Part II. Summary of Projects

A. Commercial Diving Procedures Manual

The first part of my proposal was to rewrite and update the Commercial Diving Operations Manual. The manual is used in M.T. 103, Commercial Air/Mixed Gas; M.T. 105, Offshore Equipment Repair and Maintenance; M.T. 106, Underwater Cutting and Welding; M.T. 107, Bell/Saturation Diving; M.T. 109, Ocean Dives; and M.T. 110, Open Sea Dives. The manual was written for students as a reference to guide and conduct field operations.

1. Research:

During the Fall of 1992 and Spring of 1993 I reviewed and compiled data to be used to update the Commercial Diving Operations Procedures Manual. In September I started my sabbatical by visiting commercial diving companies to meet with personnel to investigate current trends in diving operations safety. I first traveled to meet with diving companies in the Gulf of Mexico. While there I made contacts with personnel from SubSea International, New Orleans, LA, Global Divers and contractors, Maurice, LA and Offshore Petroleum Divers, Amelia, LA. During these visits, I met with company safety officers, managers, and management personnel to discuss current diving practices, decompression tables, procedures, treatment, and diving emergency procedures.

After my return to Santa Barbara, I visited several diving companies along the West Coast. I visited with diving managers, divers and tenders from Oceaneering International, Santa Barbara, CA, Martec International, Oxnard, CA, and International Diving Services, Port Hueneme, CA. I also met with personnel from smaller, more specialized companies such as MariPro, Ecomar and Western Space and Marine, all located in Southern California.
Not part of my original sabbatical leave proposal, but helpful as a means for me to keep current with the industry, was the work experience I did the summer before and after my sabbatical. This work experience also proved to be a valuable tool in regard to the research I needed to accomplish the final product of my sabbatical. I worked as a diving supervisor for SubSea International during the months of July-August of 1992. During these months I supervised saturation diving operations in 300 feet of water in the Gulf of Mexico. Besides being a diving supervisor, I trained personnel in saturation diving procedures and conducted safety meetings each day. This was extremely valuable as saturation diving is an area I teach at SBCC and is one of the chapters in the ComDivOps Manual.

Saturation diving is the deep diving procedure utilizing a diving bell and a saturation chamber complex. The divers are pressurized to a chosen depth on helium oxygen mixtures. This depth is usually the working depth. The divers are kept at that pressure (depth) for extended lengths of time, sometimes up to thirty days. The divers live in the saturation chamber complex onboard the vessel pressurized to the working depth. When the divers are ready to work, they are transported to the job site under pressure in the diving bell. Once at the work site, the diver equalizes the bell pressure with ambient pressure, then locks out of the diving bell to perform the assigned work. With this type of diving procedure the divers are able to work for many hours per day without the concern for decompression after each dive. When the project is finished, then the divers are decompressed. This decompression is very slow, usually about twenty four hours per one hundred feet depth.
2. Reviewing and Compiling Data

Throughout the sabbatical leave, I continued to gather information to be dissimulated and analyzed to determine what data would be used in the ComDivOps Manual.

My first source was the U.S. Navy Diving Manual, which is a standard for diver decompression and treatment tables. All the commercial diving companies use the U.S. Navy Tables, but have modifications to enhance their safety record. For example, the U.S. Navy claims a 92% safety record on their mixed gas decompression tables. That’s approximately 8% incidence of decompression sickness using their tables as written. SubSea International’s safety officer claimed that with their modifications to the tables they have less than 1% incidence of decompression sickness. That’s why it was important to visit with diving companies and discuss what modifications they are using to increase the safety for their divers from decompression sickness.

My second source was the Association Of Diving Contractors (ADC) Consensus Standards. This is a manual that is published by ADC to standardize the requirements and safety procedures of the commercial diving companies working throughout the United States and abroad. I met with the ADC Safety Committee chairperson in New Orleans, LA to discuss current trends in operations and decompression. We also discussed ADC’s current plans to meet with the U.S. Coast Guard and OSHA to standardize regulations regarding safe diving procedures.
3. Type & Edit Manual

The new data was stored in the computer during the writing phase of the manual. This effort will be extremely helpful for future changes and up-dates. Each year I plan to update and enter current procedures into the computer and begin each school year with a manual that is current with industry standards.


Much time and effort went into the design of the ComDivOps Manual. Besides trying to decide on the layout, time was spent learning the computer programs and drawing graphs to be used in the manual. Final formatting and lay up for printing took several days.
2. Reviewing & Compiling Summary of Questionnaires.

All the questionnaires were reviewed and notes were taken to compile a summary for later use by the Marine Diving Technology Department. A copy of the summary and each questionnaire will also be given to the Santa Barbara City College's Career Center for their reference.
Summary of Achieved Outcomes

NAME Margaret Eejima

PROJECT TITLE Computer-Based Tutorials for AutoCAD
Computer-Assisted Drafting and Design (CAD)
Software

TERM OF LEAVE 1992-1993

The purpose of this sabbatical leave was to provide CAD classes with computer-based teaching materials appropriate to a high-tech subject. Instructors in the CAD classes were using lecture and lecture/demonstration as their primary teaching method. Over the past few years, AutoCAD has become a more powerful CAD program, with an attendant increase in its complexity. Additional instructional materials and techniques were developed in order to assist our students in the learning process.

There is much interest at present in multimedia, CD-ROM, and other forms of computer-based education. As part of my sabbatical leave, I surveyed a number of computer-based training materials written for applications software. Curiously, these materials were generally not effective in teaching computer applications. Far too many of these programs rely on screens full of text with little required of the user except to press a key to advance to the next screen. As a result, the following guidelines were developed for writing these tutorials:

- Tutorials must constantly interact with the user. Instructions must be kept at a minimum number of sentences because of the inherent difficulties in reading computer screens.
- Tutorials must be short, or broken into small pieces. The maximum amount of time an average student can or should work with a computer-based tutorial should be 15-20 minutes.
- Tutorial screens should be simple. Colors and boxes are fun to write, but they generally slow down the display and the pace of the tutorial. The ability to skip material with which one is comfortable is as important as the careful explanation of complex concepts in applications tutorials.
PC-CAI can display graphics, but this capability was used sparingly in the interest of speed. Graphics screens were used mostly to simulate the effects of AutoCAD's display control commands and to display dialog boxes.

AutoCAD's own native slide file formats were used for graphics screens. These screens are directly accessible within the AutoCAD program. AutoCAD's pop-up menu was modified to display a list of graphical help screens, and the F11 function key was also programmed to do the same through AutoLISP. These screens display most of AutoCAD's complex editing functions, such as trimming and extending entities.

Handout masters for the tutorials and documentation for modification of the tutorials were provided to all Drafting and Engineering CAD instructors. These handouts are included as part of this sabbatical leave report.

One welcome addition to the CAD program was permission from Autodesk to serve as one of two beta-test sites for the training materials Autodesk has developed for its dealer training classes. Only SBCC and Milwaukee Area Technical College are currently using these materials. I am deeply indebted to Brad Zehring, now with Autodesk Training and previously Director of Software Development for Release 12, for his generous assistance in obtaining beta-testing status for SBCC. The training materials are excellent, and, until a few weeks ago, were the only instructional source for AutoCAD's new PDB (Programmable Dialog Boxes) and DCL (Dialog Control Language) languages.

The Autodesk training materials were used as a basis for computer-based presentations running under Lotus Freelance Graphics, a highly-regarded presentation program. Freelance is widely regarded for its ease-of-use, and was purchased by the Drafting/CAD Department for that reason. Any advanced CAD instructor wishing to modify the AutoLISP presentations will encounter little difficulty.

These presentations are currently in use in our Advanced CAD class. They are displayed during the lecture portion of each class, and then repeated in self-running mode during the remainder of the lab. Students have the opportunity to review important concepts and to review program code assignments. This has increased the amount and complexity of material our Advanced CAD instructors can cover during the course of a lecture.

I have also written accompanying AutoLISP assignments to supplement the material covered in the tutorials. It has been my experience that the writing of useful code is important to developing enthusiasm for AutoLISP programming.

The planning, design, writing, and implementation of these tutorials required re-evaluation of my course organization, and this was one of the most personally
A. SPECIFIC OUTCOMES

1. Through coursework, readings and workshops, I was able to accomplish a major goal of this sabbatical project: to increase my knowledge and skills in the area of career development and develop competence in career counseling for future use both as a college counselor and instructor and in developing and implementing career planning activities into future high school outreach programs.

During the Fall of 1992, I audited Education 164 at UCSB: "Introduction to Educational and Vocational Guidance". During the Winter quarter at UCSB, I served as a volunteer Teaching Assistant for this same course.

Throughout the year, I read widely in books and journals on the subject of career planning and development, career education, career counseling, reaching underrepresented populations and successful approaches to incorporating career development issues into outreach activities. The final activity toward this goal was participation in a workshop on the use of specific assessment instruments in career counseling situations.

2. The issue of students entering college unprepared and undecided concerning their goals and/or major field of study was addressed in my visits to model programs at two community colleges. These visits, to West Valley College and Rancho Santiago College, are described in full below, with recommendations for application to SBCC outreach programs in Part III. The career development activities which I observed at these colleges can be modified and adapted for use in SBCC outreach programs.

3. High school articulation, outreach and recruitment will be strengthened as a result of incorporating: a) the recommendations from visits to other campuses; b) career development elements; and c) the learning from readings, observations and meetings with local schools into future planning activities. A concept paper outlining specific ways to incorporate the learning from these experiences appears in Part III.

4. A bibliography of readings on the changing student population, career development and planning, and the effect on student development programs was compiled. This appears in Part III.

5. Outlines for career-planning presentations specific to the developmental stage of the high school student and the changing student population were developed for use in high school outreach activities. As a result of readings in career education and the developmental approaches to career planning, three different
I see the achieved outcomes of my sabbatical leave, as follows:

1) A set of typewritten notes for each of the four major novels of Henry James, one of which was made available to my English 111 students for spring and fall semesters, 1993-94, specifically for the novel, The Ambassadors. The notes enabled the students to better approach, apprehend, understand and appreciate this novel as they were reading it.

2) The complete set of notes for each of the novels I studied, namely, The Ambassadors, The Wings of the Dove, Portrait of a Lady, and The Golden Bowl made available to my English Division colleagues. These notes were given to the department to encourage and help my colleagues in teaching any of these four major James novels in their own classes. So far, I personally am aware of one instructor who requested and was given the complete set of notes.

3) A 30 page paper entitled "Henry James and the Inner Life," which I have on hand to give as a talk or as a distributed paper to my Division, or to any of our administrative or academic staff members, for the asking.

4) A course entitled The World of Henry James was offered to Adult Education for their near future curriculum. A formal letter was written May 17, 1994 to Renée Robinson, my programmer, offering the course to run in tandem with one I am already teaching, namely, The World of Marcel Proust. (At SBCC, a Topics in Literature course in James is not feasible for English Department curricula at this time.)

5) An enrichment of the literature offerings here at the College — both for the student as well as the teacher — that will further strengthen and enhance the understanding and appreciation of Henry James, one of America's greatest novelists.

6) A personal enrichment in the greater familiarity and deeper appreciation of the four most mature novels of James, upon the completion of my sabbatical reading, study and written elucidation of these works.

Mervin Lane
Associate Professor, English
Santa Barbara City College
5/25/94
# Summary of Achieved Outcomes

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<tr>
<th>NAME</th>
<th>MARGARETE REINHART</th>
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<tr>
<td>PROJECT TITLE</td>
<td>WOMEN IN MATHEMATICS</td>
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<tr>
<td>TERM OF LEAVE</td>
<td>SPRING SEMESTER, 1993</td>
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Please elaborate on the specific achieved outcomes of your project, as summarized in the Abstract, listing their benefits for Santa Barbara City College. The outcomes you describe here will be the criteria by which the success of your sabbatical project will be evaluated.

**NOTE:** This summary is read by both the Academic Senate and the Board of Trustees, and, as a result, is a critical component of your proposal. You are strongly urged to keep this summary (which will accompany your Abstract) to ONE page. You may elaborate on this summary in your proposal narrative.

1. **Women in Mathematics:** A report is provided that includes the following:
   
   a. **Review of the Literature**
      
      Books and journal articles were reviewed. The review consists of a brief annotation identifying the key points of the books and articles, and an analysis of the books and articles which identifies insights or directions to increase the success of women in Mathematics.
   
   b. **Review of the Higher Education Programs to Increase the Success of Women in Mathematics**
      
      Higher education-based programs developed to increase the success of women students in Mathematics were reviewed. The report includes a description and analysis of these programs and a delineation of program elements determined to be of value.
   
   c. **Application of Literature and Program Review for the Development of a Program to Increase the Success of Women in Mathematics at Santa Barbara City College**
      
      Program options were outlined for possible implementation at Santa Barbara City College. The strengths and weaknesses of these programs were presented. A recommendation for program direction at SBCC is included.

2. **Courses to Increase Competence in the Teaching of Mathematics:** This portion of the sabbatical resulted in the following products for two SBCC courses to be prepared:
   
   a. Calendar estimating the timeline by which course content will be covered.
   
   b. Material that will be the focus for the first week of instruction.
   
   c. The outline incorporates key teaching/learning techniques obtained through the course-taking experience of the sabbatical leave.
Summary of Achieved Outcomes

NAME         Conrad Weiler
PROJECT      18 HyperCard Stack Programs for Biology 100 Course
TERM OF      ONE SEMESTER - FALL 1992-93
LEAVE

The HyperCard stack programs for my Biology 100 class have been used in the MultiMedia (MM) computer laboratory for the past year. These were created during my sabbatical leave.

Students have been encouraged to visit the lab on their own to review the materials essential for their understanding of basic biologic principles. The lab groups have met every other week at the MM computer lab (29 Macintosh stations) to review the stack program designed for the current topic and remind students of their availability. The programs are also available on the single computer in the biology lab. They are also available in the Science Macintosh (12 station) computer lab (H-244).

These programs have been very useful in presenting biology concepts to students via an electronic means. The interactivity has been vital to better understanding by students of vital biological processes. Students learn in different ways. The textbook, laboratory manual, lecture and laboratory presentations have been augmented by the use of my HyperCard stack programs. Whereas the textbook is more passive, HyperCard offers interactivity allowing more student choice in the pathways of learning. The benefits to Santa Barbara City College are better trained students. They understand biology concepts better and have had exposure to using computers in knowledge acquisition.

HyperCard stack programs allow animations, sound, and interactivity that are different than the typical textbook or laboratory manual. Since students have been raised in the television age - screen presentations with the above effects may have a very powerful influence on learning.

One of the key features of HyperCard stack programs is that they are never finished. As new information becomes available (including new graphic materials) - it may easily be added to the existing HyperCard stack program. Hence, new students may actually add to the knowledge base that evolves during the course. This is a very dynamic way to learn and more like a "real-world" education.