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ABSTRACT

Covering the period from October 1, 1975, to September 30, 1976, this annual report contains information on the Colorado Career Information System's (COCIS) administration and organization, information development, delivery vehicle, and marketing and field services. (COCIS is an on-line computerized career information system that has been available for marketing since September 15, 1976. It contains the following files: Occupational Description, Preparation, Program, Employers, Bibliography, Women's Career Resources, and Job Skills. It includes 234 occupations which have localized data for the Denver metropolitan and State of Colorado areas. An occupational information library, using the Oregon classification system, has been established, as well as review panels for the occupations and update cycles for new and corrected material.) Appendixes make up the majority of the document and cover the following items: (1) Administration and organization information (administrative staff, organization structure, COCIS board members, and board meeting minutes); (2) information development (library list, library categories, occupation list, program list, samples of PROG, DESC, and PREP files, and samples of employers, bibliography, women's career resources, and job search files, test site instruments, test site results report, COCIS-COVIEW merger, and process evaluation; and (3) marketing and field services (demonstrations, product offering, preliminary income projections, proposed target populations, priority groupings of COCIS populations, the five COCIS regions, second year marketing timetable, cost guidelines, proposed user handbook, tentative user contract, COCIS/user contract, and COCIS/computer service contract). (TA)

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ANNUAL REPORT

COLORADO CAREER INFORMATION SYSTEM

October 1, 1975 - September 30, 1976

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COLORADO CAREER INFORMATION SYSTEM

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SUMMARY

The Colorado Career Information System staff contains 13½ people (11½ FTE) in the following categories: a Director, a Deputy Director, an Associate Director of Marketing/Field Services, a Marketing/Satellite Center Supervisor and a Marketing/Field Services Representative, 2 Labor Market Analysts, 3 Information Development graduate interns, 1 Marketing/Field Service graduate intern and a clerical staff of 2½. All positions have been filled and affirmative action requirements met.

The Board of Directors currently consists of 18 members, representing the human resources agencies of the State of Colorado, potential users of the COCIS system and persons from business and industry.

The computerized career information system is on-line and has been available for marketing since September 15. It contains the following files: Occupational Description, Preparation, Program, Employers, Bibliography, Women's Career Resources and Job Search Skills. It includes 234 occupations which have localized data for the Denver-Metropolitan and State of Colorado areas. In addition, there are 85 PROGRAM files. Forty-seven of the occupational descriptions, preparations and bibliography statements were developed by COCIS staff, as well as 24 new programs. An occupational information library, using the Oregon classification system, has been established, as well as review panels for the occupations and update cycles for new and corrected material.

Delivery systems have been finalized or are in progress. A DEC 10 version of the DISCOVER IBM software has been completed and will be used to deliver the Career Information System this coming year. It is also capable of delivering all DISCOVER Modules. Work is under way on the development of a Needlesort Deck and a printed version of the occupational descriptions. Exploration has begun on the development of a microfiche version of COCIS which will use the QUEST as an access strategy and will replace COVIEW as it currently exists in the State of Colorado. Future plans include review of other methods of delivery of the computerized information system and the potential use of mini-computers.

Marketing plans and sales strategies have been developed for a second year marketing thrust. Priorities have been established aimed primarily at school populations but also include state agencies.

A Consortium cost formula has been established; \$1.50 per user for the first 4,000 users and \$1.00 per user thereafter.

COCIS has developed a Process Evaluation Format and has participated in the development of the NOIS Impact Evaluation. In addition, COCIS tested the computerized system in 4 areas of the State during Spring, 1976, and has prepared a report of the result from the test sites.

COCIS BUDGET

July 1, 1976 through August 31, 1976

| | BUDGET | (THRU AUG. 31) EXPENDITURES | ENCUMBRANCES AND EST. EXPEND. SEPTEMBER | ESTIMATED FINAL EXPENDITURES |
|--------------------|------------------|--------------------------------|---|------------------------------------|
| PERSONNEL | \$145,866 | \$119,963 | \$13,407 | \$133,370 |
| BENEFITS | 16,045 | 11,408 | 1,789 | 13,197 |
| TRAVEL | 9,000 | 5,070 | 2,833 | 7,903 |
| PERSONNEL (Hourly) | 7,823 | 5,634 | 400 | 6,034 |
| EQUIPMENT | 20,000 | 5,938 | 15,596 | 21,534 |
| SUPPLIES | 16,000 | 10,930 | 2,457 | 13,387 |
| CONSULTANTS | 9,000 | 1,418 | 2,775 | 4,193 |
| COMPUTER SERVICES | 53,156 | 21,435 | 31,564 | 52,999 |
| MODIFY COVIEW | 3,500 | 52 | 2,448 | 2,500 |
| EVALUATION | 15,000 | 12,573 | -0- | 12,573 |
| INDIRECT COSTS | <u>36,466</u> | <u>34,021</u> | <u>678</u> | <u>33,343</u> |
| TOTALS | <u>\$331,856</u> | <u>\$228,442</u> | <u>\$72,591</u> | <u>\$301,033</u> |

List of Appendices

I. ADMINISTRATION AND ORGANIZATION INFORMATION

- I-A. Administrative Staff
- I-B. Organization Structure
- I-C. COCIS Board Members
- I-D. Board Meeting Minutes

II. INFORMATION DEVELOPMENT

- II-A. Library List
- II-B. Library Categories
- II-C. Occupation List
- II-D. Program List
- II-E. Samples of PROG, DESC and PREP Files
- II-F. Sample of Employers File
- II-G. Sample of Bibliography File
- II-H. Sample of Women's Career Resources File
- II-I. Sample of Job Search File
- II-J. Test Site Instruments
- II-K. Test Site Results Report
- II-L. COCIS-COVIEW Merger
- II-M. Process Evaluation

III. MARKETING AND FIELD SERVICES

- III-A. Demonstrations
- III-B. Product Offering
- III-C. Preliminary Income Projections
- III-D. Proposed Target Populations
- III-E. Priority Groupings of COCIS Populations
- III-F. The Five COCIS Regions
- III-G. Second Year Marketing Timetable
- III-H. Cost Guidelines
- III-I. Proposed User Handbook
- III-J. Tentative User Contract
- III-K. COCIS/User Contract
- III-L. COCIS/Computer Service Contract

TABLE OF CONTENTS

| | Page |
|--|------|
| SUMMARY | i |
| Financial Information | iii |
| List of Appendices | iv |
| | |
| I. ADMINISTRATION AND ORGANIZATION INFORMATION | |
| Staff | 1 |
| Affirmative Action | 1 |
| In-Service Training | 2 |
| Staff Problems | 2 |
| Board of Directors | 2 |
| Major Contacts and Conferences Attended | 3 |
| Major Problems | 5 |
| Consultants | 6 |
| | |
| II. INFORMATION DEVELOPMENT | |
| Library | 7 |
| COCIS Files | 7 |
| Review Panels | 9 |
| Access Strategy | 9 |
| Test Sites | 10 |
| Equipment Purchases | 10 |
| COVIEW | 11 |
| Evaluation | 11 |
| | |
| III. DELIVERY VEHICLE | |
| Software Development | 13 |
| Consulting and Support | 14 |
| Hardware Evaluation | 15 |
| Services | 15 |
| Terminal Specifications and Alternatives | 16 |
| | |
| IV. MARKETING AND FIELD SERVICES | |
| Market Stimulation Contacts | 18 |
| Marketing Plan | 18 |
| Product | 18 |
| Costs | 19 |
| Target Populations | 19 |
| Marketing Strategies | 20 |
| Multiple Delivery Modes | 20 |
| Statewide Demand Stimulation | 20 |
| Pilot Demonstration Program | 21 |
| Group Contracting | 21 |
| Initial Market Contract and Research | 21 |
| Promotional Activities and Materials | 22 |
| Training Program | 23 |
| Local Coordinator Training | 23 |
| Staff Training | 24 |
| Written Support Materials | 24 |
| Cost Formula | 25 |
| Materials Produced | 26 |
| Contracts | 26 |
| Feedback | 26 |
| | |
| V. FINIS | 27 |

I. ADMINISTRATION AND ORGANIZATION INFORMATION

Staff

Currently, all staff positions are filled. These positions are as follows: a Director, a Deputy Director, an Associate Director of Marketing/Field Services, a Marketing/Satellite Center Supervisor and a Marketing/Field Services Representative, 2 Labor Market Analysts, 3 Information Development graduate interns, 1 Marketing/Field Services graduate intern, 1/2 Administrative Assistant, 1 Secretary and 1 Typist. (See Appendix I-A, List of current staff and Appendix I-B, Current Organization Structure.)

During the year turnover has been somewhat of a problem, although not too serious. The major position that has given difficulty is the Associate Director for Marketing/Field Services, recently filled for the third time. The original resignation came as a result of a job offer and the second as a request for reassignment within the COCIS staff. In spite of the fact that a number of graduate interns have left, they either graduated or have taken better positions. The quality of work provided by interns is excellent and the source of talent among graduate students is unlimited. We have used consultants to supplement staff particularly in the area of computer services and will continue to do so during the coming grant year.

Affirmative Action

All staff vacancies other than one promotion from within have been widely advertised. The Denver Post has been used since it goes to all corners of the state as well as the local Boulder Daily Camera. One attempt was made to use Chicano and Indian newspapers. The latter was totally unsuccessful. Almost without exception the persons who have applied for vacancies as a result of newspaper ads have been primarily white and primarily male. We have made a concerted effort to locate minority persons otherwise but have had no success in employing them. The one area where COCIS has been able to employ minorities has been graduate interns. This may indicate that minorities are finally in the educational pipelines. During this past year COCIS has employed two orientals, one black and one chicana intern. COCIS has had better success with female applicants. The staff consists of 7 men and 6½ women, of which 1 is oriental, 1 is chicano, 1 is black and 10½ are white.

A continued effort will be made to seek other qualified minorities and women when vacancies occur.

In Service Training

COCIS provided in-service training to staff in the following areas:

- Career Education Concepts
- Career Counseling Theory
- Computer Technology
- Occupational Information Development
- Sales and Marketing Strategies

The technical assistance training program established by NOIS has been of great value and COCIS has had two visits from Oregon's CIS staff and has participated at Oregon in a TAT visit plus the Cadre Training Program.

Staff Problems

Some staff problems arose this year, primarily over disagreement with management on the directions of the project. One staff member resigned because of this and another staff member was fired because of it as well as a lack of good interpersonal skills with people. Since the basic disagreements have been resolved staff cooperation has increased 100%.

Board of Directors

The current consortium Board of Directors consists of 18 members. The chairman of the Board is Wilbur Richardson, Executive Director of the State Division of Automated Data Processing. A current list of Board members and their titles is contained in Appendix I-C. The permanent members of the Board were appointed by the Governor at the beginning of the grant year. The rotating members of the Board were not appointed until July of 1976. An indoctrination for all new members was held in August, 1976.

The Board has had difficulty this year in organizing. This did not relate to a lack of cooperation on the part of any board member but rather to an extensive turnover of the designates of the permanent appointees to the Board. Even so, designates who are no longer with the Board were highly supportive and helpful. NOIS staff should note that the concept of inter-agency cooperation has never been in conflict.

The lack of quorums have related to political changes and legislative and budgetary demands or constraints, rather than a lack of cooperation or support. The first meeting of the new Board will be held October 28. Throughout the difficult period when a quorum did not materialize, the Chairperson, Wilbur Richardson, has provided assistance, personal support and direction to the project which has been invaluable.

Major Contacts and Conferences Attended

1. Les Schlitt in the Office of the Executive Director of Labor and Employment to facilitate the establishment of a working relationship between the occupational information staff and appropriate information staff in the Employment Division.
2. Pat Brannigan, Employment Division, who is responsible for OES surveys.
3. Larry Pape, Director of the Computing Center, Boulder Valley Schools, related to the modification and conversion of CVIS/OAIS system and the use of DISCOVER software.
4. Jim Boyd, Technical Director for Project DISCOVER.
5. Richard Adamich, State Planning and Budget Office related to the use of grant funds, appointment of the Consortium Board, contracts, accounting and billing procedures.
6. University personnel related to the Office of Contracts and Grants, Personnel, Research, Payroll, Warehouse, etc., related to the employment of staff and organization of the office.
7. Technical Committee of the Div. of Automated Data Processing staff.
8. Dr. Fred Holmes, State Department of Education.
9. Walter Hammond, Mountain Bell Communication System.
10. Harrell Guard, Director, Career Education Resource Center.
11. Miles Reznik, Department of Institutions regarding their using the system.
12. Laprell Martin, Coordinator of Counseling, Boulder Valley Schools
13. James Folks and staff, University of Southern Colorado.
14. Virginia Patterson, President, Boulder Valley Schools.
15. Robert Scott, Acting Director, Division of Employment.
16. Violet Wagner, Boulder Public Library regarding potential library grant for use of COCIS.
17. Richard Edsall, Board of Community Colleges and Occ. Education.
18. John Copper, Director, Counseling and Guidance, Veterans Admin.
19. Randy Ruff, Research and Analysis Unit, OES Section, Division of Employment.
20. Russell Bateson, Dictionary of Occupational Titles Occupational Analysis Field Center.
21. David Monarchi, Business Research Division, University of Colorado.
22. Keith Wiley, Colorado Joint Apprenticeship Council.
23. Charles Carlson, State Bureau of Training and Apprenticeship.
24. Dick Dugdale Mountain States Employment Council.
25. Ray Kimball and Cliff Johnston, Colorado Division of Commerce and Industry.
26. Charles Sisson and Sharon Friedman, Colorado Department of Education.
27. Neal Price, Explorer Division, Boy Scouts of America.
28. Larry Dreiler, WIN, South Metro Job Center.
29. Sandy Carruthers, Better Jobs for Women.
30. Rubbie Weber, HEW, Department of Labor
31. Larry Gotfriedson, Interagency Personnel Agency, Department of Labor
32. Judy White, Colorado VIEW.
33. Warren LaSalle, Career Education Center for Greeley School District
34. Dr. Labak and Dr. Don Carson, Arapahoe Community College.
35. Mike Wette, Area Manpower Institute for Development of Staff.

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1. Lew Schmitt in the Office of the Executive Director of Labor and Employment to facilitate the establishment of a working relationship between the occupational information staff and appropriate information staff in the Employment Division.
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30. Rubbie Weber, HEW, Department of Labor
31. Larry Gotfriedson, Interagency Personnel Agency, Department of Labor
32. Judy White, Colorado VIEW.
33. Warren LaSalle, Career Education Center for Greeley School District
34. Dr. Labak and Dr. Don Carson, Arapahoe Community College.
35. Mike Wertz, Area Manpower Institute for Development of Staff.

36. Pat Ryan, Superintendent of Boulder Valley Schools.
37. Jack Parsons, Vice President for Administration, University of Southern Colorado.
38. Kenneth Burns, Vice President for Student Affairs, University of Southern Colorado.
39. Mel Hess, Director of Automated Data Processing, University of Southern Colorado.
40. Carl Walburg, Assistant to the President, Mesa College.
41. John U. Tomlinson, President, Mesa College.
42. Gilbert Garcia, Superintendent of Schools, San Luis Valley.
43. Zach Bernal, Head Counselor of District, San Luis Valley.
44. Gary Robbins, Director, San Luis Valley Board of Cooperative Educational Services.
45. Dr. Burnett Severson, Principal, North High School, Denver.
46. Daryl Boubier, Director of Guidance, Denver Public Schools.
47. Ray Pitsker, Chief of Branch of Information Systems, Division of Employment and Training.
48. Dan Whittemore, State Controller.
49. Joseph Ricciard, Jr., Marketing Manager, Hazeltine Corp.
50. Dr. Thomas Dorland, Director of Secondary Education, Boulder Valley Schools.
51. Markus Herzog, Director of C.U., Educational Computing Center.
52. Randy Ruff, Director of Research and Analyses, Division of Employment and Training.
53. Arthur Smith and Dorothy Eggan, Director and Assistant Director of the Colorado Pre-Retirement Planning Institute.
54. Bob Storer, Project Director for the Singer Corporation's Career Development Center.
55. Bruce McKinlay and John Clyde, Oregon Career Information System.
56. Dr. William Liddle, Director of Instructional Services, Roger Lowder, Career Education Coordinator and Dick Applin, Director of Computer Services, Colorado Springs Public School District #11.
57. Dr. Robert Blum, Director of Career Education, Jefferson County Public Schools.
58. Ken McNulty and Helen Rubenstein, Labor Economists, Colorado Division of Employment.
59. Lloyd Wilcox, Data Systems Marketing, Denver.
60. Matt Savoren, Asst. Superintendent, Colorado State Reformatory, Buena Vista, Colo.
61. Jack Offerle, Personnel Director; Colo. State Dept. of Institutions.
62. Jan Rohr, Director of Employment Program, Virginia Neal Blue Society for Women.

Conferences

1. Eleventh Annual Colorado Business - Economic Outlook Forum.
2. Governor's Conference on Employment.
3. University of Northern Colorado Mid-Year Conference.
4. NOIS - User Services Conference and an Information Development Conf.
5. Career EXPLO Fair (COCIS exhibited at Fair).
6. CVIS conference at Phoenix.
7. National Career Education Team Leadership Conference
8. American Society for Training and Development re: computer assisted education and preview of training films on modification and career development.
9. Oregon Cadre Training Program, OIS, Eugene, Oregon.

Major Problems

Perhaps one of the things learned in initiating a project of this nature is that there are many circumstances which are uncontrollable and as a result, create a number of unforeseen and unanticipated problems. Two have already been alluded to, the problem of staff disagreement with management and the difficulties encountered in organizing a functioning Board of Directors.

Two additional problems of major proportions related to the development and delivery of the computerized system. The Legislature failed to appropriate funds to develop a statewide computer network. The initial plan for the delivery of COCIS has been based on use of the social service or human resources computer, which would be a part of this network to deliver to approximately 40 counties in this state.

The other major problem was the collapse of arrangements with Boulder Valley Schools to serve as the delivery system for the Denver-Metropolitan area. As a substitute an agreement has been reached with Tentime Corp. to deliver to the Denver-Metro area on a DEC 10 computer. In progress is a study of alternative delivery systems which will be used this coming year for long-range planning.

Other problems related to the selection of terminals which would deliver the Oregon CIS and also the DISCOVER system. A number of false starts were made but a terminal manufactured by Automated Data Corp. resolved the problem. The terminal has the following characteristics:

Upper and lower case, 5 X 7 dot matrix, 80 columns by 25 lines, dual brightness, blinking and reverse w/blink, Text editing and order entry, 9600 Baud capability, paging variable, buffer memory, programmability with built-in micro-processor, addressable cursor.

Consultants

Consultants have been used as resources to supplement the talents and experience of the regular staff.

1. Dr. Daryl Sander, Professor of Education and the University's expert on career education and guidance has been used for staff training in career counseling theories and application and is in the process of preparing a study on the use of the career information system in institutions, i.e., correctional, mental health.
2. Mr. Larry Pape, former Director of Boulder Valley Computing Center served as a computer consultant in the effort to breach the gaps between COCIS, CVIS and the conversion to DISCOVER.
3. Mr. Rocklyn R. Garcia developed a list of Chicano organizations which would be potential users of the system and agreed that he would also be available to serve as an intermediary to these groups.
4. Mr. Paul Talmey, who had previously worked for the DIME program and who had currently returned to the University for advanced degree work was employed to develop a limited number of occupations.
5. Dr. Gene Glass, Division Chairman for Foundations, and Research, analyzed the data collected from COCIS test sites and provided the staff with a basic report from which the final evaluation has been prepared.
6. Mr. James Boyd, Co-Director of DISCOVER, has served as a consultant related to the conversion of IBM's DISCOVER software for use on a DEC 10 computer.

II. INFORMATION DEVELOPMENT

Library

The Occupational Information Library was established and the Oregon classification system was adapted for use. The current library consists of 730 items which contain occupational data and related information. Some of the major source materials currently in the library are reflected in Appendix II-A which contains extracted pages from the library catalog. Appendix II-B is a listing of COCIS library categories.

Outstanding orders for materials include: College Blue Book (all 3 volumes), "Journal of Employment Counseling", "Business Week", "The Labor Market: An Information System", "Contacts Influential of Colorado".

In an effort to build a quality library COCIS has employed as .10 FTE for the next year, the career information and occupational librarian on the Career Development and Placement staff. The librarian will perform several functions: 1) supervise the receipt and cataloging of materials, 2) the use of materials by COCIS staff, 3) review current materials on the market and recommend new purchases, 4) order new occupational materials for COCIS use.

COCIS Files

As of September 30 COCIS has 234 occupations in its data bank. A list of these occupations can be found in Appendix II-C. COCIS developed 47 new occupations during the first grant year. Of this total, 41 were new titles requiring our staff to do all research associated with development. Six of the occupations were developed using Oregon CIS's previous research on areas common to Oregon and Colorado (e.g., general job description, specialties, related occupations, aptitudes, etc.). These occupations include DESC, PREP and BIB files for each. Approximately 17 more are near completion but will not be included in the system until March, 1977.

In addition to the development of the new and review of Oregon CIS occupational descriptions the Information Development staff has reformatted all descriptions using the Oregon CIS format. This necessitated some re-writing of Oregon descriptions.

COCIS developed 24 new programs for the Educational Program File and completely revised another 12. It has a list of 85 programs in its data bank as of September 30 (see Appendix II-D). A sample PROG will be found in Appendix II-E along with samples of the DESC and PREP files.

A new file is under development, the Employers File. Permission was received from the U. S. Department of Labor, NOIS Director, to survey employers in the State of Colorado. To date 45 employers interviews have been held and 28 employer descriptions prepared. Access to the employers file may be provided in two ways. Students may directly access the employers file by a number assigned to each employers description. In this way a user may obtain a complete profile of an employer. Reference to the employers file will also be contained in the appropriate occupational description. A user therefore will be able to obtain a list of all employers who employ persons in that particular occupation. This list may be used to select particular employer profiles by the user. Appendix II-F is a sample of an employers profile. COCIS is considering several different formats for the employers file, but will get user response to different formats prior to making a final decision.

The Bibliography File format has been changed. Appendix II-G represents the new format. As new occupations are developed the new Bibliography format will be used. As old occupations are updated related bibliography files will be reformatted and additional source materials added.

The Women's Career Resources File (Appendix II-H) will contain the following: 1) Interviews with women in traditional and non-traditional opportunities, 2) employment myths and job barriers and, 3) resources for women.

The Job Search Skills File, which had previously been included in the women's career counseling file will be revised and redesigned during the coming year. The file presently contains answers to the following job hunting questions: 1) What kind of job should I seek?, 2) What are some sources of job information?, 3) How do I fill out a job application form?, 4) How do I prepare for a job interview?, 5) How do I act in an interview? and, 6) How do I write a resume? (See Appendix II-I).

The Occupational Information File contains localized data for the Denver-Metropolitan area and Colorado. COCIS is in the process of collecting local labor market information from the Pueblo region. This data will be included in the system as of March, 1977. Collection of other localized data is scheduled as follows: 1) the second grant

year data from the Colorado Springs SMSA will be completed, 2) collection of data from the Western Slope and Northeastern Colorado regions will be finalized for inclusion during the third year.

As of September 30 the Colorado Career Information System consists of the Occupational descriptions, Preparations, Bibliography, Programs, Employers, Women's Career Resources and the Job Search Skills files. To be added December, 1976 is the Four-Year College Information and Search File and the Financial Aid File.

Review Panels

All occupational descriptions and preparation statements will be submitted to review panels consisting of, at least, 2 persons having knowledge of the occupations. All occupations from each cluster will be mailed on the same date and reviewed by our information development staff during a time period specified in the COCIS work plan. This process will begin during October, 1976. A mailing schedule has been developed which will allow materials to be returned to the assigned information development staff member in time to use the panel members comments in reviewing occupations which they have been assigned in the work plan. Each panel member will receive a letter requesting their assistance, a copy of the DESC and PREP statement for the occupation and a short questionnaire which will be used to record reactions to the material. The questionnaire will cover such areas as accuracy of data, clarity of presentation and requests for additional information which should have been included in the description or prep statement.

In addition to the procedure described above, a second review of all descriptions will be requested from the Research and Analysis Unit, Colorado Division of Employment.

These procedures are seen as on-going activities which will provide a yearly reality check on the information being developed for COCIS.

Access Strategy

Access strategies currently in use are those developed by the Oregon Career Information System, i.e., QUEST and direct. In general,

the QUEST has been received quite favorably as an accessing strategy. The attribute coding on the whole was excellent.

Test Sites

The computerized career information system was tested at four sites during late Spring of 1976. These test sites were North High School, Denver; University of Southern Colorado, Pueblo; Centennial High School, San Luis; and Mesa College, Grand Junction. Each site participated in the program by providing a site coordinator and handling all scheduling and testing of participants. A staff member was assigned to each test site and served as the contact for the test site coordinator and was available at the beginning of the test period for training and at the end of the test period for a wrap-up session. The instruments used in evaluation are contained in Appendix II-J. The overall response to the computerized career information system was excellent. full report see Appendix II-K.

As a part of the evaluation, video-tape interviews were conducted with both administrative officials and users of the system. A video-tape is currently being prepared for NOIS and will be forwarded sometime this fall. A second tape is being prepared for use in sales and marketing. Portions of the uncut tape have been used with the Board of Directors and meetings with high school administrators and counselors. Reactions have been excellent.

Equipment Purchases

Following is a list of equipment which has been purchased or ordered:

- 1 Singer Caramate Slide Projector
- 4 Novation Acousti-Couplers
- 2 Texas Instrument Portable Terminals, Model 725
- 1 Bell & Howell Spacemaster Microfiche Reader/Printer
- 4 Texas Instrument Portable Terminals, Model 547
- 1 Delta Data System, Model 4000L Computer Terminal
- 1 DSM 103 Acoustic Coupler
- 2 Novation 3102A Acoustic couplers
- 1 Texas Instrument Model 735 Portable Data Terminal
- 1 Digital Equipment Corp. DEC Writer
- 1 Ektagraphic Projector
- 1 Soundamatic Recorder
- 1 JVC 3420 TV Monitor/Receiver

COVIEW

An access strategy for COVIEW was decided upon after studying a variety of accesses. It was agreed to use the QUEST System as developed for a Microfiche card system in Iowa. Work will proceed this coming year on the development of the Microfiche COVIEW system which will be compatible with COCIS occupational information. A proposal has been made to the Board of Community Colleges and Occupational Education to merge COVIEW with COCIS. All COVIEW decks this coming year will carry the COCIS logo while negotiations continue for final merger. It was agreed that the monies allocated to COVIEW during fiscal 1976-77 would be used to develop the COCIS-COVIEW microfiche decks. Appendix II-L represents items of consideration by COCIS and COVIEW related to the merger.

Evaluation

COCIS will be evaluated during the 1976-77 grant year through use of three evaluation methods. The State of Colorado will conduct a process evaluation to determine if COCIS objectives are being met. This work is being performed by Mr. Eric Durland of the State Planning and Budgeting Office in cooperation with the COCIS staff. Please refer to Appendix II-M. Mr. Durland is a very competent person and has the necessary skills to assist not only with the project evaluation but with the development and implementation of the impact evaluation. He has served as the COCIS representative in the development of the impact evaluation and has made every effort to reflect staff concerns and suggestions to NOIS.

Secondly, as previously mentioned, the DISCOVER System will be tested. The evaluation to be conducted will be based upon the plan previously developed by the DISCOVER Foundation Staff. The replication of the DISCOVER evaluation plan with Colorado students, a significant percentage of whom are of Spanish-American ethnic background, is seen as a needed evaluation to the results of the original DISCOVER test site program conducted in the Baltimore Public Schools during Spring, 1976.

Thirdly, those sites which are operational during 76-77 will be requested to administer the NOIS Impact Evaluation instrument, if appropriate. This instrument will be administered in the Spring with results provided to NOIS.

Other sources of evaluative data will be obtained from an on-line assessment by individual users and a statistical package to determine amount of file use.

III. DELIVERY VEHICLE

The services and activities involving TENTIME for the period of time from January through September, 1976 included discrete projects and supportive services and consultation. All work was done by TENTIME staff personnel or individuals under direct contract and control of TENTIME staff and was performed in the local area using computer resources owned or under contract by TENTIME. For the purposes of this report, the activities have been grouped into four categories, Software Development, Consulting and Support, Hardware Evaluation, and General Services. A brief summary of the major activities is included below.

Software Development

1. DISCOVER Conversion - The principal effort in software development was made in providing a DECsystem-10 compatible version of the DISCOVER career information system. The two main tasks involved in making DISCOVER run on the DEC-system-10 included a conversion of the DISCOVER file system and the development of DISCOVER-System/Applications software. Restructuring of the data base was done consistent with the goals of allowing the applications code to take advantage of the usable features of the host computer hardware and software, and also of allowing for portability of the final working version to other computer systems. The current DECsystem-10 version of DISCOVER makes use of a number of system features but does so through the data base architecture thus allowing comparable features to be exploited on future host systems. The system/Applications software is a composite of COBOL and assembly language routines which provide the DISCOVER-defined functions. Assembly language routines were used in place of COBOL routines at strategic points in the system to increase overall efficiency of the DISCOVER program. Dual capabilities were built into the DISCOVER system to allow operations using both light and non-light pen terminals.
2. Oregon Information System - The Oregon Information System application software and data base were converted to run on the DEC system-10 and to be available for external users in September. Information specific to the COCIS user base was merged into the OIS system. The system was set up to be runnable on a variety of ASCII terminals using the Decsystem-10.

3. DISCOVER Editor - A generalized editor package was written to allow COCIS staff members to edit existing DISCOVER data base information and to create new frames of information. The editor presupposes no computer knowledge on the part of the user and allows all the necessary operations required to make changes to existing data and to integrate new data with arbitrary linkages to existing frames.

Consulting and Support

1. IBM DISCOVER Software for State of Colorado - TENTIME personnel were involved in an advisory and assistance role with State personnel on implementing the DISCOVER system on a State operated IBM computer system. Efforts included discussions and analysis along with providing information from working version of DISCOVER on the DECSYSTEM-10 computer.
2. Network Evaluation - Information on network operations and communications was provided for COCIS to allow planning for future implementation of terminals at remote sites. Information was designed to allow COCIS to examine alternatives for delivering career information to remote sites and to sites where terminals could be clustered together. Networking information included types and cost estimates of communication alternatives and computer hardware and software considerations.
3. Feasibility Study of Minicomputer Delivery System - The alternatives available for delivering DISCOVER on minicomputers were examined in terms of system requirements, costs, expansion capabilities and auxiliary applications. An effort was made to provide COCIS with sufficient data to quantitatively evaluate the options, including computer configurations, for local delivery of DISCOVER on dedicated minicomputer systems.
4. General Consulting - An ongoing effort was made to provide COCIS staff and director with information relating to the use of computers and capabilities afforded by systems. Information was also provided on contractual considerations between COCIS and their users and between COCIS and the DISCOVER Corporation. The intent was

to provide COCIS with sufficient information to set long range plans and strategies which would be consistent with advances in the computer and communications industries.

5. Orientation of Staff - A number of sessions were held to acquaint COCIS staff with the use of the DECsystem-10 and with elementary programming and editing functions. This effort was directed toward providing COCIS staff with sufficient computer understanding to evaluate the advantages and limitations of their product and to be able to provide service and support to COCIS users.
6. Personnel Interviews - TENTIME worked with COCIS staff in evaluating applicants for Associate Director position. Opinions and recommendations were provided to COCIS on both procedures for screening applicants and considerations for final selection.

Hardware Evaluation

1. Terminal Selection - A major effort was made by TENTIME to evaluate DISCOVER terminal options and make final recommendations to COCIS. A series of vendor terminals was tested in-house for compatibility with the proposed use by DISCOVER users. An attempt was made to recommend for selection by COCIS, a terminal having good light pen characteristics, accessible microcode features, realistic costs, and sufficient ruggedness to withstand above-average rough treatment by users. Equal importance was attached to recommending a terminal vendor having a solid financial basis and reputable field service policies.

Services

1. Oregon Information System Data Preparation - TENTIME provided services to enter the hard copy information into the data base on the DECsystem-10. This service included editing source material, keypunching source data, and final editing of the data files in the system.

Terminal Specifications and Alternatives for Users

Two compatible teletypewriters are known to be available on a monthly basis in the Denver area. Allow an additional \$10-\$15 per month for paper and ribbon to be separately ordered. One cathode ray tube (CRT) has been identified which meets all the known requirements for delivery of both the Oregon CIS and DISCOVER components of COCIS. Monthly rental and annual leasing costs are not yet known.

| Terminal Name & Model | Features | Cost | Conditions | Vendor |
|--------------------------|--|--------------------------------|--|--|
| Decwriter LA 36 | <ul style="list-style-type: none"> • 30 characters per second • Accoustacoupler included • Maintenance included | \$90/mo plus \$55 installation | <ul style="list-style-type: none"> • 30 days notice to order • one day termination notice | Contact: Bob Goard, 427-2121 Am. Teledata Corp., 7290 Samuel Dr. Denver, Co. |
| IBM 2741 | <ul style="list-style-type: none"> • 14 characters per second • Maintenance included • Accoustacoupler not included • Selectric Typewriter mechanism | \$108/mo plus \$40 shipping | <ul style="list-style-type: none"> • 30-60 days notice to order • 30 days termination notice | Contact: Lee Steckmest, 831-5000, IBM Corp., 777 Grant Denver, Co. |
| Delta Data System, 4000L | <ul style="list-style-type: none"> • 30+ characters per second • Addressable cursor • 80 columns X 25 lines • Regular and Reverse Blinking • Programmable Micro-processor | \$3,300 plus \$100 shipping | Unknown at this time | Delta Data Sys. Woodhaven Industrial Park Cornwells Hts. Penna. 19020 A/C 215 580-7621 |

If you should choose other terminals be certain they have the following characteristics:

For Teletypewriters:

1. 64 ASCII Keyboard with upper case, alpha-numeric and punctuation
2. 80 column print width
3. EIA RS232 interface
4. Impact printer preferred over thermal
5. 300 baud preferred but not required

For Cathode Ray Tubes:

1. 300 baud full duplex transmission
2. 64 ASCII Keyboard with upper case, alpha-numeric, punctuation and rollover features
3. 80 column by 24 lines screen size.
4. EIA RS232 interface.
5. 110 +/- 5 volts alternating current and 60 +/- 1 cycles per second power compatibility
6. Non-destructive cursor with direct address and home capabilities
7. Upward scroll on page overflow
8. Screen erase
9. 5 X 7 character matrix

If you should choose other terminals be certain they have the following characteristics:

For Teletypewriters:

1. 64 ASCII Keyboard with upper case, alpha-numeric and punctuation
2. 80 column print width
3. EIA RS232 interface
4. Impact printer preferred over thermal
5. 300 baud preferred but not required

For Cathode Ray Tubes:

1. 300 baud full duplex transmission
2. 64 ASCII Keyboard with upper case, alpha-numeric, punctuation and rollover features
3. 80 column by 24 lines screen size.
4. EIA RS232 interface.
5. 110 +/- 5 volts alternating current and 60 +/- 1 cycles per second power compatibility
6. Non-destructive censor with direct address and home capabilities
7. Upward scroll on page overflow
8. Screen erase
9. 5 X 7 character matrix

IV. MARKETING AND FIELD SERVICES

Market Stimulation Contacts

During the first year of the grant the Field Services staff has conducted a number of demonstrations of COCIS for potential users. These demonstrations were done in an effort to stimulate the market for an aggressive sales program during the second grant year. The kinds of demonstrations have been varied and they include exhibits at conferences and career fairs, demonstrations to school and agency personnel, private businesses and libraries, and educational institutions as a part of an academic class in career development and career education. The complete listing of demonstrations and dates are contained in Appendix III-A. Feedback from the demonstrations almost without exception has been excellent. There have been the occasional times when the computer was down and, as one might expect, some negative feedback resulted.

Marketing Plan

Throughout the year COCIS has been evolving its marketing program and priorities for the second year. There have been a number of revisions made to the initial version. The plan has been developed with the concept that during the second year a statewide marketing effort will be made selling both the computerized and a non-computerized version of COCIS. The new organizational structure will include satellite centers in the Pueblo region and Western Slope as a part of the effort to saturate the state. Although the priority target for the second year remains the school systems, a similar effort will be made to sell the program to state agencies.

The marketing plan includes the following:

Product - Localized occupational and educational information represent the core product offering to be delivered in three forms: 1) by computer, 2) by printed copy with needlesort and, 3) by microfiche and needlesort. Computerized delivery will be available in the Denver-Metropolitan area effective September 1, 1976. Completed development of a needlesort occupational card deck is scheduled for January 1, 1977 pending agreement with Colorado VIEW.

Photo offset copies of the occupational descriptions, preparation statements, educational and training file and the employers file would be available at that time. Cooperative development with COVIEW of a microfiche version of that same information is slated for marketing September 1, 1977. (See Appendix III-B, COCIS Product Offering.)

In-service training, technical troubleshooting and written guides for student, client and staff use will also be offered by the Field Services unit. This support component of the greater COCIS product is designed to ensure the knowledgeable and efficient use of all delivery forms of the career information system in keeping with individual organizational needs.

Costs - A universal \$1.50 per user consortium cost will apply to all three modes of information delivery. Delivery choice is a separate and independent organizational decision and the costs of each delivery form become self-justifiable. This method of costing possesses ultimate equity for consortium members of all sizes and state location. The lower per user rate for more than 4,000 users encourages cooperative contracting efforts among organizations and the uniform cost regardless of delivery mode encourages the upgrading from manual to computer systems.

The cost formula and rate were based largely upon the experience of the Oregon CIS. Preliminary Income Projections (Appendix III-C) indicate that COCIS must have commitments to serve some 67,000 users by September 30, 1977 in order to generate required income for continuing program operation. Excluding other sources of income, a paid user base of 240,000 Coloradans is projected to ensure complete self-sufficiency at the \$300,000 annual budget level.

Target Populations - Marketing efforts will focus on both the educational and governmental agency markets. Initial and follow-up marketing contacts will include but not be limited to:

- The 71 school districts with secondary school populations in excess of 500 students (includes both junior and senior high schools)
- The 17 regional Boards of Cooperative Services which provide centralized career education and other support services to groupings of school districts

- The 4 area Vocational Schools serving as special purpose Boards of Cooperative Services
- The state's 15 community colleges
- Colorado's 13 public colleges and universities
- State Department of Labor and Employment concerning COCIS interface with the proposed computerized Job Match System
- State Department of Institutions regarding use in correctional and mental health facilities
- State Department of Social Service as applies to Welfare, WIN and vocational rehabilitation clients
- The Governor's Manpower Council and the 10 Manpower prime sponsors and appropriate subcontractors
- Selected community service programs serving disadvantaged minority populations

Successful marketing to these groups would offer COCIS a diversified user base geographically distributed throughout Colorado serving young adults and adults of all ethnic backgrounds. (See Appendices III-D through III-G, Proposed Target Populations, Priority Groupings of Target Populations, The 5 COCIS Regions and Second Year Marketing Timetable, respectively).

Marketing Strategies - A number of underlying strategies have been incorporated into the COCIS marketing effort to optimize the total number of Coloradans using the career information system statewide.

Multiple Delivery Modes - The accelerated development of a needlesort accessing strategy to the COCIS occupations in printed forms will make statewide delivery a reality during the second grant year. This broadened product mix gives potential users a choice of computer, microfiche and print delivery to best meet their individual pocketbooks and intended application (i.e., counseling versus classroom).

Statewide Demand Stimulation - Availability of non-computerized career information delivery lifts the geographic restrictions and enables statewide marketing. Satellite offices in Grand Junction and Pueblo staffed by part-time professionals will service the sparsely populated western slope and southeastern regions of the state and lend local credibility to those areas. All three

delivery modes will be promoted throughout the state. This will help to stimulate advanced demand for the computer-based system in areas where it is not yet available and for the microfiche system in preparation for its Fall, 1977 introduction.

Pilot Demonstration Program - In the spirit of "seeing is believing" COCIS will make its computerized system available on an income producing, one to three months basis to interested organizations. In this way a leading high school within a district, special agency programs or appropriate field locations have the opportunity to evaluate the effectiveness of COCIS in serving the career information needs of their particular user population. Personnel from nearby locations may also observe the "in-house" operation and lend knowledgeable decision making input before committing to the larger sums required by that delivery mode. A special telephone line will also be available for potential users to access the computerized system for demonstrations for several hours.

Group Contracting - Many small locations, such as rural school districts, may not have the financial resources to independently subscribe to COCIS. In such cases, a number of small districts will be encouraged to combine forces in a collective agreement whereby the COCIS materials may be shared on a rotating basis (i.e., a portable computer terminal). Consideration is also being given to a costing structure which would encourage central contracting with multiple location statewide governmental agencies.

Initial Market Contract and Research - Some school districts or state agency offices will be more receptive to COCIS than others. In order to optimize the success of potential of a sales contract, an initial informal meeting will be held with central administrators to both inform about COCIS and learn about existing and projected programs, funding and key personnel. This meeting will allow COCIS to better assess the level of organizational, ideological and fiscal readiness so that marketing prospects may be prioritized. It will also lend insights as to the prevailing patterns of decision making efforts. Those organizations exhibiting the strongest interest and immediate fiscal resources would become qualified COCIS prospects and receive initial marketing attention.

Promotional Activities and Materials -

A. Presentations and Demonstrations

Counselor, teacher, administrator and other staff groups within prime target schools and agencies will receive in person COCIS presentations. Participants will view a slide-tape presentation and experience a "hands-on" demonstration of the computer and needlesort versions. Portable computer terminals make on-site demonstrations possible anywhere in the state and the COCIS Demonstration Center provides facilities for groups up to 15 and will serve as a showcase of computer equipment alternatives for DISCOVER demonstrations during the second year of development. COCIS will also continue promotional efforts at conferences and conventions such as the Colorado School Counselors Association, the State Convention of School Board Superintendents and Administrators, the Career Exploration Fair and other special interest gatherings throughout the state.

B. Public Relations Materials

The quarterly COCIS newsletter, "Colorado Careers" reaches over 800 school and agency personnel with news of COCIS events and developments. A general purpose brochure and numerous special topic handouts also provide needed information regarding COCIS content, costing and equipment. A video-tape of student and staff reactions to COCIS test sites will also be available for interested viewers.

C. Media and Special Promotions

Under consideration for second year marketing are radio and TV appearances, public services announcements, newspaper articles, production of a COCIS film for statewide circulation and shopping center demonstrations.

Training Program

The following outline of training has been prepared by the field services staff. A coordinator's handbook, which will be used as part of the training materials, is in the process of being finalized and will be available October, 1976.

In addition to supplying updated, localized occupational and educational information to subscribing members, COCIS will also provide initial and continuing training and related support services.

Local Coordinator Training

1. Each user site will designate a local coordinator at least 30 days prior to the commencement of contracted services. The local coordinator serves as the principle liaison to COCIS in communicating user problems and needs, and assumes responsibility for efficient site management.
2. Within 10 working days of the contract starting date COCIS will conduct Phase I training individually at the user site or at a central location for a group of coordinators in the case of multiple-location consortium members. Group training of coordinators will occur when geographic and time restraints so warrant.
3. Phase I Coordinator Training content will be oriented to the appropriate delivery mode(s) and shall include:
 - Introduction to equipment operation and troubleshooting procedures
 - Structured review of information content, methodology of preparation, and update procedures
 - Explanation and practical "hands-on" exercises of the use of COCIS accessing strategies and internal program movement (for computerized delivery)
 - Suggestions for integration into counseling and classroom activities
 - Guidelines for introduction to staff and users
 - Publicity recommendations to encourage system use
 - Research data
 - Evaluation procedures and feedback methods
4. Phase II Coordinator Training occurs 30-60 days after Phase I training. The agenda will be set with the attending coordinator(s) based on individual complaints, questions, needs and COCIS observations of use. Anticipated topics include:

- More detailed discussion of information content
- Applications for special purpose use in the organizational setting (i.e., for classroom social studies class or prison inmates preparing for release)
- Suggestions for COCIS content amendment and expansion
- Efficient scheduling of materials availability and use
- Potential for para-professional to assist in COCIS use (computer system)
- Further promotional recommendations to encourage staff and student/client use
- Planning for special purpose staff workshops

Staff Training

The Field Services Unit is available for special purpose staff training at school or agency request. Previous experience of Career Information Systems elsewhere indicates that many local coordinators take an active role in promoting and training CIS use among local staff. In such cases, COCIS shall serve a support role. Direct staff training will be available to teachers for instruction in classroom applications during 1977, by request. Other workshops will be developed for special purpose applications in a number of settings as indicated by the expanding nature of member organizations. As the COCIS user base grows, specialized training in areas such as these may be offered:

- Classroom exercises and applications by grade level and subject area
- Applications for vocational rehabilitation clients, mental patients, supervised legal offenders, inmates, college students, unemployed adults, mid-life career changers and pre-retirees

The potential for college credit courses in COCIS content and use also exists.

Written Support Materials

1. A User Guide for the computerized delivery mode will be available in the fall of 1976 with a needlesort and print-out instructional booklet completed by January 1977. A common occupational content will include:

- An introductory statement of "What is COCIS".

- Self-assessment 24 item "QUEST" questionnaire
- Alphabetical listing of occupational code numbers
- Recommendations for follow-up action after COCIS use

In addition, the computer-based system will also include instructions for moving from one program file to another and the need-sort version of "QUEST" will offer step-by-step sorting instructions and produce exercises to ensure proper initial use.

2. An interim "Coordinator Handbook" will be available in September 1976 and will include:

- A statement of COCIS and local site responsibilities
- Guidelines for initial set up and ongoing management of the computerized system
- Explanation and brief documentation of COCIS information development rationale and procedures
- Detailed instructions for internal program movement
- Suggestions for use in counseling and classroom settings
- Equipment operations and troubleshooting procedures
- Procedures for forwarding questions about existing content and ideas for new content

During the second grant year the Coordinator Handbook will be used to reflect expanded information content and features. Sample exercises for individual and small group use in a variety of organizational settings. The final Handbook will include instructions for use of all three COCIS delivery modes.

Cost Formula

Perhaps one of the most difficult things to come to grips with is the establishment of a cost formula. COCIS staff has spent a large number of hours agonizing over an equitable method of assessing users and at the same time trying to keep the costs high enough to support the career information system. The first formula agreed upon was a per user terminal cost. This was used on an interim basis to make projections. After another period of trial and error, this formula was discarded and instead a per user fee was established. Appendix III-H contains the final cost formula approved by the Board. Appendix III-C contains the Preliminary Income Projections and their sources.

Materials Produced

Throughout the year COCIS has produced a number of handouts to be used during the demonstrations and at test sites. These have included: Career Exploration Handbooks, Brochures and special handouts on information content and cost. A final sales brochure is in the last stages of printing. Appendix III-I is the proposed final User Handbook designed for use in schools this fall. The final version will be available September 30.

As previously mentioned, a video tape of interviews at test sites is being prepared for use in marketing. In addition, a standardized slide-audio tape presentation is being developed.

Contracts

User contracts have been developed by Tentime for use with schools and other agencies for delivery of a computerized system. For a copy of the Tentime User Contract please refer to Appendix III-J.

The proposed COCIS-User Contract for consortium fees is in the process of being finalized. A copy of the proposed version is contained herein as Appendix III-K.

Appendix III-L is the proposed COCIS/Computer Service Contract.

Feedback

Field Service staff is responsible for providing the Information Development staff with regular feedback from users of the system. The following methods will be used:

1. User-grams which will reflect information that needs immediate attention.
2. Annual evaluations of the programs by counselors, coordinators and other supervisory personnel.
3. An on-line assessment by individual users.
4. Informal feedback, i.e., calls to user agencies, dropping in on users when in the vicinity.
5. The use of a statistical package to ascertain amount of usage of each file by each user agency.

In addition it is the intent of the User Services staff to hold regional conferences from time to time. These will also promote input and feedback concerning the effectiveness and attractiveness of the system, recommended changes, new informational needs, etc.

V. FINIS

The COCIS staff wishes to convey to the NOIS staff their thanks and gratitude for their assistance, support and understanding throughout the trials and tribulations encountered from October 1, 1975 through September 30, 1976.

Administrative Staff

Pauline A. Parish, Director. M.A. from Stanford in Guidance and Counseling; Twenty-two years administrative and guidance counseling experience; current position at University of Colorado, Director of Career Development and Placement.

Anita Reisig, Administrative Assistant. Secretarial Diploma from Brown-Macky Business School, Salina, Kansas. Various secretarial positions at local Boulder firms.

Lyn Richards, Secretary. Variety of secretarial positions in various parts of the country.

Aileen McCain, Typist. Prior to joining staff at University of Colorado attended college in Nebraska for four years as an English major.

Information Development Staff

Warren W. Wolff, Deputy Director. Ph.D. candidate in Counseling at University of Colorado. Extensive experience in the design of computer-based systems as an Air Force officer; presently a Coordinator for Career Development at University of Colorado.

John Evans, Information Development Specialist. M.S.E. degree in Guidance and Counseling; five years experience in employment counseling and job placement activities with special manpower programs serving military personnel, parolees and the economically disadvantaged.

Dale Lathrop, Information Development Specialist. B.A. in Mathematics from the University of Colorado.

Christian M. Madu, Administrative Intern. A native of Nigeria; master's degree in Business Administration; pursuing doctorate in economics; three years of varied experience in personnel administration and labor relations.

Aileen Lucero, Administrative Intern. Enrolled in Sociology program; worked as teaching assistant and researcher for several African-American employment and educational programs.

Field Services Staff

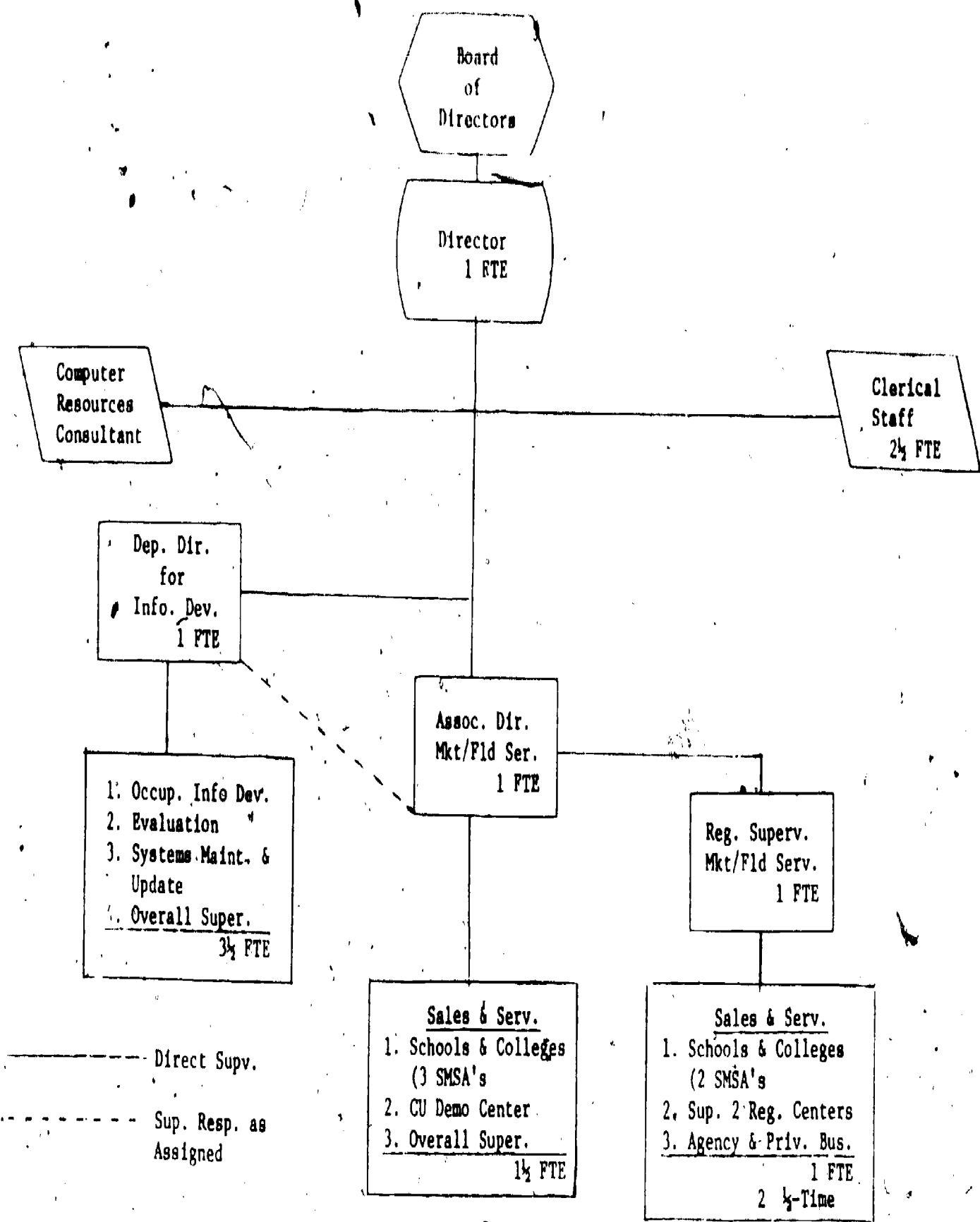
Frank Scanlon, Associate Director for Marketing/Field Services. has completed course work at the University of Colorado for his M.A. Taught Spanish at C.U., Denver Center. Twenty years experience in marketing - ethical medical/dental products, computerized orthodontic diagnosis system and industrial products.

John Lickly, Marketing/Satellite Center Supervisor. M.A. in Guidance and Counseling after three years of staff and consulting experience in job classification and related personnel work; was involved in career counseling and job development as a University Cooperative Education Program Coordinator.

Sylvia Parker, Field Services Specialist. B.A. from Colorado State University; graduate work at University of Colorado; certified secondary teacher; labor market analyst with Stanford Research Institute for three years; additional experience in writing, research, employment counseling and testing, media production and training.

Carole Ishimaru, Administrative Intern. B.A. in English, M.A. in Psychology, Guidance & Counseling; pursuing master's degree in public administration; nine years educational experience as English teacher in Iowa, exchange counselor in Washington, elementary and psychology teacher in Hawaii.

NEW ORGANIZATION STRUCTURE

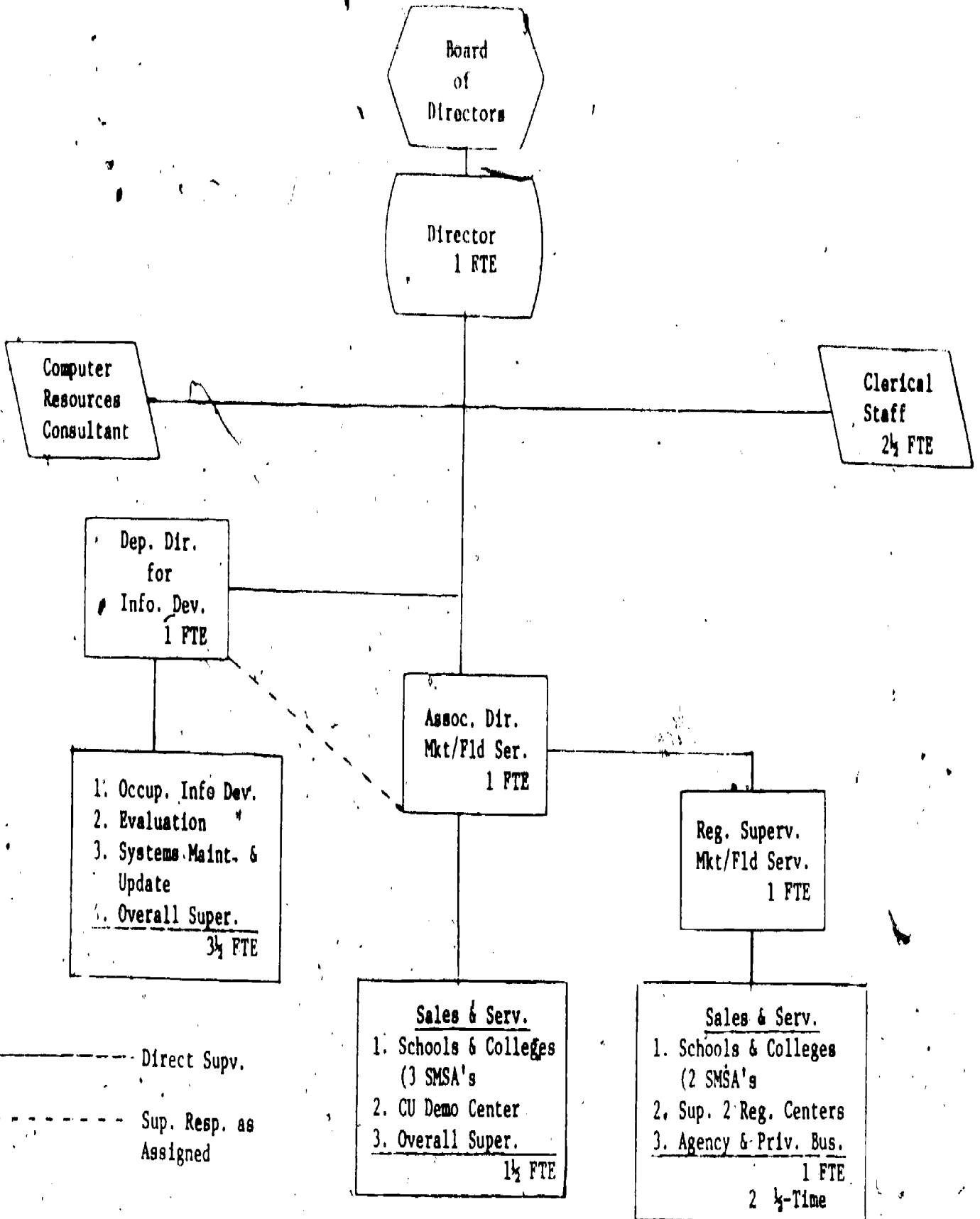


----- Direct Supv.

- - - - - Sup. Resp. as Assigned

Appendix I-B

NEW ORGANIZATION STRUCTURE



Appendix I-B

August 1976 - COCIS Board Members

Wilbur M. Richardson, Director
Div. of Automated Data Processing
2002 S. Colorado Blvd.
Denver, Co. 80222
759-1221

Dr. Keith Asplin, Director
Academic Affairs
Colorado Commission on Higher Education
Room 1000
719 State Services Bldg.
1525 Sherman Street
Denver, Co. 80203
892-2723; 892-2115

Peter Burton, Director
Personnel Research, Planning and
Information
United Bank of Denver
P. O. Box 5247
Denver, Co. 80217
861-8811

Mr. Michael Byrne, Exec. Vice President
Chamber of Commerce
7100 N. Broadway Bldg., 1B
Adams City, Co. 80221
426-1570

Mr. Robert Cooley, Director
Southeast Metropolitan BOCES
3647 S. Santa Fe
Englewood, Co. 80110
761-8757

Gary E. Angerhofer
Management Analyst II
Department of Social Services
1575 Sherman, Room 710
Denver, Co. 80203
892-2444

Page 2 - Board Members 8/76

Gerald Gerber
Career Development and Counseling
University of Southern Colorado
Pueblo, Co.
549-2581

Paul Hoskins
Division of Labor and Employment
1210 Sherman, Room 358
Denver, Co. 80203
893-2400

Dr. Ronald Kelton
Colorado Department of Education
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892-2247

Lloyd Lawson
State Board for Community Colleges
and Occupational Education
State Services Bldg.
1525 Sherman
Denver, Co. 80203
892-3071

George Mercer, Counselor
Craig Junior High School
Craig, Colorado
824-3287

Irv. Moskowitz
Career Education Center
Denver Public Schools
26 W. Elliot Street
Denver, Co. 80211
458-8218

Page 3- Board Members, 8/76

Ms. Ellen Mrachek
2270 Oswego
Denver, Co.
366-0575

Gene Nightingale
State Office of Planning and Budget
1525 Sherman, Room 617
Denver, Colorado 80203
892-3386

Jack Offerle
Personnel Officer
Department of Institutions
4150 S. Lowell Blvd.
Denver, Co. 80236
761-0220 Ext. 410

M. L. Sandos (Sam)
Manpower Development and Training
770 Grant, Room 222
Denver, Co. 80203
892-3165

Ms. Margaret Whelan
850 20th Street
Boulder, Co.
442-2434/

MINUTES OF THE COCIS BOARD MEETING
9:00 a.m., November 25, 1975

The members of the COCIS Board were introduced by the Acting Chairperson, Wilbur Richardson. Members present were: Miles Riznik, representing the Department of Institutions 761-0220 x 208, Rich Adamich, State Planning and Budget 892-3386, Frank Abbott, Colorado Department of Higher Education 892-2723, James Harris (substitute), State Board for Community Colleges and Occupational Education 892-2335, Chuck Sisson, Department of Education 892-2247, and Herrick Roth 573-6440, Colorado Department of Labor and Employment. Representatives of State Social Services and State Manpower Services were not present. Visitors were: Eric Durland, State Planning and Budget 892-3386, and the COCIS Staff members: Pauline Parish, COCIS Director; Warren Wolff, Associate Director for Occupational Information and Systems Modification; Tim Rivera, Associate Director for User Services; Jean Wisner, Occupational Information Specialist; John Evans, Occupational Information Specialist; John Lickly, User Services Specialist; Linda Wilkinson, Su-Yu Wu, and Terry Odendahl, Administrative Interns.

Pauline Parish introduced her staff and explained staff organization. The COCIS staff is organized functionally to accomplish two main tasks: Occupational Information Development staff is responsible for the preparation of occupational information, systems design and modification. The User Services staff is responsible for the sales and marketing of the COCIS system, in-service training programs, contact negotiation and trouble shooting. Each staff member introduced themselves and gave brief personal information. Ms. Parish mentioned that COCIS is still missing one professional staff member, a User Services Specialist, and 2 and 1/2 clerical staff members who will be hired in the near future.

Tim Rivera briefed the board on the Consortium Constitution by highlighting each article of the constitution and explanation of the responsibilities of the Board.

Ms. Parish mentioned that there had been some controversy in the U.S. Department of Labor, Manpower Administration over requiring an Interagency Consortium. Some felt that State agencies could not work well together but Ms. Parish said that it has worked out well for Colorado in the past. She also said that the COCIS staff was required to submit a constitution in order to receive the grant. However, she stressed the fact that nothing was particularly sacrosanct in the constitution except for a few points which were stipulated in the grant and that the Board should feel free to make any changes they felt necessary.

Mr. Abbott asked if this was the first board meeting. He said it seems as if a lot had already been done. He was concerned that the board would really be a governing body. The Chairperson replied that there had been an advisory committee which had assisted throughout the development of the grant proposal. Pauline Parish mentioned that she felt the COCIS staff needed a board and to have someone to turn to when they needed help. She said that in his position as Chairperson of the Interim Committee, Wilbur Richardson had been a most effective and helpful person.

The election of officers was discussed. Since there was not a quorum present the board decided to delay elections until the next meeting and decided to appoint an interim chairperson at the end of the meeting.

Ms. Parish asked how the board would like to proceed with the appointment of the rotating members of the board. She suggested that the staff might be able to give the board some help by suggesting people who had already served on similiar boards in the past, such as CVIS. She suggested that she didn't want to take over any of the functions of the board but that the staff would assist if the board wished.

Mr. Abbott agreed with the procedure suggested by Ms. Parish. Mr. Harris suggested that the staff get a list together with background of people they think would be good on the board, and that the board members would also make nominations.

Ms. Parish gave a brief history of the COCIS Project. The computerized Vocational Information System (CVIS) was implemented in the Boulder Valley School District and is currently in operation there and in eight other schools in the suburban Denver area. The CVIS Project was initiated by Chuck Sisson and carried out through the efforts of Lorry Pape. The funding for this project was received by the State Department of Education, from Title III funds and was supervised by Denver Area School Superintendent's Council (DASSC).

The Oregon Occupational Information Access System (OIAS) was implemented at the University of Colorado with funding from the University, grants from the Boettcher Foundation and the Colorado Commission on the Status of Women, and assistance from the Research and Analysis Unit of the State Department of Labor and Employment.

These two projects agreed to merge and to cooperate in the preparation of an initial planning grant for the development of the Colorado Career Information System. The project was approved by both Governors Vanderhoof and Lamm. The State of Colorado was one of twenty out of 44 to receive an initial planning grant of \$5,000 and one of eight to actually receive a final grant. The total money to be received by the state over a four year period will be approximately \$1,000,000. There has been a history of real cooperation between all the various agencies in the state in order to make the grant happen.

In the first year (Oct. 1, 1975 - Sept. 30, 1976) the state will receive \$331,856. The budget was negotiated for the Board by the State Planning and Budget Office with the NOIS (National Occupational Information System) Manpower Administration of the U.S. Department of Labor. This year the state will provide \$50,000 of in-kind service. Next year the state is expected to provide approximately 25 to 30% of the Federal budget which will remain approximately the same. In the third year, the federal government will fund 50-75%, and the final year, the federal government will fund 25-50%. By this time the COCIS system should be self-supporting, obtaining its budget from user fees.

Mr. Sisson asked if the money was handled through Colorado University or through the state. Mr. Adamich replied that State Planning and Budget Office was the apportioning agency although most of the money is channeled to CU. The Budget Office will keep 10-20% of the overhead for its own administrative costs.



The Chairperson mentioned that the success of the COCIS project has to do with the success of the staff in marketing it. He said that it was planned to be self-supporting. A majority of the costs probably would be paid by the user.

Warren Wolff gave an overview of the COCIS Project. The underlying assumption made by the Department of Labor was that local career employment and educational information was available, but was not getting to the people who needed it. Along with this the Department of Labor realized that some good delivery systems (both computer and microfiche) were available for delivering this information. So the Department of Labor thought that a combination of these two would be beneficial and was needed and decided to fund those states with the best proposals and most impressive records of state cooperation on the proposed project.

The primary target populations for the first year of the grant will be secondary school students, school drop-outs, and ethnic minority groups. Other important target populations are community colleges and universities, correctional institutions, employment service offices, welfare offices and libraries throughout the state.

CVIS is already operating in the Boulder Valley Schools and some areas of Denver. The Oregon system is operating at C.U. However, the staff realizes that there will be some trouble getting computer systems into all areas of the state and, consequently, Vocational Information for Education and Work (VIEW) the microfiche system will be also utilized in these places. The computers used will be the IBM 370 and DEC 10 Computers in the Boulder Valley Schools and the State Human Resources Computer in Denver. The Human Resources Computer will be able to deliver to all county seats if terminals are allocated for use in the State Teleprocessing Network in the next fiscal year.

Mr. Abbott asked if there was a central data base of information on some computer in the state.

Mr. Wolff replied that there will be two identical data bases, one at the Boulder Valley Schools serving the Eastern slope and Denver metropolitan area and the State Human Resources computer serving all the county seats. From the county seats, lines can be run to various school systems throughout the state. However, it is possible that if a school system has access to a computer capable of operating COCIS and it is economically feasible, a school system could replicate the information already in the primary two computers.

Jean Wisner discussed the information sources which the COCIS staff is developing. These sources are statewide and regional organization and individuals, such as the Employment Service, the Mountain States Employers Council, the DIME project, various Chambers of Commerce through the state, Federal government agencies and various publications. Ms. Wisner said that the staff is establishing contacts with these agencies and procedures for obtaining information. She also mentioned that she is developing a COCIS library consisting of a collection of books, organizational information on vocational labor market and cataloging the materials.

4

John Evans discussed the problems incurred in the selection of occupations to be used in the system and a classification method. He mentioned the list of occupations already developed for the system and some criteria for including occupations in the system (i.e., the number of people employed in the occupation within the state, identifiable training programs within the state, future prospects for projected growth for the occupations, the emerging occupations within the state and the strength of interest shown towards a particular occupation).

Mr. Evans mentioned that a secondary list of occupations is being prepared in which there is little data. These occupations will be gradually added to the system when accurate job descriptions, labor market data, and projections are completed. This information will be checked for accuracy by the Research and Analysis Unit of the Department of Labor and Employment. The DOT Occupational Analysis Field Center in Salt Lake City will be providing information on emerging occupations in the mountain states area.

Mr. Abbott asked what Mr. Evans meant by local. Mr. Evans explained that the state will be divided into five regions and specific information about occupations in each of these regions may be obtained by the user.

Mr. Abbott asked if the State Board for Community Colleges and Education Occupations had a fairly comprehensive list of this information. Mr. Harris replied that they did and had been working on it for about seven years. Mr. Abbott said that to be blunt he thought that the COCIS staff and the State Board ought to be getting together on this. Mr. Wolff replied that he didn't think there was any problem there and that there has been extensive cooperation between the two groups.

Terry Odendahl discussed the Women's Career Counseling File. This particular part of COCIS contains information on traditional and nontraditional jobs for women, employment myths and stereotypes about women, data on how to find a job, resources for women in the state of Colorado, and a bibliography of books for the interested woman to read.

Warren Wolff enumerated the problems the staff had related to Occupational Information Development. One major problem continues to be the receipt of information from the Division of Employment. Several meetings have been held between the Employment Service Research and Analysis personnel and the COCIS staff. Cooperation has been good but the problems to be overcome in generating the information in the format required are very complex. And a final concern is the absence of terminals in the state. Warren observed that there seemed to be adequate computer time-sharing capability but insufficient numbers of terminals to allow use of the computers.

Su-Yu Wu discussed the conversion of the system from a machine dependent system to one which can be used on different types of computers.

Warren Wolff discussed the Discover Software. Note Discover is the second generation CVIS. Discover is another computerized careering information system being developed by a joint HEW - IBM grant based at Western Maryland College. It will be installed in the Boulder Valley Schools in the next year.

Mr. Wolff also gave a terminal equipment report. He said that the COCIS staff has purchased a Texas Instrument portable terminal for use in demonstrations of COCIS. A second portable terminal is on order and should arrive in February.

Three terminals are also on order which will be used in the COCIS demonstration Area at C.U. Two new DEC terminals with a built-in copier can provide a copy for the user of anything displayed on the screen. The third terminal is a DEC teletypewriter machine for use in inputting and editing by the development staff. Larry Pape is placing this order through Boulder Valley Schools and is receiving a quantity discount of which COCIS can take advantage. This will mean that current CVIS users will also receive the new DEC terminal in April, 1976.

After re-convening from a break, Tim Rivera discussed the User Services Side of the COCIS Project. He said that they are trying to make people aware that they exist by use of a newsletter, publications, demonstrations of the system, development of extensive mailing lists, and by the identification of a target population.

Linda Wilkinson talked about the publicity which was being developed. She mentioned the design of a brochure explaining the system, the compiling of notebooks of computer printouts on various parts of the system, and various publicity materials. She invited the Board to look at these materials at the end of the meeting.

John Lickly discussed the demonstrations that had already been done and were planned for the future. He enumerated the ten demonstrations which have been completed thus far.

Ms. Parish briefly discussed a Marketing Plan that is currently being developed by the User Services staff and herself. She mentioned that people are welcome to come to the COCIS office or that COCIS Staff would go to them for any demonstrations.

Mr. Abbott asked if they would be advertising as a delivery system on microfiche or computers.

Ms. Parish replied that there were a variety of options open. It is possible to use the computerized terminal system now. Such things as long distance or Watts lines across the mountains would be discussed. She said that the User Services Staff will work with each contracting agency separately and negotiate for their individual needs. The microfiche delivery system will not be developed until next year.

Mr. Sisson brought up the idea of using the state microwave system for transmitting, but it was mentioned that most of the microwave equipment in the state is out of date.

John Lickly discussed the alternatives for contracts and pricing. He mentioned that the total user cost involves the operational costs plus consortium costs. Operational costs involve hourly, monthly, or yearly computer use, terminal rental, and communication charges, such as long distance telephone calls. The Consortium charges involve informational updates, system improvements and new developments, in-service training for counselors, and continuing marketing efforts. Pricing alternatives include charging by the terminal, number of user schools or agency cities, number of potential student or client users, number of actual student or client users and number of hours of on-line use.

Operational costs for Colorado CVIS users are now approximately \$3,800 per year. To maintain a self-sufficient program at the current funding level, consortium cost would need to be set at around \$1,200 per terminal (assuming 250 terminals were in use.) The \$5,000 total user cost per terminal estimate represents \$3.30 per hour of use to a school using COCIS eight hours per day, five days per week for nine months each year.

Tim Rivera discussed the fact that although there are no users now the User Services Staff will be responsible for in-service training and trouble shooting. Warren Wolff mentioned that COCIS staff could be doing in-service training and orientation with current CVIS users in January. In fact, we do have users currently on board.

Warren Wolff discussed Project Discover, a system developed jointly by HEW and an IBM grant. This system allows the student or client to enter it at a particular level of career maturity. In addition there will be a college version supported by the Exxon grant for the college student seeking assistance in career decision-making. Mr. Wolff indicated the numerous advantages of this system but also said that it would not be on the market until July, 1976.

Ms. Parish mentioned that the Colorado system had the possibility of becoming a test-site for Discover. We are now the third choice next to Baltimore and Illinois. She felt we would be a good choice for a test-site because of our Chicano population.

Ms. Parish discussed the Colorado-Oregon Contractual Agreement. She explained that the first contract which Oregon hoped to negotiate with Colorado was not sufficient for our needs because it limited the changes which the COCIS project could make on the system. The Oregon contract negotiations are underway to make the contract less restrictive.

Ms. Parish also stated that the grant stipulated two types of evaluations which must be made on the project, a Process Evaluation Plan and an Impact Evaluation Plan. Eric Durland, the evaluator for the State Planning and Budget Office stated that he was responsible for the evaluation. Ms. Parish mentioned that this evaluation and method must be approved by the Board.

Mr. Wolff suggested that an Interim Technical Committee might be appointed to help the staff in evaluating and approving of technical decisions dealing with computer networks, communications and terminal features. The chairpersons agreed to draw up a list of possible candidates for this committee and present it at the next board meeting.

Ms. Parish discussed the Washington training conference which was held November 10-14 for the State Directors and Associate Directors for Occupational Development. At this meeting Ms. Parish and Mr. Wolff were able to meet and work with the NOIS staff and learned what the staff had to offer local development of systems.

The Board asked Wilbur Richardson to serve as interim chairperson until the permanent officers are elected.

The next meeting was to be set for the week of the 15th of December. The meeting was adjourned at approximately 12:00 noon. A demonstration of the terminal was provided for interested members of the board following the meeting.

MINUTES
COCIS BOARD OF DIRECTORS MEETING
January 7, 1976, 1:30 p.m.

PRESENT:

Board Members

Wilbur Richardson, Division of Automated Data Processing, Ad Hoc
Miles Reznik, Department of Institutions
Fred Langille (for Henry Foley), Social Services
Keith Asplin, Colorado Commission on Higher Education
Charles Sisson, State Department of Education
Lloyd Lawson, State Board for Community Colleges & Occupational Education
Richard Adamich, State Planning and Budget Office
Leslie Schlitt, Department of Labor and Employment
Pauline A. Parish, Director, COCIS, Ad Hoc

Other

Eric Durland, State Planning and Budget, program evaluator for state
John R. Lickly, Associate Director, COCIS
Jean Wisner, COCIS staff member

ABSENT:

Board Members

M. L. Sandos, Colorado Division of Manpower

The meeting was called to order by Wilbur Richardson at approximately 1:30 p.m.

The minutes of the last meeting were approved as circulated.

Pauline Parish explained the Financial Report. There was no discussion about the report.

Old Business

Election of Officers. Keith Asplin nominated Les Schlitt for chairperson. The nomination was seconded and he was unanimously voted as chairperson. The election of other officers was postponed until other board members are finalized. There was no further discussion on the election of officers.

Consideration of New Board Members. In addition to the 8 permanent members on the board, 8 to 10 rotating members will be appointed. A list of

potential members prepared by the staff was distributed to each board member. Les Schlitt suggested that each board member choose his top three candidates from the list and bring those choices to the next board meeting. He also suggested that if any board members had additional names to recommend, that that board member should submit the names to Mr. Schlitt prior to January 19. Les Schlitt would then inquire as to their willingness to serve on the board. It was discussed that other considerations for representation on the board are: private business sector, geographical distribution, labor unions, legislature and student user.

Appointment of Technical Committee. Wilbur Richardson agreed to act for the board as chairperson of the Technical Committee. He suggested and it was agreed that Bob Yackell (Planning and Coordination Team of ADP) would be the state's representative on the Technical Committee. There was no further discussion about the Technical Committee since Warren Wolff was not present.

Wilbur Richardson mentioned that the statewide teleprocessing network is behind schedule and that it has an unknown future.

New Business

Oregon Contract. A copy of the proposed contract was distributed to each member. Pauline Parish explained that the contract was rewritten because it placed potential restrictions upon future development and modifications unless approval was given in advance by Oregon CIS. The current revision is based on the State of Washington contract. Lloyd Lawson questioned why COCIS had to pay Oregon \$2,000 for information in the public domain. Pauline Parish responded that QUEST is copyrighted and for Oregon to support and maintain the system, it must be self supporting. Colorado has the same problem.

Letter of Intent to DISCOVER. A copy of the letter of intent to use DISCOVER was distributed to the Board. It was pointed out that the letter was not a binding contract. Miles Reznik raised the problem of the fiscal years being different for DISCOVER and COCIS. DISCOVER's fiscal year begins July 1. Les Schlitt suggested that we pay DISCOVER on a quarterly basis in an effort to solve the fiscal year problem. It was mentioned that COCIS will be getting special privileges since Larry Paper is on the Board of Directors. COCIS will receive the use of DISCOVER software for one year free beginning April 1 rather than July 1. Chuck Sisson raised the question of what year would be the best to get free. Pauline Parish mentioned that DISCOVER would find it more helpful if we paid the fee the first year.

Cost Structure. John Lickly presented his report on consortium costs. Four different cost methods were mentioned (i.e., cost method per terminal, user, building and consortium member). There was sentiment that the per building method had the least to offer. Wilbur Richardson felt that a combination of the remaining three methods was the only way to go. Eric

Durland brought up two points -- that the system should be affordable and widely distributed. Pauline Parish questioned whether or not it was good psychology to give users the system free now and then charge later when the federal funds ran out. Eric Durland felt that we would have to know how many users there would be before we decide on consortion costs. John Lickly said the cost didn't seem to be a major factor to most potential users. People he spoke with would pay as much as \$2,000 for consortion costs. The general consensus was that consortion costs charged now would build up revenues to use in the future for program development as federal funding recedes. The problem of how to handle that money was raised and Rich Adamich said that he would look into the guidelines and limitations of our contract to see if we could hold over funds.

Chuck Sisson raised the question of who would be billed for computer time. Pauline Parish said that the users would be responsible for paying the actual vendor. COCIS would only be involved with consortion costs; however, the COCIS staff would make the users aware of different vendors.

Miles Reznick asked that John Lickly consolidate the three best cost formula alternatives for the board to address at the next meeting. Rich Adamich said that he would consult with Mr. Lickly regarding pricing before the next meeting.

Status Report. Jean Wisner presented the status report for the Information Development staff. The contacts that the staff have made were enumerated and the procedures that have been adopted for development of occupational descriptions were explained. Research is currently being done in the classification system to be used in COCIS.

Time and Place for Future Meetings. Pauline Parish suggested that the board meet monthly initially. Les Schlitt asked the board members what days would not be good for them to meet and he will work on a permanent day for meetings prior to the next meeting.

Adjournment

There being no further business, the meeting was adjourned at approximately 3:30 p.m.

MINUTES
COCIS BOARD OF DIRECTORS MEETING
February 17, 1976, 1:30 p.m.

PRESENT:

Board Members

Miles Reznik, Department of Institutions
Lloyd Lawson, State Board for Community Colleges and Occupational Education
Richard Adamich, State Planning and Budget Office
Leslie Schlitt, Department of Labor and Employment
Pauline A. Parish, Director, COCIS, Ad Hoc

Other

Eric Durland, State Planning and Budget Office, program evaluator for State
John R. Lickly, Associate Director, COCIS
Warren W. Wolff, Associate Director, COCIS
Sylvia Parker, COCIS staff member
John Masci, COCIS staff member

ABSENT:

Board Members

Wilbur Richardson, Division of Automated Data Processing, Ad Hoc
Henry Foley, Social Services
Keith Asplin, Colorado Commission on Higher Education
Charles Sisson, State Department of Education
M. L. Sandos, Colorado Division of Manpower

Since there were not enough members present to reach a quorum an informal discussion was held rather than a formal meeting of the Board of Directors. The minutes of the previous meeting and the financial report were not discussed. The financial report is attached.

National Occupational Information Service (NOIS)

Polly Parish reported that on February 2 and 3, 1976, Kathy Naughton, the Project Monitor and Maurice Burch of the Technical Assistance Staff visited in Boulder. They came to receive an overview of the status of the project and were pleased and satisfied by the situation. Lloyd Lawson suggested that a copy of their report to their supervisors be requested. This was agreed upon by the members present.

MINUTES
COCIS BOARD OF DIRECTORS MEETING
February 17, 1976, 1:30 p.m.

PRESENT:

Board Members

Miles Reznik, Department of Institutions
Lloyd Lawson, State Board for Community Colleges and Occupational Education
Richard Adamich, State Planning and Budget Office
Leslie Schlitt, Department of Labor and Employment
Pauline A. Parish, Director, COCIS, Ad Hoc

Other

Eric Durland, State Planning and Budget Office, program evaluator for State
John R. Lickly, Associate Director, COCIS
Warren W. Wolff, Associate Director, COCIS
Sylvia Parker, COCIS staff member
John Masci, COCIS staff member

ABSENT:

Board Members

Wilbur Richardson, Division of Automated Data Processing, Ad Hoc
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Ms. Parish also reported that on February 23 through 27, 1976, she and John Lickly will attend the NOIS inservice workshop for User Services in Washington, D. C. The topics of the workshop will be the Marketing Strategy and the Impact Evaluation.

Information Development Activities

Warren Wolff reported that the system will be ready the first week in March.

He also reported that the test sites have been chosen and the testing will be done in two phases. All expenses for the testing will be paid by COCIS. The first draft of an evaluation has been completed.

Phase I - Schools only, since they are in session then, but will not be open during the summer. Phase I tests will be held from mid-April to mid-May.* The sites will be:

1. Grand Junction at Mesa College, to cover the Western Slope. The testing will be at the Career Center and students from local high schools will come to the college.
2. Pueblo at Southern Colorado University to cover the medium-sized city. Local high school students will be brought to the University to test the system.
3. North High School, Denver to cover both the large city and a school with a good racial mix.
4. San Luis Valley - an exact location has not yet been determined. This location will cover the rural and Chicano areas.

A fifth test site will be conducted on the DISCOVER system and will be conducted at C.U. Boulder with students from Lincoln High School in Denver.

Phase II - will be conducted later in the spring and summer and will include employment offices, libraries, institutions and Manpower offices.

There are further developments in the choice of hardware. The CRT with copier that has been previously mentioned has been rejected due to lack of cooperation from the manufacturer and to reports that there have been problems with the copier. Currently there is a re-evaluation of possible terminals taking place. Also, a light pen has been found for use with DISCOVER that is reasonably priced.

*There will be an on-site test monitor at each site trained and paid by COCIS.

Field Services Activities

John Lickly reported that the first issue of the newsletter will be completed next week. If any one wishes to add to the mailing list, please send the names and addresses to the COCIS office.

He also reported that three demonstrations were held recently at the Denver Public Schools, Jeffco Schools and at C.U. for the Directors of Counseling from Denver and Arapaho Community Colleges.

Mr. Lickly also said that the marketing plan will be directed to counselors and administrators as well as to school boards. The first efforts will be placed on the 16 largest school districts.

Proposed Consortium Cost Formula

John Lickly distributed a handout, included with these minutes, explaining the proposed consortium cost formula. An extensive discussion followed touching on these topics: definition of the word "location," the potential income using formula, the potential first year income, the gross income to maintain the project, if over-subscribed, the possibility of a rebate, how the funds will be handled and the relationship with the State Planning and Budget Office, the costing formula for the use by the private sector, the costing formula from the other grant states, the possible validation of the cost formula with potential user school budgets.

Polly Parish, at the conclusion of the discussion, asked if the formula could be tried on for size. There was general agreement that it should.

Marketing Plan

John Lickly said that this would be discussed at the next board meeting after he and Polly Parish returned from the Washington, D. C. meeting on marketing strategy.

New Board Members

Due to a lack of a quorum, the choice of the new members was left to the next meeting. Leslie Schlitt recommended that a copy of this list be sent to all board members who were not present. He also said that new names could be added at the next meeting.

Letter to the Department of Labor and Employment

There was discussion about the possibility of sending a letter to the Department of Labor and Employment to obtain the additional help needed for the necessary labor market information. After extensive discussion it was agreed that the COCIS staff would send a letter to Bob Scott requesting the help.

Evaluation

Eric Durland reported that he has done nothing toward the evaluation due to the pressure of work in the State Planning and Budget Office.

The meeting was adjourned at 4:00 p.m.

MINUTES
COCIS BOARD OF DIRECTORS MEETING
March 30, 1976, 9:30 a.m.

PRESENT:

Board Members

Charles Sisson, State Department of Education
Wilbur Richardson, Division of Automated Data Processing, Ad Hoc
Pauline A. Parish, Director, COCIS, Ad Hoc

Other

Warren W. Wolff, Associate Director, COCIS
John R. Lickly, Associate Director, COCIS
Jean Wisner, COCIS staff member
Elizabeth Goldin, COCIS staff member

ABSENT:

Board Members

Miles Reznik, Department of Institutions
Lloyd Lawson, State Board for Community Colleges and Occupational Education
Richard Adamich, State Planning and Budget Office
Ray Garvey, Social Services
Keith Asplin, Colorado Commission on Higher Education
M. L. Sandos, Colorado Division of Manpower

Other

Eric Durland, State Planning and Budget Office, program evaluator for State

Since there were not enough members present to reach a quorum an informal discussion was held rather than a formal meeting of the Board of Directors. The minutes of the previous meeting and the financial report were not discussed. The financial report is attached. Since there were so few board members in attendance, it was decided that in the future, all board members would be contacted and reminded several days prior to the meetings.

New Board Members

It was decided by those present that a letter would be sent to the board members who were not present at the meeting asking for their approval to submit the following names to the governor for nomination as board members: Peter Burton, Michael Byrne, Robert Cooley, Blanche,

Cowperthwaite, Gerald Gerber, George Mercer, Irv Moskowitz, Ellen Mraček, and Margaret Whelan. The board members were instructed to respond if they had any objections by April 16, 1976.

Delivery Vehicles

Polly Parish announced that Larry Pape has submitted his resignation effective May 1, 1976 as technical consultant to COCIS. Since his presence at Boulder Valley Schools was the reason for COCIS using Boulder Valley Schools as its primary deliverer of the system, alternative delivery vehicles were discussed.

Technical Committee

In order for Field Services to put on demonstrations, Wilbur Richardson advised that the cost of hooking up a dial-up teletype port into the State IBM 370-145 would be a \$74.63 installation fee and a \$53.66 monthly charge. He also advised that there would be a 30 to 45 day waiting period once we made the decision to do it.

Warren Wolff stated that he would meet with Bob Yackell (Planning and Coordination Team of ADP) and Mike Ellis (Boulder Valley Schools) next week to discuss the capabilities of putting DISCOVER on the State IBM 370-145 and problems inherent therein.

Classification System

Jean Wisner was to present a Position Paper on the Classification System for COCIS. The presentation was postponed to the next board meeting due to the lack of a quorum. Attached is a copy of the position paper.

The meeting was adjourned at 10:45 a.m.

MINUTES
COCIS BOARD OF DIRECTORS MEETING
May 27, 1976, 10:00 a.m.

PRESENT:

Board Members

Ray Garvey, Social Services
Paul Hoskins, Labor and Employment
Kenneth McNulty, Manpower Council
Miles Reznik, Department of Institutions
Charles Sisson, State Department of Education
Wilbur Richardson, Division of Automated Data Processing, Ad Hoc
Pauline Parish, Director, COCIS, Ad Hoc

Other

Eric Durland, State Planning & Budget Office, program evaluator for State
Mike Ellis, technical consultant, COCIS
Helen Rubinstein, R & A Unit, Division of Labor
Warren W. Wolff, Associate Director, COCIS
John R. Lickly, Associate Director, COCIS
Elizabeth Goldin, COCIS staff member

ABSENT:

Board Members

Richard Adamich, State Planning & Budget Office
Keith Asplin, Colorado Commission on High Education
Lloyd Lawson, State Board for Community Colleges and Occupational Education

Wilbur Richardson called the meeting to order at approximately 10:00 a.m. The minutes of the last meeting and the financial report were approved. Polly Parish reported that a revolving account will be set up when we begin receiving income. This is a requirement of NOIS - all income to COCIS is to be returned to COCIS. She also reported that she is in the process of revising the budget categories for this year's budget at the request of NOIS. She was advised by NOIS that any money that is left over this year will be applied to next year's budget; however, we were urged to spend this year's money this year.

New Board Members

Wilbur Richardson reported that the appointment letters to the new board members were in the governor's office and would probably be mailed out on Friday, May 28, 1976. Polly Parish gave a run down of the new prospective board members, giving a brief statement on each.

Cost Formula

John Lickly reported that an interim cost formula of \$1,000 per computer terminal has been proposed. The reason for the interim cost formula is that CVIS schools will be using COCIS in the fall and have had cost questions so that they can budget. John Lickly felt that the \$1,000 cost is in line with future pricing. John Lickly reported that he felt the problem with a per terminal cost formula is that we may later use microfiche. He is working on a uniform cost formula. Prior to the next board meeting, John Lickly will distribute various cost formula alternatives to the board members so that it can be discussed at the meeting.

Wilbur Richardson questioned why CU hasn't had to pay Oregon for CUCIS when COCIS had to pay \$2,000. Warren Wolff explained that CU provides COCIS with a lot of free time on their computer. Wilbur mentioned that others are giving us free time (e.g., judicial center) and he felt that COCIS should charge CU just like any other user. Chuck Sisson agreed. It was agreed that costs incurred by CU or other donors of services and personnel should be recorded and applied against future use charges or shown as state contributions to the development of the system.

Relationship with Boulder Valley Schools & Tentime Company DEC 10 Conversion Progress Report

Due to the resignation of Larry Pape, Boulder Valley Schools has asked to terminate most of their contract with COCIS. Tentime Co. (Mike Ellis) had been subcontracted by Boulder Valley Schools to do the DEC 10 conversion. Tentime's services will now be purchased directly with COCIS. The Boulder Valley Schools computer will continue to deliver the system for awhile. The CU computer will also deliver the system this summer. Warren Wolff reported that we are moving rapidly to get Oregon up on the DEC 10 and Oregon will run as a module under DISCOVER. Warren Wolff reported that we need access to storage Tech's DEC 10 - either through Boulder Valley Schools or Tentime Company. Mike Ellis reported that he would establish a contract with COCIS for use of the DEC 10 for \$200 per month per user. The Board concurred with the cost arrangement.

Mike Ellis reported that he plans to have DISCOVER modules converted by the end of the summer. Approximately 70% of the software conversion has been completed; however, the remaining 30% is the most difficult to do. Mike reported that he will take the Oregon data base and put it on the computer using DISCOVER software. The biggest problem he has faced are the lack of documentation of existing IBM software and the problem of obtaining the DISCOVER tapes.

Wilbur Richardson moved that the Technical Committee meet and evaluate Mike Ellis' progress report prior to approving a contract with Tentime. Wilbur's motion was seconded and approved and the Technical Committee will report back to the board at the next meeting with their recommendations.

Report on Potential Lease Arrangements with DISCOVER for use of DEC Software

Polly Parish reported that COCIS will negotiate with the DISCOVER Foundation for use of the DEC 10 software and thereby realizing income each time DISCOVER sells the DEC 10 version of its system. There is no detailed information available at this time, but she hopes to have more information at the next board meeting.

Report on Test Sites

Warren Wolff and John Lickly reported on the four test sites: North High School, University of Southern Colorado, Mesa College and Centennial High School. They explained that we were able to evaluate diverse clients at the various test sites: North High School, Denver - inner city high school students; Pueblo - University of Southern Colorado students and institutional clients from the vocational rehabilitation office and state hospital; Centennial High School, San Luis Valley - rural Chicano population and many adult users; Grand Junction - Mesa College students, high school students, clients from vocational rehabilitation office and special high school program for dropouts. Warren explained that the COCIS staff also chose these test sites because of the geographical distribution. John Lickly reported that the test sites generated a lot of interest in the project, especially in the rural areas, such as San Luis. Warren Wolff reported on the status of the test site evaluation. He feels that we will not have any results by the next board meeting. The COCIS staff will have to decide exactly what kind of analysis it wants from the data:

Polly Parish reported that NOIS asked us to do several hours of videotaping of the test sites. It will not only be useful for NOIS, but will be helpful in our promotion of COCIS. The Board requested that the video tape be run at the next meeting or as soon as it is ready for viewing.

Staff Evaluation Letter

Polly Parish reported that she has asked Gerry Smith of NOIS for a copy of the evaluation of our staff prepared by NOIS staff. We were unable to get a copy of that report, so Gerry Smith wrote a letter to Polly summarizing the contents of the report. NOIS felt the basic problem was COCIS' inability to obtain LMI information from the Division of Employment.

Impact Evaluation

Eric Durland reported on the status of impact evaluation. He felt that the questionnaire prepared by NOIS was too general and too lengthy. Eric reported that he is waiting for input from the COCIS staff on goals and objectives in order to prepare a realistic process evaluation document. He discussed the problems of getting a control group to fill out questionnaires. Since impact evaluation in a problem educators have been pondering for thousands of years, Eric felt that a realistic way to evaluate the system is in terms of numbers -- how many people are using the system. Polly Parish suggested to NOIS the idea of putting together a task force comprised of a member from each of the OIS states to finalize an impact evaluation document.

Report on CVIS Conference in Phoenix

Polly Parish reported that the CVIS conference in Phoenix was very uneventful and had little impact.

Singer Career Center

John Lickly reported that the Singer Career Center is very interested in evaluating COCIS over the summer with the intent of becoming a user. The Board members were very concerned about the private sector using COCIS. The Board's recommendations to the COCIS staff are: (1) That COCIS evaluation by Manpower, Employment Service and related clients be accomplished within the physical setting of the relevant agency; (2) that the Singer Career Center may proceed with the COCIS evaluation providing that: (a) Singer bear all costs related to the test period, and (b) subsequent implementation of COCIS as a permanent Singer service to clients be subject to the "Standards of Use" to be developed for private sector consortium members; and (3) The COCIS staff prepare recommendations for private sector "Standards of Use" for Board review and approval prior to September 1, 1976. An informal committee comprised of Paul Hoskins, Miles Reznik, Chuck Sisson and Ken McNulty was set up to clear tentative "Standards of Use" for Singer as a summer site.

The meeting was adjourned at 12:15 p.m.

MINUTES
COCIS BOARD OF DIRECTORS MEETING

July 27, 1976, 1:15 p.m.

PRESENT:

Board Members

Jack Offerle, Department of Institutions
Wilbur Richardson, Div. of Automated Data Processing, Ad Hoc
Pauline Parish, Director, COCIS, Ad Hoc

Other

Warren W. Wolff, Associate Director, COCIS
John R. Lickly, Associate Director, COCIS
Sylvia Parker, Field Services Rep., COCIS
Lyn Richards, COCIS staff member

ABSENT:

Paul Hoskins, Labor & Employment
Charles Sisson, State Department of Education

Since there were not enough members present to reach a quorum an informal discussion was held rather than a formal meeting of the Board of Directors. The minutes of the previous meeting and the financial report were not discussed.

Introduction of New Board Member

Mr. Richardson introduced Jack Offerle, Department of Institutions. Ms. Parish gave Mr. Offerle a brief description of the Second Year Scope of Work and some information about the budget, i.e., that the \$331,856 is a set amount and is the same amount as provided last year. She also explained the \$50,000 contribution made by the Division of Automated Data Processing.

Orientation Meeting

Polly Parish announced there will be an orientation meeting for new Board Members. This will be scheduled the week of August 23rd.

Organizational Chart

A chart showing the new organization structure was presented by Ms. Parish. She explained that some minor changes have been made; John Lickly will be regional manager for Marketing/Field Services and will be the key person working with institutions. Further, there will be two satellite offices using half-time persons.

General Discussion

There was general discussion of various topics. Mr. Offerle inquired about the proportion of costs that will be borne by the various agencies, schools, etc. Ms. Parish explained that a cost formula has been set up on a per-user basis. She also said that COCIS would work with Mr. Offerle's agency on the utilization of the system in programs they have.

Buddy Wolff handed out a chronological sheet regarding the development of DISCOVER.

John Lickly presented and explained a Cost Guideline chart.

The meeting was adjourned at 2:45 p.m.

- Cat #
- A - 1 Dictionary of Occupational Titles 1965 Definitions of Titles
3rd Edition Volumes I and II. U.S. Dept. of Labor
10/10/75
- A - 2 Estimates of Worker Trait Requirements for 4,000 Jobs as Defined
in the Dictionary of Occupational Titles
U.S. Department of Labor
10/10/75
- A - 3 Directory of Colorado Manufacturers, 1974-75
Univ. of Colorado, Boulder / Business Research Div.
10/10/75
- A - 4 Volunteers in Action Peace Corps Vista
Action
10/10/75
- A - 5 1972 Colorado Industrial Capability Register
Colorado Interstate Gas Co.
10/10/75
- A - 6 Occupational Information- Its Development and Application 3rd Ed.
Carroll L. Shartle
10/10/75
- A - 7 Federal Career Directory A Guide for College Students
U.S. Civil Service Commission
10/10/75
- A - 8 College Placement Annual - 1975
College Placement Council, Inc.
10/10/75
- A - 9 College Placement Annual - 1976
College Placement Council, Inc.
10/10/75
- B1 - 10 Working for the USA
U.S. Civil Service Commission
10/10/75
- B1 - 11 Koontz: More Women, Minorities in Science
APGX, Guidepost Vol. 17, 8 Jan. 4, 1975
10/10/75
- B1 - 12 22 Educational Fields With Examples of Major Interest Areas
No Author
10/10/75
- B1 - 13 Gearing Your Education for the World of Work
The Christian Science Monitor March 18, 1974
10/10/75

- C2 - 76 "1967 Lane County Labor Skill Survey" Vols. I & II
State of Oregon, Department of Employment
10/10/75
- D1 - 77 Employment in Agricultural and Agribusiness Occupations- Region 8
Economic Research Service, U.S. Dept. Of Agriculture
10/10/75
- D1 - 78 Manpower Report of the President Copies 1 & 2
U.S. Dept. of Labor and U.S. Dept. of H, E W
10/10/75
- D1 - 79 Employment in Agricultural and Agribusiness Occupations
Economic Research Service, U.S. Dept. of Agriculture
10/10/75
- D1 - 80 The U.S. Labor Force: Projections to 1990
U.S. Dept. of Labor- Bureau of Labor Statistics, 1973
10/10/75
- D1 - 81 "Consumer Price Index" Jan. 21, 1975
U.S. Dept. of Labor- Office of Information
10/10/75
- D1 - 82 The Labor Market for College Graduates
American Council on Education
10/10/75
- D1 - 83 1975 Economic Forecast for Colorado & the Nation
D2 United Banks of Colorado
10/10/75
- D2 - 84 "Selected Colorado Companies Employing 250 or More Persons"
Copies 1 & 2
No Author
10/10/75
- D2 - 85 "Employment Levels- State of Colorado- State-Wide" Copies 1 & 2
No Author
10/10/75
- D2 - 86 "Comparative Statistical Data and Narrative Based on the 1970
Census for the Governor's Twelve Planning Regions of Colorado"
Cooperative Area Manpower Planning System
10/10/75
- D2 - 87 "Employment News" 11/25/74 Copies 1 & 2
U.S. Dept. of Labor- Bureau of Labor Statistics
10/10/75
- D2 - 88 "Employment News" 11/27/74
U.S. Dept. of Labor- Bureau of Labor Statistics
10/10/75

- E2 - 137 "Class Titles In Alphabetical Order"
Colorado State Dept. of Personnel
10/10/75
- E2 - 138 "1973 Salary and Employee Benefit Studies"
Colorado State Dept. of Personnel
10/10/75
- E2 - 139 "Class Titles and Salary Ranges- Schematic Within Grade Order"
Colorado State Dept. of Personnel
10/10/75
- E2 - 140 "Compensation Plan- July 1, 1974"
Colorado State Dept. of Personnel
10/10/75
- E2 - 141 "1974 Community Compensation Survey" Copies 1 & 2
Mountain States Employers Council, Inc.
10/10/75
- D2 - 142 "Annual Manpower Planning Report- Fiscal Year 1974- State of
D2a-e Colorado"
- Colorado Dept. of Labor and Employment- Division of Employment-
Research and Analysis
10/10/75
- E2a - 143 "Area Wage Survey- Denver, Colorado, Metropolitan Area- December, 1973"
Copies 1-4
U.S. Dept. of Labor- Bureau of Labor Statistics
10/10/75
- E2a - 144 "1973 Office-Clerical and Data Processing Survey"
Mountain States Employers Council, Inc.
10/10/75
- E2a - 145 "1973 Production, Maintenance and Material Handling Survey"
Mountain States Employers Council, Inc.
10/10/75
- E2a - 146 "Area Wage Survey- Denver, Colorado, Metropolitan Area- December
1972"
U.S. Dept. of Labor- Bureau of Labor Statistics
10/10/75
- E2a - 147 "Earnings and Supplementary Benefits in Hospitals- The Denver,
Colorado Metropolitan Area- August 1972"
Mountain - Plains Regions- Bureau of Labor Statistics
10/10/75
- E2 - 148 "1973 Financial Survey"
Mountain States Employers Council, Inc.
10/10/75

- D2 - 272 Colorado Health Occupations Manpower Survey - 1972
State Board for Community Colleges & Occupational Education
Colorado State Employment Service
11/5/75
- I1 - 273 Military - Civilian Occupational Source Book - July 1975
Armed Forces Vocational Testing Group - Dept. of Defense
11/5/75
- C2 - 274 Visual Supplement to Exploring Values for Career Decision-
Making: A Computer-Based System of Interactive Guidance
and Information (SIGI)
Martin R. Katz Educational Testing Service
11/7/75
- C2 - 275 SIGI - A Computer-Based System of Interactive Guidance and
Information
Educational Testing Service
11/7/75
- C2 - 276 SIGI - Printout
SIGI
11/7/75
- C2 - 277 SIGI: Report of a Pilot Study Under Filed Conditions
Warren Chapman, et al. Educational Testing Service
11/7/75
- C2 - 278 Guidance Information System II - Letter from Time Share
Corporation promoting GIS.
Charles A. Morrissey Time Share Corporation
11/7/75
- F6 - 279 Colorado Adult Needs Assessment - Summary Report, Employer
Survey, Agency Survey and Citizen Survey
Bruce M. Barlow, Carmen R. Timiraos
Colorado Department of Education. State Board for Community
Colleges and Occupational Education
11/7/75
- F6 - 280 "Measurement and Analysis of Work Training"
Willard Wirtz and Harold Goldstein
11/10/75
- J2 - 281 "Summaries of R & D Reports - No. 15"
U.S. Dept. of Labor - Manpower Administration
11/ 10/ 75
- D2 - 282 Miscellaneous Survey Forms for the OES Survey
U.S. Dept. of Labor - Bureau of Labor Statistics
11/10/75
- I1 - 283 Selected Bibliography - Career/Labor Market Information
National Occupational Information Service - Manpower Administra
tion - U.S. Dept. of Labor
11/10/75

COCIS Library Categories

- A. REFERENCES
- B. OCCUPATIONS
 - 1. General
 - 2. Trends and Outlooks
 - 3. Specific Occupations
 - 4. Clusters
- C. SYSTEMS
 - 1. General
 - 2. Specific Systems
- D. LABOR MARKET AND POPULATION INFORMATION
 - 1. National
 - 2. Colorado
 - 2a. Denver-Boulder SMSA
 - Northeastern Colorado
 - 2c. Pikes Peak High Plains
 - 2d. Southeastern Colorado
 - 2e. Western Slope
 - 3. General
- E. WAGE AND SALARY INFORMATION
 - 1. National
 - 2. Colorado
 - 2a. Denver-Boulder SMSA
 - 2b. Northeastern Colorado
 - 2c. Pikes Peak High Plains
 - 2d. Southeastern Colorado
 - 2e. Western Slope
 - 3. General
- F. EDUCATION AND TRAINING (GEN'L MATERIALS)
 - 1. Proprietary-Commercial Schools
 - 2. Vocational-Technical Schools, Public
 - 3. Community and Junior Colleges
 - 4. Colleges and Universities
 - 5. Apprenticeships
 - 6. General
- G. EDUCATIONAL CATALOGS
 - 1. Educational Directories
 - 2. Colleges and Universities, State and Private, Accredited
 - 3. Community and Junior Colleges
 - 4. Vocational-Technical Schools, Public
 - 5. Proprietary-Commercial Schools
 - 6. Apprenticeships
 - 7. Schools, General, Non-Colorado
(restricted to catalogs containing unique offerings
not found in Colorado)

- H. CAREER GUIDANCE AND CAREER EDUCATION MATERIALS
 - 1. General
 - 2. Career Guidance and Career Education Aids
 - 3. Tests and test information
- I. MILITARY
 - 1. General
 - 2. Specific Branch
- J. INFORMATION RESOURCES
 - 1. Indexes of Publications
 - 2. Individuals and Organizations
- K. POTENTIAL USERS
 - 1. General
 - 2. Specific Potential Users
- L. WOMEN AND MINORITY GROUPS
 - 1. Women
 - 2. Black
 - 3. Chicano/Spanish
 - 4. Other
- M. MISCELLANEOUS OR UNCLASSIFIED*

NUMERICAL LIST OF OCCUPATIONS
(Revised 9/76)

1100 Administrative

1132 Hotel and Motel Managers
1134 Health Service Administrators
1136 Educational Administrators
1138 Public Administrators
1142 Small Business Operators
1144 Business Executives
1152 Construction Superintendents
*1156 Building Inspectors
1162 Sales and Service Managers
1172 Military Officers
*1182 Interpreters and Translators
1184 Buyers and Purchasing Agents
1186 Personnel Managers
1195 Public Relations Workers

1400 Clerical

1411 Office Managers
1412 Secretaries
1414 Stenographers
1416 Clerk Typists
1418 Clerks, General Office
1422 Teachers Aides
1452 Receptionists
1454 Telephone and Telegraph Operators
1456 Messengers

1600 Bookkeeping- Accountants

1614 Accountants and Auditors
1616 Bookkeepers
1634 Appraisers
*1635 Underwriters
1636 Loan Officers
*1638 Credit Managers
1642 Cashiers
*1644 Bank Tellers
1646 Clerks, Railroad
1684 Programmers and Systems Analysts
1686 Computer Operators
1688 Key Punch Operators
1692 Office Machine Operators

2100 Social Research and Planning

2144 Scientists, Social
2144 Sociologists
2144 Economists
2164 Social Program Planners
2174 Writers, Freelance
2176 Reporters and Editors
2177 Writers, Technical

2300 Engineering and Design

2314 Urban Planners
2316 Architects
2318 Ecologists
2332 Mathematicians and Statisticians
*2335 Actuaries
2352 Surveyors
*2353 Rod and Chain Workers
2354 Engineers
*23541 Engineer, Agricultural
*23542 Engineer, Chemical
*23543 Engineers, Civil
*23544 Engineers, Electrical
*23545 Engineers, Industrial
*23546 Engineers, Mechanical
*23547 Engineers, Metallurgical
*23548 Engineers, Mining
*23549 Engineers, Petroleum
2356 Engineering Technicians
*2359 Electronics Technicians
2364 Drafters
*2366 Interior Designers and Decorators

2600 Laboratory

2624 Scientists, Physical
*26241 Biologists
*26242 Chemists
*26243 Physicists
2626 Scientists, Earth
*26261 Geologists
2628 Scientists, Soil
2644 Opticians
2654 Medical Technologists
*2655 Dental Laboratory Technicians
2656 Laboratory Testers
2672 Quality Control Inspectors
2674 Sanitarians

3100 Mechanical

3112 Mechanics, Automobile
3114 Mechanics, Diesel and Heavy
Equipment
3116 Mechanics, Aircraft
3118 Small Engine Repairers
3124 Service Station Attendants
3136 Officers
3142 Millwrights

| | |
|--|--|
| <u>3100 Mechanical (continued)</u> | <u>4400 Textile and Apparel</u> |
| 3144 Industrial Machinery Repairers | 4442 Clothes Designers and Patternmakers |
| 3146 Mechanics, Heating and Cooling System | 4446 Sewers, Custom |
| *3159 Mechanics, Farm Equipment | 4448 Sewing Machine Operators |
| 3164 Office Machine Repairers | 4464 Dry Cleaning and Laundry Workers |
| 3166 Telephone Installers-Repairers | 4494 Upholsterers |
| 3168 Radio and TV Repairers | 4496 Shoe Repairers |
| 3169 Household Appliance Repairers | |
| 3184 Jewelers | <u>4500 Timber Products</u> |
| 3186 Instrument Repairers | 4556 Woodworking Machine Operators |
| | 4586 Cabinetmakers |
| <u>3400 Building Maintenance</u> | |
| 3422 Building Maintenance Workers | <u>4700 Graphic Arts</u> |
| 3455 Janitors | 4724 Commercial Artists and Designers |
| 3456 Houseworkers, General | 4734 Photographers |
| | 4766 Printing Occupations |
| <u>4100 Agricultural and Forestry</u> | |
| 4124 Foresters | <u>5400 Metal Working</u> |
| 4126 Fish and Wildlife Specialists | 5422 Metal Working Patternmakers |
| 4128 Forestry Aides | 5424 Molders |
| 4144 Groundskeepers and Gardeners | 5426 Foundry Workers |
| 4146 Floral Designers | 5462 Tool and Die Makers |
| *4164 Farmers and Farm Managers | 5464 Machinists |
| *4166 Farm Hands | 5468 Saw Filers and Tool Sharpeners |
| *4168 Farm Workers, Seasonal | 5472 Machine Tool Operators |
| | 5482 Welders |
| <u>4200 Construction</u> | *5483 Structural Steel Workers |
| 4242 Painters | 5484 Sheetmetal Workers |
| 4244 Plasterers and Drywall Installers | 5486 Body and Fender Repairers |
| 4246 Cement Masons | 5488 Blacksmith and Forge Shop Workers |
| *4248 Glaziers | |
| 4254 Carpenters | <u>5600 Electricity and Electronics</u> |
| *4256 Insulation Workers | 5624 Line Installers - Repairers |
| 4264 Bricklayers | 5626 Electricians and Electrical Repairers |
| 4274 Plumbers | 5664 Broadcast Technicians |
| 4276 Floor Covering Installers | 5686 Electronics Assemblers |
| 4278 Roofers | |
| 4286 Construction Laborers | |
| 4288 Railroad Track Workers | |
| <u>4300 Food Products</u> | |
| 4324 Bakers | |
| 4326 Meat Cutters | |
| 4348 Cannery Workers | |

5900 Other Production

- *5912 Petroleum Drilling Workers
- 5914 Petroleum and Processing Occupations
- *5918 Rubber and Chemical Processing Occupations
- 5924 Rubber and Plastics Fabricators
- *5926 Production Painters and Finishers
- *5944 Engineers, Stationary
- 5946 Water Treatment Plant Operators
- 5966 Production Assemblers
- 5982 Hand Crafters

6100 Transportation

- 6126 Air Traffic Controllers
- 6128 Railroad Conductors
- 6142 Bus and Taxi Drivers
- 6144 Truck Drivers
- 6152 Bulldozer Operators
- 6154 Operating Engineers
- 6158 Industrial Truck Operators
- 6172 Locomotive Engineers and Firers
- 6174 Railroad Brakers and Switchers
- 6184 Ship Officers and Engineers
- 6188 Pilots and Flight Engineers

7100 Stock Control

- 7112 Car Loaders (Material Handlers)
- 7114 *Warehousers
- 7116 Clerks, Shipping and Receiving
- 7118 Clerks, Stock
- 7122 Mail Carriers
- 7124 Newspaper Carriers
- 7126 Packers and Wrappers
- 7164 Librarians
- 7166 Library Assistants

7400 Sales

- 7414 Salespersons, Manufacturers
- 7415 Salespersons, Securities
- 7416 Salespersons, Insurance
- 7417 Salespersons, Real Estate
- 7418 Salespersons, Automobile
- 7422 Salespersons, Business Service
- 7434 Route Sales Drivers
- 7484 Clerks, Sales

7800 Food Service

- 7824 Cooks, Chefs and Dinner
- 7826 Cooks, Fry
- 7852 Waiters and Waitresses
- 7856 Flight Attendants
- 7884 Kitchen Helpers
- 7888 Dining Room Attendants

8100 Health Service

- 8112 Physicians
- 8113 Dentists
- 8114 Veterinarians
- 8115 Optometrists
- *8116 Dietitians
- *8117 Physician's Assistants
- *8122 Chiropractor
- 8124 Pharmacists
- *8126 Health Therapists
- 8128 Speech Pathologists and Audiologists
- *8129 Respiratory Therapists
- 8162 Nurses, Registered
- 8164 Nurses, Licensed Practical
- 8166 Nurses Aides and Orderlies
- *8168 Emergency Medical Technicians
- 8174 Dental Hygienists
- 8176 Dental Assistants
- 8182 Morticians
- 8184 Barbers
- 8186 Cosmetologists

8400 Social Service

- 8414 Counselors
- 8416 Caseworkers
- 8418 Psychologists
- 8428 Social Service Aides
- 8432 Lawyers
- 8433 Legal Assistants (Paralegals)
- *8436 Clergy
- *8438 Probation Officers
- *8448 Teachers, Pre-School
- 8454 Teachers, University and College
- 8456 Teachers, Elementary and Secondary
- 8458 Education Program Specialists
- 8459 Child Care Workers
- 8482 Recreation Program Directors
- 8486 Recreation Leaders
- 8488 Recreation Aides

9400 Protective Service

- 9414 Law Enforcement Officers
- 9426 Firefighters
- 9436 Military Enlisted Occupations
- 9476 Guards
- *9480 Parking Lot Attendants

9800 Art and Entertainment

- 9824 Radio and TV Announcers
- 9842 Models
- 9866 Performing Artists
- *9868 Professional Athletes

PROGRAMS OF STUDY AND TRAINING

| <u>Code</u> <u>Number</u> | <u>Name</u> |
|------------------------------|---|
| 157 | - Accounting |
| 065 | - Agriculture |
| 081 | - Architecture and Environmental Science |
| 311 | - Art |
| 582 | - Anthropology |
| *631 | - Apprenticeships |
| *278 | - Auto and Diesel Mechanics |
| *275 | - Aviation Maintenance |
| 143 | - Banking and Finance |
| 131 | - Biology |
| 197 | - Broadcast Technology |
| 145 | - Business Mangement and Administration |
| 524 | - Chemistry |
| 389 | - Child Care |
| *373 | - Chiropractic Training |
| *163 | - Commercial Driving Training |
| 238 | - Counseling |
| 211 | - Data Processing |
| *358 | - Dental Assisting |
| 361 | - Dental Hygiene |
| *362 | - Dental Technology |
| 357 | - Dentistry |
| *413 | - Dietetics |
| 277 | - Drafting |
| 583 | - Economics |
| 231 | - Education Administration |
| 239 | - Education Aide Programs |
| 233 | - Education, Business |
| 234 | - Education, Elementary |
| 236 | - Education, Secondary |
| *292 | - Electronics |
| 251 | - Engineering |
| *253 | - Engineering Technology |
| *381 | - Environmental and Sanitation Technology |
| 067 | - Fish and Wildlife Sciences |
| 274 | - Flight Training |
| *165 | - Food Service |
| 068 | - Forestry |
| 585 | - Geography |
| *526 | - Geology |
| 383 | - Health Technologies: Laboratory |
| *385 | - Health Technologies: Radiological (X-ray) |
| *387 | - Health Technologies: Other |
| 584 | - History |
| 411 | - Home Economics |
| *065 | - Horticulture and Landscaping |
| 161 | - Hotel and Motel Management |
| *287 | - Industrial Mechanics |
| 193 | - Journalism |

*Developed during period 10/1/75-9/30/76

| <u>Code Number</u> | <u>Name</u> |
|------------------------|----------------------------------|
| 214 | - Key punch |
| 421 | - Law |
| 567 | - Law Enforcement |
| 461 | - Library Science |
| *295 | - Machine Technologies |
| 146 | - Marketing |
| *368 | - Massage |
| 481 | - Mathematics and Statistics |
| *366 | - Medical Assisting |
| *351 | - Medical Records Administration |
| 363 | - Medicine |
| 378 | - Medicine, Veterinary |
| 353 | - Nursing (RN) |
| *367 | - Occupational Therapy |
| 369 | - Optometry |
| 372 | - Pharmacy |
| 317 | - Photography |
| 374 | - Physical Therapy |
| 364 | - Physician's Assisting |
| 523 | - Physics |
| 586 | - Political Science |
| *318 | - Printing/Graphics |
| 541 | - Psychology |
| 562 | - Public Administration |
| *376 | - Public Health |
| 196 | - Radio and Television |
| 147 | - Real Estate |
| 564 | - Recreation and Park Management |
| 446 | - Religious |
| 511 | - ROTC |
| 158 | - Secretarial Studies |
| 587 | - Sociology |
| 245 | - Speech and Hearing |
| 316 | - Theatre and Drama |
| 589 | - Urban Studies |
| 283 | - Welding |

PROG 367
367 OCCUPATIONAL THERAPY

TO BECOME REGISTERED AS A CERTIFIED OCCUPATIONAL THERAPIST REQUIRES COMPLETION OF A FOUR YEAR BACHELOR'S DEGREE PROGRAM AND SIX TO NINE MONTHS OF CLINICAL EXPERIENCE. A FEW SCHOOLS IN COLORADO OFFER DEGREE PROGRAMS IN OCCUPATIONAL THERAPY AND PRE-OCCUPATIONAL THERAPY.

---PURPOSE: TO ENABLE YOU TO WORK AS A MEMBER OF A HEALTH TEAM WHICH EVALUATES LEARNING AND PERFORMANCE ABILITIES AND SEEKS TO TEACH THOSE ADAPTIVE SKILLS AND BEHAVIORS CRUCIAL TO INDEPENDENT HEALTHY FUNCTIONING.

---COURSEWORK: EMPHASIZES ANATOMY, PHYSIOLOGY, NEUROLOGY, PSYCHOLOGY AND SOCIOLOGY. OTHER SUBJECTS INCLUDE:

- ARTS AND CRAFTS
- WOODSHOP MANAGEMENT
- VISUAL FORM

---SCHOOLS: BELOW EACH SCHOOL ARE THE PROGRAMS THEY OFFER AND WHO TO CONTACT.

COLORADO STATE UNIVERSITY
DEPARTMENT OF OCCUPATIONAL THERAPY
HUMANITIES BUILDING, ROOM 100
PROFESSOR ALICE C. JANTZEN, HEAD
FORT COLLINS, COLORADO 80521
ADMISSIONS: 491-7201
"OCCUPATIONAL THERAPIST" BACHELORS AND MASTERS DEGREES.

UNIVERSITY OF COLORADO
BOULDER CAMPUS IN COOPERATION WITH COLORADO STATE UNIVERSITY
WRITE TO: REGISTRAR
COLORADO STATE UNIVERSITY
FORT COLLINS, COLORADO 80521
"OCCUPATIONAL THERAPIST" BACHELORS DEGREE

UNIVERSITY OF DENVER
DIVISION OF PRE-PROFESSIONAL TRAINING
UNIVERSITY PARK
DENVER, COLORADO 80210
ADMISSIONS: 753-2036
"PRE-OCCUPATIONAL THERAPY" OFFERS UP TO THIRD YEAR WHICH IS TRANSFERRABLE TO A PROFESSIONAL SCHOOL.

AURORA TECHNICAL CENTER
500 BUCKLEY ROAD
AURORA, COLORADO 80011
ADMISSIONS: 344-4910
"OCCUPATIONAL THERAPY AIDE" CERTIFICATE DEGREE. ONE YEAR PROGRAM.

FOR MORE INFORMATION CONSULT YOUR VOCATIONAL COUNSELOR, SCHOOL CATALOGS, AND WRITE ADMISSIONS DEPARTMENTS.

RELATED JOB DESCRIPTIONS:
DESC 8126 HEALTH THERAPISTS

RELATED EDUCATIONAL PROGRAMS:
PROG 367 PHYSICAL THERAPY
PROG 487 HEALTH TECHNOLOGIES OTHER

DESC8168

8168 EMERGENCY MEDICAL TECHNICIANS (EMT'S)

EMERGENCY MEDICAL TECHNICIANS (DOT 355.378-010) PROVIDE IMMEDIATE CARE TO THE CRITICALLY ILL AND INJURED AND DRIVE THE AMBUCLANCE TO THE HOSPITAL. THEY DETERMINE THE NATURE AND EXTENT OF ILLNESS OR INJURY, PROVIDE FIRST AID, LIFT AND CARRY PATIENTS ON STRETCHER TO AMBULANCE, AND RADIO THE PATIENT'S CONDITION TO MEDICAL PERSONNEL AT THE HOSPITAL. THEY ALSO INSPECT AND TEST AMBULANCES TO INSURE EFFICIENT OPERATING CONDITION. WHEN NOT ON CALL, THEY SPEND THEIR TIME AT THE STATION WHERE THEY SLEEP AND EAT.

---APTITUDES: STRENGTH TO LIFT AND CARRY PATIENTS, MANUAL DEXTERITY, COORDINATION, GOOD JUDGEMENT AND EMOTIONAL STABILITY, ABILITY TO WORK QUICKLY AND CONFIDENTLY UNDER PRESSURE, ABILITY TO WORK WITH PEOPLE WHO MAY BE INJURED OR IN A STATE OF SHOCK.

---WORK SETTING: WORK BOTH INDOORS AND OUT. MOST WORK ROTATING SHIFTS, WORKING FOR 24 TO 48 HOURS AND THEN OFF 24 TO 48 HOURS. EMPLOYERS: FIRE DEPARTMENTS, PRIVATE AMBULANCE SERVICES, GOVERNMENT AGENCIES, HOSPITALS, SKI RESORTS AND LARGE INDUSTRIES.

---HIRING REQUIREMENTS: ALL EMT'S MUST BE CERTIFIED WHICH MEANS COMPLETING A ONE TERM COURSE AT A COMMUNITY COLLEGE AND PASSING A WRITTEN AND PRACTICAL EXAM. MANY COMMERCIAL AMBULANCE COMPANIES REQUIRE EMT'S TO BE 21 YEARS OLD AND HOLD A CHAUFFEUR'S LICENSE.

---CURRENT EMPLOYMENT: THERE ARE AROUND 3,000 CERTIFIED EMT'S IN THE STATE OF COLORADO. THE MAJORITY ARE VOLUNTEERS IN FIRE DEPARTMENTS, AMBULANCE SERVICES AND SKI PATROL MEMBERS.

---WAGES: MOST VOLUNTEER THEIR SERVICES, BUT SOME ARE EMPLOYED. TRAINEES GENERALLY START AT AROUND \$750 PER MONTH. AFTER THE TRAINING PERIOD THE SALARY RANGE IS OFTEN BETWEEN \$868 TO \$1,200 PER MONTH

---OUTLOOK: AVERAGE EMPLOYMENT PROSPECTS. MOST COMMERCIAL AMBULANCE SERVICES REQUIRE EMT CERTIFICATION AS A CONDITION OF EMPLOYMENT. CERTIFICATION IS ALSO RECOMMENDED FOR FIRE FIGHTERS, POLICE OFFICERS AND SKI PATROL MEMBERS IN COLORADO. MOST VOLUNTEER FIRE DEPARTMENTS AND AMBULANCE SERVICES WELCOME ASSISTANCE FROM CERTIFIED EMT'S IN THEIR AREAS, AS DO THE MOUNTAIN RESCUE TEAMS. FOR INFORMATION ON HOW TO PREPARE FOR THIS OCCUPATION,

TYPE: PREP.

FOR MORE INFORMATION AVAILABLE IN BOOKS OR PAMPHLETS,

TYPE: BIB

PREP 8168

8168 EMERGENCY MEDICAL TECHNICIANS (EMT'S)

---SKILLS: THE INDIVIDUAL SHOULD HAVE THE ABILITY AND KNOWLEDGE OF FIRST AID AND EMERGENCY MEDICAL CARE. KNOWLEDGE IN THE USE AND CARE OF EMERGENCY EQUIPMENT SUCH AS OXYGEN DELIVERY SYSTEMS, THE ABILITY TO OPERATE AND MAINTAIN AMBULANCES AND FAMILIARITY WITH SANITIZING AND DISINFECTING PROCEDURES.

---PREPARATION: TO BE CERTIFIED AS AN EMT IN COLORADO, A PERSON NEEDS TO COMPLETE AN 81 HOUR COURSE THAT HAS BEEN ESTABLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION. THIS COURSE IS GIVEN AT 13 LOCAL COMMUNITY COLLEGES AND VOCATIONAL TECHNICAL SCHOOLS. UPON COMPLETION, A WRITTEN AND PRACTICAL EXAM MUST BE TAKEN AND PASSED PRIOR TO CERTIFICATION. PREFERENCE FOR ADMISSION IS GIVEN TO THOSE PERSONS WHO ARE EMPLOYED ON A PROFESSIONAL OR VOLUNTEER BASIS AS FIRE FIGHTERS, AMBULANCE ATTENDANTS, POLICE OFFICERS AND SKI PATROL PERSONNEL. EMT'S MUST UNDERGO A RECERTIFICATION EVERY THREE YEARS BY TAKING 20 HOURS OF TRAINING AND PASS THE APPROPRIATE WRITTEN AND PRACTICAL EXAMS.

---TIPS: THOSE CONSIDERING A CAREER AS AN EMT, WILL FARE BEST IF THEY HAVE COMPLETED AN EMT COURSE, HAVE SERVICE ON A VOLUNTEER BASIS FOR A FIRE DEPARTMENT OR AMBULANCE SERVICE, AND ARE WILLING TO WORK ANY SHIFT OR HOURS INCLUDING WEEK-ENDS AND HOLIDAYS.

BIB 8168

8168 EMERGENCY MEDICAL TECHNICIANS (EMT'S)

THIS IS AN EMERGING OCCUPATION. THEREFORE, THERE ARE FEW PRINTED MATERIALS AVAILABLE. FOR MORE INFORMATION, CONTACT YOUR CAREER COUNSELOR OR CAREER LIBRARIAN.

ARAPAHOE CHEMICALS
2076 5TH STREET
BOULDER, CO. 80303

ARAPAHOE CHEMICALS WAS FOUNDED IN 1946, AND PURCHASED BY THE SYNTEX CORPORATION IN 1966. IT IS A LEADING MANUFACTURER OF SPECIALTY CHEMICALS SUCH AS THOSE USED IN PHARMACEUTICAL WORK, POLLUTION CONTROL, PHOTOGRAPHY, AND FOR OTHER PURPOSES WHICH REQUIRE ORGANIC CHEMICALS. ARAPAHOE IS NOT A GOVERNMENT CONTRACTOR AND WORKS SOLELY WITH PRIVATE ENTERPRISE. THE BOULDER PLANT EMPLOYS BETWEEN 160 AND 200 EMPLOYEES. IN PRODUCTION, ONE PERSON ENTERS AS A CHEMICAL TRAINEE AND MAY THEN BE PROMOTED TO ASSISTANT OPERATOR, OPERATOR, SENIOR OPERATOR, OR SUPERVISOR. IN RESEARCH AND DEVELOPMENT ARAPAHOE CHEMICALS HIRES CHEMISTS, CHEMICAL ENGINEERS, AND TECHNICIANS WHO WORK IN LABS AND OFFICES. THE COMPANY HAS A WAREHOUSING STAFF WHICH WORKS IN SHIPPING AND RECEIVING AND A COMPLETE OFFICE STAFF WHICH INCLUDES CLERICAL WORKERS, ACCOUNTANTS, SALES REPRESENTATIVES, AND MANAGERS.

ARAPAHOE CHEMICALS USUALLY ADVERTISES ITS JOB OPENINGS ALTHOUGH THE MAIL OFFICE RECEPTIONIST IS ALSO ALWAYS AWARE OF ANY OPENINGS. APPLICATIONS ARE AVAILABLE FROM THE RECEPTIONIST AND ALL HIRING IS DONE DIRECTLY THROUGH THE BOULDER OFFICE. ARAPAHOE CHEMICALS WORKS CLOSELY WITH JOBS FOR PROGRESS AND VARIOUS MINORITY ORGANIZATIONS WHEN HIRING. IT IS A NON-UNION SHOP. THEIR TRAINING PROGRAMS ARE V. A. APPROVED. ARAPAHOE IS AN AFFIRMATIVE ACTION EMPLOYER.

ARAPAHOE OFFERS A SIX WEEK FORMAL TRAINING PROGRAM TO ITS CHEMICAL TRAINEES CONSISTING OF BOTH CLASSROOM WORK AND ON THE JOB TRAINING. IT ALSO HAS AN APPRENTICESHIP PROGRAM FOR MAINTENANCE MECHANICS AND ELECTRICIANS.

MOST PROMOTIONS AT ARAPAHOE CHEMICALS ARE MADE FROM WITHIN THE COMPANY. ALL JOB OPENINGS ARE BID INTERNALLY FOR FIVE DAYS BEFORE THEY ARE OPENED TO THE PUBLIC. PROMOTIONS ARE MADE MAINLY ON THE BASIS OF MERIT.

OVER A NORMAL YEAR ARAPAHOE CHEMICALS RUNS TWO TO THREE TRAINING CLASSES FOR CHEMICAL OPERATORS. THIS YEAR ARAPAHOE WILL HIRE IN TO FEWER NEW JOBS ALTHOUGH SOME ARE EXPECTED. MOST HIRING WILL BE DONE TO FILL CURRENT JOBS.

Examples of Sources of Occupational Information

THE FOLLOWING BOOKS AND PAMPHLETS MAY BE OF HELP TO YOU. YOU MAY FIND THEM IN THE GUIDANCE OFFICE OR THE LIBRARY.

BOOKS AND PAMPHLETS OF THE BUREAU OF OCCUPATIONAL INFORMATION, U.S. DEPARTMENT OF LABOR, BUREAU OF OCCUPATIONAL TITLES, PP. 237-238 (OTHERS AS APPLICABLE)

YOU MAY WRITE TO THESE ORGANIZATIONS FOR MORE INFORMATION:

AMERICAN FEDERATION OF TECHNICAL ENGINEERS (AFT-CTE)
900 "E" STREET, N.W.
WASHINGTON, D.C. 20004

INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
145 EAST 47TH STREET
NEW YORK, N.Y. 10017

YOU MAY WRITE FOR THESE FREE PAMPHLETS:

WHAT'S IT LIKE TO BE AN ENGINEER? (1972)
EDUCATIONAL RELATIONS
GENERAL ELECTRIC COMPANY
OSSINING, NEW YORK

QUINCY LOOKS INTO HIS FUTURE, CAREERS IN ENGINEERING (1973)
GENERAL ELECTRIC
DEPARTMENT Q
570 LEXINGTON AVENUE
NEW YORK, NEW YORK 10022

IF A GROUP OF STUDENTS IS INTERESTED IN EXPLORING THIS OCCUPATION OR RELATED ONES FURTHER, YOU MAY ASK YOUR TEACHER OR COUNSELOR TO CHECK THE CAREER EDUCATION RESOURCE CENTER CATALOG FOR MATERIALS THAT COULD BE OF HELP TO YOU. THE LIBRARIAN, COUNSELOR OR PRINCIPAL OF YOUR SCHOOL SHOULD HAVE A COPY OF THIS CATALOG. A CATALOG CAN BE ORDERED FROM:

CAREER EDUCATION RESOURCE CENTER
3647 SOUTH SANTA FE DRIVE
ENGLEWOOD, COLORADO 80110
(303) 761-8757
TOLL FREE WATS LINE 1-800-332-8470

IF YOU WOULD LIKE TO GET ANOTHER OCCUPATIONAL DESCRIPTION TYPE DISC AND THE 4-DIGIT NUMBER, FOR EXAMPLE: DISC 21444

WOMEN'S CAREER RESOURCES FILE

SUMMARY OF ATTITUDES ON WOMEN WORKING

IN THIS SECTION YOU MAY READ A RUN-DOWN OF THE GENERAL COMMENTS RECEIVED FROM ALL THE INTERVIEWS ON THE SUBJECT OF:

- 1.) OPINIONS OF HUSBANDS, BOYFRIENDS, OR FAMILIES
- 2.) ATTITUDES OF WORKING MOTHERS
- 3.) ATTITUDES OF COLLEAGUES
- 4.) ATTITUDES OF CLIENTS OR CUSTOMERS

TYPE IN THE NUMBER OF YOUR CHOICE.

1.) OPINIONS OF HUSBANDS, BOYFRIENDS, OR FAMILIES

GENERALLY SPEAKING THE PEOPLE CLOSEST TO THE WOMEN INTERVIEWED WERE VERY SUPPORTIVE OF HER AND THE FACT THAT SHE WORKED. IN A FEW CASES, THE HUSBAND WAS THE ONE WHO HAD ENCOURAGED THE WOMAN TO SEEK A CAREER. MANY HUSBANDS OR BOYFRIENDS HAD MET THE WOMAN WHEN SHE WAS ALREADY WORKING AND ACCEPTED IT AS A PART OF HER LIFE. OTHERS WERE RELUCTANT ABOUT HAVING THEIR WIFE PURSUE A CAREER. BUT ONCE THEIR WIFE WAS INVOLVED IN THE OCCUPATION THEY WHOLE-HEARTEDLY SUPPORTED HER. IN ONLY ONE INSTANCE DID A DIVORCE OCCUR WHICH WAS ATTRIBUTED TO THE COMPETITION THE HUSBAND FELT WITH HIS WORKING WIFE BECAUSE OF HER CAREER.

OR

2.) ATTITUDES OF WORKING MOTHERS

ABOUT 50 PERCENT OF THE WORKING MOTHERS HAD STAYED AT HOME UNTIL THEIR CHILDREN WERE OF SCHOOL AGE. ABOUT 25 PERCENT WORKED PART-TIME OR MADE SPECIAL ARRANGEMENT IN THEIR SCHEDULE. ANOTHER 25 PERCENT WORKED FULL TIME. NONE OF THE WOMEN FELT THAT THEIR CAREER HAD AN ILL EFFECT ON THEIR CHILDREN. MANY WOMEN FELT THAT IT WAS IMPORTANT FOR THEM TO STAY HOME WITH THEIR CHILDREN DURING THE FORMATIVE YEARS, OR AT LEAST NOT WORK FULL TIME. OTHERS FELT THAT THE FACT THAT THEY WORKED WAS POSITIVE FOR THEIR CHILDREN BECAUSE IT MADE THE CHILDREN MORE INDEPENDENT AND SELF-MOTIVATED. SOME WOMEN SENT THEIR CHILDREN TO CHILD-CARE CENTERS OR NURSERY SCHOOLS, OTHERS HIRED PRIVATE BABYSITTERS, AND SOME LEFT THEIR CHILDREN WITH RELATIVES WHILE THEY WORKED. IN A FEW CASES CHILDCARE WAS SHARED BY THE HUSBAND AND THE WIFE WHO BOTH ARRANGED THEIR SCHEDULES SO AT LEAST ONE PARENT WAS IN THE HOME ALL OF THE TIME.

OR

3.) THE ATTITUDES OF COLLEAGUES

THE ATTITUDES OF COLLEAGUES ON THE JOB WERE EXTREMELY DIVERGENT. GENERALLY SPEAKING, THE ATTITUDE OF COLLEAGUES WAS POSITIVE. WOMEN IN TRADITIONAL JOBS EXPERIENCED NO ILL FEELING FROM THEIR COLLEAGUES AND GENERALLY GOT ALONG QUITE WELL WITH THEIR BOSSES. HOWEVER, THE LESS TRADITIONAL THE WOMAN'S JOB, THE MORE RESISTANCE OR RESENTMENT WAS FELT FROM MALE COLLEAGUES AND BOSSES. SOME WOMEN IN NON-TRADITIONAL OCCUPATIONS EXPERIENCED VERY POSITIVE ATTITUDES FROM THEIR COLLEAGUES. OTHERS FELT INITIAL RESENTMENT. BUT AFTER THEY PROVED THEIR SERIOUSNESS AND THE FACT THAT THEY COULD DO THEIR JOB WELL, THEIR COLLEAGUES ACCEPTED AND SUPPORTED THEM. ONLY ONE WOMAN FELT SHE WAS NEVER ACCEPTED BY HER COLLEAGUES. THE GENERAL CONSENSUS WAS THAT THINGS ARE NOT PERFECT BUT BARRIERS ARE FALLING LITTLE-BY-LITTLE. MOST OF THE WOMEN ALSO FELT THAT BEING ACCEPTED BY YOUR COLLEAGUES IS MORE A MATTER OF YOUR ATTITUDE, AND HOW YOU APPROACH PARTICULAR SITUATIONS, THAN THE ATTITUDE OF THE COLLEAGUES. THAT IS, IF YOU EXPECT NEGATIVE ATTITUDES, YOU GET THEM. IF YOU PUT YOUR BEST FOOT FORWARD AND ANTICIPATE SUCCESS, YOU WILL BE SUCCESSFUL.

FOR INFORMATION HELPFUL IN ANSWERING THE FOLLOWING JOB HUNTING QUESTIONS
TYPE: 'JSS' AND THE APPROPRIATE QUESTION NUMBER AND THEN PRESS THE RE-
TURN KEY.

(FOR EXAMPLE: JSS 3)

1. WHAT KIND OF JOB SHOULD I SEEK?
2. WHAT ARE SOME SOURCES OF JOB INFORMATION?
3. HOW DO I FILL OUT A JOB APPLICATION FORM?
4. HOW DO I PREPARE FOR A JOB INTERVIEW?
5. HOW DO I ACT IN AN INTERVIEW?
6. HOW DO I WRITE A RESUME?

? JSS3

35. HOW DO I FILL OUT AN APPLICATION FORM?

IN MOST CASES YOU WILL BE REQUIRED TO FILL OUT A JOB APPLICATION FORM BEFORE YOU ARE INTERVIEWED. THE APPLICATION ITSELF IS VERY IMPORTANT BECAUSE IT GIVES AN EMPLOYER A FIRST, OR POSSIBLY THE ONLY, IMPRESSION OF YOU. THE FOLLOWING ARE SOME POINTS WHICH ARE IMPORTANT TO REMEMBER WHEN FILLING OUT AN APPLICATION FORM.

- A. ALWAYS BE HONEST. EMPLOYERS OFTEN CHECK OUT SOME OF THE RESPONSES WHICH YOU GIVE.
- B. BE NEAT. IF THE APPLICATION IS SLOPPY, THAT IS THE IMPRESSION WHICH YOU WILL PRESENT OF YOURSELF. IF POSSIBLE, TYPE ALL APPLICATIONS. IF YOU ARE ASKED TO FILL OUT AN APPLICATION WHILE IN THE OFFICE, PRINT NEATLY WITH A PEN THAT WRITES CLEARLY.
- C. BE THOROUGH, BUT CONCISE. MAKE SURE THAT YOU HAVE ANSWERED ALL QUESTIONS COMPLETELY.
- D. BRING YOUR: 1) SOCIAL SECURITY NUMBER; 2) DRIVER'S LICENSE; 3) MILITARY I.D. OR DRAFT CARD; 4) THE ADDRESSES AND PHONE NUMBERS OF AT LEAST THREE PEOPLE WHO COULD GIVE YOU GOOD REFERENCES (THESE PEOPLE SHOULD BE PREVIOUS EMPLOYERS, CHARACTER REFERENCES, OR TEACHERS, NOT YOUR NEXT DOOR NEIGHBOR OR YOUR BEST FRIEND.); AND 5) A COMPLETE LIST, WITH DATES, OF ALL THE JOBS WHICH YOU HAVE EVER HAD, PAID OR UNPAID.

THE BEST WAY TO FILL OUT AN APPLICATION IS TO SIMPLY DO ONE. SAMPLES ARE PROVIDED IN THIS ROOM. ASK THE ATTENDANT.

AT THIS POINT, YOU MAY:

- | | |
|---------------|---|
| TYPE: 'JSS' | TO GET ANSWERS TO OTHER QUESTIONS ABOUT JOB HUNTING |
| TYPE: 'INFO' | TO CHOOSE ANOTHER TYPE OF INFORMATION |
| TYPE: 'QUEST' | TO TAKE THE 'QUEST' QUESTIONNAIRE |
| TYPE: 'END' | TO QUIT FOR NOW |

Colorado Career Information System (COCIS)

USER EVALUATION QUESTIONNAIRE

PART I

Site Name _____

User No. _____

You have been chosen to take part in an evaluation of the Colorado Career Information System (COCIS). We hope you can tell us, by way of this questionnaire what you like about COCIS as well as what we can do to improve the system.

Before you start using the system, please answer this set of questions. AFTER you finish using the system, the monitor will give you a second set of questions to answer.

1. Please check (✓) if you are:
- a student
 a VNB client
 an Institutions client
2. Your age is: _____
3. Your sex is: female male
4. In what grade in school are you?
- High School: 9th 10th 11th 12th
- College: Fresh Soph Junior Senior
- I'm not in school at this time
5. In school your grades are:
- Below Average (D's & F's)
 Average (Mostly C's)
 Above Average (Mostly A's & B's)
 I'm not in school at this time
6. Your ethnic background is closest to which of the following:
- Spanish Surname or Latin American
 American Indian or Native American
 Black or Afro-American
 Oriental or Asian American
 White or Caucasian
 I prefer not to answer
7. Do you live in an:
- Urban area (for example, mostly city)
 Suburban area (for example, a neighborhood close to a city)
 Rural area (in a small town or outside of a town or city)

8. What was your family's total income for last year? (You may not be sure but take a guess!)

- Less than \$5,000
- between \$5,000 - \$9,999
- between \$10,000 - \$15,000
- more than \$15,000
- I prefer not to say

9. Present career plans: (check one or more, if applicable)

- Attend a four-year college or university
- Attend a community college
- Attend a vocational-technical school
- Begin an apprenticeship or on-the-job training program
- Begin a full-time job
- Enter military service
- Become a homemaker
- Other (please specify) _____
- No plans at this time

10. Which statement(s) best tells why you may want to use the computer today? (You can check more than one answer)

- I don't know what I can go into after I leave high school. I need more information to help me decide.
- I think I know what job I want to go into, but I need more information to be sure.
- I know what I want to do. I need to know how to prepare for that job.
- I want to know about colleges, vocational schools or apprenticeship training programs.
- To use the computer terminal because I thought it would be interesting.
- Other reasons; please write in _____

11. You may already have in mind some occupations which interest you. If you have, please list them in order of your interest.

- 1st _____
- 2nd _____
- 3rd _____

Write down any others you are considering:

I don't have any occupations in mind

12. At this time, how certain are you that you will try to enter the occupation you listed as your first choice in question 11?

Very certain

Certain

Uncertain

Very uncertain

Colorado Career Information System (COCIS)

USER EVALUATION QUESTIONNAIRE

PAGE 11

Site Name _____

User No. _____

1. Which parts of COCIS were most useful to you? Check (✓) those parts you used, then rank those you used from "1" (most useful) to "7" (least useful). Only rank those parts you used!

Check (✓)

Rank 1 to 7

| Check (✓) | Rank 1 to 7 | |
|-----------|-------------|--|
| _____ | _____ | DESCRiptions of occupations. |
| _____ | _____ | PREPAration statements for each occupation. |
| _____ | _____ | PROGRams of study and training. |
| _____ | _____ | APPREnticeship information in the resource guide beside the terminal. |
| _____ | _____ | BIBLIographic information about each occupation. |
| _____ | _____ | Vocational, Trade and Technical Schools information in the resource guide beside the terminal. |
| _____ | _____ | Community College information in the resource guide beside terminal |
| _____ | _____ | Women's Career Counseling File |
| _____ | _____ | QUEST questionnaire |

2. When you used the system, did you find it:

Very easy to use

Easy to use

Some parts were easy, some were hard to use

Difficult to use

Very Difficult to use

3. Place a check (✓) in front of any of the following statements which you agree with.

The words in COCIS:

_____ I had a hard time understanding alot of the words. Give two examples of words you didn't understand. _____

_____ I had difficulty understanding some of the words. Give two examples of words you didn't understand. _____

_____ I didn't have any trouble understanding the words.

Additional Comments: _____

4. Place a check (✓) in front of any of the following statements which you agree with:

Quality of the Information in COCIS:

I got ~~all~~ the information I needed.

I needed more information than I got about occupations

I needed more information than I got about myself

I needed more information than I got about colleges, technical schools, apprenticeships, etc.

I think that some of the information I received was poor

I think that most of the information I received was excellent

Additional Comments: _____

5. This system is provided to you free-of-charge today. If we had to charge for using it, how much would you be willing to pay (or ask your parents to pay) for each one hour of use.

More than \$10.00 per hour

\$10.00 per hour

\$7.50 per hour

\$5.00 per hour

\$4.00 per hour

\$3.00 per hour

\$2.00 per hour

\$1.00 per hour

nothing

6. How many occupations did you get on your final QUEST questionnaire list?

more than 20 occupations

between 10 - 20 occupations

between 5 - 9 occupations

between 1 - 4 occupations

no occupations

7. Did the occupations you received on your QUEST questionnaire list give you occupations about which you have not thought?

Yes, but I'm not interested in any of them.

Yes, and it was helpful.

No, I've thought of most of them already.

8. Now that you have used the system and received some information from it, you may be interested in the same, or different, occupations. Please list them in the order of your interest.

1st _____

2nd _____

3rd _____

Write down any others you are now considering:

_____ I don't have any occupations in mind.

9. At this time (after you have used the Career Information System), how certain are you that you will try to enter the occupation you listed as your first choice in question 7?

_____ Very certain

_____ Certain

_____ Uncertain

_____ Very uncertain

10. Which of the following career information materials have you used before? (Check (✓) as many as you've used)

_____ Occupational Outlook Handbook (OOH)

_____ Dictionary of Occupational Titles (DOT)

_____ Vocational Information for Education and Work

_____ Other materials used in your school (please list as many as you can remember).

_____ I haven't used any other materials.

How would you compare the materials you checked above with the COCIS system you just used?

_____ I found much more information I need in the COCIS system.

_____ I found more information I need in the COCIS system.

_____ I found about the same information in the COCIS system as in the materials I previously used.

_____ The other materials gave me more information that I needed.

_____ I didn't use the other materials.

12. Which means of getting career information would you rather use?

- The materials I'd already used
 The COCIS system
 Both the materials and the COCIS system

13. After using the system, to whom do you plan to talk about your career plans?
(You can check (✓) more than one)

- Your parents
 Your teacher(s)
 Your counselor
 Your friends
 No One
 Others (list) _____

14. What other information would you like to see added to this system?
Please list:

EVALUATION OF THE
COLORADO CAREER INFORMATION SYSTEM

APRIL, 1976

BY

WARREN W. WOLFF
DEPUTY DIRECTOR

INTRODUCTION

This report provides the results of evaluations of the Colorado Career Information System (COCIS) which were obtained at four test sites during April, 1976. Consequently, it reflects the "state of the System" as of that date. The purpose of the test sites was to obtain reactions from potential user populations which could be used by COCIS staff in future development of the system and to determine the kinds of problems that could be encountered in delivering COCIS statewide. Specifically, the evaluation was intended to gather information on the following major topics:

- a) Ease of use of the system by different types of clients.
- b) Quantity and quality of information contained in the system.
- c) Willingness to pay for the system.
- d) Number of new occupations not previously considered and the total number of occupations provided by the "QUEST" questionnaire list of occupational titles.
- e) Change in preferred occupations before and after usage.
- f) Change in certainty of preferred occupations before and after usage.
- g) Usage of career materials other than COCIS.
- h) Comparison of COCIS with other career information materials used by the clients.
- i) Extent of discussion of career plans with other persons.
- j) Cross-referencing of user background variables (i.e., sex, ethnic background, grade level, residence, grades in school, career plans and reasons for wanting to use the system) with outcome variables listed in a) through i) above.

The system evaluated was the Oregon Career Information System as it had been localized with Colorado labor market information as of April, 1976 and a COCIS developed Women's Career Counseling File. The system consisted of five basic files of information: the DESCRIPTION, PREPARATION, BIBLIOGRAPHIC, PROGRAM and Women's File. There were 196 occupations represented by the DESC, PREP and BIB files, and 63 programs of study and training. In addition, an "off-line" book of supplemental information on Colorado Technical and Specialized Schools, Community Colleges and Apprenticeships was provided next to the computer terminal. This book was referred to in applicable PREP statements and served to expand the amount of information available on programs of study and training within Colorado. This supplemental information was compiled from the Computerized Vocational Information System (CVIS).

TEST SITE PROCEDURES

Four test sites were chosen to provide a wide range of contrasting user backgrounds (e.g., grade in school, place of residence, ethnic background, sex and career concerns). These sites were:

- Centennial High School at San Luis
- North High School at Denver
- University of Southern Colorado at Pueblo
- Mesa College at Grand Junction

At each site one or more monitors was hired to assist with all aspects of the evaluation to include monitoring attendance of the subjects, administering the evaluation questionnaires, assisting subjects in using the system and in reporting problems caused by computer or terminal failure. Each monitor was required to maintain a log book for recording of significant events which may have affected the reactions during each day of the test site.

Prior to beginning the evaluation, extensive coordination was effected with a representative from each test site to include a visit and briefing on the purpose of the evaluation by the COCIS Director and Associate Director for Information Development. Representatives included the principal and key counselors at each high school test site and deans, vice-presidents and assistants to the president at each college test site.

During the first week of the evaluation, a COCIS staff member was assigned to train each test site's monitors regarding their duties. These staff members were in daily personal contact with the test site monitors during the first week of the evaluation and were in daily telephonic contact with the sites during the three weeks of data collection which followed. In addition, the Staff members visited each test site at the end of the data collection period to conduct a debriefing of the test site monitors.

A random sample of respondents were preselected at the North High School and Centennial High School sites. At the Mesa College site, Grand Junction High School students were randomly selected while students from the college were allowed to "drop-in" in response to school announcements of the system's availability. In addition, a group from the local Work Release Program and from the Virginia Neal Blue (VNB) Women's Resource Center were not randomly selected. At the University of Southern Colorado, students were

allowed to "drop-in". In addition, several sections of a Professions Class were required to use the system while VNB clients and Vocational Rehabilitation Program clients were also allowed to "drop-in".

Each subject was scheduled for a one-hour appointment to use the system. Appointment notices were provided to subjects at each site (see Attachment 1). Each subject was requested to fill out Part I of the evaluation before using the system (see Appendix II-J). Each subject used the system from 45 to 50 minutes after which they were asked to complete Part II of the evaluation form (Appendix II-J).

Data collected was reduced to punch cards and computer processed through a contract with Dr. Gene Glass, Professor, Laboratory of Educational Research, University of Colorado. However, results reported herein are the sole responsibility of the author.

The equipment used at all sites consisted of an ITT Data Speed 40 CRT and an attached Line-printer leased from Mountain Bell Telephone Company. A Mountain Bell representative provided training to the COCIS staff members and the test site monitor(s) at all sites.

RESULTS

A. BACKGROUND VARIABLES

Five hundred seventy-nine (579) subjects completed usable questionnaires from the following user groups: North High School students (100), Mesa College and Grand Junction High School students (114), Virginia Neal Blue (VNB) Center clients (16), Vocational Rehabilitation clients (25), Work Release Program clients (14), University of Southern Colorado (USC) students (205), and Centennial High School students (105).

Forty-six (46) percent were male.

Thirty-two (32) percent were Spanish, 3 percent were Native Americans, 2 percent were Black, less than 1 percent were Oriental, and 56 percent were white. Six (6) percent preferred not to identify their ethnic group.

Concerning the residence of the respondents, 51 percent reported urban, 21 percent reported suburban and 27 percent reported rural.

When asked about the income of the family, 20 percent reported less than \$5,000, 24 percent reported an income between \$5,000 and \$10,000, 23 percent between \$10,000 and \$15,000, 17 percent reported \$15,000 and above, and 15 percent preferred not to answer. Feedback from test site operators

indicated that many students had only vague ideas about the income levels of their parents. Therefore, definite conclusions regarding the relationship between various outcome variables measured in this study and socio-economic level (as represented by family income) cannot be definitely drawn.

Table 1 contains the frequencies of career plans reported. The largest single group was college-bound.

TABLE 1

| Career Plan | Frequency | Percentage |
|-----------------------------|-----------|------------|
| College | 221 | 40 |
| Community College | 30 | 5 |
| Vocational Technical School | 41 | 7 |
| Apprenticeship | 34 | 6 |
| Full-time job | 77 | 14 |
| Military | 18 | 3 |
| Homemaker | 2 | 1 |
| Other | 41 | 7 |
| No Plans | 91 | 16 |

The participants were questioned about their interest in using the system. Twenty (20) percent said, "I don't know what I can go into after I leave high school. I need more information to help me decide." Thirty-four (34) percent said, "I don't know what I can go into after I leave high school. I need more information to help me decide." Thirty-four (34) percent said, "I think I know what job I want to get into, but I need more information to be sure." Sixteen (16) percent said, "I know what I want to do. I need to know how to prepare for that job." Six (6) percent said, "I want to know about colleges, vocational schools or apprenticeship training programs." Fifteen (15) percent said, "To use the computer terminal because I thought it would be interesting." Eight (8) percent listed "other reasons".

The respondents grade in school and estimate of academic achievement were requested. Table 2 contains the frequencies and percentages in each grade.

TABLE 2

| Grade in School | Frequency | Percentage |
|-------------------|-----------|------------|
| Ninth Grade | 15 | 3 |
| Tenth Grade | 73 | 13 |
| Eleventh Grade | 117 | 20 |
| Twelfth Grade | 101 | 18 |
| College Freshman | 40 | 7 |
| College Sophomore | 31 | 5 |
| College Junior | 55 | 10 |
| College Senior | 32 | 6 |

Two (2) percent of the participants reported having "below average", 31 percent "average" and 48 percent "above average" grades. This measure of academic achievement yielded an extremely skewed distribution in favor of students earning "above average" grades. Therefore, the differential impact of COCIS on students with different levels of academic achievement cannot be concluded with maximum confidence.

Two-way cross tabulation of background variables failed to reveal any interesting interactions. With the exception of family income and academic achievement, it can be concluded that COCIS does not have a significantly different impact upon persons of different sex, ethnic background, area of residence, career plans, reasons for using the system or grade in school.

B. OUTCOME VARIABLES

Ease of Use. Of the respondents as a whole, 52 percent said using the system was very easy, 39 percent said it was easy, 8 percent said it was part easy and part difficult. The ease of use did not vary among sites, nor user type (student, VNB, or institutions), locale, reason for using the system, future plans, ethnic group, sex or age. Those with the highest parent income more often reported COCIS very easy to use. Those with below-average grades less often reported ease of use.

The respondents were asked about the difficulty they encountered in reading the COCIS material. Only 1 percent reported "I had difficulty with some of the words." The overwhelming majority reported no trouble in understanding the words. When this question was cross tabulated with background variables only age and reported grades showed important relationships. There was a slight tendency for those reporting below-average grades to also report difficulty in the COCIS readability. The youngest and the oldest age categories also reported relatively greater difficulty.

Quantity and Quality of Information. Forty-four (44) percent of all respondents reported that they got all the information needed. Twenty (20) percent wanted more information about occupations. Fourteen (14) percent wanted more information about self. Ten (10) percent wanted more information about colleges. Few significant and intelligible relationships with background variables were discovered. VNB respondents reported more need.

for information about self. Work release program clients and community college aspirants reported greater need for information about colleges.

Concerning the quality of the information, 5 percent reported that the information they received was poor. Fifty-six (56) percent indicated the information received was excellent. A relatively greater proportion of the highest and lowest age categories rated the information of poor quality. Table 3 contains the breakdowns on information quality by user groups:

TABLE 3

| Site | Percent indicating "Poor Quality" Information | Percent indicating Excellent Quality of Information |
|--|---|---|
| North High Students | 1.0% | 58% |
| Mesa College (includes Mesa Students and Grand Junction High Students) | 8.4 | 64.5 |
| VNB Clients | 6.3 | 81.3 |
| Voc Rehab Clients | 4.3 | 73.9 |
| Work Release Program Clients | -0- | 64.3 |
| USC Students | 4.5 | 57.1 |
| Centennial High Students | 5.8 | 43.7 |

Willingness to Pay. Nine (9) percent of the respondents indicated they would not be willing to pay. No significant relationships between willingness to pay and the background variables were discovered.

TABLE 4

| Amount | Frequency | Percentage |
|--------------|-----------|------------|
| \$ 1.00 | 64 | 12% |
| 2.00 | 78 | 14 |
| 3.00 | 73 | 13 |
| 4.00 | 43 | 8 |
| 5.00 | 146 | 27 |
| 7.50 | 25 | 5 |
| 10.00 | 51 | 9 |
| Over \$10.00 | 17 | 3 |

Number of Occupations Suggested by QUEST. On the final QUEST questionnaire received, the respondents reported the following numbers: Less than 1 percent received more than 20 occupational titles; 45 percent received between 10 and 20; 14 percent received between 5 and 9; 20 percent received

between 1 and 4; those reporting no occupations constituted 1 percent. There were some differences among the sites on this question. VNB and work release clients received relatively more occupations than other user groups. Based upon feedback from test site monitors, final QUEST lists were rarely arrived at completely independently. That is, site monitors were available and were often asked to assist a subject in structuring the final QUEST list. Therefore, this question does not answer the question of how many occupations subjects received without monitor assistance.

The following question was posed: "Did the occupations you received on your QUEST questionnaire list give you occupations about which you have not thought?" Seventeen (17) percent answered, "Yes, but I'm not interested in any of them." Sixty-nine (69) percent answered, "Yes, and it was helpful." Fourteen (14) percent answered, "No, I've thought about most of them already."

Change in Occupational Choice. Both before and after using COCIS the clients were asked to indicate 3 occupations which interested them. These two items were compared and the number of new occupations (after COCIS use) were tallied. Changes in rank of the same occupation were not counted as true changes for this analysis. Twenty-nine (29) percent of the respondents demonstrated no changes in the occupations considered following COCIS use. Twenty-four (24) percent showed one change. Twenty-five (25) percent showed two changes. Twenty-one (21) percent showed three changes. No significant relationships between occupational preferences and the background variables were discovered.

Certainty of Occupational Choice. The following question was asked: "At this time (after you have used the Career Information System), how certain are you that you will enter the occupation you listed as your first choice...?" Twenty-six (26) percent reported they were "very certain". Forty-three (43) percent said "certain". Twenty-nine (29) percent said "uncertain". Two (2) percent said they were "very uncertain". Relatively more clients who had originally said, "I know what I want to do -- I need to know how to prepare for that job", also reported they were "very certain" after COCIS. The converse was true for those who had originally reported "I don't know what I can do..." as their interest in using COCIS.

A comparison was made between the above question of certainty (after COCIS) with the similar question asked before the clients had used the system. After COCIS, 25 percent were more certain than they had been before. Sixteen (16) percent became less certain. Fifty-eight (58) percent showed no change in level of certainty. Some interpretable relationships were found between the "change in certainty" and various user groups, as shown in Table 5.

TABLE 5

| Site | More Certain | Less Certain | No Change |
|---|--------------|--------------|-----------|
| North High Students | 34% | 20% | 46% |
| Mesa College and Grand Junction High Students | 24 | 14 | 61 |
| VNB Clients | 20 | 20 | 60 |
| Voc Rehab Clients | 52 | 26 | 22 |
| Work Release Program Clients | 14 | 7 | 79 |
| USC Students | 19 | 18 | 64 |
| Centennial High Students | 28 | 12 | 60 |

Other Materials and COCIS. The clients were asked whether they had used other career information materials. Table 6 contains the frequency of use of each type of material by all respondents. Materials referred to were those which students were more likely to have used in their schools.

TABLE 6

| Information Source | Frequency | Percentage |
|--|-----------|------------|
| Occupational Outlook Handbook (OOH) | 142 | 25% |
| Dictionary of Occupational Titles (DOT) | 85 | 15 |
| Vocational Information for Education and Work (VIEW) | 69 | 12 |
| Other materials | 39 | 7 |
| "I haven't used any other materials" | 237 | 58 |

Results indicated that those who earlier said, "I know what I want to do - I need to know how to prepare for that job" were also more likely to have used these materials than were respondents as a whole. Those respondents aspiring to apprenticeship programs were less likely to have used them. Other than these relationships, use of other career materials did not vary with background variables.

A comparison between COCIS and the materials listed in Table 6 was requested. Table 7 contains the response items and percentage of responses.

TABLE 7

| Item | Percentage Response |
|--|---------------------|
| I found <u>much more</u> information I need in the COCIS System | 31 |
| I found <u>more</u> information I need in the COCIS system | 26 |
| I found about the same information in the COCIS System as in the materials I previously used | 5 |
| The other materials gave me more information that I needed | 6 |
| I didn't use the other materials | 37 |

The respondents were asked which means of getting career information they would rather use. Only two (2) percent favored the "materials I'd already used." Fifty-three (53) percent favored use of only the COCIS system. Forty-five (45) percent favored use of COCIS with the other materials. No interpretable relationships with background variables were uncovered.

Discussion of Career Plans. The participants were asked the following question: "After using the system, to whom do you plan to talk about your career plans?" Forty-nine (49) percent said they would talk to a parent, 18 percent to teachers, 49 percent to counselors, 35 percent to friends, 10 percent to "others". Eleven (11) percent indicated they would talk to "no one." This varied in predictable ways according to type of client and test site; for example, because non-students lacked access to counselors and older clients lacked access to parents percentages who indicated they would talk with those people were lower. A breakdown by user groups of responses for each discussion category is provided in Table 8.

TABLE 8

| Site | Talk w/ Parents | Talk w/ Teachers | Talk w/ Counselors | Talk w/ Friends | Talk w/ No one |
|---|--------------------|---------------------|-----------------------|--------------------|-------------------|
| North High Students | 64% | 18% | 59% | 32% | 1% |
| Mesa College and Grand Junction High Students | 57 | 29 | 49 | 42 | 15 |
| VNB Clients | 13 | 0 | 60 | 33 | 7 |
| Voc Rehab clients | 32 | 0 | 86 | 23 | 0 |
| Work Release Program Students | 7 | 0 | 36 | 29 | 29 |
| USC Students | 32 | 19 | 43 | 41 | 14 |
| Centennial High Students | 69 | 12 | 43 | 25 | 9 |

SUMMARY OF FINDINGS

Ninety-one (91) percent of the respondents rated COCIS either very easy or easy to use. Only four percent said that they had difficulty understanding the words used in the system commands or occupational descriptions. We suspect that the presence of the test site monitors may have influenced to some extent the responses obtained to the question on reading difficulty. However, these results would indicate that, in general, the reading level is not too high for a high percentage of potential users.

Concerning the quantity of information provided by COCIS, 44 percent indicated that the system provided all the information they needed. However, 20 percent wanted more information about occupations than was provided. With regard to the quality of information received, 56 percent rated the information of excellent quality whereas only 5 percent rated the information as poor quality.

Sixty-five (65) percent of the respondents said they would be willing to pay at least \$3.00 for use of the system for a period of one hour. Another 28% said they would pay at least \$1.00 for use of the system. Only 9 percent said they would not be willing to pay for use of COCIS.

A major objective of the QUEST questionnaire is to provide those in process of career exploration some new occupations to consider which seems to match the user's personal preferences and abilities. Sixty-nine (69) percent of the respondents reported that they received occupational titles in their QUEST list which they had not previously considered and which they felt were helpful to them.

Data collected on changes in occupational choice and in certainty of occupational choice are subject to various interpretations. Generally, these data were collected to determine the magnitude of change and extent of certainty which might be expected when users are exposed to a career information system.

Information was requested on the extent of use of other career information materials. Surprisingly, 58 percent reported that they had not used other materials other than the COCIS system as part of this evaluation. Not surprisingly, the largest percentage of use (25) was attributed to the Occupational Outlook Handbook. Fifty-seven (57) percent of the respondents

reported that they found more information they needed in COCIS than in the other materials they had used. Fifty-three (53) percent favored use of COCIS (standing alone) as their preferred method of getting career information. Another 45 percent favored use of COCIS in conjunction with use of other materials.

Previous studies in the Oregon CIS have indicated that use of the CIS generated further discussions of career plans with parents, counselors, teachers and others. This study served to further confirm these findings. Forty-nine (49) percent said they would talk with parents, 49 percent to counselors, 18 percent to teachers and 45 percent to friends and others.

This report constitutes a summary of significant findings. The computer-generated Chi Square contingency tables for all comparisons referred to in this paper are available in the COCIS library, Willard Administrative Center, University of Colorado, Boulder, Colorado. They are available for further inspection for those interested.

Student's Name _____

You have been chosen to take part in a special experiment in career exploration. We are testing a computerized vocational information system in your area and want to know what students, like you, think about it. We would like you to use the system and give us your honest reactions.

*** The computer terminal is located at: _____

*** Your time to use the terminal is: _____ at _____
(Date) (Time)

Please be prompt so everyone has a full hour on the terminal. Someone will be there to answer any questions and show you how to use the terminal.

IMPORTANT: If for some reason you cannot use the terminal at the time scheduled or do not wish to take part in this experiment, please see _____ . You are not required to take part in this experiment.

Thank you for your cooperation! We hope you will enjoy using the system!

The Staff of the Colorado Career Information System

PROPOSAL FOR CO-VIEW/COCIS INTERFACEI. Objective

To supply Coloradans with quality, localized career information and related support services on a cost recovery basis.

II. Assumptions

- A. That a common data base of occupational and educational information presented in a compatible format be used for the microfiche, print and computer delivery modes.
- B. That a universal pricing policy apply for all delivery modes and that this price be separate from the cost of delivery equipment and materials.
- C. That statewide career information development, marketing and training for all delivery modes can be most efficiently coordinated by a centralized organization.

III. Transitional Steps

- A. Cooperative Development of Needlesort Deck by January 1, 1977
 1. Establish common base of occupations and code numbers
 2. Finalize artwork for cards (includes logo)
 3. Order card decks, needles and containers
 4. Contract for printing of cards
 5. Determine attribute coding for each occupation
 6. Notch individual cards
 7. Collage and assemble
 8. Develop instruction booklet for use
 9. Develop an in-service training program
- B. Cooperative Marketing of Needlesort Deck (beginning December 1976)
 1. Inventory current VIEW use by personal visit and telephone survey
 2. Explain and promote needlesort/print and needlesort/microfiche options to VIEW users (through newsletters, in-service training sessions, regional counselor group meetings and individual school contact)
 3. Present and demonstrate to non-VIEW users
 4. Contract for services
- C. Cooperative Development of Microfiche Cards
 1. Determine format and content (including artwork)
 2. Develop modified copy if required (may entail a new computer program)
 3. Produce microfiche cards
 4. Assemble and package
 5. Distribute to contracted users

D. Common Pricing for Cost Recovery

1. VIEW continue as a complimentary service until June 30, 1977
2. COCIS market the computer-based system and print/needlesort version on a per user cost recovery basis as independent product offering from September 1, 1976 through August 3, 1977
3. All three delivery modes be offered by a single organizational entity in accordance with the uniform COCIS per user cost formula effective September 1, 1977

E. Centralized Administration

1. Co-VIEW and COCIS maintain separate staffs, budgets and locations through June 30, 1977
2. Effective July 1, 1977 the Board of Community Colleges and Occupational Education authorize COCIS to serve as the developer and deliverer of information and services for the microfiche system.
3. Funds previously allocated for Co-VIEW operations be transferred to COCIS effective July 1, 1977
4. Co-VIEW personnel be retained as member(s) of the COCIS staff to assume a mutually agreed upon set of duties and responsibilities
5. A Boulder or Greeley location serve as the operations base for continuing microfiche efforts

Demonstrations

1. State of Colorado Career Education Conference, 10/16-17, 1975.
2. Poudre Valley School District officials, 10/22/75.
3. Colorado Springs School District, 10/29/75.
4. Guidance Fair sponsored by State Department of Education, 11/19/75.
5. Colorado Council for Vocational Education, 11/21/75.
6. Human Resources Committee, Boulder Chamber of Commerce, 12/3/75.
7. Joint Conference of Colorado Association of School Boards and School Executives, 12/7-9, 1975.
8. Jefferson County School District High School Counselors, 12/12/75.
9. Mid-Year Education Conference, 1/30/76.
10. Community College Deans and counselors, 2/4/76.
11. Employment Service and WIN representatives, 2/6/76.
12. Denver Public Schools career counselors and administrators, 2/12/76.
13. Jefferson County Schools counselors and administrators, 2/13/76.
14. Boulder Valley Schools counselors, 2/18/76.
15. University of Colorado UMC, 2/19/76.
16. Career EXPLOR Fair, 3/5-11, 1976.
17. Colorado School Counselors Association, 3/12/76.
18. Boulder Valley School Board President, 3/29/76.
19. Berthoud High School counselors, 4/1/76.
20. Boulder Public Library staff, 4/5/76.
21. Colorado Springs Public Schools, District #11, counseling, career education and computing administrators, 4/6/76.
22. Denver Public Schools, North High School personnel and district administrators, 4/9/76.
23. Adams State College Counseling Administration Class, 4/9/76.
24. Pre-Retirement Planning Institute of Colorado, program administrators, 4/15/76.
25. Ray Garvey, COCIS Board of Directors member from State Department of Social Services, 4/15/76.
26. Singer Corporation, Career Development Center, Denver project administrators and national Education Division representatives, 5/4/76.
27. Denver Income Maintenance Experiment, Special Project Counseling Center, counselors, 5/4/76.
28. Denver Metropolitan Educational Opportunity Center, counselor, 5/6/76.
29. Singer Corporation (see #26), 5/11/76.
30. Denver Urban Coalition's Action 76 Conference on Employment 5/20/76.
31. Jefferson County Public Schools, district career education staff, 5/24/76.
32. Department of Labor, Labor Market Information Project, national and regional representatives, 5/26/76.
33. Boulder Manpower, job development staff, 6/2/76.
34. Colorado Jobs for Progress, Southeastern Colorado Area Coordinator 6/16/76.
35. Denver Metropolitan Area WIN office, staff specialists, 6/21/76.
36. Colorado University Career Education Class, 6/24/76.
37. Colorado State University Career Counseling Class, 7/20/76.
38. Colorado State University Career Counseling Class, 7/28/76.

39. Colorado State University, Workshop on Job Development and Placement, Vocational Education Dept., 7/20/76.
40. Colorado State University, Workshop Group in Career Education and Counseling, Dept. of Education, 7/28/76.
41. Rocky Mountain College Placement Association, 8/5/76.
42. COCIS Board of Directors, orientation meeting, 8/21/76.
43. Boulder Valley Schools, Special Committee, 9/8/76.
44. Ron Kelton, COCIS Board of Directors member, State Department of Education, 9/8/76.
45. Mapleton and Highland High School Counselors, 9/14/76.
46. Department of Institutions at Buena Vista, 9/27/76.

PRODUCT OFFERING

| | |
|---------------------------------|--|
| <p>CAREER INFORMATION</p> | <p>Accessing Strategies to the Information</p> <ul style="list-style-type: none"> • Occupational Descriptions • Occupational Bibliographies • Preparation Statements • Programs of Education and Training • Additional Information as Developed |
| <p>SERVICES & MATERIALS</p> | <ul style="list-style-type: none"> • Annually updated labor market statistics • In-Service Training and workshops • User Guides and Coordinators Handbook • Technical Equipment Troubleshooting • Continued Information Expansion to Meet Specific User Needs |

By Computer

- Fingertip Access
- Swift Retrieval
- Continuously Updated
- Provides print copy
- A motivating experience

September 1976
Availability

By Print and
Needlesort

- Highly Portable
- Excellent for small group and classroom use
- An insightful learning tool

January 1977
Availability

By Microfiche and
Needlesort

- Can utilize existing equipment
- Provides printed copy
- An insightful learning tool

September 1977
Availability

Appendix III-B

COLORADO
 STATE
 DEPARTMENT
 OF
 EDUCATION

Colorado Career Information System
Preliminary Income Projections

FY 1977-78

COCIS will require \$100,000 income receipts and commitments by September 30, 1977. At \$1.50 per user this represents a paid user base of 66,667. Best estimates indicate the number of total users served by educational and governmental institutions in Colorado to be 717,000 as itemized below.

| | |
|----------------------------|----------------|
| Secondary Schools | 300,000 |
| Colleges & Universities | 145,200 |
| Employment Service | 205,000 |
| Manpower | 3,600 |
| WIN | 31,700 |
| Vocational Rehabilitation | 20,800 |
| Corrections | 1,800 |
| Supervised Legal Offenders | 8,900 |
| | <u>717,000</u> |

FY 1978-79

COCIS will require \$175,000 income receipts and commitments by September 30, 1978. Assuming that one third of the users qualify for the lower \$1.00 per user rate. This represents approximately 120,000 paid users.

FY 1979-80

If one half the users qualify for the lower rate, a 200,000 paid user base would be required to raise the needed \$250,000 revenue commitment by September 30, 1979

Self Sufficiency

A paid user base of 240,000 Coloradans is the target goal for the \$300,000 self supporting level assuming that one half the users qualify for the lower group rate of \$1.00 per user.

Proposed Target Populations

General Groupings: - Schools - Public and Private (2 groups)

Junior High School
Senior High School
Community College
Four-Year College, University

- Agencies

Employment Service
Vocational Rehabilitation
WIN
Manpower
Institutions: Correctional
Youth Services
Mental Health

Public Libraries
Community Agencies

- Private Sector

Geographical Groupings:

urban
rural
suburban

Sociological Groupings:

students
unemployed
career changers
disadvantaged - socio-economic
women
veterans
minorities: Chicano
Black
American Indian

Priority Groupings of COCIS Populations

Note: Urban and Rural populations, by general agreement, include the largest majority of disadvantaged, minorities, and women in need of occupational information.

Priority I - Highest Priority

- Service as many as possible, as soon as possible
- major effort of project in long run, almost exclusive effort in short run

- Urban and rural students - found in
Public Schools: Junior High School
Senior High School
Voc-Tech
Community Colleges

- Urban and rural unemployed, career changers -
found in the Agencies: Manpower
Voc Rehab
WIN
Institutions

Priority II - Moderate Priority

- system made available by end of last grant year
- some effort after Priority I population is at 2/3 of state level with 80% service capacity

- Suburban students - found in
Public Schools: Junior High School
Senior High School

- Urban, Rural and Suburban students -
found in Four-Year Colleges and Universities

- Urban, Rural and Suburban unemployed -
found in these agencies: Employment services
Veterans
Institutions

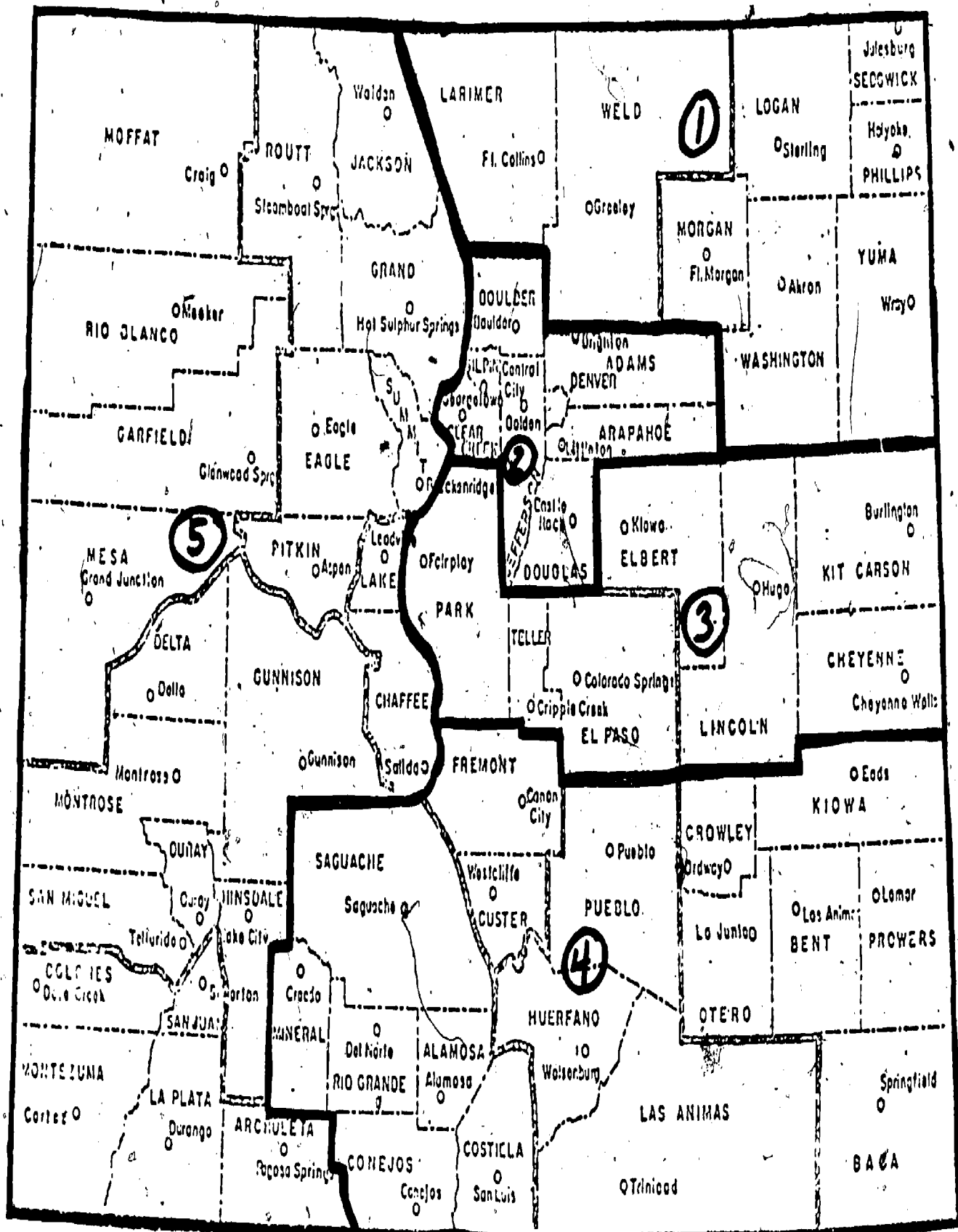
Priority III - Lowest Priority

- only if they approach us
- only if time from other priorities permits

- Urban, rural and suburban students - found in Private Schools

- general populations - serviced by Public Libraries
Community agencies

Private Sector



Colorado Career Information System
 Second Year Marketing Timetable

| Time | Administrative Center (Educational) | Regional Centers (Educational) & Agency |
|--------|--|--|
| FALL | 1. Public Secondary Schools (LMR II) a. Denver b. Suburban | 1. Establish Pueblo Center and Begin Public Secondary Schools Marketing (LMR IV) |
| WINTER | 2. Public Secondary Schools (LMR I & III) a. Urban & rural b. Suburban | 2. Institutions 3. Manpower 4. Employment Service 5. Establish Grand Junction Center and Begin Public Secondary Schools Marketing |
| SPRING | 3. Community Colleges (LMR I, II, III) a. Urban and Rural b. Suburban 4. Colleges and Universities (LMR's I, II, & III) a. Urban and Rural Suburban | 6. Social Services 7. Community Colleges (LMR's IV & V) 8. Colleges & Universities (LMR's IV & V) |
| SUMMER | 5. Rural Remote Locations of Above for (LMR's I, II, & III) | 9. Community Agencies (All LMR's) |

Appendix III-G

Colorado Career Information System
Cost Guidelines

Consortium Cost Formula

Subscribing organizations will be charged an annual fee for each user to be serviced by COCIS in accordance with the following schedule:

\$1.50 per user up to 4000
\$1.00 per user after 4000

Consortium Cost Policy

1. A minimum payment for 100 users is required for the needlesort/printout version and 500 users for the computer version.
2. The number of charged users will be negotiated based upon planned organizational use and will typically be less than the total organizational population (i.e. 2/3 of the students in a secondary school).
3. Group contracting will be allowed to assist organizations in reducing individual consortium costs.
4. Per user charges may be raised or lowered as dictated by the number of statewide paying users.

Delivery Mode Costs

1. The cost of materials or equipment required to physically deliver the information to the school or agency site represents a separate, additional charge.
2. COCIS shall serve as an equipment and service coordinator for computerized and microfiche delivery by supplying factual information regarding equipment performance requirements and local vendor contacts. COCIS will not lease or sell computer terminals, computer time, microfiche readers, etc.
3. COCIS will produce and sell for profit the non-computerized delivery materials including:
 - Needlesort Card Decks
 - Photo Offset Booklets of Printouts
 - Microfiche Cards

Pricing is to be established when exact cost figures are known.

Proposed User Handbook follows

EXPLORATION HANDBOOK



COLORADO CAREER INFORMATION SYSTEM

WILLARD ADMINISTRATIVE CENTER • UNIVERSITY OF COLORADO • BOULDER, COLORADO 80309 • (303) 492-8832

What is the Colorado Career Information System?

Colorado residents now have a unique tool to assist them in choosing rewarding careers. COCIS (pronounced CO-SIS) will serve as a statewide clearinghouse of occupational and educational information.

Students, job seekers, career changers and counselors alike can now benefit from an easy to use, up to date library of career information previously unavailable or scattered about in dozens of publications or government agencies. A special staff of researchers continually compile current facts and figures about occupations right here in Colorado.

The career information comes to you in two ways: by computer or by printout books and needlesort cards. Both allow you to explore occupations based upon your individual characteristics and information needs.

Whether you are about to begin an insightful stroll down the printed path or take a computerized cruise into the world of career, you are sure to find your journey fun, informative and rewarding. You can save a lot of time and effort too!

The Colorado Career Information System does not, however, have information about actual job openings. If you are looking for a job right now, you will need to get help elsewhere.

GETTING READY

This Career Exploration Handbook is your master guide to all the information in the Colorado Career Information System. It contains important code words and numbers which you can use to request information from the computer.

Before you start, let's do some preparing. There are two paths you may take which lead to different kinds of career information. The right path for you depends upon how sure you are about your occupational plans.

Choose QUEST PATH if you are undecided about which occupations to explore. See the first box below for more details.

Choose INFORMATION PATH if you have a particular occupation or career topic in mind. To learn more see the second box below.

ONCE YOU HAVE SELECTED A PATH, TURN TO THE COLOR KEYED SECTION OF THIS HANDBOOK TO FIND OUT MORE ABOUT THE INFORMATION YOU WANT. THEN TURN TO THE OTHER SIDE OF THIS PAGE FOR GENERAL INSTRUCTIONS TO HELP YOU ENTER YOUR REQUEST FOR INFORMATION ON THE COMPUTER TERMINAL. DIRECTIONS FOR CROSSING FROM ONE PATH TO ANOTHER ARE ALSO PROVIDED.

QUEST PATH

WHITE PAGES

You can get a list of job titles to explore based on your answers to a questionnaire. Turn to the QUEST pages of this Handbook and circle your answers to the questions. You will then be ready to type in the circled code words on the computer terminal.

INFORMATION PATH

This Path divides into four branches. Select the branch you want and turn to the color keyed section of this Handbook. When you have found the code word and number for the information you want you are ready to type them in on the computer terminal.

OCCUPATIONS

GOLD PAGES

You can learn about job duties, Colorado salaries and employment prospects, how to prepare for an occupation and where to get more information.

PROGRAMS OF STUDY AND TRAINING

YELLOW PAGE

Included are details about a variety of Colorado vocational, technical, community college, college and apprenticeship training programs.

JOB SEARCH SKILLS

TAN PAGE

This branch offers many job hunting hints useful in developing skills which can help you better present yourself to a prospective employer.

WOMEN

TAN PAGE

A questionnaire, interviews and special readings will help you better understand the role of women in the working world.

GENERAL INSTRUCTIONS

Now that you **have** chosen a COCIS Path and looked up the code words and numbers you want, you are ready to sit down at the computer terminal.

The computer terminal is a tool you use to ask for and receive information stored in a computer. The terminal is connected by telephone lines to a computer serving your area.

The keyboard of the computer terminal is arranged just like a regular typewriter. To request information from the computer all you do is type in the code word and numbers that you have selected and then press the return key.

REMEMBER TO PRESS THE RETURN KEY TO SEND YOUR MESSAGE TO THE COMPUTER AFTER TYPING IN EACH REQUEST.

TO START

Three easy steps will get you ready to type in the code words and numbers you have chosen.

| <u>STEP</u> | <u>TYPE IN</u> | <u>WHEN YOU WANT TO:</u> |
|-------------|---------------------|---|
| 1 | HELLO | Start or go to the beginning of COCIS |
| 2 | "Your Name" | Let the computer know who you are |
| 3 | QUEST or INFO | Enter your responses to the questionnaire Get information about occupations, education or other special career topics |

(To CROSS FROM ONE PATH TO ANOTHER AT ANY TIME TYPE QUEST or INFO)

FOR HELP AND SHORTCUTS

If you have some trouble while you're using COCIS or would like to learn about some tricks to speed up your journey, these pointers may come in handy.

| | |
|--|---|
| <u>TYPE IN:</u> HELP | <u>WHEN YOU WANT TO:</u> Get help with what to do next |
| <u>HOLD DOWN:</u> the CTRL key and press U | Cancel your message before it is sent (if you change your mind or make a mistake) |
| the CTRL key and press O | Stop a printout of information (this allows you to go on to your next information request) |

WHEN YOU'RE DONE

After each time that you use COCIS we would like to find out your reactions. You will be asked to enter your responses to a few questions. Your answers will help us to make the Colorado Career Information System better as time goes on.

| | |
|------------------------|--|
| <u>TYPE IN:</u> BYE | <u>WHEN YOU WANT TO:</u> Stop using COCIS and answer the question. |
|------------------------|--|

Pages 3 through 8 of appendix III-I (containing the QUEST questionnaire developed at the University of Oregon) are copyrighted and therefore not available. They are not included in the pagination

OCCUPATIONS

There are 234 occupations in the Colorado Career Information System. They cover over 90% of the employed workers in Colorado.

The information for each occupation is thoroughly reviewed at least once each year. As new information becomes available it can immediately be entered into the computer and delivered to you.

There are four types of occupational information you can request from the computer. Choose from the four code words below, then type it in followed by the number of the occupation that interests you. An alphabetical listing of occupational titles begins on the next page.

The GENERAL INSTRUCTIONS section of this handbook will help you once you have chosen a code word and an occupational number.

| <u>TYPE IN</u> | <u>FOR</u> |
|---------------------------------|---|
| DESC (<u>OCC.</u> <u>NO.</u>) | A description of duties, list of specialty and related work areas, aptitudes, work setting, hiring requirements and the current Colorado employment level, wage range, and future outlook. (For example, DESC 1614) |
| PREP (<u>OCC.</u> <u>NO.</u>) | Skills, licensing requirements and special tips to help you prepare for an occupation. (For example, PREP 1614) |
| BIB (<u>OCC.</u> <u>NO.</u>) | A bibliography of books, pamphlets, organizations and other sources of information about the occupation. (For example, BIB 1614) |
| ATTR (<u>OCC.</u> <u>NO.</u>) | A list of occupational attributes based on the 24 item QUEST questionnaire. (For example, ATTR 1614) |

OCCUPATIONAL CLUSTERS

Many occupations have something in common which allows them to be grouped into occupational clusters. These clusters can be helpful to let you see how occupations are alike and how they are different. If you have an occupation in mind and would like to find out about some similar kinds of work, you can type in DESC and the occupational cluster number.

| | | | |
|------|------------------------------|------|-----------------------------|
| 1100 | Administrative | 4700 | Graphic Arts |
| 1400 | Clerical | 5400 | Metal Working |
| 1600 | Bookkeeping - Accounting | 5600 | Electricity and Electronics |
| 2100 | Social Research and Planning | 5900 | Other Production |
| 2300 | Engineering and Design | 6100 | Transportation |
| 2600 | Laboratory | 7100 | Stock Control |
| 3100 | Mechanical | 7400 | Sales |
| 3400 | Building Maintenance | 7800 | Food Service |
| 4100 | Agriculture and Forestry | 8100 | Health Service |
| 4200 | Construction | 8400 | Social Service |
| 4300 | Food Products | 9400 | Protective Service |
| 4400 | Textile and Apparel | 9800 | Art and Entertainment |
| 4500 | Timber Products | | |

OCCUPATIONAL INDEX

| | | | |
|-------|-----------------------------------|-------|---------------------------------------|
| 1614 | Accountants and Auditors | 1418 | Clerks, General Office |
| 2335 | Actuaries | 1646 | Clerks, Railroad |
| 1136 | Administrators, Educational | 7484 | Clerks, Sales |
| 1134 | Administrators, Health Service | 7116 | Clerks, Shipping and Receiving |
| 1138 | Administrators, Public | 7118 | Clerks, Stock |
| 23541 | Agricultural Engineers | 4442 | Clothes Designers and Patternmakers |
| 6126 | Air Traffic Controllers | 4724 | Commercial Artists and Designmakers |
| 3116 | Aircraft Mechanics | 1686 | Computer Operators |
| 6188 | Airline Pilots | 1684 | Computer Programmers |
| 3169 | Appliance Repairers | 6128 | Conductors, Railroad |
| 1634 | Appraisers | 4286 | Construction Laborers |
| 2316 | Architects | 1152 | Construction Superintendents |
| 4724 | Artists, Commercial | 7824 | Cooks, Chef and Dinner |
| 3686 | Assemblers, Electronics | 7826 | Cooks, Fry |
| 9868 | Athletes, Professional | 8186 | Cosmetologists |
| 8432 | Attorneys | 8414 | Counselors |
| 3112 | Automobile Mechanics | 1638 | Credit Managers |
| 7418 | Automobile Salespersons | 8176 | Dental Assistants |
| 5486 | Automotive Body Repairer | 8174 | Dental Hygienists |
| 4324 | Bakers | 2655 | Dental Laboratory Technicians |
| 1644 | Bank Tellers | 8113 | Dentists |
| 8184 | Barbers | 4442 | Designers, Clothes and Patternmakers |
| 7852 | Bartenders | 3114 | Diesel and Heavy Equipment Mechanics |
| 8186 | Beauticians | 8116 | Dieticians |
| 26241 | Biologists | 7888 | Dining Room Attendants |
| 5488 | Blacksmith and Forge Shop Workers | 8112 | Doctors, Medical |
| 5486 | Body and Fender Repairers | 8114 | Doctors, Veterinary |
| 1616 | Bookkeepers | 2364 | Drafters |
| 4264 | Bricklayers | 4464 | Dry Cleaning and Laundry Workers |
| 5664 | Broadcast Technicians | 2626 | Earth Scientists |
| 1156 | Building Inspectors | 2318 | Ecologists |
| 3422 | Building Maintenance Workers | 21442 | Economists |
| 6152 | Bulldozer Operators | 2176 | Editors and Reporters |
| 6142 | Bus and Taxi Drivers | 1136 | Education Administrators |
| 1144 | Business Executives | 8458 | Education Program Specialists |
| 7422 | Business Services Salespersons | 23544 | Electrical Engineers |
| 4326 | Butchers | 5626 | Electricians and Electrical Repairers |
| 1184 | Buyers and Purchasing Agents | 5686 | Electronics Assemblers |
| 4586 | Cabinetmakers | 2359 | Electronics Technicians |
| 4348 | Cannery Workers | 8182 | Embalmers |
| 7112 | Car Loaders (Material Handlers) | 8168 | Emergency Medical Technicians |
| 4254 | Carpenters | 2356 | Engineering Technicians |
| 8416 | Caseworkers | 2354 | Engineers |
| 1642 | Cashiers | 23541 | Engineers, Agricultural |
| 4246 | Cement Masons | 23542 | Engineers, Chemical |
| 7824 | Chef and Dinner Cooks | 23543 | Engineers, Civil |
| 23542 | Chemical Engineers | 23544 | Engineers, Electrical |
| 26242 | Chemists | 23545 | Engineers, Industrial |
| 8459 | Child Care Workers | 23546 | Engineers, Mechanical |
| 8122 | Chiropractors | 23547 | Engineers, Metallurgical |
| 23543 | Civil Engineers | 23548 | Engineers, Mining |
| 8436 | Clergy | 6154 | Engineers, Operating |
| 1416 | Clerk Typists | 23549 | Engineers, Petroleum |
| | | 5944 | Engineers, Stationary |

| | | | |
|-------|--------------------------------------|-------|---------------------------------------|
| 1144 | Executives, Business | 5624 | Line Installers-Repairers |
| 3159 | Farm Equipment Mechanics | 1636 | Loan Officers |
| 4166 | Farm Hands | 6172 | Locomotive Engineers and Firers |
| 4164 | Farmers and Farm Managers | 5472 | Machine Tool Operators |
| 4168 | Farm Workers, Seasonal | 5464 | Machinists |
| 9426 | Firefighters | 7122 | Mail Carriers |
| 4126 | Fish and Wildlife Specialists | 7414 | Manufacturing Salespersons |
| 7856 | Flight Attendants | 7112 | Material Handlers |
| 4276 | Floor Covering Installers | 2332 | Mathematicians and Statisticians |
| 4146 | Floral Designers | 4326 | Meat Cutters |
| 4124 | Foresters | 23546 | Mechanical Engineers |
| 4128 | Forestry Aides | 3116 | Mechanics, Aircraft |
| 6158 | Fork Lift Operators | 3112 | Mechanics, Automobile |
| 5426 | Foundry Workers | 3114 | Mechanics, Diesel and Heavy Equipment |
| 2174 | Freelance Writers | 3159 | Mechanics, Farm Equipment |
| 8182 | Funeral Directors | 3146 | Mechanics, Heating and Cooling System |
| 4126 | Game Wardens | 3118 | Mechanics, Small Engine |
| 1418 | General Office Clerks | 2654 | Medical Technologists |
| 26261 | Geologists | 1456 | Messengers |
| 4248 | Glaziers | 5422 | Metal Working Patternmakers |
| 4144 | Groundskeepers and Gardeners | 23547 | Metallurgical Engineers |
| 9476 | Guards | 9436 | Military Enlisted Occupations |
| 5982 | Handcrafters | 1172 | Military Officers |
| 1134 | Health Service Administrators | 3142 | Millwrights |
| 8126 | Health Therapists | 23548 | Mining Engineers |
| 3146 | Heating and Cooling System Mechanics | 9842 | Models |
| 6152 | Heavy Equipment Operators | 5424 | Molders |
| 8166 | Hospital Attendants | 8182 | Morticians |
| 1132 | Hotel and Motel Managers | 7124 | Newspaper Carriers |
| 3169 | Household Appliance Repairers | 8166 | Nurse Aides and Orderlies |
| 3456 | Houseworkers, General | 8164 | Nurses, Licensed Practical |
| 23545 | Industrial Engineers | 8162 | Nurses, Registered |
| 3144 | Industrial Machinery Repairers | 1692 | Office Machine Operators |
| 6158 | Industrial Truck Operators | 3164 | Office Machine Repairers |
| 1156 | Inspectors, Building | 1411 | Office Managers |
| 2672 | Inspectors, Quality Control | 3126 | Oilers |
| 3186 | Instrument Repairers | 6154 | Operating Engineers |
| 4256 | Insulation Workers | 2644 | Opticians |
| 7416 | Insurance Salespersons | 8115 | Optometrists |
| 2366 | Interior Designers and Decorators | 8166 | Orderlies and Nurse Aides |
| 1182 | Interpreters and Translators | 7126 | Packers and Wrappers |
| 3455 | Janitors | 4242 | Painters |
| 3184 | Jewelers | 8433 | Paralegals |
| 1688 | Keypunch Operators | 9480 | Parking Lot Attendants |
| 7884 | Kitchen Helpers | 5422 | Patternmakers, Metal Working |
| 2656 | Laboratory Testers | 9866 | Performing Artists |
| 4286 | Laborers, Construction | 1186 | Personnel Managers |
| 9414 | Law Enforcement Officers | 5912 | Petroleum Drilling Workers |
| 8432 | Lawyers | 23549 | Petroleum Engineers |
| 8433 | Legal Assistants (Paralegals) | 5914 | Petroleum Processing Occupations |
| 7164 | Librarians | 8124 | Pharmacists |
| 7166 | Library Assistants | 4734 | Photographers |
| 8164 | Licensed Practical Nurses | 2624 | Physical Scientists |

OCCUPATIONAL INDEX

| | | | |
|-------|--|-------|--------------------------------------|
| 8112 | Physicians | 2628 | Scientists, Soil |
| 8117 | Physician's Assistants | 1412 | Secretaries |
| 26243 | Physicists | 7415 | Securities Salespersons |
| 6188 | Pilots and Flight Engineers | 3124 | Service Station Attendants |
| 4244 | Plasterers and Drywall Installers | 4446 | Sewers, Custom |
| 4274 | Plumbers | 4448 | Sewing Machine Operators |
| 9414 | Police Officer | 5484 | Sheetmetal Workers |
| 8448 | Pre-School Teachers | 6184 | Ship Officers and Engineers |
| 4766 | Printing Occupations | 7116 | Shipping and Receiving Clerks |
| 8438 | Probation/Parole Officers | 4496 | Shoe Repairers |
| 5966 | Production Assemblers | 7826 | Short Order Cooks |
| 5926 | Production Painters and Finishers | 1142 | Small Business Operators |
| 9868 | Professional Athletes | 3118 | Small Engine Repairers |
| 8454 | Professor, College | 2164 | Social Program Planners |
| 1684 | Programmers and Systems Analysts | 2144 | Social Scientists |
| 8418 | Psychologists | 8428 | Social Service Aides |
| 1138 | Public Administrators | 8416 | Social Workers |
| 1195 | Public Relations Workers | 21441 | Sociologists |
| 2672 | Quality Control Inspectors | 2628 | Soil Scientists |
| 9824 | Radio and TV Announcers | 8128 | Speech Pathologists and Audiologists |
| 3168 | Radio and TV Repairers | 7856 | Stewardesses/Stewards |
| 5664 | Radio and TV Technicians | 5944 | Stationary Engineers |
| 6174 | Railroad Brakers and Switchers | 1414 | Stenographers |
| 1646 | Railroad Clerks | 7118 | Stock Clerks |
| 6128 | Railroad Conductors | 5483 | Structural Steel Workers |
| 4258 | Railroad Track Workers | 2352 | Surveyors |
| 7417 | Real Estate Salespersons | 4446 | Tailors/Seamstresses |
| 1452 | Receptionists | 6142 | Taxi and Bus Drivers |
| 8488 | Recreation Aides | 1422 | Teacher Aides |
| 8486 | Recreation Leaders | 8456 | Teachers, Elementary and Secondary |
| 8482 | Recreation Program Directors | 8448 | Teachers, Pre-School |
| 8162 | Registered Nurses | 8454 | Teachers, University and College |
| 2176 | Reporters and Editors | 2655 | Technicians, Dental Laboratory |
| 8129 | Respiratory Therapists | 2359 | Technicians, Electronics |
| 2353 | Rod and Chain Workers | 2356 | Technicians, Engineering |
| 4278 | Roofers | 1454 | Telephone and Telegraph Operators |
| 7434 | Route Sales Drivers | 3166 | Telephone Installers-Repairers |
| 5918 | Rubber and Chemical Processing Occupations | 1644 | Tellers, Bank |
| 5924 | Rubber and Plastics Fabricators | 5462 | Tool and Die Makers |
| 1162 | Sales and Service Managers | 1182 | Translators |
| 7484 | Sales Clerks | 6144 | Truck Drivers |
| 7418 | Salespersons, Automobile | 1416 | Typists, Clerk |
| 7422 | Salespersons, Business Services | 1635 | Underwriters |
| 7416 | Salespersons, Insurance | 4494 | Upholsterers |
| 7414 | Salespersons, Manufacturers | 2314 | Urban (Land Use) Planners |
| 7417 | Salespersons, Real Estate | 8114 | Veterinarians |
| 7415 | Salespersons, Securities | 7854 | Waiters and Waitresses |
| 2674 | Sanitarians | 7114 | Warehousers |
| 5468 | Saw Filers and Tool Sharpeners | 5946 | Water Treatment Plant Operators |
| 2626 | Scientists, Earth | 5482 | Welders |
| 2624 | Scientists, Physical | 4556 | Woodworking Machine Operators |
| 2144 | Scientists, Social | 2174 | Writers, Freelance |
| | | 2177 | Writers, Technical |

PROGRAMS

The computer contains information about 85 kinds of educational and training programs. Some, like medicine, secretarial studies, architecture, auto and diesel mechanics and apprenticeships are intended primarily to prepare for careers. Others, like biology and theatre and drama have other objectives.

The programs may range from a few weeks to several years. Schools from throughout Colorado are included which represent both practical training and classroom academics.

The educational program information can tell you about:

- Purpose and occupational objectives
- Typical coursework and areas of specialization
- Colorado schools that offer training
- Related occupations and educational programs

This information will help you understand what is included in a specific program of study. It will give you an idea of program requirements and Colorado educational opportunities.

TYPE IN:
PROG (PROG. NO.)

WHEN YOU WANT TO:
Find out about courses, degrees, and schools
for a particular program of study.

You may choose from the alphabetical list of programs on the following page. Be sure to use the special three digit program number. The four or five digit occupational numbers will not get you educational program information.

PROGRAM INDEX

- 157 Accounting
145 Administration, Business Management and
231 Administration, Education
351 Administration, Medical Records
562 Administration, Public
065 Agriculture
081 Architecture and Environmental Science
311 Art
582 Anthropology
631 Apprenticeships
270 Auto and Diesel Mechanics
275 Aviation Maintenance
143 Banking and Finance
131 Biology
197 Broadcast Technology
233 Business Education
145 Business Management and Administration
524 Chemistry
389 Child Care
373 Chiropractic Training
163 Commercial Driving Training
238 Counseling
211 Data Processing
358 Dental Assisting
361 Dental Hygiene
362 Dental Technology
357 Dentistry
375 Dietetics
277 Drafting
163 Driving Training, Commercial
583 Economics
231 Education Administration
239 Education Aide Programs
233 Education, Business
234 Education, Elementary
236 Education, Secondary
292 Electronics
234 Elementary Education
251 Engineering
253 Engineering Technology
381 Environmental and Sanitation Technology
067 Fish and Wildlife Sciences
274 Flight Training
165 Food Service
068 Forestry
585 Geography
526 Geology
383 Health Technologies: Laboratory
385 Health Technologies: Radiological (X-ray)
387 Health Technologies: Other
314 History
411 Home Economics
065 Horticulture and Landscaping
161 Hotel and Motel Management
287 Industrial Mechanics
193 Journalism
214 Key Punch
421 Law
567 Law Enforcement
461 Library Science
295 Machine Technologies
145 Management, Business
161 Management, Hotel and Motel
564 Management, Recreation and Park
146 Marketing
368 Massage
481 Mathematics and Statistics
275 Mechanics, Aircraft
278 Mechanics, Auto and Diesel
287 Mechanics, Industrial
366 Medical Assisting
351 Medical Records Administration
363 Medicine
378 Medicine, Veterinary
353 Nursing (RN)
367 Occupational Therapy
369 Optometry
372 Pharmacy
317 Photography
374 Physical Therapy
364 Physician's Assisting
523 Physics
586 Political Science
318 Printing/Graphics
541 Psychology
562 Public Administration
376 Public Health
196 Radio and Television
147 Real Estate
564 Recreation and Park Management
446 Religious Studies
511 ROTC
236 Secondary Education
158 Secretarial Studies
587 Sociology
443 Speech and Hearing
197 Technology, Broadcast
253 Technology, Engineering
381 Technology, Environmental and Sanitation
383 Technologies, Health: Laboratory
385 Technologies, Health: X-Ray
387 Technologies, Health: Other
295 Technologies, Machine
316 Theatre and Drama
589 Urban Studies
378 Veterinary Medicine
283 Welding

JOB SEARCH SKILLS

Finding a good job is often a job in itself. Sound job hunting skills are always important, but they are a special advantage today when many jobs are scarce.

To help sharpen your own job hunting behavior:

TYPE IN:

JSS and the Question Number
(For Example: JSS3)

WHEN YOU WANT TO:

Get an informative answer
about a specific job search
skill

Helpful hints and guidelines are available to help you answer the following questions:

1. What kind of job should I seek?
2. What are some sources of job information?
3. How do I write a resume?
4. How do I fill out a job application form?
5. How do I prepare for a job interview?
6. How do I act in an interview?

WOMEN

More and more women are entering the labor force and finding better and more challenging jobs than ever before.

Still there are many things about the working woman which are unique or frequently misunderstood. To learn more about the world of women who work

TYPE IN:

WOMEN and the Topic Number
(For Example: WOMEN 2)

WHEN YOU WANT TO:

Learn about a specific aspect
of women who work

You have the following topics from which to choose:

1. A true or false questionnaire about employment myths and job barriers
2. Interviews with women employed in both traditional and non-traditional occupations
3. A list of books and other readings about women
4. A list of Colorado resources which offer special services to women.

THE COCIS CONCEPT

THE COLORADO CAREER INFORMATION SYSTEM is a public interagency consortium which provides current labor market and educational information in usable forms to individuals, schools and social agencies. The purpose is to improve career choices and training opportunities.

Colorado is one of eight states to earn federal funds to pioneer the development and delivery of current, locally relevant career information.

Relying upon federal support only in its initial years of development, program maturity will witness COCIS carrying its own weight as a non-profit, self-supporting organization. In this way COCIS will stand directly accountable to those schools and agencies it serves and to those who share the program cost as consortium members.

The Colorado Career Information System also supplies specialized training and consultation to subscribing organizations in the use of COCIS information in counseling and instructional programs.

For more information on becoming a COCIS consortium member, please contact:

The logo features a stylized mountain range with a magnifying glass over it, followed by the word "CAREERS" in a large, bold, sans-serif font.
COLORADO CAREER INFORMATION SYSTEM
WILLARD ADMINISTRATIVE CENTER • UNIVERSITY OF COLORADO • BOULDER, COLORADO 80506 • (303) 492-8832

Contract No.: _____

Customer: _____

TERMS AND CONDITIONS

**COMPUTER DELIVERY OF CAREER INFORMATION,
SUPPORT SERVICES, CONSULTING, AND DOCUMENTATION**

Upon execution of this Agreement by an authorized TENTIME representative, TENTIME agrees to provide Computer Timesharing Services, Support Services, Consulting, and Documentation on the basis of and on the terms and conditions set forth in the Agreement and the Schedules attached hereto.

Customer agrees to pay all charges for services as defined in Schedule A and any Federal, State, or local taxes imposed on the resources and services provided.

TENTIME

CUSTOMER _____

Signature _____

Signature _____

Name _____

Name _____

Title _____

Title _____

Date _____

Date _____

ACKNOWLEDGEMENT _____ (Date)

COLORADO CAREER INFORMATION SYSTEM

BY: _____

1. SCOPE OF AGREEMENT

The terms of this Agreement shall govern the provision by TENTIME of Computer Delivery of the Colorado Career Information System, Support Services, Consulting, and Documentation.

Support Services and Consulting require as an addition to this Agreement, a Schedule B defining work to be done and including but not limited to, the responsibilities of Customer and TENTIME, delivery schedules, ownership of work product, and minimum charges for all TENTIME services not included in Schedule A.

2. PAYMENT

Payment of all charges for Computer Delivery of Career Information must be made within thirty (30) days of initiation of service.

3. LEGAL FEES

Should TENTIME be required to commence legal action and/or seek the services of an attorney to collect any payment due hereunder, Customer agrees to pay attorney fees and the costs incurred by TENTIME in connection therewith.

4. DOCUMENTATION AND PROPRIETARY SOFTWARE

Documentation and proprietary software provided by TENTIME are furnished pursuant to a limited license grant. Customer use of this documentation and proprietary software is limited to use in connection with TENTIME-provided resources and services. Customer's license for this use shall expire upon termination of the provision of services by TENTIME. Customer agrees that the documentation and proprietary software provided by TENTIME may contain confidential information and agrees not to disclose to any third party the content thereof without the written consent of TENTIME.

5. WARRANTY AND LIMITATION OF REMEDY

TENTIME warrants that documentation furnished hereunder has been prepared and compiled with reasonable care, and that services furnished hereunder shall, under normal use, be provided in a workmanlike manner. TENTIME's liability under this warranty is limited as follows: (a) in the case of documentation, the warranty is limited to the obligation to replace (with similar documentation free from the error or deficiency in question) with reasonable promptness such documentation; (b) in the case of services, the warranty is limited to the obligation to correct any errors in the service attributable solely to TENTIME without additional charge to the customer.

TENTIME shall have no liability under this warranty unless written notice of said warranty claim describing the alleged error or deficiency upon which said claim is made is submitted by the Customer to TENTIME as follows: (i) in the case of documentation, such claim must be submitted within thirty (30) days following receipt of documentation; (ii) in the case of services, such notice must be submitted within thirty (30) days after performance of the service by TENTIME. Any replacement or correction of documentation or services by TENTIME pursuant hereto shall not extend the period of this warranty. Any modification to documentation or services made by anyone other than TENTIME shall cancel this warranty as to such documentation or services.

THE AFORESAID WARRANTY AND TENTIME'S OBLIGATIONS AND LIABILITIES THEREUNDER ARE IN LIEU OF, AND CUSTOMER HEREBY WAIVES, ALL OTHER GUARANTEES AND WARRANTIES AND ALL OBLIGATIONS AND LIABILITIES THEREUNDER, EXPRESS OR IMPLIED, ARISING BY LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR OF MERCHANTABILITY, AND ALL OBLIGATIONS AND LIABILITIES WITH RESPECT TO LOSS OF USE, REVENUE, OR PROFIT, OR INDIRECT OR CONSEQUENTIAL DAMAGES. CUSTOMER AGREES THAT THE OBLIGATIONS OF TENTIME AS SET FORTH HEREIN SHALL CONSTITUTE THE SOLE REMEDY FOR A CLAIM RELATING TO DOCUMENTATION OR SERVICES PROVIDED HEREUNDER.

6. DELAYS

TENTIME shall not be liable or deemed in default for any delay or failure in performance of this Agreement resulting directly or indirectly from any cause beyond the control of TENTIME.

7. THIRD PARTY LIABILITY

The purchaser agrees to indemnify and hold TENTIME harmless from and against all losses, costs, expenses, damages, and liabilities, including reasonable attorney's fees, which TENTIME may suffer or be required to pay arising out of injuries to persons (including death) or damage to property resulting from or pertaining to the furnishing of timesharing services, support services, consulting services, and the use of documentation furnished hereunder other than that caused by the negligence or willful misconduct of TENTIME, its agents, employees, or servants.

8. GENERAL

- (a) Governing Law. This Agreement shall be construed and the legal relations between the parties hereto determined in accordance with the laws of the State of Colorado.
- (b) Waiver. The waiver of one breach or default hereunder shall not constitute the waiver of any subsequent breach or default.
- (c) Assignment. This Agreement shall be binding upon and shall inure solely to the benefit of the parties hereto and their respective successors in interest and (to the extent specified in the assignment) assignees, and not for the benefit of any other person or legal entity. The customer, however, shall not assign this Agreement without first obtaining the prior written consent of TENTIME, which consent shall not be unreasonably withheld.
- (d) Term of Agreement. This Agreement shall be in effect from the date of signature through the remainder of the Calendar year, or as amended and/or extended under the provisions contained in Schedule A.
- (e) Discrimination and Affirmative Action. TENTIME agrees to comply with the letter and spirit of the Colorado Antidiscrimination Act of 1957, as amended, and other applicable laws respecting discrimination and unfair employment practices. TENTIME will not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, marital status, religion, ancestry, mental or physical handicap, or age.
- (f) Entire Agreement. This Agreement and the attachments hereto represent the entire agreement between the parties and supersede all existing contracts or agreements previously executed between said parties, with respect to the subject matter hereof. This Agreement, and each provision and schedule hereof, may be modified only in writing duly executed by both parties. In the event the customer issues a purchase order or other instrument covering the services or documentation

herein specified, it is understood and agreed that such purchase order or other instrument is for the customer's use and purposes only and shall in no way affect any of the terms and conditions of this Agreement.

9. DEFINITIONS

- (a) Computer Delivery of Career Information. Access to Colorado Career Information System license software through dial-up asynchronous telephone lines.
- (b) Consulting Services. Services performed by TENTIME Systems and/or Applications Consultants. Services include, but are not limited to, special studies, systems design and analysis, programming and program development, system conversion, planning and evaluation, documentation, and customer training.
- (c) Documentation. All manuals and materials accrued, prepared, or compiled by TENTIME and furnished to customers in connection with the purchase by customer of timesharing services.
- (d) Proprietary Software. Programs developed by TENTIME or those programs for which TENTIME has secured right of use.
- (e) Support Services. Services which include but are not limited to media conversion, plotting services, punching services, user orientation, and user access assistance.
- (f) Terminal Time. Time measured in minutes between initiation of the computer connection and the breaking of the connection.
- (g) Timesharing Services. Access to computer and computer resources as defined in Schedule A and/or subsequent schedules attached to and made a part of this Agreement.

TERMS AND CONDITIONS

COMPUTER DELIVERY OF CAREER INFORMATION,
SUPPORT SERVICES, CONSULTING, AND DOCUMENTATION

SCHEDULE A

This schedule is attached to and made a part of the contract, Number _____,
between TENTIME COMPANY and _____
dated as of _____, 19__.

Computerized Delivery of Career Information

Access to the Colorado Career Information System is through local Denver Metro area dial-up telephone lines.

Access to information is on a scheduled basis from 7:00 A.M. to 5:00 P.M. weekdays, major holidays excepted. Access at other times is by special arrangement with COCIS.

Use of the Colorado Career Information System is by measured subscription which provides for up to one hundred thousand (100,000) lines of output per terminal per month. Charges for additional usage are on an incremental line basis.

Additional Terminals

Customer may elect to add additional terminals for Career Information Services. Estimated installation times will be provided on a case by case basis.

General Timesharing Usage

Computer resource usage for applications other than COCIS is available and requires as an addition to this Agreement, a separate schedule defining charges for computer resources and support services.

Cost of Service (For 1976 and 1977)

| | |
|--|----------|
| Per Terminal Installation Charge (One time charge per terminal) | \$ 60.00 |
| Delivery of COCIS per month per terminal for yearly subscription service | \$200.00 |
| Additional lines of output (per one thousand (1000) lines) | \$ 1.00 |

For contract period _____ 19__ through _____ 19__
for service provided for _____ () terminals, total cost,
excluding any charges for additional lines of output, is \$ _____.

USER/COCIS

This AGREEMENT is entered into this _____ day of _____, 197____, by and between _____

hereinafter referred to as the "USER" of the system, and COLORADO CAREER INFORMATION SYSTEM, hereinafter referred to as "COCIS", the developer of the system under various license agreements and grants.

It is understood by and between the parties hereto that the purpose of this agreement is to provide USER with a computerized career information system, to be operated expressly for the sole use of the USER at the following locations: _____

for the period of _____ to _____

Upon payment to COCIS by USER of the following consideration _____

COCIS agrees to:

1. Supply such books, pamphlets, manuals, lists, documentation and materials as are necessary to utilize the system in such quantity as needed or to grant permission to the USER to reproduce exactly such materials in such quantity.
2. Conduct at least one in-service training session for the coordinator and other designated key personnel and supply appropriate materials for same.
3. Assist coordinator and other designated key personnel in planning in-service training for clientele of USER.

USER/COCIS

4. Serve as an advisor and consultant on the proper and effective use of the System.
5. Make every reasonable effort to maintain and update the data banks and files on the computer system which delivers the system to the USER.
6. Authorize the designated computer services to execute the system (run on the computer) for the USER.
7. Act as liaison and advisor, when requested to do so, between USER and the designated Computer Services,

USER agrees to:

1. Appoint a coordinator who will:
 - a. Distribute materials to local user sites.
 - b. See that a local coordinator is designated for each site where the system is used.
 - c. Jointly plan and execute in-service training and other activities with COCIS staff.
 - d. Promote the implementation of the system into ongoing counseling and guidance activities.
 - e. Be available for consultation with COCIS staff.
2. Operate the system only from the Computer Service designated by COCIS.
3. Comply with standard of use attached.
4. Participate in such evaluations as may be deemed necessary by COCIS and to expediently submit such forms and reports as may be supplied by COCIS.
5. Allow staff members of COCIS to observe, inspect, photograph, record (publicize) etc. the operation of the system and to inspect and copy any records or data collected by the user or pertains to the operation of the system.
6. Refrain from alteration of any materials provided by COCIS without written permission; refrain from violation of any copyrighted material provided or contained in the imposition of any charge to any of its clientele for the use of the system or any material supplied by COCIS.

7. Refrain from the disclosure of information obtained from the system to any third parties.

It is further mutually understood and agreed by and between the parties that:

1. This agreement may not be assigned by USER and that USER shall not sell, lease, loan, copy or otherwise share this system, or any portion thereof, with any third party without prior written approval of COCIS; except that the system may be operated occasionally for a third party for demonstration purposes only.
2. The system is intended to be solely a program of information and as an aid to career decision making on the part of the clientele of the USER. To this end, COCIS will make every reasonable effort to maintain the files, programs, data banks and other materials in such manner that they reflect and incorporate accurate and current information, but that COCIS does not guarantee the accuracy thereof, or assume any responsibility for the utilization thereof by the clientele of USER.
3. COCIS does not assume any responsibility for the execution and delivery of the system - same being the responsibility of _____
4. COCIS reserves the right to temporarily suspend execution of the system by notifying the Computer Service and the USER in writing.
5. Either party may cancel this contract by giving 30 days written notice. Immediately upon cancellation USER will promptly return all materials supplied by COCIS.
6. This agreement shall constitute the whole agreement between the parties and shall not be modified, waived or discharged except as provided hereinabove and in writing

USER/COCIS

duly signed by the authorized representative of each party. This agreement supercedes all proposals, oral or written, and all other prior communications between the parties relating hereto. Any waiver by either party of any requirement of this agreement shall not constitute a waiver of any other requirement of this agreement nor of the same requirement on a separate occasion. The USER acknowledges that it has read this agreement and agrees to be bound by its terms.

(USER)

By _____

Title _____

ATTEST:

COLORADO CAREER INFORMATION SYSTEM (COCIS)

By _____

ATTEST:

COCIS/COMPUTER SERVICE

This AGREEMENT is entered into this _____ day of _____, 197____, by and between the COLORADO CAREER INFORMATION SYSTEM, hereinafter referred to as "COCIS" and

_____ hereinafter referred to as the "COMPUTER SERVICE".

It is understood by and between the parties hereto that the purpose of this agreement is to enable and authorize the COMPUTER SERVICE to execute and deliver a computerized career information system, developed by COCIS under various license agreements and grants, to _____

_____ hereinafter referred to as "USER".

DEFINITIONS: For the purposes of this agreement the following definitions will apply:

- a. "System" is the total collection of information, data, programs, instructions, and other input which are loaded into and maintained in a computer. System shall be considered as consisting of two parts, (1) data-banks, and (2) programs. It is recognized that these two parts are not necessarily physically separable in the computer.
- b. "Data-banks" shall be considered in the usual sense of common computer terminology and shall consist of all data, files, and other information for which substitution of character for character would not affect the execution or running of the system.
- c. "Programs" shall consist of those commands, languages and input which are essential for the execution of the system by the computer and which do not qualify as data-banks.

COCIS/COMPUTER SERVICE

In CONSIDERATION of the mutual promises and agreements herein contained, the parties agree as follows:

COCIS agrees to:

1. Supply Computer Service with computer program, data-banks, files, documentation, necessary tapes, object decks, and other materials, not including computer equipment or hardware, for Computer Service to load and execute the system.
2. Provide technical assistance of a temporary nature to aid in the loading and de-bugging of the system.
3. To permit Computer Service to make minor changes in the program, machine or compiler languages so as to allow the system to execute efficiently on a particular computer configuration provided such changes and alterations preserve the execution of the System exactly and completely as set by the standard maintained by COCIS and available to Computer Service.

COMPUTER SERVICE agrees to:

1. Execute or cause to be executed the System for the sole and exclusive use of the USER. Not to execute system for any third party without express permission by COCIS except that Computer Service may execute or run system for purpose of maintenance or inspection by their own personnel. The times and quality of execution of the system to be jointly agreed upon between USER and COMPUTER SERVICE.
2. Allow COCIS, or its designated agent, to monitor, inspect and oversee the execution of the System at any time.
3. Allow COCIS or its authorized representative to update, alter, add, delete, or otherwise edit any or all of the data-banks at any time, or cause such to be done, and to refrain from any changes, additions, alterations and deletions, or otherwise edit any character in the data-banks, without prior written permission of COCIS.

COCIS/COMPUTER SERVICE

4. To maintain such accounting records of System use as shall be agreed upon and to allow COCIS to inspect, record, reproduce and publish such records.
5. To maintain reasonable internal security to prevent unauthorized users access to the system or the data-banks.
6. To refrain from disclosure of the contents of data-banks to any third party, recognizing that said data-banks may contain information of a confidential nature.
7. Suspend service and execution of System to any USER immediately upon written request of COCIS.
8. Immediately upon termination or cancellation of this agreement to return all tapes, manuals, documentation, object decks and other materials supplied by COCIS and to purge, erase, delete or otherwise do away with all programs, files, data-banks and other computer-stored pieces of the system.
9. Not to reproduce by print, magnetic, electric, optical, or any other means any tapes, object decks, manuals, documentation, materials or computer-stored programs, files or data-banks pertaining to the system except by written permission of COCIS.

Either party may cancel this agreement upon 60 days written notice.

This agreement shall constitute the whole agreement between the parties and shall not be modified, waived or discharged except as provided hereinabove and in writing duly signed by the authorized representative of each party. This agreement supersedes all proposals, oral or written, and all other prior communications between the parties relating hereto. Any waiver by either party of any requirement of