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ABSTRACT

A 6-year project is being conducted by the Department of Industrial Education of the University of Minnesota to identify criteria which are useful in counseling post-high school vocational technical students. Data are gathered through comprehensive measurement of basic competencies and selected characteristics and are analyzed to determine which and how much of each element is useful in counseling applicants. The four overlapping phases of the project include testing all applicants through seven data gathering instruments, keeping accurate records on each student, followup 12 months after students graduate, and analyzing data and writing a final report. The norms included in this report were developed from one of the data collection instruments, the Minnesota Vocational Interest Inventory (MVII), which was administered to students who had been successful in training but not on the job. A description of the development of the MVII and suggestions for interpreting the norms are included. Profiles for 13 trade or industrial occupations and 8 business and social service occupations along with a listing of 63 occupational groups and standard score means, deviations, and number of observations are appended. (SB)

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Minnesota Vocational Interest Inventory

TRAINING SUCCESS NORMS

INCLUDING SUPPLEMENT ONE

David J. Pucel
Howard F. Nelson

PROJECT MINI-SCORE

DEPARTMENT OF INDUSTRIAL EDUCATION
University of Minnesota, Minneapolis, Minnesota
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MINNESOTA VOCATIONAL INTEREST INVENTORY
TRAINING SUCCESS NORMS INCLUDING SUPPLEMENT ONE

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Project MINI-SCORE
(Minnesota Student Characteristics and
Occupationally Related Education)
Department of Industrial Education
University of Minnesota
May, 1970

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PROJECT MINI-SCORE¹

Project MINI-SCORE (Minnesota Student Characteristics and Occupationally Related Education) was begun at the University of Minnesota in 1966 in an attempt to study the problem of selecting and counseling vocational students for post-high school vocational programs. The Project is a six year project funded by the U.S. Office of Education being conducted by two staff members of the Department of Industrial Education, University of Minnesota. The primary purpose of the project is to identify criteria which are useful to counselors and others in the counseling of post-high school vocational-technical students as they seek to pursue specific vocational-technical curricula. Data are gathered through comprehensive measurement of basic competencies and selected characteristics. The data are being analyzed to determine which and how much of each element is useful to the process of counseling applicants to the full time vocational-technical courses offered in the area vocational-technical schools of Minnesota.

The project was divided into four overlapping phases. Phase one involved testing all 17,500 applicants to the full-time, day trade programs conducted in the area vocational-technical schools of the state of Minnesota during the period from September, 1966 to October, 1968. The applicants applied to 63 relatively homogeneous groups of training programs (See Appendix A for a listing of these groups). The data gathering instruments consisted of: (1) a personal information sheet, (2) the written portions of the General Aptitude Test Battery (GATB) B-1002 form B, (3) the Minnesota Vocational Interest Inventory (MVII), (4) the Minnesota Importance Questionnaire (MIQ), (5) the Sixteen Personality Factors Questionnaire (16-PF) form C, and (6) the Vocational Development Inventory (VDI). Minnesota Scholastic Aptitude Test (MSAT) scores were obtained from the Minnesota Statewide Testing Program since virtually all high school students in Minnesota take the test during their junior year.

Phase two of the project involved keeping accurate records on each of the individuals tested to determine what happened to them after testing. For example, were they accepted in an area vocational-technical school or were they rejected? If accepted, did they leave the program before completion or did they graduate?

Phase three included the follow-up of graduates twelve months after graduation from one of the full-time programs of the area vocational-technical schools. These students as well as their employers were contacted to determine the extent to which they had become successful employees.

Phase four of the project will provide for the analysis of the data and writing the final report.

¹Project MINI-SCORE (Minnesota Student Characteristics and Occupationally Related Education) is supported by a grant from the Division of Comprehensive and Vocational Research, Office of Education, U.S. Department of Health, Education, and Welfare under the formal title "The Characteristics of Full-time Students in Post Secondary Trade Schools." Project No. HRD 5-0148.

THE MINNESOTA VOCATIONAL INTEREST INVENTORY*

Development

The research which forms the foundation for the Minnesota Vocational Interest Inventory (MVII) had its beginning during World War II in the development of a vocational interest inventory which could assist Navy counselors in the assignment and placement of Navy enlisted personnel. After the War, the findings of this research were applied to the study of a wide sampling of civilian nonprofessional occupations.

The MVII is an inventory which provides systematic information on the interest patterns of men and women in nonprofessional occupations. However, most of the work in the past has been done with men. It is composed of 158 triads of brief statements describing the tasks or activities involved in a number of different occupations. Examinees indicate their preferences for the tasks in each triad by choosing the one activity most liked and the one activity most disliked. For each person who completes the inventory, scores are derived to provide an index of similarity between his or her interests and the interests of persons in a variety of nonprofessional occupations.

The MVII authors believe that, for general purposes, the inventory would be suitable for students in the ninth grade or higher, or for persons who are at least fifteen years of age. However, they indicate caution should be observed when interpreting the scores of fifteen or sixteen year olds as occupational interest levels have not fully crystallized for this age group.

The MVII assumes that workers in a given occupation possess certain likes and dislikes in common and that these differ from those of workers in other occupations. The MVII accomplishes for the nonprofessional occupations what the Strong and the Kuder do for professional groups. Currently, MVII data are available on the interest patterns of over seven thousand civilian workers distributed among more than twenty civilian occupations. The validity of the occupational scoring keys is based on the fact that they are "empirical" keys that have been developed through scoring responses that differentiate men in an occupation from a group of tradesmen in general. Validity indices are not reported for the Homogeneous Keys as these keys were not used in the past to separate groups but were an attempt to draw together items with a common core into scales that can be used to understand the nature of the differences between groups.

The extent to which an individual's interest pattern matches that of a given group is determined by applying a key to the interest inventory. Each key was developed by comparing the item responses made by a specific occupational group with those made by a group of tradesmen-in-general. The key represents a profile that provides a method of evaluating an individual's interests against the interest profile of an occupational group.

*Kenneth E. Clark and David P. Campbell, Minnesota Vocational Interest Inventory (New York, The Psychological Corporation, 1965).

Inventory Keys

Two sets of keys, "Occupational" and "Homogeneous" have been developed for interpreting inventory results. The "Occupational Keys" provide a means of comparing an individual's interests with those of persons employed in specific occupations. Each of the twenty-one keys bears the name of the occupational group which served as the basis for its development. These keys are:

Baker	Painter
Food Service	Plasterer
Milk Wagon Driver	Truck Driver
Retail Sales Clerk	Truck Mechanic
Stock Clerk	Industrial Education Teacher
Printer	Sheet Metal Worker
Tabulating Machine Operator	Plumber
Warehouseman	Machinist
Hospital Attendant	Electrician
Pressman	Radio-TV Repairman
Carpenter	

Nine "Homogeneous Keys" were derived by identifying clusters of inventory items that correlated highly with each other using the tradesmen-in-general group. These clusters could be viewed as nine factors underlying interest as measured by the MVII. These clusters were named by inspecting the items which formed each cluster. The "Homogeneous Keys" and their descriptions are as follows:

H-1: Mechanical

Indicates interests in mechanical things, machine operation and design, or about home repairs of mechanical and simple electrical gadgets.

H-2: Health Service

Expresses interests in medical and hospital services, activities and occupations, or in working in medical, biological or chemical laboratories.

H-3: Office Work

Indicates interests in general clerical work and office machine operation, bookkeeping and accounting, and office management practices.

H-4: Electronics

This key expresses an interest in the maintenance, operation and construction of electronic equipment, and the repair and construction of electrical systems and devices.

H-5: Food Service

Indicates interests in the preparation of food and menu planning.

H-6: Carpentry

This cluster deals primarily with interests relating to carpentry, cabinet making and furniture construction.

H-7: Sales-Office

Two clusters of interests are indicated here. The larger deals with a variety of verbal activities, while the other relates to aesthetic interests.

H-8: Clean Hands

Indicates an interest in those occupations which possess "clean hands" kinds of activities.

H-9: Outdoors

This key reflects an interest in athletics and other outdoor activities.

Standard Reporting of Scores

The scores on the MVII are relatively independent of intelligence or abilities as measured by aptitude tests. The scores summarize the individual's preferences for work; they do not indicate those areas in which he has the greatest skill or the greatest possibility of attaining competence.

Scores on all keys are reported as standard scores based on the appropriate occupational group for each "Occupational Key" and on the tradesmen-in-general group for the "Homogeneous Keys".

To facilitate the interpretation of the scores, a profile of standard T-scores is provided as well as the scores themselves. About two-thirds of any given occupational group score above 45 on their own scale. The Occupational Keys are clustered on the profile sheets into groups determined by a study of the inter-correlations among keys.

DEVELOPMENT OF PROJECT MINI-SCORE TRAINING NORMS

Occupational Groups

Project MINI-SCORE has gathered data on 63 different occupational training program groups. The training programs were grouped by personnel from the Minnesota State Department of Vocational Education and the Department of Industrial Education at the University of Minnesota into relatively homogeneous groups. In many cases the specific titles given to training programs in a given group are different, but the training programs are relatively the same. Each of the group names and the specific titles of training programs falling into each group can be found in Appendix A.

Population

The norms included in this report were developed with data obtained from students who were accepted to and graduated from programs offered in the cooperating post-high school area vocational-technical schools of Minnesota during the period from September 1, 1966, until September, 1969, on whom data had been reported and processed at the time the norms were developed. Therefore, the norms which have been developed are in reference to persons who have been successful in training but not on the job. Profiles have been prepared only for those occupational groups for which at least 50 individual sets of data were available. The profiles are presented in Appendix B and the actual sample size used in developing each norm profile is indicated in Appendix C.

The initial printing of the Project MINI-SCORE MINNESOTA VOCATIONAL INTEREST INVENTORY TRAINING SUCCESS NORMS contained data on eleven different occupational groups. These eleven different occupational groups have been normed again using larger numbers of students. The combined group norms presented in the original publication are the same in this publication. Seven additional sets of norms have also been included in this publication which represents the addition of supplement one to the original publication. Additional sets of norms will be published as more data become available. The occupational groups, including supplement one, have been clustered into two clusters as follows:

Cluster I

1. Accounting-Males
2. Agri-Technology
3. Aircraft Mechanics
4. Automotives
5. Carpentry
6. Electronics
7. Farm Equipment Mechanics
8. Machine Shop
9. Mechanical Drafting and Design
10. Power and Home Electricity
11. Printing and Graphic Arts
12. Welding
13. Combined Automotives, Machine Shop, Mechanical Drafting and Design, and Welding

Cluster II

1. Accounting-Females
2. Clerical Training
3. Cosmetology
4. Data Processing
5. Practical Nursing
6. Sales
7. Secretarial Training
8. Combined Clerical and Secretarial Training

An examination of cluster one indicates that cluster one contains occupations typically referred to as trade or technical occupations. The large majority of persons receiving training in these programs were males. Cluster two contains occupations which are related to business and social service. The large majority of persons receiving training in these programs were females. The accounting group was divided because approximately 50 per cent of the people who completed the program were males and 50 per cent were females.

Since some of the occupational groups were found to have almost identical profiles; some of the occupational groups have been combined and the combined profiles are also presented in Appendix B. The following combined profiles are presented: (a) Automotives, Machine Shop, Mechanical Drafting and Design, and Welding and (b) Clerical and Secretarial Training.

INTERPRETING THE NORMS

Cautions

AS WITH THE INTERPRETATION OF ANY NORMS THAT ARE TO BE USED IN THE COUNSELING PROCESS; PERSONS USING THE NORMS ARE CAUTIONED AGAINST USING THEM AS ABSOLUTES. THEY SHOULD BE USED AS COUNSELING TOOLS BY QUALIFIED PERSONNEL. AS INDICATED EARLIER, THE NORMS PRESENTED IN THIS PUBLICATION HAVE BEEN DEVELOPED ON THE BASIS OF SUCCESSFUL GRADUATES FROM TRAINING PROGRAMS. ONE WOULD LOGICALLY EXPECT THEY WOULD ALSO HAVE RELEVANCE TO JOB SUCCESS, BUT SUCH A RELATIONSHIP IS NOT GUARANTEED. A FURTHER CAUTION IS TO REMIND USERS THAT IF A PERSON HAS AN INTEREST PATTERN SIMILAR TO THAT OF AN OCCUPATIONAL GROUP, THIS DOES NOT INDICATE HIS COMPETENCE TO PERFORM IN THAT OCCUPATION.

Description of the Profiles

The profiles were developed from tabular data indicating the percentile associated with each score. The light weight line represents the range between the 5th and 95th percentiles. The top and bottom five per cents were eliminated to avoid having to consider extremely high or low scores. The bold bar represents the middle two thirds of the scores that were obtained most often by persons who successfully completed a training program. Table I is an example of such a profile for the automotive group. The middle two thirds was identified by using the percentiles. The top of the bar is located at the 83.5 percentile and the bottom of the bar is located at the 16.5 percentile. The percentiles were used in developing the profiles rather than the means and standard deviations because the percentiles are sensitive to skews in the distributions. However, the mean and standard deviation of the scores for each homogeneous key are presented in Appendix C for each training program along with the number of scores which went into each calculation.

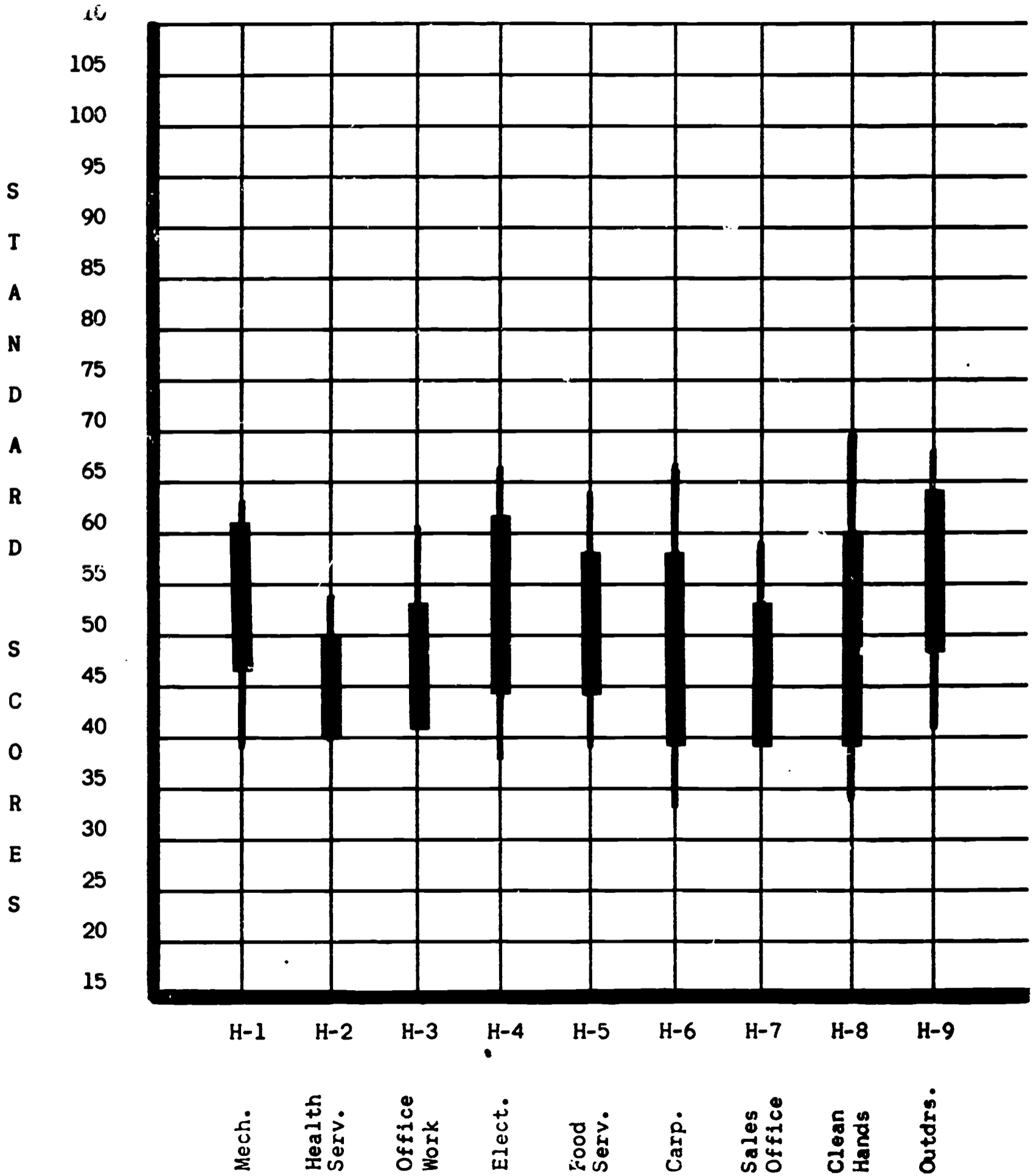
Preparing the Profiles for Counseling

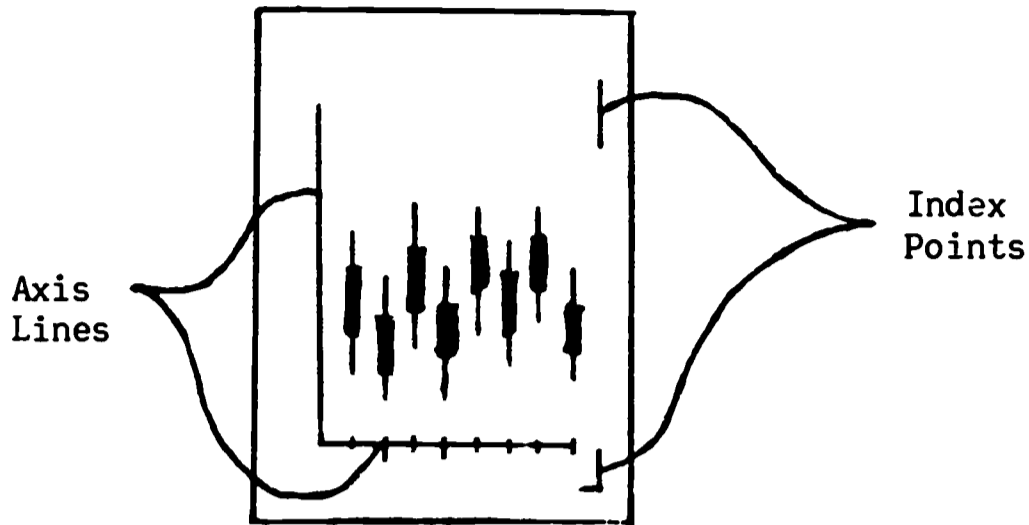
The profiles are organized in Appendix B according to the two major clusters for easy reference. A sample student profile sheet is also included.

First, transparencies should be made of the profiles. This can be done as follows.

- a. Take the profiles out of the booklet.
- b. Each of the profile sheets have two index points on them. Match the lower right hand corner of the transparency material with the right angle index point in the lower right hand corner of the profile. Match the right hand edge of the transparency material with the line index point in the upper right hand corner of the profile sheet. Make the transparency.
- c. After making transparencies of all of the profiles in a given cluster, punch all of the transparencies at once with a three hole punch.

PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
AUTOMOTIVES

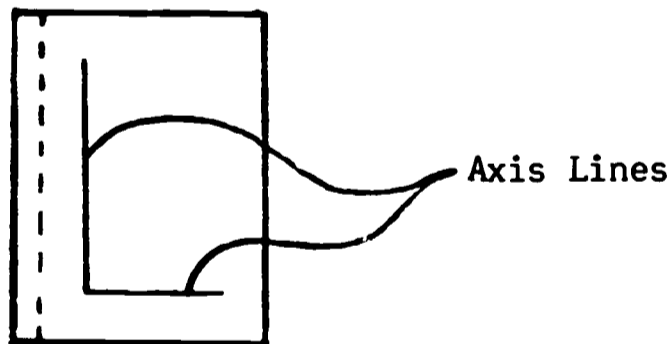




- d. Place the transparencies into a three ring binder. When looking through all of the transparencies in a given cluster at one time, all of the axis lines should match.

Second, duplicate the student profile summary sheets. To make additional copies of the student profile summary sheets do the following.

- a. Take the sample sheet out of the booklet.
- b. Trim the profile summary sheet along the dotted line.



- c. Duplicate the sheets after they have been trimmed. Make sure the left hand edge of the new sheets is the same distance from the axis lines as the dotted line is or was on the sample.

Using the Prepared Profiles in Counseling

1. Administer the MVII in accordance with the MVII manual.
2. Obtain standard scores on the homogeneous keys for a given individual.

3. Plot the individual's scores on a student profile summary sheet. MAKE SURE YOU USE THE ACTUAL NUMERICAL SCORES PROVIDED ON THE ANSWER SHEETS AND DO NOT TRY TO TAKE SCORES FROM THE PLOTTED ANSWER SHEET PROFILES WHICH ARE PROVIDED BY THE SCORING AGENCY.
4. Place the individual's student profile summary sheet under each of the transparencies to determine how similar the individual's profile is to those of people who have successfully completed training in each of the occupational areas.

It is recommended that each individual be allowed to make such comparisons himself with the counselor. If a person's profile does not fall within the bold portion of all of the profile stalks of a given occupational group, this does not mean he could not succeed in the occupation. It only means he is more different on that dimension measured by the MVII than 60 per cent of those who have successfully completed training.

REFERENCES

Kenneth E. Clark and David P. Campbell, Minnesota Vocational Interest Inventory, (New York, The Psychological Corporation, 1965).

APPENDIX A

NOTE: SALES OR BUSINESS MANAGEMENT IN ANY OF THE AREAS ARE RELATED

MECHANICS AND MACHINERY REPAIR

6. Automotives
Auto Mechanic
Auto Body Repair
Automobile Management
Automobile Technician
10. Diesel Mechanics
Diesel Mechanics
Diesel Mechanics Technicians
Truck & Diesel Mechanics
13. Farm Equipment Mechanics
Farm Equipment Mechanics
Farm Mechanics I & II
18. Aircraft Mechanics
Aviation Mechanics
19. Service Station Mechanic
Automotive Services
Automotive Service Station
Mechanics Attendent
Mechanical Repair & Servicemen
25. Marine and Small Engine Mechanics
56. Heavy Equipment Operation and Repair

APPLIANCE & REFRIGERATION REPAIR

14. Appliance Repair
30. Office Machine Mechanic
32. Mechanical Refrigeration & Air Conditioning

7. PRINTING AND GRAPHIC ARTS

Graphic Arts
Graphic Arts I, letter press
Graphic Arts II, Photolithography
and off-set printing
Offset Printing

SELLING AND RELATED WORK

41. Sales
Sales Management
Sales & Marketing
Sales Training
- Business Management

AGRICULTURAL RELATED OCCUPATIONS

37. Agri-Technology
Agri-Chemicals & Fertilizers, Sales & Service
Agricultural Technician
(Animal Science)
Agricultural Technician
(Plant Science)
Agricultural Sales Technician
42. Farm Equipment Sales
Farm Equipment Sales & Service
Partsman Training
50. Agri-Business
Agri-Business Management
Agri-Business Office Training
51. Farm Management

FOODS

15. Chefs and Cooks
Chef
Cook, Institutional
Hotel & Restaurant Cooking
31. Bakery Procedures
52. Food Management
62. Butcher and Meat Cutting

DRAFTING, ARCHITECTURAL, MECHANICAL AND TECHNICAL

8. Mechanical Drafting and Design
Engineering Drafting
Industrial Drafting
Industrial Drafting Technology
Machine Drafting
Mechanical Drafting
Technical Drafting
Design Technology
Drafting and Design Technology
9. Architectural Drafting

35. Highway Technology
Highway Technicians
Highway Technology
Civil Technology

ELECTRICITY AND ELECTRONICS

1. Electronics
Electronics
Electronics, Communications
Electronics, Computer Maintenance
Electronics, Industrial & Home
Entertainment Service
Electronics, Industrial Technical
Electronics, Radio & Television
Electronics, Technician
Communications
Electronics, Technician Industrial
Electronics, Technician
Electronics, Technology
2. Power and Home Electricity
Electrical
Electrical, Construction
Electrical Maintenance
Electrical Technology
Lineman Electrician
Power and Plant Operation
58. Telephone Communications

MACHINE TRADE OCCUPATIONS

5. Tool and Die
Tool and Design Technician
Tool and Die Maker
Tool, Die, and Mold Maker
11. Machinist
Machine Operator
Machinist
Production Machinist
12. Welding
23. Pattern Maker
26. Plastic Injection Molding Technician

CONSTRUCTION INDUSTRY

4. Carpentry
Building Construction
Carpentry
28. Bricklaying

22. FLUID POWER TECHNOLOGY

WOODWORKING INDUSTRY

4. Carpentry
Building Construction
Carpentry

20. Cabinet Making

21. PLUMBING AND SHEETMETAL

JEWELRY AND WATCH REPAIR

27. Watch Repair

55. Jewelry

FURNITURE MAKING

20. Cabinet Making

29. Upholstering

59. INTERNATIONAL DOCUMENTS SPECIALIST

60. LAW ENFORCEMENT

63. BROADCASTING

40. WRITING

OPTICAL AND MEDICAL LAB

38. Optical Technology

39. Medical Laboratory Assistants

16. SHOE REPAIRING

44. INTERIOR DESIGN & SALES ASSISTANT

GROOMING

17. Cosmetology

24. Barbering

CLOTHING

- 53. Needle Arts
- 54. Tailoring
- 57. Fashion Merchandising

HEALTH SERVICES

- 3. Practical Nursing
- 33. Dental Assistant
- 39. Medical Laboratory Assistants

FOREST INDUSTRIES

- 36. Paper & Pulp Technology
- 61. Conservation and Forestry

LANDSCAPE AND FLORISTRY

- 34. Nursery-Landscape Technology
- 43. Retail Floristry

BUSINESS, ACCOUNTING, CLERICAL, SECRETARIAL

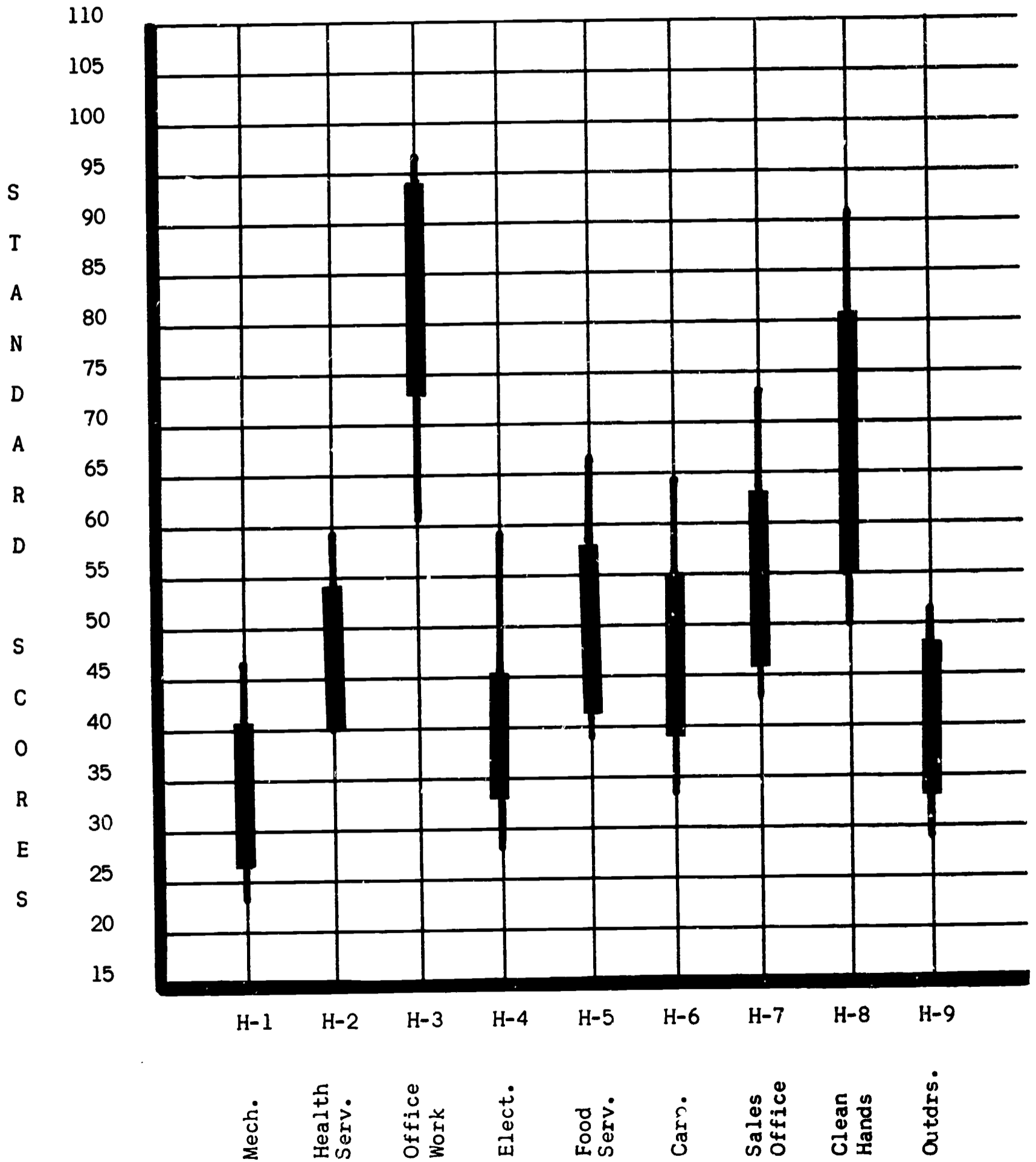
- 45. Accounting
- 47. Clerical Training
 - Clerical Record Keeping
 - Clerk, General Office
 - Clerk-Typist
 - Clerk-Typist Machine Operator
- 48. Secretarial Training
 - Educational Secretary
 - Hospital Station Secretary
 - Secretarial Training, General
 - Secretarial Training, Medical
 - Stenographic Training
 - Medical Office Assistant
 - Medical Office Service
 - Legal Secretary
- 49. Data Processing
 - Clerical Training & Data Processing
 - Clerical Training & Key Punch
 - Tabulating Machine Operator
(Unit Records)

APPENDIX B

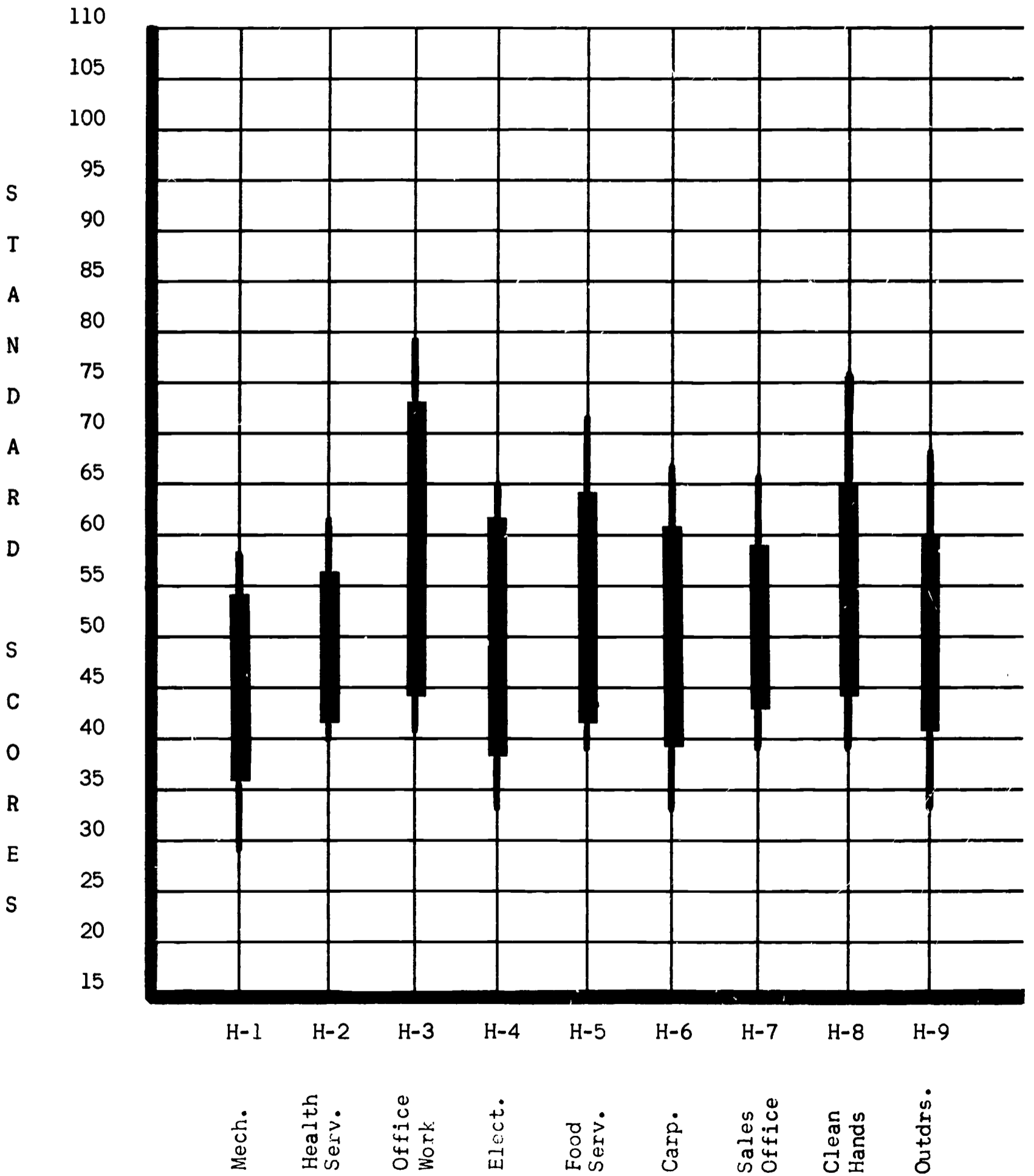
MVII HOMOGENEOUS KEY PROFILES

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<u>Homogeneous Key Student Profile Sheet</u>	

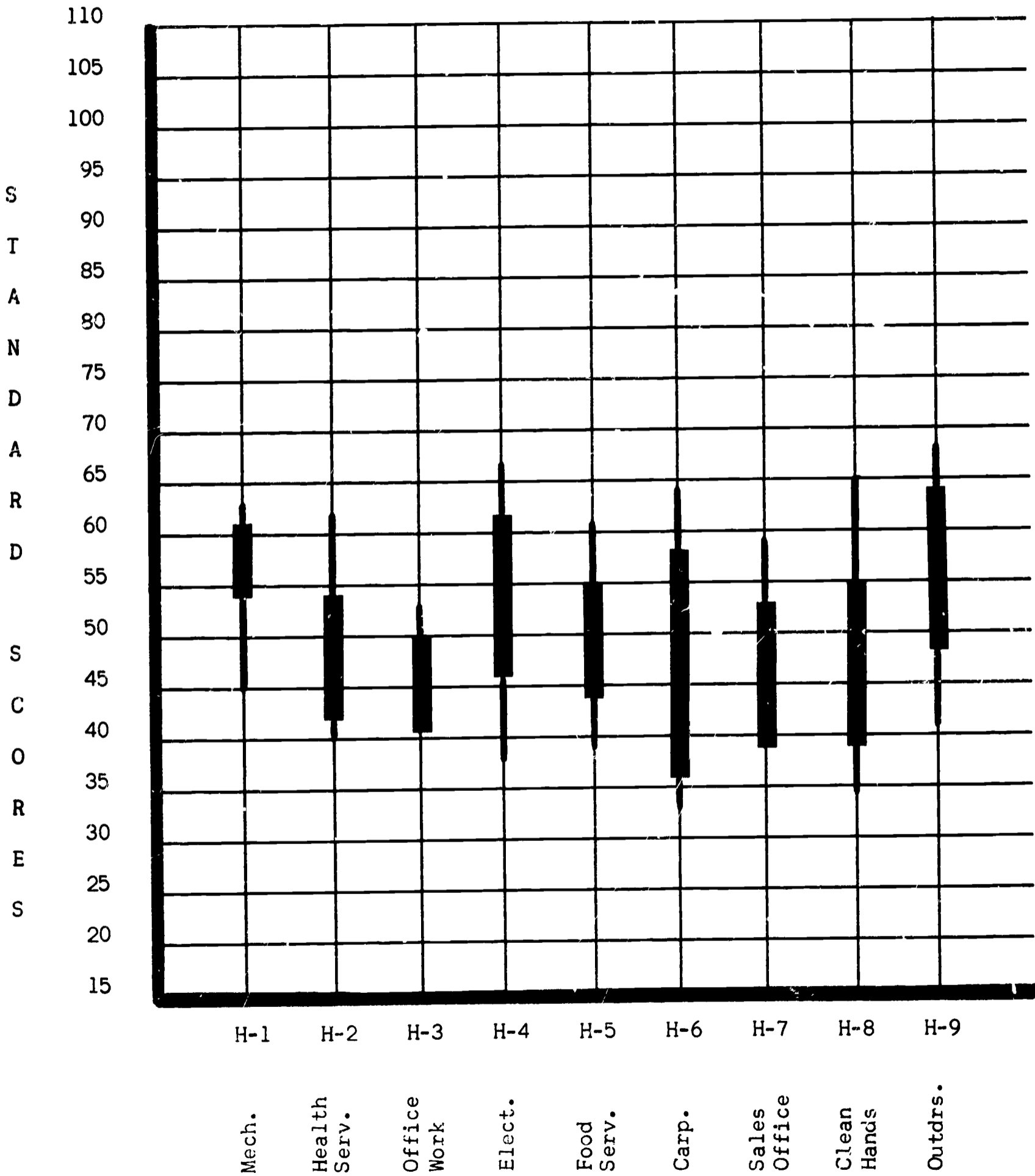
PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
ACCOUNTING MALES



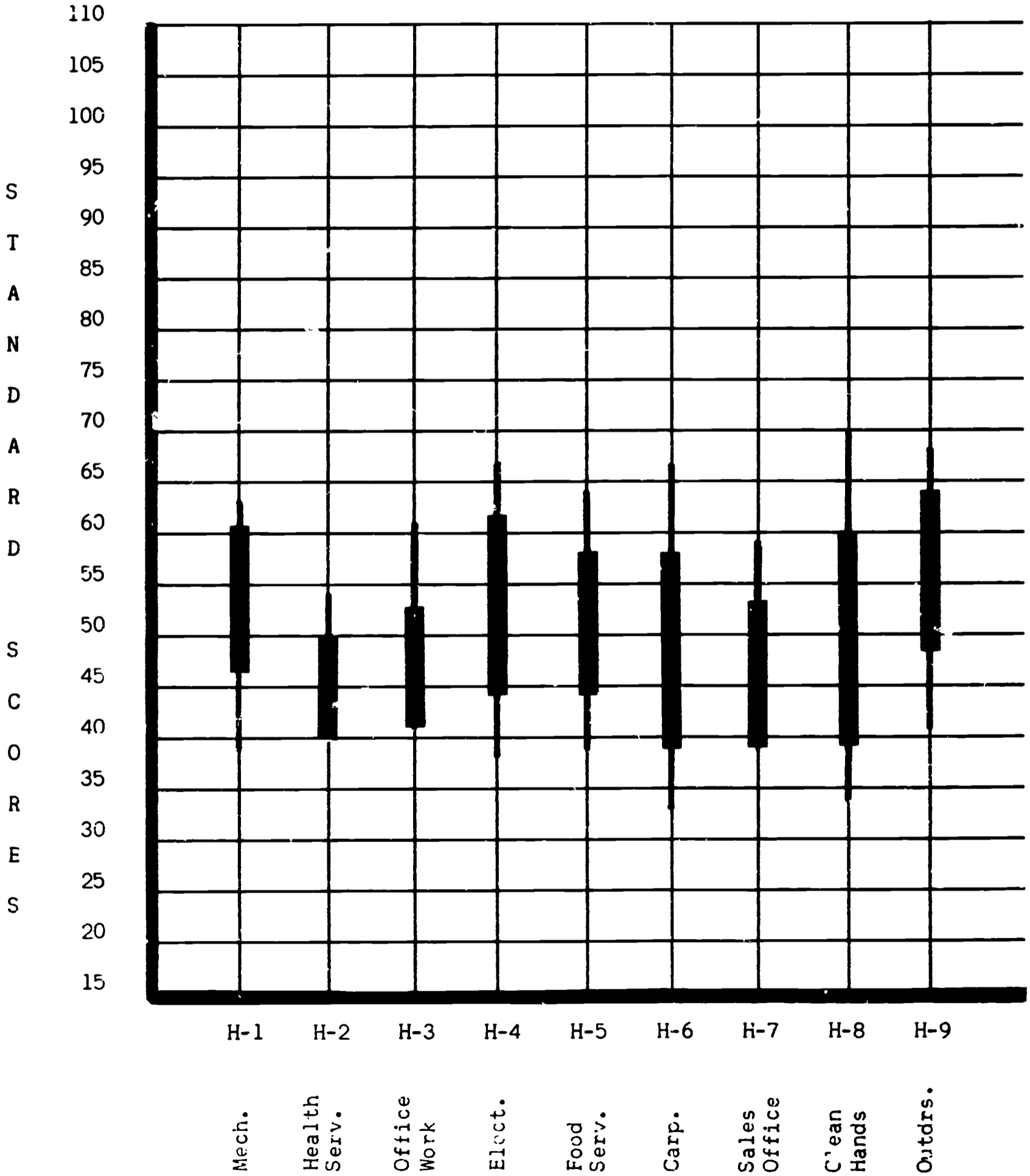
PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
AGRI-TECHNOLOGY



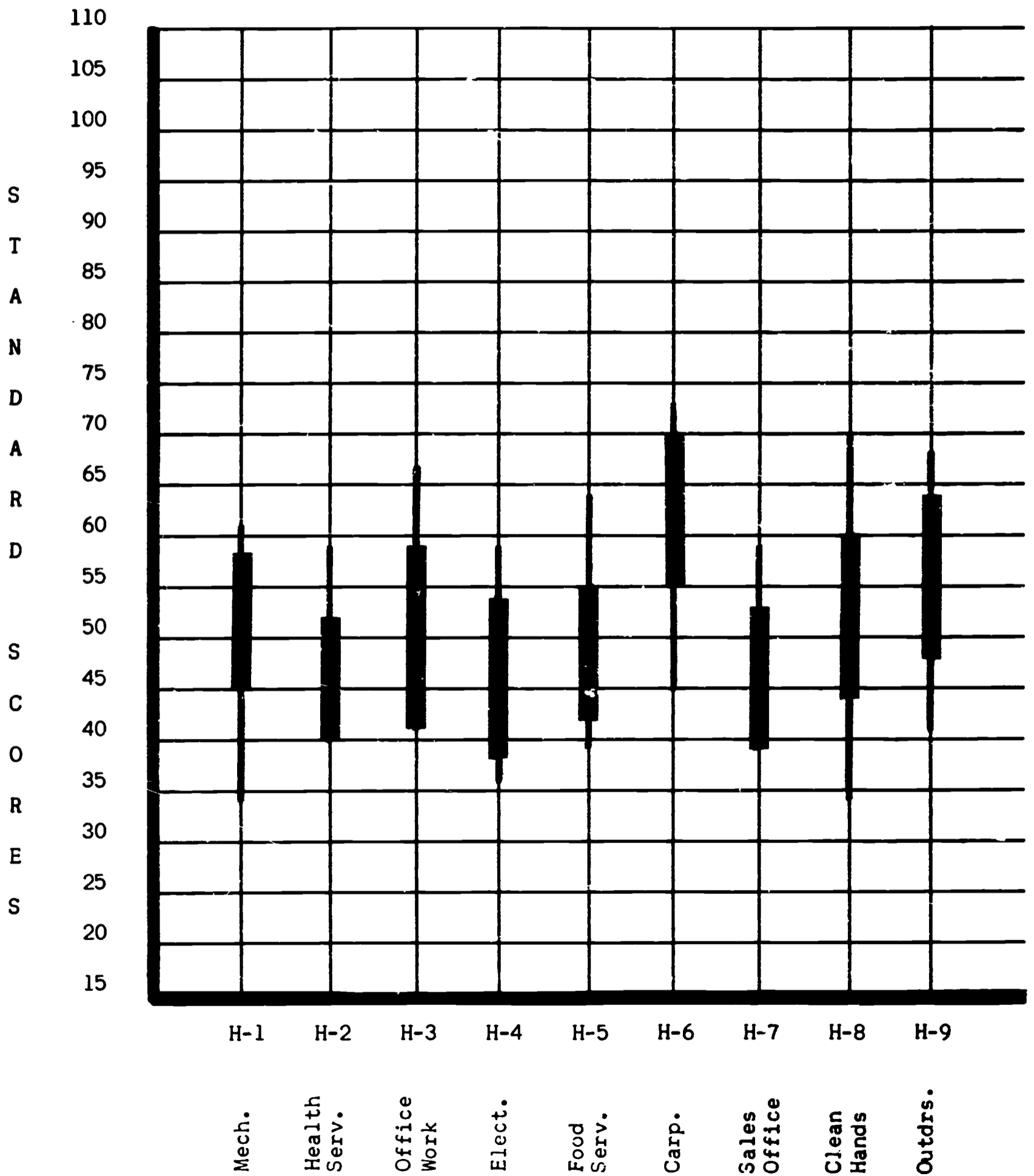
PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
AIRCRAFT MECHANICS



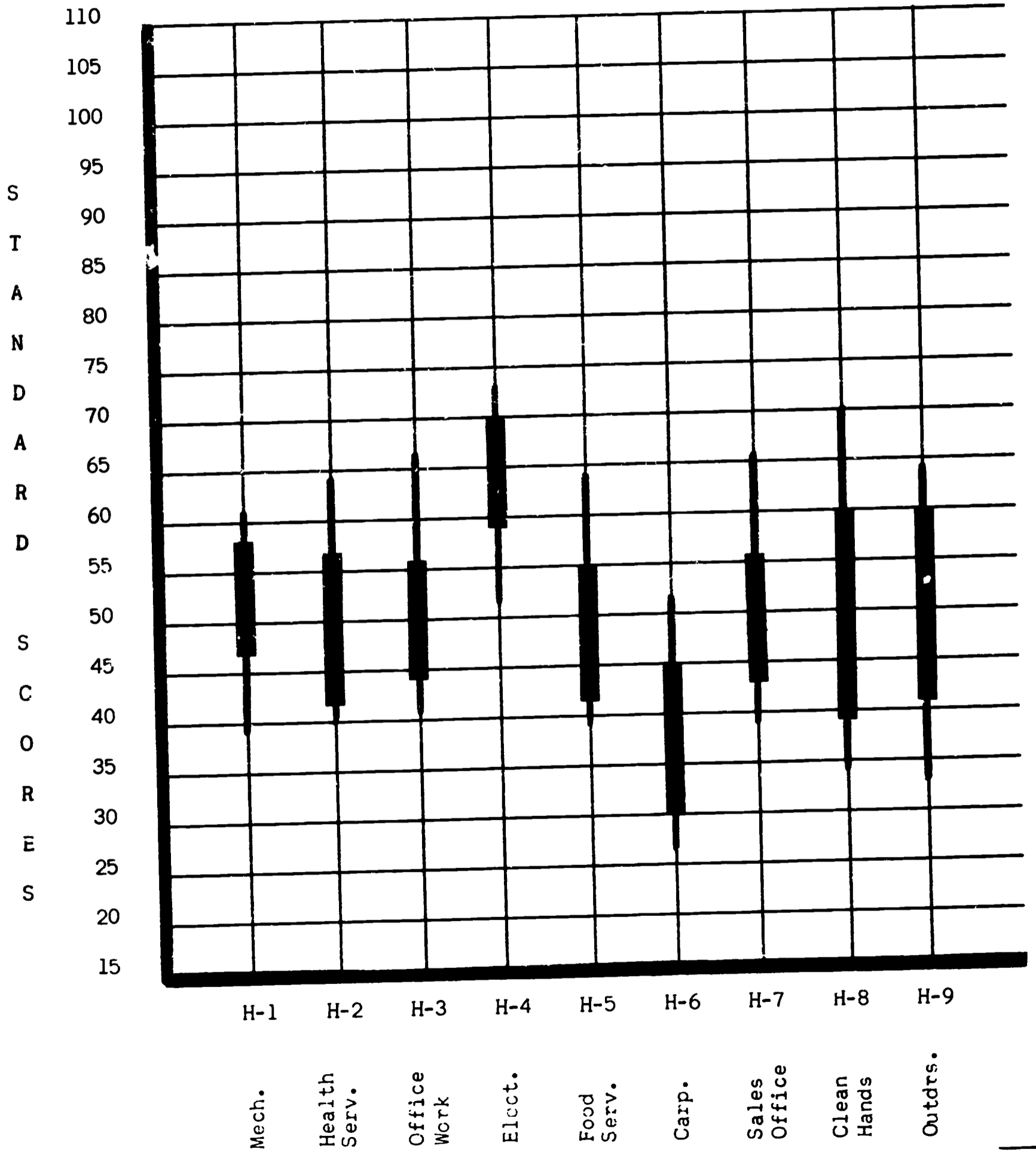
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MVII - HOMOGENEOUS KEY
PROFILE SHEET
AUTOMOTIVES



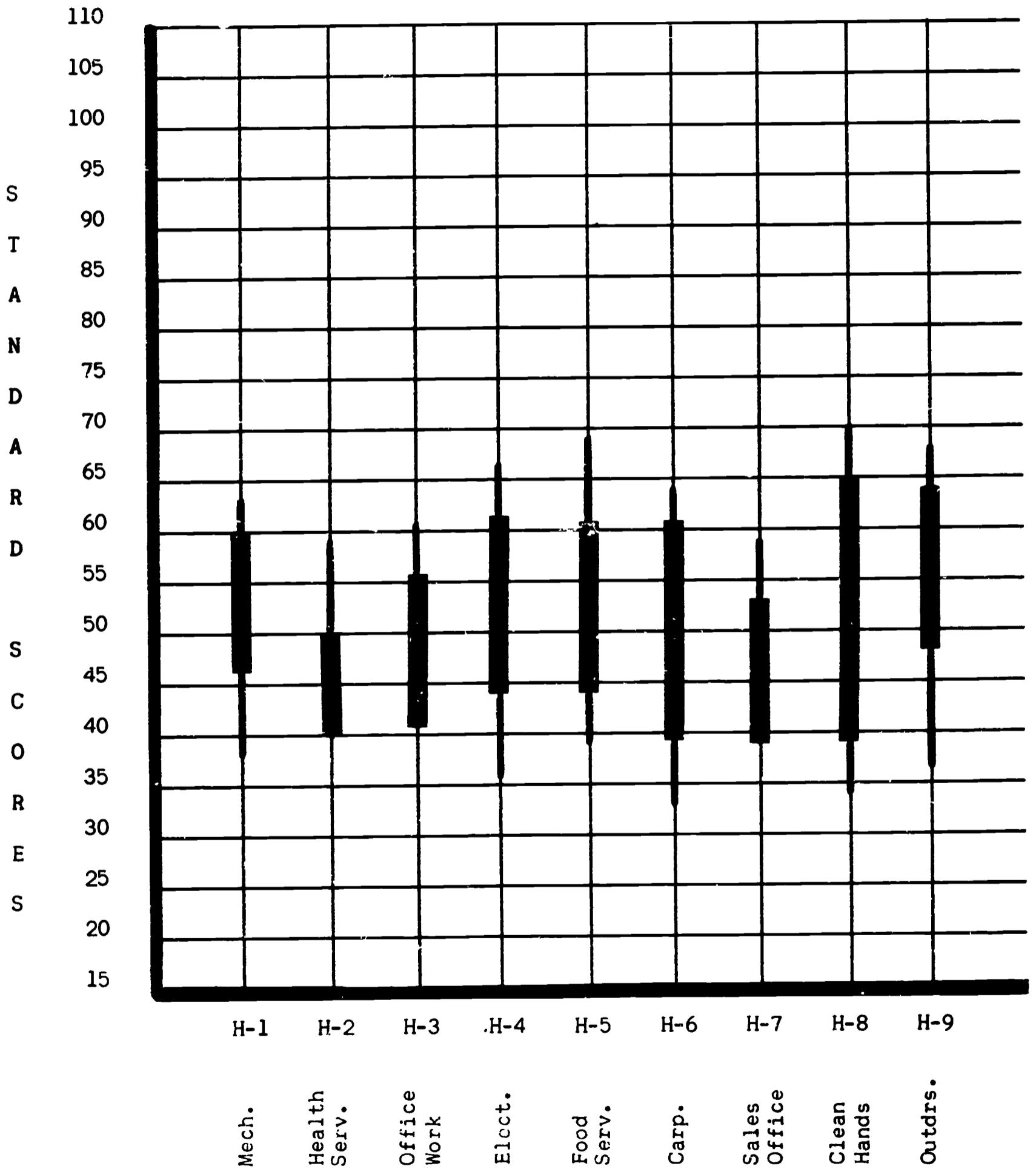
PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
CARPENTRY



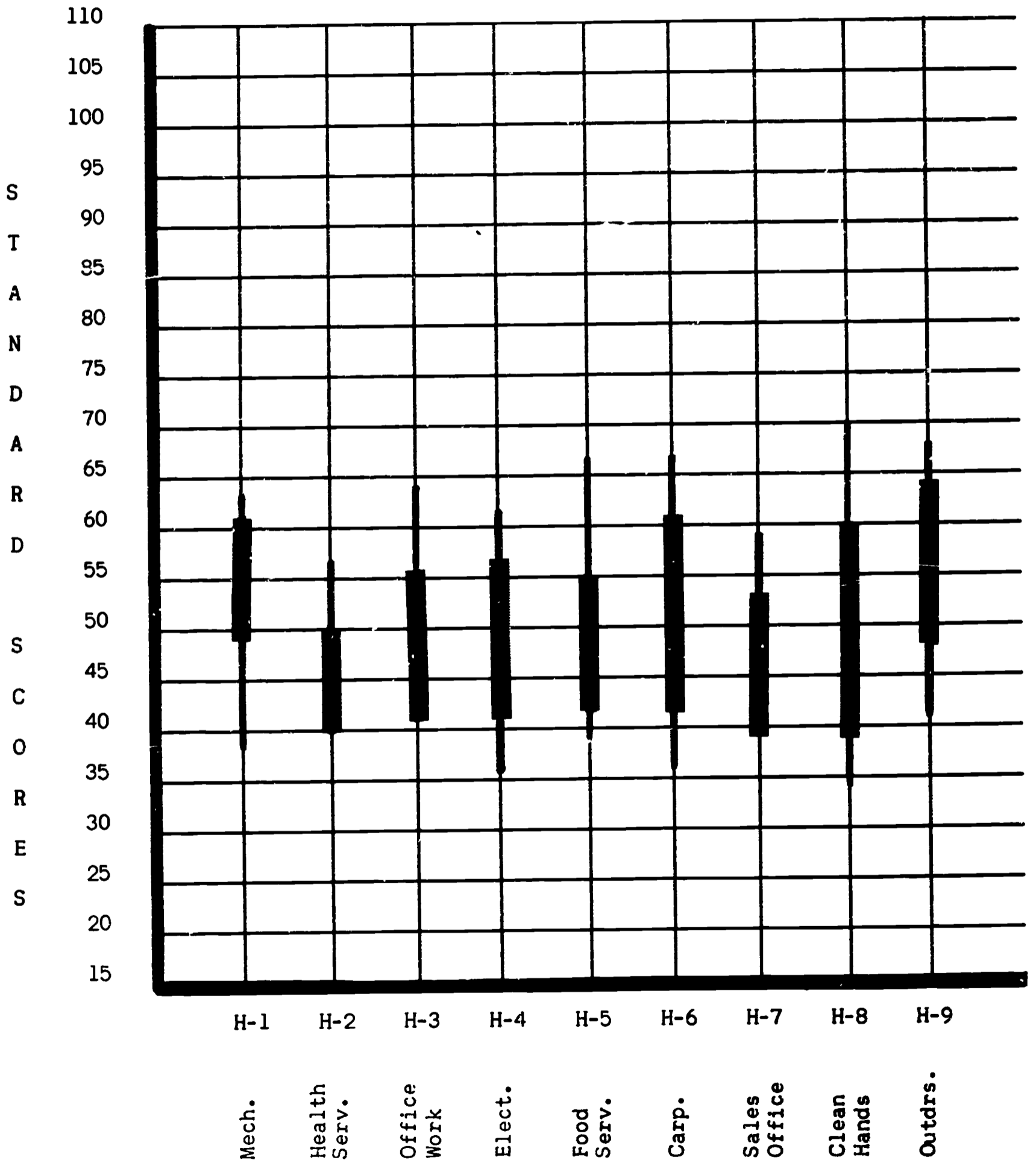
PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
ELECTRONICS



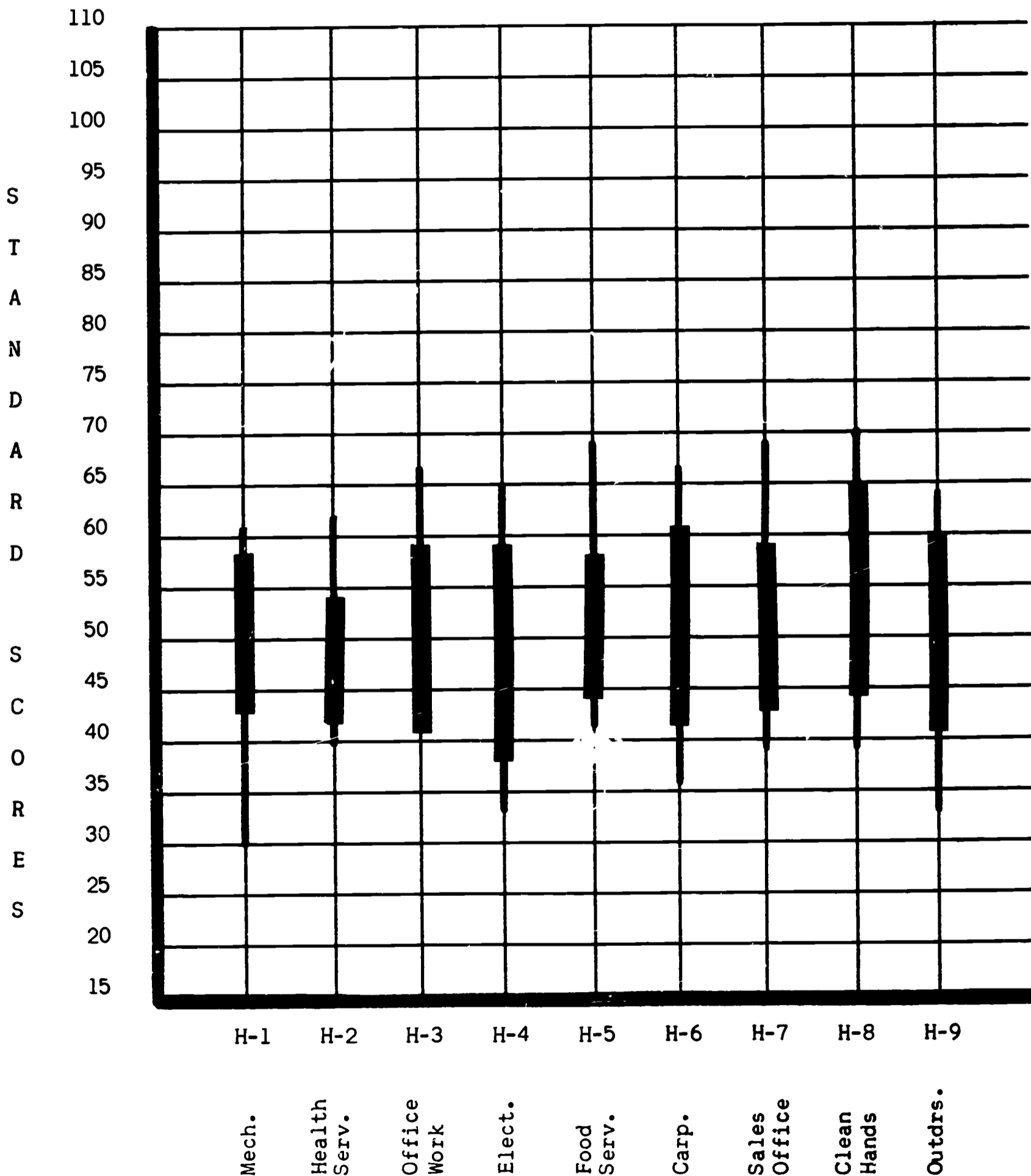
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MVII - HOMOGENEOUS KEY
PROFILE SHEET
FARM EQUIPMENT MECHANICS



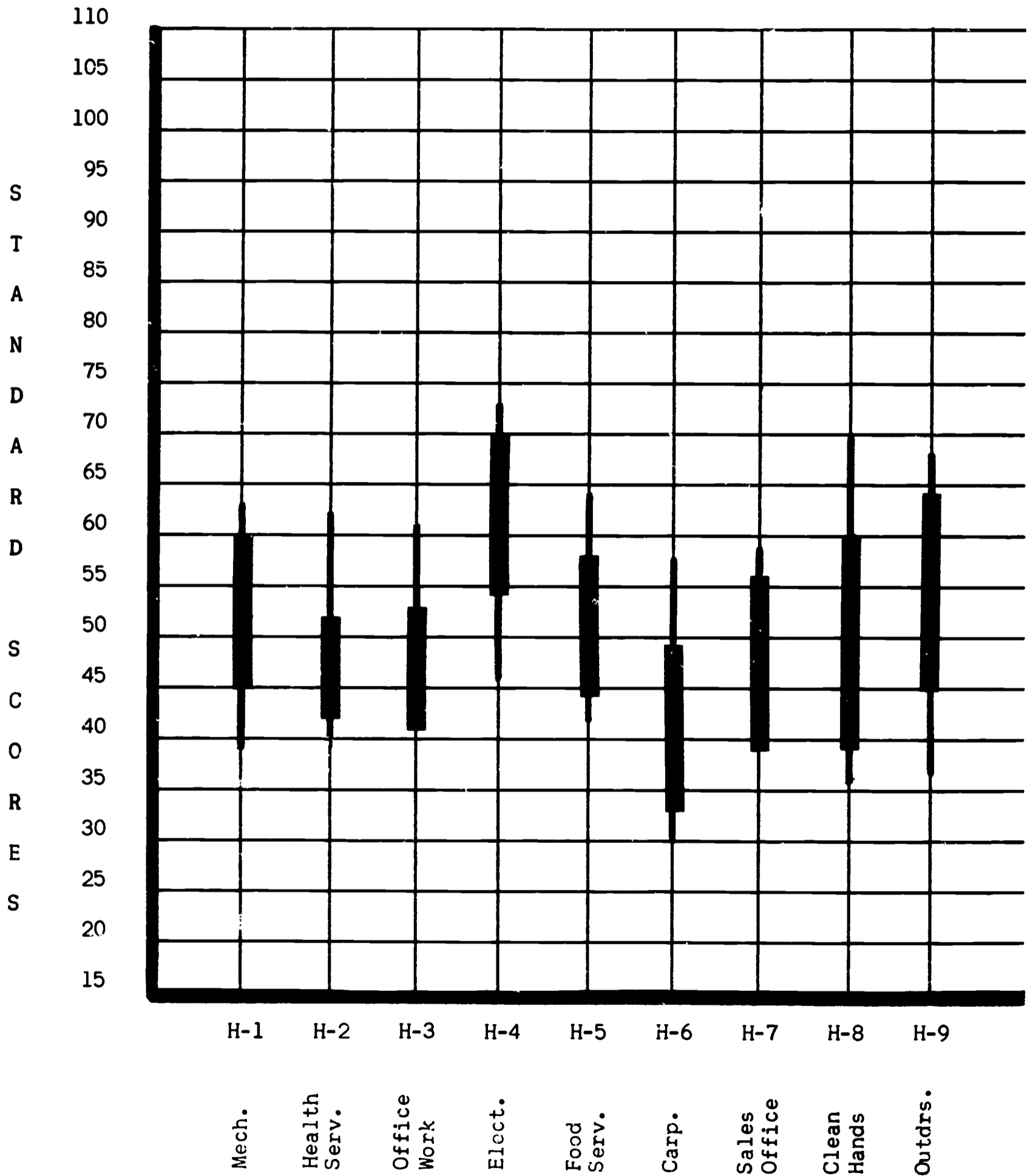
PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
MACHINE SHOP



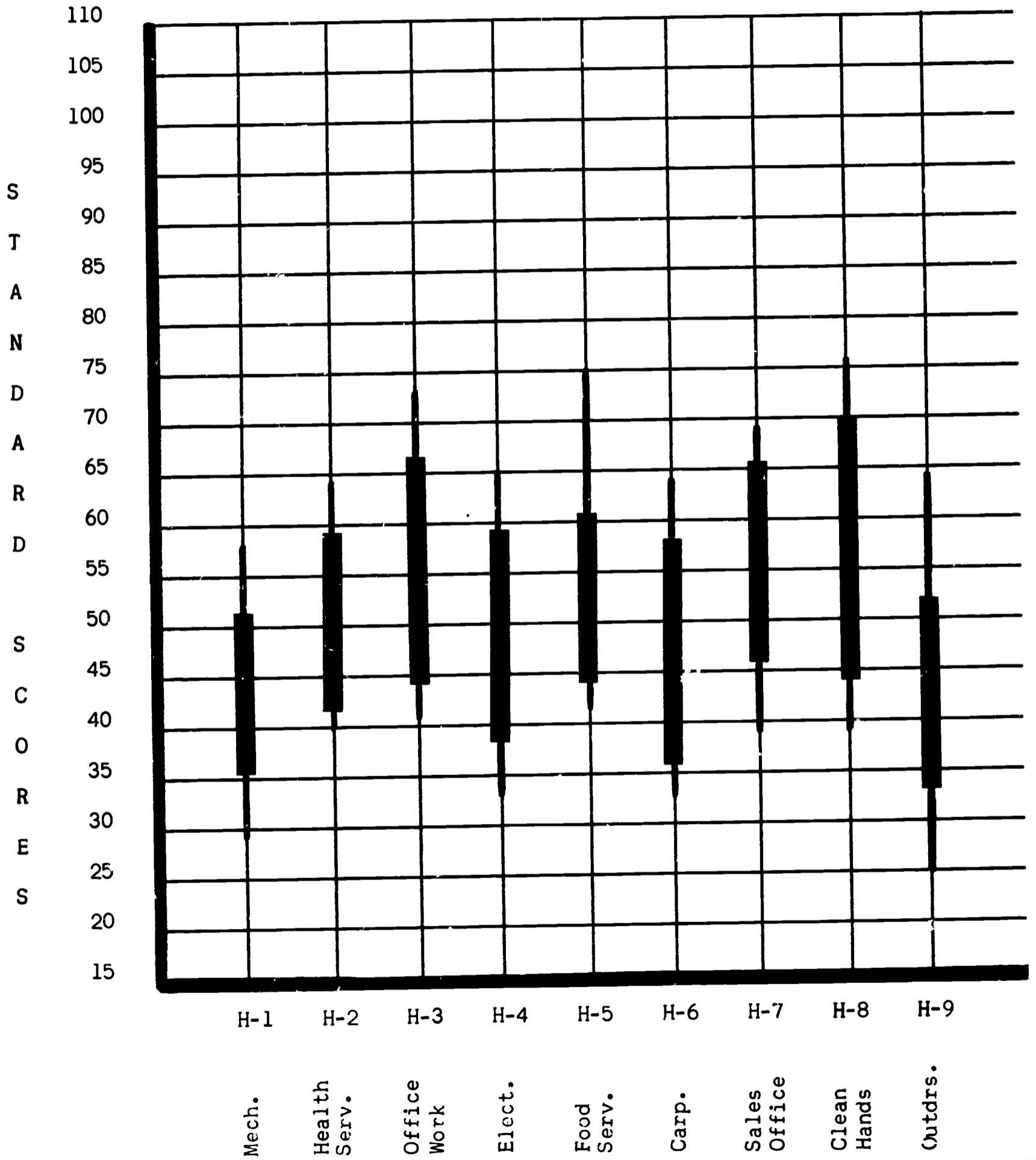
PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
MECHANICAL DRAFTING AND DESIGN



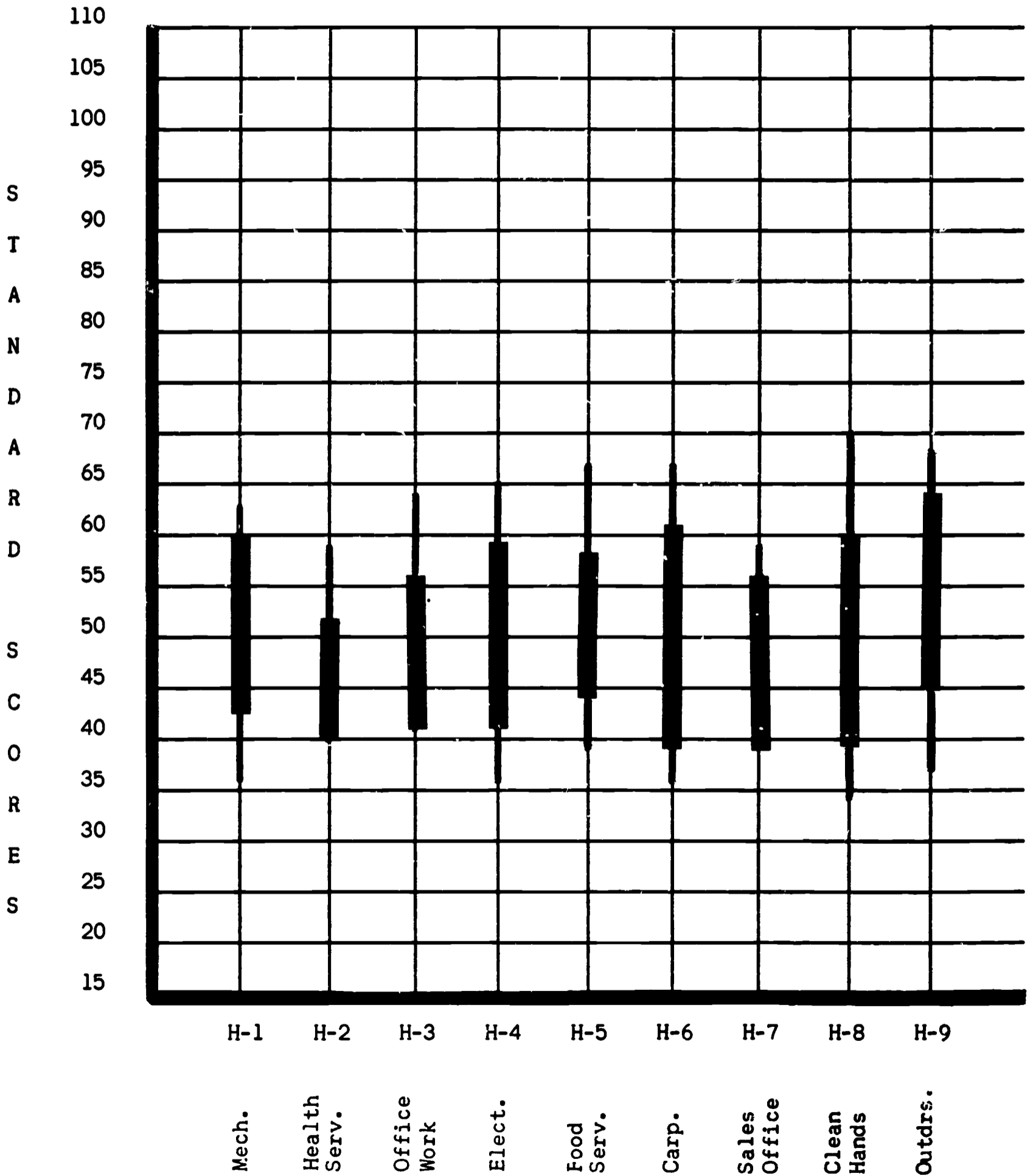
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MVII - HOMOGENEOUS KEY
PROFILE SHEET
POWER AND HOME ELECTRICITY



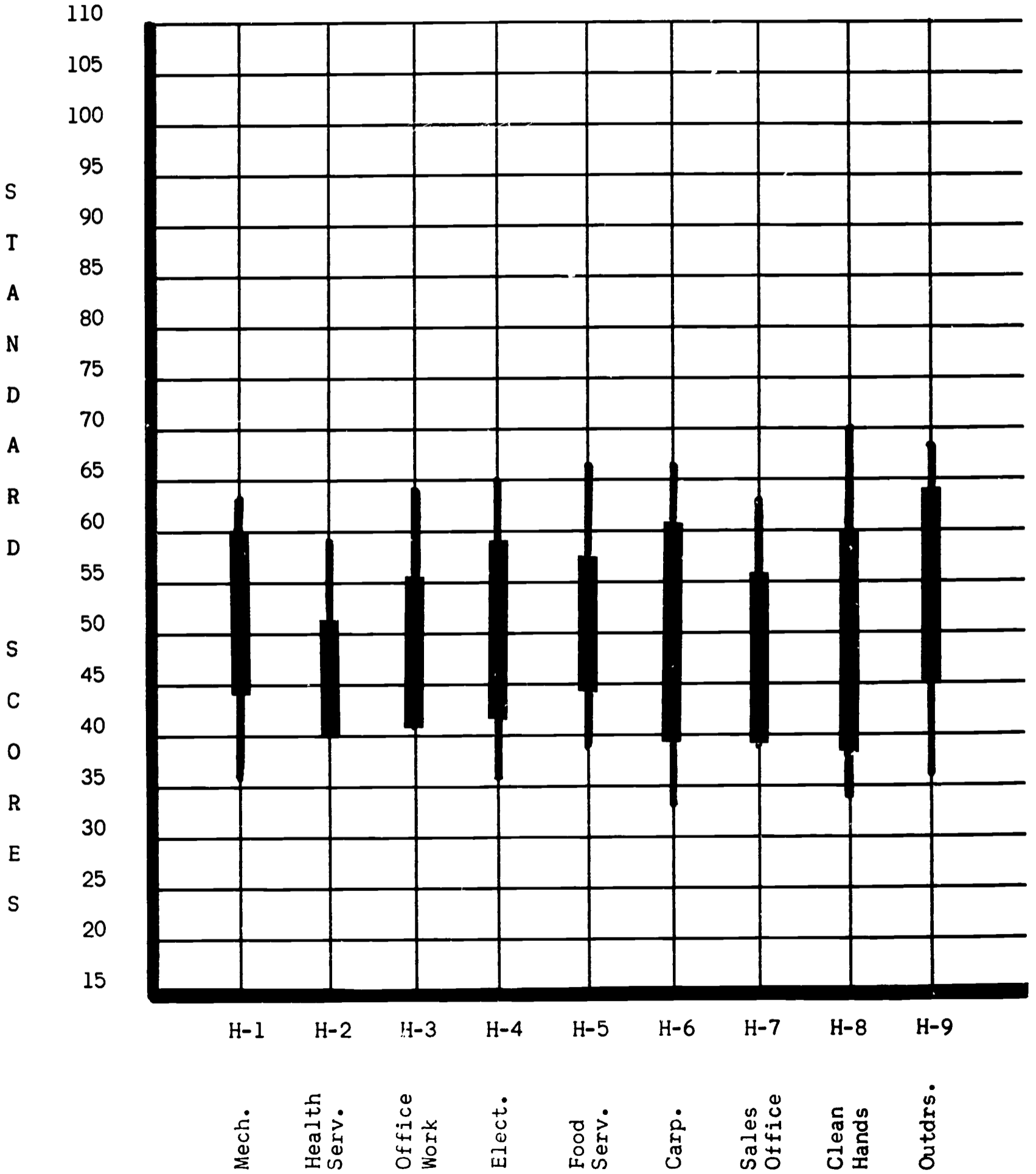
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MVII - HOMOGENEOUS KEY
PROFILE SHEET
PRINTING AND GRAPHIC ARTS



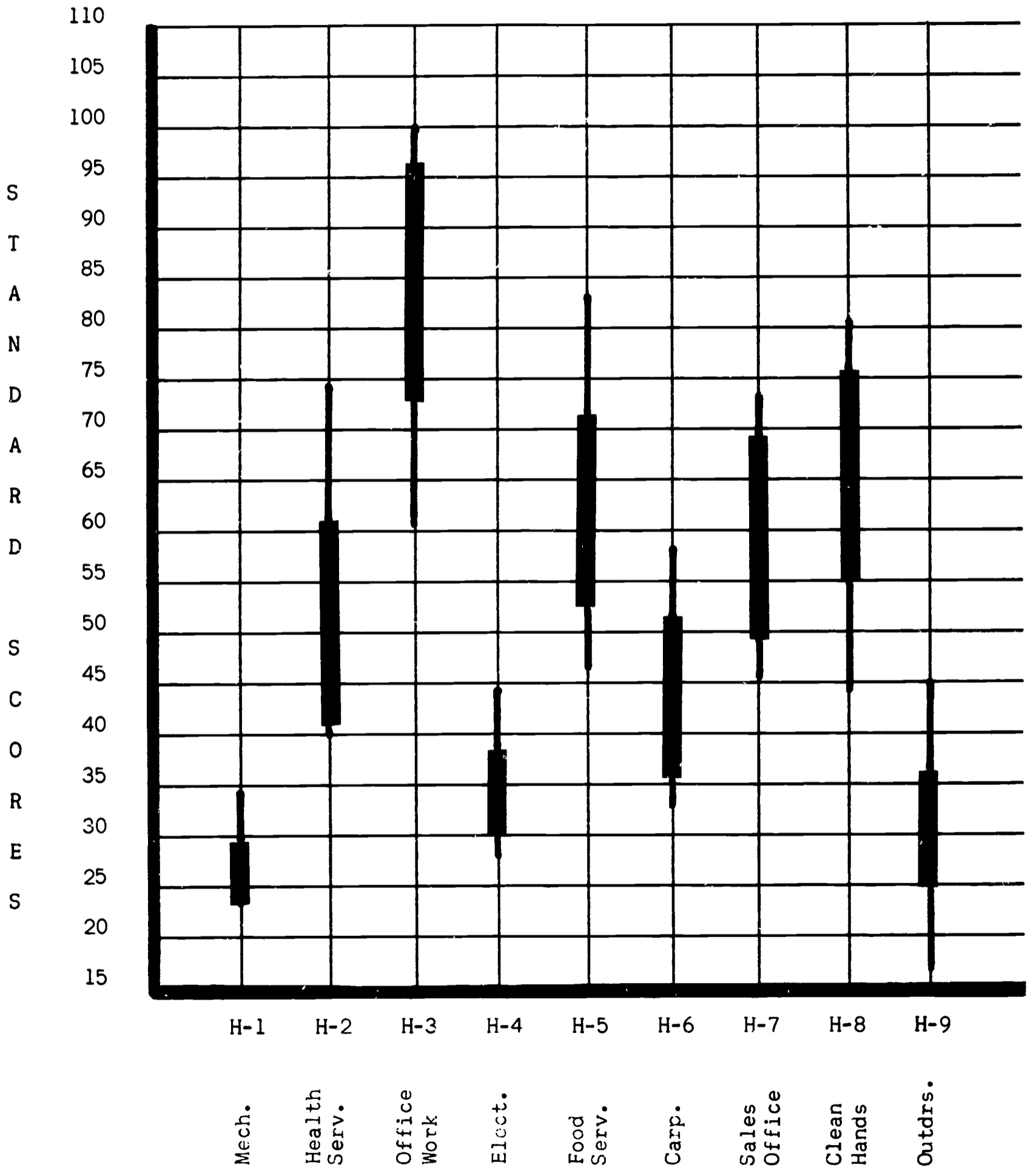
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MVII - HOMOGENEOUS KEY
PROFILE SHEET
WELDING



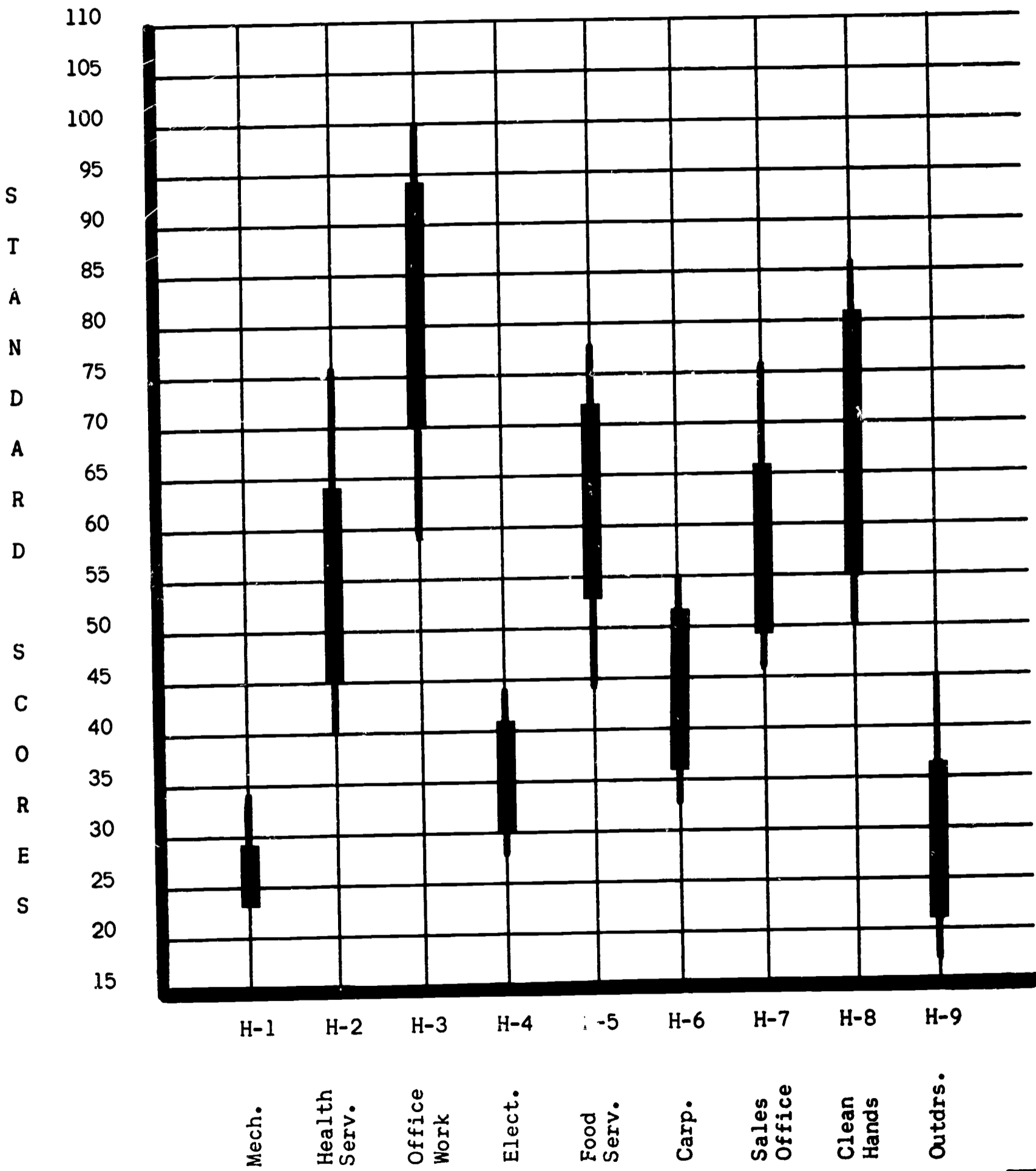
PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
AUTOMOTIVES, MACHINE SHOP, MECHANICAL
DRAFTING AND DESIGN, AND WELDING



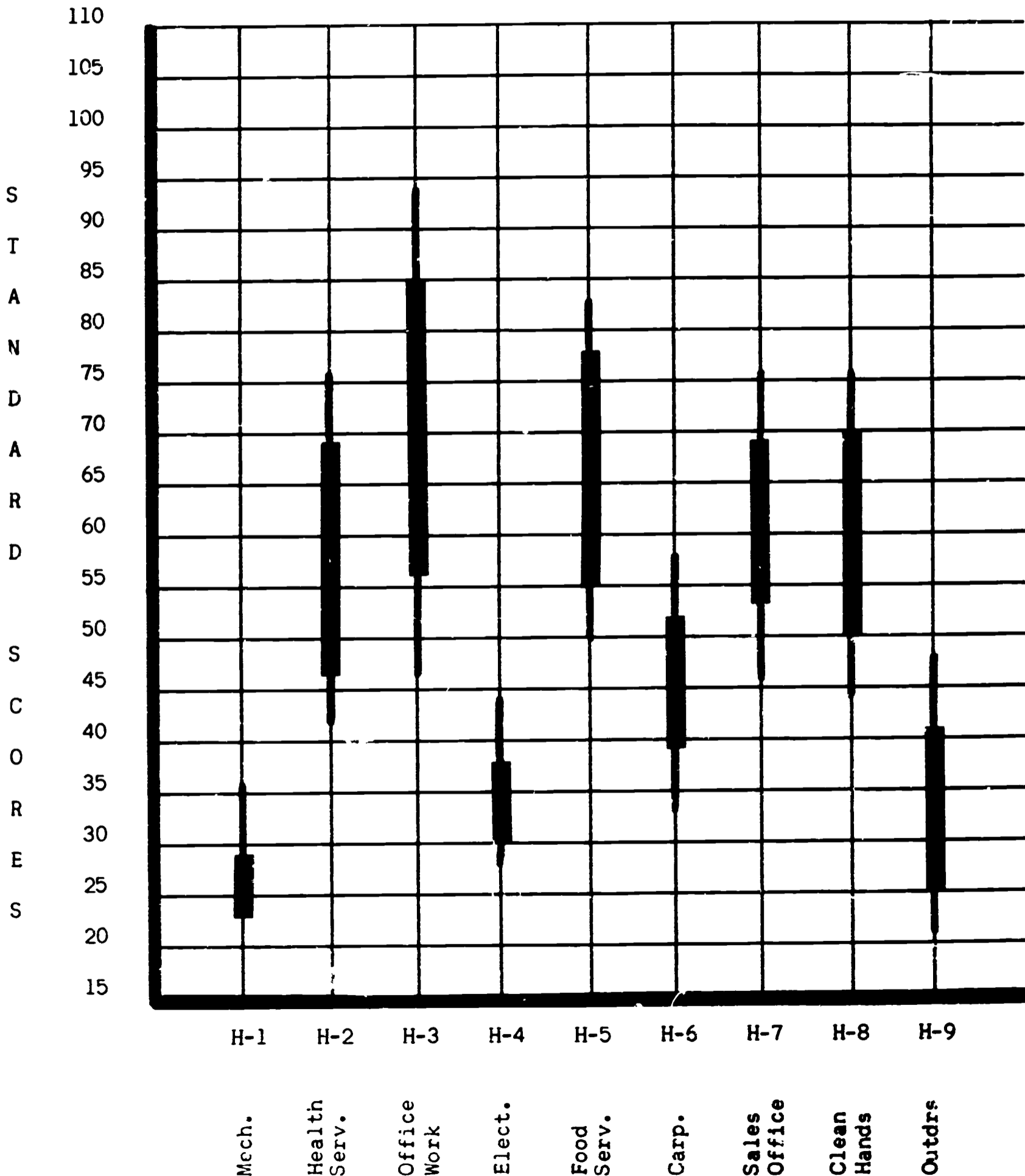
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MVII - HOMOGENEOUS KEY
PROFILE SHEET
ACCOUNTING FEMALE



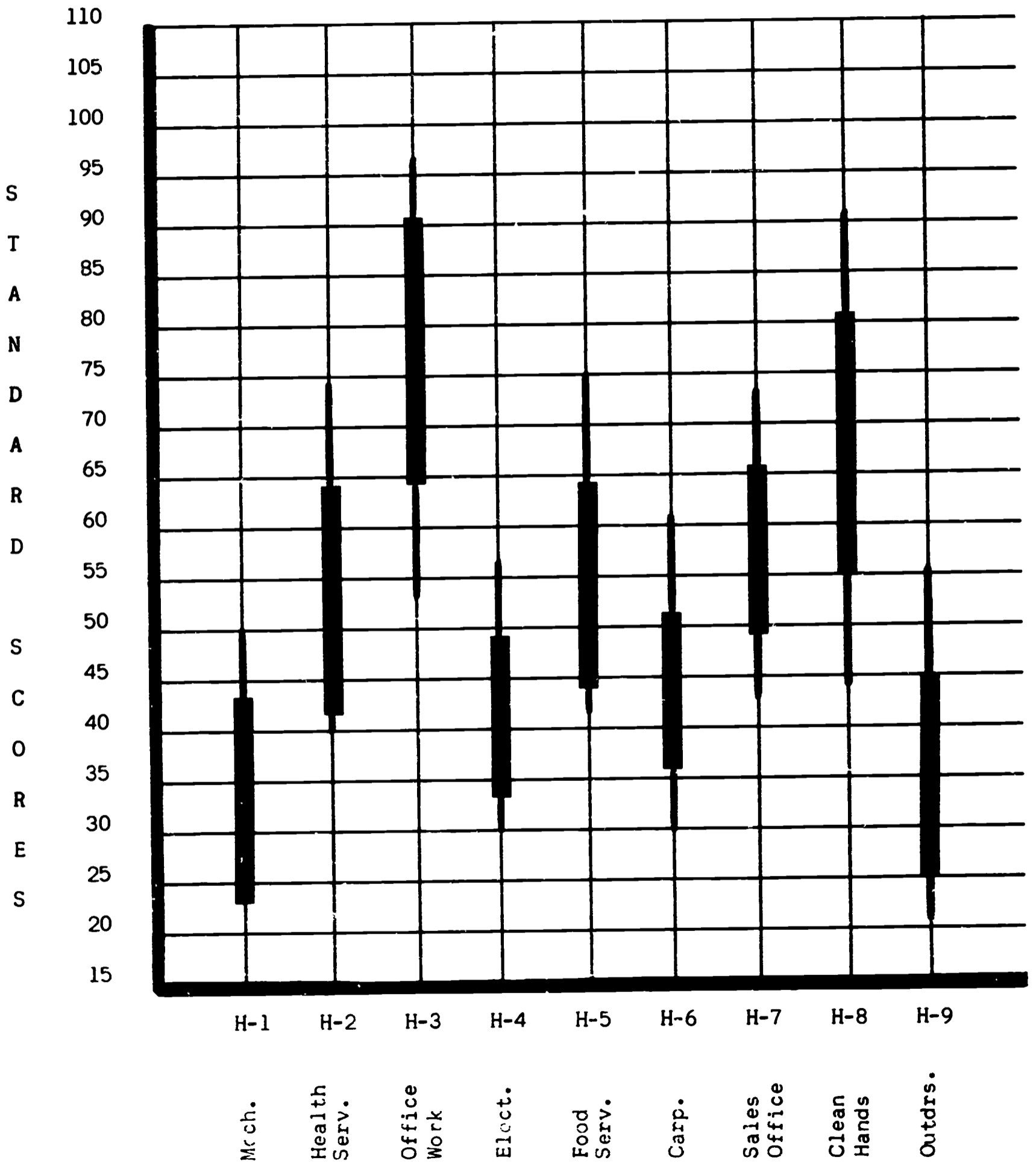
PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
CLERICAL TRAINING



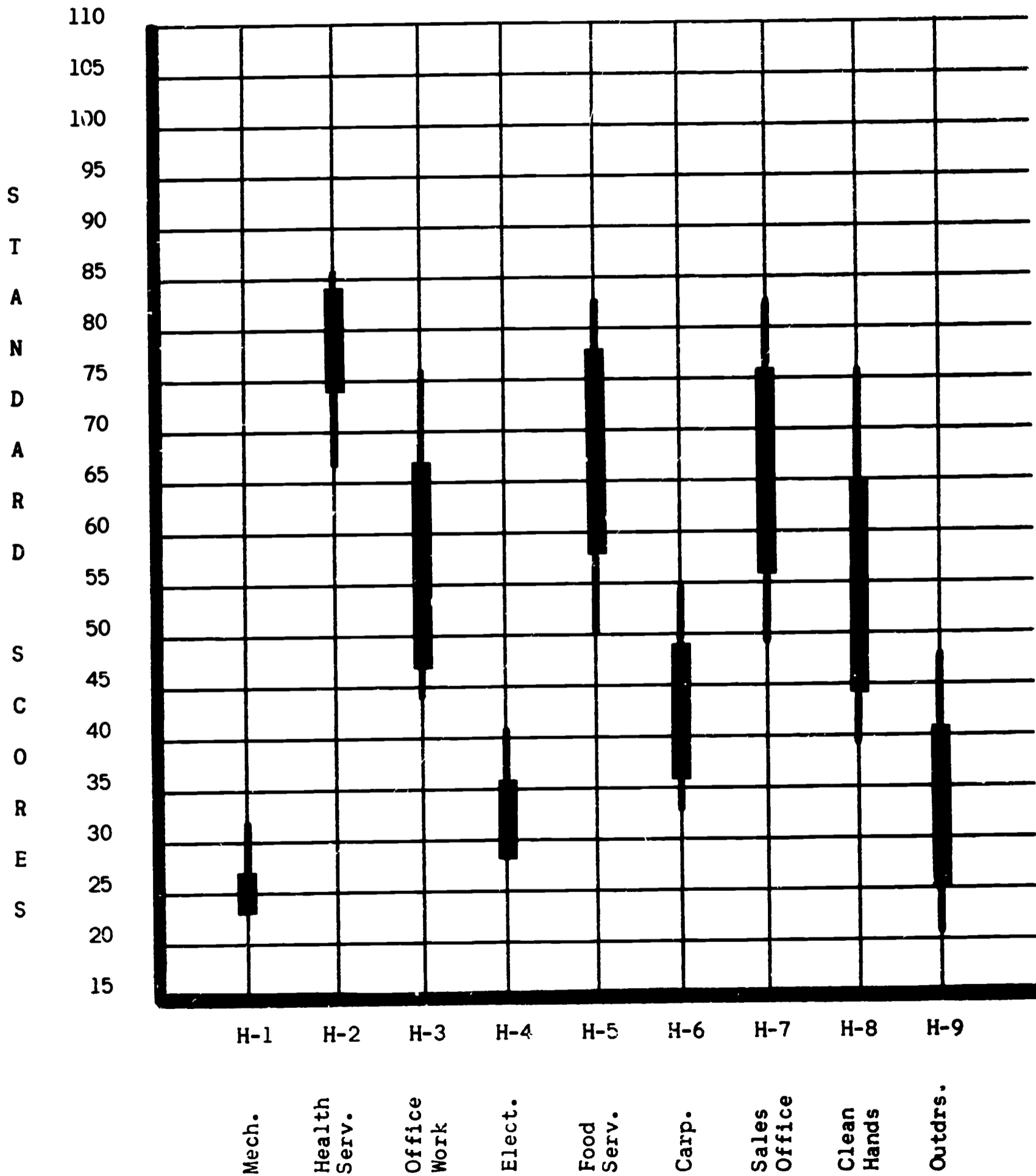
PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
COSMETOLOGY



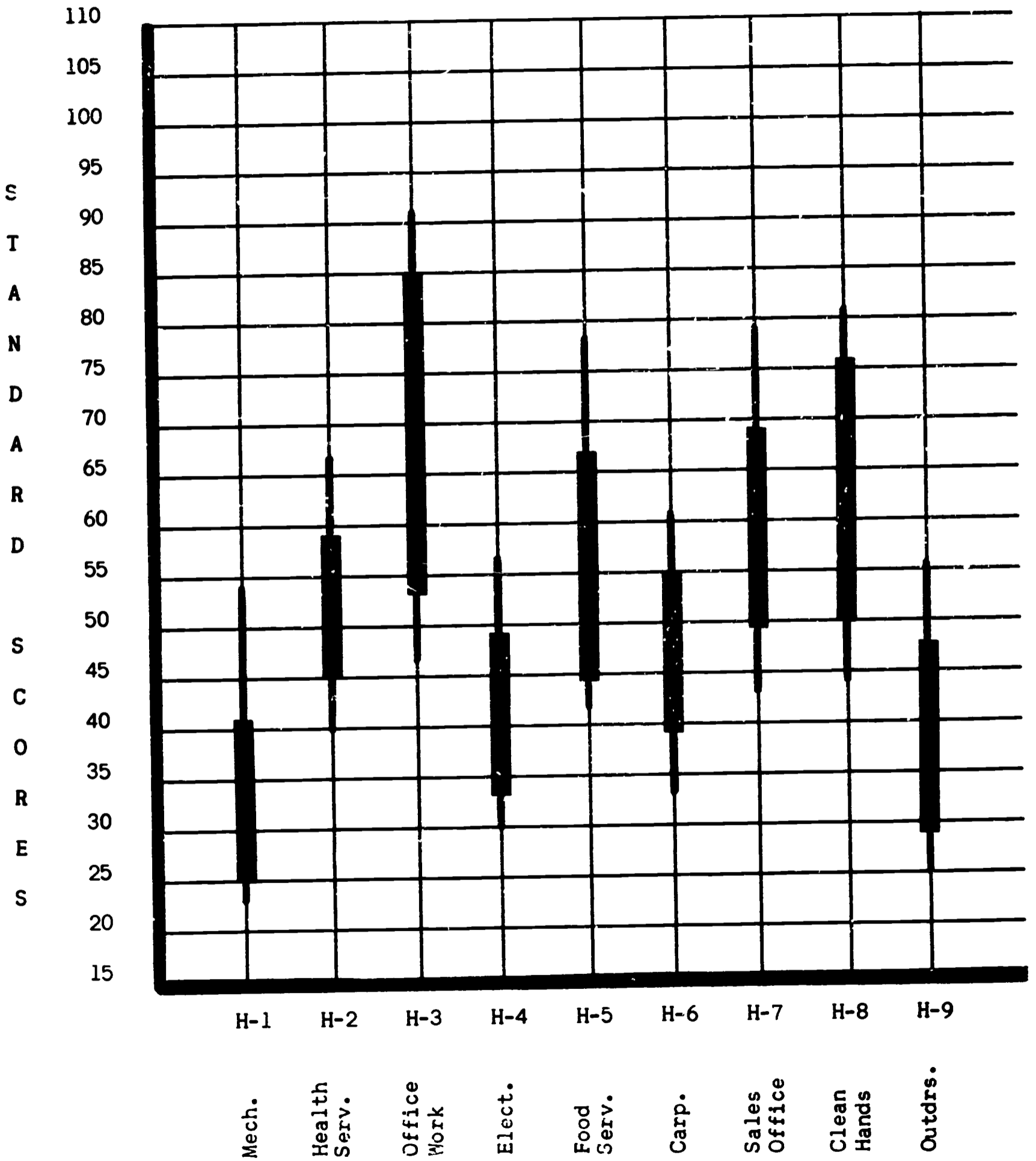
PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
DATA PROCESSING



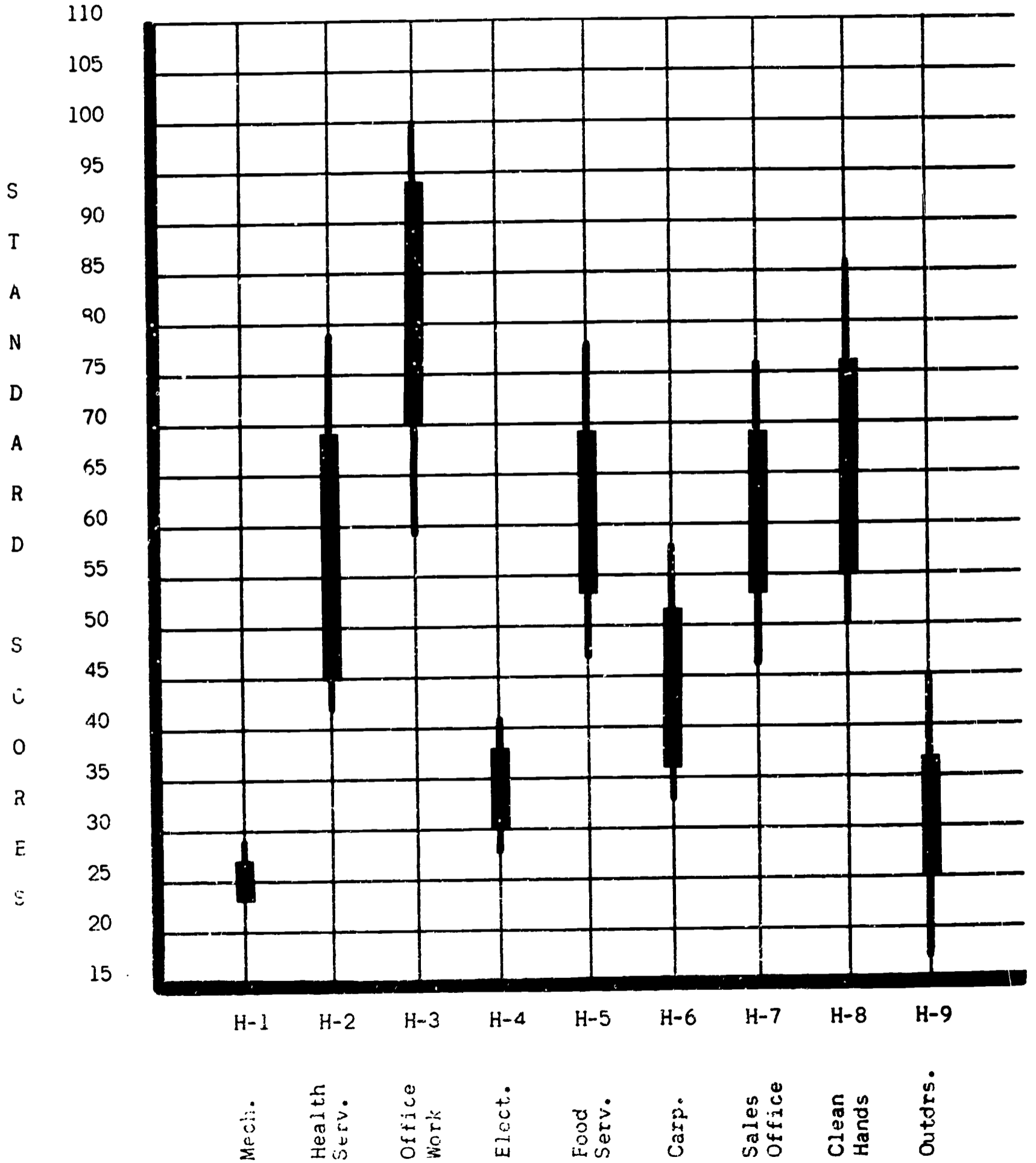
PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
PRACTICAL NURSING



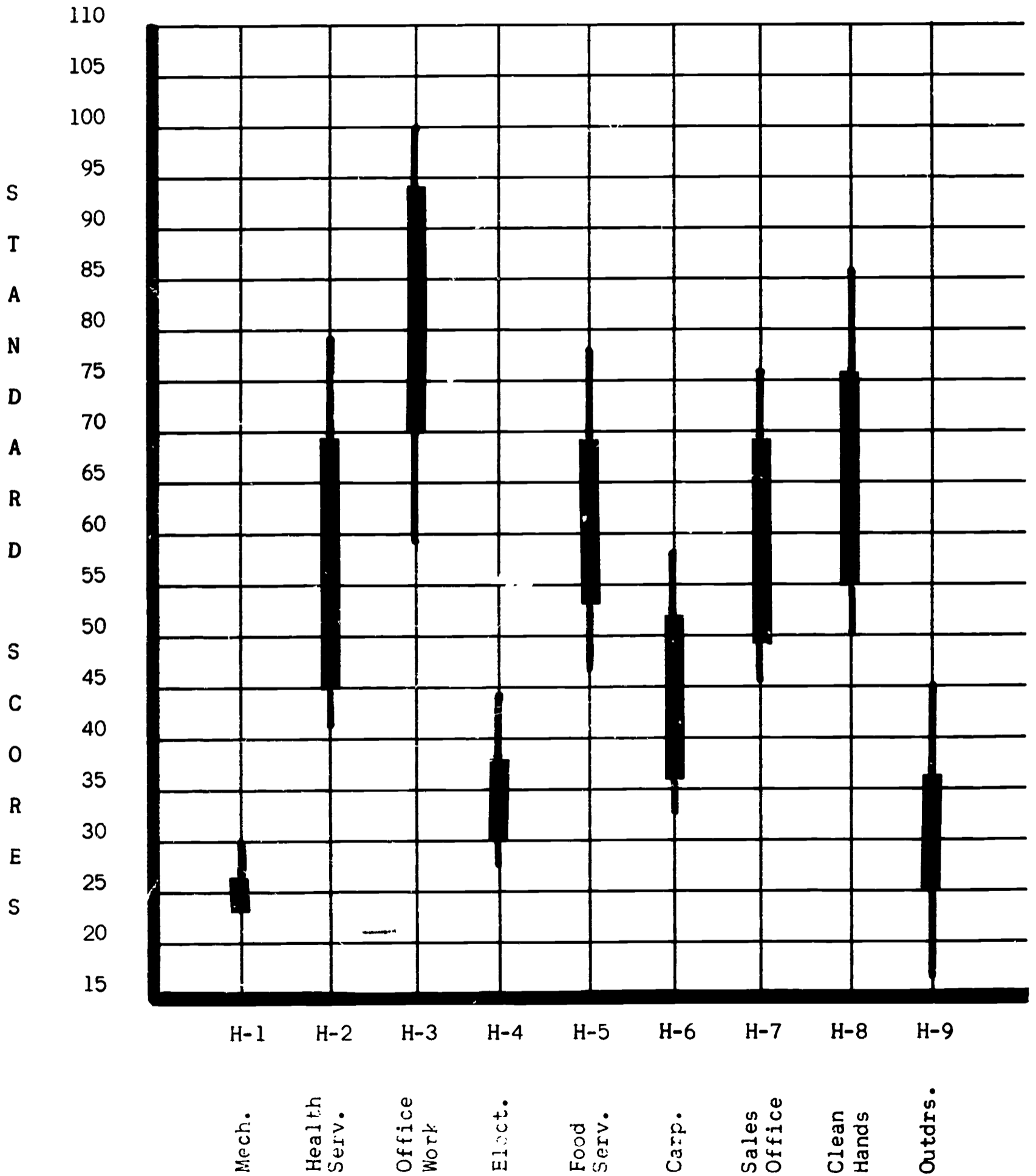
PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
SALES



PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
SECRETARIAL TRAINING



PROJECT MINI-SCORE TRAINING SUCCESS NORMS
MVII - HOMOGENEOUS KEY
PROFILE SHEET
CLERICAL AND SECRETARIAL



APPENDIX C

STANDARD SCORE HOMOGENECUS KEY MEANS, STANDARD DEVIATIONS AND NUMBER OF OBSERVATIONS

1. Accounting-Males
2. Agri-Technology
3. Aircraft Mechanics
4. Automotives
5. Carpentry
6. Electronics
7. Farm Equipment Mechanics
8. Machine Shop
9. Mechanical Drafting and Design
10. Power and Home Electricity
11. Printing and Graphic Arts
12. Welding
13. Combined Automotives, Machine Shop, Mechanical
Drafting and Design, and Welding
14. Accounting-Females
15. Clerical Training
16. Cosmetology
17. Data Processing
18. Practical Nursing
19. Sales
20. Secretarial Training
21. Combined Clerical and Secretarial Training

STANDARD SCORE
HOMOGENEOUS KEY MEANS, STANDARD DEVIATIONS
AND NUMBER OF OBSERVATIONS

CURRICULUM	H-1			H-2			H-3			H-4			H-5		
	\bar{X}	S	N	\bar{X}	S	N	\bar{X}	S	N	\bar{X}	S	N	\bar{X}	S	N
Accounting-Males	33.04	24.03	92	46.58	43.75	92	82.75	21.81	92	40.13	27.18	92	49.97	40.31	92
Agri-Technology	45.32	17.52	58	48.86	39.28	58	56.87	47.41	58	49.42	22.64	58	53.34	40.34	58
Aircraft Mechanics	57.48	8.43	54	47.66	36.26	54	45.17	49.07	54	55.05	16.28	54	49.22	29.22	54
Automotives	54.02	12.42	380	45.60	41.24	380	47.69	53.04	380	53.18	18.24	380	50.51	32.71	380
Carpentry	50.68	13.91	120	45.90	49.09	120	49.70	47.64	120	46.03	17.66	120	48.62	37.08	120
Electronics	51.62	12.21	134	50.36	38.19	134	50.33	47.09	134	64.19	12.34	134	49.13	34.70	134
Farm Equipment Mechanics	52.92	13.54	56	45.72	58.31	56	48.35	41.64	56	52.58	19.47	56	52.25	32.78	56
Machine Shop	53.84	12.76	101	46.00	50.78	101	48.86	52.03	101	50.05	17.44	101	49.37	35.04	101
Mechanical Draft- ing and Design	49.69	16.00	154	48.41	41.29	154	50.75	47.31	154	48.25	21.79	154	51.38	33.18	154
Power and Home Electricity	53.18	12.57	165	47.27	42.38	165	48.08	45.43	165	61.85	13.95	165	50.06	32.25	165
Printing and Graphic Arts	42.94	17.93	65	51.20	39.51	65	54.89	40.78	65	47.80	22.45	65	53.56	36.21	65
Welding	51.82	14.62	202	46.72	42.64	202	48.65	50.94	202	49.48	20.38	202	51.71	35.76	202
Auto, Machine Shop Mechanical Draft- ing and Welding	52.32	14.06	447	46.76	44.63	447	48.44	52.73	447	50.71	20.19	447	50.66	34.81	447

\bar{X} = Mean S = Standard Deviation N = Sample Size

STANDARD SCORE
HOMOGENEOUS KEY MEANS, STANDARD DEVIATIONS
AND NUMBER OF OBSERVATIONS

CURRICULUM	H-6			H-7			H-8			H-9		
	\bar{X}	S	N	\bar{X}	S	N	\bar{X}	S	N	\bar{X}	S	N
Accounting-Males	48.28	19.89	92	54.86	31.46	92	68.65	23.66	92	40.16	12.77	92
Agri-Technology	49.99	21.89	58	50.44	34.23	58	55.95	28.17	58	50.48	15.05	58
Aircraft Mechanics	45.96	24.16	54	46.72	39.00	54	46.10	31.19	54	55.48	11.24	54
Automotives	49.60	20.87	380	45.52	46.26	380	50.40	29.62	380	54.72	12.49	380
Carpentry	61.90	14.95	120	46.00	42.55	120	52.55	26.65	120	55.96	11.88	120
Electronics	37.62	25.93	134	49.64	32.20	134	52.35	29.42	134	51.24	13.14	134
Farm Equipment Mechanics	50.38	20.73	56	46.63	44.10	56	52.05	29.31	56	55.48	12.42	56
Machine Shop	52.87	19.00	101	45.76	45.52	101	51.85	30.93	101	55.76	12.40	101
Mechanical Drafting and Design	52.03	20.79	154	51.36	37.34	154	53.90	27.09	154	50.32	13.61	154
Power and Home Electricity	42.09	21.92	165	47.35	38.85	165	50.85	32.08	165	53.36	12.57	165
Printing and Graphic Arts	46.60	23.81	65	54.71	34.12	65	57.60	25.87	65	42.92	18.35	65
Welding	50.80	20.85	202	47.23	38.22	202	51.65	30.87	202	53.20	13.79	202
Auto, Machine Shop Mechanical Drafting and Welding	50.92	20.51	447	47.17	43.62	447	51.80	29.74	447	53.24	13.33	447

STANDARD SCORE
HOMOGENEOUS KEY MEANS, STANDARD DEVIATIONS
AND NUMBER OF OBSERVATIONS

CURRICULUM	H-1			H-2			H-3			H-4			H-5		
	\bar{X}	S	N	\bar{X}	S	N	\bar{X}	S	N	\bar{X}	S	N	\bar{X}	S	N
Accounting-Females	26.44	42.27	96	52.32	42.08	96	85.27	23.16	96	34.56	22.48	96	62.98	26.75	96
Clerical Training	25.66	37.24	354	54.78	37.19	354	82.57	22.52	354	35.64	22.52	354	62.11	24.19	354
Cosmetology	26.70	43.01	186	59.12	31.25	186	69.04	33.02	186	35.25	25.38	186	67.26	24.97	186
Data Processing	32.12	32.44	109	52.78	40.05	109	78.01	28.94	109	40.28	27.08	109	54.18	34.79	109
Practical Nursing	25.14	39.47	370	78.34	12.76	370	57.89	33.93	370	31.80	30.01	370	67.74	22.01	370
Sales	33.42	30.44	62	51.04	36.02	62	69.52	34.90	62	41.09	27.04	62	54.52	38.33	62
Secretarial Training	24.64	53.49	490	57.10	36.53	490	82.60	24.08	490	34.29	25.40	490	61.36	24.56	490
Clerical and Secretarial	25.12	48.58	545	56.85	37.06	545	82.21	23.77	545	34.74	23.28	545	62.20	24.20	545

\bar{X} = Mean S = Standard Deviation N = Sample Size

STANDARD SCORE
HOMOGENEOUS KEY MEANS, STANDARD DEVIATIONS
AND NUMBER OF OBSERVATIONS

CURRICULUM	H-6			H-7			H-8			H-9		
	\bar{X}	S	N	\bar{X}	S	N	\bar{X}	S	N	\bar{X}	S	N
Accounting-Females	44.46	18.03	96	58.85	26.80	96	66.25	22.47	96	30.20	17.29	96
Clerical Training	43.14	17.64	354	58.52	26.26	354	67.75	21.31	354	30.60	16.74	354
Cosmetology	45.40	16.82	186	60.48	25.16	186	61.45	21.95	186	32.28	18.00	186
Data Processing	44.07	21.84	109	57.17	28.00	109	55.85	26.58	109	36.24	19.14	109
Practical Nursing	42.39	17.19	370	66.57	22.76	370	56.65	23.81	370	33.24	16.05	370
Sales	46.92	19.19	62	59.52	30.68	62	63.05	23.26	62	39.52	17.97	62
Secretarial Training	43.08	18.24	490	59.72	23.87	490	66.05	21.06	490	30.16	15.86	490
Clerical and Secretarial	43.11	18.47	545	59.44	25.69	545	66.45	21.86	545	30.72	16.76	545