum requirements for a sound system?

G. What are the minimum requirements for an orchestra pit?

2. How closely do the colleges in the state of South Dakota meet the minimum requirements?

Origin of the Study

The investigator was interested in examining the differences among theatrical facilities in the thirteen selected colleges. Curiosity was stimulated by the fact that the investigator's undergraduate work was completed in theatre with special emphasis in technical theatre. The question arises as to what are the minimum requirements for a college level proscenium arch theatrical facility? When these requirements are applied to the selected colleges, how closely do they match the requirements? The study, therefore, resulted in a list of criteria for a college level proscenium arch theatrical facility which was subsequently applied in evaluation of the selected college and university theatrical facilities.

Procedures

The following procedures were completed in the attempt to answer the questions raised in the "Statement of Purpose:"

1. The following guides were surveyed to determine any previous studies undertaken regarding the minimum requirements for a college proscenium arch facility or an evaluation of the facilities in the colleges of South Dakota;

Comprehensive Dissertations Index, 1961-1976. Communication and the Arts. Ann Arbor, Michigan: Xerox University Press.

Dissertation Abstracts International, XXVIII. Ann Arbor, Michigan: Xerox University Microfilms.

Dow, Clyde W., "Abstracts of Theses in the Field of Speech." Speech Monographs, 1930-1965.

Knower, Franklin H., "Graduate Theses: An Index of Graduate Work in Speech." Speech Monographs, 1930-1969.

Littoe, Fredric M., American Dissertations of Drama and Theatre, A Bibliography. Ann Arbor, Michigan: Kent State University, 1969.

Nelson, Max, "Abstracts of Theses in the Field of Speech." Speech Monographs, 1966.

Shearer, Ned A., Bibliographic Annual in Speech Communication: 1970-1975. New York: Speech Communication Association.

The survey of the above guides revealed no duplicate study. Initial observation identified four investigations which appeared relevant to the current study:

Wildman, James W., "Sound for the Theatre." M.A. Thesis, Humbolt State College, 1969.

After further investigation of this study it was noted that it dealt only with the area of sound in the theatre. The proposed study undertook a more extended observation of the overall theatre facility, including the sound facilities.

Head, George, "University Theatre Structures, 1965-1972." M.F.A. Thesis, University of Texas at Austin, 1974.

Further examination of this study revealed that it was limited to the years of 1965-1972 and dealt with all types of theatre structures. The current study deals only with the proscenium arch theatre in terms of the selected criteria.

Hidde, Dale K., "A Survey of College Union Theatre with Facilities of the Presentation of Drama, Concert, and Film." M.A. Thesis, University of Wisconsin, 1969.

Hidde's study dealt with union theatre facilities and the requirements for the presentation of drama, concert, and film. The South Dakota study deals only with proscenium arch theatrical facilities and only with adequacy for the presentation of educational theatre.

Poe, Harold W., "Critical Elements of Functional Theatre Architecture in American Colleges and Universities." Ph.D. Dissertation, Florida State University, 1967.

Examination of Poe's study revealed that section three dealt with data useful in the design of functional theatre facilities in American colleges and universities. This data had been compiled by sending questionnaires to eighty-eight college and university theatre operators. An evaluation of practical space requirements and efficient work-area arrangements was then determined. Poe's evaluation provides only information as to colleges' and universities' existing facilities and is not a judgment of adequacy. The dissertation did not include all areas of investigation examined in the current study. Some information from the Poe study was used as part of the written material for establishing the minimum criteria.

2. In order to determine the minimum requirements for a proscenium arch theatrical facility for an educational theatre program, a detailed, itemized list of questions was compiled for each category cited on page 1. The list was compiled by the investigator under the direction of Professor Raymond Peterson, Designer/Technical Director for South Dakota State University Theatre. The investigator used personal knowledge and undergraduate course materials on the categories to establish a general list of questions for each

category. In the meetings with Professor Peterson additions to and revisions of the list were made. The list of questions was then finalized. The questions did not cover all areas of the proscenium arch theatrical facility, nor did they cover all aspects of each area. They were designed to give a basic representation of what is needed for a proscenium arch theatre in a college or university level. The following are the criteria-seeking questions that were used in seeking the minimum requirements for a proscenium arch theatrical facility:

- A. What are the minimum requirements for the proscenium arch stage?
 - (1) What should be the width of the proscenium arch?
 - (2) What should be the height of the proscenium arch?
 - (3) What should be the depth of the stage?
 - (4) How wide should the apron be at center stage?
 - (5) What should be the distance between the stage floor and the lowest point of the auditorium floor?
 - (6) What should be the width of the wing space on stage right?
 - (7) What should be the depth of the wing space on stage right?
 - (8) What should be the height of the wing space on stage right?
 - (9) What should be the width of the wing space on stage left?
 - (10) What should be the depth of the wing space on stage left?
 - (11) What should be the height of the wing space on stage left?
 - (12) What should be the distance between the grid and the stage floor?
 - (13) What should be the size of the grid?
 - (14) What should be the distance between the grid and the ceiling?
 - (15) How many battens should be suspended from the grid?
 - (16) What should be the distance between the grid and the top of the proscenium arch?
 - (17) How many doors are needed to gain access to the stage area?

- (18) What should be the size of the doors?
- (19) Of what type of material should the stage floor be constructed?
- (20) What type of lighting does the stage area need?
- (21) How many control switches should there be?
- (22) Where should the switches be located?
- (23) Where should the doors be located?
- (24) What should be the size of the act curtain?
- (25) What should be the size of the grand drape?
- (26) What type of system should be used to operate the act curtain?
- (27) How many teasers should be located on the stage?
- (28) How many tormentors should be located on the stage?
- (29) How many of the battens should be suspended by counterweights?
- (30) How many of the battens should be suspended by rope lines?
- (31) What should be the size of the rear curtain?
- (32) What should be the size of the pinrail loft?
- (33) What should be the size of the light bridge?
- (34) What should be the distance between the rear curtain and the back wall?

B. What are the minimum requirements for the seating facility (house area)?

- (1) What should be the height of the ceiling in the house area?
- (2) What should be the depth of the seating facility?
- (3) What should be the width of the seating facility?
- (4) What type of seating should be used?
- (5) How many seats are needed?
- (6) How many aisles are needed?
- (7) What should be the size of the balcony?
- (8) What should be the width of the aisles?
- (9) How many seats should be in each row?
- (10) How many seats are needed in the balcony?
- (11) What should be the distance between the seats from row to row?
- (12) Is a balcony needed?
- (13) How many access doors are needed?
- (14) What should be the size of the doors?
- (15) How many fire escape doors are needed?
- (16) What should be the size of the fire escape doors?
- (17) Where should the fire escape doors be located?
- (18) What should be the angle of the floor incline?

- (19) What type of ceiling should be used?
- (20) What type of floor covering is needed?
- (21) What type of house lighting is needed?
- (22) Where should the control switches be located?

C. What are the minimum requirements for the lighting facility?

- (1) Where should the light control booth be located?
- (2) What should be the size of the light control booth?
- (3) What type of soundproofing is needed in the light control booth?
- (4) How many dimmers are needed?
- (5) How many pre-sets are needed?
- (6) What size of electrical output is needed?
- (7) What should be the watt power of each dimmer?
- (8) Where should the patch panel be located?
- (9) How many circuits are needed in the patch panel?
- (10) How many beam positions are needed?
- (11) What should be the distance between the beam position and the stage?
- (12) What should be the size of the beam opening?
- (13) How many outlets are needed at the beam position?
- (14) How many outlets are needed on the first electric?
- (15) How many light battens are needed?
- (16) How many outlets should be located on each light batten?
- (17) How many outlets should be located on the stage?
- (18) What should be the angle between the stage floor and the beam position?
- (19) What type of house dimmer system is needed?
- (20) Where should the house light dimmer be located?

D. What are the minimum requirements for the box office and foyer?

- (1) What should be the size of the box office?
- (2) Where should the box office be located in relation to the house area?
- (3) How many ticket windows are needed in the box office?
- (4) What should be the size of the windows?
- (5) How many doors are needed in the box office?
- (6) What should be the size of the doors?
- (7) Is a permanent phone needed?
- (8) What should be the width of the foyer?

- (9) What should be the length of the foyer?
- (10) Where should the foyer be located in relation to the box office?
- (11) Is an accessible pay phone needed?
- (12) Where should the pay phone be located?

E. What are the minimum requirements for the dressing rooms and green room?

- (1) How many dressing rooms are needed?
- (2) What should be the size of each dressing room?
- (3) What type of lighting is needed?
- (4) Where should the dressing rooms be located in relation to the stage?
- (5) What type of special lighting is needed for make-up?
- (6) How many doors are needed?
- (7) Are double doors needed?
- (8) How many make-up stations are needed?
- (9) How large should the storage area be?
- (10) What type of clothes racks are needed?
- (11) How many clothes racks are needed?
- (12) Where should the green room be located in relation to the stage?
- (13) Where should the green room be located in relation to the dressing rooms?
- (14) What should be the size of the green room?
- (15) How many doors are needed in the green room?
- (16) Are double doors needed in the green room?
- (17) What type of sound system is needed in the dressing rooms and green room?
- (18) What type of rest room and shower facilities should be available?

F. What are the minimum requirements for the sound system?

- (1) How many speakers should be placed on stage?
- (2) How many speakers should be placed in the house area?
- (3) What should be the size of the stage speakers?
- (4) What should be the size of the house speakers?
- (5) How many microphone plugs are needed on stage?
- (6) What type of amplification system is needed?
- (7) Where should the sound control board be located?

G. What are the minimum requirements for an orchestra pit?

- (1) If an orchestra pit is not built in, how much area should be available to be used for it?
- (2) What should be the width of the orchestra pit?

- (3) What should be the length of the orchestra pit?
- (4) What should be the distance between the orchestra pit floor and the seating floor?
- (5) Where should the orchestra pit be located?
- (6) How many electrical outlets are needed in the orchestra pit?

3. In order to determine the answers to the criteria-seeking questions, a survey of written materials was completed. Written materials examined were text books, dissertations, and journal articles dealing with the proscenium arch theatrical facility used for a comprehensive educational theatre program. An explanation of how the written materials was selected and examined appears in Chapter II. A portion of the answers to the criteria-seeking questions were discovered through the survey of written materials. Those questions which were not adequately answered by the written materials were arranged in questionnaire form and submitted to the panel of three experts.

4. The experts who answered the remaining criteria-seeking questions were selected by the investigator under the guidance of Professor Peterson. Preliminary criteria for selection were that the experts must have worked in a college educational theatre program for at least three years. They may have been technical directors or must have had some other indication of a thorough knowledge of the facilities in a proscenium arch theatre. The experts were not to have been associated with the South Dakota institutions that were examined. A more complete description of the process of selection is offered in detail in Chapter II. The answers from those experts

were then synthesized to answer the remaining criteria-seeking questions.

5. Information obtained in the completion of steps 3 and 4 was then compiled. This information then became the data for answering the criteria-seeking questions. Answers to the criteria-seeking questions then became the criteria for the minimum requirements for a proscenium arch theatrical facility for a comprehensive educational theatre program.

6. Criteria formed in the completion of step 5 were then used to determine the adequacy of the proscenium arch theatrical facilities in the thirteen four-year degree granting institutions in the state of South Dakota. The investigator examined each facility to determine the extent to which it met, exceeded, or fell short of the established criteria. An explanation of how the institutions were examined appears in Chapter III.

FOOTNOTES

¹For the purpose of this study "comprehensive" is defined as an institution that offers a variety of dramatic productions, drama and musicals, for the purpose of offering educational theatre to the enrolled students.

CHAPTER II

ESTABLISHING THE MINIMUM REQUIREMENTS

Establishing Criteria-Seeking Questions

In establishing the minimum requirements for the proscenium arch theatrical facility for a comprehensive educational theatre program, a list of criteria-seeking questions was compiled by the investigator and approved by Professor Raymond Peterson, Designer/Technical Director for South Dakota State University theatre.

These questions dealt with seven specific categories. The categories were: 1) the stage area, 2) the seating facility or house area, 3) the lighting facility, 4) the box office and foyer, 5) the dressing rooms and green room, 6) the sound system, 7) the orchestra pit. The questions were established as a means of discovering the minimum requirements for a proscenium arch theatrical facility. The questions did not cover all aspects of the theatrical facility, nor did they cover all aspects of each area. They were designed to yield answers concerning minimum standards for a proscenium arch theatre used to present educational theatre on a college or university level.

Process of Answering Criteria-Seeking Questions

A two step process was completed in answering the criteria-seeking questions. First, an examination of selected written material available to the investigator was conducted to find

available answers. The adequacy of these first step answers was determined by the investigator under the direction of Professor Peterson. The questions for which answers were not deemed adequate were then put into a questionnaire and submitted to a panel of three experts for their responses.

The answers received from the written material and the panel of experts became the data used to establish the criteria for the minimum requirements for a proscenium arch theatre for a comprehensive educational theatre program. In those instances where final answers were not considered adequate by the investigator and Professor Peterson, no minimum requirement could be established.

Examination of Written Material

Selected books, journal articles, and dissertations were examined concerning the advocated minimum requirements for each of the criteria-seeking questions.

In the search for appropriate sources, the card file at South Dakota State University Library was surveyed. The key words, theatre, auditorium, and architecture were used to produce a bibliography. The sources were then further examined individually for answers to the criteria-seeking questions. The indexes of the books were read to discover if any of the material appeared useful. The books were deemed useful if the information dealt with college or university educational theatre, not professional or community theatre, and offered possible answers to the criteria-seeking questions. Certain books offered answers but were more than

twenty-five years old. . These books were not used because the investigator arbitrarily chose this cut-off since the innovations occur frequently.

One additional book, Burris-Meyer and Cole, Theatres and Auditoriums, was received through the inter-library loan. This book was discovered through an examination of the bibliography from Harold Poe's dissertation, "Critical Elements of Functional Theatre Architecture in American Colleges and Universities." The dissertation was discovered in the review of literature from Chapter I.

In the search for professional articles that might produce answers to the criteria-seeking questions, journal indexes were surveyed. The investigator placed a twenty-five year limit on this material also. The Educational Theatre Journal was the only one found that pertained to the area of study. The journal was examined on the same basis as the books.

In a search for theses and dissertations that might yield answers, the review of literature from Chapter I was used. The same criteria that were used in examining the books and journal articles were applied to the dissertations.

Adequate answers to a portion of the criteria-seeking questions were found in the review of the written material. The adequacy of the answers was determined by the investigator and Professor Peterson in a conference on December 11, 1978.

Certain written material surveyed yielded no answers to the criteria-seeking questions or did not meet the time limit concerning recency.

The following bibliography is inclusive of the materials surveyed:

Bay, Howard. Stage Design. New York: Drama Book Specialist, 1974.

Brikmire, William H. The Planning and Construction of American Theatres. New York: John Wiley and Sons, 1896.

Burdrek, Elizabeth B.; Hansen, Peggy C.; and Zanger, Brenda. Contemporary Stage Designs U.S.A. Middletown, Connecticut: Wesleyan University Press, 1974.

Burris-Meyer, Harold, and Cole, Edward C. Theatres and Auditoriums. New York: Robert E. Krieger Publishing Co., Inc., 1975.

Collison, David. Stage Sound. New York: Drama Book Specialist, 1976.

Corry, Percy. Planning the Stage. New York: Pitman Corporation, 1961.

Educational Theatre Journal. 1949-1977.

Fuchs, Theodore. Stage Lighting. New York: Benjamin Blom, Inc., 1957.

Gassner, John. Producing the Play bound with the New Scene Technicians Handbook by Phillip Barber. rev. ed. New York: The Dryden Press, 1953.

Gillette, A. S. Stage Scenery. New York: Harper & Bros., 1959.

Guthrie, Tyrone. A New Theatre. New York: McGraw-Hill Book Co., 1964.

Hartman, Louis. Theatre Lighting. New York: Drama Book Specialist, 1930.

Krows, Arthur Edwin. Equipment for Stage Production. New York: D. Appleton and Company, 1928.

McNamara, Brooks; Rojo, Jerry; and Schechner, Richard. Theatre, Spaces, Environments. New York: Drama Book Specialist, 1975.

- National Fire Protection Agency. National Fire Codes. Boston: National Fire Protection Agency, 1973.
- Parker, W. Oren, and Smith, Harvey K. Scene Design and Stage Lighting. New York: Holt, Rinehart and Winston, Inc., 1963.
- Phillippi, Herbert. Stagecraft and Scene Design. Cambridge, Massachusetts: Houghton Mifflin Co., The Riverside Press, 1953.
- Pilbrow, Richard. Stage Lighting. New York: Von Nostrand Reinhold Company, 1970.
- Poe, Harold. "Critical Elements of Functional Theatre Architecture in American Colleges and Universities." Ph.D. dissertation, Florida State University, 1967.
- Ransley, Charles G., and Sleeper, Harold R. Architectural Graphic Standards. New York: John Wiley & Sons, Inc., 1970.
- Rubin, Joel E., and Watson, Leland H. Theatrical Lighting Practice. New York: Theatre Arts Books, 1954.
- The American Federation of Arts. The Ideal Theatre: Eight Concepts. New York: Clark and Way, Inc., 1962.
- The American Theatre Planning Board, Inc. Theatre Check List. Connecticut: Wesleyan University Press, 1969.

Panel of Experts

The criteria-seeking questions that were not answered adequately by examination of the written material were then submitted to the chosen panel of experts for their answers. A written questionnaire and letter were prepared by the investigator and approved by Dr. Wayne Hoogestraat, thesis advisor, in a conference on December 18, 1978. (The letter and questionnaire are shown in Appendix A.)

It had been established that the experts must have worked in a college educational theatre program for at least three years.

These experts could be technical directors or must have had a thorough knowledge of the facilities of a proscenium arch theatre. The experts could not be individuals who were working at or involved with the institutions covered in Chapter III of this study.

In a conference on December 11, 1978, Professor Peterson suggested that selected persons be contacted by telephone to inquire if they would agree to complete the questionnaire. He offered names of individuals who were thought to have sufficient knowledge of proscenium arch theatre facilities and were likely to cooperate by completing the questionnaire.

The first expert contacted was Robert Clausen, Director in Theatre at Rochester Community College, Rochester, Minnesota. In a telephone call on December 12, 1978, the investigator discovered, through a conversation with a department member, that Mr. Clausen was on sabbatical in the east, and it would be difficult to contact him because of his activities. Thus, Robert Clausen was not selected.

The next suggestion was to find a theatre department member at Southwest State University, Marshall, Minnesota. In a telephone conversation on December 13, 1978, contact was made with Mr. Paul Brown. In the telephone interview it was discovered that Mr. Brown was the technical director at Southwest State University and had worked in educational theatre for six years. Mr. Brown agreed to cooperate with the study. The investigator, along with Professor Peterson, agreed that Mr. Brown was a qualified expert. Thus, he became the first expert and a questionnaire was sent to him.

The next suggestion was to interview theatre department members at Morningside College, Sioux City, Iowa. In a telephone conversation on December 19, 1978, contact was made with Mr. Chuck Whetzel. In the interview it was revealed that Mr. Whetzel was a director at the college and had worked in educational theatre for fifteen years. He has designed sets for at least six different proscenium stages in Iowa, Indiana, and Pennsylvania and has served as a consultant on the construction of stages for high schools and colleges. Mr. Whetzel agreed to cooperate with the study. With Professor Peterson's approval, Mr. Whetzel became the second expert for the study. A questionnaire was then sent to Chuck Whetzel on December 20, 1978.

The next suggestion by Professor Peterson was to inquire of other members of the South Dakota State University Theatre faculty whether they knew anyone who qualified as an expert. Dr. Lawrence Stine suggested contacting Lewin Goff, Director of Theatre at University of Iowa; David Thayer, Lighting Director, University of Iowa; and Margret Hall, Costume Mistress, University of Iowa. It was decided by the investigator and thesis advisors Peterson and Hoogestraat that these people may be too specialized in their respective fields and may not be able to answer a broad based questionnaire creditably. Thus, they were eliminated from the list of candidates.

Professor Clarence Denton, Associate Director of Theatre at South Dakota State University, suggested Mr. Terry Gunvordahl. Mr.

Gunvordahl is presently on the staff of the University of Alberta at Edmonton, Alberta. Mr. Gunvordahl has worked in other educational theatres for the past nine years. In a telephone conversation with Mr. Gunvordahl on December 21, 1978, he agreed to complete the questionnaire. Professor Peterson gave his consent and Mr. Gunvordahl was sent a questionnaire on December 21, 1978. Thus, Mr. Gunvordahl became the third expert.

The completed questionnaire from Mr. Paul Brown was received on January 23, 1979. The questionnaire from Chuck Whetzel, properly completed, was received on December 27, 1978.

The questionnaire was not immediately returned by Mr. Gunvordahl. Mr. Gunvordahl sent a letter of explanation that was received on February 7, 1979. He explained, "to try to give you the minimum requirements as specifically as you have indicated, I would do what you have already done--examine available written material." He went on to state, "the minimum requirements for any theatre space is that it be responsive to the dramatic action. That is about as specific as I can be." Thus, Mr. Gunvordahl's responses could not be used, and another expert had to be sought.

Professor Peterson suggested contacting members of the theatre faculty at Mankato State University, Mankato, Minnesota. Dr. C. R. Olauson was contacted by telephone on February 8, 1979. Dr. Olauson is a director in the theatre at Mankato State University and has been involved in educational theatre for thirteen years. He agreed to complete the questionnaire. Professor Peterson gave

his consent to using Dr. Olauson as an expert, and a questionnaire was sent on February 8, 1979. Thus, the third expert was assigned. In a follow up telephone conversation on February 23, it was discovered, for reasons unknown, that Dr. Olauson had passed the questionnaire on to Dr. Fred Bock. It was discovered that Dr. Fred Bock was the technical director at Mankato State University. Dr. Bock had been involved with college educational theatre for twenty years. Thus, with Professor Peterson's approval, Dr. Fred Bock became the final expert. The completed questionnaire from Dr. Bock was received March 15, 1979.

The answers from these experts were synthesized with other information to answer the remaining criteria-seeking questions.

Minimum Requirements for a Proscenium Arch
Theatre for a Comprehensive Educational
Theatre Program

The following have been established as minimum requirements for a proscenium arch theatre. The requirements were derived from the answers to the criteria-seeking questions found in the review of written material and from the questionnaires received from the panel of experts. The adequacy of the answers was determined by the investigator and with the approval of Professor Raymond Peterson.

Minimum Requirements for a Proscenium Arch Stage

The first category of criteria-seeking questions dealt with the proscenium arch stage. The first criteria-seeking question asked: What should be the width of the proscenium arch? Several

answers were found to this question. Perry Corry in his book, Planning the Stage, stated the width should be a minimum of "24 to 26 feet."¹ The dissertation by Harold Poe described "proscenium width--at least half the maximum width of the auditorium."²

From Burris-Meyer and Cole's Theatres and Auditoriums, a widely used source, it was found that "the minimum proscenium width for drama is 26 feet . . . the usual is 30 feet to 35 feet."³ The comprehensive educational theatre would include musical as well as dramatic productions; therefore, the minimum of 26 feet would not seem adequate for large cast musical productions. The usual distance of 30 to 35 feet would be more adequate.

A. S. Gillette, in his book, Stage Scenery, stated some dimensions as well as the reasoning for them:

For dramatic productions the acceptable width of the proscenium arch is from 32 feet to possibly 36 feet or 38 feet. When the arch is made wider than this, there is an immediate increase in the problems affecting the movement of actors, the design of the scenery, and the cost of production.⁴

The American Theatre Planning Board stated that "the width of the proscenium arch should not be less than 30 feet."⁵

From the material found it was concluded that the minimum width of the proscenium arch be 30 feet. This would allow for musical as well as dramatic productions in a comprehensive educational theatre program and was agreed upon by a majority of the authorities.

The second question asked: What should be the height of the proscenium arch? Corry stated that the height should be "11 feet to

14 feet."⁶ John Gassner stated that the "proscenium height--at least half the width of the proscenium opening (usually about two-thirds)."⁷ The American Theatre Planning Board also maintained the height as being "approximately two-thirds of the width of the proscenium arch opening."⁸

Harold Poe, in his dissertation, examined eighty-eight colleges and universities in the United States. He concluded that "by far the most frequently occurring proscenium height is 20 feet."⁸ The measurement of twenty feet would also meet the two-thirds of the minimum width standard used by the other authorities. Therefore, the minimum height of the proscenium arch was accepted as 20 feet.

The third question asked: What should be the depth of the stage? Corry expressed his opinion:

What is known as a "full set" would have a depth of about two-thirds of the width. Thus, if the opening width is 36 feet the depth of the acting area would probably be about 24 feet but this depth might be increased.¹⁰

Using 30 feet as the minimum width, applying the two-thirds standard would create a depth of 20 feet.

Gassner used the standard of "stage depth--at least equal to the proscenium opening (too often only two-thirds)."¹¹ This would call for a depth equal to the minimum proscenium width of 30 feet. This figure was also offered by Herbert Phillippi in Stagecraft and Scene Design, "the actual depth of the stage must be no less than 30 feet."¹² This distance would allow for large sets and also provide adequate cross-over space. From the acquired

opinions from the majority of the authorities, the minimum depth of the stage was set at 30 feet.

The fourth question asked: How wide (deep) should the apron be at center stage? The width (depth) is defined as the distance from the front of the stage to the curtain line.

Two written sources provided information to the question. Corry stated that "it is normally from 3 feet to 5 feet in depth."¹³ The 3 foot distance was also suggested by the American Theatre Planning Board which repeated, "most designers prefer at least 3 feet of clear working space in front of the curtain."¹⁴ Thus, a distance of 3 feet was accepted to be the minimum width of the apron at center stage.

Question five asked: What should be the distance between the stage floor and the lowest point of the auditorium floor? The lowest point of the auditorium floor is usually located at the front of the auditorium floor.

Corry was the only source who cited a specific distance. First he stated that "the eye-line of a seated adult is generally accepted as being at a height of 3 feet 8 inches."¹⁵ He then established guidelines for the different types of seating facilities:

If one had to establish a rule of thumb in relation to stage height it would be 3 feet 8 inches if the auditorium is flat; 3 feet 6 inches minimum if the auditorium is raked 1 in 10; 3 feet if auditorium is stepped.¹⁶

These standards appeared to be the adequate minimum distances for the different types of seating arrangements and were accepted as the minimum criterion.

The sixth question was: What should be the width of the wing space on stage right? Corry stated "a wing space of 8 feet at each side should be regarded as the irreducible minimum."¹⁷

Several sources supported the same standard. Gassner revealed that "stage width--should be twice the width of the proscenium," thus, one-half the proscenium opening for each side.¹⁸ The American Theatre Planning Board stated "there should be a minimum of one-half as much clear unobstructed space on each side of the proscenium opening as the proscenium width itself."¹⁹ This standard was also offered by Burris-Meyer and Cole in a diagram on page ninety-six of Theatres and Auditoriums.²⁰ From the preceding authorities one could reason that the minimum width of the wing space on each side of the stage is one-half the width of the proscenium opening but not less than 8 feet. This was accepted as the criterion.

The seventh question asked: What should be the depth of the wing space on stage right? None of the written authorities supplied an answer to this question. The question was then submitted to the panel of experts established earlier in this chapter. Answers received from the experts were as follows: Whetzel stated "15 feet." Brown suggested "35 feet to 40 feet." Bock suggested "3 feet wider than scenery stored." From the answers received it would appear that the distance is varied. A distance of 15 feet would be the bare minimum with 35 feet being more ideal. The accepted criterion is a minimum of 15 feet with a greater distance being desirable.

Question eight inquired: What should be the height of the wing space on stage right? There were no answers found to the question from the examination of the written material. The question was presented to the experts. Whetzel stated the height should be "14 feet." Brown suggested "to the grid." Bock expressed that the height should be "1 foot higher than scenery." From the answers received one could conclude that the height should be to the grid but not less than 14 feet. This was the accepted criterion.

Question nine was: What should be the width of the wing space on stage left? The information that was acquired to answer question six on page 24 was also used to establish a criterion for this question. The opinions cited that wing space width for each wing should be the same. Standards chosen in answering question six were that the minimum width of the wing space is one-half the width of the proscenium opening but not less than 8 feet. This was accepted as the criterion.

Question ten asked: What should be the depth of the wing space on stage left? No written authority offered an answer. The panel of experts felt the same size was adequate for stage left as that of stage right. Whetzel stated "15 feet." Brown stated "35 feet to 40 feet." Bock suggested "3 feet wider than the scenery." The same answers were received for the depth of the wing space on stage right. It seemed logical to formulate the same criterion. The criterion established that the depth of the wing space should be a distance of at least 15 feet with a greater distance being desirable.

Question eleven was: What should be the height of the wing space on stage left? Written material offered no answers. The experts agreed that the size for stage right was adequate for stage left. Whetzel stated "14 feet." Brown expressed the height as being "to the grid." Bock suggested "1 foot higher than the scenery." Answers to the question on the height of stage right were the same, so it would seem appropriate to use the same criterion. The accepted criterion was that the height of the wing space should be to the grid but not less than 14 feet.

Question twelve asked: What should be the distance between the grid and the stage floor? Three sources offered similar answers. Gassner stated:

Stage height to grid--twice the depth of the stage or three times the height of the proscenium opening, whichever is greater (too often the lesser of these dimensions is taken as the height of the grid).²¹

Poe also expressed that "one formula for determining the grid height is to multiply the proscenium height by three."²² The American Theatre Planning Board also stated to "build the grid three times the height of the effective proscenium opening."²³ Applying the minimum proscenium opening height figure of 20 feet would create a distance of 60 feet between the grid and the stage floor. From the opinions gathered from the authorities it would be reasonable to establish the minimum distance between the grid and the stage floor as three times the height of the proscenium opening.

Question thirteen asked: What should be the size of the grid? Written material surveyed did not yield any answers to the

question. When the question was submitted to the experts, Whetzel stated that the grid "should cover the entire usable stage area." Brown suggested that it "cover the full stage opening" plus the "full depth." Bock stated that the grid size should be the "same as the stage." From the experts' answers it would appear that the size of the grid should be large enough to cover the usable stage area. This was accepted as the minimum criterion. The usable stage area is considered the width of the proscenium and the depth of the stage behind the curtain.

The fourteenth question read: What should be the distance between the grid and the ceiling? Burris-Meyer and Cole was the only source to suggest a standard. They held that "the gridiron [grid] must allow at least a minimum of headroom under the roof structure: 6 feet under the lowest roof griders."²⁴ A distance of 6 feet would allow for adequate work space above the grid. Thus, the standard by Burris-Meyer and Cole, of 6 feet, represents the minimum distance between the grid and the ceiling.

Question fifteen asked: How many battens should be suspended from the grid? Burris-Meyer and Cole stated that for a "drama five to ten" and "musical ten to twenty."²⁵ Burris-Meyer and Cole were the only authority to give a specific number. In a comprehensive educational theatre program both drama and musicals would be presented. Taking the minimum number for musicals, which would be sufficient for drama, ten battens were chosen as the minimum number of battens that should be suspended from the grid.

Question sixteen inquired: What should be the distance between the grid and the top of the proscenium arch? Using the figure established for question two, 20 feet being the minimum height of the proscenium arch (page 21), and subtracting that from three times the proscenium height, 60 feet, which was the established height of the grid (question twelve, page 26), 40 feet was established as the minimum distance between the grid and the top of the proscenium arch.

Question seventeen asked: How many doors are needed to gain access to the stage area? According to National Fire Codes, section 8-1517 (b), "there shall be at least two exits available from every auxiliary stage space."²⁶ A minimum of two doors are needed from the stage.

Burris-Meyer and Cole²⁷ and American Theatre Planning Board²⁸ cited that there should also be a loading door to the stage. Thus, a minimum of two doors and a loading door are needed to gain access to the stage. This seemed adequate and was accepted as the criterion.

Question eighteen was: What should be the size of the doors? Corry stated that "doorways used by the performers should not be less than 7 feet high and 3 feet wide."³⁰ The American Theatre Planning Board gave no specific distances but suggested "doors should be wide and high enough to handle maximum size flats, properties, and platforms anticipated."³¹ The answers from the authorities did not seem adequate, so the question was presented to the panel of experts.

Whetzel gave no answer to the question. Brown stated doors should be "3 feet by 7 feet." Bock suggested doors should be "big enough for the largest moving piece of scenery." From the information received it would appear that doors should be at least 3 feet wide by 7 feet high. This size is adequate for performers but not for any type of loading door. It was accepted as the minimum criterion.

Question nineteen asked: Of what type of material should the stage floor be constructed? Burris-Meyer and Cole was the only written source to indicate specific material. They gave the reasoning for their choice:

The stage must be covered with a tough wear-resisting wood which is at the same time receptive to nails and hand-driven stage screws. Edge-grained yellow pine or similar wood is satisfactory.³²

The stage floor should be constructed from wood that is workable for attaching scenic devices.

Question twenty was: What type of lighting does the stage area need? Parker and Smith in Scene Design and Stage Lighting offered several suggestions:

For the main portion of the stage area, ordinary 300-watt lamps in metal reflectors are perfectly satisfactory; their number will depend on the dimensions of the stage. The battens assigned to carry the stage lighting instruments are ideal locations for the work lights. A second group of lights must be provided along the back and side walls of the stage. These may use smaller lamps, say 60 watts.³³

This was the only source found to cite specific standards. Stages may have adequate work lights but not meet these specific standards.

Thus, no standard could be set other than the stage should have adequate lighting to work by at times other than during performance.

Question twenty-one asked: How many control switches should there be? Corry suggested that the work lights should be "controlled both at stage level and at the point of stage lighting control."³⁴

This was the only authority to present an opinion. The answer did not appear to be adequate, and the question was given to the experts. Brown revealed that there should be "one on stage right and one on stage left." Whetzel suggested "one per door, with lock-out controls at the stage manager's desk and one at the lighting console." Bock stated "enough to turn them (lights) on." From the experts' and authorities' opinions, most agree that there should be switches at the stage manager's control and at stage lighting control. Other locations on the stage would be ideal, but these two locations were established as the minimum criterion.

Question twenty-two read: Where should the switches be located? Corry was the only source to cite specific locations. Corry stated that they were needed at only two specific locations, "at stage level and at the point of stage lighting control."³⁵ These locations were judged adequate and were accepted as the criterion.

Question twenty-three was: Where should the doors be located? Corry stated "entrances in the side walls should either be well down-stage or as far up-stage as possible."³⁶ This allows for as much workable wall space as possible on each side of the

stage. Burris-Meyer and Cole revealed that the loading door should be "at the side or the rear of the stage."³⁷ The doors should be located either well down-stage or as far up-stage as possible with the loading doors being either at the side or rear of the stage. This statement constituted the accepted locations for stage doors.

Question twenty-four asked: What should be the size of the act curtain? Architectural Graphic Standards provided the only authoritative standard. They suggested "working height of the curtain: 15 feet to 20 feet for drama, 20 feet to 30 feet for musical and opera."³⁸ This answer was not considered adequate; thus, the question was presented to the panel of experts. Their opinions were as follows: Whetzel stated "enough to cover the proscenium opening." Brown suggested "50 feet to 60 feet." Bock stated "proscenium width plus 6 feet and proscenium height plus 3 feet." From the opinions expressed it would appear that the size should be large enough to cover the proscenium opening with an excess footage of 6 feet on the sides and 3 feet on the top.

Question twenty-five was: What should be the size of the grand drape? Corry gave no standards but explained the nature of the grand drape. He stated that it "fits immediately inside the proscenium and consists of two curtains with an overlap in the center and extends beyond the proscenium opening at each side."³⁹ This answer was not acceptable, and the question was submitted to the experts. Whetzel suggested that the grand drape be "enough to cover the proscenium." Brown stated it should be "40 feet to

45 feet long and 22 feet high." Bock suggested that the drape should be the "proscenium width plus 6 feet and one-half the proscenium height." Since the answers differed so greatly, a minimum standard was not establishable. The only point agreed on is that the width should be equal to the proscenium opening. This was used as the minimum criterion.

Question twenty-six asked: What type of system should be used to operate the act curtain? Corry suggested "the most modern type of stage curtain track . . . is suitable for the operation by an endless cord or a cable with manual or electric controller."⁴⁰ This answer was the only one presented by the authorities and did not appear comprehensive. The question was then given to the experts. Whetzel suggested that the system should be "operated by a counter weighted pulley, hand not electric." Brown stated a "line set with standard, non-mechanical, track pulley operation control." Bock expressed that either "electric or manual" is acceptable. The opinions differed on this question. The only item agreed on by the experts is that a manual operated system is acceptable. The minimum criterion chosen was that the system be operated by a manual operation. Any type system is acceptable.

Question twenty-seven was: How many teasers should be located on stage? Corry gave a suggestion but offered no standards. He suggested "borders [teasers] should not be too numerous or the amount of lighting equipment required will be increased."⁴¹ The suggestion is helpful but was not a suitable answer to establish a

criterion. Therefore, the question was presented to the panel of experts. Whetzel revealed that there should be "one teaser for every 10 feet of depth." Brown suggested that there be a minimum of "four blacks [teasers]." Bock stated that it is "determined by trim height and vertical sight lines." From the answers received from the experts it would appear that there should be one teaser every 10 feet with at least four blacks on stage. This became accepted as the minimum criterion.

Question twenty-eight asked: How many tormentors should be located on the stage? Examination of the written material revealed no answers. The question was given to the experts. Whetzel stated "one for every 5 feet of depth." Brown suggested a "minimum of five blacks." Bock stated "enough for masking." From the opinions expressed by the experts it would appear that there should be one tormentor every 5 feet and at least five in total. This appeared adequate and was established as the minimum criterion.

Question twenty-nine read: How many battens should be suspended by counterweights? No answers were discovered in the written material. The question was presented to the experts. Whetzel stated "no less than one every 2 feet." Brown suggested "all" the battens be hung by counterweights. Bock stated all battens be suspended by counterweights "except those on sandbag lines." From the answers received it would appear that all battens should be hung by counterweights except those on sandbag lines, and there should not be less than one every 2 feet.

Question thirty was: How many battens should be suspended by rope lines? Corry stated "nine sets (minimum) of rope line suspension consisting of gridder-fixing pulleys, barrels, ropes and cleats."⁴² Corry was the only authority to present a minimum standard. Nevertheless, Corry's suggestion of nine battens suspended by rope lines appeared adequate and was accepted as the criterion.

Question thirty-one asked: What should be the size of the rear curtain? The written material revealed no answers. Of the experts, Whetzel suggested the "same as the act curtain." Brown also expressed the "same as the act" curtain. Bock stated "the proscenium width plus sightline allowance." From the opinions of the experts it was concluded that the rear curtain should be the same size as the act curtain.

Question thirty-two was: What should be the size of the pinrail loft? Corry was the only source to cite specific standards. He stated figures for the different size stages:

For a small stage a width of 4 feet would be adequate; for the medium and large stages the desirable width might be 6 feet to 8 feet . . . ⁴³

Using the lowest of these figures, the minimum width of the pinrail loft was judged to be 4 feet. This distance was the established criterion.

Question thirty-three inquired: What should be the size of the light bridge? No answers were found in the written material. Experts produced the following answers: Whetzel stated that the bridge is "not necessary if all electrics can be lowered." Brown

suggested a bridge was "not necessary to comply with minimum standard." Bock stated that "no light bridge was needed." From the answers presented it would be logical to assume that a light bridge is not necessary. Therefore, no minimum criterion is needed.

Question thirty-four asked: What should be the distance between the rear curtain and the back wall? This space is used as cross-over space during productions. Corry was the only authority who set a standard. He stated "curtains should be provided at the rear of the setting and would be positioned on what would be regarded as the back setting line, which should be not less than 6 feet from the back wall."⁴⁴ A distance of six feet appeared adequate; this became the minimum distance required between the rear curtain and the back wall.

Minimum Requirements for the Seating Facility (House Area)

The second category of criteria-seeking questions dealt with the seating facility of the house area. The answers to those questions have established the minimum requirements.

The first question asked: What should be the height of the ceiling in the house area? The written material provided no answers, so the question was submitted to the experts. Whetzel stated that the height "depends on height of proscenium and rake of seating . . . no less than 20 feet." Brown revealed "approximately 25 feet to 30 feet." Bock stated "high enough for the first beam." Concluding from the experts' opinions, it would appear that a minimum distance

of 25 feet would satisfy the majority. A distance of 25 feet was accepted as the minimum criterion.

Question two read: What should be the depth of the seating facility? No minimum could be set on the depth of a facility because it is entirely dependent upon the number of seats as well as the width of the facility. Burris-Meyer and Cole established an ideal distance that would be used as a maximum. They suggested 50 feet as a standard and reasoned as follows:

Facial expressions are not plainly recognizable at distances of more than 50 feet from the performer since the normal human eye can clearly perceive dimensions of no more than .175 inch at 50 feet.⁴⁵

No other authority gave standards for this question. Therefore, a maximum distance of 50 feet was established as the criterion, and distances greater shall be considered inadequate.

The third question asked: What should be the width of the seating facility? No specific distances were discovered, but an angle from the stage was agreed upon by two authorities.

Architectural Graphic Standards stated that the width should be "80 degrees from curtain to wall."⁴⁶ This was also supported by Burris-Meyer and Cole, who stated "audiences will not choose locations beyond a line approximately 100 degrees to the curtain at the proscenium."⁴⁷ The 80 degree angle was established as the minimum requirement for the width.

Question four inquired: What type of seating should be used? Poe's survey of American college theatres revealed "the predominant seating arrangement in American theatres is described

as conventional."⁴⁸ No other written authorities suggested a preference for continental or conventional. From the investigator's observation and personal knowledge it has been discovered that many facilities use continental. The choice is usually personal, therefore, no standard could be set. Either continental or conventional seating is acceptable.

The fifth question was: How many seats are needed? Answers from the material reviewed differed but fell within the same range. Corry held "for stage performances it may well be that a capacity of 400 would be adequate, and, perhaps, preferable."⁴⁹ Poe's survey revealed that "more than half of the departmental theatres' seating capacities fall in the 201-500 seat range."⁵⁰ Poe went on, "300 to 500 seats is regarded as the ideal seating capacity . . . no less than 300 seats."⁵¹ The 300 seat figure was established as the minimum number of seats.

Question six asked: How many aisles are needed? Since continental and conventional seating may require different standards, this question has been divided.

For conventional seating the number of aisles appears dependent upon the number of seats. Burris-Meyer and Cole gave no standards but suggested a practical rule to follow:

A center aisle wastes the most desirable seating area in the theatre and inevitably causes the objectionable condition of seats near the aisles being directly in front of each other.⁵²

Four aisles were revealed in Architectural Graphic Standards, with two located on the outside and the other two spaced between.⁵³ It

was also stated "side aisles are better than side seats."⁵⁴ From the material presented it appears that four aisles, two outside and two between, with no center aisle is the minimum number of aisles for the seating facility. This was then used as the established criterion.

The American Theatre Planning Board suggested two outside aisles as the standard for continental seating.⁵⁵ Architectural Graphic Standards revealed that two outside aisles are required, and a rear aisle is optional.⁵⁶ The examined material revealed the minimum number of aisles for continental is two outside aisles.

Question seven was: What should be the size of the balcony? No answers were discovered through the survey of written material. The question was submitted to the panel of experts. Whetzel gave no answer. Brown suggested the "Julliard model." This answer presents no criterion. Bock gave no answer. Thus, from the opinions expressed it appeared a minimum criteria could not be established for the size of a balcony when one exists.

The eighth question asked: What should be the width of the aisles?

For conventional seating the standard established by the National Fire Code was used as the minimum requirement because all theatres must meet this criterion:

When serving more than sixty seats, every aisle shall not be less than 3 feet wide when serving seats on one side only, and not less than 3 feet 6 inches wide when serving seats on both sides. Such minimum width shall be measured at the point farthest from an exit, cross aisle, or foyer,

and shall be increased by 1 1/2 inches for each 5 feet in length toward an exit, cross aisle, or foyer.

Hence the minimum aisle width is 3 feet when serving one side, 3 feet 6 inches when serving both sides and increasing by 1 1/2 inches for every five feet in length toward the exit, cross aisle, or foyer.

For continental seating, Architectural Graphic Standards revealed that the minimum width is 3 feet 8 inches. Then applying the National Fire Protection Agency's code of increasing the distance 1 1/2 inches per each 5 feet of length toward an exit, foyer, or cross aisle, the minimum criterion has been established.⁵⁸

Question nine was: How many seats should be in each row?

No authority suggested a minimum number apparently because that is dependent upon the width of the seating facility and aisle width. The standards that were discovered established the maximum number of seats for each row. For conventional seating the National Fire Codes reads, "rows shall not have more than fourteen seats," and "rows of seats opening to an aisle at one end shall not have more than seven seats."⁵⁹ The first standard was also supported by Poe.⁶⁰ The second was supported by Burris-Meyer and Cole.⁶¹ No minimum was established, but conventional theatres may not exceed the maximum standard of fourteen seats per row when between aisles, and seven seats when opening to an aisle at one end.

According to the National Fire Codes, for continental theatres the number of seats is dependent upon the width between the seats from row to row. The following is the maximum number of seats that may be in each row per width between seats:

18 inches clear width between rows of eighteen seats or less; 20 inches clear width between rows of thirty-five seats or less; 21 inches clear width between rows of forty-five seats or less; 22 inches clear width between rows of forty six seats or more.⁶²

No minimum standard was discovered from the research, so the maximum limit by the National Fire Protection Agency, which appears above, was used as the established criterion.

Question number ten asked: How many seats are needed in the balcony? From the examination of the written material no answers were discovered. The question was given to the experts. None responded. Thus, a minimum criterion could not be established for the number of balcony seats.

Question eleven read: What should be the distance between the seats from row to row?

Authorities offered varying figures for conventional seating. Corry stated "a depth of 2 feet 6 inches for each row."⁶³ Burris-Meyer and Cole revealed that "the marginal comfortable spacing, back to back, is 34 inches."⁶⁴ Architectural Graphic Standards suggested the same distance as Burris-Meyer and Cole.⁶⁵ The minimum distance is also governed by the National Fire Codes which stated "the spacing of rows of seats from back to back shall not be less than 33 inches."⁶⁶ Although the authorities agreed the distance should be greater, the fire code of 33 inches was used as the minimum criterion.

Authorities cited different figures for row spacing in continental theatres. The American Theatre Planning Board stated

"continental seating requires approximately 45 inches between rows."⁶⁷ Architectural Graphic Standards recommended 39 inches and suggested 18 inches as a minimum.⁶⁸ Spacing distance for seats from row to row for continental seating is also governed by the National Fire Codes. They established standards according to the number of seats in each row.

With continental seating, the spacing of rows of unoccupied seats shall provide a clear width between rows measured horizontally as follows: 18 inches clear width between rows of eighteen seats or less; 20 inches clear width between rows of thirty-five seats or less; 21 inches clear width between rows of forty-five seats or less; 22 inches clear width between rows of forty-six seats or more.⁶⁹

The standards by the National Fire Codes were used as the criterion because theatres must legally comply with this minimum requirement.

Question twelve read: Is a balcony needed? No answers were discovered from the written material. The question was submitted to the panel of experts. Whetzel stated that a balcony is "not even recommended." Brown stated "no, dependent on rake of seating and 60 feet maximum viewing distance/size of house." Bock stated "not needed." From the opinions of the experts it was concluded that a balcony is not needed.

Question thirteen inquired: How many access doors are needed? These doors provide the audience access to the house area as well as being used as fire exits. The only authority to provide minimum standards was the National Fire Protection Agency. Different standards were required for different types of seating.

For conventional theatres National Fire Codes established minimum per seating capacity. Using the criteria established for the minimum number of seats needed (question five, page 37) as being 300, a code was then applied.

Every Class B place of assembly (capacity 300 to 1,000 persons) shall have at least two separate exits as remote from each other as practicable, and if the capacity is over 600, at least three, each exit not less than two units.⁷⁰

Using this regulation, the minimum number of exits is two if the seating is less than 600, and three if the seating is greater than 600.

Continental seating requires different numbers of exits per number of rows. The National Fire Protection Agency stated "there shall not be more than five seat rows between pairs of doors."⁷¹ This means there must be an exit on each end of the row per every five rows. This standard was accepted as the criterion.

Question fourteen was: What should be the size of the doors? Burris-Meyer and Cole was the only authority to present a standard. They stated "32 inches should be considered a maximum width for a single unit of a pair of double doors."⁷² This distance was a maximum; therefore, the answer was not satisfactory. When the question was presented to the panel, Whetzel gave no answer, and Brown presented no dimensions but stated "there should be double doors from the lobby." Bock suggested "see the fire code." The fire code only establishes a minimum for fire safety not for proper

theatre operation. From the answers received from the experts it would appear that no standard can be formulated from the available information.

Question fifteen was: How many fire escape doors are needed?

The answer to this question has already been presented on page 41, question thirteen. The same standards would apply and become the criterion for the minimum number of fire escape doors. For conventional theatres the minimum number of exits is two if the number of seats is less than 600, and three if the number of seats is greater than 600. For continental theatres one exit door at each end of the row is required for every five rows.

Question sixteen inquired: What should be the size of the fire escape doors? National Fire Codes was the only authority to set a standard on the size of the fire escape doors. Section 5-2151 stated "no single door in a doorway shall be less than 28 inches wide."⁷³ This distance appeared adequate and was accepted as the criterion.

Question seventeen read: Where should the fire escape doors be located? Authorities gave no specific locations for the exits. National Fire Codes suggested locations that are dependent upon the design of the seating facility. They stated:

Exits shall be located as far apart as practicable and as far from the main exit as practicable. Such exits shall be accessible from a cross aisle or side aisle.⁷⁴

The only criterion that could be established was that the exits must be accessible from a cross aisle or side aisle.

Question eighteen asked: What should be the angle of the floor incline? Corry gave a criterion for the minimum of different types of floors. He stated "1 inch per 10 inches" if the floor is raked; if stepped, "the seating levels rise 9 inches each row."⁷⁵ No other authority presented standards; thus, 1 inch per 10 inches raked and 9 inch rise between rows if stepped was decided upon as the minimum criterion.

Question nineteen was: What type of ceiling should be used?

Burris-Meyer and Cole reasoned:

The ceiling is generally kept as highly reflective as possible to insure undiminished sound distribution. Pre-fabricated plaster or metal reflecting panels are cheaper to erect than continuous ceilings.⁷⁶

Burris-Meyer and Cole was the only authority to comment on ceiling type. The following were the answers received from the panel of experts. Whetzel suggested "some acoustic material." Brown stated it is "dependent upon acoustical requirements for exact specifications." Bock stated the material could be either "plaster/wood or metal." From the opinions expressed it appeared that either plaster, metal, or other acoustical material with adequate sound distribution is required.

Question twenty asked: What type of floor covering is needed?

The American Theatre Planning Board stated a suggestion, "consider the use of carpet to help solve acoustical problems."⁷⁷ This was the only source to identify a specific material. The use of carpet was accepted as the criterion. The carpet must meet the National Fire Codes standard of being of noncombustible material; as stated

in section 17-2152, "only noncombustible materials . . . may be used on the audience side of the proscenium arch."⁷⁸ The type of floor covering that is needed is noncombustible carpet.

Question twenty-one was: What type of house lighting is needed? Authorities presented possible types that could be used.

Poe stated "theatres must have 50 to 100 foot-candles to armchair level with even distribution, no dead spots, and no glare."⁷⁹

Burris-Meyer and Cole maintained that:

The lighting must be generally distributed with a minimum of shadows and preferably from concealed or low-brightness sources installed in the ceiling, the light passing through the small holes or louvered openings. Even distribution at moderate intensity (15 foot-candles) is desirable.⁸⁰

These answers were not deemed adequate by Professor Peterson, and the question was given to the experts. Whetzel stated that the lighting should be "subdued and on dimmers." Brown suggested "incandescent mounting in ceiling." Bock expressed that the lighting must be "bright enough to read programs." The answers from the authorities and experts vary greatly. They all appeared to agree that the lighting should be subdued and of low brightness quality but still produce adequate distribution.

Question twenty-two was: Where should the control switches be located? Two authorities gave the same location. Corry stated:

It is necessary that the auditorium lighting should be controlled either by the stage lighting operator, or by the stage manager from the prompt corner. Although the control from the switchboard was formerly general, it is now common practice for this control to be in the prompt corner.⁸¹

The prompt corner is usually located on either side of the stage in a position where the stage manager can view the activities on the stage. This position would be a proper location for control switches because it gives the stage manager control over them. This was also supported by Burris-Meyer and Cole, who stated that the "house board should be located on the stage from which all house lighting circuits branch."⁸² From the reasoning presented, the proper location of the house lighting control is backstage and preferably in the stage manager's corner.

Minimum Requirements for the Lighting Facility

The third category of criteria-seeking question dealt with the lighting facility. The lighting facility consists of the requirements for the lighting of a performance. Answers to the criteria-seeking questions have established the minimum requirements.

The first question asked: Where should the light control booth be located? Corry cited a basic accepted theory that "the control of the lighting should be sited to enable the operator to see the whole of the stage."⁸³ This would be an obvious location because the operator must be able to view the activities on the stage. Many times, if the control is located on stage, for many reasons, vision may be obstructed. That may be why Corry went on to further suggest:

It is desirable that the control should be situated at the rear of the auditorium in a position from which the

operator has a clear view of the whole stage, when seated, and when standing at the controls.⁸⁴

Thus, from the reasoning presented, it would appear that the best location would be in the rear of the auditorium in a location where the operator has a clear view of the whole stage.

Question two was: What should be the size of the light control booth? After examining the written material no answers were found, and the question was submitted to the panel. Whetzel suggested that the booth be "large enough for equipment and two people." Brown revealed that the size was "dependent upon type of dimmer system, repair facilities, storage system for media and lamps." Bock stated "big enough for board and operator." From the experts' answers it would appear that the light booth must be large enough for the control board and operator plus additional space for storage.

The third question inquired: What type of soundproofing is needed in the light control booth? No answers were revealed through the survey of written material. The experts suggested the following criteria. Whetzel expressed that the soundproofing be the "best available--normal talking should not be heard." Brown cited that "double glass" be used. Bock gave no answer. The only standard that can be established from the experts' opinions is that the booth should have double glass.

Question four read: How many dimmers are needed? Corry stated that "thirty to thirty-six" would be adequate.⁸⁵ The thirty figure was also supported by Parker and Smith, who expressed that

"thirty dimmers would be the absolute minimum."⁸⁶ Thirty dimmers were accepted as the minimum criterion.

The fifth question asked: How many pre-sets are needed?

Printed sources yielded no answer to the question. The question was submitted to the panel. Whetzel stated "two would be nice, but none are absolutely necessary." Brown stated that a "five scene" pre-set is needed. Bock revealed "0-999, depending upon the system." From the experts' answers it appears that five pre-set would satisfy a majority of the experts. This was accepted as the minimum criterion.

The sixth question inquired: What size of electrical output is needed? Corry was the only authority to respond with a possible standard. He stated a "60 amp. single-phase supply is desirable."⁸⁷ This answer did not appear adequate, and the question was presented to the experts. Whetzel suggested "all dimmers operating on 110 lines with outlet for tapping 220 line." Brown stated a "3 phase, 4 wire service to the dimmers" is needed. Bock cited "110-120 with 200 supply." From the answers received it appeared that the majority of the experts agreed that a 110 supply is needed along with the option of 220 tap line. This answer appeared adequate and was accepted as the minimum criterion.

The seventh question was: What should be the watt power of each dimmer? Parker and Smith were the only authorities to cite a standard. They stated "in the electronic systems the smallest dimmer is usually about 2000 watts."⁸⁸ This answer did not seem adequate, so the question was given to the panel. Whetzel stated "2000

watts." Brown suggested "twenty dimmers at 4 kilowatts, eight at 6 kilowatts, eight at 12 kilowatts." Bock gave no answer. From the answers expressed by the majority of the experts and the authority, it appears that 2000 watts is the minimum power for each dimmer.

Question eight asked: Where should the patch panel be located? Burris-Meyer and Cole was the only source to give possible locations. They stated "the interconnect panel [patch panel] may be located conveniently either at the control center or onstage."⁸⁹ Either of these locations is desirable because it allows the light technicians easy access to the panel. Therefore, the patch panel should be either located onstage or at the place of lighting control.

The ninth question was: How many circuits are needed in the panel? No answers were discovered from the survey of written material. Therefore, the question was submitted to the experts for their opinions. Whetzel stated "100." Brown suggested "250-300." Bock stated the number should be equal to "the number of circuits in the theatre." From these opinions it appeared that 250 circuits would satisfy the majority of the experts.

The tenth question read: How many beam positions are needed? No answers were revealed through the examination of written materials. The question was presented to the panel for their replies. Whetzel suggested "for a typical proscenium opening, twelve." Brown stated the beam positions are "variable, dependent upon architectural plan." Bock's answer could not be read. A criterion could not be

established, from the variety of answers that were presented, to satisfy all experts. Thus, no criterion could be established for this question.

Question eleven was phrased: What should be the distance between the beam position and the stage? Written materials yielded no answers to the question. Therefore, the question was given to the panel. Whetzel suggested "35 feet to 50 feet." Brown stated "a position for 45 degree height from the proscenium line is needed (approximately 35 feet)." Bock felt the distance must be enough to produce a "37 1/2 degree angle." The majority of the panel agreed that a distance of 35 feet would be adequate. Thus, 35 feet was accepted as the minimum criterion.

Question twelve asked: What should be the size of the beam opening? No answers were discovered through the examination of written materials. The question was presented to the panel. Whetzel stated that the beam opening "should run across the house parallel to the plaster line and be at least 3 feet wide." Brown presented no answer. Bock stated "large enough to let light through and allow for instrument adjustment." From the experts' opinions the only distance that can be established is that it runs the width of the house and be at least 3 feet wide. This appeared appropriate and was accepted as the minimum criterion.

Question thirteen was: How many outlets are needed at the beam position? No answers were found in the written sources. The question was presented to the panel. Whetzel suggested a minimum

of "ten." Brown cited between "fifteen and twenty-five." Bock stated "one for every instrument." A minimum of fifteen outlets would satisfy the majority of the panel. This number appeared adequate and was accepted as the criterion. This question had been omitted from the Whetzel and Brown questionnaires by an oversight; a telephone conversation to the experts produced the preceding answers.⁹⁰

Question fourteen inquired: How many outlets are needed on the first electric? The first electric is also called the bridge by many. Rubin and Watson in Theatrical Lighting Practice stated "back-stage mounting positions include the 'first pipe' of eighteen to twenty-four."⁹¹ This may be more an ideal standard than a minimum. Parker and Smith stated what they considered the minimum to be: "Twelve is the very minimum number of connections for the most modest layout."⁹² More would be ideal, but a minimum of twelve would be the very least for a college production. Twelve was accepted as the criterion.

Question fifteen asked: How many light battens are needed? The authorities seem to believe that the specific number is dependent upon the depth of the stage. Corry stated that the light battens should be "spaced at intervals of 7 feet to 8 feet upstage."⁹³ This was also supported by Burris-Meyer and Cole who revealed that "steel light-mounting pipes . . . extending the full width of the acting area, from 7 to 10 feet apart up- and downstage."⁹⁴ From the material presented a distance of 8 feet was agreed upon by both

authorities. This distance would create a minimum number of battens for any stage.

Question sixteen was phrased: How many outlets should be located on each light batten? The authorities differed greatly on this question. Corry stated for a large stage "possibly forty or fifty."⁹⁵ This figure seemed desirable but idealistic as a minimum standard. Parker and Smith held that "the needs of a minimum stage suggest three, with more desirable."⁹⁶ While this number seemed low, from the answers found it was concluded that a minimum of three outlets are needed with more being desirable. This was accepted as the criterion.

Question seventeen was: How many outlets should be located on the stage? Parker and Smith stated "on the smallest stage at least six connections should be provided along each side, and many more preferable."⁹⁷ Parker and Smith was the only written source to give a minimum figure. The answer was not found sufficient, and the question was given to the panel. Whetzel stated that "eight" are needed. Brown suggested that a total of "twenty-one" are needed. Bock expressed "as many as you need." The amount suggested by Whetzel would also satisfy the written sources' opinions; thus, eight outlets were accepted as the criterion.

Question eighteen inquired: What should be the angle between the stage floor and the beam position? Rubin and Watson was the only source to give standards. They stated "the instruments are mounted at a height which is vertically from 35 degrees to

60 degrees elevation from the stage floor. About 40 degrees is considered optimum."⁹⁸ Using the minimum of 35 degrees established by Rubin and Watson would create the lowest acceptable angle. Thus, 35 degrees is the established criterion.

Question nineteen asked: What type of house dimmer system is needed? No answers were discovered through the survey of written materials, and the question was given to the panel. Whetzel stated that "any type" of system is acceptable. Brown suggested the SCR (brand name) system. Bock stated "remote or direct control." The experts differ in their opinions. Each system appears to be that of personal choice. Thus, no criterion could be established other than that there should be some type of dimmer system.

Question twenty was: Where should the house dimmer system be located? No answers were discovered through the survey of written material. The question was submitted to the panel. Whetzel gave no answer. Brown suggested that it be "available to stage manager and light booth." Bock stated "near power source and convenient to the operator." From the answers received it would be logical to place the dimmer system in a location that is convenient to the operator and close to his location.

Minimum Requirements for the Box Office and Foyer

The fourth category of criteria-seeking questions dealt with the box office and foyer. Answers to these questions have established minimum requirements.

The first criteria-seeking question asked: What should be the size of the box office? Burris-Meyer and Cole presented no specific figures but gave suggestions on how to determine the box office size. They stated:

Size and shape of the box office are determined by
 (1) number of windows with their attendants' equipment, change drawer, automatic change machine,
 (2) wall space for the ticket racks which include the day board for the current performance, the rack containing tickets for the rest of the current week, rack size 20 inches by 30 inches.⁹⁹

This may be a good guide to follow, but it does not establish a specific criterion. The question was submitted to the panel. Whetzel suggested that the box office be "8 feet by 10 feet." Brown stated it should be "10 feet by 20 feet." Bock revealed that the box office should be large enough to accommodate "two people, phone, and ticket racks." From the information received from the experts a size of 10 feet by 20 feet would satisfy a majority. This appeared appropriate and was established as the criterion.

Question two inquired: Where should the box office be located in relation to the house area? Burris-Meyer and Cole presented a rule to follow but gave no specific location. They stated:

Patrons having seats bought in advance must cross the foyer; therefore, the direction of lines at ticket windows must be so arranged as not to interfere with the straight path from foyer to lobby door.¹⁰⁰

Burris-Meyer and Cole's was the only authoritative suggestion found. Their answer did not appear adequate, and the question was given to the experts. Whetzel stated that the box office could be "in the

lobby anywhere." Brown suggested "the center but on the opposite wall of the house area." Bock stated "near the house area." The variety of answers differed greatly, and it would be difficult to establish a proper location for the box office. Thus, no standard could be presented, except that it be in some proximity with the house.

The third question was: How many windows are needed in the box office? Burris-Meyer and Cole suggested:

The box office needs at least one window for the current sale per approximately 1250 seats, one window for reservations.¹⁰¹

Burris-Meyer and Cole was the only authority to offer specific numbers. This answer did not appear complete, and the question was submitted to the panel. Whetzel stated "obviously at least one, but two would be very helpful." Brown suggested "three." Bock stated that the number of ticket windows is dependent upon the size of the auditorium. From the answers the experts and authority presented, two ticket windows would appear adequate for the box office.

Question four was: What should be the size of the ticket windows? No written authorities presented answers to the question. The question was given to the panel. Whetzel stated windows should be "3 feet by 4 feet." Brown suggested "18 inches by 24 inches." Bock stated that the windows should be "big enough for tickets and money to go through." In searching for the minimum, the size suggested by Brown, 18 inches by 24 inches, would be large enough for

proper box office operation. A size of 3 by 4 feet would be ideal but not minimum. The accepted criterion was 18 inches by 24 inches.

Question five read: How many doors are needed in the box office? Burris-Meyer and Cole gave opinions which could be used to answer the question. They stated "access to the box office is by a single door inside the theatre, often from an adjacent business office."¹⁰² A single door would be sufficient for most box offices and usually preferable for safety reasons when handling large amounts of cash.

The sixth question inquired: What should be the size of the doors? The criterion established from question seventeen, page 43, could also be applied to this question. The National Fire Protection Agency has established a width of 28 inches as a minimum for any door in a doorway. Twenty-eight inches was accepted as the minimum width of the door in the box office.

Question seven asked: Is a permanent phone needed? Burris-Meyer and Cole stated "telephones complete the useful box office equipment."¹⁰³ They were the only source to cite an answer to this question. The answer appeared adequate and became the criterion.

Question eight was: What should be the width of the foyer?
Question nine asked: What should be the length of the foyer?
These two questions were combined for the purpose of analysis because all information gathered was in terms of total amount of square footage. "Three square feet per person" was given in Architectural Graphic Standards.¹⁰⁴ This would be an ideal amount.

The minimum was given by Burris-Meyer and Cole, who stated "a reasonable minimum allowance in anticipation of periods of congestion is 1 square foot per theatre seat."¹⁰⁵ From the material examined the criterion is 1 square foot per theatre seat.

The tenth question was: Where should the foyer be located in relation to the box office? The survey of written material produced no answers. The panel gave the following answers: Whetzel stated "the box office should be in the lobby." Brown suggested that the location should be "logical in terms of traffic flow and facilitate efficient crowd management." Bock suggested that the foyer should be located "near" the box office. From the answers received from the experts it seemed logical to assume that the foyer should be near the box office in a position that best facilitates efficient crowd management, or produce the least amount of congestion in traffic flow between box office and seating area. This answer gives no specific location but suggests applicable general standards that should be used for the location of the foyer.

Question eleven read: Is an accessible pay phone needed? No answers to the question were found in the written sources. Thus, the question was submitted to the panel. Whetzel stated that a pay phone is "recommended highly." Brown stated "yes" a pay phone is needed. Bock stated a pay phone is needed "if a free phone is not available." From the answers offered it appears that a pay phone is a necessary part of the foyer area.

Question twelve asked: Where should the pay phone be located? Written materials, of course, provided no answers. The question was presented to the panel. Whetzel suggested that the phone should be located "in the lobby." Brown stated "a booth (built-in) should be provided near the rest rooms or fountains." Bock stated that the pay phone should be "in or near the lobby." The majority of the experts agreed that the phone should be located in or near the lobby.

Minimum Requirements for the Dressing Rooms and Green Room

The fifth category of criteria-seeking questions dealt with the dressing rooms and green room. Answers to those questions have established the minimum requirements for these areas.

The first criteria-seeking question asked: How many dressing rooms are needed? Most colleges or universities do not have "star" dressing rooms, and this would not be required for the minimum standard. The accepted minimum was established by Poe, who stated, "two group dressing rooms (male and female) . . . will do."¹⁰⁶ Two group dressing rooms would be adequate in most colleges. This was accepted as the criterion.

Question two read: What should be the size of each dressing room? This question was covered in detail by Poe who used standards offered by Burris-Meyer and Cole:

Burris-Meyer and Cole indicated that it would be reasonable to plan the dressing room for a total of twenty principals and thirty extras. . . . At 16 square feet per person,

the actors would need dressing room space of 800 square feet . . . ¹⁰⁷

Poe went on to further support this figure by an evaluation of the survey of college and university theatres in the United States.

While dressing room space of less than 800 square feet may be satisfactory for some theatre programs, it is assumed that a fully developed theatre, especially a program presenting period costume plays, requires 800 square feet and more. ¹⁰⁸

It is probable that a comprehensive educational theatre may use up to fifty performers and present plays that require period costumes. From the reasoning presented, 800 square feet would be the minimum requirement for the combined area of all dressing rooms.

The third question inquired: What type of lighting is needed? Burris-Meyer and Cole was the only written authority to suggest a type. They stated how much light is needed, "25 foot-candles general lighting on faces," not what type should be used. ¹⁰⁹ This answer did not answer the question, so it was submitted to the experts. Whetzel stated "under no circumstances should there be fluorescent lights; overhead or mirror lights are best." Brown suggested "warm fluorescent." Bock stated the lighting should be "bright enough to put make-up on." The experts and authorities differ greatly on this question. From the answers presented it is difficult to conclude an answer that would satisfy a majority of the experts. Thus, the only criterion that can be established is that illumination must be sufficient to dress and put on make-up.

Question four was: Where should the dressing rooms be located in relation to the stage? No set rule was found for the

ideal location of the dressing rooms. However, it must surely be near the stage because some productions require quick changes in a short period of time. Burris-Meyer and Cole gave the only opinion by saying that the dressing rooms should be located "near the stage but not necessarily adjoining the stage."¹¹⁰ The only criterion that could be established was that the dressing rooms be near the stage, the closer the more adequate.

The fifth question asked: What type of special lighting is needed for make-up? A generally accepted rule was presented by Corry. "The lights, which should have reflectors, should be placed so that they shine on both sides of the face of the actor and the lamps are not reflected in the mirror."¹¹¹ Corry was the only source to establish a standard. Make-up lighting that has lights on both sides of the face and does not reflect in the mirror was the established criterion.

The sixth question read: How many doors are needed? Examination of the written materials yielded no answers. The question was given to the panel. Whetzel stated "one" door is needed. Brown suggested "one." Bock gave no answer. The majority of the panel agreed that one door is a minimum standard. This answer appeared appropriate and was accepted as the criterion.

Question seven read: Are double doors needed? No answers were discovered from the written materials. Thus, the question was presented to the panel for their responses. Whetzel stated that "no" double doors are needed in the dressing rooms. Brown replied

that double doors are "not necessary." Bock stated double doors are necessary "only for fat actors." The majority of the experts agreed that double doors are not needed.

The eighth question asked: How many make-up stations are needed? No specific numbers were received from the written sources. The question was submitted to the experts. Whetzel revealed that there should be "eight for men and eight for women." Brown stated that there should be a total of "twenty-four." Bock stated "one per actor." In educational theatre there are times when at least fifty actors would be applying make-up; using shifts would still suggest a minimum of half that amount. The number stated by Brown, twenty-four, would seem appropriate to accommodate the performers at these peak times. Thus, a minimum of twenty-four make-up stations for all dressing rooms was accepted as the criterion.

The ninth question was: How large should the storage area be? A survey of written materials provided no answers. Therefore, the question was presented to the panel. Whetzel stated that the storage area should be "enough to store twenty costumes each and make-up supplies." Brown stated "rack and shelf space for three changes plus street and outerwear, shoes/boots, hats, etc. Double room for women." Bock gave no answer. Since the experts gave no standards or specific size, the only criterion established was that costume storage space must be available in each dressing room.

Question ten asked: What type of clothes racks are needed? No answers were discovered through the examination of the written

sources. The question was given to the panel. Whetzel suggested that "any" type of clothes rack is adequate. Brown stated that racks should have "shelves with separators and divisions for actors--not closeted." Bock gave no answer. From the responses it appeared that clothes racks are needed. No more specific criterion could be established.

Question eleven read: How many clothes racks are needed?

Burris-Meyer and Cole did not suggest a number but put forth a size standard. They suggested clothes and costume hangers should have "2 linear feet of rod per person."¹¹² This answer did not appear sufficient, and the question was presented to the panel. Whetzel stated "any" would be helpful. Brown suggested "rack and shelf space for three changes plus street and outerwear, shoes/boots, hats, etc." Bock stated racks should be large enough "to hold street clothes and costumes." The answers received presented no specific size, and it would be difficult to estimate the number of performers that would be using the facility from time to time. Thus, no criterion could be established.

Question twelve was: Where should the green room be located in relation to the stage? The American Theatre Planning Board indicated that it was "usually beneath the stage."¹¹³ Burris-Meyer and Cole suggested that it should be near the stage on the same level.¹¹⁴ The opinions offered would all be adequate as long as it is located near the stage so there would be easy and quick access at needed times.

Question thirteen asked: Where should the green room be located in relation to the dressing rooms? Examination of written material revealed no answers. Thus, the question was submitted to the panel. Whetzel stated the green room is "best to be between men's and women's dressing rooms." Brown stated the following location:

Variable, should be secure from backstage and dressing room operations, accessible from lobby or aisles corridor, or dormitory after the show, for public.

Bock gave no answer. The panel differed on this question. They cited no specific location that is acceptable to the majority. Thus, no criterion could be established.

Question fourteen read: What should be the size of the green room? Poe expressed that it would "require 480 square feet."¹¹⁵ Burris-Meyer and Cole offered the minimum as being 300 square feet.¹¹⁶ Poe's opinion was drawn from material that was specifically related to college educational theatre and 480 square feet would also be more than adequate for the standard presented by Burris-Meyer and Cole. Therefore, 480 square feet was accepted as the criterion.

Question fifteen asked: How many doors are needed in the green room? Examination of printed sources provided no answers. The question was submitted to the panel. Whetzel stated that "two" doors are needed in the green room. Brown stated "two." Bock suggested "enough to satisfy the code and give access to adjacent areas." The majority of the experts agreed that two doors are

needed in the green room. This answer appeared adequate and was accepted as the minimum criterion.

Question sixteen inquired: Are double doors needed in the green room? No answers were discovered through the survey of written materials. Thus, the question was given to the panel of experts. Whetzel stated "no" double doors are needed. Brown also replied "no." Bock stated that double doors are needed "only for fat actors." The majority of the experts agreed that double doors are not needed. Thus, no criterion was established.

Question seventeen read: What type of sound system is needed in the dressing rooms and green room? Printed authorities gave several suggestions but only agreed that a call system from the stage manager is mandatory. Corry stated "the stage manager uses a microphone to deliver messages to all the dressing rooms, and in many theatres the entire performance is relayed from the stage."¹¹⁷ Burris-Meyer and Cole revealed that there should be a call system and a monitor loud-speaker.¹¹⁸ A call system is the only essential sound system that is needed in the dressing rooms and green room. This seemed adequate and was accepted as the criterion.

Question eighteen asked: What type of rest room and shower facilities should be available? Information gathered in Poe's study "indicated a need for showers for actors to remove body make-up and also for student technicians after a performance night of perspiration-inducing work."¹¹⁹ Many authorities agreed that a shower facility is ideal but not a mandatory need compared to proper

rest room facilities. The American Theatre Planning Board indicated a need for at least one toilet and one wash basin per six actors.¹²⁰ This figure was also supported by Burris-Meyer and Cole.¹²¹ Using at least fifty performers, as used to determine dressing room size (question two, page 58), that would call for a minimum of eight toilets and eight wash basins necessary. This was used as the established criterion.

Minimum Requirements for the Sound System

The sixth category of criteria-seeking questions dealt with the sound system needed in a proscenium arch theatre. Answers to these questions have established the minimum criteria.

The first question asked: How many speakers should be placed on stage? Burris-Meyer and Cole indicated the minimum number that is needed on stage to make it appear that the sound is coming from the actor or stage location.

One at each side of the acting area, one over the proscenium for each 15 feet of proscenium width, one below the stage, one upstage center in the floor and one in the flies.¹²²

The minimum proscenium width of 30 feet (question one, page 20) would call for one in the middle, 15 feet from each side. Adding that to the others would create a minimum of six speakers. Burris-Meyer and Cole was the only authority to establish a minimum; this requirement of six appeared sufficient and was the accepted criterion.

The second question inquired: How many speakers should be placed in the house area? Burris-Meyer and Cole presented no minimum number but suggested locations for the speakers. They advised that speakers be placed on "the auditorium walls, the auditorium ceiling, above the proscenium, the back of the house and the floor."¹²³ This answer was not sufficient in establishing a criterion; therefore, the question was submitted to the experts. Whetzel suggested "two." Brown replied that there should be "three front, and two rear." Bock gave no answer. Five speakers, as suggested by Brown, would also satisfy the other experts. Thus, five speakers became the minimum number of speakers that should be placed in the house area.

The third question was: What should be the size of the stage speakers? No specific answers were discovered through the examination of written materials. The question was given to the panel. Whetzel stated "any good 8 ohm system speaker will do, either in the house or backstage." Brown suggested one should "utilize high efficiency speakers. The system should, without distortion, provide 100 db from 20 feet at each speaker, 20 RMS per channel." Bock stated that the speakers should be "20 percent larger than the amplifier." The standards of the experts differ greatly. Whetzel's suggestion of 8 ohms refers to the amount of resistance the speaker will hold, but he does not suggest a wattage for the speakers. Brown's suggestion of high efficiency speakers producing 100 db at 20 feet does not present a specific size because speakers of

various sizes will produce this requirement. The other opinion offered by Brown of 20 RMS refers to the amplification output. Bock's statement of 20 percent larger than the amplifier suggests only the wattage the speaker will allow, and many different size speakers will accept a specific wattage. From the answers presented no criterion could be drawn.

Question number four read: What should be the size of the house speakers? The survey of written materials produced no answers, so the question was given to the panel. The experts felt that the criterion they used to answer the previous question, on the size of stage speakers, applies to the house speakers. No conclusions could be achieved in the previous question; therefore, no criterion could be established for this question.

Question five was: How many microphone plugs are needed on stage? Burris-Meyer and Cole indicated that the smallest stage will require three hung in the front and three in the footlights.¹²⁴ In addition they strongly suggested that there be an equal number in the orchestra pit.¹²⁵ No other printed sources offered standards. A minimum of six appeared adequate and was established as the criterion.

Question six asked: What type of amplification system is needed? Most authorities did not mention a specific system that should be used, apparently because this is usually a personal choice and depends greatly upon the acoustics of the facility. Burris-Meyer and Cole indicated a proper system:

The control system consists of two parts: the input mixing panel and the output mixing panel with appropriate provisions for input and loudspeaker switching on either side.¹²⁶

The only minimum standard that was discovered suggested a minimum power output. Burris-Meyer and Cole stated that "output power should be at least 40 watts."¹²⁷ The only minimum criterion that was established was that the power output should be at least 40 watts; the control system may vary according to the facility.

Question seven inquired: Where should the sound control board be located? Corry stated "when provisions are made for sound amplification for the stage effects or general use, the control panel should be in the lighting control room."¹²⁸ Corry was the only source to cite a specific location. Thus, the sound control board being located in the lighting control room was established as the criterion.

Minimum Requirements for the Orchestra Pit

The last category of criteria-seeking questions dealt with the orchestra pit. The answers to those questions have established the minimum requirements.

The first question was: If the orchestra pit is not built in, how much area should be available to be used for it? Burris-Meyer and Cole stated, "it is reasonable to provide a pit for fifteen to thirty musicians," then applied a standard by stating "space planning for the orchestra should allow 10 square feet per person."¹²⁹ This was also supported in Architectural Graphic Standards which said that allowed space should be "10 square feet per musician."¹³⁰

These answers did not appear sufficiently complete as a minimum criterion, and the question was presented to the panel of experts. Whetzel suggested the space should be "30 feet by 8 feet." Brown replied that the size should be "8 feet to 10 feet by 35 feet to 40 feet." Bock stated the area should be large "enough to hold the largest needed orchestra." It is difficult to estimate the largest needed orchestra. If there was available space of 8 feet by 35 feet, this size would satisfy the minimum suggested by the majority of the experts. This would total 280 square feet, which would also meet the suggestion proposed by Burris-Meyer and Cole. Thus, an area 8 feet by 35 feet, or not less than 280 square feet, appeared adequate and was accepted as the minimum criterion.

The second question asked: What should be the width of the orchestra pit? The width refers to the distance between the side toward the audience and the side closest to the proscenium arch. Corry stated "in general it may be assumed that a depth [width] of 6 feet is desirable."¹³¹ Corry was the only authority to cite a specific distance. The question was submitted to the panel. Whetzel suggested a width of "8 feet." Brown said the width should be "8 to 10 feet." Bock gave no answer. The majority of the experts agreed that a width of 8 feet would be an adequate minimum. This distance would also satisfy the written authority. Thus, a distance of 8 feet was established as the criterion.

The third question was: What should be the length of the orchestra pit? Corry stated a standard that could be applied. "The

length will normally be that of the proscenium opening or slightly more."¹³² The minimum proscenium width being 30 feet (question two, page 20) would make the minimum length of the orchestra pit 30 feet. Corry was the only source to establish a standard. A length of 30 feet was accepted as the criterion.

Question four inquired: What should be the distance between the orchestra pit and the seating floor? No specific distance was discovered. The only requirement was presented by Corry, who stated, "The floor should be below the auditorium floor so that the seated musicians are masked from view."¹³³ No other source revealed a standard. Corry's requirement was used as the minimum criterion, which was, the floor of the orchestra pit must be deep enough to mask seated musicians from view.

The fifth question inquired: Where should the orchestra pit be located? Burris-Meyer and Cole presented a standard they claimed was used by most. "The developed location of the orchestra is in a pit between the acting area and the audience."¹³⁴ This statement was adopted as the minimum requirement.

The sixth question read: How many electrical outlets are needed in the orchestra pit? Examination of written materials provided no answers. Thus, the question was submitted to the panel. Whetzel suggested a minimum of "twelve." Brown stated "two per 5 feet on front and back walls or floor outlets--one per 20 square feet." Applying the minimum criteria for the size of the orchestra pit to Brown's reply would create a total of thirty-six outlets.

Bock stated "one outlet per three stands." A specific number cannot be established from this answer. From the answers received it would appear that a total of thirty-six outlets would satisfy the majority. This answer became accepted as the minimum criterion.

Summary

In this chapter the minimum requirements for selected areas of the proscenium arch theatre were established. The requirements were formulated through the process of identifying adequate answers to the criteria-seeking questions. A portion of the questions appeared to be adequately answered through available written materials. Answers to the remaining questions were procured through a questionnaire submitted to a panel of selected experts. Some questions were answered by a combination of written material and the opinions of selected experts. For some questions no criterion could be established.

The criteria formulated through this process are held to represent standards for a proscenium arch theatre for the presentation of educational theatre.

These criteria became the basis for determining the adequacy of the proscenium arch theatres in the thirteen selected institutions in the state of South Dakota. The extent to which the institutions met, exceeded, or fell short of the criteria is discussed in Chapter III.

FOOTNOTES

¹Percy Corry, Planning the Stage (New York: Pitman Corporation, 1961), p. 137.

²Harold Poe, "Critical Elements of Functional Theatre Architecture in American Colleges and Universities" (Ph.D. dissertation, Florida State University, 1967), p. 83.

³Harold Burris-Meyer and Edward C. Cole, Theatres and Auditoriums (New York: Robert E. Krieger Publishing Co., 1975), p. 71.

⁴A. S. Gillette, Stage Scenery (New York: Harper & Bros., 1959), p. 153.

⁵The American Theatre Planning Board, Theatre Check List (Middletown, Connecticut: Wesleyan University Press, 1969), p. 31.

⁶Corry, Planning the Stage, p. 137.

⁷John Gassner, Producing the Play bound with the New Scene Technicians Handbook by Phillip Barber, rev. ed. (New York: Dryden Press, 1953), p. 809.

⁸The American Theatre Planning Board, Theatre Check List, p. 31.

⁹Poe, "Critical Elements," p. 96.

¹⁰Corry, Planning the Stage, p. 17.

¹¹Gassner, Producing the Play, p. 809.

¹²Herbert Phillippi, Stagecraft and Scene Design (Cambridge, Massachusetts: Houghton Mifflin Co., The Riverside Press, 1953), p. 11.

¹³Corry, Planning the Stage, p. 17.

¹⁴The American Theatre Planning Board, Theatre Check List, p. 30.

¹⁵Corry, Planning the Stage, p. 20.

¹⁶Ibid., p. 23.

- ¹⁷Ibid., p. 18.
- ¹⁸Gassner, Producing the Play, p. 809.
- p. 28. ¹⁹The American Theatre Planning Board, Theatre Check List,
- ²⁰Burris-Meyer and Cole, Theatres and Auditoriums, p. 96.
- ²¹Gassner, Producing the Play, p. 809.
- ²²Poe, "Critical Elements," p. 98.
- p. 26. ²³The American Theatre Planning Board, Theatre Check List,
- ²⁴Burris-Meyer and Cole, Theatres and Auditoriums, p. 231.
- ²⁵Ibid., p. 241.
- ²⁶National Fire Protection Agency, National Fire Codes
(Boston: National Fire Protection Agency, 1973), p. 101-81.
- ²⁷Burris-Meyer and Cole, Theatres and Auditoriums, p. 164.
- p. 29. ²⁸The American Theatre Planning Board, Theatre Check List,
- ²⁹Corry, Planning the Stage, p. 25.
- ³⁰Ibid., p. 24.
- p. 27. ³¹The American Theatre Planning Board, Theatre Check List,
- ³²Burris-Meyer and Cole, Theatres and Auditoriums, p. 213.
- ³³Oren W. Parker and Harve K. Smith, Scene Design and Stage Lighting (New York: Holt, Rinehart and Winston, 1963), p. 496.
- ³⁴Corry, Planning the Stage, p. 34.
- ³⁵Ibid., p. 11.
- ³⁶Ibid., p. 24.
- ³⁷Burris-Meyer and Cole, Theatres and Auditoriums, p. 164.

³⁸Charles G. Ramsey and Harold R. Sleeper, Architectural Graphic Standards (New York: John Wiley & Sons, 1970), p. 33.

³⁹Corry, Planning the Stage, p. 55.

⁴⁰*Ibid.*, p. 57.

⁴¹*Ibid.*, p. 56.

⁴²*Ibid.*, p. 139.

⁴³*Ibid.*, p. 37.

⁴⁴*Ibid.*, p. 56.

⁴⁵Burriss-Meyer and Cole, Theatres and Auditoriums, p. 67.

⁴⁶Ramsey and Sleeper, Architectural Graphic Standards, p. 33.

⁴⁷Burriss-Meyer and Cole, Theatres and Auditoriums, p. 64.

⁴⁸Poe, "Critical Elements," p. 45.

⁴⁹Corry, Planning the Stage, p. 5.

⁵⁰Poe, "Critical Elements," p. 52.

⁵¹*Ibid.*, p. 69.

⁵²Burriss-Meyer and Cole, Theatres and Auditoriums, p. 67.

⁵³Ramsey and Sleeper, Architectural Graphic Standards, p. 33.

⁵⁴*Ibid.*, p. 33.

⁵⁵The American Theatre Planning Board, Theatre Check List,
p. 41.

⁵⁶Ramsey and Sleeper, Architectural Graphic Standards, p. 34.

⁵⁷National Fire Protection Agency, National Fire Codes,
p. 101-77.

⁵⁸Ramsey and Sleeper, Architectural Graphic Standards, p. 34.

⁵⁹National Fire Protection Agency, National Fire Codes,
p. 101-76.

⁶⁰Poe, "Critical Elements," p. 45.

- ⁶¹Burris-Meyer and Cole, Theatres and Auditoriums, p. 57.
- ⁶²National Fire Protection Agency, National Fire Codes,
p. 101-76.
- ⁶³Corry, Planning the Stage, p. 23.
- ⁶⁴Burris-Meyer and Cole, Theatres and Auditoriums, p. 110.
- ⁶⁵Ramsey and Sleeper, Architectural Graphic Standards, p. 34.
- ⁶⁶National Fire Protection Agency, National Fire Codes,
p. 101-76.
- ⁶⁷The American Theatre Planning Board, Theatre Check List,
p. 41.
- ⁶⁸Ramsey and Sleeper, Architectural Graphic Standards, p. 34.
- ⁶⁹National Fire Protection Agency, National Fire Codes,
p. 101-76.
- ⁷⁰Ibid., p. 101-74.
- ⁷¹Ibid., p. 101-76.
- ⁷²Burris-Meyer and Cole, Theatres and Auditoriums, p. 92.
- ⁷³National Fire Protection Agency, National Fire Codes,
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- ⁷⁴Ibid. p. 101-75.
- ⁷⁵Corry, Planning the Stage, p. 23.
- ⁷⁶Burris-Meyer and Cole, Theatres and Auditoriums, p. 81.
- ⁷⁷The American Theatre Planning Board, Theatre Check List,
p. 38.
- ⁷⁸National Fire Protection Agency, National Fire Codes,
p. 101-95.
- ⁷⁹Poe, "Critical Elements," p. 137.
- ⁸⁰Burris-Meyer and Cole, Theatres and Auditoriums, p. 73.
- ⁸¹Corry, Planning the Stage, p. 72.

- ⁸²Burris-Meyer and Cole, Theatres and Auditoriums, p. 113.
- ⁸³Corry, Planning the Stage, p. 10.
- ⁸⁴*Ibid.*, p. 49.
- ⁸⁵*Ibid.*, p. 136.
- ⁸⁶Parker and Smith, Scene Design and Stage Lighting, p. 500.
- ⁸⁷Corry, Planning the Stage, p. 138.
- ⁸⁸Parker and Smith, Scene Design and Stage Lighting, p. 500.
- ⁸⁹Burris-Meyer and Cole, Theatres and Auditoriums, p. 275.
- ⁹⁰Chuck Whetzel was questioned by telephone on March 1, 1979.
Paul Brown was telephoned on March 1, 1979.
- ⁹¹Joel E. Rubin and Leland H. Watson, Theatrical Lighting Practice (New York: Theatre Arts Books, 1954), p. 30.
- ⁹²Parker and Smith, Scene Design and Stage Lighting, p. 495.
- ⁹³Corry, Planning the Stage, p. 64.
- ⁹⁴Burris-Meyer and Cole, Theatres and Auditoriums, p. 269.
- ⁹⁵Corry, Planning the Stage, p. 64.
- ⁹⁶Parker and Smith, Scene Design and Stage Lighting, p. 499.
- ⁹⁷*Ibid.*, p. 498.
- ⁹⁸Rubin and Watson, Theatrical Lighting Practice, p. 8.
- ⁹⁹Burris-Meyer and Cole, Theatres and Auditoriums, p. 97.
- ¹⁰⁰*Ibid.*, p. 50.
- ¹⁰¹*Ibid.*, p. 97.
- ¹⁰²*Ibid.*, p. 97.
- ¹⁰³*Ibid.*, p. 97.
- ¹⁰⁴Ramsey and Sleeper, Architectural Graphic Standards, p. 13.
- ¹⁰⁵Burris-Meyer and Cole, Theatres and Auditoriums, p. 50.

- 106 Poe, "Critical Elements," p. 99.
- 107 Ibid., p. 100.
- 108 Ibid., p. 102.
- 109 Burris-Meyer and Cole, Theatres and Auditoriums, p. 158.
- 110 Ibid., p. 157.
- 111 Corry, Planning the Stage, p. 47.
- 112 Burris-Meyer and Cole, Theatres and Auditoriums, p. 157.
- 113 The American Theatre Planning Board, Theatre Check List,
p. 33.
- 114 Burris-Meyer and Cole, Theatres and Auditoriums, p. 158.
- 115 Poe, "Critical Elements," p. 113.
- 116 Burris-Meyer and Cole, Theatres and Auditoriums, p. 158.
- 117 Corry, Planning the Stage, p. 73.
- 118 Burris-Meyer and Cole, Theatres and Auditoriums, p. 157.
- 119 Poe, "Critical Elements," p. 100.
- 120 The American Theatre Planning Board, Theatre Check List,
p. 33.
- 121 Burris-Meyer and Cole, Theatres and Auditoriums, p. 158.
- 122 Ibid., p. 291.
- 123 Ibid., p. 189.
- 124 Ibid., p. 291.
- 125 Ibid., p. 291.
- 126 Ibid., p. 292.
- 127 Ibid., p. 299.
- 128 Corry, Planning the Stage, p. 137.
- 129 Burris-Meyer and Cole, Theatres and Auditoriums, p. 149.

- ¹³⁰Ramsey and Sleeper; Architectural Graphic Standards, p. 33.
- ¹³¹Corry, Planning the Stage, p. 47.
- ¹³²Ibid., p. 47.
- ¹³³Ibid., p. 47.
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CHAPTER III

SOUTH DAKOTA COLLEGIATE PROSCENIUM ARCH THEATRES

The Established Criteria

The minimum requirements for a proscenium arch theatre for the presentation of educational theatre on a college or university level established by processes described in Chapter II were as follows:

Proscenium Arch Stage

1. The proscenium arch should not be less than 30 feet wide.
2. The height of the proscenium arch should not be less than 20 feet.
3. The depth of the stage should not be less than 30 feet.
4. The apron at center stage should not be less than 3 feet.
5. The distance between the stage floor and the lowest point of the auditorium floor should not be less than 3 feet 8 inches if the auditorium is flat; 3 feet 6 inches if the auditorium is raked; 3 feet if the auditorium is stepped.
6. The width of the wing space on stage right should be one-half the width of the proscenium opening, but not less than 8 feet.
7. The depth of the wing space on stage right should not be less than 15 feet.
8. The height of the wing space on stage right should be equal to the height of the grid, but not less than 14 feet.
9. The width of the wing space on stage left should be one-half the width of the proscenium opening, but not less than 8 feet.
10. The depth of the wing space on stage left should not be less than 15 feet.
11. The height of the wing space on stage left should be equal to the height of the grid, but not less than 14 feet.
12. The distance between the stage floor and the grid should not be less than three times the proscenium opening.
13. The grid should be large enough to cover the usable stage area.
14. The distance between the grid and the ceiling should not be less than 6 feet.
15. No less than ten battens should be suspended from the grid.
16. The distance between the grid and the top of the proscenium arch should not be less than 40 feet.

17. There should not be less than two doors and one loading door to gain access to the stage.
18. The stage doors should not be less than 3 feet wide and 7 feet high.
19. The stage floor should be constructed of a wood that is workable for attaching scenic devices.
20. Work lights should produce adequate light to work by, other than during performance times.
21. There should be at least two switches for stage work lights.
22. Work light switches should be located at stage level and at the stage lighting control position.
23. Stage doors should be located either well down-stage or as far up-stage as possible and the loading door either at the side or the rear of the stage.
24. The act curtain should be large enough to cover the proscenium opening with an excess of 3 feet on each side and 3 feet on the top.
25. The width of the grand drape should be equal to the width of the proscenium opening.
26. The act curtain should be operated by manual control; any system is acceptable.
27. There should be a teaser for every 10 feet of depth with a minimum of four blacks on stage.
28. There should be one tormentor every 5 feet on the stage with a minimum of five.
29. All battens should be suspended by counterweights with one located every 2 feet.
30. There should not be less than nine battens suspended by rope lines.
31. The rear curtain should be the same size as the act curtain.
32. The pinrail loft should not be less than 4 feet wide.
33. A light bridge is not needed.
34. The distance between the rear curtain and the back wall should not be less than 6 feet.

Seating Facility

1. The height of the seating facility should not be less than 25 feet.
2. The minimum criteria for the depth of the seating facility is a maximum of 50 feet.
3. The width of the seating facility should not be less than 80 degrees from curtain to wall.
4. Either conventional or continental seating is acceptable.
5. There should not be less than 300 seats in the house.
6. Conventional--There should not be less than two outside aisles and two aisles in between, with no center aisle.
Continental--There should not be less than two aisles.
7. No criteria was established for the size of the balcony.

8. Conventional--The aisles should not be less than 3 feet wide when serving on one side; 3 feet 6 inches when serving both sides and increasing by 1 1/2 inches per 5 feet of length toward an exit, foyer, or cross aisle.
Continental--The aisles should not be less than 3 feet 8 inches wide and increasing by 1 1/2 inches per 5 feet of length toward an exit, foyer, or cross aisle.
9. Conventional--the minimum criteria for the number of seats in each row is a maximum of fourteen seats per row when between aisles, and seven seats when one aisle.
Continental--The minimum number of seats in each row is eighteen or less when width between rows is 18 inches, thirty-five seats or less when width between rows is 21 inches, forty-six seats or more if width between rows is 22 inches.
10. No criteria was established for the number of seats in the balcony.
11. Conventional--There should not be less than 33 inches between seats from row to row.
Continental--There should not be less than 18 inches between seats with rows of eighteen seats or less, not less than 20 inches with rows of thirty-five seats or less, not less than 21 inches with rows of forty-five seats or less, and not less than 22 inches with rows of forty-six seats or more.
12. A balcony is not needed in the proscenium arch theatre.
13. Conventional--There should not be less than two exits when seating capacity is 600 or less, and not less than three if capacity is greater than 600.
Continental--There should not be less than one door on each end of rows for every five rows.
14. No criteria was established for the size of the doors.
15. The number of fire escape exits is the same requirement as the number of exits needed (question 13).
16. Fire escape doors should not be less than 28 inches wide.
17. Fire escape doors must be accessible from a cross aisle or side aisle.
18. The floor should be at an incline of not less than 1 inch every 10 inches, and if stepped, the seats should rise not less than 9 inches for each row.
19. Either plaster, metal, or acoustical material with adequate sound distribution is required for the ceiling.
20. The floor should be covered with noncombustible carpet.
21. House lighting should be subdued, low brightness, but still have adequate distribution.
22. The control of the house lighting should be located backstage, preferably in the stage manager's corner.

Lighting Facility

1. The light booth should be located in the rear of the house in a location where the operator has a clear view of the entire stage.
2. The light booth should be large enough for the light control board and operator plus storage space.
3. The light control booth should have double glass for sound-proofing.
4. There should not be less than thirty dimmers.
5. There should be at least five presets.
6. There should be electrical supply of 110 volts, plus the option for a 220 volt tap line.
7. Each dimmer should be at least 2000 watts.
8. The patch panel should be located either on stage or at the place of stage lighting control.
9. There should be at least 250 circuits in the patch panel.
10. No criteria was established for the number of beam positions.
11. There should be at least 35 feet between the beam position and the stage.
12. The beam position should be the distance of the width of the house and at least 3 feet wide.
13. There should be at least fifteen outlets at the beam position.
14. There should not be less than twelve outlets on the first electric.
15. Light battens should be spaced not less than 8 feet apart for the entire depth of the stage.
16. There should be at least three circuits on each light batten, with more being desirable.
17. There should be at least eight outlets located on the stage.
18. The angle between the stage floor and the beam position should not be less than 35 degrees.
19. No criteria could be established for the type of house dimmer system needed, other than that there be a dimmer system.
20. The house dimmer system should be located in a position that is convenient to the operator, and close to his position.

Box Office and Foyer

1. The box office should be at least 10 feet by 20 feet.
2. The box office should be in some proximity with the house.
3. There should be at least two windows in the box office.
4. The ticket windows should be at least 18 inches by 24 inches.
5. There should be one door in the box office.
6. The box office door should not be less than 28 inches wide.
7. A permanent phone is needed in the box office.
8. The foyer should not be less than the amount equal to one square foot per theatre seat in size.
9. Same as question eight.

10. The foyer should be near the box office in a position that best facilitates efficient crowd management.
11. A pay phone is needed in the foyer.
12. The pay phone should be located in or near the lobby area of the foyer.

Dressing Rooms and Green Room

1. There should not be less than two group dressing rooms.
2. There should not be less than 800 square feet combined area for all dressing rooms.
3. Dressing room lighting must produce sufficient light to dress and apply make-up.
4. Dressing rooms should be located near the stage, the closer the more adequate.
5. Make-up lighting requires lights on both sides of the face; the light should not reflect in the mirrors.
6. There should be one door in each dressing room.
7. Double doors are not necessary in the dressing rooms.
8. There should be at least twenty-four make-up stations located in the dressing rooms.
9. Costume storage space must be available in each dressing room.
10. Any type of clothes rack is acceptable in the dressing rooms.
11. No criteria was established for the number of clothes racks needed.
12. The green room should be located near the stage, the closer the more adequate.
13. No criteria was established for the location of the green room in relation to the dressing rooms.
14. The green room should not be less than 480 square feet in size.
15. There should be at least two doors in the green room.
16. No criteria was established for the use of double doors in the green room.
17. A call system is needed in the dressing rooms and green room.
18. There should be at least eight toilets and eight wash basins available.

Sound System

1. There should be at least six speakers placed on the stage.
2. There should be not less than five speakers in the house area.
3. No criteria was established for the size of the stage speakers.
4. No criteria was established for the size of the house speakers.
5. There should be at least six microphone plugs on the stage.
6. The amplification system should not have less than 40 watts.
7. The sound control board should be located in the lighting control room.

Orchestra Pit

1. There should be at least 8 feet by 35 feet, or not less than 280 square feet available to be used for an orchestra pit if one is not built in.
2. The width (depth) of the orchestra pit should be not less than 8 feet.
3. The orchestra pit should not be less than 30 feet in length.
4. The distance between the orchestra pit and the seating floor should be enough to mask a seated musician from the audience's view.
5. The orchestra pit should be located between the acting area and the audience.
6. There should be at least thirty-six electrical outlets in the orchestra pit.

These criteria were used to evaluate the selected college and university theatres in the state of South Dakota.

Process of Examination

On October 17, 1978, a letter was sent to theatre staff members seeking permission to examine the facilities at the thirteen selected institutions. All responses were positive, with the exception of Black Hills State College and South Dakota School of Mines and Technology from whom no response was received. These theatre department members were later contacted by telephone, and they agreed to cooperate.

The investigator scheduled visits to each institution for the process of examination. A check list was made from the criteria established in Chapter II. During the visits this check list was completed by the investigator with the cooperation of the institution's theatre administrator. The check list consisted of the established criteria with a question appended to discover if the facility met or exceeded the criteria (See Appendix B.).

In the following sections each college facility is discussed individually. If the facility met or exceeded the criterion, no mention is given to it. If the facility did not meet the criterion it is cited, and the specific area it fell short is identified.

Augustana College

On April 6, 1979, Augustana College was evaluated. Professor Gary Reed, the Technical Director at the institution, was helpful in completing the check list. The following areas were found to fall short of the criteria.

Proscenium Arch Stage

While the stage facility at Augustana College meets many of the established standards, the height of the proscenium arch falls short of the criterion of "not less than 20 feet." It is 9 feet 6 inches. The depth of the stage is 4 feet short of the "30 feet" standard.

Wing space meets all the requirements except width. The criterion stated that the width should be "one-half the proscenium opening," which would be 15 feet on each side. The width of the wing space is 8 feet.

The distance between the stage floor and the seating floor is 5 inches short of the standard "3 feet 6 inches if raked." The height of the stage is 3 feet 1 inch.

No grid system is built into the facility; therefore, criteria related to it are not met. The stage facility has six

battens, but these are suspended from pulleys attached to the ceiling rafters not to any type of counterweight system.

Dimensions of the stage doors are slightly smaller than the set standard. The width is only 2 feet 8 inches instead of the required "3 feet." The height of the doors is 6 feet 8 inches instead of "7 feet."

The work lights appeared to cover the stage quite adequately except for the outside areas of the stage. The work light controls are properly "located on stage," but there is no control switch in the "stage light control position."

The act curtain does cover the proscenium opening but does not have "an excess of 3 feet on the top," only about 1 foot. No grand drape is used in the facility.

With the height of the proscenium opening at only 9 feet 6 inches and having a raked seating floor, there is no need for teasers in the facility, and none are present. The tormentors are spaced at an average of 6 feet, with the criterion being "one every 5 feet." There are four on stage, which appear to cover the stage adequately, but the standard was set at "at least five on stage."

Seating Facility

The seating facility at Agusutana College meets many of the requirements. Only a few items do not comply with the standards. The height of the ceiling in the facility is 13 feet. The criterion

was stated as being "at least 25 feet." The seating capacity falls short by twenty-two seats of the required "300."

The criterion for the number of aisles was that there should be "two outside aisles and two in between." At Augustana there are only the two aisles in between and no outside aisles. The width of the aisles meets the requirement but does not "increase in width" as the standard stated. The aisle width does not increase at all.

The only other portion of the seating facility that does not meet or exceed the criteria is the floor covering. The requirements cited that "the entire floor should be covered with noncombustible carpet." Only the aisles are covered with noncombustible carpet, and the seating area is a bare cement floor.

Lighting Facility

The light booth is 8 feet by 11 feet, which is adequate for the "controls and the operator" but lacks sufficient "storage space" because the entry to the booth is gained through the floor, which reduces the available space. The booth also has only single glass, and the requirement called for "double glass."

Only twelve dimmers are present, the criterion indicated a need for "thirty." The patch panel has thirty-two of the recommended "250 circuits." The criterion demanded "five presets," but only one is available.

The beam position is slightly inadequate, according to the requirements in several categories. The minimum distance between the beam position and the stage was cited as being "at least 35

feet." The distance at Augustana is 10 feet. The width of the beam opening is 32 feet and the recommended criterion stated it should be "the width of the house" which is 43 feet. The number of outlets in the beam is short by three of the "fifteen outlet" criterion. Only the first electric appears behind the arch, no other light battens.

Box Office and Foyer

The criterion stated that the box office should be "at least 10 feet by 20 feet." The box office at Augustana is 5 feet by 10 feet. No phone is located in the box office or foyer area. The criterion cited a need for a "telephone in both areas." All other box office and foyer standards are met.

Dressing Rooms and Green Room

One large room is used for the combination of green room and dressing rooms. The room is also used for a small theatre as well as a classroom facility. The criterion stated that there should be "two group dressing rooms." The room is approximately 60 feet by 30 feet.

No make-up stations are set up; only large mirrors are attached to one wall of the facility. The mirrors have no "lighting around them" as suggested by the criterion. Costume and storage area in the room is portable and used during performance times.

No "call system" between the stage and the facility exists. The criterion showed a need for "wash basins and toilets in the

dressing rooms." None is available, but two large restrooms are located near the room.

Sound System

The criterion indicated a need for "six speakers on stage" and "five speakers in the house area." The system has two large portable speakers which are used in both areas. No microphone plugs are located on the stage, but the small size of the facility would suggest that they are not needed. The watt power of the system was not known by the technical director and could not be discovered by examining the control system.

Orchestra Pit

No orchestra pit is "built into the facility." In questioning Gary Reed it was revealed that only a small orchestra is used for musical productions, and they are positioned behind the stage. The scene shop area is located behind the stage, and this is occasionally used. The criterion location stated that the pit should be "between the stage and the seating facility." The number of outlets available varies depending upon the amount of lighting used because the same outlets are shared. There is a total of thirty-four outlets to be shared.

Black Hills State College

The theatre at Black Hills State College is located in Woodburn Hall. The hall was built in 1906, and the theatre was

remodeled in 1965. Black Hills State College is located in Spearfish, South Dakota.

Proscenium Arch Stage

The width of the proscenium arch is 2 feet less than the standard of "30 feet." The depth of the stage is 26 feet, the criterion indicated it should "be not less than 30 feet."

The width of the wing space on each side is only 4 feet 6 inches. The criterion held that it should be "not less than 8 feet." The height of the wing space on each side is 10 feet with the recommended height being "at least 14 feet."

The height of the proscenium opening is 22 feet, while the criterion called for the height of the grid to be "three times the opening," or 66 feet. The distance between the grid and the stage is 26 feet. The recommended height between the grid and the ceiling was "6 feet." The actual space is 2 feet, 6 inches.

The criterion required "two doors and a loading door to gain access to the stage." Two doors are present, but there is no loading door.

There is only one work light control of the recommended "two control switches." The control switch is "located on stage;" there is no switch at the "location of stage lighting control."

The act curtain does cover the width of the proscenium opening, but there are 18 inches of excess on the top instead of the required "3 feet."

The teasers are spaced at 10 feet 6 inches. The criterion stated that they should be spaced "every 10 feet." Only two are located on stage instead of the recommended "four." The tormentors are also spaced at 10 feet 6 inches. The criterion indicated a space requirement of "one every 5 feet." Only four were located on stage, this is one short of the needed "five."

The grid system does not use the "counterweight type of suspension." All twelve battens are suspended by rope lines. The pinrail loft is 2 feet 6 inches. The criterion stated "not less than 4 feet."

The distance between the rear curtain and the back wall falls 2 feet short of the required criterion of "6 feet."

Seating Facility

The Black Hills State College seating facility meets a majority of the stated criteria. The depth of the facility is 63 feet. The criterion stated "a maximum of 50 feet."

The criterion called for "two outside aisles and two in between." There are no outside aisles in the house. The aisle width is 4 feet, 6 inches wider than the minimum recommended, but it does not "increase in width toward an exit, foyer, or cross aisle" as the criterion required. Distance between seats from row to row is 31 inches, 2 inches short of the "33 inches" needed.

The floor of the seating area is inclined for the first 20 feet from the stage and meets the requirement by being at "an

incline of 1 in 10." The remaining 43 feet of the house is stepped. The step is 8 inches, 1 inch short of the recommended "9 inches."

The criterion indicated that the floor should be "covered with noncombustible carpet." The aisles of the facility are covered with noncombustible carpet. The seating area has a tile floor.

Lighting Facility

The lighting facility in the auditorium is inadequate when compared to the criteria. The light booth is of appropriate size but has only single glass for soundproofing instead of the recommended "double glass."

The dimmer system contains twelve dimmers. The criterion stated a need for "not less than thirty dimmers." The system also contains one preset with the criterion indicating "five." The patch panel has 120 circuits. The minimum standard cited a need for "250."

The beam position is not located "in the ceiling of the house area" but is a circuited pipe attached to the front of the balcony. It meets the criterion stated distance of "not less than 35 feet," but the angle between the stage floor and the beam does not meet the standard. The angle is approximately 23 degrees instead of being "not less than 35 degrees."

Box Office and Foyer

No box office is built into the facility. During the productions tables are set up to be used for the box office. The tables are set in the foyer of the building. The foyer of the facility is the hall space in front of the downstairs house area and the balcony. The size of the area is adequate according to the criterion.

The requirements called for "a telephone in the foyer area." There is none.

Dressing Rooms and Green Room

Two dressing rooms are found in the facility, but the size does not meet the minimum criterion. The total area of the dressing rooms is 336 square feet. The standard cited was "at least 800 square feet." Only fourteen make-up stations are found in the dressing rooms. The criterion required "at least twenty-four."

The green room area is 266 square feet. The stated need was for "480 square feet." The green room has one door. The minimum was set at "two."

One other area falls short in this category. The criterion stated that there should be "at least eight toilets and eight wash basins available." There are four wash basins and no toilets in the facility.

Sound System

There are no speakers on the stage of the facility. The standard required "at least six." Two large speakers are in the house area. The speakers produce adequate sound for the facility, but the criterion stated "five should be present."

Only two microphone plugs are permanently installed on the stage. Portable plugs are installed at times needed. The standard required "six."

The sound control board is not located "in the light control room." The system is usually set up back stage.

Orchestra Pit

An orchestra pit is not built into the facility. The stage left area of the house is used for the orchestra. When seats are removed for the orchestra, the available area is approximately 12 feet by 23 feet. The distance of 12 feet is adequate, but 23 feet does not meet the advocated standard of "35 feet." The total square footage of the area is only 4 square feet less than the stated "280 square feet."

The minimum number of needed outlets in the pit area was set at "at least thirty-six." There are none in the pit area.

Dakota State College

The theatre facility of Dakota State College, located in Madison, South Dakota, was examined on April 11, 1979. The theatre is located in Kennedy Hall.

Proscenium Arch Stage

The criterion set the width of the proscenium arch at "not less than 30 feet." The width at Dakota State is 24 feet. The height of the arch is 15 feet; a need for "20 feet" had been established. The depth of the stage falls 1 foot short of the "minimum of 30 feet."

Wing space size meets all the requirements except the width requirement. The criterion stated the width should be "one-half the arch opening," which is 12 feet. The width is 8 feet. This distance did, however, meet the criterion for "not being less than 8 feet."

None of the requirements related to the grid are met because no grid system is built into the facility. All battens and curtains are dead hung from the ceiling.

No loading door is present on stage. The criterion cited a need for "one." Two of the stage doors meet the required size of "3 feet by 7 feet." Two of the doors are 30 inches by 80 inches.

Stage work lights are adequate and are "controlled at stage level." No control switch is "located at the stage light control center" as required.

The act curtain meets the criterion for the needed width. The height of the curtain was set at "an excess of 3 feet." The curtain is 3 feet short of the proscenium opening, which is a total of 6 feet short of the requirement.

The teasers meet the depth standard, but only two are on stage. The criterion required "at least four." The tormentors

are located every 6 feet instead of at the recommended "5 foot" intervals. The number is adequate.

Only one other area was found slightly deficient in the stage facility. The distance between the rear wall and the back curtain is 5 feet. The standard called for "not less than 6 feet."

Seating Facility

A portion of the standards set up for the seating facility is not satisfied. The demanded height for the ceiling was "at least 25 feet." The height of the ceiling is 22 feet.

The aisle space in the seating facility is of adequate size, but the width does not "increase," as the requirements stated.

The distance between the seats from row to row is met in a portion of the facility. One section of the house is stepped, and the distance between seats in that area is 30 inches. The criterion cited a need for "33 inches."

Two types of floor angles are found in the facility. The criterion stated there should be an "incline of 1 in 10, and, if stepped, the rise should be at least 9 inches." The front portion of the house is flat, and the stepped section is at a rise of 4 1/2 inches.

Lighting Facility

The light booth in the facility is of adequate size for the "control panel and operator," but it lacks area for "storage space." The booth's dimensions are 5 feet by 6 feet. The criterion stated

that the booth should be located in "the rear of the auditorium where the operator can view the entire stage." The booth at Dakota State is located on the right side of the house near the proscenium arch. From this position the stage right side of the stage cannot be viewed. The booth also lacks "double glass" needed for sound-proofing. The viewing window is without glass.

The criteria for the dimmer system stated a need for "thirty dimmers," "five presets," and "at least 2000 watts per dimmer." Twenty dimmers, seven working, one preset, and wattage of 1200 per dimmer are present. The patch panel has fifty-four circuits. The minimum requirement was "250."

Two beam positions are located in the facility. The first position from the opening is of the proper angle. The width of the beam does not meet the criterion, which stated that the width should be "equal to the width of the house." Three openings are inset in the ceiling and are evenly spaced. Two are 3 feet by 4 feet, the other is 2 feet by 2 feet. The distance for that beam position is 25 feet from the stage instead of the required "35 feet." The second beam is a pipe suspended above the balcony. The pipe is an adequate distance from the stage, but the angle is 30 degrees. The standard required "at least 35 degrees."

No outlets are located on the second pipe. The first opening has nine outlets. The need was cited as "fifteen outlets." Only one electric appears backstage. Eight outlets are on this electric. The standard required "not less than twelve outlets."

Box Office and Foyer

No permanent box office has been built into the theatre. Thus, none of the criteria regarding the box office could be met. A table is used in the foyer during performances. Hall area outside the downstairs seating area and balcony is used for the foyer. The hall space is adequate compared to the area needed for proper foyer space. No telephone is available in the foyer. The criterion indicated a need for "one."

Dressing Rooms and Green Room

Only one room is designated as a dressing room. Classrooms in the facility are used for dressing areas and green room. The area of the single dressing room totals 304 square feet. The requirement had been set at "800 square feet."

The dressing room lacks proper make-up lighting, and only 8 feet of mirror space is available for make-up application. The standard desired "twenty-four make-up stations with appropriate lighting."

No costume storage space appears in the dressing room. Criterion cited a need for "storage space."

The room located behind the stage is usually designated as the green room. The room exceeds the size requirements. No "call system" is in the rooms used for dressing rooms and green room as the criterion advocated.

The areas also lack the proper wash basins and toilets advocated in the minimum criteria. The criterion called for "eight

of each." No plumbing facilities are in any of the designated rooms.

Sound System

There are no speakers on the stage of the Dakota State College facility. "At least six" were required. The seating area has two large speakers. The criterion revealed that "at least five" should be on stage.

No microphone plugs are located on the stage, but the portable control panel will accept two microphone plugs. "Not less than six" were required. The sound control system is located on the stage right side of the stage not "in the light control room" as cited in the minimum standards.

Orchestra Pit

The orchestra pit is not built into the facility. The area used for the orchestra is on the stage left side of the house. Seats are usually removed for the needed area. The area of the removed seats meets the minimum criteria.

Dakota Wesleyan University

Dakota Wesleyan University is located in Mitchell, South Dakota. The theatre, located in Science Hall, was examined on March 30, 1979. The present theatre area was remodeled from a theatre-chapel in 1976.

Proscenium Arch Stage

The size of the stage area exceeds the standard for width, but is lacking in depth and height. The height was stated as being "not less than 20 feet." The actual height is 16 feet. The depth is 6 feet short of the recommended "30 feet."

Wing space meets the criteria except for the width on each side. The standard stated a need for "one-half the proscenium opening, or not less than 8 feet." The wing space on each side of the stage is 2 feet.

No grid exists in the facility; therefore, no criteria concerning it were met. Battens and stage curtains are suspended from the ceiling of the stage. Stage access doors are adequate, but no loading doors are available. The criterion required "a loading door."

Stage lights are used for work lighting. No specific work lighting is built into the facility. The lighting is adequate under working conditions. Work lighting is "controlled on the stage," but control had to be switched to be "controlled in the light booth." The criterion cited a need for "control at both locations."

The act curtain meets the width requirement, but the height of the curtain does not "exceed the proscenium by 3 feet." The act curtain is 3 feet short of the proscenium opening.

When the investigator examined the teasers and tormentors, he found that each falls short in a separate area. The teasers are

properly located concerning spacing, but there are only three on the stage instead of the recommended "four." The tormentors exceed the number needed but are positioned every 7 feet. The criterion stated "every 5 feet."

One other measurement falls short of the minimum requirements. The criterion stated that the distance between the rear wall and back curtain should be "at least 6 feet." The distance is only 6 inches.

Seating Facility

The seating area of the Dakota Wesleyan facility is generally adequate. A few areas of examination fall short. The minimum height of the area was cited at "not less than 25 feet." The height of the ceiling in the house is 20 feet.

The balcony of the house has the proper number of aisles. The downstairs area lacks the "two outside aisles" required by the standards. Aisle space is of adequate distance, but the width does not "increase toward cross aisle, foyer, or exit."

The floor of the house area is flat. The criterion revealed a need for an "incline or stepped." The balcony is stepped at the proper spacing.

Lighting Facility

The light booth is in the proper location advocated in the criterion. The light booth is of adequate size for the "control board and the operator" but lacks "sufficient space for storage

area." The dimensions of the booth are 4 feet by 7 feet. The booth is built out over the back of seats; therefore, the floor is only 2 feet wide. The booth has single glass not the "double glass" stated by the requirements for soundproofing.

Dimmer criteria were cited as being "thirty dimmers" and "not less than five presets." The facility has eighteen dimmers and one preset. Seventy-two circuits are in the patch panel. The criterion demanded "250."

The beam position is not "inserted in the ceiling" but consists of three pipe sections hung from the ceiling above the front of the balcony. The pipes do not "cover the width of the entire facility." The angle of the beam is proper, but the distance from the stage is approximately 25 feet. The requirement was a distance of "at least 35 feet."

Box Office and Foyer

There is no permanent box office in the building. For that reason none of the requirements concerning the box office were studied. When a portable box office is set up, it is located in the hall area between the stairs leading to the theatre. A table is used for the box office.

Two stairs, one on each side of the seating area, lead to the house. The hall area between the stairs is used for the foyer. The space is of adequate size. No telephone is available, the criterion stated a need for "one."

Dressing Rooms and Green Room

The dressing rooms are located directly off stage right, and the green room is located beyond the dressing room. Only one dressing room is present. The criterion was for "two." The size of the dressing room is a total of 208 square feet. The criterion cited a need for "800 square feet." Five make-up stations are located in the dressing room. "Twenty-four" were required by the standards.

A classroom is used for the green room and additional dressing area during performance times. The classroom is 23 feet by 31 feet. No "call system" is located in the dressing room or green room as demanded by the standards. The room also lacks wash basin and toilet facilities. The criterion was "at least eight each."

Sound System

The criterion indicated a need for "at least six speakers on the stage" and "five in the house area." Two are used at the school. They are portable and can be used either backstage or in the house. No microphone plugs are built into the stage; all are portable with the speaker system. The sound control is located on the right side of the stage, not "in the light control booth" as the standards required.

Orchestra Pit

The orchestra pit is not built into the facility. Seats are removed on stage right side of the house for the orchestra area. The area available is approximately 140 square feet. The

requirement was "at least 280 square feet." The area is on the same level as the seating floor. The area is in the front of the house; therefore, it does meet the criterion of being "between the audience and the acting area." No electrical outlets are located in the area of the orchestra pit. "At least thirty-six" were stated as the standard.

Huron College

The Huron College Fine Arts Center, built in 1974, is located in Huron, South Dakota. Bruce Woodruff, chairman of the Theatre Department, was helpful in completing the check list.

Proscenium Arch Stage

The stage area meets all but a few of the stated criteria. The size of the stage meets all the criteria except for the width of the apron. The width is 18 inches. The standard was set at "not less than 3 feet."

The distance between the stage floor and the seating is not adequate when compared with the requirements. The actual measurement is 18 inches. The criterion stated that the distance should be "3 feet when seating floor is stepped."

No grid is present in the facility; therefore, no criteria concerning the grid were satisfied. Battens are suspended from the ceiling by rope lines connected to the rafters.

The act curtain meets the required width but is short when the height is surveyed. The height of the act curtain is equal to

the proscenium opening. The standard called for "an excess of 3 feet." The teasers and tormentors fell short in different areas. Teasers are of adequate spacing, but there are only three of the recommended "four." Tormentors are spaced every 10 feet. The criterion called for "one every 5 feet" of depth. Only four of the required "five" are present on the stage. All other criteria regarding the stage area are equaled or exceeded.

Seating Facility

The seating area is slightly inadequate in several areas. The criterion stated that the height of the house area should be "not less than 25 feet." The height of the seating area is 23 feet. The number of seats in the house falls short of the standard of "300" by fifty-four. The present seats number 246.

A portion of the floor in the seating area does not comply with the requirements. The criterion held that if the seating is stepped, the rows should "rise at least 9 inches." The front seven rows rise only 8 inches. The remaining rows have a greater degree than the requirement.

One final area of the seating does not meet the standard. "Noncombustible carpet" was recommended to cover the "entire floor area." At Huron College noncombustible carpet appears only in the aisles. The remaining section is bare cement.

Lighting Facility

The light booth is of sufficient size and exceeds all requirements, except one. The windows in the light control booth have no glass in them. The criterion cited a need for "double glass" for soundproofing.

The standards demand "at least thirty dimmers," and "not less than five presets." Huron College has sixteen dimmers and one preset. The patch panel has 161 circuits. The criterion was established at "250 circuits."

Two beam positions are "present in the ceiling of the facility." Both meet the requirements for appropriate angle, but the position nearest the stage does not comply with proper distance. The criterion was established as being "not less than 35 feet." The actual distance is approximately 29 feet. The first beam position has the number of circuits called for. The second beam falls short of the required "fifteen outlets" by three.

Box Office and Foyer

No permanent box office facility is present at Huron College. A portable box office is used during performance times. The criteria related to the box office is not adequately met. The foyer area complies with all criteria.

Dressing Rooms and Green Room

Two dressing rooms are located in the theatre facility. The total square footage of the dressing rooms falls short of the

criterion. The actual square footage is 714. The requirements stated a need for "not less than 800 square feet."

The criterion advocated that the dressing rooms should be "located near the stage, the closer the more adequate." The dressing rooms are below the stage. To cross from the dressing rooms to the stage one must climb stairs from the basement, travel through the scene shop area, then enter the stage. For these reasons the position of the dressing rooms in relation to the stage appears inadequate.

None of the criteria related to the green room are satisfied, because no green room appears in the facility.

One final requirement is not adequate. Standards revealed that "eight toilets and eight wash basins" should be available. At the school one toilet and two washbasins are available in each dressing room.

Sound System

The sound system is lacking only in the area concerned with the proper number of speakers. The criteria established a need for "six speakers on the stage" and "five in the house facility." Only two speakers are located in the house area; there are none on the stage.

Orchestra Pit

An orchestra pit is built into the facility at Huron College. One standard is not met. Eighteen outlets are available in the pit instead of the recommended "thirty-six."

Mount Marty College

Mount Marty College is located in Yankton, South Dakota. The present theatre facility was constructed in 1954. Professor Dick Reddy, a member of the theatre department staff, assisted in the examination of the facility.

Proscenium Arch Stage

The height of the proscenium arch is 16 feet. Requirements stated a need for "at least 20 feet." The wing space meets the criteria except in the width being "at least one-half the width of the proscenium opening." The width on each side is the same, 13 feet 6 inches. One-half the arch width would call for a wing space width of 16 feet. The wing space width meets the requirement for not being less than 8 feet.

The criterion stated that the distance between the stage floor and the seating floor should be "at least 3 feet 6 inches if the house floor is raked." The distance is 3 feet.

A grid system is built into the theatre facility. The distance between the stage floor and the grid is 40 feet. Requirements called for a measurement of "three times the proscenium opening," or 48 feet. The grid is attached to the stage ceiling; therefore, there is no space between the grid and the ceiling. The criteria indicated "6 feet" were needed. With the grid being 40 feet and the proscenium arch being 16 feet, the distance between is 24 feet. The standards called for "not less than 40 feet."

Part of the stage floor is constructed of proper material to meet the criterion. The first 10 feet of the stage from the arch is constructed of oak, not workable when "attaching scenic devices." The remaining section of the stage is made of yellow pine, adequate for "scenic device attachments."

The act curtain falls 1 foot short of the proper height by having only 2 feet excess above the proscenium arch instead of "3 feet." The tormentors lack in one area by being positioned every 10 feet. Requirements called for "one every 5 feet."

Seating Facility

Four areas of investigation are inadequate concerning the seating area at Mount Marty College. The first area is the depth of the seating. The criterion cited the depth at "a maximum of 50 feet." The depth of the house is 73 feet.

Standards cited revealed that "two outside aisles" should be present in the house. No outside aisles appear in the facility, but all other aisle requirements are satisfied.

The distance between seats from row to row is 31 inches. The criterion stated a need for "at least 33 inches." The criterion required "noncombustible carpet" in the seating area. The aisles are the only carpeted area. It is noncombustible, however.

Lighting Facility

No light booth is built into the facility at Mount Marty College. The light control system is located on stage right of the

stage. Standards revealed the proper location for the light booth was "at the rear of the house area." Therefore none of the criteria regarding the light booth are satisfied.

Dimmer requirements cited a need for "at least thirty dimmers," and "not less than five presets." The system has fifteen dimmers and no presets. The patch panel has seventy circuits of the recommended "250."

The beam position falls short of complying with several criteria. The beam position is at the proper angle, but the distance from the stage is approximately 30 feet. "Not less than 35 feet" was the advocated minimum. The beam consists of two evenly spaced port openings built into the ceiling. The openings measure 10 feet by 2 feet 6 inches. This criterion stated the beam position should be "the distance of the width of the house and at least 3 feet wide." The beam also has ten outlets of the "fifteen" required.

Box Office and Foyer

The box office in the theatre is 6 feet by 8 feet. Requirements stated that the box office should be "at least 10 feet by 20 feet." Only one large window is in the office. Standards cited a need for "two." A permanent telephone is not present in the box office. The criterion cited a need for "one."

The foyer is located at the rear of the house area, and additional foyer space is gained by using a dorm lobby located on the side of the foyer. The actual foyer space is 486 feet. The requirements stated that there should be "one square foot of foyer

space per theatre seat." This would create a need of 746 square feet. Therefore, the foyer space does not meet the criterion if the additional dorm lobby is not used.

No telephone is located in the actual lobby area as called for by the standards, although one is located in the dorm lobby.

One other area of concern, aside from the requirements, was noted by the investigator. The criterion held that the box office should be located in some "proximity of the house area." This standard is satisfied, but the box office is located at the far end of the foyer in a corner. The position does not facilitate efficient crowd management.

Dressing Room and Green Room

Two dressing rooms are available at Mount Marty College. The area of the dressing rooms is short of the stated criterion. Dressing room space totals 600 square feet instead of the recommended "800 square feet." Each dressing room has eight make-up stations, sixteen total, while the criterion called for "at least twenty-four."

No specific green room has been built into the facility. A large band room on the stage left side of the stage is used for this purpose. The area of the band room exceeds the demanded standard. No call system is available in the dressing rooms or green room. The criterion stated a need for such a system.

A need for "at least eight toilets and eight wash basins" available was stated in the requirements. Two toilets and two wash basins are available.

Sound System

The criteria stated that there should be "at least six speakers located on the stage." Two portable speakers are used on the stage. The house area has a sufficient number of speakers. The only shortcoming of the remaining sound system requirements is the location of the sound control board. The control is not "at the same position as the light control board," as stated by the criterion, but it is located off stage left in a radio station studio.

Orchestra Pit

Only one criterion is not met by Mount Marty College's orchestra pit. The standard for the minimum number of outlets for the pit was set at "thirty-six." The orchestra pit contains twenty-four outlets.

Northern State College

Northern State College is located in Aberdeen, South Dakota. The theatre, located in the Johnson Fine Art Center, was examined on April 3, 1979.

Proscenium Arch Stage

The stage area meets all the criteria except for a few inadequacies. The stage dimensions exceed the standards, but the grid lacks the appropriate height. The distance between the stage floor and the grid is 33 feet. The criterion called for a distance of "three times the proscenium opening," or 66 feet. The distance between the grid and the ceiling is 1 foot short of the recommended

"6 feet." The measurement between the grid and the top of the proscenium arch is 11 feet. Minimum need was cited as being "at least 40 feet."

Teasers are of adequate spacing, but only three are positioned on stage instead of the standard of "four." Tormentors fall short of the proper spacing of "one tormentor every 5 feet" called for by the criterion. The tormentors are located every 8 feet.

All battens are suspended by counterweights, but they are positioned 3 feet apart. The requirements called for a spacing of "2 feet." A cyclorama is used for the rear curtain of the stage area. The cyclorama is positioned 4 feet from the rear wall instead of the required "6 feet."

Seating Facility

Three areas of the seating facility do not comply with the established standards. The criterion for the depth of the house stated that it should "not be more than 50 feet." The distance between the stage and the rear wall of the seating is 80 feet. The aisles meet part of the criterion but fall short in one specific aspect. Outside aisles do not appear in the facility as the requirements called for. Instead of having "two aisles in between," four are present.

The floor covering also fails to meet required standards. Examination revealed that only the aisles are covered with non-combustible carpet. The remaining section is concrete. Requirements

cited a need for "noncombustible carpet" throughout the entire house area.

Lighting Facility

The lighting facility at Northern meets or exceeds all but a portion of the criteria. The light booth does appear in the proper location as stated by the requirements "in the rear of the auditorium." The drawback was explained to the investigator by Professor Richard Norquist. A curtain in the center of the seating facility can be drawn to cut the seating in half during needed times. With the light booth placed against the rear wall, the curtains have to be left open to enable the operator to view the stage. Thus, the purpose of the curtain to make a more intimate seating area was not achieved.

The preset and patch panel is slightly different than the cited criteria. Two presets are available, the criterion called for "five." The patch panel falls short of the required "250" by five circuits.

Box Office and Foyer

No box office is built into the facility at Northern State College. Thus, no criteria related to the box office are accommodated.

The foyer area is of sufficient size but does not meet the standards required for proper telephone arrangements. The criterion indicated "a telephone is needed in the foyer." No telephone is available.

Dressing Rooms and Green Room

Two rooms are available as dressing rooms with an additional room used specifically for make-up. The dressing room areas do not meet the criterion, but when the make-up room area is added, the total exceeds the standards.

The green room lacks sufficient size when compared to the criterion. The requirement stated that the green room should be "not less than 480 square feet." The existing facility size is 225 square feet.

Standards cited that "a call system is needed in the dressing rooms and green room." There is a call system in the dressing rooms but not in the green rooms.

The area also lacks the proper wash basin and toilet facility needs presented in the minimum criterion. Two toilets and four wash basins are available. The criterion called for "eight of each."

Sound System

The sound system only falls short concerning the number of speakers needed. Two of the recommended "six speakers" are located on the stage. The seating facility required at least "five speakers." Two are present.

Orchestra Pit

The orchestra pit meets all of the established criteria except for the number of outlets needed in the pit. Thirty of the recommended "thirty-six" outlets are available in the pit.

Sioux Falls College*Jes chke*

The theatre at Sioux Falls College, located in the Jeske Fine Art Center, was constructed in 1971. The theatre was examined on April 5, 1979. Dr. Perry Patterson assisted in the review.

Proscenium Arch Stage

The stage meets all but a few of the minimum requirements. The height of the grid is not adequate when compared to the criterion. The requirements expressed the grid height at "not less than three times the proscenium opening." The height of the arch is 28 feet which creates a needed grid height of 84 feet. The distance between the stage floor and the grid is 63 feet. This also means that the distance between the grid and the top of the proscenium arch is 5 feet short of the recommended "40 feet."

The stage floor should be constructed of "wood that is workable for attaching scenic devices" as stated in the requirements. The stage portion is constructed of wood, but the wing space is cement.

There are two teasers located on the stage. This criterion cited a need for "four." An adequate number of tormentors appears on stage, but they are positioned every 7 feet instead of the "5 foot" spacing required.

Seating Facility

Only two areas of investigation in the house area fall short of the criteria. The standards called for a "maximum depth of

50 feet." The distance between the stage and the rear wall is 92 feet. Requirements held that the total house facility should be "covered with noncombustible carpet." The aisles are tile, and the seating area is furnished with noncombustible carpet.

Lighting Facility

The light booth and dimmer system meet or exceed the established criteria. The preset panel consist of 130 of the required "250 circuits."

The beam positions complied with all the standards except for the width being 10 feet short on each side of the total "width of the facility."

Requirements called for the light battens to be "not less than 8 feet apart." The first three battens are spaced at 5 foot intervals.

Box Office and Foyer

There are two box offices present in the foyer area. Each box is 4 feet 6 inches by 7 feet. The criterion cited the box office to be "at least 10 feet by 20 feet." One window is built into each one. The requirements expressed a need for "at least two windows." The box office doors are only 24 inches of the recommended "28 inches."

The foyer lacks only a "telephone" as demanded by the criterion.

Dressing Rooms and Green Room

The total area of the dressing rooms is 246 square feet. The criterion called for "800 square feet." Standards cited the location of the dressing rooms as being "near the stage." The dressing rooms at Sioux Falls College are located under the stage. To gain access to the stage from the rooms one must climb a spiral ladder that enters the stage at the rear left corner. This position does not appear to be an adequate location for the dressing rooms. A total of nineteen make-up stations are available at the facility. The criterion called for "at least twenty-four."

The green room is located one level below the stage; however, it is placed at the rear end of the seating area. This position did appear to be in a proper location.

One criterion called for "eight toilets and eight wash basins." Four toilets and two wash basins are available.

Sound System

The sound system lacks only the proper number of speakers. There are two speakers located on the stage instead of the recommended "six." Four speakers are present in the house area. The criterion was "not less than five."

Orchestra Pit

The orchestra pit meets all the requirements except for the number of outlets needed. Examination revealed twenty available. The criterion called for "at least thirty-six."

South Dakota School of Mines and Technology

The theatre at the School of Mines is located in the Subeck Center. The theatre also doubles as a multiple facility and a ballroom. The South Dakota School of Mines and Technology is in Rapid City, South Dakota. *Subeck?*

Proscenium Arch Stage

The stage size falls short of the recommended overall measurements. The height of the arch is 11 feet, width is 26 feet, and the depth of the stage is 16 feet. The criteria called for an "arch height of 20 feet," "width of 30 feet," and a "stage depth of 30 feet." The distance between the stage floor and seating area floor is 3 feet. Standards revealed that the distance should "not be less than 3 feet 8 inches" for a flat floor.

The width and height of the wing space is not adequate when compared to the requirements. The dimensions for each side are equal. Wing space width is 5 feet 6 inches not the "minimum of 8 feet." The height of the wing space is 12 feet. Standards cited "14 feet" as being the minimum.

No grid is present in the facility, therefore, any criteria related to the grid are not met.

Two doors are situated on the stage, no loading door is present. Requirements cited a need for "a loading door." The stage doors comply with the proper height but are 4 inches short of the "3 feet" width standard.

The act curtain is of the proper width but is only 1 foot above the proscenium arch. Requirements asked for "not less than 3 feet." "Four teasers" were called for in the criterion, but only two are present. There are no tormentors on the stage; thus, standards related to them are not satisfied.

There are no battens positioned on the stage. One criterion called for "at least ten spaced every 2 feet." The distance between the rear wall and the back curtain is variable. The minimum distance is 6 inches. A criterion called for "not less than 6 feet."

Seating Facility

The house area of the theatre is also used for a ballroom. Seating in the facility consists of portable chairs that may be arranged in any fashion. Therefore, criteria related to the seating are not met.

The house lacks proper height and depth. The height is 16 feet and the depth is 53 feet. Criteria stated that the height should be "25 feet" and the depth "a maximum of 50 feet."

The floor of the seating facility at the School of Mines is flat. Requirements held that the floor should be "stepped or inclined." The floor covering is tile not the recommended "non-combustible carpet."

Lighting Facility

The light booth is not located in the "rear" of the facility as advocated by the criterion. The light booth is situated in a

room on the stage right side of the stage. The control booth has no glass for soundproofing. The light control operator can only view a small portion of the stage from the booth position. The requirement was to "be able to view the entire stage."

Dimmer criteria called for "thirty dimmers," "five presets," and "250 circuits" in the patch panel. The existing facility has nine dimmers, no presets, and no patch panel. The distance between the beam and the stage is 24 feet of the recommended "35 feet." The beam position also lacks the proper width. The positions are three, 4 foot pipes suspended from the ceiling. The criterion cited the beam as being "the width of the house and 3 feet wide." There are six outlets on the beam, "fifteen were required."

The electrics on the stage are of the type where an electrical strip is present, and lights may be plugged in anywhere along it. Therefore, no outlets or circuits are present with this type of system. Lights may be plugged in until the maximum wattage is used. For this reason the stage lighting was inadequate in terms of the criterion. The strips are spaced 4 feet apart. Standards called for the lighting positions to be located "not less than 8 feet" apart.

Box Office and Foyer

There is no permanent box office used for theatre operations at the School of Mines. Hence, none of the criteria related to the box office are met. The lounge area of the Subeck Center is used

for the theatre's foyer area. This facility complies with the minimum requirements.

Dressing Rooms and Green Room

The dressing rooms and green room are combined into one large storage room off stage right. The room's size is 315 square feet. The criteria for dressing and green room required a total of "1,280 square feet." No make-up lighting is available in this area; only a mirror that is 3 feet by 9 feet is present for make-up application. Requirements cited a need for "twenty-four stations" with "lighting on each side of the face that does not reflect in the mirror."

There are no clothes racks or costume storage area in the room. The criterion called for both. There is no call system nor any plumbing facilities available in the room. Standards specified a need for each.

Sound System

"Six speakers" were to be placed on the stage. There are none. The criterion cited a need for "at least six microphone plugs on the stage." The facility has four. All other sound system features were adequate.

Orchestra Pit

There is no pit built into the facility and with the portable seating, any area may be used by the orchestra. For this reason the

facility could not be specifically examined. However, a suitable arrangement can be made for the orchestra pit.

South Dakota State University

The theatre at South Dakota State University, located in the Administration Building, is called Doner Auditorium. South Dakota State University is located in Brookings, South Dakota. The theatre was examined on March 15, 1979.

Proscenium Arch Stage

The stage area meets many of the requirements. The depth of the stage is 24 feet and the criterion called for at "least 30 feet." The width of the wing space did not meet the "one-half the proscenium arch" distance requirement, or 19 feet. The wing space width on both sides of the stage is 13 feet. The height of the wing space on stage left is 13 feet because of the overhead pinrail loft. The criterion stated that wing space height should be "to the grid, but not less than 14 feet." The distance between the grid and the stage floor is not adequate. The distance was required to be "three times the proscenium opening," or 66 feet. The measured distance is 32 feet. The ceiling above the grid area is a pitched roof. The pitch varies from 3 feet to 8 feet. The criterion called for "at least 6 feet."

With the height of the grid being 32 feet, the distance between the top of the proscenium arch and the grid is 10 feet. A "40 feet" minimum was indicated by the authorities. Stage doors

lacked 4 inches of width and height of the required "3 feet by 7 feet." The work lights on the stage appeared inadequate for the outside areas of the stage. More work lighting would be required to properly "fill the entire stage" facility. Work light control appears at "stage level," but none is located in the "stage light control position" as indicated by the criterion.

The act curtain complies with the proper width requirement, but the height did not meet the "3 feet excess" called for in the criterion. The act curtain falls short of the arch height by approximately 4 feet. Teasers are of adequate distance, but only two are present on stage. Standards required "at least four." The tormentors are positioned every 6 feet, with five on stage. A criterion called for "one every 5 feet" and "not less than five on stage."

Not all of the battens are "suspended by counterweights" as advocated by the criterion. Five of the fifteen are on counterweights; the remaining are suspended by rope lines.

The distance between the rear curtain and the back wall is 1 foot. Requirements called for "at least 6 feet."

Seating Facility

The house area falls short of the minimum requirements in five specific areas. The depth of the house area is 64 feet instead of the "maximum 50 feet" cited by the authorities.

The aisle width is proper but does not increase as required. Standards stated that the aisle width should "increase 1 1/2 inches every 5 feet toward an exit, cross aisle, or foyer." Distance between the seats from row to row is 32 inches. The criterion cited that the distance needed was "33 inches." The criteria called for the use of "noncombustible carpet" for the floor. The aisles are the only portion of the floor covered with noncombustible carpet.

The final area that does not comply with the criteria is the width of the fire escape doors. The doors are 27 inches wide. Standards were set at "not less than 28 inches."

Lighting Facility

The light booth at South Dakota State University satisfies the desired criteria except for the type of window present in the booth. The requirements called for "double glass." The light booth has single glass for soundproofing.

Dimmer requirements cited a need of "thirty," "five presets," and a "250 circuit patch panel." The facility has twenty-four dimmers, no presets, and 100 circuit patch panel.

The beam position falls short in two areas. The criterion stated that the beam position should "run the width of the house." The beam position consist of nine sections that are built into the ceiling. The total width of the beam is 32 feet. The width of the house is 70 feet. The beam also lacks the proper amount of outlets by having ten of the recommended "fifteen." The spacing criterion for light battens was set at "not less than 8 feet apart." The

battens are positioned every 6 feet. The number of outlets on stage falls short of the recommended "eight" by two. Six are available.

Box Office and Foyer

The box office at South Dakota State University is 6 feet by 6 feet. The standards cited the size at "10 feet by 20 feet." The box office door does not meet the "28 inch width" requirement. The width of the door is 24 inches. The hall area at the rear end of the house is used for the foyer. A telephone is not available in the immediate foyer area, but one is present downstairs. One criterion required "a pay phone in the lobby area of the foyer."

Dressing Rooms and Green Room

The area of the dressing rooms is not adequate when compared to the "800 square feet" criterion. The total area of the dressing room is 350 square feet. Eighteen make-up stations are available. The requirement was "twenty-four." The dressing rooms are lacking in costume storage space. None is available.

The dressing rooms and green room have no call system. The criterion cited the need for "a call system" in each. The facility has one toilet and three wash basins. Requirements indicated a need for "eight of each."

Sound System

The sound system falls short in several areas. There are no speakers on stage. The standards cited a need for "at least six." Four of the required "six microphone plugs" are on stage. The

investigator could not discover the power of the amplification system. The sound control board is located on stage right not in the "light control room" stated by the criterion.

Orchestra Pit

The orchestra area only falls short in one area. A criterion called for "at least thirty-six outlets" to be located in the pit area. There are twenty.

University of South Dakota

The theatre is located in the University of South Dakota Center for the Fine Arts. The University is located in Vermillion, South Dakota. The facility was examined on April 10, 1979.

Proscenium Arch Stage

A few areas of investigation did not satisfy the minimum requirements for the proscenium arch stage. The distance between the stage floor and the seating floor is 30 inches. The criterion held that the distance should be "3 feet if the seating area is stepped."

The act curtain exceeds the height of the proscenium arch by 2 feet. Authorities requested an "excess of 3 feet." The tormentors are spaced every 10 feet. The criterion indicated they should be placed "every 5 feet." The rear curtain is placed 5 feet from the back wall. The requirements cited the necessary distance as "6 feet."

Seating Facility

The seating complies with the proper dimensions, excluding the depth. Criterion stated the depth as a "maximum of 50 feet." The depth of the house is 67 feet. There are no outside aisles in the facility. "Outside aisles" were required by the standards.

The floor of the house is stepped at a rise of 7 inches. The criterion stated that the steps should be "not less than 9 inches." Only the aisles are covered with noncombustible carpet not the "entire floor" as required.

Lighting Facility

The light booth at the University of South Dakota only lacks the "double glass" for soundproofing called for in the criterion. Single-plex glass is in the light booth. The dimmer system consists of three presets. The requirements were "five." The patch panel has 140 of the required "250 circuits."

Two beam positions are present and are at the proper angle. The beam nearest the proscenium is 30 feet from the stage. The standards called for "at least 35 feet." The criterion stated that the beam position should "run the width of the house," or 57 feet. The width of the beam is 37 feet.

The requirements were that the light battens be spaced "not less than 8 feet the entire depth of the stage." At the University of South Dakota the light battens are positioned every 6 feet.

Box Office and Foyer

The box office is 9 feet by 11 feet. The standard was set at "10 feet by 20 feet." The box office has one window instead of the "two" required by the criterion. All other areas are adequate.

Dressing Rooms and Green Room

Five dressing rooms are available at the facility. The total area of the dressing rooms is 578 square feet. The criterion called for "800 square feet." The location of the dressing rooms did not appear adequate to the investigator. The dressing rooms are located behind the stage in the scene shop area. With the construction that takes place in shop areas, actors traveling to the stage from the dressing rooms would encounter the obstructions and dirt of the shop. For this reason the investigator felt that the location is not proper. The dressing rooms lack only one of the "twenty-four" needed make-up stations.

There is no green room in the facility; therefore, any criteria related to it are not met. The dressing rooms do not have the "call system" the requirements desired. Four toilets and five wash basins are available. The criterion stated a need for "eight of each."

Sound System

The number of speakers falls short of the minimum requirements. Standards cited a need for "six speakers on stage" and "five in the house." Two speakers are present in each position. The sound

control is not located "in the light control room" because a separate sound booth is located directly beside the light booth. This position is perhaps ideal for sound system control.

Orchestra Pit

The orchestra pit does not comply with the standards in one area. The criterion indicated that there should not be "less than thirty-six outlets" in the pit. There are twenty-four available.

University of South Dakota--Springfield

The theatre at the University of South Dakota at Springfield was built in 1919. The college is located in Springfield, South Dakota. The facility was examined on April 10, 1979.

Proscenium Arch Stage

The criteria stated the necessary dimensions of the proscenium arch as being "at least 30 feet wide" and "20 feet high." The arch is 24 feet wide and 12 feet high. The depth of the stage is 18 feet. Requirements called for a "stage depth of 30 feet." The width of the wing space does not comply with the standards. Necessary wing space width was established as being "one-half the proscenium opening but not less than 8 feet." One-half the proscenium opening is 12 feet. The width of the wing space on stage right is 7 feet and stage left is 6 feet.

There is no grid in the facility. Therefore, any criteria related to the grid are not met.

There are an adequate number of stage doors, but no loading door is present. The criterion called for "one." The stage doors are of the proper height, but the width is 7 inches short of the "3 feet minimum." The work light control switch is located properly "on stage," but no switch is available "in the light control position." The criterion required switches in both locations. Only one switch is present instead of the "two" called for by the requirements.

The act curtain meets the width standard but falls 1 foot short of the necessary arch height. The curtain needed "3 feet of excess" to comply with the criterion. Two teasers are on the stage. The minimum requirement was set at "four teasers." The four tormentors are spaced at 6 feet. "Five tormentors positioned every 5 feet" were required.

There are four battens suspended by rope lines from the ceiling. The standard was "not less than nine." The rope lines are not attached to a pinrail loft because there is none. The rear curtain is 5 feet from the back wall instead of the recommended "6 feet."

Seating Facility

The height of the ceiling in the house area is 22 feet, 3 feet short of the required height. The criterion stated that there should be "not less than 300 seats in the seating area." The seats total 230.

The aisles are located on the outside, and a center aisle is present. The requested aisle arrangement was "two outside aisles, two in between with no center aisle." The criterion indicated that the floor should be "inclined or stepped." The floor at the University of South Dakota at Springfield is flat for the first 12 feet from the stage. The remaining portion of the floor is adequate. The floor of the house is covered with tile, and the aisles are covered with noncombustible carpet. Requirements called for the "entire floor to be covered with noncombustible carpet."

The control of the house lighting is in the light control room not in the "stage manager's corner" as stated in the criterion.

Lighting Facility

The light booth complies with the proper requirements except for the use of "double glass" for soundproofing. Single-plex glass is used in the booth window.

The dimmer system called for "thirty dimmers," "five presets," and "250 circuits in the patch panel." The dimmer system in the facility consists of fifteen dimmers, with two presets for eight of the dimmers, and fourteen circuits in the patch panel. Six of the dimmers are 1200 watts instead of the recommended "2000 watts." The remaining dimmers are of adequate size.

The beam position did not meet the minimum criterion of being "at least 35 feet from the stage." No beam position is present in the facility. The lighting position in the house area consists of four vertical pipes that are placed in the four front corners of the

balcony. The balcony is U-shaped. The lights mounted on the two pipes nearest the stage are 18 feet from the stage. The remaining two are 25 feet from the stage. The positions contain nine outlets. The criterion indicated a need of "fifteen."

Four outlets appear on the first electric instead of the required "fifteen." One other light batten is on stage and is positioned 6 feet from the first electric. The standards called for a spacing of "at least 8 feet."

Box Office and Foyer

A classroom with a window cut into the wall that opens to the outside hall is used for the box office. The room exceeds the standard for size, but only one window is present. The criterion called for "at least two windows." The office meets the remaining criteria excluding the need for a "permanent telephone." No telephone is available in the office.

The hall downstairs from the theatre is used for the foyer. The foyer is of adequate dimensions, but no pay phone is available. The requirements indicated that "one" should be present.

Dressing Rooms and Green Room

The combined area of the dressing rooms is 180 square feet. The minimum required "at least 800 square feet." One of the dressing rooms is in the process of being remodeled, thus, no make-up stations or costume storage area is available. The other dressing room has four make-up stations, no costume storage area, and no clothes racks.

The criteria stated there should be "at least twenty-four make-up stations," available "costume storage area," and "clothes racks" of any type.

The area of the green room is 170 square feet. The requirements called for "480 square feet." A call system is in the green room but none is in the dressing rooms. The criterion indicated a need in "both rooms." The facility did not meet the standards for wash basin and toilet availability. Requirements called for "eight of each," none are present.

Sound System

Criteria expressed a need for "six speakers on the stage" and "five in the house area." The stage has no speakers, and the seating facility has two. The amplification system and microphone plugs are portable. The amplification system is of adequate size. No permanent microphone plugs are located on the stage. The criterion called for "at least six."

Orchestra Pit

The orchestra pit is not built into the facility. The area available for the pit is 12 feet by 12 feet, or 144 square feet. The minimum requirements were "at least 8 feet by 35 feet, or 280 square feet." The available pit area is located on the stage right side of the house. The advocated location was "between the acting area and the audience." Because the pit is not built in, no outlets are present instead of the recommended "thirty-six."

Yankton College

The Yankton College theatre facility was examined on April 9, 1979. The College is located in Yankton, South Dakota. Professor James Wilcox, Director of the Theatre Department, was helpful in the completion of the check list.

Proscenium Arch Stage

The proscenium arch is of the proper width, but the height is 3 feet less than the required "20 feet." The depth of the stage is 27 feet, 3 feet short of the desired minimum distance. The distance between the stage floor and the seating floor is 3 feet 4 inches. The criterion stated that "if the floor is raked, the distance should be not less than 3 feet 6 inches."

The width of the wing space falls short of the "one-half the arch opening" requirement. The width of the wing space on each side of the stage is 11 feet 6 inches. One-half the proscenium opening would be 15 feet. The grid is 37 feet above the stage. A criterion stated that the height of the grid should "not be less than three times the arch height," or 51 feet. There are nine battens suspended from the grid instead of the recommended "ten." The distance between the grid and the top of the proscenium arch is 20 feet. Requirements expressed a need of "40 feet."

There is a loading door on stage, but only one of the "two" required stage doors appears.

Strip lights are used for the work lights. The criterion stated that the work lights should produce "adequate light to work

by other than during performance times." The work light is adequate for the major portion of the stage, but the wing space light is not sufficient. The control for the work light is located "on the stage" in the proper position. Only one switch is available instead of the recommended "two." No work light control is in the "light booth" as required by the standards.

The width of the act curtain meets the standards. The height of the act curtain exceeds the arch height by 1 foot, 2 feet short of the requirement. The criterion for the teasers was "one every 10 feet of depth with a minimum of four blacks." The stage has one teaser spaced 13 feet from the front of the stage. The four tormentors are positioned at intervals of 6 feet. Standards called for "five tormentors, one every 5 feet."

Five of the nine battens are hung by counterweights and positioned every 3 feet over the entire depth of the stage. The requirements cited that all battens "should be suspended by counterweights with one located every 2 feet." There are four battens hung by rope lines instead of the "nine recommended." The pinrail is located 3 feet from the wall. The standard indicated the pinrail should be "4 feet wide."

Seating Facility

The dimensions of the house area at Yankton College were slightly inadequate when compared to the standards. The height of the ceiling is 23 feet, and the depth is 64 feet. The criteria

stated that the height be "at least 25 feet" and "the maximum depth 50 feet."

The house has two outside aisles and one center aisle. The criterion is satisfied by the two outside aisles, but the center aisle is not as recommended. The aisles comply by being of the proper width but do not "increase" as needed. The aisle width does not increase at all. The distance between seats from row to row is 31 inches, 2 inches short of the recommended "33 inches." The aisles of the house are covered with noncombustible carpet; the remaining portion is not. The criterion stated that "the entire floor should be covered with noncombustible carpet."

Lighting Facility

The light booth is lacking in only one aspect, that of "double glass" needed for soundproofing. The viewing window is single glass. Dimmer criteria required "thirty dimmers," "five presets," "2000 watt dimmers," and "250 circuits in the patch panel." Yankton College has eighteen dimmers, no presets, thirteen of the eighteen dimmers are 1200 watts, and thirty-six circuits are in the patch panel.

The beam position is at the proper angle but does not meet the size requirement. The criterion stated that the beam position should "run the width of the house and be at least 3 feet wide." Two openings are cut into the ceiling with an overall width of 24 feet. The width of the house is 52 feet. Light battens on the

stage are positioned every 5 feet. The standards cited that the battens should be "spaced every 8 feet the entire depth of the stage."

A criterion stated "a house dimmer system is needed." No house dimmer system is present; therefore, the requirement for the location of the control are also not met.

Box Office and Foyer

The box office at Yankton College is 10 feet by 10 feet. The minimum advised size was "10 feet by 20 feet." One window is present in the box office instead of the "two" recommended. The only other area of the box office criteria that was not adequately met concerned the need for "a permanent phone." No phone is present.

The hall outside the house area is used for the foyer. The only item of criteria not met was the required "telephone." None is available.

Dressing Rooms and Green Room

The combined area of the dressing rooms is 252 square feet. The desired footage was "800 square feet." There are ten make-up stations located in the dressing rooms. "Twenty-four" were called for.

There is no green room in the facility; thus, all criteria related to the green room are unsatisfied. A "call system" was required for the dressing rooms. No call system is present. The plumbing facilities at the college were less than the standard

advocated. Two toilets and four wash basins are available. A criterion expressed a need for "eight of each."

Sound System

The sound system falls short in several areas. Criteria required "six speakers on stage" and "five in the house." No speakers are present. The requirements called for "at least six microphone plugs on the stage." None are available. The sound control is located on stage right, not in the "light booth" as advised.

Orchestra Pit

The orchestra pit is not built into the facility at Yankton College. The area available for the pit is 9 feet by 30 feet, or 270 square feet. The criterion called for a space of "8 feet by 35 feet, or 280 square feet." The only other item not complying with the standards is the number of outlets in the pit. No outlets are in the available area. The criterion was "thirty-six outlets."

Summary

This chapter represents an attempt to determine the adequacy of the proscenium arch theatres in the thirteen degree-granting institutions in the state of South Dakota. This process was completed by applying the minimum criteria established in Chapter II to the existing facilities. For each institution only the criteria not met were identified.

CHAPTER IV

SUMMARY AND CONCLUSIONS

Summary

In this study an attempt was made to determine the adequacy of selected areas of the proscenium arch theatrical facilities in the thirteen four-year degree granting institutions in the state of South Dakota.

The first step was to determine any previous studies completed on either the minimum requirements for a proscenium arch theatrical facility for the presentation of educational theatre or a study of the theatrical facilities in the institutions in the state of South Dakota. A review of specific guides revealed no duplicate studies. Four studies were found relevant to the investigation but after further observation were discovered not to be duplicates of the study undertaken.

The next step was to determine the minimum requirements for selected areas of proscenium arch theatrical facility for a comprehensive educational theatre program. The selected areas of investigation were: the proscenium arch stage, the seating facility (house area), the lighting facility, the box office and foyer, the dressing rooms and green room, the sound system, and the orchestra pit.

The third step was to establish an itemized list of questions that would be used to determine the minimum requirements. The list of questions for each category was prepared by the investigator under the direction of Professor Peterson, Designer/Technical Director at South Dakota State University. The questions were designed to yield criteria concerning the needs in an educational theatre facility.

A two-step process was used to answer the criteria-seeking questions. The first step was to examine selected available written material. Written materials surveyed were text books, dissertations, and journal articles dealing with proscenium arch theatrical facilities on an educational theatre level. Information received from the written material was used to establish answers to a portion of the criteria-seeking questions.

The criteria-seeking questions that were not answered adequately in the written material were arranged in a questionnaire form and submitted to a panel of three experts. The adequacy of the answers was determined by the investigator under the discretion of Professor Peterson.

The experts who answered the remaining criteria-seeking questions were chosen by the investigator under the guidance of Professor Peterson and the thesis advisor. The panel consisted of individuals who were thought to be experts in the field of educational theatre. They were college level professors employed at institutions other than those being examined. Some were

technical directors; others were directors at their respective institutions. The opinions from the panel of experts were used to answer the remaining criteria-seeking questions. Answers to the questions became the minimum requirements for the selected areas of a proscenium arch theatrical facility for a comprehensive educational theatre program.

Criteria established for the minimum requirements were then used to determine the adequacy of theatrical facilities at the thirteen four-year degree granting institutions in the state of South Dakota. A letter was sent to each institution seeking permission to examine the theatre facility. All institutions agreed to cooperate.

The investigator visited each institution for the process of examination. A check list was made from the criteria established as the minimum requirements. The check list contained the criteria with a question appended intended to discover if the facility met, exceeded, or fell short of the criteria. The extent to which the institutions' facilities did not comply with the minimum requirements was identified.

Conclusions

Based on the findings of this study, the following conclusions have been drawn:

1. Prior to the completion of this study no comprehensive comparative criteria for selected areas of a proscenium arch

theatrical facility for the presentation of educational theatre were available.

2. Prior to this study no investigations had been undertaken to determine the adequacies of the proscenium arch theatres in the thirteen four-year degree granting institutions in the state of South Dakota.

3. One set of minimum requirements for selected areas of a proscenium arch theatrical facility for the presentation of educational theatre has been established by this current study.

4. All the proscenium arch theatres in the colleges in the state of South Dakota fall short of the minimum requirements in some area when compared to the criteria.

5. The principle areas in which all theatres fall short of the established criteria were:

A. The proscenium arch stage.

(1) Only four of the institutions examined have proper wing space width on each side of the stage.

(2) Six of the facilities have no grid system. Six others do not have adequate distance between the stage floor and the grid.

(3) Only one facility meets the criteria for height of the act curtain. The standard was to be "3 feet of excess above the arch." All other institutions fall short.

(4) None of the institutions comply with the criterion that tormentors be located "every 5 feet."

(5) Only two institutions have the proper number of teasers located on the stage.

B. The seating facility (house area).

Only two facilities have the entire floor area covered with "noncombustible carpet" as required by the criterion.

C. The lighting facility.

(1) Only two schools have "double glass" in the light booth for soundproofing.

(2) Only three institutions have the recommended number of dimmers.

(3) Only one facility complies with the standards for presets.

(4) None of the institutions has the proper number of circuits in the patch panel.

(5) Only three colleges meet the requirement of adequate beam opening width.

D. The box office and foyer.

Only four of the thirteen schools have a telephone located in the foyer area.

E. The dressing rooms and green room.

(1) None of the schools has the proper amount of area in the dressing rooms.

(2) Only two institutions have the adequate number of make-up stations.

(3) Only three facilities meet the requirement for a "call system" in the dressing rooms and green room.

(4) None of the institutions meets the standard for proper plumbing facilities.

F. The sound system.

(1) None of the institutions has the proper number of speakers on stage.

(2) Only three facilities have the appropriate number of speakers in the house area.

G. The orchestra pit.

(1) Only three facilities have a built in orchestra pit.

(2) None of the facilities has the appropriate number of outlets in the orchestra area.

6. An overall conclusion was that the more recently built facilities were more adequate when compared to the minimum requirements.

Recommendations for Further Study

On the basis of what has been learned from this study about the minimum requirements for a proscenium arch theatre, it is recommended that the criteria be used for the examination of other such theatrical facilities.

The criteria might also be refined from the present form to include only a portion of the selected areas, and then they might be used for the examination of other theatrical facilities.

The study might also be expanded to encompass all areas of a proscenium arch theatrical facility, not just selected areas, and then be used for further investigation.

Nevertheless, the current study may have provided a foundation for future construction of educational theatrical facilities.

APPENDIX A

December 18, 1978

Dear :

I greatly appreciate your agreement to cooperate with my study. Enclosed is a list of the questions I hope you will be able to answer.

To explain the proposed study in more detail, I am examining the adequacy of the proscenium arch theatres for a comprehensive educational theatre facility in the four-year degree granting institutions in the state of South Dakota. In order to determine the adequacies, a minimum requirement must be established for a proscenium arch theatre in an educational theatre facility.

A list of criteria-seeking questions has been designed by the investigator. An examination of the written material available to the investigator has established adequate answers to a portion of the questions. For the remaining questions a panel of three experts, of which you are one, will be asked for their opinion. This will then complete the answers to the criteria-seeking questions. These answers will then be the criteria used as the minimum requirements for a proscenium arch theatre. The institutions in the state of South Dakota will then be examined as to how they meet or exceed the minimum requirements.

Keep in mind that these questions are searching for the minimum not the ideal. Answers to some of the questions may be of specific distance or measurement, others may be in proportion to another factor involved. The more specific you are the more helpful it will be. I thank you for your help. Please return the questionnaire in the stamped, self-addressed envelope.

Sincerely,

Kenneth Stofferahn

The first group of questions deals with the stage area.

What should be the depth of the wing space on stage right? (depth means the distance between the proscenium wall and the back wall)

What should be the height of the wing space on stage right? _____

What should be the depth of the wing space on stage left? _____

What should be the height of the wing space on stage left? _____

What should be the size of the grid? (in length and width)

What should be the distance between the grid and the top of the proscenium arch? _____

What should be the size of the stage doors? (not loading doors)

How many control switches should there be on stage for work lights?

What should be the size of the act curtain? _____

What should be the size of the grand drape? _____

What type of system should be used to operate the act curtain?

What should be the distance between the teasers on stage? _____

How many tormentors should be located on the stage? _____

How many battens should be suspended by counterweights? _____

What should be the size of the rear curtain? _____

What should be the size of the light bridge? _____

The next group of questions deals with the seating facility (house area).

Is a balcony needed? _____

If needed, what should be the size of the balcony? _____

If needed, how many seats are needed in the balcony? _____

What should be the height of the ceiling in the house area? _____

How many access doors are needed in the house area? _____

What should be the size of these doors? _____

What type of ceiling should be used? (material) _____

What type of floor covering should be used? _____

What type of house lighting is needed? _____

The next group of questions deals with the stage lighting facilities.

What should be the size of the light control booth? _____

What type of soundproofing is needed in the lighting control booth?

How many presets are needed? _____

What size of electrical output is needed? (volts) _____

What should be the watt power of each dimmer? _____

How many circuits are needed in the patch panel? _____

How many beam positions are needed? _____

What should be the distance between the beam position and the stage?

What should be the size of the beam opening? _____

How many outlets should be located on the stage? (not on battens or bridge) _____

What type of house dimmer system is needed? _____

Where should the house dimmer system be located? _____

How many circuits should be located at the beam position? _____

The next group of questions deals with the box office and foyer area.

What should be the size of the box office? _____

Where should the box office be located in relation to the house area?

How many ticket windows are needed in the box office? _____

What should be the size of the ticket windows? _____

Where should the foyer be located in relation to the box office?

Is an accessible pay phone needed? _____

If needed, where should the pay phone be located? _____

The next group of questions deals with the dressing rooms and green room.

What type of general lighting is needed in the dressing rooms? _____

How many doors are needed in the dressing rooms? _____

Are double doors needed in the dressing rooms? _____

How many make-up stations are needed in the dressing rooms?
(all together) _____ (per room) _____

How large a storage area is needed in the dressing rooms? _____

What type of clothes racks are needed in the dressing rooms? _____

How many clothes racks are needed? _____

Where should the green room be located in relation to the dressing rooms? _____

How many doors are needed in the green room? _____

Are double doors needed in the green room? _____

The next group of questions deals with the sound system.

How many speakers should be placed in the house area? _____

What should be the size of the house speakers? (watts) _____

What should be the size of the stage speakers? (watts) _____

The next group of questions deals with the orchestra pit.

If the orchestra pit is not built in, how much area should be available to be used for it? _____

What should be the width of the orchestra pit? _____

How many electrical outlets are needed in the orchestra pit? _____

APPENDIX B

Check List

Institution _____ Date _____

Proscenium arch stage.

1. The proscenium arch should not be less than 30 feet wide.
What is the width of the proscenium arch? _____
2. The height of the proscenium arch should not be less than 20 feet.
What is the height of the proscenium arch? _____
3. The depth of the stage should not be less than 30 feet.
What is the depth of the stage? _____
4. The apron at center stage should not be less than 3 feet.
What is the depth of the apron at center stage? _____
5. The distance between the stage floor and the lowest point of the auditorium floor should not be less than 3 feet 8 inches if auditorium is flat, 3 feet 6 inches if auditorium is raked, 3 feet if auditorium is stepped.
What type of floor is used in the house area? _____
What is the distance between the auditorium and stage floor? _____
6. The width of the wing space on stage right should be one-half the width of the proscenium opening, but not less than 8 feet.
What is one-half the width of the proscenium opening? _____
What is the width of the wing space on stage right? _____
7. The depth of the wing space on stage right should not be less than 15 feet with a greater distance being more adequate.
What is the depth of the wing space on stage right? _____
8. The height of the wing space on stage right should be equal to the height of the grid, but not less than 14 feet.
What is the height of the wing space on stage right? _____
9. The width of the wing space on stage left should be one-half the width of the proscenium opening, but not less than 8 feet.
What is one-half the width of the proscenium opening? _____
What is the width of the wing space on stage left? _____
10. The depth of the wing space on stage left should not be less than 15 feet, with a greater distance being more adequate.
What is the depth of the wing space on stage left? _____
11. The height of the wing space on stage left should be equal to the height of the grid, but not less than 14 feet.
What is the height of the wing space on stage left? _____
12. The distance between the stage floor and the grid should not be less than three times the proscenium opening.
What is three times the proscenium opening? _____
What is the distance between the stage floor and grid? _____

13. The grid should be large enough to cover the usable stage area.
What is the size of the usable stage area? _____
What is the size of the grid? _____
14. The distance between the grid and the ceiling should not be less than 6 feet.
What is the distance between the grid and the ceiling? _____
15. No less than ten battens should be suspended from the grid.
How many battens are suspended from the grid? _____
16. The distance between the grid and the top of the proscenium arch should not be less than 40 feet.
What is the distance between the grid and the top of the proscenium arch? _____
17. There should be not less than two doors and one loading door to gain access to the stage.
How many doors are there? _____
How many loading doors? _____
18. The stage doors should not be less than 3 feet wide and 7 feet high.
How wide are the stage doors? _____
How high are the stage doors? _____
19. The stage floor should be constructed from a wood that is workable for attaching scenic devices.
Is the stage floor constructed of wood? _____
Will the wood accept scenic devices? _____
20. Work light should produce adequate light to work by other than during performance times.
Can scripts be read by work lighting? _____
Explain _____
21. There should be a least two control switches for stage work lights.
How many switches are there for work lights? _____
22. Work lights switches should be located at stage level and at the point of stage lighting control.
Is there a work light switch at stage level? _____
Is there a work light switch at the stage light control center? _____
23. Doors should be located either well down-stage or as far up-stage as possible, and the loading door at either the side or the rear of the stage.
Are stage doors located well down-stage or as far up-stage as possible? _____
Is the loading door at the side or the rear of the stage? _____
24. The act curtain should be large enough to cover the proscenium opening with an excess of 6 feet on the sides and 3 feet on the top.
Does the act curtain cover the proscenium opening? _____
Is there an excess of 3 feet on each side? _____
Is there an excess of 3 feet on the top? _____

25. The width of the grand drape should be equal to the width of the proscenium opening.
Is the width of the grand drape equal to the proscenium opening? _____
26. The act curtain should be operated by manual control, any system acceptable.
Is the act curtain operated by manual control? _____
27. There should be a teaser for every 10 feet of depth with a minimum of four blacks on stage.
Is there one teaser every 10 feet? _____
Are there four blacks on stage? _____
27. There should be one tormentor every 5 feet on stage and a minimum of five.
Is there one tormentor every 5 feet? _____
Are there five tormentors on stage? _____
29. All battens should be suspended by counterweights with one located every 2 feet.
Are all battens suspended by counterweights? _____
If no, how many are? _____
Is there a batten every 2 feet? _____
If no, how many feet apart? _____
30. There should not be less than nine battens suspended by rope lines.
How many battens are suspended by rope lines? _____
31. The rear curtain should be the same size as the act curtain.
What is the size of the act curtain? _____
What is the size of the rear curtain? _____
Are they the same? _____
32. The pinrail loft should not be less than 4 feet wide.
What is the width of the pinrail loft? _____
33. A light bridge is not needed.
Is there a light bridge? _____
34. The distance between the rear curtain and the back wall should not be less than 6 feet.
What is the distance between the rear curtain and the back wall?

Seating facility (house area).

1. The height of the ceiling in the house area should be at least 25 feet.
What is the height of the ceiling in the house area? _____
2. The minimum criteria for the depth of the seating facility is a maximum of 50 feet.
What is the depth of the seating area? _____
3. The width of the seating facility should not be less than 80 degrees from curtain to wall.
What is the angle between curtain and wall? _____

4. Either continental or conventional seating is acceptable.
What type of seating is used? _____
5. There should not be less than 300 seats in the facility.
How many seats are in the facility? _____
6. Conventional--There should not be less than two outside aisles
and two aisles in between, with no center aisle.
Are there two outside aisles? _____
Are there two aisles in between? _____
Is there a center aisle? _____
Continental--There should not be less than two aisles.
How many aisles are there? _____
7. No criteria were established for the size of the balcony.
8. Conventional--The aisles should not be less than 3 feet wide
when serving one side, 3 feet 6 inches when
serving both sides and increasing by 1 1/2
inches per 5 feet of length toward an exit, foyer,
or cross aisle.
Does the aisle serve one side or both? _____
What is the width of the aisle? _____
If serving both, does the aisle increase in width? _____
If yes, how much? _____
Continental--The aisles should not be less than 3 feet 8 inches
wide and increase by 1 1/2 inches per 5 feet of
length toward an exit, foyer, or cross aisle.
What is the width of the aisle? _____
Does the aisle size increase? _____
If so, how much? _____
9. Conventional--The minimum criteria for the number of seats in
each row is a maximum of fourteen seats per row
when seats are between aisles, and a maximum of
seven seats when seats open to one aisle.
Does the row open to one or two aisles? _____
How many seats are in each row? _____
Continental--The minimum number of seats in each row is
eighteen or less when width between rows is 18
inches, thirty-five seats or less when width
between rows is 20 inches, forty-five seats or
less when width between rows is 21 inches, forty-
six seats or more if width between rows is 22
inches.
What is the width between the rows? _____
How many seats are in each row? _____
10. No criteria was established for the number of seats in the
balcony.
11. Conventional--There should be not less than 33 inches between
seats from row to row.
What is the distance between seats from row to row? _____
Continental--There should be not less than 18 inches between
seats with rows of eighteen seats or less, not

less than 20 inches with rows of thirty-five seats or less, not less than 21 inches with rows of forty-five seats or less, and not less than 22 inches with rows of 46 seats or more.

How many seats are in each row? _____

What is the distance between rows? _____

12. A balcony is not needed in the proscenium arch theatre.

Is a balcony present? _____

13. Conventional--There should be not less than two exits when seating capacity is 600 or less, and not less than three if capacity is greater than 600.

How many seats are there? _____

How many exits are there? _____

Continental--There should be not less than one door on each end of rows for every five rows.

Is there one door at each end of the rows for every five rows? _____

If not, how many rows between pair of doors? _____

14. No criteria was established for the size of the doors.

15. Conventional--There should not be less than two doors when seating is 600 or less, and not less than three if the seating is greater than 600.

How many seats? _____

How many exits? _____

Continental--There should not be less than one door at each end of the rows for every five rows.

Is there one door at each end of the rows for every five rows? _____

If not, how many rows between pairs of doors? _____

16. Fire escape doors should be not less than 28 inches wide.

How wide are fire escape doors? _____

17. Fire escape doors must be accessible from a cross aisle or side aisle.

Are fire escape doors accessible from cross aisles? _____

Are fire escape doors accessible from side aisles? _____

18. The floor should be at an incline of not less than 1 inch every 10 inches, and if stepped the seats should rise not less than 9 inches for each row.

Is the floor stepped or on an incline? _____

What is the measurement? _____

19. Either plaster, metal, or accoustical material with adequate sound distribution is required for the ceiling.

Material? _____

20. The floor should be covered with noncombustible carpet.

Is the floor covered with carpet? _____

Is the carpet noncombustible? _____

21. House lighting should be subdued, low brightness, but still have adequate distribution.

Explain. _____

22. The control of the house lighting should be located backstage and preferably in the stage manager's corner.
 Is the lighting control located backstage? _____
 Is it located in the stage manager's corner? _____

Lighting facility

1. The light booth should be located in the rear of the auditorium in a location where the operator has a clear view of the entire stage.
 Is the booth located in the rear of the auditorium? _____
 Can the operator view the entire stage? _____
2. The light booth should be large enough for the light control board and operator plus space for storage.
 Storage space? _____
 Is the booth large enough for the light control board and operator? _____
3. The light control booth should have double glass for sound-proofing.
 Does the light booth have double glass? _____
4. There should be not less than thirty dimmers.
 How many dimmers are there? _____
5. There should be at least five presets.
 How many presets are there? _____
6. There should be electrical supply of 110, plus the option for a 220 tap line.
 Is there a 100 electrical supply? _____
 Is there a tap line for 220? _____
7. Each dimmer should be at least 2000 watts.
 What is the wattage of each dimmer? _____
8. The patch panel should be located either on stage or at the place of stage lighting control.
 Is the patch panel located on stage? _____
 Is the patch located at stage lighting control position? _____
9. There should be at least 250 circuits in the patch panel.
 How many circuits are in the patch panel? _____
10. No criteria was established for the minimum number of beam positions.
11. There should be at least 35 feet between the beam position and the stage.
 What is the distance between the beam position and the stage? _____
12. The beam position should be the distance of the width of the house and at least 3 feet wide.
 What is the width of the house? _____
 What is the distance of the beam position? _____
 How wide is the beam position? _____
13. There should be at least fifteen outlets at the beam position.
 How many outlets are at the beam position? _____

14. There should be not less than twelve outlets on the first electric.
How many outlets are on the first electric? _____
15. Light battens should be spaced not less than 8 feet apart for the entire depth of the stage.
How far apart are the light battens? _____
16. There should be three circuits on each batten, with more being desirable.
How many circuits are there on each batten? _____
17. There should be at least eight outlets located on the stage.
How many outlets are located on the stage? _____
18. The angle between the stage floor and the beam position should be not less than 35 degrees.
What is the angle between the beam position and the stage? _____
19. No criteria could be established for the type of house dimmer system needed other than that there be a dimmer.
Is there a dimmer? _____
20. The house dimmer system should be located in a position that is convenient to the operator and close to their location.
Is the dimmer located in the same location as the control panel? _____

Box office and foyer.

1. The box office should be at least 10 feet by 20 feet.
What are the dimensions of the box office? _____
2. The box office should be in some proximity with the house.
Explain. _____
3. There should be at least three windows in the box office.
How many windows are in the box office? _____
4. The ticket windows should be at least 18 inches by 24 inches.
What are the dimensions of the ticket windows? _____
5. There should be one door in the box office.
How many doors are in the box office? _____
6. The box office door should be not less than 28 inches wide.
How wide is the box office door? _____
7. A permanent phone is needed in the box office.
Is there a permanent phone in the box office? _____
8. The foyer should be not less than the amount equal to one square foot per theatre seat in size.
How many seats are in the theatre? _____
How many square feet are in the foyer? _____
9. Same as question eight.
10. The foyer should be near the box office in a position that best facilitates efficient crowd management.
Explain. _____

11. A pay phone is needed in the foyer.
Is there a pay phone? _____
12. The pay phone should be located in or near the lobby area of the foyer?
Is the pay phone located in the lobby? _____

Dressing rooms and green room.

1. There should be not less than two group dressing rooms.
How many group dressing rooms are there? _____
2. There should be not less than 800 square feet combined area for all dressing rooms.
What is the combined square footage of all dressing rooms? _____
3. Dressing room lighting must produce sufficient light to dress and put make-up on.
Explain. _____
4. Dressing rooms should be located near the stage, the closer the better.
Where are the dressing rooms located? _____
How close to the stage? _____
5. Make-up lighting requires lights on both sides of the face, and light should not reflect in the mirrors.
Are there lights on both sides of the face? _____
Do the lights reflect in the mirrors? _____
6. There should be at least one door in each dressing room.
How many doors are there in each dressing room? _____
7. Double doors are not necessary in the dressing rooms.
8. There should be at least twenty-four make-up stations located in the dressing rooms.
What is the total number of make-up stations? _____
9. Costume storage space must be available in each dressing room.
Is it? _____
Explain. _____
10. Any type clothes rack is needed in the dressing rooms.
Are racks available? _____
What type? _____
11. No criteria was established for the number of clothes racks needed.
12. The green room should be located near the stage, the closer the more adequate.
Where is the green room located? _____
How close is it to the stage? _____
13. No criteria was established for the location of the green room in relation to the dressing rooms.
14. The green room should be not less than 480 square feet in size.
What is the total square footage of the green room? _____

15. There should be at least two doors in the green room.
How many doors are in the green room? _____
16. No criterion was established for the use of double doors in the green room.
17. A call system is needed in the dressing rooms and green room.
Is there a call system in the dressing rooms? _____
Is there a call system in the green room? _____
18. There should be at least eight toilets and eight wash basins available.
How many toilets are available? _____
How many wash basins are available? _____

Sound system.

1. There should be not less than six speakers placed on stage.
How many speakers are there on stage? _____
2. There should be at least five speakers in the house area.
How many speakers are there in the house area? _____
3. No criteria could be established for the size of the stage speakers.
4. No criteria could be established for the size of the house speakers.
5. There should be at least six microphone plugs on the stage.
How many microphone plugs are on stage? _____
6. The amplification system should not have less than 40 watts power.
What is the wattage of the amplification system? _____
7. The sound control board should be located in the lighting control room.
Is the sound control board located in the lighting control room? _____

Orchestra pit.

1. There should be at least 8 feet by 35 feet, or not less than 280 square feet available to be used for an orchestra pit, if one is not built in.
Is the orchestra pit built in? _____
What are the dimensions of the available area? _____
What is the square footage of the available area? _____
2. The width (depth) of the orchestra pit should be not less than 8 feet.
What is the width (depth) of the orchestra pit? _____
3. The orchestra pit should be not less than 30 feet in length.
What is the length of the orchestra pit? _____
4. The distance between the orchestra pit and the seating floor should be deep enough to mask a seated musician from audience view.
Is a seated musician in the orchestra pit masked from the view of the audience? _____

5. The orchestra pit should be located between the acting area and the audience.
Is the orchestra pit located between the audience and the acting area? _____
6. There should be not less than thirty-six outlets in the orchestra pit.
How many outlets are there in the orchestra pit? _____

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