COOPERATIVE TRAINING OF SERVICEMEN IN CERTAIN PHASES OF SHEET METAL WORK.


A Thesis Presented for the Degree of Master of Arts

by

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Approved by:

[Signature]
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B.C.M.
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INTRODUCTION

The problem as presented is in the field of vocational education. It is the feeling of the writer that this problem is fast becoming general throughout the nation, and that there will be a need for this type of study for communities, attempting to solve the problem of the rehabilitation of the veteran.

Furthermore, the type of program presented can be made sufficiently flexible to meet the demand of non-veterans who are in need of rehabilitation. As a matter of social concern the community must face the problem of the maladjusted common laborer, office worker, and executive, non-skilled, semi-skilled and skilled worker, those now jobless due to industrial reconversion, also professional and non-professional workers who are faced with the stress and strain of every day living problems.

Appreciation of the need for readjustment can be had by studying the ever growing files of case histories reported by the social worker, Red Cross worker, Volunteers of America and the State Hospital for the treatment of the mentally sick.

This study is primarily an attempt to develop an educational program that will meet the social and economic needs of a local community, its veterans and their families, through the cooperation of federal, state, and local governments.

The program studied and described is implemented through the unselfish enterprise of a local industry cooperating with the public school and other governmental agencies.
Objectives of a Veterans Program

In formulating objectives and principles for a veterans program, or any sound program of education, it is necessary to see with sufficient clarity, what it is one wishes to do or accomplish. Furthermore, one must have an understanding of the means employed in relationship to the ends desired.

The following general principles therefore are stated. These objectives are based upon the personal observation and experience of the writer as a veteran and teacher, interviews with veterans, leaders of veterans organizations and readings in educational bulletins, pamphlets and the general literature of the profession.

Rehabilitation, as used in this thesis, deals with the returning veterans and the processes of readjustment. The main purpose of rehabilitation then is an attempt to remedy the damage of war to man and especially the veteran by:

1. Aiding and encouraging the veteran, through economic and social channels, to change any anti-social attributes of bitterness or resentment which may have developed between himself and civilians, and to establish a healthy relationship with his community, church and schools.

2. Establishing the veteran as a civilian possessing the knowledge, ambitions, and sentiments of a worthy member of his community.

3. Assisting, encouraging, and presenting opportunities in which he can make a personal effort to overcome any handicaps which may have resulted from service, so that he might take his position in a competitive society and hold that position on the basis of merit and exercise of his skills and abilities.
4. Aiding him to develop self-confidence and self-reliance, a cooperative attitude with his fellow citizens, and stimulating him to take an active and intelligent part in the political life of his community, state, and nation.

Community Responsibility

What can the Local Community Do For The Veteran?

The responsibility for meeting the problems of the returned veteran cannot be placed upon one particular person, agency, administration, state or nation. Everyone will be in close contact with the veteran. If there isn't a family relationship there certainly will be business relationships. Ten million returned servicemen in all socio-economic levels will be a problem in some measure according to the situations and conditions of each community as to housing, employment, etc.

Much of the work of rehabilitating veterans is being sponsored by Federal and State departments and their services. Their contributions are in the form of financial aid, organization, direction and supervision. The most important contributions can and must be made by respective local communities. These have the responsibility of finding the serviceman a job, not as a gift or reward for his services, but as an opportunity to prove to himself as well as to his neighbors that he can and will make good, that he can work, think, feel and again act like a civilian.

Finding a satisfactory job for the veteran is one of the basic problems the community must attempt to solve. This is vital in the readjustment of the veteran into society. A job can only do so much toward this process of readjustment. There are some problems of every day living which the job itself cannot solve. Harmonious living with his
family, or maintaining a high moral character are problems of readjust-
ment which are not necessary requirements for a job in industry as a
welder, for example. Without a job, however, these and many more problems
cannot be approached. Self-support in American society, is an important
prerequisite to self-respect. The job itself is a means of social contact.
For these reasons it is necessary and vital that all veterans who are able
and willing must find jobs as soon as possible after their return to civil
life.

Each community has its own individual problem as the situation
arises. The usual practice in community organization is to depend largely
upon the leaders of institutions and agencies and upon persons who in the
past have shown themselves concerned with community welfare. This group
includes educators, ministers, social workers, merchants, industrialists,
lawyers, etc. Service clubs, such as Rotary and Kiwanis, have usually
taken an important part in community organization and welfare. It is
likely that outstanding leadership will come from those who have the fore-
sight and ability to understand the need a veteran has for employment.
Many who have not had military service are as much in need of retraining
as the veteran. Many of these people were trained to perform some operation
or task peculiar to the prosecution of the war. Skills achieved for this
purpose do not find a use in a peace time economy. The manufacture of new
products demand new skills. Perhaps expansion of the plant may call for an
increase in employment.

The leader of the veterans on-the-job training program will prob-
ably see the veteran as his future employee. A suggested procedure
might be to guide, by counselling, all unemployed veterans into a pre-
employment training course. Persons so trained would form a pool from
which capable and qualified employees might be drawn to feed the expanding
needs of a local industry. To assure the continued support of cooperating
industries the program presumably should provide specific training for the
industries concerned.

A program of pre-employment training then is a logical stepping
stone to launch the veteran upon the career he may choose from among the
different opportunities that present themselves in his home community. The
pre-employment phase of training usually is followed by a more specialized
training within the industry.

The Ohio State Director of Vocational Training, Mr. Joseph R.
Strobel, has expressed the opinion that in many cases, the local high school
has the facilities to meet the standards for vocational education as set up
by federal and state agencies. Furthermore, he feels that the vocational
school program is sufficiently flexible and with few adjustments, such as
the addition of evening extension courses, can meet the needs of a veteran
for pre-employment training. The opinion was also expressed that there is
considerable overlapping of training, loss of time and efficiency due to
lack of equipment in many veteran training programs because of the fact that
many school administrators look upon the veteran training program as a sepa-
rate problem in itself and therefore, should be administered as such. This
might succeed in cases where schools have machinery and equipment in excess
of their needs from the Defense Training Program for War Workers, or those
schools operating under State aid for vocational trades and industries.

This study is a report of a specific pre-employment training pro-
gram developed as a means of solving the employment problem of the return-
ing veterans at Delaware, Ohio. The first phase of the program, termed
pre-employment training, in the local high school is treated in detail in
Chapter III under the title, "The Willis High School Plan."
The second phase of training for the veteran may be either Apprenticeship Training, or On-The-Job Training. On-The-Job Training was chosen by the Correct Manufacturing Company of Delaware.

The final phase, job placement occurs when the veteran has demonstrated to his foreman and plant supervisor that he is capable of satisfactorily doing the work expected of him. At this time federal aid and supervision is withdrawn and the veteran is considered a fully qualified employee of the company, with a standing commensurate to a journeyman in the trade for which he was in training.

The Ultimate Purpose

The leading citizens of every community are facing the problems of presenting worthy opportunities for the returning veteran to readjust himself. Education appears to be one of the most popular choices made by the returning veteran. As a result, many educational institutions are reaching the limits of their facilities. However, there are many veterans who desire immediate employment and are interested only in finding a job. Industry and business have learned the value of pre-employment training during the national emergency. Now industry, business, and agriculture, are offering opportunities to veterans through a training program financed in part by the federal government under state direction and approval and supervised by the federal office of the Veterans Administration. The controls exercised by the latter are outlined in the abstract of Veterans Administration Circular 61, See Chapter I.

Since local schools generally must agree to sponsor pre-employment training, school administrators are confronted with the question of providing facilities and an educational program for pre-employment training of veterans. The writer feels that there is a definite need for
information concerning the organization and administration of such a program in the public school system of every community. It is hoped that this thesis will provide suggestions as to methods and procedures helpful to those confronted with the problem of organizing a veterans program according to the principles established by the United States Office of Education, The Superintendent of Public Instruction for the State of Ohio, and the Veterans Administration. A general outline of the study follows:

Chapter One presents the principles, standards and policies of the U. S. Office of Education, Ohio State Department for Vocational Training and the Veterans Administration.

Chapter Two presents the scope of the problem in its general application, the limitations of this thesis, in relation to the general problem, and what is being done toward accomplishment of the general objectives as stated in the introduction.

Chapter Three describes the two phases of the training program, the pre-employment and on-the-job training plan of the Correct Manufacturing Company.

Chapter Four presents apparent strengths and weaknesses of the Willis High School plan in the light of the principles established by the federal, state, and veterans administration policies and standards.
CHAPTER I

PRINCIPLES AND CONTROLS

To receive federal aid programs of education and training, such as described in this thesis, must be approved by representatives of the Federal, State and Veterans Administration. For their guidance certain policies and principles have been established.

The following excerpts taken from the foreword of the revised Bulletin No. 1, U. S. Office of Education, "Statement of Policies for the Administration of Vocational Education", issued by United States Department of the Interior, Office of Education, Vocational Division, 1936, will serve as a background for the reader in understanding the method and procedure used by the U. S. Office of Education in deriving the following "Special Standards and Safeguards" for establishing training programs within industry.

---Policy making for vocational education has become established as a cooperative function between the State and Federal Government. In preparing this revision the Office of Education has sought the advice and counsel of many individuals and groups. One of these groups represented States officials actively engaged in the administration and supervision of State programs of vocational education throughout the country, --- composed of 12 State Superintendents of Public Instruction, 5 representatives of city school systems, 10 representatives of State vocational education staffs, a representative of the American Vocational Association, and a member of the Federal Advisory Board for Vocational Education, meeting with members of the staff of the Office of Education. --- As a final check on the revised policies, the Commissioner of Education arranged for a review of the entire manuscript by representatives of labor and industry. --- As a result of careful consideration it was unanimously recommended for approval. Approved and signed by J. W. Studebaker, Commissioner.

Special Standards and Safeguards

CONDITIONS UNDER WHICH A PUBLIC SCHOOL SYSTEM MAY OR MAY NOT BE JUSTIFIED IN ESTABLISHING TRAINING PROGRAMS WITHIN A PRIVATE INDUSTRIAL PLANT DURING THE WORKING DAY AT PUBLIC EXPENSE FOR WHICH FEDERAL REIMBURSEMENT MAY BE GRANTED.

(Approved February 1, 1936)

SECTION A -- When the Use of Federal Funds is Justified.

When the school system is enabled to provide training in the public interest and that of those being trained, which it could not otherwise provide for want of the equipment and supplies available in the plant, providing the following requirements are met:

1. The program must be under public supervision or control, as evidenced by:

   a. The fact that the local school officials have furnished satisfactory proof to the State Officials that --

      (1) The training is organized and maintained in response to public need.

      (2) The interest of the persons enrolled in the training program is the chief consideration.

      (3) The program is generally recognized as a part of the public school work of that community.

      (4) The determination of matters such as the selection, qualifications, and salaries of teachers; content and length of courses; admission of students, supervision of instruction, and all other details of the training program are vested in officially designated school officials who recognize and admit their responsibility.

   b. The fact that the teachers engaged in training in the industrial plant are being paid by the same procedure and through the same sources as such teachers would be paid if teaching in public school buildings.

2. There must be a definitely organized plan of instruction which shall include the technical knowledge and related industrial information, based on the standard practices of the trade or occupation, to insure adequate knowledge and mastery of the machines or operations, and orientation of the worker.
a. Every state which is either operating or contemplating establishing training at public expense in industrial education should have a State Advisory Committee composed of equal representation of outstanding representatives of Employers and outstanding representative of Labor to advise the State Board for Vocational Education on all matters relative to such training in industrial education.

In addition, where possible, it is strongly urged that the whole program, rates of pay, etc., should be worked out by a local representative committee. Such a local representative committee should be appointed by the school authorities to advise on all phases of the program. The committee should include at least three employers, not more than one of whom represents the industry or plant affected, and at least three representatives of labor, not more than one of whom represents the industry involved.

b. The training courses should be in general harmony with the time customarily given by industry to breaking in for payroll jobs, such as are to be covered in the training program, making allowance for the extra time needed to teach functioning related subjects. The training program should be checked against actual job requirements in the plant, and any accepted time standards for training for such jobs, before approval is given.

c. Training at public expense should stop with the completion of the learning state -- the formation of automatic habits of correct procedure.

3. The program must meet all of the remaining requirements of the State plan, as attested by --

A sworn statement from an administrative official of the school organization, to the effect that all conditions set up in the State plan have been met.

4. Where plant employees, such as foremen, mechanics or skilled workers, are used as instructors, there must be a definite division of duties between instruction and plant activities, by definite time periods.

5. Persons are to be paid as instructors only in case they are working with a group of persons who are in a recognized learning status and for whom a regularly organized plan of instruction, as defined in paragraph "2" preceding, is given.
6. A full statement of each instructor's qualifications must be kept on file in the State Office, as evidence that such teacher meets the requirements of the State plan.

7. Evidence should be on file in the State Office to show that the work has been adequately supervised.

SECTION B -- When the Use of Federal Funds is not Justified.

When the conditions set up in Section A, preceding, cannot be met. In addition, Federal funds should not be used in connection with training programs possessing one or more of the following characteristics, for the reasons stated in connection with each.

1. Where the training is for the purpose of the initial breaking in of operatives in newly located industries, no matter whether the demand for training the new workers arises from plant migration or relocations, labor turnover or replacements.

Comment: An employer should expect to invest in the training of his workers, the same as in bricks and mortar, machines and tools, in any community where he locates his plant and expects to make a profit. Since the cost of initial breaking in of factory operatives has always been carried by industry as a legitimate part of the cost of production, it follows that Federal funds should not be used in this connection, as it would be subsidizing industrial production which would be contrary to the purposes of the National Vocational Education Acts.

2. Where training is confined to manipulative operations and processes, with no provision for teaching the technical knowledge and related industrial information, based on the standard practices of the trade or occupation, to insure adequate knowledge and mastery of the machines or operations, and orientation of the worker.

Comment: The purpose of vocational education at public expense is not to serve the industry as such, but to benefit the individual worker by providing a plan of instruction which will insure not only initial employment assets but will enable the worker to keep pace with changing conditions and eventual advance in the occupation.

3. Where training is confined to a single operation, to develop high production speed, extended over the period of time necessary to bring the operator to full piece rate ability.
Comment: Routine drill to develop high production speed and dexterity is a legitimate charge against the industry rather than against public funds, hence the comments given under "2" preceding apply here.

4. Where plant foremen, mechanics, or skilled workers are paid from public funds for giving casual instruction on the job incidental to the regular run of production.

Comment: If such a program were financed from public funds, it would be a use of public money to pay an assistant to the foreman to discharge his instructing or his inspecting responsibility for which he is paid by the company, as foreman, to discharge. Hence, in such a case, the use of public funds would be a violation of the purposes of the National Vocational Education Acts.

5. Where a disproportionate amount of time is spent on manipulative training, in comparison with related technical subjects, in a standard production industry, where it cannot be justified by a check against the actual job requirements of the industry, any accepted time standards for training for such jobs, or legitimate training objectives.

Comment: If such a program is not actually a phase of "4" preceding, where the use of public funds would result in subsidizing industrial production, it would result in the exploitation of workers, which is contrary to the purposes of the National Acts.

6. Where the training period is far in excess of that customarily given by the industry itself for payroll jobs, where it cannot be justified by a check against the actual job requirements of the industry, any accepted time standards for training for such jobs, or legitimate training objectives.

Comment: Such a program would result in an exploitation of workers, which is contrary to the purposes of the National Acts, and the use of public funds would discredit vocational education for inefficiency and excessive cost.

7. Where the training is extended over long periods of time on regular production work, without pay or at reduced pay.

Comment: Not only would this type of program exploit the workers, which is contrary to the purposes of the National Acts, but the use of public funds for it would discredit vocational education as subsidizing industrial production, which also is contrary to the purposes of the National Acts.

8. Where an investigation of the program itself discloses that the objectives and the operation are such as to result in subsidizing industrial production, rather than in providing training for the
workers' benefit.

Comment: The use of public funds for such a program would be in violation of the purposes of the National Acts.

9. Where those to receive the training are required to sign an agreement which, in effect, seeks to enable an employer to evade or violate some State or Federal law.

Comment: Such an agreement is not in accord with public interest or that of the individuals being trained, hence it is not in harmony with the purposes of the National Acts.

Question 20:

What is the policy regarding the use of Federal funds for coordination?

Answer:

Federal funds appropriated for the reimbursement of salaries of trade and industrial teachers may be used for the reimbursement of the salaries of coordinators for all-day, part-time, or evening trade and industrial classes, providing that plans for each type of coordination are designated in the State plan. The provisions set forth in the State plan should include: (1) The plan for each type of coordination, and (2) duties and qualifications of the coordinator.

State authorities will, in making reimbursement for the salaries of coordinators, ascertain that: (1) Not over 10% of the coordinator's time is taken up with the keeping of office records and reports or other administrative affairs; reimbursement for services as a coordinator cannot be made for time spent in the discharge of the duties of a director, a principal, or a supervisor; and (2) that the school responds to the work of the coordinator by making use of the information which he brings in, by arranging the school program in accordance with his suggestions and by outlining or changing the instructional content to suit changing conditions uncovered by the coordinator. It is the opinion of the Federal office that if an individual is to carry on the work of the coordination successfully he must have some voice in the direction of the school work of the pupils, in order that the instruction they receive may be actually coordinated with the employment in which they are engaged.

Question 21:

What is meant by the term "trade and industrial pursuit" as used in Section 11 of the Smith-Hughes Act?

Answer:

By "trade and industrial pursuit" is meant: (1) any occupation which directly functions in the designing, producing, processing,
assembling, maintaining, servicing or repairing of any manufactured products, and (2) any public or other service trades or occupations which are not classified as agricultural, commercial, professional, or homemaking.

The United States Census Reports for 1930 may be taken as a general guide in classifying specific occupations. Practically all occupations listed in these reports under the headings of "Forestry and Fishing" (with the exception of certain phases of forestry), "Extraction of Minerals", "Manufacturing and Mechanical Industries," "Transportation and Communication," "Public Service," and "Domestic and Personal Service," (including only those phases of domestic service where workers are employed for wages), may be regarded as trade and industrial pursuits. For training in these occupations it is proper to use Federal funds as reimbursement for the salaries of teachers. Recognized occupations listed under "Agriculture," "Professional Service," except for nurses, laboratory assistants, draftsmen, and some others which are considered as "semi-professional"; "Trade," "Commercial" and "Clerical Occupations" are not considered as trade and industrial pursuits and it is not proper to use Federal funds in training for them.

The conception of the meaning of "trade and industrial pursuits" here set forth is clearly in accord with the intent of Congress and the language of Section 11 of the Smith-Hughes Act which requires "that the controlling purpose of such education shall be to fit for useful employment; and shall be designated to meet the needs of persons over 14 years of age who are preparing for a trade or industrial pursuit."

Question 22:

Under what conditions may Federal funds be used for the necessary travel expenses of members of a representative State advisory committee?

Answer:

When a State in its official plan makes provision for a representative State advisory committee to assist the State board for vocational education in the formulation of policies and render technical consulting service to the State board and its staff, in order that the interests of the work may be adequately safeguarded, Federal funds authorized by the George-Deen Act may be used for the necessary travel expenses of committee members to attend meetings officially called by the State board for vocational education, provided such committee is set up in accordance with the principles outlined in Section A, 2a, of the special standards and safeguards approved February 1, 1936.
The State Veterans Training and Education Service

The State of Ohio, at the time of this writing, provides no financial aid toward the direct operation of a veterans training program. The source of funds for this type of program emanates from the Federal Government. However, the Superintendent of Public Instruction for the State has been appointed by the Governor, in compliance with Federal regulations, to direct and approve all training programs instituted for the returned veteran.² Basically, the State of Ohio has established its standards and policies in keeping with the Federal Office of Education Policies and Standards.

In the State of Ohio, Director of Vocational Education, Joseph R. Strobel has been designated by the State Superintendent of Public Instruction, Clyde Hissong, as the Director of Veterans Training and Education Service. Mr. Strobel and his assistants Mr. Reese and Mr. Borosage and Mr. E. O. Bartlow, the latter State Coordinator for veterans training programs, are making every effort to cooperate with local communities throughout the State in setting up programs which will meet the Federal, State and Veterans Administration standards and policies and render effective service to trainees.

Once the initial program has been approved, it has been found advisable by the State Department of Education to carry on a "follow-up" study of each program in order that continuance of approval may be effected.

² Approved Training Institutions (Veterans Training and Edu. Service)

The fact that a veteran takes employment in a business or industrial establishment does not entitle him to government subsistence payments. He must be in training status in an "approved training institution," which means in the case of on-the-job training, a business or industrial establishment approved by the State Department of Ohio as "qualified and equipped" to furnish the proposed training.
as the training program proceeds and develops. The following questions are now being used by the State Department of Vocational Education and Veterans Training and Education Service, as criteria in evaluating accomplishments and determining that State standards and policies are being met. It is not assumed that these are the only criteria to be considered in evaluating all situations. It is, however, a definite list of questions emanating from the State department of Veterans Training and Education Service, and clearly indicate the necessity for an integrated relationship between school and industry.
1. What is the title and description of the specific job objective for which the veteran is in training?

2. Has the school prepared a schedule listing the various operations for the major kinds of work or tasks to be performed, and the approximate length of time to be spent on each operation?

3. Is the training content and selection of training jobs adequate to qualify the veteran for appointment to the job for which he is being trained? Shop skills? Related information? Does it include non-functioning content?

4. What portion of the training time is devoted to job theory or technical information? How was the content determined?

5. Does the job objective customarily require a period of training which justifies the setting up of a pre-employment program of 10 weeks?

6. Does the school provide adequate space, equipment, instructional materials and qualified instructor personnel to provide satisfactory training?

7. What records are kept to show the progress made by the veteran toward his objective?

8. Is a copy of the training program as approved by the State Agency provided to the veteran by the school?

9. Have the employees of the company been notified of the training program?

10. What jobs (specific payroll classifications) are now held by the veterans who have completed the training program?

11. Does the shop and classroom organization conform to established practices in the plant? Good housekeeping; trainees busy; stations filled, etc.?
Policies of the Veterans Administration:

Circular 61 Veterans Administration, Washington, D. C.

March 14, 1936 is the latest directive emanating from the Federal offices concerning the supervision, organization and policies for establishments undertaking veteran training. The circular also contains definite instructions to an establishment operating an approved program, regarding the requirements of reports, records, a written statement of the program etc. This Circular also outlines the responsibilities of the Training Officer and directs him to inspect and instruct all veteran training establishments according to the policies outlined. An Abstract of Circular 61 follows:

Circular No. 61, Veterans Administration, Washington, D. C.
March 14, 1936 by direction of the administrator, Eldon L. Bailey
Executive Assistant Administrator.
AN ABSTRACT OF CIRCULAR 61 VETERANS ADMINISTRATION
WASHINGTON D. C., March 14, 1946

SUPERVISION OF VETERANS ENROLLED FOR COURSES OF TRAINING

1. Managers of Veteran Administration offices are authorized and directed to institute direct supervision of veterans enrolled in schools and training on-the-job establishments to an extent necessary to protect the interests of the Government and the veteran.

2. Supervision will be of the veteran enrollee. Supervision will not be of the school or the training on-the-job establishment. Affirmative answers must be shown on the following inspection questions in order that subsistence allowance will be payable and continuance of payments authorized.

   A. Is veteran actually pursuing a course of training at the place where he is enrolled?

   B. Is his conduct and progress in the course satisfactory?

3. All veterans now or subsequently enrolled for training under the Public Law 346 must have VA Form 1905h completed. This is for the purpose of supervision by the Training Officer. (Duties of training officer follow)

   A. The Training Officer will call upon each training establishment to develop mutual understanding of the law and policies of the VA governing training.

   B. To ascertain whether the veteran is pursuing a definite written program (course) of training. If so, obtain a copy of such course for VA records.

   C. A copy of such program should be in the hands of the veteran as a basis for his understanding of what parts of the occupation he is to learn.

   D. A definite course must be set down in writing, together with prescribed standards of progress and accomplishment.

4. In training on the job situations, there will be at the plant (a) a program of training, (b) a list of the major kinds of work which together make up the particular occupation for which the veteran is enrolled for training, (c) under each of these major kinds of work there will be listed as many as practicable of the constituent work tasks, job operations, processes, and items of occupational information, together with time elements and standards of satisfactory accomplishment.

   A reference card or record must be kept of each trainee indicating
1. The kinds of jobs, tasks, or activities in which he is engaged
2. The kinds of jobs must be related definitely to the elements of the training program. The veteran should not be required or permitted to take longer to complete a course of training than time necessary under reasonably good conditions. The veteran must not be allowed to continue in training status merely because he has further entitlement and desires to augment his income through the subsistence allowance. In order to avoid subsidized labor, the present rate of pay to the particular veteran will be observed to determine whether the veteran is being paid an adequate wage considering the type of work he is doing in his training and the proficiency with which he is performing his duties. Every course of training must be definitely outlined. Each course of training must qualify the veteran directly for appointment to the position for which the training is being given. There must be available, the particular position for which the veteran is being trained, upon completion of the course. The veteran must attain the position directly as a result of completing the course.

5. If there is no recorded course and none will be prepared, no subsistence allowance will be paid. Training Officer will inform the establishment orally, subject to confirmation in writing by the Manager of the VA. The veteran may change to another training establishment and the VA may assist him in finding a suitable place.

6. If there is no recorded course of training, but assurance is given by the establishment that such course will be recorded promptly, the veteran will be continued in training status for a reasonable time in which the establishment may prepare a record of the course. Preparation of the course is a responsibility of the establishment.

7. Failure of establishment or the veteran to show reasonable progress in the course and no assurance of immediate correction of the fault or weakness is given, the Training Officer may remove the training status from either the veteran or the plant according to the violator. Reasonable time may be granted by the Training Officer for correction to take effect before final judgment is made.

8. A copy of this instruction will be sent by the Manager of the Veterans Administration to the appropriate agency of the State responsible for approving training establishments in which veterans are now or hereafter may be enrolled and pursuing a course of training.

9. Managers responsible for the supervision of training as required by this instruction are authorized and directed to take steps, necessary to procure personnel and other requirements for this purpose.

By the direction of the Administrator,

Eldon C. Bailey
Executive Assistant Administrator
The Importance of Standards or Principles

The United States Commissioner of Education, John W. Studebaker, sent a letter to all State Departments for vocational education and enclosed a pamphlet entitled, "Forty Years in Vocational Education," by Dr. J. C. Wright, Assistant U. S. Commissioner for Vocational Education.

Commissioner Studebaker, in this letter of April 5, 1946, states:

On the evening of February 7, 1946, at the annual banquet of the American Vocational Association, Buffalo, New York, Dr. J. C. Wright delivered an address on the subject, "Forty Years in Vocational Education." It was an inspiring and thought-provoking address and the many people who heard it expressed a desire to possess it in printed form. In his address Dr. Wright spoke upon the "Factors for Evaluating the Efficiency of Vocational Education", which he regarded as one of the major accomplishments in providing the conditions needed for effective vocational education.

In this pamphlet, Dr. Wright stresses the fact that it is highly important that school officials be properly indoctrinated and understand the standards or efficiency factors used to evaluate classes in vocational education. This seems to indicate that school administrators need to understand the principles and standards as set forth by the directing and supervising agencies in order to effect a functioning program of pre-employment training. Dr. Wright emphasizes this need as follows:

---Another major accomplishment has been the development of a set of standards or efficiency factors used to evaluate classes in vocational education. In the opinion of many persons this development did more to secure an appreciation and common understanding of the fundamentals of a good vocational training course than any other single thing that has been done. The mere evaluation of specific class situations has probably not greatly affected the work done,

4 Dr. J. C. Wright's address "Forty Years In Vocational Education"
but this method of indoctrinating school officials in the underlying principles has had tremendous effect. Once the principles of functioning subject matter, or occupationally competent teachers, or properly selected students, of training on a productive basis and in a practical environment are accepted, the whole treatment of vocational education is viewed in a different light. When school administrators realize the meaning of these efficiency factors and the reasons back of them, many of the problems of providing the conditions needed for effective vocational education disappear.

It will be noted that there is a similarity of the principles outlined by the federal, state, and veterans agencies. Chapter IV is based upon an evaluation of the principles described as they apply to the Delaware Veterans program.
CHAPTER II

SCOPE AND LIMITATIONS

The general aims and purpose, as mentioned on Page 2, for a veterans training program were outlined as the ultimate goals toward which the federal, state, and local governments have put into effect the Servicemans Readjustment Act of 1944. To determine achievements the training program should be evaluated periodically by the application of the criteria established. A new automobile requires periodical checkups after prescribed numbers of driven miles, to maintain the quality and efficiency of operation and to determine that factory instructions and specifications have been followed. The veteran training program is analogous to the new car. A properly cared for new automobile affords rapid, convenient, and effective transportation. Similarly an effective training program should provide the knowledge, skills, appreciations and habits required by the industry for which the veteran is training. The trainee must receive a practical, specific, and efficient education, so that he may accomplish the desired end which is the job for which he has been trained. A job that enables him "to feel the joy that springs from labor," a job that provides human satisfaction and is a means whereby he supplies his needs and wants. The veteran must be trained and given individual care and attention if the community, local industry, the state and nation, expect to profit eventually from this undertaking. So that every citizen may be proud and justified in stating that this is a country that is "governed by the people and for the people," to the end that seemingly insurmountable obstacles such as problems of readjustment, shortage of materials, houses, etc., may be solved in due time by the application of sound and tried
principles of experience but flexible in their implementations to meet needs.

The Limitations and Statement of the Problem

The overall view of the veterans training program is of gigantic proportions. In substance it is as large as was the combined forces in the armed service who have passed or are in the process of passing through the separation centers throughout the nation.

The principles stated in the preceding chapter are applicable to all training establishments. However, it is not the purpose of the writer to evaluate all phases and types of programs. As stated previously this thesis is concerned with an evaluation of a local program, a community in which there is but one high school. The community is a typical small city which has a population of from nine to ten thousand. The industry cooperating is a comparatively new one in this community. In an unselfish and sincere effort to present opportunities to the ex-serviceman, it has taken the lead and accepted its responsibilities in aiding the servicemen concerned to prove their value and worth to the community, state and nation. This is being done in cooperation with the local school administrators, United States Employment Service and Veterans Administration.

The veterans pre-employment training program began functioning in Delaware, Ohio, at Willis High School in cooperation with the United States Employment Service and the Correct Manufacturing Company on February 1, 1946. The first group of veterans completed their ten-weeks program at the high school April 15, 1946 with credit amounting to 250 clock hours and thus accomplished the first phase of their training. At the time of this writing, 25 of the original 30 veterans are placed in the Correct Manufacturing Company, undergoing the second phase of training, termed "On-the-job" training. This study involves 90 veterans
who have enrolled for pre-employment training as conducted at the Willis High School, Delaware, Ohio, from February 1, 1946 to April 1, 1946. The study also includes brief follow-up of the first 25 who are now at the Correct Manufacturing Company, taking the second phase of training. An accurate evaluation of this program would necessitate a study over many weeks and months since the ultimate objective is to place the veteran on his job having the ability and skill necessary to earn the wage normally paid by the industry. Because of the limitations of time and in order to get an early evaluation of accomplishments the study is at this time limited to covering the first eleven weeks of the program.

Within this limit an attempt is made to show the importance of a concerted effort on the part of the community, industry, public schools, and employment agencies, in providing a solution to the veterans readjustment problems. Also as an aid to school administrators in organizing a similar program for veterans.

Scope of the Problem

In making a survey of what is being done for the returned serviceman regarding suitable employment, one should begin at the source of stimulation. Administration then would be the logical place from which to start. Public Law 346 and Public Law 16 (G. I. Bill) then are the primary controls under which pre-employment education for veterans must be organized. See Appendix A for a brief description. Who is in the driver's seat? What organizations are backing up these laws? Who and where is the sparkplug needed in order to get action?

The responsibility for the employment of veterans rests upon the nation as a whole, government, business and citizens of the community. All
must share equally in the task, states Mr. Perry Faulkner, Chief of Veterans Employment Service, U. S. Department of Labor. He further states, in his letter addressed to all employers of America, that the complete readjustment of our national economy depends upon the manner in which we serve the veteran.

The Veterans Employment Service has prepared a folder entitled "Employers' Guide" and is indebted to scores of industrial concerns for much of the material contained therein. This folder contains twelve pamphlets ranging in subject matter and information from number one, titled, "Why We Are Doing This Job", to number twelve, "Special Request to All Employers." Contributions to this Guide were made by the United States Chamber of Commerce, The National Association of Manufacturers, Committee for Economic Development, The National Research Council, The American Public Relations Association, Congress of Industrial Organizations and American Federation of Labor.

Mr. Faulkner goes on to say that:

One of the most satisfying features in the employment of veterans has been the attitude of employers throughout the nation. With sincerity and enthusiasm they have recognized their responsibilities as employers and their duties as citizens. Many of them have well conceived plans for the return of veterans to their establishments. Some are so complete that there does not seem to be anything that might be done to better them. There are some, however, who do not seem to have any plan at all.

One of the most important phases of the Veterans Employment Service is finding jobs for returning veterans. Whether this service succeeds or fails will depend entirely upon the support given by the

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employers of America and the educational establishments. The cooperation and coordinated efforts of all employment services, employers, educational training services, and the Veterans Administration are of vital importance in the achievement of this objective. Such is the gist of the "Employer's Guide." On the inside cover of the "Employer's Guide," printed and dated March 1946 and sent to all employers of America by the Veterans Employment Service, United States Employment Service, U. S. Department of Labor, Washington 25, D. C., is a statement by the President of the United States, Harry S. Truman who says:

The spirit of America is the spirit of independence. Americans are typified by our fighting men; they seek no favors; they ask only for the right to make their own way. They want only one assurance, the right to work out their own destiny. They deserve that right and we are determined that they shall have it. Government alone cannot do the job, private industry must cooperate. By pooling the vast resources of our country, we can make it possible for every returning service man and service woman to find a job. They do not want a dole. They ask only the right to continue and improve our American standards of living.

This and previous statements clearly indicate the position of the federal government with respect to readjustment services to the veterans. In the writer's estimation, the statement by the President embodies the basic philosophy upon which the modern trend in veterans education is founded. That the schools of Ohio certainly are accepting the challenge from their own local communities is indicated by the data given in the Directory of Veterans Training Facilities, approved by the Ohio State Department of Education. This Directory presents all cooperating school authorities and programs throughout the State. Mr. Joseph R. Strobel, Director Vocational Education for the State of Ohio states that the cooperative efforts of the local authorities has greatly facilitated approval of educational service to the veteran.
Data on Graph I represents the trend of educational programs approved by the Ohio State Department of Education for Veterans training under the Servicemen's Readjustment Act of 1944.

The apprenticeship training program indicated by the red line shows a marked drop during March. According to Mr. W. C. Webb, Director of Apprenticeship Training Service for Central Ohio, the drop is due to the time spent by his office in obtaining signed agreements between the training establishment and the Apprenticeship Training Council. This is a requirement to be met before approval is given for apprenticeship training.

If the drop is a temporary one, then it may be assumed that apprenticeship training is being accepted by a substantial number of veterans as a means of achieving occupational training. The blue line on the chart indicates a very rapid growth of on-the-job training beginning with November, 1945. If growth continues at the present rate of acceleration, on-the-job training may prove to be the most popular means whereby veterans achieve all training for an occupation. Data on this chart show only the number of programs and not the number of individuals being served. Were those data available, it is probable that on-the-job training program would be revealed serving a much larger number of veterans than the apprenticeship method. This assumption is based on the relatively small number of apprentices usually indentured with a given employer. Other elements likely to increase the popularity of on-the-job training is the flexibility in the training hours and the more rapid increase in earnings.
Graph I

Cumulative Approvals

Prior to August: 4,000
August: 4,002
Sept.: 4,791
Oct.: 5,361
Nov.: 5,783
Dec.: 6,513
Jan.: 7,764
Feb.: 9,335
Mar.: 12,015
Apr.
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.

- Total approvals
- Apprenticeship
- On-the-Job
- Other
- Farm
For the purpose of summarizing this panoramic view of the veterans economic readjustment problem the statements on the inside back cover of the "Employers' Guide" under the caption the "Combined Statement for Employers' Guide," are presented.

To meet the total problem of jobs for veterans, all employers of workers and every individual must assume their full responsibility.

The returned veteran will expect an opportunity to reach the objective he might have attained had he not enlisted in the service of his country. To offer him less would result in a penalty for his having served.

An adequately planned veterans employment program for employer groups is the goal of all American industry. To this program we pledge our full aid and support.

Signed:

Paul G. Hoffman, National Chairman, Committee for Economic Development.

Eric H. Johnston, President, Chamber of Commerce of the United States.

Robert R. Wason, President, National Association of Manufacturers.
The Adult Education Journal of January, 1946, published a special issue entitled "Trends in Postwar Adult Education." This is the official publication of the American Association for Adult Education. The following items taken from this journal give a cross-section of trends regarding vocational education for veterans and other adults.

Meetings of the Lorain County (Ohio) Adult Education Council during the coming year will be devoted to problems of the returning veteran, writes Evelyn H. Teaton. The council also proposed to compile a catalogue of adult education agencies in the area, work on better intercultural relations, and study pending legislation on adult education.

A conference on "Veteran Education" which will give special consideration to the G. I. Bill and other veteran legislation, has been called by the Greater Pittsburgh Council on Adult Education.

Every adult education agency in the country is "Veteran conscious" these days, and each in its own way is making necessary program changes to meet the needs of returning servicemen.

Public schools in the District of Columbia, Greensboro (N. C.), Bridgeport (Conn.), Richmond (Va.), Kansas City (Mo.), Wichita, (Kan.), Portland (Me), and Tampa (Fla.) report that they have set up special centers for veterans which offer them an opportunity to speed up completion of their regular high school programs, enroll in accelerated refresher courses. A good many of these, like the one in Kansas City (Mo.) are operated on a self study plan, with no classes and no required attendance, taking standardized examinations whenever they feel they are ready for them.

"Today vocational educators are giving particular attention to needs of returning servicemen and women, demobilized war workers, out-of-school youth, and follow-up services for those who have left either the day-school or evening school program but are not yet established satisfactorily in an occupation," writes L. H. Dennis, Executive Secretary of the Vocational Association, Inc.

These statements show that many private as well as public agencies are concerned with providing education and readjust services to veterans and others. They also show that many programs are flexible with the intent of being adapted to the needs of the learner.

Standards for On-The-Job Training For Veterans

The State of Michigan has taken a leading position in organizing her resources for training of her returning servicemen and women. The
principles and standards appear under the caption of "Standards for On-The-Job Training," and are as follows:

The purpose of on-the-job training is to assist the veteran in establishing himself or herself in some desirable occupation for which he or she is suited, and on a self-supporting basis so as not to be placed under a handicap because of his or her service in the Armed Forces. Therefore, all those responsible for any phase of the program should assist in maintaining the following standards in all programs of on-the-job training:

1. Business firms, farmers, governmental agencies, industrial establishments, and other agencies will apply for approval to train veterans only for those jobs in which there is a reasonable assurance of employment upon the completion of the training program.

2. The ratio of trainees to trained workers in the establishment should be consistent with future job opportunities.

3. The training program should be organized and administered in such a way that the trainee has an opportunity to obtain the knowledge and the ability to apply the skills and to perform all the job operations, work tasks, and duties essential to the occupation for which he is being trained.

4. The training program should be organized and administered so that the trainee may learn his or her job within the time specified in the plan.

5. The training plan schedule of on-the-job experiences should be organized in a logical sequence and indicate the approximate time to be spent on each phase of the work. It should provide for work experiences of increasing responsibility supplemented by related instruction. Local school coordinators or other designated personnel will assist employers in preparing training plans and the schools will cooperate in making needed courses available to trainees through a Veterans' Institute or regular adult education program.

6. As the trainee progresses in his training program, adjustments in his wages will be commensurate with his achievements.

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7. Approved establishments will receive an approved copy of their application and training plan and will be required to notify the Superintendent of Public Instruction of the names and claim numbers of veterans employed under the approval; the job for which they are being trained; and the starting wage and potential wage.

8. Firms employing veterans on an approved training program will submit a monthly report of each trainee's wages and progress to the Veterans' Administration.

9. Firms employing veterans in an approved training program will immediately notify the Veterans' Administration of the completion or interruption of each veteran's program.

10. The trainee will at all times be under the guidance and supervision of a supervisor or foreman who is skilled in the occupation for which the veteran is being trained.

11. The occupation in which the veteran is placed will be consistent with his ability, interest, and physical condition.

The Ohio State standards for veteran training programs closely parallel these commitments.
CHAPTER III

THE WILLIS HIGH SCHOOL PLAN

Local veterans return. The Federal Employment Office is flooded with applications. Local industry is in the process of expanding but cannot absorb all applicants at the present. It is felt, by far-seeing representatives of local industry, that in the near future there will be a definite need for workers who can qualify. The questions that follow represent problems that confronted the local community.

Questions:

(1) What can be done for the veteran at home?

(2) Will the eighteen year olds who left school for the service find a job or opportunity for training at home?

(3) Will the veteran use his G. I. benefits wisely or will the Bill of Rights become a "Bill of Rewards?"

(4) How can the local community direct the veteran towards a well balanced plan of action and not a plan of dependence?

(5) How can the local community provide for its own veterans through the G. I. Bill of Rights?

Whatever is done for the veteran, wisely or otherwise, will be a reflection of the interest his country and community have in him. A reconversion and retooling process must take place in the case of every veteran if effective civilian learning and living adjustments are made, much as he was conditioned for effective military service. Veterans as a whole are not asking for pity, sympathy or rewards for work well done. They are asking for an opportunity to strengthen the foundations that
support self-confidence, strength of character and to develop a sound philosophy of life.

A Preliminary Meeting:

On December 29, 1945, a meeting was held to discuss with veterans, School Administrators and Representatives of Local Industry, the need for a veterans training program which would prepare the veteran for a vocation. Seventy-five veterans attended this meeting. Fifty-seven of those attending lived in the City of Delaware, the remainder residing within a ten-mile radius of Delaware.

The entire group of veterans were interested in securing primary training in sheet metal work so that they could achieve such skills and information as would enable them to hold positions in the local industries.

About one-third of the veterans were also interested in a night program of vocational training in the local high school. Superintendent D. R. Smith stated such a program might come later but the first program would be a day school enterprise.

The High School Proposal:

Following study of the problem, the administration of the high school decided it would provide a program which would fit veterans for sheet metal work. The course developed, consisted of practical shop work and related subjects in accord with the State Department of Education standards. The course was offered throughout a minimum of ten weeks for each student, five days per week and five and one-half hours per day. This program was offered in conjunction with an "on-the-job" training program in a local industry. The High School administration
secured a qualified and certified supervisor and an assistant instructor.

Accommodations for the program were provided in the industrial arts and vocational education shops. Necessary machinery, other than the property of the school board, was secured through the assistance of local industry and government surplus.

The program operated under the provisions of the G. I. Bill for Veterans, and went into effect immediately upon approval by the Delaware City Board of Education, The State Department, and the Veterans Administration.

Tuition rates were based upon overall costs. These included the instructors salary, cost of machinery, tools, light and heat, gas, water, materials, administration, janitorial service, and clerical help needed in keeping records and making reports.

Under the G. I. Bill of Rights, each veteran received hand tools in the amount of fifty dollars under the provisions of the act. This amount may be increased according to prices and additional tools needed. See Appendix C showing an itemized list of the tools required, as indicated by the supervisors of on-the-job training at the Correct Manufacturing Company. There is a possibility that the amount available for the purchase of tools may reach a hundred dollar maximum after entry to on-the-job training phase of the training program.

Application Procedure for Veterans:

1. The veteran must file Form #1950 with the Veterans Administration in Dayton, Ohio. This form can be obtained at the Superintendent's Office in the high school where the veterans educational program is being offered. Each veteran must include a certified copy of his discharge. The Veterans Administration will return to the applicant a "Certificate of Eligibility"
giving the period of training to which the applicant or trainee is entitled.

2. The veteran next files his Eligibility Certificate with the company which has agreed to employ him after completion of the ten-weeks pre-employment program. This is the second phase of the training program. In this phase a specific type of "on-the-job" training is followed for a prescribed number of hours. If the trainee is accepted by the industry he then surrenders his "Certificate of Eligibility" to the employer who in turn makes out a report form to be sent to the Veterans Administration. On this form the employer certifies the "Certificate of Enrollment" stating time of employment and sends it to the Veterans Administration at Dayton, Ohio. See Appendix D.

The Plan for Financial Aid and Salary for the Veteran as a Trainee:

Married trainees, under the G. I. Bill, are entitled to ninety dollars ($90.00) monthly while attending school and single men sixty five ($65.00).

Tuition up to five hundred dollars ($500.00) annually is provided under the G. I. Bill. This, however, is adjusted to cover expenses which a specific Board of Education incurs in operating the training program.

The industry employing the trainee and the Veterans Administration both contribute to the trainee's wages. The amount of the wage is set at journeymen's rates and starts at the minimum entry wage when employment in the plant begins.

As the trainee progresses, the company's contribution increases and that by the veterans administration is decreased by a corresponding amount. When the trainee is qualified to earn full salary in his trade governmental support is withdrawn.
The Curriculum

Sheetmetal work is a term that covers a wide range of activities in which there are many specific occupations and much related information peculiar to these. Such being the case, it is evident that a program of study and training for a specific area must be streamlined in both related and practical work. The related work must be to the point and as closely related to the real job situation as practicable. To achieve these ends many teaching aids were used. Visual aids of various kinds have proven their worth in many different ways. For example, models, charts, graphs, motion pictures, film strips, and many other devices were successfully and efficiently used as teaching aids in every branch of the armed forces.

In 1945, the United States Office of Education produced a catalogue of visual training aids in cooperation with the United States Department of Agriculture, the War and Navy Departments. Most of these aids are in the form of sound motion pictures, silent film and film strips. Other aids were charts, mock-ups and models.

The quotation below was taken from the foreword of the 1945 catalogue, written by John W. Studebaker.

There are 683 visual aids listed and described in this catalogue, a library of motion pictures and film strips which stands as one of the major achievements of wartime education. Their use in schools, industrial plants, and the armed forces has speeded up training, improved instruction and increased production. Of equal importance is the value of these visual aids to American peacetime education. Over 90% of the subjects deal with basic skills and understanding. They have a permanent place in American industry and American education.

From this source a list of motion picture films and film strips suitable to the purposes of the program of training in the school

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was selected by representatives of the teaching staff and from industry. Experience with these devices in the present program demonstrated their worth in a pre-employment educational enterprise.

The program as developed represents the coordinated efforts of the industrial representative, instructors of the related and practical subjects, the State Department of Vocational Education and the Veterans Administration, the city superintendent of schools and his assistant and covered the specific skills to be developed, pertinent related matter to be taught, and the time to be allocated to each major phase of the course as indicated in the following outline.

**VETERAN'S SHEETMETAL COURSE**

**OUTLINE**

<table>
<thead>
<tr>
<th>RELATED SUBJECT MATTER</th>
<th>TIME</th>
<th>CLASS</th>
<th>INSTRUCTION-HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9:00 - 10:00</td>
<td>Sheetmetal Industry</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Metals and Alloys</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tools</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Machinery and Shop Equipment</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drills and Drilling</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Abrasives and Grinding</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Abrasives and Finishing</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(leveling included)</td>
<td></td>
</tr>
</tbody>
</table>

|                                | 10:05 - 11:05 | Layout, Pattern Drafting and Blueprint Reading | 24                |
|                                |              | Sheetmetal Arithmetic                 | 24                |
|                                |              | Use of Tables                         | 2                 |

|                                | 11:10 - 11:40 | Rivets and Riveting                   | 1                 |
|                                |              | Solder and Fluxes                     | 6                 |
|                                |              | Electric Welding                      | 6                 |
|                                |              | Spot Welding                          | 1                 |
|                                |              | Gas Welding (A)                       | 5                 |
|                                |              | Brazing                               | 6                 |

**TOTAL 125 INSTRUCTION HOURS**
SHOPWORK

TIME

SHOP

Orientation of tools and machines and equipment
Cutting sheetmetal
Simple layout and cutout
Bending sheetmetal
Hemming sheetmetal
Folding edge with bar folder or pan brake
Wiring an edge by hand and machine
Turning burr by machine
Forming a bead by machine
Making a common sheetmetal joint
Tinning a soldering iron
Soldering joints
Identifying metals
Forming with rolls
Adjusting equipment
Drilling sheetmetal
Sharpening drills, chisels, and punches
Grinding a weld smooth
"Leveling" an irregular surface
Forming over stakes
Gas welding
Arc welding
Spot welding
Brazing
Reading a blueprint
Riveting
Use of handtools

TOTAL 125 INSTRUCTION HOURS

JOB LIST

Pan
Match Holder
Scoop
Mail Box
Funnel
Tool Box
Measuring Can ½ gal.

NOTE:

Group divided. One half in class and one half in shop exchange groups at noon. 5 hours per day, 25 hours per week, 250 hours per 10 weeks.
Enrollment for this particular type of training does not prohibit a shift to another type of training if the trainee decides upon a change. However, change is subject to review and decision by the Veterans Administration. Flexibility in the course provides opportunity for those who are undecided between occupational training and a college education to make an appropriate change once a decision has been made.

Organization and Methods of Instruction:

The first class comprised thirty trainees. Half of the class studied the related subjects in a drafting room while the other half of the class had shop practice under the direction of the shop instructor. The shop work was closely related to the fundamental skills in the use of hand tools and machinery which, at a later date, would be required in the "on-the-job" training phase of the program.

A preliminary study was made of each basic skill to be acquired. This took place in the related subjects classroom during the first half of the school day. The remaining half of the day was spent in the shop where the related work is applied and tested in the performance of a specific task.

The methods of instruction varied according to the needs and abilities of each trainee and the judgment of the instructor.

The first day was used as an orientation period for the trainee in which he was required to answer a questionnaire regarding his previous experience and background acquired as a civilian and while in the armed service. Information thus obtained was an aid to the instructor in becoming acquainted with the background of each veteran for purposes of guidance and of giving individual attention. A pre-test was administered to each.

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It was found that enrollees in general became quite concerned when the word "test" was mentioned. This led to the substitution of the word "survey" for test and seemed to have the effect of allaying fears and emotional strain.
trainee as an aid to the instructor in deciding the educational level at which to start each trainee.

The results of this survey indicated the general conclusions that follow:

1. Teaching should begin with basic information and tool operations. It cannot be assumed that a trainee has retained basic knowledge and skill learned previous to military service. Instruction at an elementary level should be the general approach. Judgment of individual capacities and abilities based upon class discussion and participation is likely to be more reliable than conclusions reached on the basis of scores made on a written test.

2. This type of survey gives the instructor an indication of individual potentialities in the elements of arithmetic, shop drawing, and ability to read a steel rule.

3. An aid to the instructor in selecting individuals most likely to advance beyond the average factory worker level. A cue to the instructor in offering appropriate guidance. A positive correlation was found between outstanding trainees of the pre-employment course and those who made good showings in the sheetmetal survey test.

4. Results of the survey test and general progress of the group show some variation. Most of those who were average on the survey test showed above average progress in the pre-employment course of training.

5. Records show that at the beginning of the course, the group, as a whole, made scores below what the teaching staff established as average in general metal work information. Student achievements show that those who had had previous metal work experience made more rapid progress than those without experience.
6. Instruction in basic processes of arithmetic, mensuration and shop drawing, was found necessary and resulted in more accurate solution of problems and in the amount of work accomplished.

An example of the pre-test and questionnaire are included in Appendix A.

Appropriate motion pictures were used in teaching the related subjects. These were selected and secured from commercial firms and from State and Federal Departments.

A progress chart was used. The progress chart is a form of record keeping and should act as a stimuli to the trainee. It is a visual picture of the outlined course. The chart used showed each student where he stood as to his achievements, and the rate of progress. Appendix B includes a copy of the certificate issued to trainees after completing the required course of pre-employment training, a recommended form for judgment of work traits and attitudes as determined by the pre-employment instructional staff and/or by the plant supervisor or foreman of on-the-job training.

After completing the 250 hours of related and school shop pre-employment training, the trainee is transferred to on-the-job training.

On-the-Job Training Defined:

On the job training is interpreted by the State Department of Education\(^9\) to mean:

An organized plan of training designed to assist the veteran in acquiring the desired job skills and job information which are essential to participation in the normal activities of the establishment.

Requests for approval to train veterans under this type of plan will be submitted in conformance with instructions in Misc. VT-3, on Misc. VT-30.

On-The-Job Training Program for Local Industry:

On January 22, 1946, Mr. G. W. Way, owner and operator of the Correct Manufacturing Company of Delaware, Ohio, wrote a letter to the Veterans Training Section of the State Board of Education, State Office Building, Columbus, Ohio, in which he presented his formal application for the establishment of an "on-the-job" program of training for veterans of that community. The application included training programs for fourteen different trades, providing jobs for over two hundred veterans.

The following was required by the State Office of Education:

(1) description of each trade be sent to them in duplicate,

(2) the plan of training to be followed,

(3) the time necessary to complete the specific training,

(4) the procedure to be used in training,

(5) the qualifications of the plant instructor or supervisor who would direct the veteran while in the process of training,

(6) the facilities at the plant for training the veteran,

(7) the minimum wage scale, and a wage schedule commensurate with the trainee's progress and ability as he develops during the program.

The program was recommended by the school superintendent for approval by the Veterans Training and Educational Service, State Department of Education, Columbus 15, Ohio. In the letter of recommendation originating from the local high school, it was stated that the school would offer its facilities and services to assist in improving the training program as and if needed.

In setting up an on-the-job training program, a specific type
of report is required by the approving office of the state. This report must be made on form (VT-30). Study of the form will indicate the definite procedure a typical training establishment must pursue in requesting approval for a veterans training program. For further instructions regarding the conditions to be met by business and industrial establishments requesting approval for on-the-job training, the reader's attention is called to "Veterans Training Information" bulletin (Misc. VT-3) issued by the State Department of Education, Veterans Training and Education Service, Columbus 15, Ohio. The latest revision being made January 1, 1946.

The following are examples of the application form, job descriptions, as required by the sponsoring agencies, and a notice of approval form from the State Department of Education.

10 State Department of Education, Veterans Training and Education Service, Columbus, Ohio. Request for Approval (On-the-job Training).
REQUEST FOR APPROVAL
(On-the-Job Training)
Public 346

Requested by __ The Correct Manufacturing Co. ______________________________

Address ____________________________  Delaware, Ohio ____________________________

Nature of Business __ Truck Body Manfg. ______________________________

Person to Contact __ G. W. Way ______________________________

Number of Veterans you propose to train 210 ______________________________

Indicate by a check mark whether you desire assistance in developing your program:

From your local schools Yes __ No __

From the Veterans Training Education Service, Yes X  No __
State Department of Education

Job or Occupations for which approval is requested:

1. Stock Clerks 4; Receiving clerk 1, Shipping clerk 1.
2. Time study man 2; Production Planner 1, Spray Painters 8.
3. Truck Body Builders 120; Sheet metal Fabricating Machine Operators 60; assistant Purchasing Agent 1; Cost Clerk 1.
4. Personnel clerk 1; Cost Accountant 1.
5. Bookkeeper 1.

The attached on-the-job training program for veterans is, to the best of my knowledge and belief, an accurate and complete statement of what we intend to follow in training veterans under Public Law 346.

Date 1/23/46

Signed:  G. W. Way ________________

Title:  Operator ____________________

Recommended by:  D. R. Smith ________________

Title:  Supt. Delaware City Schools ____________________
Jan. 25, 1946

ON THE JOB TRAINING

Production Planner (Truck Body Mfg.)

0-60.50

1. Job Description:
The production planner receives the list of units which are next to be built and then after following through thru all of the various processes of manufacture, it is his duty to schedule these units in accordance with the ability of the factory to produce as near as possible to the plan required by the Sales Department. A fairly broad knowledge of manufacturing processes together with ability to get along well with the various departments, such as purchasing, production, receiving, shipping and all the important departments in the business are required. Also a fairly broad judgment must be developed in order to execute the duties of this post properly.

2. Training Schedule:
Any Trainee preparing himself to become a Production Planner must be expected to spend approximately 18 months in the process of training. To begin with he will only be able to observe while those experienced in the business of planning production go ahead with the work until he is able to grasp the primary functions thereof, after which he will be permitted to plan the production for one day out of each week. Later he will be able to plan the production for two days, etc. until he has learned to plan the production for the entire program. In his initial planning, he will plan the production for only one or two machines. Eventually he will be able to gather the information and develop such judgment and information gathering ability that he will be able to plan the production for the entire plant, easily, quickly and accurately.

3. Training Facilities:
This work will, of course, be accomplished under the instruction of an experienced and skilled production manager. Information and all necessary knowledge will be available to the Trainee at any and all times. He will be led through the various stages by the production manager and by others who are experienced in planning production and/or providing the necessary information to the production department.

4. Wage Schedule:
Wage schedule for this job shall be not less than 60¢ per hour to

All of the Code numbers used have been taken from the Dictionary of Occupational Titles published by the Department of Labor in June 1939, together with Supplemental Dictionary published in July 1943.
start with, the trainee's wages being gradually and periodically increased commensurate with his ability to learn and to retain knowledge and exercise judgment until he reaches his employer's minimum entry wage for this skill which is considered to be $1.30 per hour.
1/23/46

ON THE JOB TRAINING

Spray Painters (Truck Body Mfg.)

7/16/210

1. Job Description:

Spray painters shall be capable of accomplishing any part of a paint job, including but not restricted to the following processes:
1. Clean properly with phosphoric acid cleaner and prime the new work.
2. Sand lightly and prepare surface wherever needed with a primer surfacer or a surfacer.
3. Wet sand the surfacer, clean the job and prepare for color coat.
4. After cleaning tack ragging the job is now sprayed with synthetic enamel in the desired color or colors.
5. If a sufficient coating has not been achieved the unit will now be taken to the Infra Red Oven and dried in a period of approximately 10 minutes by the application of Infra red rays.
6. The job will now be rubbed lightly to renew all orange peel and all other traces of roughness or dirt after which it will again be coated with color in a rather thin viscosity known as a re-flow coat.
7. The job will again be taken to the Infra red oven and dried, after which it will be cleaned, touched up and set to go.

2. Training Schedule:

This training schedule will extend over a period of 18 months as follows:

1. Clean for prime - 2 months.
2. Prime, sand, prime and apply surfacer - 2 months.
3. Sand out surfacer, spot glaze, sand out and seal - 3 months.
4. Sand color with vibrating sanding machines wet; also by usual hand method of wet sanding and prepare for final color coat - 4 months.
5. Spray light colors on small panels, tape off, mask, etc. - 3 months.
6. Complete phase of all spray painting, including large panels in dark colors - 4 months.

3. Training Facilities:

Equipment will include agitating production cup with pressure fed Binks or DeVilbiss guns. Infra red drying ovens; an instructor with not less than 10 years experience. Power equipment for sanding, polishing, cleaning and finishing, masking compound for all glass masking and paper together with Scotch or other crepe tape for all taping off.

4. Wage Schedule:

The trainee's starting wage will be not less than 60¢ and not more
than 75¢ per hour and this will be gradually and periodically in-
creased commensurate with his ability to learn and perform until
he reaches his employer's minimum entry wage for this skill, which
is $1.25 per hour.
1. **Job Description:**

The Time Study man makes time and motion study on all of the jobs being accomplished in the factory. These various time and motion studies are accomplished by breaking the work down into elements and timing systematically each element. The purpose of the time study is to develop easier and better methods of doing work, to avoid unnecessary motion and to create set-ups which will avoid unnecessary labor and fatigue. This is very important work and requires a considerable amount of training to attain proficiency. A finished time-study man is expected to be able to thoroughly analyze in a systematic manner and describe the analysis of any job in the factory.

2. **Training Schedule:**

It is estimated that a training schedule on this class of work will require 18 months. Trainee will start by making simple time studies and will advance into the process of breaking the time study down into elements, analyzing each element and later will advance into the process of analyzing the various movements in each element to the extent that he will be able to eventually segregate the worker's movement or wrong movement and eventually he will advance to being able to thoroughly analyze any job as well as to recommend different and better methods of performing it.

3. **Training Facilities:**

The Trainee will have access to all the different types of equipment required in the fabrication and manufacture of modern all steel truck bodies. Also he will be able to operate under the instruction of a capable, industrial engineer qualified to teach him any and all phases of the work he is doing together with the importance of the work.

4. **Wage Schedule:**

Trainee's starting wage shall be not less than 60¢ per hour and this will be gradually and periodically increased in proportion to his ability to perform his duties until he has reached his employer's minimum entry wage for this skill which is $1.20 per hour.
ON THE JOB TRAINING

Shipping Clerk (Truck Body Mfg.)

1/34.14

1. Job Description:

To ship in the proper manner and fashion all products manufactured by us. This will include shipment via rail and motor truck, both car-load and LCL quantities. Would also include store door pickup and non store-door pick-up quantities. It would involve the handling of all shipments outgoing together with the keeping of proper records and making proper reports in connection therewith.

2. Training Schedule:

The training schedule for this job would consist of the trainee doing the work under specific instructions from his instructor until he has learned all the different angles of the work. It is assumed, and from past experience, it is known that this will require a period of approximately 12 months. The trainee will be required to make brief reports at the end of each week in order to determine whether or not his progress is as it should be. Also competitive examinations will be given in connection with the work to determine whether or not further progress is being made as it should and in addition, to keep a keen interest in the work.

3. Training Facilities:

The trainee will have at his command an opportunity to perform every and any kind of work which would be encountered at this factory in this position, together with an instructor who will be able to properly and quickly answer any and all questions.

4. Wage Schedule:

The trainee's starting wage shall be not less than 60% per hour and this will be gradually and periodically increased, based largely upon the ability of the trainee to learn and retain knowledge, as well as to apply himself in a larger way until he reaches his employer's minimum skilled wage, which is $1.00 per hour.
1/23/46

ON THE JOB TRAINING

Receiving Clerk (Truck Body Mfg.)

1-34.04

1. Job Description:

To receive in proper fashion from railroad and all other transportation companies, any and all shipments of material consigned to his employer and to make proper receiving reports, claims for shortages or damages, records of free astray shipments, as well as any and all other records and activity required to completely discharge the duties of a Receiving Clerk.

2. Training Schedule:

The trainee will perform all of the various phases of this work under a competent instructor for a period of twelve months. He will be required to make brief reports at the end of each week showing what he has accomplished in the way of actual work performed, also to show the progress he is making in learning all of the different details in connection with this work. He will be required to take an examination each thirty days for the purpose of determining the progress he is making and to keep his interest in learning at a high pitch.

3. Training Facilities:

The trainee will perform his duties under the guidance of an experienced receiving clerk who with a minimum of 5 years of experience will be able to instruct, make corrections in any and every phase of activity required.

4. Wage Schedule:

The trainee's starting wage shall be not less than 60¢ per hour and this will be gradually and periodically increased, based largely upon the ability of the trainee to learn and retain knowledge, as well as to apply himself in a larger way until he reaches his employer's minimum skilled wage, which is $1.00 per hour.
1/23/48

ON THE JOB TRAINING

Stock Clerk (Truck Body Mfg.)

1-38.01

1. Job Description:

The stock clerks will attend to the business of getting all materials from the stock room to the workmen, or making them available for the workmen to get. Everything will be issued on Requisition and/or deposit of tool checks. The stock clerks will be responsible for the unpacking and storing of all materials, as well as issuing them. Principal thing required in this category is to learn all materials and to differentiate between different qualities, gauges, weights, textures and other differences in the commodities to be handled.

2. Training Schedule:

It is estimated that a period of 18 months will be required (average) to thoroughly train the average man in this work. The general plan here would be to rotate the men from one Department to another as they learn the particular Department in which they are working. It is intended to conduct a competitive examination each thirty (30) days in order to stimulate keen interest and maximum learning on the part of the student workmen in this Department.

3. Training Facilities:

One experienced stock keeper will be in charge of all this work. Every item of material used in the construction of truck bodies will be available at all times affording every student workmen an opportunity to learn by actual experience in handling the article or commodity in question.

4. Wage Schedule:

The trainee's starting wage shall not be less than 50c per hour and this will be gradually and periodically increased, based largely upon the ability of the trainee to learn and retain knowledge, as well as to apply himself in a larger way until he reaches his employer's minimum skilled wage, which is $1.00 per hour.
Jan. 23, 1946

ON THE JOB TRAINING

Draftsman (Truck Body Mfg.)

0-45-18

1. **Job Description:**

   The draftsman will attend to the business of making a record of all templates, and all sheet metal shapes, sizes and forms before forming but after notching or cutting to size. He will also be capable of making a complete drawing of any part on the body, or of the complete body itself, when he has finished his course of training. This description shall include the ability to properly detail.

2. **Training Schedule:**

   It is estimated that a period of eighteen (18) months will be required, average, to thoroughly train candidates for this work, but only after they have first been interested in this type of work, and it is understood that any man undertaking this classification will have had at least some previous experience or schooling for it.

3. **Training Facilities:**

   All facilities for drafting, including instruction books are available, and a graduate mechanical engineer is also available for purposes of instruction.

4. **Wage Schedule:**

   Trainees starting wage shall be not less than 70% per hour, and this will be gradually and periodically increased, based largely upon the ability of the trainee to learn and retain knowledge, as well as to develop skill in drawing, and to apply himself in a larger way until he reaches his employer's minimum skilled wage for this classification, which is $1.25 per hour.
DRAFTSMAN

0-49-18 - Mechanical, Auto Body

Nature of work:

Draftsman's work consists of preparing clear, accurate and detailed working plans and drawings to scale for manufacturing or construction purposes.

Some of the more common jobs that exist in the field of drafting are:

1. Designer or lay-out draftsman who makes a drawing of an idea which an inventor, engineer or architect has given to him.

2. The detailer who makes the detailed plan of one section of the designing, drawing.

3. The checker who examines each drawing for errors and dimensions and other practicabilities.

4. The tracer who traces the original drawing in ink on linen or transparent paper before it is sent to the blueprinters.

A draftsman may specialize in mechanical, architectural, construction, typographical or patent office drafting.
ON THE JOB TRAINING

Sheet Metal Fabricating Machine Operators
(Truck Body Mfg.)
5-81.510

1. Job Description:

Sheet metal fabricating machine operators will be expected to successfully read blueprints, layout blanks, operate punch presses, squaring shears and press brake. Also hand brake and any and all other power cutting, bending, forming and shaping tools such as would be used in a truck body fabricating plant. This will also include the use of ordinary spot welders, gun type spot welders and seam welders. It will also include drawing presses both hydraulic and mechanical, for the actual stretching of sheet metal parts into desired shapes over dies or tools for the purpose desired. It shall also include but not be restricted to ordinary welding and metal finishing, including the flowing on and proper sanding with power tools or hand file of ordinary body metal.

2. Training Schedule:

Training schedule in this skill shall be approximately divided into two parts. First, the operation of light machines where one man commonly does the work under close supervision of instructors having many years experience in the work. All of the heavy machines the trainee will always operate as a helper along with a skilled workman who has been doing this type of work for many years and is skilled in its accomplishments. The training period will consist of a minimum of 8 months and a maximum of 20 months, with an average of approximately 16 months, inasmuch as some people acquire the ability to successfully operate machinery much quicker than others. Reflexes, and physical as well as mental capabilities effect the time required to become skilled in this occupation. It is not considered advisable to attempt to set up a schedule showing exactly how long a trainee will operate a certain machine. He will operate any machine long enough to master the ordinary knowledge required to successfully operate the machine and then will move on to the next one.

3. Training Facilities

Equipment available for trainees in this occupation will consist of punch presses, brakes, square shears, special hydraulic forming tools, gun type spot welders, stationary spot welders, seam type welders, electric drilling and shearing tools, nibbler type shears, serpentine and ordinary rotary type shears, bending rolls, hand punching equipment, rivet spinning equipment, etc. Experienced men who will act as instructors on this type of work will have had an average of 15 years of experience with a maximum of 30 years and a minimum of 5 years, also a considerable number of machine operators will be employed who will act as operators where as the trainee will act as his helper. This is a well recognized method of instruction in this type of work.
4. Wage Schedule:

The starting wage shall be 50¢ per hour and this will be gradually and periodically increased in proportion to the trainee's ability to learn and perform the successful operation of various machines until he reaches his employer's minimum entry wage for a qualified machine operator, which is $1.10 per hour.
ON THE JOB TRAINING

Assistant Purchasing Agent
(Truck Body Mfg.)

9-91,60

1. Job Description:

Assistant Purchasing Agent shall take care of sending out inquiries and locating sources for any and all items of material used in production or maintenance throughout the factory. He shall also perform the ordinary expediting duties which accrue to a purchasing department. After completion of a 12 months training course, he is expected to be able to, in cases of emergency, perform the duties of the purchasing agent. It is assumed that his judgment will have developed during the 12 months period to a point where he could successfully perform the duties of a purchasing agent.

2. Training Schedule:

The training schedule will consist of 12 months of work of purchasing and expediting nature starting with the small items of supplies commonly known in the trade as mill supplies and stepping up to where after 4 months period he is actually purchasing some of the routine production supplies. After 8 months he is expected to be able to produce any of the ordinary routine production supplies and after 10 months he is expected to be able to purchase any ordinary commodity required in the construction of truck bodies. At the end of the 12 months period the trainee is expected to be able to exercise the necessary judgment to do what would be considered a good commercial job of purchasing for any material used in the construction of any type of truck bodies.

3. Training Facilities:

Trainee shall have at his command the use of good, modern buyers guides listing the names of all manufacturers together with the items they manufacture. He shall also have a complete file of catalogues and buyers guides making possible the immediate location of one or more firms who manufactured the commodity which he is interested in purchasing. He shall serve under an experienced purchasing agent who has had not less than 15 years of experience and who is considered to be a good, modern purchasing agent.

4. Wage Schedule:

Trainee’s starting wage shall be 75c per hour and this will be gradually and periodically increased commensurate with his ability to learn, retain and apply his knowledge and exercise judgment until he has reached his employer’s minimum entry wage which is $1.40 per hour.
ON THE JOB TRAINING

Cost Clerk (Truck Body Mfg.)

1-01-35

1. **Job Description:**

   It is the duty of the cost clerk to learn the costs of all items entering into construction of a body, including labor, overhead and any and all items constituting cost. This is a very important and a rather lengthy process to learn. Information pertaining to the cost of a body must, of course, come from the Accounts Payable Dept., Purchasing Dept., Time Study Dept., Personnel Dept., Shipping and Receiving Dept., any and all departments which influence the cost of the body in any way. The cost clerk must first obtain from the Engineering Dept. a complete list of any and every as well as all parts entering into the construction of the body.

2. **Training Schedule:**

   Trainee will first spend 120 days learning how to analyze the cost of individual parts which are fabricated within the plant. He will then spend approximately six months learning how to completely analyze and make up a cost on a sub-assembly. He will then spend approximately six months learning to make a cost on a complete body up to the paint shop but not including finishing, after which he will spend approximately 2 months working on the finished product including all phases of accessory attachments, etc.

3. **Training Facilities:**

   Every item of information necessary in the making of costs will be available to the cost clerk at any and all times. Also the cost clerk will be continuously coached by an instructor who has performed the above work for approximately twenty years.

4. **Wage Schedule:**

   The trainee’s starting wage shall be 60¢ per hour which will be gradually and periodically increased commensurate with his ability to learn and retain knowledge until he reaches his employer's minimum wage for this vocation which is considered to be $1.40 per hour.
ON THE JOB TRAINING

Personnel Clerk (Truck Body Mfg.)

1. **Job Description:**

   It shall be the duty of the Personnel Clerk to keep an accurate and complete record of all employees, including the necessary history of the employee before entering this "On The Job" training or the employee of his employer. He shall also keep records of all things required to be recorded in connection with the activities of the employee after they have entered the employ of his employer and he shall also keep records of the progress made by each "On The Job" trainee as well as the reports pertaining to other employees by the supervisor and instructors.

2. **Training Schedule:**

   Personnel clerk will be under the instruction of the personnel manager and will start his training by the keeping of simple records on a few employees. He will gradually increase the scope of his records and the number of his records until at the end of a 12 month period he should be keeping the complete records of the personnel department.

3. **Training Facilities:**

   The trainee will have at his command every device, facility and bit of information required to advance as rapidly as his ability will permit him to advance.

4. **Wage Schedule:**

   Trainee's starting wage shall be 50c per hour and this will be gradually and periodically increased until the trainee has completed his training, at which time he should be on a wage of not less than $.90 per hour which is the minimum for the position involved.
ON THE JOB TRAINING

Cost Accountant (Truck Body Mfg.)

1. Job Description:

It is the duty of the cost accountant to make and keep complete cost records and be able to file at intervals as required, complete Balance Sheets, Manufacturing Statement, Operating Statement, etc., for the complete operation of his employer.

2. Training Schedule:

The Cost Accountant trainee shall begin his work by first studying the work others trained in his vocation. This period shall extend for approximately 90 days after which he will attempt the making up of simple manufacturing statements and all of the work in connection therewith for a period of another 90 days. He will then attempt to make up a complete operating statement which will require approximately another 90 days, and then for the last three months period he will attempt to make up complete statements including general and administrative expense and any and all items entering into the operation of a business.

3. Training Facilities:

The Cost Accountant will have at his command any and every facility required to perform the work as fast as his ability will permit him to absorb it and in addition will have the services of an experienced C. P. A. regularly employed by his employer at any and every time it shall be necessary.

4. Wage Schedule:

Trainee's starting wage shall be $36.00 per week which will be gradually and periodically increased until at the end of a 12 month period of training the trainee should be capable of attaining his employer's standard wage for this vocation which is $70.00 per week.
ON THE JOB TRAINING

Bookkeeper (Truck Body Mfg.)

1. Job Description:

The duties of a bookkeeper are well known, however, in this case, the bookkeeper will be required to make all entries and do any and all other work in connection with actually entering into the permanent record of the company all facts and figures pertaining to its operation. The bookkeeper will not be responsible for funds nor for the success or failure of any operation except his own.

2. Training Schedule:

The training period shall consist of a 12 months schedule of progressive "On The Job" training beginning with the simplest of entries and progressing steadily to a complete keeping of a set of books continuously under the supervision of a competent bookkeeper.

3. Training Facilities:

Every ordinary facility considered necessary to the keeping of books shall be available for the use of the trainee including periodic examinations which determine whether or not the trainee is actually applying himself or herself to the fullest reasonable extent.

4. Wage Schedule:

The trainee's starting wage shall be 50¢ per hour and this shall be gradually and periodically increased until the trainee shall at the end of the 12 month period reach the employer's minimum wage for this vocation which is $42.00 per week.
1/23/46

ON THE JOB TRAINING

Truck Body Builders (Truck Body Mfg.)

5-81,525

1. Job Description:

A truck body builder is able to do any assembly operation in connection with the construction of a truck body after the ordinary processes of fabricating on the material have been completed. This work includes, but is not restricted to the use of electric hand drills, both universal or high cycle type current, nut runners, screwdriver machines, electric hand saws, pneumatic nut tighteners, all types of bolt clippers, hand crimping machine, hand punches and all ordinary power hand tools necessary in the assembly of truck bodies. He shall also be conversant with the best current methods of fitting doors, fitting glass, sealing doors, sealing glass, applying in a workman-like manner windshield wipers, rear view mirrors, courtesy lights and all such ordinary and usual accessories. He may do this work from sketches and verbal descriptions or from blueprints, but in any case shall be able to read all ordinary blueprints of an assembly nature used in truck body work. This work shall be specifically related to sheet metal work in all its forms including ordinary welding, but not the finer arts of welding. This man shall also be able to puddle body metal and to finish, but not as an expert metal finisher. In short, he shall be able to perform all of the ordinary duties of a sheet metal worker, blacksmith, welder, etc., but is not expected to perform as an expert in any one of those lines, but rather as needed to do a passable job of truck body assembly work.

2. Training Schedule:

The training period shall consist of 18 months divided approximately as follows:
1. Assemble small simple parts in foolproof jigs--2 months.
2. Assemble more complicated parts in jigs impossible to make foolproof--3 months.
3. Assemble still more complicated assemblies in jigs requiring judgment and skill--3 months.
4. Assembling parts in jigs for the entire jig and the parts are taken to spot welders for ordinary spot welding--3 months.
5. Assembling parts in jigs where the entire part and the jig are taken to seam welders for seam welding in the jig--2 months.
6. Assembling complete sub-assemblies, including welding and metal finishing but not an eye for curves or shapes--2 months.
7. Assembling complete sub-assemblies, including welding, metal finishing and complete shaping of part to proper curve and sweep which requires judgment and keen perception--3 months.

Training facilities shall consist of any and all types of equipment
required to do this work proficiently, together with instructors with a minimum of 10 years average experience. Trainee will be required to pass rigid examinations in one training period before being permitted to pass on to the next.

4. Wage Schedule:

Trainee's starting wage shall be a minimum of 55¢ per hour and this shall be gradually and periodically increased commensurate with the trainee's ability to perform satisfactory work until he has reached his employer's minimum entry wage, which for this skill will be $1.05 per hour.
NOTICE OF APPROVAL
TO
ESTABLISHMENTS CONDUCTING VETERANS TRAINING
UNDER PUBLIC LAW 346

The State Department of Education being the authorized approval agency for the State of Ohio, considers

THE CORRECT MANUFACTURING COMPANY
located at
Delaware, Ohio

to be qualified and equipped to conduct training for veterans under Public Law 346 of the following types:

Apprenticeship Training

X On-the-Job Training

School

for the following occupational classifications:

1. Stock Clerks
2. Receiving Clerk
3. Shipping Clerk
4. Time Study Man
5. Production Planner
6. Spray Painters
7. Truck Body Builders
8. Sheet Metal Fabricating Machine Operators

Approval effective this 28 date of January, 1946.

Approved by:

Clyde Hissong
Supt. of Public Instruction

E. O. Bartlow, Coordinator
Veterans Training and Education Service

(See next page)
COPY

STATE DEPARTMENT OF EDUCATION
COLUMBUS 15, OHIO

NOTICE OF APPROVAL
To
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   School

for the following occupation classifications.

  9. Assistant Purchasing Agent       13. Bookkeeper
  10. Cost Clerk
  11. Personnel Clerk
  12. Cost Account

Approval effective this 28 day of January, 1946.

Approved by:

Clyde Hissong
Supt. of Public Instruction

E. O. Bartlow, Coordinator
Veterans Training and Education Service
CHAPTER IV

EVALUATION OF THE WILLIS HIGH SCHOOL VETERANS TRAINING PROGRAM
IN TERMS OF THE PRINCIPLES ESTABLISHED

Question 1.

Is the training program organized and maintained in response to
public need?

Comment:

During the month of January, 1946, Mr. G. W. May of the Correct
Manufacturing Company, stated to Superintendent D. R. Smith of the Delaware
City Public Schools, that he was in need of 200 new employees in his
plant and requested establishment of a pre-employment program to train
veterans to fill positions which he had available. This request was en-
dorsed by the local office of the United States Employment Service.

Data shows that in response to this request, a pre-employment
program of education was established. Classes began February 1, 1946 with
an enrollment of 30 students. This group was selected from a large list
of applicants. Selection was based on interviews and answers given to
a list of questions.

The veterans program is recognized at Delaware as being a part
of the public school work of the community insofar as the first phase
(pre-employment) training is concerned. This is shown in Chapter III.

Question 2.

Is there a definite organized plan of instruction which includes
technical knowledge and related industrial information based upon standard
practices of the trade or occupation?

Comment:

The program at Delaware was hastily developed with the result
that there was not, at first, a well-developed program, nor was it clearly understood as to the needs of the trainees or of the best methods of approach. Consequently, the staff was not prepared fully to cope with the situation. After the first few weeks a better understanding of purposes was had through consultation with the prospective employer. This led to a series of conferences with the teaching staff, which resulted in development of appropriate content and better teaching procedures and methods based on an analysis of the jobs for which personnel was to be trained and the fundamental requirements of the sheet metal industry.

One of the early mistakes made was teaching the trainees to solder when the job they were preparing for did not require ability in this respect. A similar mistake was attempting to teach blueprint reading using blueprints unrelated to the occupation.

After reorganization of the program, an outline of the requirements was given to the newly hired instructor of related subject matter as an aid to him in organizing his content material. The groups were small, this worked out satisfactorily as it gave the instructor opportunity to counsel and give individual attention to each trainee.

A definite list of tasks to be learned proved to be an advantage to the instructor, industry and the trainee. The instructor was able to present related subject matter to specific situations and recognize items which needed emphasis. The plant was able to evaluate the school's program more accurately which made for better relationships.

Tests covering the subject matter were given bi-weekly. These tests provided the veteran a basis upon which he could judge his progress toward proficiency in the occupation he was preparing to enter. The tests
were analyzed and approved by Mr. Way, the prospective employer, thus providing a close check on coordination between the pre-employment training program and practices of the trade or occupation. See Appendix C.

The fact that the analysis approach was not followed in the beginning resulted in much loss of time and effort. A job analysis for each task to be learned should be one of the first steps in planning a training program of this type. In this way proper emphasis will be given to both operations and related information.

Question 3:

Is there a title and description of the specific job objective for which the veteran is being trained?

Comment:

The latter half of Chapter III presents the program as formulated by the Correct Manufacturing Company of Delaware, Ohio. Fourteen separate jobs are described giving the title and code number based on the "Job Dictionary" as used in the United States Employment Service. Each job is properly titled with a detailed description indicating what the veteran needs to know and be able to do in meeting the established standards of the job for which he is training. It will be noted that 120 Truck Body Builders and 60 Sheet Metal Fabricating Machine Operators are specifically requested. The instructional staff in conference with the prospective employer organized the content of the pre-employment course in terms of the skills and information essential to success in the above occupations.
Question 4:

Does the job objective customarily require a period of training which justifies the setting up of a pre-employment program of 10 weeks?

Comment:

The advisory committee agreed that there was a substantial body of information and a number of skills to be acquired. They also agreed upon the time required to accomplish the objectives of pre-employment. The writer knows of no investigation establishing the time required for beginners in automotive sheet metal work to achieve the objectives of this pre-employment course as they appear in Chapter III. Instruction will vary with different types of work activities involving manipulative skill essential to success in shop practice. These must be given adequate emphasis. However, mastery of related subject matter will result in a more intelligent worker and may bring advancement to him more rapidly than otherwise might be the case. Thus, training time should be apportioned according to the situation or skill to be learned and the facilities at hand.

Question 5:

Is the training program checked against actual job requirements in the plant?

Comment:

The need for power driven sheet metal machines in the school shop was indicated after many minor injuries were received by the veterans during their first week operating power presses, squaring sheers, bending and forming devices at the plant. These the school shop did not possess.
when the program was put in operation and was a decided weakness. The pre-employment training would have been more effective if certain power machines had been installed in the school shop and trainees given opportunities to operate those machines, following adequate and careful instruction accompanied with meticulous supervision.

Horizontal and vertical arc welding as taught in the school shop is closely coordinated with the plant as the same processes and materials are used in each case. The plant superintendent now provides the material for job trays which are to be welded in the school shop and used in the plant. The tray must meet the particular specifications indicated on the blueprint supplied by the plant.

A coordinator was appointed by the advisory committee in order to check actual job requirements in the plant with the course content as presented in the ten-week pre-employment training at the high school. A continuous program of close coordination between the school and industry is now in operation. One element of the coordinator's work is to observe the work of the trainee and to determine the adequacy and effectiveness of the training received in the school shop. This should result in an effective program of specific training. Some progress in this direction has been achieved as indicated by the employer who has expressed satisfaction with the results.
Question 6:

Has the trainee attained a position directly as a result of completing the course?

Comment:

The Correct Manufacturing Company has employed the first group of veterans who have completed the pre-employment training program as outlined in Chapter III. Mr. Way is making a sincere effort to absorb as many trainees for on-the-job training as possible under the present circumstances. Unforeseen shortage of materials, due to labor difficulties in the coal and steel industries at this time, is preventing expansion of the Correct Manufacturing Company. It was, therefore, necessary for Mr. Way to request those veterans who had been put to work at another type of job to remain on that job until materials could be obtained in such quantities as to permit full-time operation. In the meantime, jobs of a miscellaneous nature are being provided for those who upon graduation from the pre-employment program do not have employment. Many of the veterans enrolled in the night class at the high school have jobs during the day.

Question 7:

Does the school shop and classroom organization conform to established practices in the plant? Good housekeeping; trainees busy; stations filled, etc.?

Comment:

As adults, veterans should not be subjected to high school rules except as such rules are necessary to the effective conduct of the institution and to the learning situation. In this particular case, the pre-employment training for veterans is located in the old section of the high school in separate rooms from the regular high school. This separation permits
flexibility concerning rules. Rules regarding smoking on the schoolgrounds are entirely under the control of local boards of education in Ohio. Smoking is particularly important to many veterans for at least two reasons; first, that the rule against it was a symbol of the school's restrictions on personal freedom which many veterans rebelled against, and second, that most men in the armed forces have become dependent upon smoking for release of nervous tension. The industrial plant for which the veterans are preparing permits smoking at specified times only. The school has adopted a somewhat similar procedure and a few minutes each hour is given the trainee for a smoking period. This privilege can be abused very easily if not handled in a tactful manner by the instructor.

The proper attitudes toward good housekeeping, study habits, attendance, etc. must be insisted upon by the instructor if the training is to be effective and successful in meeting the requirements of the State approving agency. It is the general opinion among educators that laxness in the rules of good housekeeping, study and other habits, attendance, etc. is not conducive to effective learning.

**Question 8:**

What portion of the training time is devoted to job theory or technical information?

**Comment:**

The pre-employment training program consists of 250 instruction hours one half of which is devoted to job theory or technical training. This includes those items outlined on Page 39 under related subject matter.
CHAPTER V

SUMMARY, CONCLUSIONS AND SUGGESTIONS FOR FURTHER STUDY

This is a study of a training program established by the City of Delaware, Ohio, for the purpose of aiding returned veterans to adjust into occupational life. This enterprise was undertaken in cooperation with the Veterans Administration, United States Employment Service, the public school administrators and the Correct Manufacturing Company of Delaware, Ohio. Thus, the local school administrators were confronted with the problem of organizing and coordinating the work of local establishments concerned with the occupational adjustment of the returned veteran.

While working with the teaching staff and aiding in organizing the program, the writer became interested in making a follow-up study of veterans, their reactions and attitude toward the opportunities offered in their home community. Through contacts with the State Director of Vocational Education, the writer found that other communities were confronted with problems similar to those facing the group at Delaware, Ohio. In the course of an interview, Director Strobel mentioned the need for a "Measuring Stick" by which veteran training programs could be evaluated. This suggestion seemed to imply application of the principles and policies established by the sponsoring agencies.

A visit was made to the regional headquarters of the Veterans Administration where information was secured regarding the supervision of veterans training programs. The Trades and Industries division of the office of Vocational Education for the State of Ohio was next visited where helpful suggestions, information and pertinent literature were secured.
Class and shop activities were observed to gain an insight upon the training procedures and progress of the program as conducted at the high school.

Visits to the Correct Manufacturing Company were made to observe the type of occupation for which the trainee was preparing himself, and as a means of follow-up in the eleventh week of the program.

The aims and objectives of a veterans program of educational training were used as a basis upon which the Delaware Pre-employment and the on-the-job training service was organized. The necessity for cooperation among many organizations, and agencies in the community to meet the challenge of the problems created by the returned veterans is stressed as a major factor of success in developing this type of program.

Two phases of educational training for veterans are described. The pre-employment training program, directed and operated by the local high school and "On-the-Job training" operated and supervised by the Correct Manufacturing Company.

Chapter I presents the principles, standards, and policies of (1) The United States Office of Education, (2) The Ohio State Department of Vocational Training, and (3) The Veterans Administration. These principles were used as criteria in the evaluation of the training program at Delaware, Ohio.

The overall problem of training for occupational life is viewed briefly from the standpoint of concern to the nation, state and community. A brief resume is given of the activities of governmental agencies and departments.

The problem as seen by the school administrator, local employment office, the veteran and the local industry was reviewed. This revealed
that the four groups found a need for coordinating efforts and resources in solving the common problem of organizing the content of the pre-employment program which preceded On-the-Job training at the plant.

The purposes of on-the-job training was presented, and the standards maintained by the State of Michigan for Veteran educational programs used to show similarity of the Federal and State policies regarding on-the-job type of vocational training.

Application of the criteria revealed strengths and weaknesses in the pre-employment program as follows:

1. Need for pre-employment training originated in the community, and was not instigated by the school. The school was asked to aid in solving the local problem.

2. Investigation shows full cooperation between local industry, the United States Employment Service, school administrators, and veterans.

3. Had the counsel of the State Department of Education, Division of Veterans Education and Training Service, been sought during the planning stage, it is probable that a stronger initial program might have been developed.

4. Experiences with this program indicated that hastily developed plans result in disorganization and inefficiency.

5. A representative advisory committee should be organized as one of the first steps in developing a pre-employment training program, as an aid in determining the content of the program. In the program studied, a weakness in subject content was found. The cause seems to have been a result of plans made by one individual - the instructor of related information.

6. The program was improved after a definite list of tasks to be learned were established and approved by the instructional staff and representatives from the industry for which preparation was being made.
7. The results of the testing program indicate a definite need for a review of processes in shop arithmetic, drawing and blueprint reading. Experience with this group of veterans indicated that instruction must begin at an elementary level in the pre-employment training program.

8. Classes must be small in order that individual attention may be given.

9. Training time should be apportioned according to the situation or skill to be learned, the facilities at hand, and the aptitude of the learner.

10. Tools and machinery similar to that used in the plant should be used in the pre-employment training shop. Because this was not done in the beginning trainees had difficulty in adjusting to conditions of on-the-job training and a number of accidents resulted.

11. Materials and processes similar to those used in the plant should be used in the pre-employment training program.

12. Results indicate clearly the need for a full time coordinator.

13. The instructor of a veterans pre-employment training program must be friendly but firm. A need for this is shown in the non-observance of certain rules and regulations of the school with respect to personal privileges.

14. Standards and policies emanating from the federal and state departments for veteran training programs must be observed consistently by the administration, the teaching staff, the local employer and the veteran. Otherwise, the veteran may be removed from training, or the program disapproved.
Problems which seem worthy of further investigation are:

1. A follow-up study of on-the-job training in order to evaluate the effectiveness of the pre-employment program.

2. Conduct a survey of all veterans who have completed the pre-employment training program to find the correlation of job placement with the veterans original intention. Is the veteran employed in the type of industry for which he was prepared in the pre-employment program of the local high school?

3. A study of the reports made by the Training Officer representing the Veterans Administration in his follow-up of on-the-job training program, (1) to determine how closely the training establishment was adhering to the policies and directives of the Veterans Administration, (2) as to the effectiveness of the training program, and (3) the proportion of trainees given employment in the plant, or who have secured employment in other plants in the capacity for which they were trained.

4. A survey of on-the-job training programs which have not used the pre-employment phase of training, to find the value of this type of training to the veteran and his employer.
APPENDICES
APPENDIX A

PUBLIC LAWS 346 AND 16

PRE-TEST AND QUESTIONNAIRE
IMPORTANT PUBLIC ACTS

The following brief descriptions as outlined in "A MANUAL OF INFORMATION," will serve as the necessary reference for this study.

PUBLIC LAW 16.

A vocationally handicapped veteran of World War II discharged under honorable conditions with a service-connected disability on which he may collect a pension is entitled to vocational rehabilitation training under Public Law 16 of the 76th Congress. The veteran may receive compensation for himself and his dependents while training and for two months after employability has been established.

PUBLIC LAW 346.

Public Law 346 of the 78th Congress, "Serviceman's Readjustment Act of 1944," as amended by Public Law 268, 79th Congress. It provides federal aid for the readjustment of returning World War II veterans to civilian life. It provides under Title II that "Any person who served in the active military or naval forces on or after September 16, 1940, and prior to the termination of hostilities in the present war shall be entitled to certain vocational rehabilitation and education or training benefits."

Under Public Law 346, 78th Congress, Servicemen's Readjustment Act of 1944 (G. I. Bill), as amended by Public Law 268, 79th Congress, a veteran other than one dishonorably discharged may learn any one of many trades and occupations in his own community. While in training, he will receive from the employer the standard scale of wages for a beginner or learner in the occupation and, in addition, will receive a subsistence allowance ($65 per month for single men and $90 per month for married men or men with dependents.) When the sum of his subsistence allowance plus his wages on the job exceeds the standard wage for a trained worker or journeyman in that particular occupation, the amount of his subsistence allowance will be reduced so that at no time will his wages exceed the standard wage of the trained worker or journeyman in the case of apprenticeship.

12 Published by Office of Veterans Affairs, Col. Philip C. Pack, Director and Eugene B. Elliott, Superintendent of Public Instruction for the State of Michigan, April, 1946.
DIRECTIONS:

If you believe the statement made is true, place a circle around the letter "T". If you believe the statement is false or untrue, place a circle around the letter "F".

Example:

T   F The teeth of a hacksaw blade, when mounted in the frame, should point away from the handle.

1. T   F It is good practice to attach parts requiring frequent removal with rivets.

2. T   F All drills have straight shanks.

3. T   F A single cut file is one having a single row of teeth all cut in one direction.

4. T   F When using a hand-hacksaw, pressure should be applied on the forward stroke only.

5. T   F A flexible hacksaw blade will break much easier than an all-hard blade.

6. T   F The purpose of body clearance on a drill is to reduce friction which might become sufficient to draw the temper of the drill.

7. T   F In the soldering process, the pieces being soldered and the solder should be heated to the melting point of solder.

8. T   F A flux is necessary to prevent oxidation while soldering and to clean the surfaces being soldered.

9. T   F The number and variety of products made from sheetmetal is decreasing.

10. T  F The reason for galvanizing black iron is to make the metal stronger and heavier.

11. T  F The head of the soldering copper is made of copper in order to prevent marring or scratching the metal being soldered.

12. T  F Before attempting to grind a tool on the emery wheel, one should always examine the tool rest to make sure that it is as close to the face of the wheel as is possible without touching it.

13. T  F The most efficient tool to use in squaring up a piece of sheetmetal to a size of 16" x 20" is the tin snips.

14. T  F Copper is a good metal to use as a soldering tool because it is a good conductor of heat.
15. T  F It is impossible to prepare the edge of straight work for receiving wire, on a barfolder.

* * * * * * * * * * * * * * * * * * * * * * *

DIRECTIONS:

Each of the following problems contain one untrue statement. Read each statement carefully and place an X before the one which you believe to be false.

Example: When ordering rivets the following information should be given:

a) ___ type of head (b) x size of job. (c) ___ diameter of rivet. (d)___ length of rivet.

1. Factors which enter into the doing of a good soldering job are:
   (a) ___ correct sized soldering copper. (b) ___ well tinmed and clean iron. (c) ___ red hot iron. (d) ___ clean well fitting joint (e) ___ preheating the work with the soldering copper. (f) ___ use of flux.

2. Some hammers used in metalwork are: (a) ___ ball pein (b) ___ riveting (c) ___ setting (d) ___ straight pein (e) ___ claw (f) ___ "stanloid" soft face.

3. In grinding a drill the following factors must be considered:
   (a) ___ shape of the tang (b) ___ lip clearance (c) ___ length and angle of the lips. (d) ___ location of "Dead Center" in relation to the axis or the center of the drill.

4. The purpose of the flutes of a drill are: (a) ___ to help form the proper cutting edges on the cone shaped "Point" (b) ___ to form channels through which the chips escape from the hole. (c) ___ to strengthen the construction of the drill (d) ___ to permit flow of lubricant to cutting edges.

5. Some common sheet metal joints are: (a) ___ flat lap (b) ___ offset lap (c) ___ folded seam (d) ___ grooved, folded seam (e) ___ dowel (f) ___ flush corner seam.

6. Some common forms of tinner's snips are: (a) ___ straight (b) ___ hawks bill (c) ___ squaring shears (d) ___ double cutting (e) ___ pivoter (f) ___ bench shears.

7. The following stakes are used in forming sheetmetal: (a) ___ hollow mandrel (b) ___ solid mandrel (c) ___ beakhorn (d) ___ blowhorn (e) ___ candle mold (f) ___ beading (g) ___ hatchet.

8. A few necessary tools for sheetmetal workers are: (a) ___ 10 or 12 ounce ball pein hammer (b) ___ curved tin snips (c) ___ prick punch (d) ___ back saw (e) ___ rivet set.

9. Types of rolls used in forming sheetmetal are: (a) ___ turning (b) ___ burring (c) ___ wiring (d) ___ handy seamer (e) ___ single bead (f) ___ ogee (g) ___ pitch crimping.
10. Types of sheetmetal machines: (a) squaring shears (b) ring and circle shears (c) lever punches (d) jointer (e) combination folder and brake (f) slip roll forming (g) combination rotary (h) beading.

DIRECTIONS:
Add the correct missing word in the space indicated by the underscored blank.
Example: Soldering is a common method of fastening together two or more pieces of metal by means of (a) softer metal, in fluid state.

1. The process of tinning a soldering copper consists of cleaning the point and__________it with__________.

2. Galvanized iron is black iron which has been coated with__________.

3. Soft or 50-50 solder is composed of__________and__________.

4. The term 3 lb. rivets means there are__________rivets in____lbs.

5.__________is a good flux to use when soldering tin plate.

DIRECTIONS:
In each of the following sentences underline the answer within parenthesis which makes true meaning.
Example: A scratch awl is a sheetmetal tool used as a (scriber) (punch) (file).

1. The pointed portion of a file which fits in a handle is called the (shank) (tang) (point).

2. A fusion of any two or more metallic elements is called an (amalgam) (alloy) (oxide).

3. Galvanizing is a process of coating metal articles with (tin) (zinc) (copper).

4. The pointed instrument for marking around a templet is called a (center punch) (awl) (scriber).

5. The two helical grooves on opposite sides of a drill are called (flutes) (hollows) (channels).

6. The oxy-acetylene process of welding and cutting is an adaption of a very ancient art, which was first practiced by the (Indians) (Egyptians).

7. Dissolved acetylene and compressed oxygen burned in a suitable blowpipe, produce a flame temperature of approximately (6,300 degrees Fahrenheit) (600 degrees Fahrenheit) (10,000 Degree F).

8. A welded joint is one in which the parts joined together are (fused into a solid piece) of the same structure and character throughout (where a new metal having certain adhesive qualities, is used as a binder).
9. When it is necessary that the welding flame be neutral, there should be (a small excess of acetylene) (more oxygen than acetylene) (no excess of oxygen or acetylene).

10. The regulation of the welding flame really means the regulation of the (white inner cone) (oxygen pressure) (acetylene pressure).

11. Beveling is unnecessary when butt welding thin sheet metal up to (1/16 inch think) (1/8 inch think) (3/16 inch thick) (1/4 inch thick) (5/3 inch thick).

12. A welding flux is a combination of chemicals in powder form, which (assists fusion and either prevents the formation of oxides or breaks down oxides when formed), (to be sprinkled lightly over parts to be welded after heat is applied to insure against blowup).

**MEASUREMENTS**

Encircle the larger measurements of each pair of sizes below:

Example: 15/32" -- 9/16" 3/32" -- 1/8"
Example: 13/16" -- 3/4" 1/16" -- 3/64"
1/16" -- 1/2" 7/8" -- 19/64"
27/64" -- 3/8" 3/16" -- 15/64"
13/32" -- 3/8" 15/16" -- 31/32"
25/64" -- 7/16" 7/32" -- 1/4"

Measure the distance from zero to each of the lines below and place your answer below each vertical line measured as the first two examples show. Measure to the nearest 1/16 inch.

0 7/16" 1-3/16"

0 1-27/32" 2-31/32"

Measure the circles below, write the measurement in the dimension line (***) below each circle, use the measurement indicated between the edges of the circles to calculate the distances between centers (C-C) and write the measurements between the circles.
Determine the total length of flat stock needed to construct 4 angular braces according to the drawing to the left. - Allow for bending -

Four angular braces like this are cut from a piece 12 ft. 4 in. long. What is the total amount of material used, allowing 1/8 in. for cutting off each piece? How much remains? - Allow for bending -

FUNDAMENTALS OF ARITHMETIC

(1) $\frac{2}{3}\frac{3}{8}$  
(2) $\frac{5}{3}\frac{32}{64}$  
(3) $\frac{2}{5}\frac{16}{64}$  
(4) $\frac{3}{1}\frac{1}{4}$

(5) $\frac{1}{4} \times \frac{3}{1}\frac{1}{2}$  
(6) $\frac{3}{16} \times \frac{1}{2}$  
(7) $3 \frac{1}{8} \times 5 \frac{3}{4}$

(8) $7 + .02 = $  
(9) $1.2 \times .004 = $  
(10) $13 \sqrt{.39}$

(11) $.061 \sqrt{24.4}$  
(12) $\frac{3}{4} \div 4 = $  
(13) $3 \frac{3}{4} \div 5 = $

(14) $\frac{5}{2} \div 2 = $  
(15) $.04 - .002 = $  
(16) $75 - .25 = $

(17) $784 \sqrt{39200}$  
(18) $118 \sqrt{25960}$  
(19) $1 - .0625 = $

(20) $1.35 \sqrt{27}$
3 VIEWS BLUEPRINT READING

Complete the 3 views given

Complete the 3 views given showing hidden edges.

Sketch the top, front and right side views of this block within the space given to the left and name each view according to orthographic projection rules.
BACKGROUND QUESTIONNAIRE
SHEET METAL COURSE

Name ___________________________ Age ___________________________
(Print) Last First Middle Initial
Telephone
Post Office Address ___________________________ Number ________________________
(nearest phone)
Serial Number ___________________________
Branch of Armed Service ___________________________ Marital Status ________________________
Last rate or rank in Service ___________________________ Status ________________________
Number of dependents & relationship ___________________________
Minimum salary expected per week after training $ __________ per wk.
Describe mechanical experiences gained while in service:

School ___________________________ Location ___________________________ Name of Course ___________________________ Length of Course ___________________________ Type of Training ___________________________

Physical defects describe:

Years completed in public schools:
Grade _______ High School Grade _______ College _______ NYA _______ (weeks)

Nat'l. Defense Training School (weeks) other ___________________________

Leadership experience in past few years:

Are you interested in knowing the general metal field for future vocational work?
APPENDIX B

CERTIFICATE OF COMPLETION

RECOMMENDED FORM FOR TRAINING PERIOD
The following certificate is issued by the high school to each trainee and is evidence of his having satisfactorily completed the pre-employment training program.

It will be noted that this report in no way informs the prospective employer of the trainee's general work habits and attitudes which should be included not only for the employer but as a personal aid to the trainee.

The following is a suggested form or reference sheet which might be used to advantage by the staff conducting the pre-employment classes and/or by on-the-job training establishment in reporting progress of each trainee to the representative of the Veterans Administration.

<table>
<thead>
<tr>
<th>FRANK B. WILLIS HIGH SCHOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELAWARE, OHIO</td>
</tr>
<tr>
<td>SHEET METAL DEPARTMENT</td>
</tr>
</tbody>
</table>

This is to certify that has satisfactorily completed the 250 hour course in Basic Sheet metal work, covering the following subjects:

1. Related Sheet Metal Information
2. Layout and Pattern Drafting
3. Blueprint Reading
4. Use of Sheet Metal Hand Tools
5. Use of Sheet Metal Machines
6. Soldering
7. Acetylene Welding
8. Electric Welding
9. Sheet Metal Operations

INSTRUCTOR

PRINCIPAL H. S.

SUPT. OF SCHOOLS
A SUGGESTED FORM OR REFERENCE SHEET
AS A WORK AND TRAINING RECORD FOR VETERAN TRAINING

Veterans Name

Last Name          First Name          Initial C. Number

Local Address

Street          City          State

Date of Birth

Name and location of training center

Name of job being trained for

Total hours of training for this job to date

GENERAL WORK TRAITS

Work Regularity

Check here

Occasionally absent without notification

Occasionally absent with notification

Rarely or never absent

Work Punctuality

Frequently late (Five per cent or more of the time)

Occasionally late (Less than five per cent of the time)

Rarely or never late

Work Accuracy

Trainee's standards of accuracy are low

Production is average in accuracy

Is an accurate worker

Work Quantity

Is a slow producer

Is average in production

Is a fast worker

Work Adaptability

Does not change jobs easily

Changes jobs with an average loss of time and production

Easily shifts from one job to another

Work Leadership

Needs constant supervision

Needs average supervision

Can follow instructions and lay out his own work

Can lay out work for others

Cooperation with Fellow Workers

Prefers to work by himself

Works satisfactorily with others

Workers consider him a leader

Remarks

Signed

Shop Supervisor          Related training instructor
APPENDIX C

TESTS GIVEN

HAND TOOLS REQUIRED

TRAINEE ACKNOWLEDGMENT FORM
VETERAN'S SHEETMETAL TEST #1

1. What is the definition of welding?

2. Name two (2) types of welding processes that we use.

3. What is the temperature of oxygen and acetylene flame?

4. What is the color of the oxygen hose? Acetylene hose?

5. Why don't you use oil or grease around pure oxygen?

6. Name one (1) safety device on both your oxygen and acetylene cylinders.

7. Name four (4) safety measures you should always use when using gas welding equipment.
   (a)
   (b)
   (c)
   (d)

8. What is the temperature of the electric arc?

9. What is the melting point of carbon steel?

10. Name three major things it takes to make a welding job.
    (a)
    (b)
    (c)

11. What causes thin sheetmetal to warp when it is being welded?

12. How can you prevent this?

13. Name the three grades of carbon steel.
    (a)
    (b)
    (c)

14. Which grade will you use most?

15. Is soldering the same as welding?

16. Name three important things to use if you want a good soldering job.
    (a)
    (b)
    (c)

17. Name two hand-operated tools in our Shop used to bend or form sheet metal.
18. Name one (1) power operated machine used to cut metal.
19. Name one (1) hand-tool used to cut metal.
20. Name five (5) hand-tools used in sheet metal work.
21. Name six kinds of sheet metal commonly used in the sheet metal trade.
22. What is the difference between hot-rolled and cold-rolled steel?
23. What is the difference between galvanized and galvanealed steel?
24. Why is "pickling" an essential process in the manufacture of sheet steel?
25. What is the purpose of the "annealing" process?
26. Which steel will spot-weld the best, non-pickled hot-rolled, or cold-rolled?
27. What common metal is obtained by alloying tin and lead?
28. When forming over dies, why is the property of ductility of steel important?
29. When is a "fusing point" obtained when alloying metals?
30. What is the decimal equivalent for the following sheet metal gauges? 14, 16, 18, 20, 22?
31. How can various gauges of sheet metal be checked accurately?
32. What is tere plate? When is it used?
33. What happens to shears, dies, and cutters when used on hot-rolled non-pickled steel?
34. Which steel spot welds most successfully non-pickled or cold-rolled steel?
35. What is meant by malleability of steel?
36. Name four common shapes of rivets.
37. Name five common ways of fastening sheet metal together.
38. Name three soft metals that are used in coating steel sheets.
39. What metals are mixed to form brass?
40. Why is hot-rolled steel used in great quantity?
41. Why is it best to work from a center line or working edge, as much as possible, when laying out a pattern for a job?
42. What layout tool is used to obtain dimensions accurately?
43. What is a suitable procedure in layout work for sheetmetal?

44. What is the purpose of a prick punch?

45. Why is accurate layout necessary?
1. What type steel can most easily be worked which you will use?

2. Define ferrous metals.

3. Define non-ferrous metals.

4. Give the commercial symbol for the following:
   (a) wrought steel
   (b) dead soft or fully annealed
   (c) fully cold worked or hard wrought
   (d) condition following solution treatment, prior to ageing.
   (e) fully heat treated and aged.
   (f) temper resulting from cold working after heat treatment and ageing.

5. Name four (4) non-ferrous metals in our shop.


7. Give the proper care and use of soldering irons.

8. Name four kinds of files you will use in sheetmetal work.

9. What should you do before you ever start to cut a piece of metal from a pattern or print?

10. Name three (3) things you should not do with an emery wheel.

11. Give the reading on the barrel and thimble for the following decimal equivalent readings:
    0.132  0.202  0.1875  0.067  0.982

12. What should be checked on a drill before it is used?

13. What are number and letter drills?

14. What general rule should be followed with reference to speeds of high speed and carbon drills?

15. What is the difference between a N. C. and N. F. thread?

16. Define tapping; threading.

17. What size tap drill is used for 1/4-24S thread?

18. When is a fine thread used? When is a course thread used?

19. Why is it necessary to use a soldering flux?

20. What is the difference between 2nd cut and double cut files?
21. Can you solder two entirely different metals together?

22. Name three (3) hard solders.

23. Name one (1) soft solder.

24. At what temperature does bronze lose its strength?

25. Name two brazing rods that can be used to braze brass.

26. What is flux?

27. What is the melting point of the following:
   A. Brass    B. Tobin Bronze    C. Manganese bronze

28. Name three (3) types of flames that you can have with gas welding. Which one is necessary to use when welding carbon steel? Why?

29. When would you use an oxidizing flame?

30. What is a good welding rod for carbon steel?
## TOOL KITS

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Each Chest (box) tool, Kennelly K-20</td>
<td>4.50</td>
</tr>
<tr>
<td>1 Each Hammer, ball pein, 12 oz., handled</td>
<td>1.25</td>
</tr>
<tr>
<td>1 Each Hammer, ball pein, 6 oz., handled</td>
<td>1.25</td>
</tr>
<tr>
<td>1 Each Hammer, cross pein, 12 oz., handled</td>
<td>1.50</td>
</tr>
<tr>
<td>1 Each Mallet, &quot;Amberlite&quot; 1&quot; to 1½&quot; size</td>
<td>1.00</td>
</tr>
<tr>
<td>1 Each Chisel, cold 1/2&quot;</td>
<td>0.35</td>
</tr>
<tr>
<td>1 Each Chisel, cold 3/4&quot;</td>
<td>0.50</td>
</tr>
<tr>
<td>1 Each Punch, center</td>
<td>0.35</td>
</tr>
<tr>
<td>1 Each Punch, prick</td>
<td>0.35</td>
</tr>
<tr>
<td>1 Each Punch, solid</td>
<td>0.35</td>
</tr>
<tr>
<td>1 Each Set, rivet</td>
<td>0.35</td>
</tr>
<tr>
<td>2 Each &quot;C&quot; clamp 4&quot;</td>
<td>1.50</td>
</tr>
<tr>
<td>2 Each &quot;C&quot; clamp 3&quot;</td>
<td>1.00</td>
</tr>
<tr>
<td>1 Each Wrench, adjustable, crescent, straight 8&quot;</td>
<td>1.00</td>
</tr>
<tr>
<td>1 Each Wrench, vice grip, No. 7</td>
<td>2.75</td>
</tr>
<tr>
<td>1 Pair Pliers, side cut, flat nose</td>
<td>1.75</td>
</tr>
<tr>
<td>1 Pair Pliers, comb side cutting, lico'sman 8&quot;</td>
<td>3.25</td>
</tr>
<tr>
<td>1 Pair Nippers, and cutting, 6 or 7&quot;</td>
<td>1.50</td>
</tr>
<tr>
<td>1 Pair Snips, tin, straight, (sizes 7 to 10 furn.)</td>
<td>3.00</td>
</tr>
<tr>
<td>1 Pair Snips, tin, straight, size A-14,</td>
<td>0.50</td>
</tr>
<tr>
<td>1 Pair Snips, tin, curved</td>
<td>0.00</td>
</tr>
<tr>
<td>1 Pair Snips, aviation, left hand</td>
<td>4.25</td>
</tr>
<tr>
<td>1 Pair Snips, aviation, right hand</td>
<td>4.25</td>
</tr>
<tr>
<td>1 Pair Levers, Cleco sheet metal clamp w/</td>
<td></td>
</tr>
<tr>
<td>6 Each Sheet metal fasteners (&quot;Cleco&quot; clamps)</td>
<td>3.00</td>
</tr>
<tr>
<td>1 Each Frame hacksaw w/blade</td>
<td>1.95</td>
</tr>
<tr>
<td>1 Each Square, combination w/</td>
<td></td>
</tr>
<tr>
<td>1 Each Center head and protractor</td>
<td>3.50</td>
</tr>
<tr>
<td>1 Each Divider, toolmaker's 6&quot; (Stanley)</td>
<td>2.75</td>
</tr>
<tr>
<td>1 Each Caliper, toolmaker's outside 6&quot; (Stanley)</td>
<td>2.75</td>
</tr>
<tr>
<td>1 Each Compass (or Divider) 12&quot; (Stanley)</td>
<td>2.75</td>
</tr>
<tr>
<td>1 Each Rule (flexible steel tape) 72&quot; (K&amp;F whiteface)</td>
<td>1.50</td>
</tr>
<tr>
<td>1 Each Wire gauge</td>
<td>0.75</td>
</tr>
<tr>
<td>1 Each Scriber, machinist's</td>
<td>0.60</td>
</tr>
<tr>
<td>1 Each Padlock w/ two keys, Fram</td>
<td>0.90</td>
</tr>
<tr>
<td>1 Each Sheet Metal Worker's &quot; Manual, by L. Broemel</td>
<td>1.80</td>
</tr>
</tbody>
</table>

## ACKNOWLEDGEMENT

The undersigned student attending Automotive Sheet Metal Vocational Course at Willis High School acknowledges that tools and books issued him during training remain the property of the training agency. Such tools and books issued must be returned to the training agency issuing tools and/or books if for any reason the undersigned student is interrupted before training is completed both at Willis High School and on-the-job training at Correct Manufacturing Company.

Upon completion of both vocational training at Willis High School and on-the-job training at Correct Manufacturing Company, certain tools and books issued become the property of the undersigned student.

__________________________
Signature of Student
APPENDIX D

CERTIFICATE OF ENROLLMENT
The Certificate of Enrollment

This is a signed agreement by the training establishment, indicating to the Veterans Administration the responsibilities and intentions of the industry to fulfill its obligations to the veteran and the Veterans Administration.

This agreement is comparable to the agreement required by those establishments offering apprenticeship training programs under the direction of the Federal Apprenticeship Training Service.
CERTIFICATE OF ENROLLMENT OF A VETERAN
IN A COURSE OF TRAINING ON THE JOB
PUBLIC LAW 346, 78TH CONGRESS

This is to certify that ___________________________ C-number
Name of Veteran
was entered for a course of training on the job, by the Correct Manufacturing Company of Delaware, Ohio.

1. Name of objective or trade for which the veteran has been entered:
   Automotive Sheet Metal

2. Length of training program (in years or months)
   Truck Body Builders --------------18 months
   or
   Sheet Metal Fabricating
   Machine Operators --------------16 months

3. Educational level of veteran (actual years of schooling completed):
   ___________________________ years.

4. Wage that will be paid trainee or apprentice, based on standard work week, exclusive of overtime:
   Truck Body Builders --------------minimum of 55¢
   per hr.
   or
   Sheet Metal Fabricating
   Machine Operators --------------minimum of 50¢
   per hr.

5. Salary or wage veteran may expect to receive upon becoming journeyman or upon completion of training program, based on standard work week, exclusive of overtime:
   Truck Body Builders - minimum entry wage
   $1.05 per hr.
   or
   Sheet Metal Fabricating Machine
   Operators - minimum entry wage for a qualified machine operator $1.10 per hr.

6. Number of hours in our standard work week: 40 hrs.

7. Estimated charges: $147.00 for 10 wks. course of 250 hrs. in Automotive sheet metal school, Willis High School, Delaware, Ohio.

NOTE: (A) There must be attached to this certification, the veteran's Certificate of Eligibility and Entitlement (Rehabilitation Form 1953), which must bear the endorsement of the certifying officer of the institution.
CERTIFICATE OF ENROLLMENT (Continued)

(B) In accepting the above named veteran for training, this establishment agrees to report monthly to the Veterans Administration the absences of the veteran and any amounts paid him for work during the standard work week during the month preceding the report, and to notify the Veterans Administration promptly when the veteran interrupts, discontinues or completes his course.

Certifying Officer  G. W. WAY

Date __________________________  Title  Partner and Manager
APPENDIX E

VETERANS ADMINISTRATION FORMS
VETERANS ADMINISTRATION FORMS

The following is a list of the more frequently used Veterans Administration forms: 

13 A brief description of each is given as an aid to those concerned with the Veterans program for education.

1. V. A. Form P-22: Appointment of service organization as claimant's representative. This form is used as a power of attorney in the filing of a claim for pension.

2. V. A. Form 526: Application for pension. This form is not to be confused with Form 526b which is an application for a pension—not service connected.

3. V. A. Form 1900: Application for vocational rehabilitation. This form is issued to the disabled veteran for benefits under Public Law 16.

4. V. A. Form 1950: Application for educational and training benefits. This form is filed by the veteran as a basis for issuing the Certificate of Eligibility.

5. V. A. Form 1958: Certificate of Eligibility. This form is sent to the veteran by the Veterans Administration and states educational or training benefits to which the veteran is entitled.

6. V. A. Form V. O. R. No. 3: Individual budget. Each veteran receives this form from the Veterans Administration with his Certificate of Eligibility and entitlements. The training establishment uses this form to prepare an individual budget for the Veterans Administration, covering tuition, books, equipment and supplies.

13 Job Training for Michigan Veterans. Published by Office of Veterans Affairs, Lansing, Michigan, April, 1946.
APPENDIX F

BIBLIOGRAPHY TO INFORMATIONAL MATERIAL
BIBLIOGRAPHY

TO INFORMATIONAL MATERIAL


11. Wright, Dr. J. C. Forty Years in Vocational Education. An address delivered at the annual banquet of the American Vocational Association, February 7, 1946. Buffalo, New York. Printed by Burgard Vocational High School Press through the efforts of Dr. Frank H. Wing, Associate Superintendent of Schools in charge of vocational education, Buffalo, N. Y.