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EVALUATION OF TWO MULTI-SHIPYARD COOPERATIVE TRAINING PROGRAMS

BY

Dr. Alvin J. Abrams
Data Design Laboratory
Vice President, Training

ABSTRACT

Descriptive and evaluative information is reported on two multi-shipyard training programs: (1) Tidewater Maritime Training Institute, Norfolk, Virginia, and (2) Cooperative Apprentice Training Program, Seattle, Washington. The programs differ greatly in origin, goals, organization and operation; yet both successfully met local requirements.

Both programs are described relative to their: (1) program history, (2) legal basis, (3) objectives, (4) funding, (5) geographic area, (6) staff and facilities, (7) trainee input, (8) curriculum, and (9) hiring and retention of graduates. The detailed descriptions are presented for two reasons. First, a useful evaluation must be based upon knowledge of specifics. Second, one goal of this project is to provide guidance to shipyards in other locations.

The dissimilarity between these programs is instructive. First, training for both unskilled and skilled workers can be addressed via cooperative efforts. Second, cooperative efforts may involve various relationships between federal, state and' local governments as well as between shipyards, unions, and educational institutions.

INTRODUCTION

This project was funded by the SNAME Ship Production Committee Education Panel. Data-Design Laboratories performed the work during the summer of 1984 under subcontract to the University of Michigan Transportation Research Institute. The project is described in detail as SP-9 Panel Report.[1] Three purposes stated in the Request for Proposal were:

(1) to investigate and evaluate two existing cooperative shipyard training programs,
(2) to identify other geographic areas in the U.S. where similar programs might be feasible, and
(3) to produce a program development and implementation guide for new projects.

Two programs were designated for study. These were the Tidewater Maritime Training Institute, Norfolk, Virginia, and the Cooperative Apprentice Training Program, Seattle, Washington.

Most of the information that I am reporting was obtained from interviews using four questionnaires. These questionnaires were designed to elicit both descriptive and evaluative data from four major categories of program participants: (1) program managers, (2) participating employers, (3) students and program graduates, and (4) instructors. The questionnaires were administered at both Norfolk and Seattle, and overall we found two very different but successful programs. Unfortunately during late 1984 there was little need for shipyard apprentices in the Seattle area.

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Employment in shipyards had shrunk over 50% in the previous two years. As a result, that program was not flourishing at the time of the survey.

In addressing the questions of potential areas for shipyards, Data-Design Laboratories obtained information on 27 areas which had significant ship building and/or ship repair yards. The areas were ranked relative to total tonnage and described on four other variables that might be considered in assessing potential for a cooperative training program.

Finally, guidelines for establishing other programs were derived from what we observed in the Norfolk and Seattle programs'. Although the programs differ greatly, there are underlying principles and concepts that may be generalized.

Before going into greater detail, I would like to note that I am not certain of the rationale behind the selection of these two programs. However, they provided an interesting and informative contrast. As you will see both are well developed programs, but each meets a unique need in a unique manner. Perhaps the only commonalities are that: (1) the shipyards involved in each program defined their training needs, and (2) they meet these needs through cooperative relationships with a variety of governmental and private entities. As we look more closely at each program, we will focus on nine factors: (1) objectives, (2) geographic area, (3) program history, (4) legal basis, (5) funding, (6) staff and facilities, (7) trainee input, (8) curriculum, and (9) hiring-and retention of graduates.

THE TIDEWATER MARITIME TRAINING INSTITUTE

Objectives

First we will look at the Tidewater Maritime Training Institute. It's objectives are consistent with both local needs and the Federal Jobs Training and Partnerships Act of 1982. The program seeks to take unskilled trainee input and produce individuals who (1) are motivated to learn and to work, (2) understand the rigors of the ship repair work environment, (3) are familiar with a number of ship repair skills involving the use of tools and equipment, and (4) have sufficient mastery of basic math, blueprint reading, and safety practice to enable entry into the ship repair industry.

Geographic Description

The Tidewater area is the 31st largest Metropolitan Statistical Area in the country. Six cities in this area have a combined population of over one million people. These cities are: Norfolk (267,000), Virginia Beach (262,000), Newport News (145,000), Hampton (123,000), Chesapeake (114,000) and Portsmouth (105,000). There is considerable commercial and military maritime activity in the area. There are three major shipyards and over a dozen smaller yards. Only one of the larger yards participates in the program.

Program History

In 1972 a ship repair executive recognized the need for training entry personnel for the ship repair business. He spent a few years attempting to build the program. In late 1981, the Maritime Training Institute came into being with over a dozen ship repair companies cooperating in the venture. Federal funds were obtained from the

Comprehensive Employment Training Act (CETA). The CETA funds were complemented by donated spare materials and instructional personnel from members of the institute. CETA funding ended with the demise of CETA; however, federal support has continued through the Federal Jobs Training Partnership Act.

Legal Basis

The Tidewater Maritime Training Institute is a non-profit educational foundation, whose purpose is to operate a training facility for the ship repair industry in the Tidewater area. The parent corporation is the South Tidewater Association of Ship Repairers, whose membership includes 42 companies or corporations that are involved in the ship repair industry. There are separate boards of directors for the Ship Repairers' Association and the Tidewater Maritime Training Institute, but all directors are appointed from the associated companies.

Funding

This program has been federally funded since the inception of the Training Center. The funding level has been approximately $300,000 annually since 1981. This represents an average cost of $2,160 per student. Financial support of an "in kind" nature is provided by members of the Ship Repairers Association. This support is in the form of: (1) providing the Training Center building for $1/year, (2) providing surplus tools and equipments, (3) providing training materials such as pipe, welding rods, (4) assigning supervisors/foremen to participate in instruction, (5) providing organized tours of repair yards, and (6) involving of shipyard owners and senior executives in trainee orientation and graduation ceremonies.

Staff and Facilities

The five person staff includes an executive director, who also instructs, three instructors, and an administrative assistant. At the time of this survey, the training center was housed in an old, renovated shipyard building that was centrally located relative to the association's various shipyards. The 20,000 square foot building was divided into work areas for the various trades as well as a classroom, office space, a tool room, a conference room and locker room facilities. There were plans to relocate during the current calendar year. Within this facility, the staff administered four 12-week courses per year, with approximately 30 students per course.

Trainee Input

Applicants are obtained from responses to newspaper ads which briefly describe the course, the program, and application procedures. From 200 to 350 applications have been received for each class of thirty. The structured, multistage screening process which is employed includes review of applications, interviews, achievement testing, and physical examinations. Applicants must be eligible under the Job Training Partnership Act.

Curriculum

The training course is organized into five 8-hour days for 12 weeks. Each morning is devoted to classroom instruction, and ship work practice in each of nine trade areas is provided every afternoon. Guest speakers from the shipyards periodically address the class. The curriculum includes generic skills and knowledges such as

material identification, ship layout, safety, use of common hand tools, shop math, and blueprint reading. It also presents basic unique skills and knowledges that are associated with painting, pipefitting, shipfitting, welding, sandblasting, fiber-glass repair, electrician and mechanical tasks.

Hiring and Retention of Graduates

At the time of the survey, there had been 14 graduating classes. Over 90% of the graduates had been placed in shipyards, and about 65% were still working in shipyards. The employers reported that graduates have both desirable attitudes concerning work and are competent helpers.

THE SEATTLE AREA MULTI SHIPYARD COOPERATIVE APPRENTICESHIP TRAINING PROGRAM

Objectives

In contrast to the program in Norfolk, the Seattle area Multishipyard Cooperative Apprenticeship Training Program involves labor unions, the State of Washington, and ship repair and construction companies. The objectives of this joint effort is to ensure that: (1) programs produce qualified journeymen, (2) apprentices receive a well rounded technical exposure with as much additional training as is feasible, and (3) apprenticeships be completed if at all possible.

Geographic Description

Seattle has a population of approximately one-half million, with a population base of over one-million including surrounding areas. Like Norfolk, it is a center for international shipping and is fifth in containerized cargo tonnage. There are three major shipyards and over one-half dozen smaller yards in the area.

Program History

During the World War II, the government passed the Federal Apprenticeship Act. Shortly thereafter, the State of Washington passed its own Apprenticeship and Training Act, which closely paralleled the national act. This act established an Apprenticeship and Training Council under the State Department of Labor and Industries. This council is a relatively high level state body with members representing employers, employees, the public, and the State Vocational and Employment Security. The council approves and registers apprenticeship programs and training agreements. There are 11 craft unions involved in shipbuilding and repair in the Seattle area. Only four Boilermakers, Carpenters, Marine Electricians and Machinists have an apprenticeship program. In our study, we looked at two of these programs in greater detail. These were the Boilermakers and the Marine Electricians.

Legal Basis

Both programs are governed by the following agreements and regulations: the Masters Agreement between local shipbuilding and ship repair yards and the union, the State of Washington rules and regulations regarding apprenticeships, and the state-approved "Standards for Apprenticeship", which is agreement between union and management for a Joint Apprenticeship and Training Committee (JATC) to run the program. The Boilermaker program, which was initiated in 1947 and amended in 1982, legally indentures all Boilermaker apprentices to the, JATC for 6,000 hours over three years. The Marine Electricians program, was approved in 1982, and apprentices are indentured to the Seattle Electrical Workers Apprenticeship Committee for 6,000 hours.

Funding

Funding for the two apprentice programs is similar, but we were able to obtain detailed information on only the Boilermakers program. Employers are the primary

funding source, and their obligations are defined in the Master Agreement between the shipbuilding/ship repair firms and the unions. For the Boilermaker program, employers contribute $.03 per hour worked by employees covered under the agreement. These funds go into a trust account, whose sole purpose is to provide apprenticeship training materials and other training program support. The trust fund also receives a small contribution from a local vocational-technical institute that teaches courses at the Boilermaker School. This institute reimburses the Trust Fund for a portion of the tuition that is identified for school rental facility expense. Apprentices are paid on a graduating scale starting at 70% of the journeyman rate during the first 1,000 hours of the program and increasing to 95% of the journeyman rate during the last 1,000 hours.

Staff and Facilities

Both programs utilize instructors from the vocational institute for classroom work. Facilities for the Boilermaker program include the work site, the Boilermaker school that is attached to the local union headquarters, and the local vocational-technical institute. The Marine Electrical program also uses North Seattle Community College for formal classroom instruction.

Trainee Input

Applicants for both apprentice programs are at least 18 years old, high school graduates and they must pass an aptitude test. They are interviewed and ranked by the Joint Apprenticeship and Training. Committee. Employers/. are then offered names according to the applicants' rank. Employers may however, select someone on their OWN.

Curriculum

The curricula for both courses include 6,000 hours of job experience plus school requirements. THe job experience is broken down by activity and hours per activity. For example, a Boilermaker receives 150 hours of work in rigging. The school requirements are defined in term of courses and hours of instruction. The Boilermaker "apprentices must complete six 11 week courses (396 hours) plus 88 hours of welding, while the Marine Electrician apprentice must attend three hour classes, two nights per week (258 hours) for each of the first two years, and a three semester course during the final year.

Hiring and Retention

Hiring and retention data were available for only the Boilermaker program because the Marine Electrician program was only in its third year. In the five years of 1980 through 1984, 42 apprentices graduated from this program. The number per year fluctuated considerable, with 13 graduates in 1981 and only 4 in 1984. Retention of graduates was quite low because a sluggish level of shipyard activity coupled with a strong union seniority system. The graduate of the apprentice program becomes low person on the seniority list for journeymen and is the first in line for a lay off.

IDENTIFICATION OF OTHER GEOGRAPHIC AREAS

The scope of this project did not permit a detailed analysis of who might need what type of program and where. The analysis that was performed suggests that on a numbers basis, cooperative training might be appropriate in other areas. For example, relative to other centers of shipbuilding and repair activity, neither the Norfolk nor the Seattle area has the highest concentration of shipyards or the highest

import/export tonnage. The project leads to the conclusion that cooperative training programs may be of value in other areas, but only those in the local shipyards can assess their needs.

GUIDELINES FOR DEVELOPING AND IMPLEMENTING NEW PROJECTS

The guidelines presented in the project report are in the format of a sequence of questions. In answering these questions one will construct a roadmap for developing and implementing a program. Time does not permit going through each question in detail.

The first question, however, is, "Who should initiate action?" This question is important because typically there is no single person who would have this task as part of any job description. Basically, if you perceive the need and have the resources, the energy, and the contacts to make it happen, the answer may be you.

The development process requires detailed analyses of training needs in your area, of state and federal programs and resources, of union agreements, of local technical training institutions, of relevant state and federal laws. Many questions that are relevant to these analyses are presented in the project report. The development process also requires extensive coordination between some or all of the various entities mentioned above. Because each program may meet unique needs in a unique way, there is no single set of guidelines. The programs studied in this project, however, demonstrate that a cooperative training program can be a viable alternative in meeting your needs.