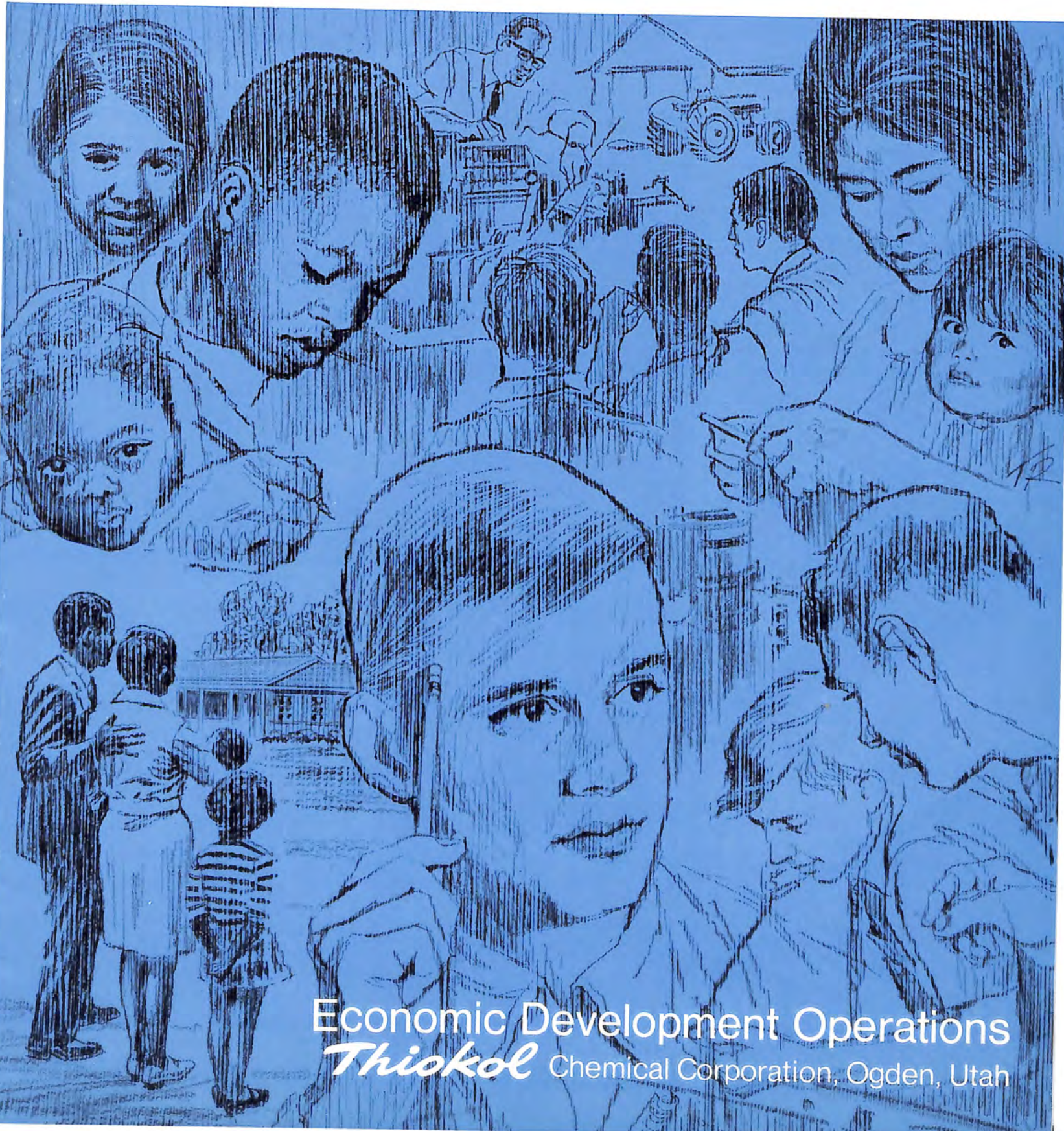


Skills Training, Education, and Area Development

Experience and capability in innovative programs
with people, government, and industry



Economic Development Operations
Thiokol Chemical Corporation, Ogden, Utah

Human Development

To respond to opportunity, opportunity must exist. For many Americans the lack of opportunity has been an awesome reality. Economic development of our depressed areas and natural resources is important; development of our people is mandatory.

Thiokol has grown in depth of knowledge and experience through

early commitment of our total Corporate resources to America's socioeconomic struggle. Through an innovative social engineering system, Thiokol helps convert the unemployed to motivated taxpayers with a future. Our nation's growth will be greater tomorrow by creating employment today.

Robert L. Marquardt

Robert L. Marquardt
Vice President
Economic Development
Operations
Thiokol Chemical
Corporation



Skills Training, Education, and Area Development

Program experience demonstrates Thiokol's unique capabilities



Training and Education

Thiokol training programs are, for the most part, job placement-oriented. In some instances, such as the tenant management training program in Gulfport, Mississippi, jobs are not the end result. But regardless of the objective, all Thiokol training is based on the following principles:

1. Every trainee has individual capabilities and learning rates.
2. Each training program has unique objectives, trainee population, and organization structure.
3. Each training program is a complete system since it is an assembly of people and materials unified to meet a common goal.

Programs, designed and conducted by application of systems analysis, provide individualized instruction leading to specific objectives and involving all components of the EDO training concept.



Area Development

Thiokol's successful systems management experience gained by Thiokol as a leading aerospace systems producer gives the company an unmatched capability to define and help solve local, state, national, and even inter-

national socio-economic problems. The EDO technique of total area development includes:

1. A thorough systems analysis of the community or area to be developed or redeveloped.
2. Preparation of a detailed technical plan outlining the tasks required to achieve the objectives of the program.
3. Implementation and operation of the program.

Emphasis is placed by the company on industrial plant location, including product market analysis and housing and recreation development. Complete training programs offered in this total development concept include curriculum development, housing occupancy, basic educational, vocational, and social skills training.

Necessary rapport also is established with other private companies, and with local and federal governmental agencies to coordinate efforts needed to solve problems.



Educational Products

Because of the growing general need for vocational and basic educational materials, EDO established its Educational Products organization. It is staffed by curriculum experts from many academic and technical disciplines. These highly qualified educators have experience in both traditional and unusual training-education situations. The Educational Products facility, located in Ogden, Utah, produces educational material for use in Thiokol programs and for distribution through publishers and other marketing firms.



Training and Education

The Components

■ Basic Education

Basic education must impart to trainees the academic skills required for successful job training and placement. The content of Thiokol basic education courses is geared to individual vocational courses. Both remedial and advanced courses are offered, dependent on the needs of the trainees. Courses currently being conducted in the various programs include reading, mathematics, communication skills, personal development, high school equivalency (GED), and driver education.

■ Vocational Training

Thiokol vocational training prepares trainees for entry level positions within a cluster of job skills. Specific courses offered in each of Thiokol's many programs are based on the projected manpower needs in those fields for the following ten years.

Specific job positions provide the basis for organization and operation of the vocational training course. As a contingency, "step-off" achievement levels are built into each course to facilitate placement of trainees who do not complete the program. Individualized courses currently being offered in the various company programs include electronics assembly, welding, surveying, hospital services, clerical, baking, meatcutting, cooking, farm equipment operation, sheet metal processing, refrigeration, air conditioning, plastics patternmaking, plastics molding, plastics reinforcement, machine shop operation, and automotive services.

■ Counseling and Social Skills

Counseling and social skills development are vital components of Thiokol training. Acceptable behaviors are reinforced and the new attitudes and perceptions required for a well-adjusted life are developed. Group counseling techniques are used to allow trainees to test their views and behaviors and to receive critical reaction or support from their peers. Where the need exists, individual counseling procedures are implemented.

Techniques utilized include the use of role playing and simulation games

and problem-solving situations to provide trainees with models of real life experiences.

■ On-The-Job Training

In addition to the vocational training component, EDO also can offer training in actual job situations. Thiokol training emphasis is given by demonstration, application, and practice. On-the-job training available includes such positions as cabinet assembler, medical assistant, machine shop operator, teaching aide, metals and welding technician, offset press operator, air conditioning and refrigeration technician.

■ Home Management Skills

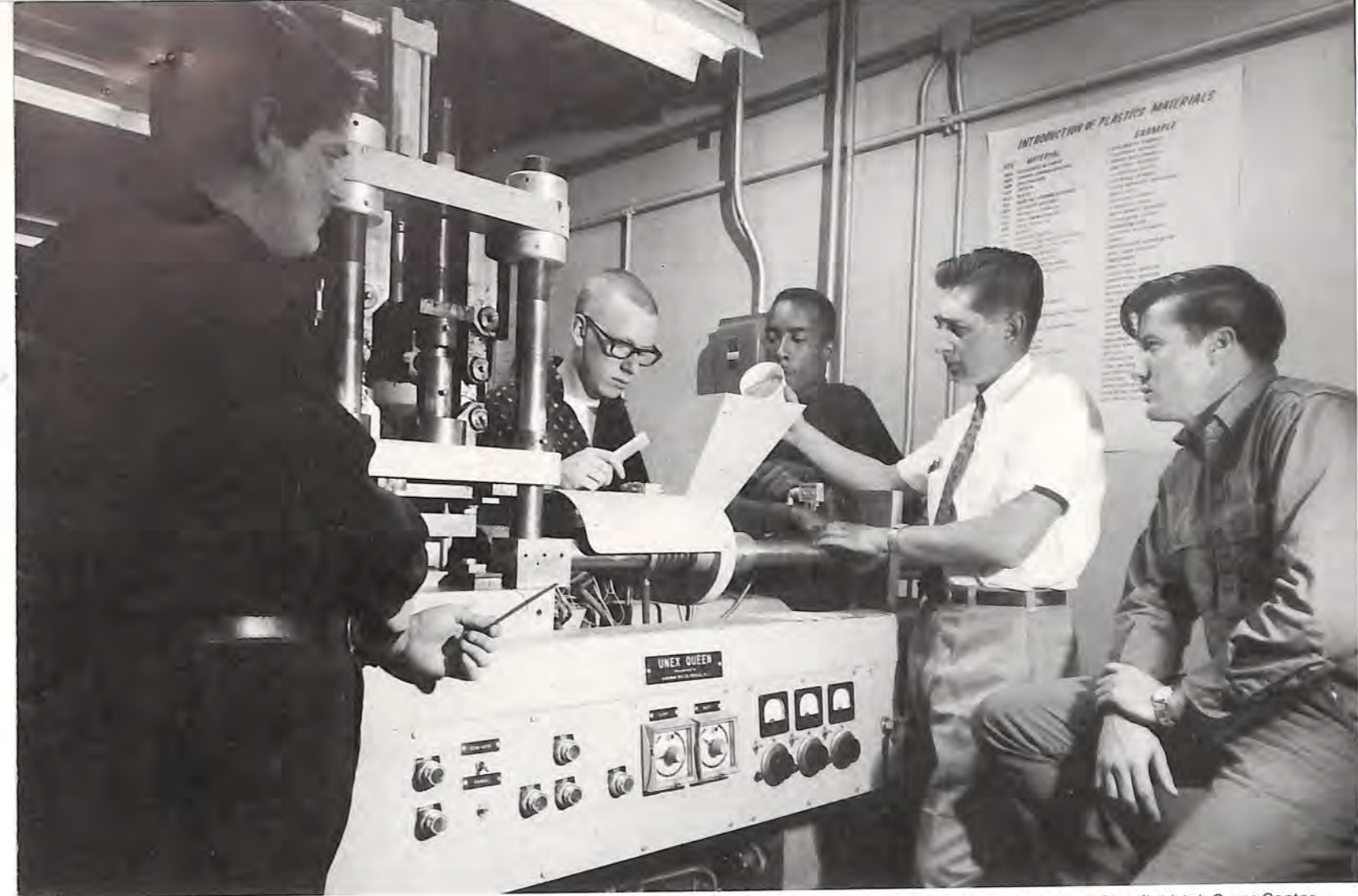
Thiokol trains entire families in the procedures and skills needed to maintain a home. Subjects taught include maintenance, housekeeping, landscaping, budgeting, and purchasing. This content provides instruction for individuals and families experiencing life in a new home for the first time. Additional remedial and enrichment courses also are offered those trainees having a need or interest in a particular subject.

■ Placement

Several thousand graduates of Thiokol programs, have been placed in jobs related to their training. Many others have gone back to high school or college; or have entered the armed services, for which they had not been educationally qualified before training.

Thiokol is placing more than 250 men and women in productive jobs each month through its program graduations and the operation of its job placement centers.

Curricula and objectives of each Thiokol vocational training program have been prepared to conform to the job descriptions found in the Department of Labor **Dictionary of Occupational Titles**. Graduation requirements meet these descriptions, assuring jobs to those who successfully complete the training.



Plastics forming instruction at Clearfield Job Corps Center.

Clearfield Job Corps Urban Center

Clearfield, Utah

The Clearfield Job Corps Urban Center provides a residential program of total training for economically disadvantaged young men 16-1/2 to 21 years of age. The Operation was established April 1, 1966. Current trainee enrollment at Clearfield is 1,350, 200 of whom are designated as students of the Advanced Corpsman Institute for Para-Professional Training.

Academic, basic education, classes are geared to the vocational training

entry level of each individual and include reading, mathematics, personal development, language arts, and driver education. Each corpsman is assigned to a dormitory with 31 other corpsmen and a resident counselor. There he receives group and individualized counseling. Avocational activities are conducted during weekdays after classwork and on weekends and holidays.

The average corpsman is enrolled at the Center for a period of eight to ten months. While there, he earns \$30 a month. The federal government sets aside an additional \$50 a month to provide the corpsman an adjustment allowance between the time he completes his training and until he earns his first regular paycheck.

More than 2,500 former unemployables have completed the program and have taken jobs, gone back to high school, or gone into the armed forces. Many also have gone on to college enrollment.

During the first two years of operation, more than 50 enrollees graduated

from high school while at the Center. More than 300 earned GED certificates and 200 enrolled in college.

VOCATIONAL CLUSTERS

Automotive—Automotive and small engine repair and maintenance.

Plastics—Courses in plastics molding, reinforcement, and patternmaking.

Food Services—Complete meatcutting, baking, and cooking skills training.

Metals and Welding—Training in gas, arc, and tungsten inert gas welding techniques.

Medical—Personal health, sanitation and safety, first aid, and hospital attendant training.

Agriculture—Training in farm equipment operation and maintenance; farm landscaping, construction, and maintenance; and livestock farm hand.

Air Conditioning/Refrigeration—Sheet metal, refrigeration, and air conditioning skills training.



Trainees get practical experience as para-professional teachers, counselors and recreational assistants.



Counter clockwise: Newly arrived student, and family, gets first meal at Center. Student governing body discusses student projects. Trainees learn welding, other trades.

Advanced Corpsman Institute for Para-Professional Training

A need for well-trained para-professional recreation, teaching, and counseling assistants became evident early in the Clearfield Job Corps Program. This need, found to exist also throughout the education industry, led directly to establishment of the Clearfield Advanced Corpsman Institute for Para-Professional Training.

Teaching Technique

Thiokol's systems analysis technique couples social skills development with job-related skills training. Trainees are challenged to develop their potential by systematically looking inward, assessing their aspirations and goals, and experimenting with new behaviors. Simulated interpersonal confronta-

tions typical of real-life situations force the trainees to react. These reactions then are reviewed for their effectiveness in coping with the situation. New reactions and patterns of behavior are explored and practiced. Thus, enrollees are involved in training that emphasizes creative ways of solving problems. This small, group-oriented program provides a supportive atmosphere in which both social skills exposure and theory are integrated.

Such training techniques as micro-teaching, closed circuit television, and role playing are introduced to the Institute trainees. On-the-job exposure also offers them the opportunity to practice their newly developed skills in public school classrooms and in other work situations. Awareness of self, concern for others, and helping others learn to develop their own potential are all focal points of the training.

Placement

Several hundred corpsmen have completed the para-professional training

at the Clearfield Job Corps Center. Approximately sixty-five percent of these young men graduated with high school diplomas or general equivalency certificates. Twenty percent of the graduates have gone on to college, while another fifteen percent complete military obligations before resuming social services careers.

Graduates from Thiokol's Institute have been placed as counseling, personnel, teaching, and recreation aides in Job Corps, Peace Corps, VISTA programs, and in other projects and programs sponsored by the Office of Economic Opportunity. They also have accepted employment with the Utah State Employment Commission, the Washington State Social Services Office, the New York State Board of Education, Thiokol's GATE House (Job Corps placement office), the Dallas and St. Louis Employment Security Offices, the Seattle Public Schools, the Newark Public School System, the Bellevue Mental Hospital in New York (children's recreational therapy), and the Juvenile Detention Office in New York City.

Roswell Employment Training Center

Roswell, New Mexico

Program Concept

A lack of vocational and social skills has prevented many American Indians from attaining proper levels of productivity and social standing. Their training and adjustment from inadequate or primitive housing and a state of unemployment to permanent employability is the basic goal at the Roswell Employment Training Center, where the training period averages nine months. Normally more than 500 trainees are enrolled continually.

An outstanding feature is the moving of total families for the first time from the hogan, pueblo, or igloo to a single family house on the Center following training in how to occupy and maintain a home.

The Center provides vocational, related basic educational, home living and social skills training to volunteer single adults and entire families from all the nation's Indian tribes. As many as 37 such tribes from a dozen states have been represented there. Well equipped nurseries and structured training are included for pre-school age children.

Training Clusters

The vocational training classes, supported by extensive classroom work in the related basic educational subjects, include automobile mechanics, welding, electronics assembly, clerical duties, surveying, high school GED, driver training, nursing, and personal development.



Peace Corps volunteer surveying for new farm road in Iran. Photo: Peace Corps

Peace Corps Training Programs

Thiokol's highly successful Peace Corps training prepares volunteer trainees to live and work effectively in other cultures. Volunteers have been trained for service in Iran and Libya.

The Thiokol training creates immediate and sustained trainee involvement, presents highly individualized instruction, gives the trainee the responsibility for his own learning, and provides him with an underlying methodology that serves to help relate and interrelate all aspects of training.

Language training is based on an audio-lingual technique that also includes role playing, situational exercises, and cultural simulation. Many of the geographical region and cross-cultural studies also consist of role

playing and situational exercises. In addition, the studies include group discussions or problem solving activities involving the role, requirements, expectations, and problems of the Peace Corps volunteer in his job, his assigned country, and community.

Training takes place in small group settings where learning is creative and participative. Interaction, self-analysis, evaluation of experiences, and problem solving behaviors of the group all stress the importance of each member's role as a resource. Each member compares his reaction to various experiences with the reactions of others of the group. He also gauges his understanding of material and concepts, ideas, and opinions with those of the other members.

Thiokol Texas, Inc.

San Antonio, Texas

President's Test Program

Thiokol joined the President's Test program to provide manpower training and new jobs for the hard core unemployed of San Antonio, Texas. This was one of the five "target" cities chosen to pilot-test the program that would provide jobs for individuals economically handicapped by inadequate education or other problems. Thiokol responded by acquiring two San Antonio businesses, Tex-Wood Cabinet Company and Empress Brick Company, with which to establish its training-employment operation.

Thiokol Texas produces kitchen cabinets and manufactures decorative ceramic tile. The two operations have been relocated at a single 3-1/2 acre plant site, where training and production efforts are proceeding.

Training the Hard Core Unemployed

At least 100 new jobs are being created at Thiokol Texas, Inc.

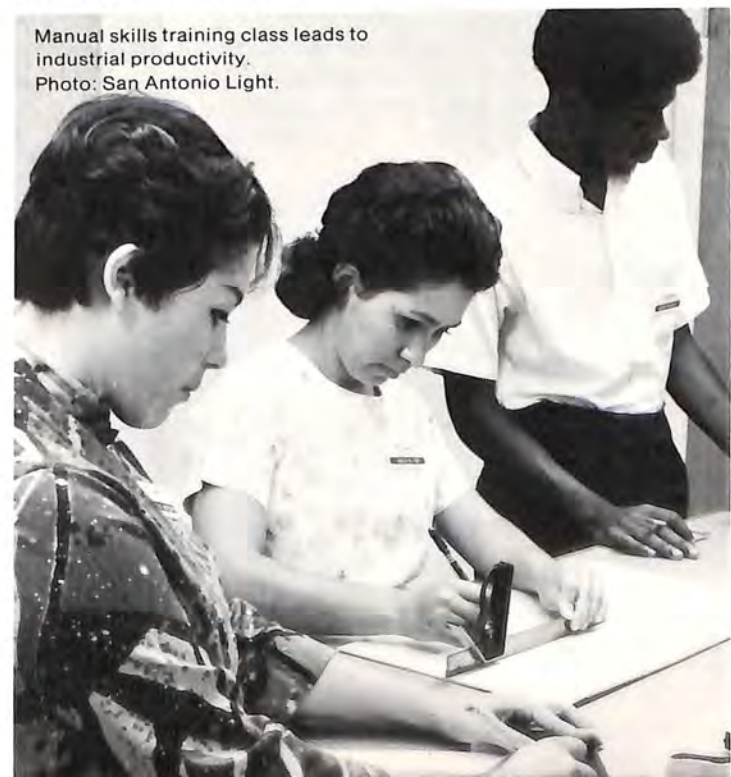
The first phase of training is designed to build self-confidence. Trainees are taught to think positively and as winners, attitudes completely foreign to most. In directed group seminars, the trainees discuss their thoughts, expectations, and fears. They define for themselves the meaning of success.

Language laboratories equipped with audio tape recorders improve the reading and speaking abilities of the trainees, many of whom speak mostly Spanish.

Basic job skills training is designed to build further confidence. Trainees visualize, verbalize, and apply what they have learned during the lesson.

Training for Other Companies

The Center also will design and conduct similar training programs for other companies and government agencies.



Manual skills training class leads to industrial productivity. Photo: San Antonio Light.



Thiokol's Operation Turnkey trains disadvantaged in normal living arts and home making.

Thiokol Gulfport Tenant Management Training

Gulfport, Mississippi

Scope of Program

Thiokol initiated this first-of-kind training and research project to help the U.S. Department of Housing and Urban Development in a program designed to assist lower income families become successful homeowners. Many such families now occupy homes in Gulfport and have lease purchase rights to these structures.

The objective of the training program is to provide tenants with the organizational and social skills needed to maintain the housing. Intensive pre-occupancy and occupancy training designed to meet specific needs of the homeowners includes counseling, budgeting, and financial management. This training increases the likelihood of later successful homeownership. Thiokol research from this pilot program will enable HUD to institute similar training throughout the country.

Homeowner Association

A Homeowner Association organization will be organized during the Thiokol training to stress self-government of the tenants of housing development as a significant phase of the program.



Area Development

The back cover of this booklet locates Thiokol's current operations and service locations, devoted to aerospace, chemical, industrial, and economic development operations. Its Corporate Headquarters are in Bristol, Pennsylvania. Due to remote locales of some of the plant sites, it was necessary to utilize systems engineering techniques in area development.

An example is Thiokol's Wasatch Division (capital assets exceeding \$100,000,000) located 30 miles west of Brigham City, Utah, in valleys of the Promontory Mountains and Blue Springs Hills. Complete area development required techniques identical to those needed in urban area development. These include buildings, roads, power transmission systems, potable water supplies, air quality, waste water treatment and renovation, disposal of solid wastes and garbage, neutralization of chemical and other industrial wastes, sanitation, health, and safety measures.



Computer Technology

Advanced computer programs and computer capability facilitate the effectiveness and efficiency of every training, research, business, and technical service operation under EDO. Student accountability and progress data are retrievable on a daily basis. Statistical programs provide rapidly analyzed data to aid in behavioral research and training evaluation. Employee payroll, accounting, inventory, and other business operations assist management in every department.

Computer systems, including the IBM System/350 Model 50, that meet the needs of varied organizations, expand the capability offered to our customers. These computerized services and numerous others are available and are recommended because of proven value in design, implementation, and evaluation of any EDO service.

Environmental Research

Thiokol conducts research in material and method systems technology to provide low-cost housing meeting essential health and safety standards. This technology includes the important housing-related social concerns of lower-income families. Studies of possible structural systems utilizing native resources for remote area housing for Indians and Eskimos are being conducted.

Thiokol also is participating in research studies to develop improved equipment and systems necessary to meet the requirements of federal, state, and local governments in the correction of sanitation and health deficiencies resulting from water and air pollution.

Primarily, Thiokol promotes the development and utilization of improved equipment, more effective chemicals, and a complete systems approach in

changes necessary to provide a clean America.

Economic Development

Thiokol's direct approach to solving socioeconomic problems and utilizing systems techniques in area development has been successful in stimulating economic development in both urban and rural areas of persistent unemployment. An experienced Thiokol team works cooperatively with governmental agencies and community groups in conducting market research, natural resource studies, transportation studies, financial and training studies, organizational surveys, and schedules for implementation.

Model Cities Planning

Economic Development Operations is consulting with the various levels of federal, state, and local governments in the application of systems management and computerized techniques in Model Cities planning programs. The broad aims and objectives of the Model Cities program are:

1. Rebuild or revitalize large slums and blighted areas.
2. Expand housing, job, and income opportunities.
3. Reduce dependency on welfare payments.
4. Improve educational facilities and programs.
5. Combat disease and ill health.
6. Reduce incidence of crime and delinquency.
7. Enhance recreational and cultural opportunities.
8. Establish better access between homes and jobs.
9. Generally improve living conditions for people who live in such areas.

Customers of EDO

Bureau of Indian Affairs
Dept. of Commerce
Dept. of Labor
Dept. of Health, Education, and Welfare
Housing and Urban Development
Office of Economic Opportunity
State and Municipal Governments
Governments Abroad
Other Industries



Educational Products

Curriculum Development

Curricula and related teaching materials developed by EDO and formulated through the systems approach emphasize and utilize the latest learning theories and technology. Any of the following services can be provided by Thiokol:

- Task analysis to determine curriculum content.
- Curriculum outlines.
- Linear programs.
- Training kits.
- Models.
- Audio-visual materials designed for specific applications.
- In-service instruction training programs and curriculum implementation.

All curriculum materials developed by the Educational Products organization are field tested and validated in one or more of Thiokol's training programs.

Social Skills Development Kit

Through its training experience, Thiokol has learned that the major problems of the disadvantaged are their inappropriate and ineffective work behaviors. Prior to training, the majority of the enrollees had histories of failure and lacked self-confidence and the effective means of dealing with job related problems.

Thiokol applied the principles of group problem solving to the dilemma

of chronic unemployment. Trainees were placed in group situations where they tested new behaviors, received immediate critical reaction or support from their peers, and planned for needed change.

Early successes led to the incorporation of a social skills development concept in all of Thiokol's training programs. The resultant increases in successful training and placement prompted Thiokol to offer the Social Skills Development Kit to other companies engaged in training the hard core for employment.



The Kit consists of a complete series of exercises, games, and simulation materials designed to provide hard core unemployed trainees with the desirable behaviors, and social skills needed to stay on a job. The Kit contains complete trainer direction, teaching aids, and trainee materials needed to support a forty hour learning laboratory for fifteen trainees. Each exercise is written explicitly to assist the trainer, even those having only marginal experience in leading group discussion, in conducting the course.

The course outline covers the following major topics:

- Trainee Orientation
- Basic Work Habits
- Interpersonal Skills
- Communication Skills
- Problem Solving
- Goal Setting

Punctuality, attendance, and personal appearance are also stressed. Trainees are taught to gain and accept responsibility, to communicate and listen with understanding, to take pride in personal habits, to look positively at supervisory relationships, and to develop a pattern of overall success at work, at home, and in the community.



Audio-Visual Instructional Programs

Varying educational levels are inherent in student populations of all training programs. This fact necessitates great emphasis on audio-visual techniques for use in individualized instruction. Although used extensively, each media is researched completely for specific student impact and program applicability.

The highly experienced staff of EDO media specialists ensures proper use of audio-visual techniques, which include 16mm motion pictures, 8mm and 16mm sound and silent continuous loop single topic films, 35mm slide and film strips, programmed instructional material, overhead transparencies, audio tapes, and electrical transcriptions.

Complete photographic, illustrative, and sound reproduction facilities are available at EDO, where each phase of development is carried to the "master copy" level. Reproduction of additional copies normally is subcontracted to established companies.

Many trainers feel that vocational programs should utilize the actual hardware applicable to the desired skill position. Although sound, this concept is not always practical since actual equipment, besides being expensive, is not always the most effective way to demonstrate operational concepts and principles.

Working models of equipment that have proven to be highly effective in instructional situations have been developed by Thiokol. These devices, fabricated of transparent materials, allow students to see parts relationship, sequence of operation, and flow of raw materials.

Economic Development Operations

The world of people is part of the Widening World of Thiokol



THE WIDENING WORLD OF THIOKOL

Operations and Service Locations

AEROSPACE

Astro-Met Division
Ogden, Utah 84402

Elkton Division
Elkton Plant
Elkton, Md. 21921

Bristol Plant
Bristol, Pa. 19007

Georgia Division
Woodbine, Ga. 31520

Huntsville Division
Huntsville, Ala. 35807

Longhorn Division
Marshall, Texas 75670

Reaction Motors Division
Denville, N.J. 97834

Wasatch Division
Brigham City, Utah 84302

District Offices
Washington, D.C. 20006
Huntsville, Ala. 35801
Dayton, Ohio 45402
El Segundo, Calif. 90245
Lancaster, Calif. 93534

CHEMICAL

Headquarters—
Trenton, N.J. 08607

Moss Point Plant
Moss Point, Miss. 39563

*Thiokol Chemicals Limited
Coventry, Warwickshire,
England

*Thiokol Canada Limited
Burlington, Ontario,
Canada

*Thiokol Australia Pty., Ltd.
Sydney, N.S.W., Australia

ECONOMIC DEVELOPMENT

Operation Headquarters
Technical Services
and Educational Products
Ogden, Utah 84402

Clearfield Division
Clearfield, Utah 84015

Roswell Division
Roswell, New Mexico 88201

Thiokol Gulfport
Tenant Management Training
Gulfport, Mississippi 39501

Thiokol Texas, Inc.
San Antonio, Texas 78208

INDUSTRIAL

*The AFA Corporation of Florida
Miami Division
Miami, Florida 33147
Owens Division
Palatine, Illinois 60067

Dawbarn Division
Waynesboro, Virginia 22980

*Delta Corporation
East Granby, Conn. 06026

Dynastar Laboratories
Denville, N.J. 97834

*Humetrics Corporation
Los Angeles, Calif. 90064

Logan Division
Logan, Utah 84321

Panelyte Industrial Division
Trenton, N.J. 08604

CORPORATE
HEADQUARTERS
P.O. Box 27 Bristol, Pa. 19007

WASHINGTON OFFICE
839 17th St. N.W.
Washington, D.C. 20006

Additional information about the Economic Development Operations and its many services can be obtained by contacting: Mr. Bernie R. Diamond, Director, Program Development, Economic Development Operations, Thiokol Chemical Corporation, Post Office Box 1619, Ogden, Utah 84402, Phone: 801/399-1191

*Wholly-owned subsidiary