

Trust Territory of the Pacific Islands

Public Works Operations and Maintenance Manual

TRUST TERRITORY SAFETY MANUAL

In accordance with Section 300, Chapter 1 of the Manual of Administration, the Trust Territory Safety Manual is made a part of the Public Works Operations and Maintenance Manual. Section 303, Chapter G, Part 1 (Industrial Safety Manual).

FOREWORD

The Trust Territory Safety Manual was established August 1956 and was authorized by Section 303, Chapter G of the Manual of Administration. Previous revisions were made in July 1961, April 1966 and July 1973. This revision supersedes all previous releases.

This Safety Manual has been prepared to assist government employees at all levels, supervisory as well as non-supervisory, in the prevention of accidents which may cause injuries or death; and to serve as a reference point of carrying out an effective accident prevention program. Such a program is established to lessen personal and family suffering and hardship [sic] which can result from occupational injuries or death and to permit the Trust Territory to receive maximum production from each salary dollar spent by avoiding injuries which can keep the employee from remaining at his job.

The procedures and regulations contained in this manual are to be strictly observed by all employees, and further, the directives contained herein have the force and effect of administrative law, and govern all aspects of safety program administration in the Trust Territory of the Pacific Islands.

This Safety Section does not contain solutions to all safety problem [sic]. There will occur, from time to time, accident prevention problems which can only be met by the application of practical common sense and clear thinking. The cooperation and assistance of all employees in complying with the spirit as well as the letter of this Safety Manual is requested.

Edward E. Johnston
High Commissioner

TRUST TERRITORY OF THE PACIFIC ISLANDS
PUBLIC WORKS OPERATIONS AND MAINTENANCE MANUAL

TRUST TERRITORY SAFETY MANUAL

PART I - POLICY

The policy of the Trust Territory Government is to establish and maintain an aggressive program of accident prevention, safety education, training and inspection.

PART II - POLICY

The purpose of this manual is to formulate and maintain an effective and comprehensive accident prevention program for the conservation of employees, materials, and equipment by (1) making accident pre-vention an inherent responsibility of each employee and of each supervisor, (2) ensuring that safety become an integral part of every task; (3) seeking out and correcting unsafe conditions; (4) eliminating unsafe acts through on-the-job training of employees; (5) planning to ensure other project plans.

PART III - SCOPE

The Trust Territory Safety Program will include:

- (a) Occupational safety and training of Government employees.
- (b) Occupational safety of contractors and concessionaries while performing work at any site under jurisdiction of the Trust Territory.
- (c) Industrial Safety at all levels of Governments throughout the Territory.
- (d) Off-the-job safety promotion for Government employees and their dependents.

PART IV - RESPONSIBILITIES

A. Director of Public Works:

The Director of Public Works through his Division of Operations and Maintenance will establish, maintain, and coordinate an effective program of accident prevention throughout the Trust Territory. He and his safety staff will be responsible for:

1. Leadership in an aggressive, continuing safety campaign;
2. Serving in a staff capacity without line authority;
3. Coordinating all agency industrial safety activities;
4. Maintaining and analyzing industrial accident records;
5. Conducting educational Industrial Safety activities for supervisors both at

Headquarters and in the Districts;

6. Conducting activities for stimulating and maintaining industrial safety interest of Government employees;
7. Developing, implementing and auditing industrial safety educational program;
8. Supervising and appraising industrial accident investigations;
9. Planning and directing a regular program of industrial safety inspections;
10. Supervising a program for checking compliance with applicable safety laws and codes;
11. Issuing regular reports to the High Commissioner and/or Department of Interior showing safety performance and accident trends;
12. Maintaining membership in the National Safety Council and the Federal Safety Council on behalf of the Government of the Trust Territory.

B. Designation of Trust Territory Safety Administrator:

The Director of Public Works will designate a qualified member of his Headquarters staff as a Trust Territory Industrial Safety Administrator, who will be responsible to him for the conduct of the safety program in the field. His duties will include, but not be limited to:

1. Inspection: Conducting field inspection trips throughout the Trust Territory Districts to observe operations and recommend measures to eliminate accident hazards and to improve the quality of the safety program.
2. Enforcement of industrial safety regulations.
3. Reviewing industrial accident reports and conducting special investigations when called upon to do so by proper authorities.
4. Providing aggressive leadership in all phases of the industrial safety program.

C. District Industrial Safety Inspector:

1. Each District Director of Public Works shall appoint a Safety Inspector. The District Industrial Safety Inspector will be responsible for the district-wide industrial safety program under the supervision of the District Director of Public Works. He will collect, summarize and disseminate, in the local language, information dealing with all phases of industrial accident prevention; conduct industrial safety inspections, and investigate accidents as may be directed by his supervisor.

2. Conduct spot checks of field and ship operations and observe actual application of industrial safety rules and practices.
3. Observe working conditions to ensure that all possible measures have been taken to eliminate hazards.
4. Conduct special investigations of hazardous conditions as may be necessary to determine cause and corrective action required.

5. Submit to the Trust Territory Safety Administrator written reports of results of inspections noting conditions observed and actions required to correct unacceptable operating practices or conditions. In the event proper remedial action is not instituted promptly, he will report all circumstances of the situation to the District Administrator through the District Director of Public Works by written memorandum. Upon approval by the District Director of Public Works and District Administrator he shall immediately stop operation of equipment presenting an actual hazard to life, limb or property until remedial action has been taken. An operation so stopped may be resumed only after the approval by the District Administrator

6. Be available for consultation on all matters pertaining to industrial safety, to render assistance in preparation of compensation forms and to assist in the solution of any industrial safety problem.

7. Provide information for proper procurement of safety equipment and ensure issuance of needed equipment.

8. Responsible for investigation of all industrial accidents and preparation of reports covering injury or damage in accordance with existing directives.

9. Provide aggressive leadership in all phases of the district industrial safety program.

10. Ensuring that safe working conditions prevail at all times.

11. Correcting of unsafe conditions to the maximum possible extent.

12. Familiarizing personnel in the hazardous aspects of specific jobs.

13. Ensure that personnel are equipped with proper personal protective equipment such as goggles, helmets, respirators, etc., as available and needed.

14. Ensure that procurement of special clothing on a custody basis is in accordance with existing procedure.

D. All Employees:

Each employee is responsible for promptly notifying his immediate supervisor of the occurrence of accidents and injuries, and unsafe conditions encountered during the progress of work, and for taking such precautions as necessary until hazards are eliminated. Each employee is required to observe all safety precautions and adhere to all written and oral safety instructions.

E. District Administrator:

It is the general responsibility of each District Administrator and the specific responsibility of each District Director of Public Works and the district Industrial Safety Inspector to effectively administer the industrial safety program in his district. It is emphasized, however, that delegating supervision of the program to the District Industrial Safety Inspector does not relieve department heads and line supervisors of their responsibility for maintaining a safe and efficient department or shop and instructing personnel under their supervision on the safest method of performing their respective duties.

F. Education and Training:

1. The Headquarters Public Works Department, Industrial Safety Section, will obtain and distribute to the District Industrial Safety Inspector appropriate safety materials and shall

otherwise assist and advise the districts in administration of their industrial safety programs.

2. District Director of Public Works will initiate an educational program to acquaint all supervisors with standards safety policies, practices, and procedures and will take necessary steps to assure that all supervisors become proficient in such matters which are an essential phase of supervision.

G. Inspection

1. The District Director of Public Works shall require a safety inspection, at least once a year, of all physical facilities, equipment and work places under the cognizance of the Trust Territory involving building structures, machines, processes and equipment.

2. Written reports of these inspections are required and in all cases will be furnished to District Administration Personnel involved so that appropriate corrective actions may be taken.

3. Inspection of all fire fighting equipment shall be conducted by each District Fire Department.

4. All heavy equipment shall be properly equipped with safety devices.

5. The District Industrial Safety Inspector shall make inspections of working areas at least once a week to identify and eliminate safety hazards. When "unsafe conditions or practices" are encountered, the District Industrial Safety Inspector shall order immediate correction of the condition and/or cessation of the action or procedure, and shall report the matter to the supervisor empowered to deal with the situation, who will take immediate steps to eliminate the hazards.

6. Upon receipt of reports of safety inspections, cognizant administrators must take corrective actions on serious hazards immediately and no later than 24 hours - on all other hazards immediately and no later than 24 hours - on all other hazards within 30 days. A written report of corrective action taken must be submitted to the District Director of Public Works and copy to Trust Territory Safety Administrator no less than 30 days from the date of receipt of the inspection report.

H. Accident Reporting

1. When a Trust Territory employee suffers a duty-connected injury or occupational illness, regardless of the degree of severity, the employee shall immediately report the occurrence to his supervisor, who will immediately refer him or her to the district hospital with a medical referral slip Trust Territory Form 508 accompanying employees when possible. The supervisor will ensure that the injured employee does, in fact, report to the hospital.

2. Upon arrival of injured employee at the hospital, the examining Medical Officer will complete the referral slip and immediately return it to the District Industrial Safety Inspector. This data will be used in preparing the report of duty-connected illness or injury, T. T. Form (68); and in accounting for the employee's absence from the job.

3. In event the injury or illness resulted in lost time at such time as the employee is considered fit for duty, the Medical Officer will complete a Medical Release T. T. Form S09 and transmit it to the employee's supervisor with copies to the Social Security Representative and the District Industrial Safety Inspector. This data will be used in submission of claims and as a basis for accounting for absence from duty. Any absence which is not accounted for on these forms should promptly be investigated, and if the employee has been

absent without authority or has disobeyed instructions, appropriate disciplinary action may be instituted.

4. District Medical Officer shall provide, the District Industrial Safety Inspector with necessary information on forms as shown in the Appendix to this Manual (T. T. Form 68).

5. Each month the District Director of Public Works shall report to Headquarters Public Works Department on form shown in Appendix IV (a) all accidents requiring medical attention; (b) all lost time accidents, stating the nature of injury, how the accident occurred, amount of time lost (if any), and any pertinent details; and (c) the number of manhours worked, in all categories of employees. The form, in the appendix to this manual, will be utilized for this purpose and submitted to Headquarters in duplicate.

6. The Headquarters Industrial Safety Administrator shall carefully analyze the district reports and direct his program to elimination of causative factors as indicated thereby.

7. When a serious industrial accident or death to an employee results from other than natural causes, the District Administrator will immediately report such incident to the High Commissioner, by dispatch, with an information copy to the Director of Public Works. The dispatch will state the essential facts concerning the accident. The District Director of Public Works will then submit a full report of the incident in quadruplicate - original to the High Commissioner, a copy to the Director of Public Works, a copy to the Industrial Safety Administrator, and a copy for the District industrial Safety Inspector files. The following information will be included in the report:

- a. Name, age, sex, marital status and citizenship of the injured or deceased.
- b. Time and place (exact location) of accident.
- c. Names and statements of witnesses.
- d. Regular work employee was hired to perform.
- e. Type of work performed at the time of the accident.
- f. How accident occurred, (detailed).
- g. Probable cause of accident, i. e, poor brakes, no gasoline, carelessness, etc.
- h. If deceased, name, date of birth, sex and relationship of dependents.
- i. Rating, grade, rate of pay, employer and department.

8. In case of death of employee from duty-incurred injuries, the Director of Public Works or the Industrial Safety Administrator, upon receipt of the district report, will conduct a comprehensive investigation, if necessary, and report his findings to the High Commissioner.

9. The actual period of absence will be shown on the monthly report in all cases. In reporting lost time cases, it is to be expected that the actual period of the employee's absence from work will, in many cases, not coincide with the prognosis of the Medical Officer.

10. Time and attendance report for all Civil Service inter-district staff members will be available at the District Personnel Office for completing statistics for the monthly accident report.

11. Where a pay period extends less than one week into the new month, the Accident Report may be delayed until the actual number of work hours can be completed after receipt of the time sheets. In cases where the pay period extends more than one week (5 working days) into the new month, estimate the number of manhours worked in the previous month, both for Civil Service and Micronesian employees, and include those figures in the monthly report. On receipt of time sheets, at the end of the pay period, subtract the estimate from the actual hours worked during the pay period and pick up the remainder of the hours worked at the beginning of the new month.

EXAMPLE:

There are two (2) working days in the month of July and eight working days in the month of August.

CLARIFY Assume that the August time and attendance report shows 19,872 manhours for the month, then we would have 4,000 manhours for July and included in July report. 15,872 manhours worked during first pay period in August. The pay period at the end of August includes five (5) working days in September. Wait for the time and attendance report and add the actual manhours in August to the 15,872 manhours noted and the total for the intervening pay period.

I. Quarterly Industrial Safety Report of Accidents

The Department of Interior requires the submission of a quarterly summary of accidents from Trust Territory Government. A portion of the information needed in the summary is obtainable from the Monthly Accident Reports which are prepared by the Districts. However, information on other types of accidents are not available at Headquarters. It is therefore, necessary that each District submit a quarterly report, in the form shown in the Appendix (V) of the Manual, to reach Headquarters by the 10th of the month following the end of the month following the end of the quarter.

PART V - SAFETY REGULATIONS

The Director of Public Works will, from time to time, recommend to the various District Administrators the enactment of regulations dealing with safety in their respective area. This Manual serves only as the basic regulation for the Industrial Safety Program. Pertinent portions of the Manual may be translated into the local language, by the Districts and a copy provided to all Micronesian Supervisory Personnel, who will instruct their subordinates in safety policies, practices and procedures.

District Administrators may draft District promulgations to augment or amplify this Manual to deal with local conditions. Copies of such proposed district promulgations should be forwarded for the High Commissioner for approval prior to release. The High Commissioner will release the proposed district promulgation. Two copies of the release will be transmitted to Headquarters in addition to the regular distribution.

SUPERVISOR'S INSTRUCTION SHEET

NO. 1

A. HOLDING A SAFETY MEETING

All supervisors will hold a minimum of one safety meeting per month with all employees under his direction. Special jobs of particular hazard or jobs involving new employees shall require short safety meetings prior to start of the operation. A copy of the Minutes of all safety meetings shall be forwarded to the Industrial Safety Section.

B. DO THESE THINGS BEFORE THE MEETING

Schedule the meeting as far ahead as possible; set a definite time. Select the best possible location for the meeting.

1. Meeting place, should be free of outside noise, hazard, or movement that will detract from the meeting.

2. If possible, provide seats.

C. Plan your meeting if you need help, see your Industrial Safety Section and the District Director of Public Works.

1. Assemble information to be used.

2. Make brief notes. Do not trust your memory.

3. Make one or two points, but be sure you make them.

4. Know your subject; you must, if you are to get it across.

D. The Industrial Safety Section will provide you with any available safety materials for your safety meetings. The Industrial Safety Section maintains a library of safety information which you are encouraged to borrow. Keep your meetings confined to topics of local interest and be specific. Listed below are some ideas and examples of meeting subjects:

1. Use items on specific job hazards in the area where you now work. In other words, talk the job they understand.

2. Analyze a job in detail, pointing out hazards and how to overcome them.

3. Poor housekeeping creates hazards and shows both lack of order and management. Discuss some phase of this important subject.

4. Discuss unsafe practices noted and suggest corrective methods.

5. Discuss all or pertinent sections from one of the Industrial Safety Procedures found elsewhere in this Manual.

6. Give specific safety instructions to new employees and demonstrate where possible.

7. Special subject that require refresher talks from time to time:

- a. Handling acids and caustics.
- b. Handling flammable liquids.
- c. Smoking areas.
- d. Importance of housekeeping and personal cleanliness.
- e. Use of respirators.
- f. Subjects assigned for the month.
- g. Subject suggested by the Safety Inspector.
- h. Review lost time, close or near accidents. Always show what should have been done to prevent the accident.
- i. Fire safety topics or demonstrations.
- j. Protective clothing and equipment are always worthy of attention. Explain use and show how and why equipment is needed.

NOTE: Use only two or three ideas in each meeting. If too many are employed, you may confuse people.

E. DO THESE THINGS AT THE MEETING:

- A. Call the meeting to order promptly.
- B. Insist on individual attention and control the meeting at all times.
- C. Stick to your subjects; do not get “off the beam”. Remember this is a safety meeting and you are the leader.
- D. Demonstrate how to perform some specific action and do not hesitate to use charts, pictures or diagrams.
- E. Ask for safety suggestions from your employees and always give an answer. If you do not have an immediate answer, get it and bring it back to the person who asked.
- F. Meetings should be brief and concise. Fifteen minutes should be ample time if you are well prepared. Stop the meeting when you are finished. Don’t let it drag on.

FOLLOW-UP

- A. Follow through on your instructions after the meeting and on the job. Make sure they have been understood. Check your personnel and see that they do jobs as you want them done for safety.

SUPERVISOR'S INSTRUCTION SHEET

NO. 2

Supervisor's Daily Safety Program

1. At the start of each day's work check to see that your department is properly manned and that the machines, equipment, etc. are in good order. During this check, be alert to detect any unusual condition. Promptly investigate same and correct at once.
2. Learn from the preceding day of any accident pertinent to your operation that may have occurred, or of hazards created or safety jobs to be taken care of.
3. A new man must receive your personal attention. He should be given safety instructions before being placed or be turned over to a competent older employee to learn the job until you can personally instruct him on the specific hazards of the job.
4. Check your men periodically until you are sure they can do their work satisfactorily and in a safe manner.
5. Before placing men on various jobs, familiarize them with the hazards and safety rules pertaining to the work they are to perform.
6. After your men are placed, a round of inspection should be made in conjunction with activities. The following items should be checked on this round and irregularities corrected on the spot (this should include all men under your supervision).
 - A. Observe men for unsafe acts. Are they in correct position, indulging in horseplay, using equipment and tools safely, and, otherwise, doing their job in a safe manner?
 - B. Protective equipment such as goggles, gloves, hard hats, respirators, etc.; all should have the equipment on hand or be wearing such equipment as the job may require. Spot check occasionally for the condition of protective equipment.
 - C. Equipment guards, railings, and any other hazardous condition of machinery: correct all possible unsafe conditions on the spot and take necessary precautions for these conditions which cannot be corrected at once, such as the following:
 1. Pits, holes, trenches, wall openings, etc.
 2. Guards over shafts, motor couplings, chain and belt driven, etc.
 - D. Check tools of the job, including hand tools. Are all the necessary tools on hand? Are they in good condition? Are they being used properly? Are they stored properly and safely? Are the unsafe tools scrapped or repaired?
 - E. working equipment other than tools, etc., such as ladders, welding equipment, lifters, spreaders, chains, extension cords, grinding wheels, forklifts, cables, etc., should be checked daily.
 - F. Good housekeeping: aisles clear, material safely piled, accumulations of papers, oils, grease and other combustibles or slipping hazards should be disposed of. Scrap wire, blocking, projecting lifts, tools and other tripping hazards should be removed at once. Lighting, windows, lavatories, drinking fountains, and fire equipment should be checked

regularly.

G. Investigate all minor injuries and close calls thoroughly in the recommended manner. But be sure you determine the cause and prevention.

H. Follow through on employee's suggestions. Take a firm stand on all unsafe acts; be sincere and fair. If your men respect you, they will carry out your orders.

SUPERVISOR'S INSTRUCTION SHEET

NO. 3

MINOR INJURY AND NEAR ACCIDENT INVESTIGATION

The primary purpose of safety is to prevent accidents before they occur. This is done by instructing thoroughly the employees and then following up to see that such instructions are carried out. Stopping the unsafe practices on the spot will prevent the accident from occurring; however, several injuries and many "close calls" occur monthly. Many of these are recurrences; others happen for the first time.

There is no better way to find out what is happening to your Safety Program than by investigating thoroughly each accident as it occurs. Most accidents and minor injuries occur as the result of unsafe acts or conditions. The number of minor injuries and near accidents is an indication of the effectiveness of Accident Prevention Activities in your department. Thorough investigation and preventative measures will forestall recurrence and reduce accidents.

It is extremely important that an accident be investigated as soon as possible and the following procedure be carried out by all foremen in the investigation of all types of accident:

1. If your indication of an injury is when the injured returns after having received first-aid, question him briefly and accompany him to the scene of the accident. If injured is not available, go immediately to the scene of the accident and question men working with injured. (The First Concern, of course, is the care of the injured).
2. Have injured or witness re-enact accident as closely as possible, making sure that injury will be repeated in so doing.
3. Secure names of and question witnesses, taking notes concerning the accident.
4. Check surrounding conditions to determine their influence or contribution to the accident.
5. From your knowledge of job and investigation, determine whether or not the employee received adequate instructions which, if followed, would have prevented the accident. Also, if he were instructed on the specific hazard causing the accident and if safety equipment prescribed for job was being used properly.
6. If injured has any suggestion or comment, note same briefly.
7. The most important part of all accident investigation is "What shall be done to prevent recurrence"? Whenever possible, action should be taken at once. What is done, of course, must be determined by your investigation. **FIND THE CAUSE OF THE ACCIDENT AND THAT WILL DETERMINE THE NECESSARY PREVENTION.**
8. It is the supervisor's responsibility to follow through until conditions or act causing injury or accident is eliminated.
9. A Supervisor's Accident Investigation Report Form DI-134 should be prepared for all injuries as follows:
 - a. Eye injuries, imbedded particles, injurious chemicals, ultra-violet, infra-red, thermal burns, (wind blown dust) non-impact particles or minor weld flashes to transients

excluded).

- b. Broken bones, dislocations.
- c. Extensive second or third degree burns.
- d. Electric shock - source, above 35 volts.
- e. Lacerations involving tendons, nerves or results in restricted motion or when judged to be medically severe and require the use of wound closures for treatment not cosmetic effect.
- f. Injured sent home for remainder of day. Injuries near end of shift will be individually judged.
- g. Injuries resulting from power equipment in motion.
- h. Exposure to toxic material that results in medical treatment for physiological change and/or clinical symptoms.
- i. Back sprains/strains that result from slip, trip, or fall or poor lifting practices.

It is the intent of the above listing that minor bumps, bruises, nicks, cuts, wind-blown dust and similar minor injuries that have little serious potential do not normally require completion of the report form. If there is doubt whether the form should be completed or not, it should be.

Copies of the Supervisor's Accident Investigation Report DI-134, are available from the District Safety Inspector.

SUPERVISOR'S INSTRUCTION SHEET

NO. 4

Foreman's Safety Indoctrination of New Employees

The proper safety indoctrination of all new employees is perhaps the most important work we do as supervisors. Positive safety action, by the supervisor, at the time of the new employee's arrival may help to properly direct the employee's entire working career with the Trust Territory Government. Prior to placing the new employee on the job, you should know of his past experience and qualifications and how this experience will fit into your plans for him. Determine what mobile equipment, power tools, chemicals, solvents, etc., that he is familiar with, and, if necessary, have him demonstrate his proficiency to you. With a little background information you will be better prepared to give further instruction.

Be sure that the new fellow has been issued the personal protective equipment. Explain the work routine and any applicable departmental safety rules as well as the overall safety policy. You might also make available to him the applicable sections of this Safety Manual.

Introduce the new employee to his co-workers and give any specific safety instructions necessary for the immediate job that you will place him on, and give him the opportunity to ask questions. Assure yourself that he understands the safe way to do the job before you leave him on his own.

Supervisor's Instruction Sheet No. 4-1 shows a supervisor's safety check list for new employees. It is required that the supervisor, to whom a new employee has been assigned, shall complete a copy of the Supervisor's Instruction Sheet No. 4-1 and submit it to his District Director of Public Works on the same day that he places the new employee on the job.

SUPERVISOR'S INSTRUCTION SHEET

No. 4-1

SUPERVISOR'S SAFETY CHECK LIST FOR NEW EMPLOYEES

1. Employee's Name
2. Job Title
3. Has employee a Trust Territory issued driver's license? Yes No
4. This employee has been equipped with the following Personal Protection Safety Equipment?

| | |
|----------------|-----------------|
| Safety Glasses | Safety Shoes |
| Respirator | None Needed |
| Hard Hats | Other (specify) |
5. What kind of work did employee perform on the last job
6. What mobile equipment or vehicle do you intend him to operate
7. Have you checked him out or otherwise satisfied yourself that he is qualified to safely operate the equipment mentioned in question No. 6? Yes No NA
8. Have you instructed employee or otherwise determined that he knows how to safely operate any power tools which his job will require? Yes No NA
9. Have you instructed employee in use of any Solvents, Acids, Flammable liquids or chemical that he may be required to use on this job? Yes No NA
10. Have you made him familiar with the location and in the use of portable fire fighting equipment within his working area? Yes No NA
11. Have you instructed employee in the use of the following?

| | |
|-------------------------------|--------------------|
| Safety Rails | Use of scaffolding |
| Safety Belts | Ladders |
| Personal Protection Equipment | Others |
12. Has work routine been explained and instructed to make the fellow workers understand?
Yes No NA
13. Have you explained the necessity for prompt attention to any minor injury and what action to take to get first-aid? Yes No NA

14. Briefly list below any specific safety instruction that you have given this new employee

Date:

Department:

Foreman's Signature:

Note: Upon completion of this form, it must be forwarded to your District Director of Public Works for review. He in turn will forward to the Safety Section where a copy will be placed in the new employee's folder.

INDUSTRIAL SAFETY PROCEDURES NO. 9-100

PART VI-OFFICE SAFETY

A. General

The objectives of this set of rules is the prevention and elimination of personal injuries to employees working in offices. Although the office worker may face less serious hazards in his work than the field or shop employees, disabling and often painful injuries can and do occur in office areas.

Good housekeeping is important in the reduction of hazards which may result in injuries.

Each office worker is encouraged to correct or report obvious hazards which may result in injuries.

B. Handling Material and Equipment

1. The movement of boxes or bundles of office supplies, ledgers, portable filing cases, and various items of office equipment constitutes a definite lifting hazard. Employees should be instructed in proper methods of lifting--lifting by leg power with the back erect. Mechanical devices should be provided for the handling of very heavy loads.

2. Office machines, belts, gears, pulleys and other rotating or reciprocating parts should have the parts enclosed with the proper guards.

3. Sharp burrs are sometimes found on metal filing cabinet edges and perforations, or sheet metal typewriter stands and similar furniture. The burrs should be removed.

4. Razor blades: the use of safety razor blades for cutting paper, sharpening pencils, etc., in offices is discouraged.

5. Pins should not be used to fasten papers together.

6. Damaged furniture and broken veneer surfaces frequently become chipped or splintered. This condition constitutes a definite hazard of splinter injuries. Repairs to furniture should be made.

7. Pointed objects: uncapped fountain pens, pencils or other pointed objects should not be carried with points exposed either in pockets or attached to the clothing, nor should they be carried in the hand when walking through congested aisles or working areas.

8. Safes, typewriter compartments in desks, and file cabinet drawers should be closed by grasping the handles with the fingers away from edge, or by means of the attachments provided for that purpose.

9. The two top drawers of filing cabinets must never be opened at the same time.

C. Slipping, Tripping, Falling

1. Slipping hazards may be created by water, oil, soap, waste paper or other refuse on floors. Rough or splintered floors should be repaired.

2. Running in aisles, stairways, and corridors is a definite injury hazard.

3. Extension cords, either telephone or power should not run over floor area where employees have occasion to walk. This item constitutes a serious tripping hazard.

4. The common swivel chair should not be overlooked. Weak spring tension, adjusting bolts, too great elevation of chair seat, or tilting the chair too far back may lead to severe falls.

5. Chairs should not be used as ladders.

D. Falling Objects

1. Ceiling fixtures: all ceiling fixtures should be inspected for defective fastenings, bases, globes and loose tubes.

E. Collision or Striking Against

1. Extreme care should be exercised in approaching corridor intersections. Partly open doors are dangerous. They should be kept either wide opened or closed.

2. Electric fans shall be properly anchored, guarded and maintained in good operating condition. They shall be installed at points where employees are not likely to come into contact with them.

3. Pencil sharpeners extending beyond the ends of desks and tables, filing cabinets with projecting devices or those which extend into aisles because of their length, desk drawers and file drawers left open, open sliding fronts in section bookcase, glass desk tops with broken or chipped edges and defective or broken metal waste paper baskets having sharp edges or points are considered office hazards which should be corrected.

F. Fire Prevention

1. Electrical appliances such as coffee pots, hot plates and electrical typewriters will not be left on during off hours.

2. Be careful with matches and cigarettes. Do not keep loose matches, cigarettes, or cigar butts into waste paper baskets. Use ash trays.

3. Waste paper accumulated in corners and behind equipment is a fire hazard.

INDUSTRIAL SAFETY PROCEDURE NO. 9-101

FOOT SAFETY

A. Policy

A shoe with all leather or canvas upper construction is required on all jobs involving Material Handling, Vehicle Operation, Maintenance and Construction Activities, Stevedoring Work, Boat Operation, and by all personnel working in the industrial or supply areas. "Go aheads" (Zories) are prohibited.

The wearing of safety shoes by all personnel is encouraged, but particularly in the shops and industrial areas. The wearing of safety shoes is presently left to the individual's judgement. A safety shoe affords maximum protection as the steel toe cap can withstand a 2,500 pound static load and an impact of 50 pounds dropped 18 inches.

Any employee of the Trust Territory Government who is required to wear safety shoes, reporting for duty without a pair of safety shoes, should be sent home for that particular day and will not be compensated for that day's work. Persons who work in offices are not required to wear safety shoes, however, they should exercise extreme caution when entering industrial areas and shops where foot injuries may occur.

B. Purchase of Safety Shoes

The Industrial Safety Section will make available a catalog of safety shoes showing many models and styles of excellent quality shoes which a prospective buyer can order directly from the supplier. Safety shoes may be purchased locally if available.

The District Director of Public Works will obligate necessary funds from Operations and Maintenance account for purchase of employee's safety shoes. Personnel that are required to wear safety shoes may apply by contacting the Industrial Safety Inspector. The Inspector will assist in application for payroll deduction for safety shoes and submit to the District Finance Officer for approval. Reimbursements will be returned to the operations and Maintenance account. The amount of purchase to the employee will not exceed acquisition cost.

INDUSTRIAL SAFETY PROCEDURE NO. 9-102

SAFE LIFTING PRACTICES

A. Purpose

This procedure sets forth what is considered to be a safe technique for manual lifting and handling of material.

B. Lifting Load Limits

Due to our physical size, our physical condition, etc., each of us is capable of lifting varying amounts of weight. It is not realistic to set weight numbers as the configuration of the subject to be lifted, certainly has a direct bearing on the size of a lift that can be made safely.

Size up the load. Make sure you can handle it easily by yourself. If not, get help.

C. Method of Lifting

1. Inspect the object for sharp edges, splinters, wet or greasy spots, etc. Wear gloves when lifting objects with sharp or splintered edges. Gloves should be free of oil, grease or other materials which could contribute to the load slipping.

2. Inspect the route over which the object is to be carried. It should be free of obstructions and spillage which might pose a tripping, slipping hazard.

3. The load should not obstruct the carrier's view.

D. The Actual Lift

1. Face the load squarely; get a firm footing and spread your feet apart about 10 to 12 inches.

2. Bend your knees to be in position to get a good grip on the load.

3. Keep your back straight and lift by straightening your legs.

4. Lift slowly and evenly without quick or jerky motions.

5. Keep load close to your body throughout entire lifting procedure.

6. If it is necessary to turn, change your foot position. Do not twist your body.

ALWAYS LIFT WITH YOUR LEGS, NOT YOUR BACK. IF IT'S TOO HEAVY, GET HELP.

INDUSTRIAL SAFETY PROCEDURE NO. 9-103

STEVEDORING OPERATIONS

A. SAFETY OF PERSONNEL DURING STEVEDORING OPERATIONS

1. Personnel are not permitted to engage in stevedoring operations without benefit of hard hats, long trousers, gloves, and full cover shoes. Wearing of sandals and “go ahead” is prohibited.
2. Personnel will attend a Special Safety meeting prior to arrival of any ship containing hazardous or unusual cargo, or having unfamiliar ship cargo handling gear.
3. All personnel are required to board and leave ships by the gangplank or other means provided. Boarding or leaving a ship via cargo-handling gear or by climbing up and down a save-all is prohibited. When ship’s holds are equipped with stairways these must be used in lieu of ladders. Entertaining or leaving ship’s hold by means of ship’s cargo-hoisting gear is prohibited. Hand carrying of tools, equipment or personal gear when using hatch ladders should be discouraged. In areas where hand rails have been removed to make way for cargo, ropes must be used to block off space to prevent personnel from falling overboard.
4. Riding of hooks and cargo loads is prohibited.
5. Personnel shall keep clear of loads at all times.
6. Smoking in or around open hatches is prohibited.

B. PREPARING PIER AND CARGO GEAR

1. It shall be the responsibility of the stevedoring superintendent to conduct frequent inspection of pier flooring and structures. If defects are found, temporary repairs will be made immediately and permanent repairs will be accomplished as soon as possible.
2. Stevedoring gear must be carefully inspected by designated and competent personnel prior to use on an incoming ship. Stevedoring bridles and slings with broken stands shall be discarded and protruding ends of strands in splices on slings and bridles shall be covered as blunted.
3. Prior to stevedoring operation, the stevedoring superintendent shall inspect the rigging of falls and booms to ascertain that guys and preventors are kept as far as possible from the heel of the outer boom but not pass the line of fall. As much as possible, the preventor on the inboard boom should be secured in line with the fall cable.
4. It shall be the responsibility of the stevedoring superintendent to assign responsible and qualified winch operators and signalmen. In all cases the winch operators and signalmen shall be completely familiar with the standard hand signals.

C. WORKMEN RULES

1. Only approved Safe methods will be used for properly fastening the slings to the load and to the hook.
2. Workmen shall stand clear of all loads being hoisted or lowered.

3. Caution shall be used when setting a load down, as it may spread. When withdrawing slings from underneath a lift, workmen shall exercise caution to prevent the slings from flying loose and striking someone or catching and tipping the load.

4. Workmen shall never touch a cable as it is being mounted on a drum or being pulled through a set of sheaves.

5. Heavy loads shall always be tested by hoisting a few inches above deck or pier and allowed to stabilize for a few seconds. This also gives the operator an opportunity to check the brakes.

6. Refueling of forklifts within the holds of ships is prohibited.

7. Climbing the cables or ropes to reach top of deck cargo for placement of bridles should be avoided. A ladder should be used for cargo on ship and a Safety Pallet should be used for cargo on the pier.

8. Adequate ventilation must be provided in the holds when fork trucks are in use. If the ship's ventilation system is inadequate to provide proper circulation, portable blowers must be installed to reduce the carbon monoxide content to a safe acceptable level.

9. Tag lines will be used on all large loads.

10. All loads of dunnage will be securely tied before removing them from the ship. All dunnage and trash must be removed from the top of loads before offloading.

11. Special care and attention must be given to avoid puncturing drums of gas during off-loading operations. If a drum leaks or is punctured while in a hold, all persons must evacuate the hold until the Fire Department arrives and evaluates the potential hazard.

12. Extreme care must be exercised while driving fork-lifts during stevedoring operations. Fork truck speeds must be reduced when approaching blind corners, entering the cargo shed, and when the deck is wet.

13. When working a port and starboard compartment of a hold simultaneously, the winch operator must signal personnel in the dockside compartment to find safe cover before he moves the load over the open hatch.

INDUSTRIAL SAFETY PROCEDURE NO. 9-104

THE HANDLING OF ACIDS

A. Purpose

This procedure outlines the basic safety rules for handling acids.

B. Hazards

Most acids are corrosive to the skin and when in contact with the body, destroys tissue. The degree of corrosiveness depends on factors such as: type and concentration of acids; parts of body contacted; and emergency measures taken. In general the hazards are:

1. Explosions or Explosives Reactions. Most acids by themselves are not explosive; however, when they come in contact with some metals, other chemicals, and many organic materials, a spontaneous reaction may occur.

2. Skin Contact. Most acids are corrosive and unless immediately flushed with water can cause damage to the skin. Eyes are especially susceptible to either liquids or vapors.

3. Inhalation. Acid fumes act upon the body in two ways; irritation of the air passages of the nose, throat and lungs; and, absorption of the vapors from the lungs into the blood stream. The seriousness of damage will depend on concentration in air and length of time inhaled.

4. Swallowing. Upon entering the digestive tract the acid attacks the lining of the tract and unless flushed immediately can cause ulcers and death.

C. Personal Protective Equipment

The specific items of protective clothing to be worn for an operation will depend on the type of operation and its potential hazards.

Each supervisor must evaluate acid handling in his area and require the wearing of appropriate personal protective equipment. If assistance is needed in evaluating an operation, call the District Director of Public Works or the Safety Inspector.

1. A full face mask with safety glasses or goggles underneath.

2. Rubber or neoprene gloves to protect the hands and arms.

3. A full body length rubber, plastic or neoprene apron.

4. Shoes of all leather upper construction, rubber boots, or other equipment giving full foot protection.

D. Handling

Normal safe handling procedures will vary with each operation and the type and concentration of the acid, but general safe handling methods are applicable.

1. Never pour water into a container of acid --ADD ACID TO WATER.

2. Never empty carboys or drums of acid by means of air pressure. Use a tilting rack or a

safety siphon.

3. Never siphon acid by means of hose and mouth.
4. Open any acid container (bottles, carboys) slowly and carefully, guarding hands, face, and body for splashes and fumes.
5. Flush the outside of an acid container with water after any amount of acid has been poured from it.
6. All areas where acids are handled shall be provided with an emergency eye wash and shower.

E. Acid Spills

Never use combustible organic materials such as: sawdust, excelsior, wood scraps and shavings, papers, rags, burlap bags, to absorb or clean up acid spillage.

1. Evacuate people from area.
2. Establish best possible ventilation.
3. Isolate area, and call the Fire Department for washdown.

F. First Aid

1. Eye
 - a. Immediately flush the eye with clean running water (flush the eye before other parts of the body).
 - b. Spread the eye lids with fingers and allow the water to flood the eye. Roll the eye about so that the water may contact all surfaces.
 - c. Continue washing eye for 15 minutes before reporting to the Medical Department.
2. Skin Exposure
 - a. Flush area thoroughly with clean water, remove contaminated clothing and then gently scrub area with soap and water.
 - b. Report to the Medical Department for treatment as soon as possible.
3. Swallowing
 - a. Follow all instructions on container label.
 - b. Call your Medical Department for an ambulance.

INDUSTRIAL SAFETY PROCEDURE NO. 9-105
SAFE HANDLING OF OXYGEN AND ACETYLENE

A. Introduction

Oxygen and acetylene require special care and handling due to their hazardous properties. This procedure states the precautions to be taken when using these gases.

B. General Information - Acetylene

1. Acetylene is shipped dissolved in acetone. Cylinders are filled with a porous material which holds the acetone.

a. Cylinders should only be used or stored properly secured in an upright position to avoid the possibility of acetone leakage.

b. When cylinders are empty, the valves must be closed to prevent evaporation of the acetone.

c. Never transfer acetylene from one cylinder to another.

2. Acetylene under pressure, not dissolved in acetone, may decompose.

a. Line pressure for acetylene must never exceed 15 PSI.

3. Acetylene can react with-copper and form explosive acetylides.

a. Piping and fittings containing more than 50% copper must never be used with acetylene.

b. Steel or wrought iron should be used.

4. Acetylene is highly flammable with an explosive range 2.5% to 81%.

a. Do not store cylinders near an open flame or where, in case of a leak, the gas can diffuse to a flame or spark source, and always use acetylene in a ventilated area.

b. Never store reserve supplies of acetylene with oxygen. They should be separately grouped.

C. General Information - Oxygen

1. The reaction between oxygen and oil or grease can be of explosive violence. Never permit oil, grease, or organic matter to come in contact with oxygen cylinders, valves, couplings or regulators. Hands and gloves must be free of grease before handling oxygen.

2. Oxygen and other pressure cylinders should never be dropped, rolled or handled roughly. In doing so, there is always danger of damage to both valves and tanks.

3. Any time an oxygen cylinder is placed in an upright position it must be properly secured.

4. Any time that a cylinder is not in actual use it must have the protective cap installed.

5. Special care must be exercised to avoid the inter-change of oxygen and fuel gas piping as this could result in a mixture of these gases that would be highly explosive.

D. Burning and Welding

1. Employees are forbidden to use burning, regulator or reducing valve on oxygen or fuel gas cylinders shall be as follows:

a. Before attaching the regulator, open the discharge valve on the cylinder slightly for a few seconds and then close it. This will clear the valve of dust or dirt that might otherwise enter the regulator.

b. Attach the regulator to the cylinders and release any pressure on hose or regulator.

c. Open the discharge valve on the oxygen gradually to its full width. Never open valve suddenly as the seal in the regulator may be injured causing it to leak.

d. Adjust the pressure regulating screw on the regulator until the desired pressure is shown on the low pressure gauge. CAUTION: Acetylene should never be used at a working pressure greater than 15 PSI.

e. Oxygen or acetylene shall never be used from a cylinder without first connecting a regulator to the cylinder valve.

2. High pressure red colored hose is to be used for acetylene and high pressure green hose is to be used for oxygen.

3. All hose should be examined periodically as often as use demands, but no less than once a month.

4. Operators shall take precautions to protect the hose from flying sparks, slag or open flame and shall never burn or weld with hose over shoulders, between legs, under arm or fastened to their person in any manner whatsoever.

5. Welding or cutting should not be done directly on a concrete floor due to the possible explosion of the concrete. Raise the material and cut a few inches off the floor.

6. Do not cut or weld on tanks or containers which have had any liquids or material which would produce an explosive gas until proper purging procedures have been complied with, and approval has been given by either the Fire Department or the Safety Section.

7. The pressure must be turned off from regulator and hose when leaving the job for any purpose, or moving the apparatus from one job to another.

E. General

1. Do not-store "spare" oxygen or acetylene inside buildings.

2. Always store oxygen and acetylene or fuel gas separately, and out of the direct rays of the sun.

3. Regulators and gauges should be handled carefully as they are delicate mechanisms and can easily be damaged.

4. Welding and cutting torches must not be used as a hammer, lever or for any purpose other than welding, cutting, heating of materials.

5. Never strike a welding arc on a cylinder.

6. When cutting material, assure that it is properly blocked or supported to prevent injury by sudden shifting, of pieces when cut.

INDUSTRIAL SAFETY PROCEDURE NO. 9-106

USE OF METAL WORKING MACHINERY

A. Scope

The safe practices described in this procedures are applicable to all types of metal working equipment and should be used by all machine operators to avoid both personal injury and damage to equipment. The mention of specific machines in this procedure is not intended to exclude other metal working machinery from these requirements.

B. Qualification of Personnel

Supervisor shall see that no inexperienced person is permitted to operate any metal working machinery equipment until he has been instructed as to the hazards and proper operation of such equipment.

C. Machine Guarding

1. All exposed spindles, shafts, belts, and motor couplings shall be guarded.
2. All machine guards are to be properly adjusted and in working order before starting the machine.

D. Personal Protective Equipment

1. Any person engaged in assisting, or in close proximity of any metal working operation wherein there is danger of flying particles shall wear eye protection.
2. Loose, flowing or torn clothing and rings or brace-let should not be worn around operating machinery.
3. Gloves are not to be worn around rotating machinery unless sharp or rough material is being handled. If gloves must be worn because of sharp material, exercise due care to prevent their being caught in the machinery.

E. General

1. Areas around machines shall be kept clear of obstructions and in non-slippery condition. Machines shall be kept clean.
2. Do not clean chips from machine surface with the hands or compressed air. A brush or hook should be used.
3. Do not place hand tools on lathes or other machines. Keep them in their assigned location.
4. See that tools and work area are properly clamped and that other personnel are in the clear before starting the machine.
5. Tools, machinery or other equipment that is defective shall not be used until repaired.
6. Do not repair, oil or clean machinery while it is in motion.

7. Pull the main power switch prior to repairs, adjustments, changing lathe face plate, chuck, etc.
8. Excessive cutting speed, feeds, and depth of cut should be avoided.
9. Never leave a chuck key in a chuck. A place near the machine should be provided for its safekeeping when not in use.
10. Never leave machinery, under power, unattended.

INDUSTRIAL SAFETY PROCEDURE NO. 9-107

USE OF WOODWORKING MACHINERY

A. Scope

These safety precautions shall apply to all woodworking machinery and equipment. The mention of specific machines in this procedure is not intended to exclude other wood working machinery from these requirements.

B. Qualification of Personnel

1. Supervision shall see that no inexperienced person is permitted to operate any woodworking machinery until he has been instructed as to the hazards and proper operation of such equipment.

C. Machinery Guarding

1. All exposed spindles, shafts, belts, pulleys and motor couplings shall be guarded.
2. Point of contact guards will be used whenever possible on all saws. On equipment which does not have a guard or where it is not possible to obtain one, supervisors will be responsible for providing specific safety instruction and enforcing reasonable safety measures.
3. No person is permitted to remove a guard or to operate a machine without the guard except with the consent of his supervisor.

D. Personal Protective Equipment

1. The wearing of eye protection, face shields, or any other personal protective equipment required by supervisor's or Trust Territory regulation is mandatory.
2. Personnel engaged in the operation of woodworking machinery or assisting in such operation shall wear eye protection.

E. General

1. Rigid housekeeping standards shall be maintained in areas where woodworking operations are performed. No accumulations of scrap, sawdust, drop cords or any item that might constitute tripping hazards shall be permitted. Aisle ways should be kept clear.
2. No smoking rules are to be enforced in applicable areas and care must be taken to see that no firefighting equipment is blocked by materials in process.
3. Tools, machinery or other equipment including vehicles that is defective shall not be used until repaired. It shall also be tagged to warn other operators that it is out of order.
4. All broken saws shall be removed from service and all used hand saw blades shall be cut into short lengths prior to disposal.
5. A "push stick" shall be present at all table saws and used when work is in close proximity to the rip fence, or when there is danger of operator's fingers coming into contact with saw blades or jointer knives.

6. All saws, knives and cutting heads shall be kept sharp, properly adjusted and firmly secured.

7. All cut-off saws shall be provided with a limit stop which will prevent the saw teeth from exceeding the front edge of the work table.

8. Never leave any machine unattended with the power turned on.

9. Always pull the main switch prior to any work or adjustment of machinery.

10. Working area around the machine should always be cleared.

11. Always use face protective shield covering face while ripping lumbers.

INDUSTRIAL SAFETY PROCEDURE NO. 9-108

MACHINE GUARDING

A. Responsibility

It shall be the responsibility of the supervisor to ensure that all personnel are aware of the inherent dangers involved in the use and operation of machine equipment, both fixed and mobile. Personnel shall be thoroughly instructed, by their supervisor, as to the use of guards and the safe operation of equipment.

B. Scope

This procedure shall apply to all personnel assigned to work in any shop and industrial areas, in the Department of Public Works, and other departments required, which have reason to operate machine equipment, including portable equipment used at construction and rehab site.

C. Principle of Guarding

Too frequently, the purpose of machine guarding is misunderstood in that it is thought to concern only the point of operation of a Power transmission part. Guarding is also necessary to prevent injuries from other cases on and around machines. Specifically, machine guarding protects against and prevents injury from the following sources:

1. Direct contact with the moving parts of the machine.
2. Work in process (kick-backs on a circular rip saw, metal chips from a machine tool, splashing of hot metal or chemicals, etc.).
3. Mechanical failure.
4. Electrical failure.
5. Human failure; resulting from such things as curiosity, zeal, distraction, fatigue, indolence, worry, anger, illness, and deliberate chance taking.

Guards help to remove an operator's fear of machine, and often permits operation of machines at higher speeds, thereby increasing production. Therefore, eliminating the mechanical hazard, through installation of a guard, change in machine design, or some means, can be a permanent gain in production and efficiency.

D. Safe Practices

Safe guarding of equipment is of primary importance in eliminating accidents, but guards alone are not enough. The employee who works around mechanical equipment or the operator of a piece of machinery must maintain a healthy respect for safeguards.

If an employee is required to operate a piece of mechanical equipment, he shall be instructed by his supervisor in all the safety precautions connected with the safe operation of the machine before being permitted to operate it.

Positive procedures shall be established to ensure that there is no misunderstanding, and supervision shall be such that no deviation from the following safe work practices is tolerated:

1. No guard shall be adjusted or removed for any reason by anyone, unless:
 - a. Specific permission has been granted by the supervisor;
 - b. The person concerned is specially trained; and
 - c. Machine adjustment is considered a normal part of his job.
2. Defective or missing guards shall be reported to the supervisor immediately.
3. Whenever safeguards or devices are removed to repair, adjust, or service equipment (lubrication and maintenance), the power supply for the equipment shall be turned off and the main switch shall be tagged or locked out.
4. Employees shall not be permitted to work on or around mechanical equipment while wearing loose clothing or articles which may be caught or entangled in shaft, wheels, pulleys, gears, etc.
5. Operators of machine equipment shall be required to wear adequate eye protection at all times.
6. Operator of machine equipment shall not be permitted to operate equipment with long hair.

E. SOME TYPICAL MACHINE EQUIPMENT CAN CAUSE PERSONAL INJURY

1. Engine and Turret Lathes
 - a. Contact with projections on work or stock, face plates, chucks, or lathe dogs, especially those with projecting set screws.
 - b. Flying metal chips.
 - c. Hand braking of the machine.
 - d. Filing right-handed, using file with unprotected tang, or using hand instead of a stick to hold emery cloth against work.
 - e. Gauging the job while the machine is in operation.
 - f. Attempting to remove chips while machine is running.
 - g. Leaving chuck wrench in chuck.
 - h. Catching loose clothing or wiping rags on revolving parts.
2. Drills
 - a. Contact with the spindle or with the tool.
 - b. Breaking of tools.
 - c. Failure to clamp work securely.
 - d. Sweeping chips off by hands.

3. Planers and Shapers

- a. Placing the hand or fingers between the tool and the work.
- b. Measuring the job while machine is in operation.
- c. Failure to clamp work securely.
- [sic]. Insufficient clearance for work.

4. Grinding Machines

- a. Failure to use eye protection and shield.
- b. Holding work incorrectly.
- c. Incorrect adjustment or lack of work rest.
- d. Grinding on side of the wheel.
- e. Incorrect dressing of wheel.

5. Cut-off Saws

- a. Failure to use limit stop and counter weight device.
- b. Failure to install and use point of operation guard and pipe guard to prevent bodily contact with saw blade when extended full length.
- c. Failure to stand on handle side and pull saw with the hand near it.
- d. Using bent or dull saw.

6. Circular Saws

- a. Failure to use push stick.
- b. Tripping over pieces of lumber and debris.
- c. Cutting lumber of twisted stock.
- d. Improper alignment of the gauge or fence.
- e. Dull saw which permits the material to pinch on the out feed edge of the saw and raise from the table.
- f. Failure to use spreader.
- g. Strict adherence to safety rules, procedures and common sense can prevent most injuries that occur through use of machine equipment. If in doubt about correct procedure, contact the foreman immediately.

INDUSTRIAL SAFETY PROCEDURE NO. 9 - 109

CARE AND USE OF GRINDING WHEELS

A. Purpose

This procedure describes the proposed storage, testing, handling, installation, care and use of grinding wheels.

B. Storage - Shop

1. Normally, extra grinding wheels should not be stored in shops, but should be drawn from supply as needed.

2. Grinding wheels being stored must be protected from damage. They should not be stored on cabinet shelves with other parts, tools, equipment, or where they may come into contact with oil, water, or other liquids.

3. Wheels should not be stored flat on a smooth surface.

C. Storage - Supply

1. When grinding wheels are received, they should be unpacked and inspected for damage. Wheels that are chipped, broken, cracked, etc., should be returned to the Vendor or discarded.

2. Each wheel should be given a “ring” test before it is put in storage and again at the time of issue.

e. [sic] If wheel is undamaged, the wheel will give a clear “ringing” tone. If cracked, a dull sound will be heard.

4. For best results tag wheel about one-third the distance from the periphery to the blotter.

D. Handling

Grinding wheels are breakable. A cracked grinding wheel can literally “explode” at operating speed throwing fragments that are deadly as bullets.

1. Do not drop wheel or drop tools, etc., on wheels.

2. Do not roll wheels.

3. Provide support for wheels when transporting; DO NOT LET THEM BOUNCE.

E. Installation

Test all wheels before installation. If wheel does not sound right, don't use it.

1. Fit wheels freely on spindles. Wheels should not be forced on or be too loose.

2. Make certain that surface of wheels, blotters, and flanges are free of foreign material.

3. Abrasive wheels may only be mounted between flanges of equal size.
4. Tighten the spindle end firmly enough to hold the wheel but not tight enough to cause a strain that may damage the wheel.
5. Run new wheels at full speed, with safety guard in place, for at least one minute before applying work. **STAND ASIDE. IF GRINDER VIBRATE [sic] EXCESSIVELY, SHUT OFF CRINGER [sic], CHECK INSTALLATION, OR, IF NECESSARY, INSTALL A DIFFERENT WHEEL.**
6. Replace all safety guards, safety glass, shields, and tool rests after wheel installation and before use.

CAUTION: NEVER EXCEED 1/8 INCH.CLEARANCE BETWEEN TOOL REST AND GRIND WHEEL.

7. Make sure grinder is bolted down.

F. Operating Speed

Never operate grinding wheels at speed greater than that specified by the Manufacturer.

| <u>WHEEL DIAMETER</u> | <u>THICKNESS</u> | <u>SPINDLE SIZE</u> | <u>MAXIMUM R.P.M.</u> |
|-----------------------|------------------|---------------------|-----------------------|
| 7" | 1" | 3/4" | 3600 |
| 7" | 1" | 5/8" | 3600 |
| 10" | 1" | 3/4" | 2485 |
| 10" | 1" | 3/4" | 2485 |
| 6" | 1" | 1/2" | 4140 |

G. Use

A good wheel must be used properly for efficiency and safety.

1. Stand to side when starting grinder. If wheel has been damaged and failed, you will not be in the way.
2. Do not jam work against a wheel; apply work gradually giving wheel time to warm up.
3. Do not grind on side of wheel. No flat wheels from Manufacturer are designed for side grinding.
4. Always shut off power before leaving the wheel.
5. Wear eye protection while using grinders, even with safety shield in place. The best protection is fully enclosed goggles.
6. The only materials which may be applied to a grinding wheel are iron and steel. Any other material such as copper, brass, aluminum, etc., will plug the wheel. This will cause overheating and cause the wheel to fail.
7. When the wheel becomes worn to the point that the tool rest cannot be adjusted to within 1/8" from the wheel, the wheel should be replaced.
8. Keep wheels properly dressed for efficient operation.

INDUSTRIAL SAFETY PROCEDURE NO. 9-110

EYE SAFETY

A. Policy

The Department provides goggles, face shields, or other eye protection equipment for all employees who are exposed to eye hazards. It is required that suitable eye protection be worn by all personnel at any time a hazard to the eye exists.

B. Responsibility

1. THE EMPLOYEE. Although the Department provides eye protection equipment, the individual employee remains responsible for its proper use.

2. THE SUPERVISOR. The supervisor must emphasize the need and importance of wearing eye protection. He determines if employees in his department need eye protection and takes appropriate action to obtain them when required. He also establishes areas where eye protection is mandatory. Such areas shall be posted with a warning signs requiring the use of eye protection.

3. THE INDUSTRIAL SAFETY SECTION. The District Safety Inspector will assist supervisors in defining hazardous operations, in designating eye hazards area where eye protection is required, and in selecting special protective equipment. The following list of activities requires the wearing of eye protection. There may be other activities where eye protection should be worn. If in doubt, use eye protection.

a. Using power equipment on metal where particles of metal are cut or ground off such as drills, lathes, snappers [sic], grinders, etc.

b. Use of portable power tools, drills, grinders sanders, etc.

c. Using compressed air, air tools, jack-hammers, chippers, etc.

d. Welding, soldering, brazing, cutting, etc.

e. Power activated tools-stud-guns, should not be used by employee that are not trained in the proper use of equipment. Only licensed employees are authorized to operate stud gun.

f. Any operation where metal is struck by metal, such as using cold chisels, drift pins, star drills, driving rods with sledge hammer, driving spikes, nails, etc.

g. Any operation where a person is working, where dirt or materials may fall, such as paint scraping, wood notchings [sic], etc.

h. Cutting or breaking glass.

i. Handling acids and caustics.

j. Persons working in or traveling through areas where workers are wearing eye protection should also wear eye protection as the same hazards exist to all personnel.

C. Eye Injuries

1. **FOREIGN BODY IN EYE.** Employee should report to the Medical Department to have foreign body removed. A cloth covering the eye to keep from rubbing and causing scratching of the eye may be used. Do not let coworkers attempt to remove foreign body.

2. **CHEMICALS.** In the event an employee receives a chemical splash into his eye, he should immediately go to an emergency eye wash or other source of water and flood the eye for 10 to 15 minutes then report to the Medical Department. Do not use other chemicals to neutralize, dilute, etc.

D. General

1. Safety glasses, goggles, face shields, etc., should be kept clean. Use soap and cold water to wash them; do not use silicone treated cleaning tissue, paper, hard towels, or dirty rags on plastic as they will scratch.

2. Personnel working in dusty areas or using a grinder should be sure that fine particles of dust/metal are brushed from forehead and eyebrows so that material does not fall into the eyes.

E. Eye Protection to Be Stocked

The Industrial Safety Section should make available the following items:

DESCRIPTION:

Acid goggle
American optical general purpose goggles
Welsh coverall goggles
Chipper's goggles
Lens for burning goggles, 50 mm round, shade 5
Clear lens for burning goggles, 50 mm round
Wilson burning goggles
Cover lens for welder's goggles 50 mm
Welder goggles
MSA plastic coverall goggles
Face shield
Welding helmet
Welder's helmet with hard hat

INDUSTRIAL SAFETY PROCEDURE NO. 9-111

USING COMPRESSED AIR SAFELY

A. Scope

This procedure prescribes general safety rules for use of compressed air in shop areas.

B. Working Pressure

1. Experience indicates that about 20 PSI accomplishes most shop operations and at the same time reduces the hazard of compressed air to a minimum. Discretion and good judgment should be exercised when using compressed air even at low pressure.

2. Compressed air may be used at full pressure (about 100 PSI) if required for air operated tools.

C. Use

1. Never use compressed air to blow dirt, chips, or dust from your clothing.

2. Compressed air should not be used to transfer materials from containers where it is possible to exceed the safe working pressure of the container.

a. Never use compressed air to transfer materials from glass containers.

b. Don't use compressed air to transfer material from a standard 55 gallon drum. At 15 PSI, the total force of a vessel, can be considerable; for example, a standard 55 gallon drum head with a diameter of 22.5 inches is subject to 393 square inches times 15 PSI or 5,895 lbs. - almost three tons!

WARNING: It is dangerous to pressurize any container not designed for that purpose.

3. Never use compressed air where a projectile effect is possible.

4. To prevent injury, never apply compressed air to any part of a person's body regardless of air pressure.

5. Attach a short length of chain between the hose and the housing on air operated tools to keep the hose from slipping should the hose tool coupling separates.

6. Always turn valve off and relieve pressure from a line when it becomes necessary to connect or disconnect it. Never work on pressurized air lines.

7. Do not connect - air supplied breathing equipment to ("house air") systems. The quality of compressed air may not be adequate for such use.

INDUSTRIAL SAFETY PROCEDURE NO. 9-112

FORK TRUCK OPERATION

A. General

This procedure describes the safe operation of power operated trucks.

B. Operator Qualification

DRIVERS MUST POSSESS A U. S. Government motor vehicle operator's Identification Card Standard Form 46, issued by the District Sheriff, and certified by the issuing agent.

C. Care of Fork Trucks

1. Before starting daily operations, the drivers must make sure that tires, horn, lights, controller, lift system (including fork chains, cable, and limit switches), brakes and steering mechanism are functioning properly.

2. Any fork trucks determined by the operator to be in any way unsafe, shall be reported to supervision. Such fork trucks shall not be operated until repairs are effected.

D. Operation

1. Maintain a safe speed consistent with load requirements at all times.

2. Passengers will not ride on fork trucks unless the vehicle is equipped with riding facilities.

3. Riding on forks is prohibited except for work being performed from Safety approved work basket or platforms.

4. Travel with fork as low as possible, consistent with safe operation.

5. Always face in direction of travel. If load obscures your vision, drive in reverse or have someone guide you.

6. Keep hands and gloves free of oil and grease to ensure a firm grip on the steering wheel or levers.

7. Do not run motor in confined areas where the danger of carbon monoxide poisoning from exhaust gases exit.

8. Never pass through or under a structure unless you are certain ample clearance exists.

9. On ramp, travel with the load on the uphill side.

10. Do not fuel fork trucks within buildings.

11. Never move a fork truck in any direction until you are sure that all personnel are in the clear.

12. When traveling along loading docks or piers, stay at least 18 inches from the edge,

13. Use caution when approaching intersections, cross-walks, or corners, and always come to a complete stop at all stop signs.

14. Never exceed the rated capacity of the truck.

E. Parking

1. When parking, don't block aisles or alleys, doorways, or loading docks.

2. If it becomes necessary to park on an incline, chock the wheels.

3. When leaving a forklift unattended, shut off the power, set the brakes and always leave forks in the down position.

F. Fork Trucks used for Stevedoring on Ships

1. Fork trucks will not be refueled in the hold of a ship.

2. Gasoline fork trucks used in hold of a ship must have adequate ventilation by ship's ventilation gear, a portable ventilation, or a combination of the two.

3. Particular attention must be given to preventing puncture of gasoline, paint or other flammable materials in the hold and creating a severe fire hazard.

NOTE: Forklift operators must be certified as explosive handlers and their drivers license so stamped before they are permitted to move explosives on any vehicles.

INDUSTRIAL SAFETY PROCEDURE NO. 9-113

USE OF TRUCKS AND OTHER HEAVY EQUIPMENT FOR
TRANSPORTING PASSENGERS

A. Purpose

Personnel may be transported in pickup, flatbed and dump trucks when this can be done safely.

B. Safety Rules

1. Where seats are not available the number of passengers transported is to be limited to prevent crowding and must never exceed a number which may endanger the safe handling of the vehicle or the safety of the passengers.

2. Flatbed trucks, dump trucks and pickup trucks may be used for passengers transportation when the following conditions where applicable are complied with:

a. Where possible, all passengers must ride in the driver's compartment or cab; no more than three (3) people should ride in a standard pickup cab.

b. Passengers must sit on the truck bed. Open flatbed trucks may be used to transport persons if they sit directly behind the cab.

c. Secure dump truck hoisting mechanism and close tailgate. Passengers must sit on the truck bed.

d. Do not permit passengers to ride on loads, sit on the top of side rails, top of cab, running board, fenders, on the hood, or in such a position which permits any part of the body to extend beyond the body of the vehicle. Standing in a moving vehicle is prohibited.

3. Passengers must not be allowed to get on or off a vehicle that is moving.

4. No passengers are to be permitted to ride on vehicle which carry acids, caustics, or explosives.

5. When it is necessary to transport personnel on trucks which also carry material, equipment, or tools with sharp edges, such materials must be safely secured to prevent injury to personnel from shifting loads. Sharp edges must be protected with guards.

6. No passengers are to be permitted to ride on forklift forks, tank trailers, or other pieces of equipment not intended for that purpose.

7. It is the responsibility of the equipment driver to see that regulations concerning passengers are obeyed.

INDUSTRIAL SAFETY PROCEDURE NO. 9-114

OVERHEAD DISTRIBUTION AND TRANSMISSION

General

A. Only qualified employees shall be assigned to work on or near energized lines or equipment. In case of emergency where danger to life or property would be aggravated by delay in waiting for the arrival of the second man, one man may clear the hazard without assistance. During the time an employee is doing work on any energized parts of the line, the other employee shall act only as an observer for the purpose of preventing an accident.

B. Whenever it is necessary to patrol lines during the day or night, and road conditions, weather conditions or other factors make it impossible to patrol safely with one man, additional help shall be provided.

C. No employee shall touch any exposed ungrounded line wire or apparatus unless he is insulated from other conducting surfaces or uses adequate protective devices.

D. Employees shall immediately report to their nearest foreman or supervisor of any defective line, apparatus or tool or other condition of their utility which in their judgment may be dangerous either to persons or property or likely to interrupt or delay service.

E. Electrical equipment and lines shall always be considered as "live" unless they are positively known to be dead. Before starting to work, preliminary inspection or tests shall be made to determine what conditions exist. Wires designed to operate at ground potential may sometimes become energized by reason of faulty or inadequate connections. Care shall always be exercised to handle ground wires with the same caution as is used with energized wires.

F. Before working on instruments or other devices in a current transformer secondary circuit, always bridge the instruments or devices with jumpers so that the circuit cannot be opened at the device. Never open a circuit transformer and the part of the circuit to be opened.

G. Whenever any overhead work is being performed, it shall be the duty of the foreman or other person in charge to see that every precaution is taken to protect persons and property from injury or damage.

APPROVED PERSONAL PROTECTIVE EQUIPMENT

- a. The term “energized lines”, as used in this manual, is defined as any conductor, including neutral conductors, apparatus, or part thereof with circuits energized at above 500 volts and below 7,500 volts phase to phase. This includes street light conductors, communications circuits, and any other circuits of similar nature.
- b. Employees shall not touch or work on any exposed energized lines or apparatus except when wearing approved rubber gloves.
- c. When work is to be done on or near energized lines, all energized and grounded conductors or guy wires within reach of any part of the body while working shall be covered with rubber protective equipment, except that part of the conductor on which the employee is to work.
- d. When working on energized lines or apparatus, work should be done from below if possible.
- e. In applying rubber protective equipment, an employee should always protect the nearest and lowest wire first, protecting himself as he progresses. In removing rubber protective equipment, the reverse order shall be maintained. Protective equipment shall be applied from a position underneath the conductor when possible.
- f. Rubber gloves shall be put on before entering the work area within which energized lines or apparatus may be reached and shall not be removed until the employee is completely out of reach of this area.
- g. Rubber gloves shall never be worn inside out or without leather protectors. They shall be exchanged at any time when they become damaged or the employee to whom they are assigned becomes suspicious of them. Leather protectors or overgloves [sic] shall not be worn except when in use over rubber gloves.
- h. Rubber gloves shall be inspected for corona cracks and bruises and shall be given the roll and air test at least once each day while in use, preferably at the beginning of the work period and at any other time when their condition is in doubt.
- i. When not in use, rubber protective equipment shall be protected from mechanical and chemical damage, and shall always be stored in the containers provided and nothing else placed therein.
- j. All rubber gloves which are used on energized electrical equipment shall be electrically tested at intervals of two weeks to four months depending upon extent of use. Rubber gloves shall be inspected by workmen before each use.

INDUSTRIAL SAFETY PROCEDURE NO. 9-115

CLIMBING AND WORKING ON POLES

- a. Workmen shall not wear their climbers while driving or riding in vehicles or when doing work on the ground or on ladders or platforms in which the wearing of the climbers creates a hazard.
- b. Gaffs on climbers shall be kept within safe length limits (1-1/8" min) properly shaped and sharp.
- c. Employees shall not work on an elevated pole or structure without first securing themselves with a safety strap, unless a proper platform with adequate railing is provided.
- d. Only approved belts and straps shall be used.
- e. Suitable clothing including long-sleeved shirt or jacket with sleeves rolled down and buttoned and full brimmed safety hat shall be worn when working in the vicinity of energized wires or equipment.
- f. All tools and materials must be passed to a lineman working upon a pole by means of tool bags or hand lines, and under no circumstances shall a lineman throw anything from a pole to the ground or allow anything to be thrown to him while on a pole. Tools shall not be laid on crossarms or ladders, or in other places or positions from which they may fall.
- g. All poles shall be carefully inspected before climbing to assure that such poles are in safe condition for the work to be performed thereon. Any found to be unsafe shall be adequately guyed or otherwise supported before pole is climbed. All poles shall be guyed or otherwise supported during installation and removal.

INDUSTRIAL SAFETY PROCEDURE NO. 9-116
INSPECTION AND TESTING OF LIFTING DEVICES

I. Purpose

Pre-load test inspection, testing, and use of lifting devices. This does not cover preventive maintenance, inspections or daily inspections established by individual department.

II. Responsibilities

a. Each District Director of Public Works within the Trust Territory is responsible for assuring that all lifting devices, including forklifts, mobile cranes assigned or located within the department will be pre-load test inspected, load tested, and maintained in accordance with the general testing procedures described in this procedure.

b. The supervisor of Heavy Equipment shops under direction of District Director of Public Works is responsible for:

1. Assuring that all forklifts, within the district are pre-load test inspected and load test by the Heavy Equipment shop are required by the procedure.

2. Provide qualified personnel to make necessary mechanical adjustments and repairs on mobile cranes during pre-load test inspections and load testing.

3. Fabricating and load testing all new slings used by the Heavy Equipment/Rigging group.

4. Performing pre-load test inspections and load testing all mobile cranes.

5. Load testing and labeling all slings fabricated.

6. Supplying personnel and weights to perform inspections and load test for bridge cranes, jib cranes, etc.

III. Definitions

a. Lifting Device: Cranes (mobile or stationary) forklifts, hoists, slugs, chains, ropes, cables, hooks, spreader bars, A-Frames.

b. Pre-load Test Inspection: A careful examination of all components to assure that the lifting device is in satisfactory condition.

c. Load Test: Lifting a static load in excess of the rated capacity y in accordance with the schedules and loads specified in Section C.

IV. Procedures:

A - General

1. Lifting devices used within the Trust Territory are required to be pre-load test inspected, load tested, and maintained on a routine program to minimize the possible risk of utilizing unsafe equipment which could result in serious injury and property damage. This routine inspection program established a method of detecting mechanical defects and

identification of lifting devices.

B - How to have lifting devices tested

1. District: All Departments having slings, chains, A-Frames, monorails, and chain hoists will prepare work requests for the Public Works Heavy Equipment shop to conduct pre-load test inspections and load test. Work request must be submitted and tests schedule to coincide with frequency schedule discussed in Section C.

NOTE: Pre-load test inspections and load testing of mobile cranes and forktrucks will be accomplished by Public Works and Heavy Equipment shop without any action required from the using department.

V. Frequency and Rating of Load Tests:

Formal pre-load test inspection and load testing will be performed in accordance with the schedule listed below. All lifting devices should be inspected prior to routine use by the individual using the gear. Any lifting device found to be mechanically defective at any time will be removed from service.

| <u>Lifting Device</u> | <u>Schedule</u> | <u>Load Test</u> |
|-------------------------------------|---|------------------|
| 1. Mobile Cranes | Quarterly - or after any major overhaul or cable change | 110% |
| 2. Overhead Cranes | Annually - or after any major overhaul or cable change | 125% |
| 3. Wire rope, chains, slings, hooks | Semi-annually - and at time of fabrication | 125% |
| 4. A-Frame/Monorails | Annually - and at time of fabrication | 125% |
| 5. *Fiber-Rope | NONE | -0- |
| 6. Chain Hoist | Annually | 125% |
| 7. Forktrucks | Semi-Annually | 115% |

*Use of fiber rope for lifting purpose should be limited due to vulnerability of fiber rope to corrosive materials, high temperatures, and exposure to rough edge which can cut strands. Use of fiber rope for lifting personnel will not be permitted. Load tests on fiber rope WILL NOT be performed. Lifting capacities recommended by the manufacturer will be observed.

VI. Identification, Records, and Test Procedures:

1. Mobile Cranes: Load testing of all mobile cranes will be conducted quarterly or after any major overhaul, cable changes, or suspected damage. The testing will consist of a pre-load test inspection to determine mechanical condition of the unit, and a load test of 110% of the rated capacity at the boom angle indicated on the manufacturer's capacity chart, using standard weights. Form ISP-115 Appendix A will be used to record the pre-load test inspection and load test. One copy of Form ISP-115 Appendix A will be filed in the holder inside the crane cab and one copy will be sent to the Control Maintenance Office. Load test date will be stenciled on the

boom in sufficient size to be clearly visible. All deficiencies found on the pre-load test inspection must be corrected prior to making the load test.

2. Overhead Cranes: Load testing of all overhead cranes will be conducted annually or after any major overhaul, cable changes or suspected damage. The pre-load test inspection and load test of 125% will be recorded on Form ISP-115-I Appendix A. The load test date and rated capacity will be stenciled in large letters enough to be clearly visible from the ground. Copies of Form ISP-115-I Appendix A will be retained at the building for which the test was performed and one copy should be sent to the Control Maintenance Office.

3. Wire Rope and Chain: All wire rope slings, hooks, shackles, pulleys, clamps, and other fittings used in lifting of loads will be inspected and load tested on a semi-annual basis. Each sling or chain will be tested, and labeled at the time they are fabricated, and then inspected, load tested, and re-labeled with metal tags each 6 months thereafter.

The tags will have to state that the slings or chains were load tested plus maximum rated capacity allowed. Slings and chain found without an attached inspection and test tag may not be used until an inspection and load test has been performed and a new affixed to the item. Slings and related gear will not be numbered or recorded on an inspection form since the required information will be on the metal tag.

Inspection of slings and chains will include the following:

- a. Frayed-Ends - Seize
- b. Kinked - Dispose of cable
- c. Rusty or corroded - Lubricate or replace
- d. Arc damage - Dispose of cable
- e. A marked reduction in diameter of wire - Dispose of cable
- f. Fittings and terminals showing great wear - Dispose of cable
- g. Hooks that are bent, opened up or twisted - Dispose
- h. Chain links excessively worn or stretched - Dispose

4. A-Frames - Monorails-Chains Hoists: These units will be inspected and load tested annually. The load test date will be stenciled on the bottom and sides of horizontal beams in minimum 1" high letters. Chain hoists normally have rated capacity affixed. If the manufacturer's data is obscured, a metal tag will be attached stating last test date. If the chain hoist is attached to an A-frame on monorail, the load test date and rated capacity will be stenciled on the horizontal beam of the supporting device.

5. Fiber Rope: Lifting devices such as chokers, bridles or basket hitches made up from fiber rope will have a metal tag attached describing recommended rated capacity by the rope manufacturer and the inspection date. No load will be performed. Caution must be exercised to assure that the rated capacity of the rope is consistent with the angles at which the rope will be used.

6. Forklift Trucks: These units will be inspected and load tested semi-annually. The load test date and rated capacity will be stenciled on the side of the forklift. A record that the unit has

been tested will be included in the vehicle history jacket at the Control Maintenance Office.

Inspection and load testing of Forklift trucks will include the following:

- a. Inspect for proper working and evidence of mishandling.
- b. Check for and lift carriage assembly for cracks, broken welds, distortion, and fit in mast.
- c. Check mast for cracks, broken welds, and distortion.
- d. Check chain for excessive wear.
- e. Check moving parts for excessive wear and defective components in:
 1. Brake system
 2. Controls
 3. Hydraulic system
- f. Check power system for satisfactory operation.
- g. Conduct load test consisting of lifting, lowering, holding, and maneuvering, at test load of 115% of the manufacturer's rated capacity.
 1. Measure drift at both the lift and tilt cylinders.
 2. Drift on each cylinder may not exceed 1" in a 2 minute period with test load in the hold position.
 3. Re-stencil load test date on unit and record test in the vehicle history jacket in the Control Maintenance Office.

INDUSTRIAL SAFETY PROCEDURE NO. 9-116-1

APPENDIX - A

INSPECTION & CRANE LOAD TEST RECORD

CRANE # _____

A. Inspection

Sat.

Unsat

1. Booms

- a. Check for bends -----
- b. Distorted sections -----
- c. Broken welds -----
- d. Excessive corrosion -----
- e. Loose bolts or rivets -----
- f. Boom angle indicator -----

2. Drums, Sheaves, and Pulleys

- a. Check for smoothness and surface defects

3. Gears

- a. Eccentric bores -----
- b. Cracked hubs, spokes, or flanges -----

4. Size of Grooves

- a. Check grooves for wear and distortion -----

5. Length of Rope

- a. No less than 2 (two) full wraps of rope shall remain on drum when the cable has reached the maximum extended position. Rope attached to drum in an approved manufacturer's method. - - -

6. Moving Parts

- a. Make a visual check for defective moving parts: such as pins, bushings, shafts, gears, worms, brake linings, pawls, ratchets, and locking devices. - - - -

7. Operation

- a. Check mechanical, electrical, hydraulic and air controls for operation. -----

8. Limit Switches

- a. Proper operational function. -----

9. Power System

- a. Proper operational function. -----

10. Outriggers (If applicable)

- a. Hoses - Check for kinks, loose connections and abrasions to hose.
- b. Slides - Adequate lubrication -----
- c. Shoes - Pins lubricated & no cracks on shoes.-----

11. Hooks

- a. Swivels must rotate freely -----
- b. Safety closure latching operational -----
- c. Hooks with excessive wear or twisted out of plane will be discarded.

APPENDIX - A

INSPECTION & CRANE LOAD TEST RECORD

12. Wire Rope - Inspection for the following discrepancies of the rope on drum used for lifting and action taken as noted:

- a. Frayed ends - SEIZE [sic]
- b. Kinked - REPLACE
- c. Rusty or corroded - LUBRICATE AS REQUIRED REPLACE IF EXCESSIVELY CORRODED
- d. Arc damage - REPLACE
- e. Broken wire - CUT IF LONG ENOUGH OR REPLACE
- f. Reduction in diameter - WILL BE REPLACED
- g. Fittings and terminals with marked distortion or excessive wear of load bearing surfaces - REPLACE

NOTE: All deficiencies noted must be corrected prior to load test except as approved by Automotive and Safety Departments.

B. Load Test

- 1. Crane # _____ Manufacturer _____ Max. Rated Capacity _____
- 2. Boom Length _____ Boom Angle _____ = _____ Radius
- 3. Position Outriggers _____
- 4. Hoist _____ Pound Weight: Two (2) feet off ground.
- 5. Lower load to within one (1) foot off ground and let hang for five (5) minutes. (This will test the drift of brake).
- 6. With load two (2) feet from ground, swing load forty five degrees (45°) in both directions.
- 7. Boom unit up and down to check brakes.
- 8. Lower load.
- 9. If any problems are experienced when performing above procedures, contact the authorized Automotive representative to make mechanical adjustments and/or repair.
- 10. Comments: _____

TEST APPROVAL _____

Distribution:

Cab of Crane

CONTROL MAINTENANCE OFFICE

[charts on pages 66 through 73 not scanned]

INDUSTRIAL SAFETY PROCEDURE NO. 9-118

HOW TO HANDLE AND REPORT AN EMERGENCY

A. General

Written procedures cannot encompass every eventuality or situation which might arise and be considered an emergency. For the purpose of the procedure we will consider only fire and injury to personnel. Should either of these situations arise the following paragraphs should be considered.

B. Take Control

Take whatever action necessary to control the emergency, but do not risk further personal injury.

C. Obtain Assistance

1. If you are in the vicinity where an emergency occurs, call for assistance unless a person's life depends on some other immediate action by you.

- | | | |
|----|-----------------------------|--------------|
| 2. | To obtain assistance | Phone Number |
| | Dial the Fire Department | |
| | Dial the Medical Department | |
| | Use Radio (If available) | |

State: What happened and your name;
 Location (be specific); and injury (If any)

D. Take Remedial Action

1. Give only immediate emergency aid to the injured.

CAUTION: If you don't know what you're doing, it may be better to do nothing; but generally the following will apply.

a. Do not move the injured unless absolutely necessary.

b. Stop serious bleeding. Apply pressure over the wound with the cleanest cloth available, for use, but start immediately.

2. Take whatever other remedial action seems prudent under the circumstances. For example, in some cases building evacuation may almost be the first course of action. The type and extent of emergency in most cases will dictate the order in which action should be taken. Proceed with any special emergency instructions established for your area as appropriate.

E. Assist Emergency Group

1. Stand by to direct either fire or medical personnel to the scene of the incident.

2. If you have any pertinent information, make yourself known to the senior fire officer or medical personnel who may respond to the emergency. Supply them with facts and give help as requested. Responding emergency people are in a better position to make decisions if they have been given a factual description of the happenings to date.

3. The successful handling of emergency situation depends on the preplanning and preparation to cope with various situations.

INDUSTRIAL SAFETY PROCEDURE NO. 9-119

REPORTING OF VEHICULAR ACCIDENTS

1. Accidents involving Trust Territory Government vehicles shall be reported immediately to the Trust Territory Public Safety in each district and to the Department Head or Supervisor concerned and then to the District Industrial Safety Inspector concerned. Vehicles and personnel involved shall not leave the scene of an accident until released by the cognizant Police Authority, unless the principals are in immediate need of medical attention. The District Public Safety Representative shall make an immediate investigation on the spot to determine the extent of damage to vehicles and injuries involving personnel, and to ascertain all facts surrounding the accident. Copies of accident reports will be forwarded to the District Industrial Safety Inspector in the district and the Industrial Safety Administrator in the Headquarters.
2. The driver of the vehicle, or if he is incapacitated, his supervisor in the district, shall immediately fill out in complete detail, SF Form 91, "Operator's Report of Motor Vehicle Accident." This form shall be filled out regardless of who was injured or what property was damaged, or to what extent or where the accident occurred, or who was responsible. The driver's report shall be referred to the District Industrial Safety Inspector in the districts who shall be responsible to examine it for completeness and accuracy and who shall retain it for references and a subsequent attachment to the investigating report.
3. Trust Territory vehicles involved in an accident, regardless of severity, shall be taken directly to the Public Works Heavy Equipment supervisor or his representative who shall inspect the vehicle to determine fitness for further use or to arrange for necessary repairs. Under no circumstances shall a vehicle involved in an accident be driven in line of duty until clearance has been received from the District Attorney and District Director of Public Works and Public Works Heavy Equipment supervisor or his representative.
4. Drivers of all vehicles including forklift, trucks, jeeps and other cargo-moving vehicles shall comply with this regulation.

INDUSTRIAL SAFETY PROCEDURE NO. 9-120

COLOR CODING

The following is partial list of the standard color code for the Trust Territory:

1. Safety Equipment ----- Green
First aid kits, medicine, cabinets, etc.
Safety bulletin board, etc.
2. Accidental Hazards
Extreme hazards or dangerous parts of equipment, switch boxes ----- Orange
Physical obstacles, such as projections, platforms edges,
low beams, elevation change, etc. ----- Yellow or yellow
with black stripes
Eye Hazards ----- Black & yellow
Checker board
symbol "eye Hazards"
3. Fire equipment and Specific danger ----- Red
Fresh water hydrants ----- Yellow
Salt Water hydrants ----- Yellow with Red Top
4. Cautionary Equipment which has been put out of services for repair ----- Blue
5. Good Housekeeping and indoor traffic colors - White Gray Black
6. Interior Walls and Ceilings ----- Light green brown or buff, gray or off white
7. Piping Systems:
Safe system ----- Green, white or black
Dangerous system ----- Yellow
Fire Protection system ----- Red
8. Containers of Flammable Liquid ----- Brilliant yellow with contents indicated in
bold black letters
9. Signs:
Safety ----- White and green
Warning Signals ----- Black on Yellow
Direction and information ----- Black on White

Stop (traffic) ----- Red/White

10. Fuel/Liquid

Mogas -----Red

Diesel -----White

Oil ----- Yellow

Water ----- Blue

Air ----- Green

Steam ----- White

INDUSTRIAL SAFETY PROCEDURE NO. 9-121

STORAGE OF MATERIALS

This part prescribes basic requirements for the storage of equipment, materials, and supplies acquired by the Trust Territory Government. This part does not attempt to cover every conceivable condition or problem that will arise in connection with the storage of various commodities. With a reasonable exercise of judgment, as well as reference to standards published by the National Safety Council and the National Fire Protection Association, and compliance with applicable safety techniques and standards, it will enable and assist each district and operating department to achieve the desired objectives.

Types of property should be stored in accordance with the kind of protection required. Protection requirements will vary greatly with the types of commodities stocked. All items must be protected from fire and theft. Certain items require protection from dampness, heat, freezing, or extreme temperature changes. Others must be stored away from light and odors, protected from vermin infestation or because of their hazardous characteristics stored separate from other stocks. These factors as well as maximum protection of property against all cause of deterioration or destruction must be considered in selecting proper storage locations.

A. Flammable Materials

1. Stock of flammable materials, such as paints, oil, varnish, etc., in quantities exceeding 50 gallons, should be stored in a separate building or in a fireproof room which is separated from stocks of other materials.

2. Where lack of suitable segregated storage building or room necessitates the storing of flammable materials in regular warehouse storage areas, it is essential that a restricted area of the warehouse be used where flammable liquid such as gasoline, fuel, oil, etc., is dispensed by pumping.

3. Arrangements shall be made to store in tanks or containers approved and installed in accordance with the NATIONAL FIRE PROTECTION ASSOCIATION. All buildings, rooms, or other storage areas containing flammable materials shall be adequately ventilated. Such areas must be conspicuously posted and entrance to the areas restricted to admit only authorized personnel.

INDUSTRIAL SAFETY PROCEDURE NO. 9-122

EXPLOSIVES HANDLING

A. The term “explosives” is defined to mean any chemical compound or mixture that contains any oxidizing and combustible units or other ingredients in such proportion, quantities, or packing that ignition by fire, friction, part thereof may cause an explosion.

1. All explosives shall be stored in high explosive magazine to provide safe storage and minimize the destructive-effects to property and personnel in the event of an explosion. The type of magazine needed will depend upon the quantity and characteristics of the explosives to be stored.

2. Explosives in quantities exceeding 200 pounds shall be stored in a substantially constructed magazine, preferably of the building or dugout type. Such magazine must be adequately ventilated and be fire, theft, weather and bullet-resistant. More detailed information concerning the construction of building and underground type magazines may be obtained from the National Fire Protection Association Volume 3 - 1971/72, combustible solids, dusts and explosives.

(a) Building and underground-type magazine shall be located between storage magazine for explosive and inhabited building, public railways and public highways according to the American Table of Distances published by the American Institute of Makers of Explosives, New York, N. Y.

(b) The premises on which a high explosive magazine is located shall be conspicuously marked by signs containing the words “EXPLOSIVES - DANGER - KEEP OFF.” Such signs shall be so placed that they will adequately warn persons approaching the magazine of the presence of explosives, but shall not be so placed as to direct general attention to the location of the magazine.

3. Explosives in quantities of 200 pounds or less may be stored in box type magazines. Such magazines shall be strongly constructed of not less than 2-inch hardwood or 3-inch softwood, or of other material of equivalent strength. If metal is used, the magazines shall be lined with a non-sparking material. Doors or lids shall be installed in such a manner that they cannot be removed when the magazine is locked.

(a) Box-type magazines may be locked indoors, provided that the same building shall not be used for storage materials of any kind, and provided further that magazine shall not be placed less than 20 feet from stove, furnace, open fire or flame, or less than 5 feet from other source of external heat.

(b) Box type magazines shall be painted red or other distinctive color and be clearly and conspicuously marked “EXPLOSIVES.”

B. Accident prevention in the use of explosives. The protection of accidents in the use of explosives is a result of careful planning and observance of the best known practices. The explosives user must remember that he is dealing with powerful force and that various devices and methods have been developed to assist him in directing this force. He should realize that this force, if misdirected, may either kill or injure both him and his fellow workers.

WARNING: All explosives are dangerous and must be handled and used with care either by or under the direction of a competent experienced person. It is the responsibility of all persons who handle explosives to know and to follow all approved safety procedures. Only qualified personnel approved by Trust Territory Government,

Headquarters or District, are authorized to handle explosives.

It is obviously impossible to include warnings or approved methods for every conceivable situation. A list of DO's and DON'TS to aid in avoiding the more common causes of accidents is set forth below.

1. DEFINITIONS

(a) The term "EXPLOSIVES" as used herein includes any or all of the following: Dynamite, block blasting powder, pellet powder, blasting caps, electric blasting caps and detonating fuse.

(b) The term "Detonating Fuse" as used herein refers to Primacord.

2. DO'S AND DON'TS - INSTRUCTIONS AND WARNING WHEN TRANSPORTING EXPLOSIVES:

(a) Do see that any vehicle used to transport explosives is in proper working condition and equipped with a tight wooden or non-sparking metal floor with sides and ends high enough to prevent the explosives from falling off. The load in an open-bodied truck should be covered with a waterproof and fire resistant tarpaulin and the explosives should not be allowed to contact any source of heat such as exhaust pipe. Wiring should be fully insulated also as to prevent short circuiting and at least two fire extinguishers should be carried. The truck should be plainly marked so as to give adequate warning to the public of the nature of the cargo.

(b) Don't permit metal, except approved metal truck bodies, to contact cases of explosives. Metal, flammable or corrosive substances should not be transported with explosives.

(c) Don't allow smoking or unauthorized or unnecessary persons in the vehicle.

(d) Do load and unload explosives carefully. Never throw explosives from the truck.

(e) Do see that other explosives, including detonating fuses, are separated from blasting caps and/or electric blasting caps where it is permitted to transport them in the same vehicle.

(f) Don't drive trucks containing explosives through cities, villages, or towns, or park them near such places as restaurants, garages, and filling stations, unless it cannot be avoided.

(g) Do request that explosives deliveries be made at the magazine or in some other location well removed from populated areas.

(h) Don't fight fires after they have come in contact with explosives. Remove all personnel to a safe location and guard the area against intruders.

3. When storing explosives:

(a) Do store explosives in accordance with federal, state or local laws, and regulations.

(b) Do store explosives only in a magazine which is clean, dry, well ventilated, reasonably cool, properly located, substantially constructed, bullet and fire resistant, and securely locked.

(c) Don't store blasting caps, electric blasting caps, or primers in the same box, containers, or magazine with other explosives. Detonating fuses should not be stored with

blasting caps or electric blasting caps.

(d) Don't store explosives, fuses, or fuse lighters in a wet or damp place, or near oil, gasoline, cleaning solution or solvents, or near radiators, steam pipes, stoves, or other sources of heat.

(e) Don't store any sparking metal or sparking metal tools in an explosive magazine.

(f) Don't smoke or have matches or have any source of fire or flame in or near an explosives magazine.

(g) Don't allow leaves, grass, brush or debris to accumulate within 25 feet of an explosives magazine.

(h) Don't shoot into explosives or allow the discharge of fire arms in the vicinity of an explosive magazine.

(i) Do locate explosive magazine in the most isolated places available. They should be separated from inhabited buildings and highways by distance not less than those recommended in the "American Table of Distances."

4. When using Explosives:

(a) Don't use sparking metal tools to open keys or wooden cases of explosives. Metallic slitters may be used for opening fiberboard cases, provided that the metallic slitter does not come in contact with the metallic fasteners of the case.

(b) Don't smoke or have matches, or any source of fire flame within 100 feet of an area in which explosives are being handled or used.

(c) Don't place explosives where they may be exposed to flame, excessive heat, spark or impact.

(d) Do replace or close the cover of explosives' cases or packages after using.

(e) Don't carry explosives in the pocket of your clothing or elsewhere on your person.

(f) Don't insert anything but a fuse in the open end of blasting caps.

(g) Don't strike, tamper with, or attempt to remove or investigate the contents of a blasting cap or an electric blasting caps, or try to pull the wires out of an electric blasting cap.

(h) Don't allow children or unauthorized or unnecessary persons to be present where explosives are being handled or used.

(i) Don't handle, use or be near explosive during the approach or progress of an electric storm. All persons should retire to a place of safety.

(j) Don't use explosives or necessary equipment that are obviously deteriorated or damaged.

(k) Don't attempt to reclaim or use fuse, blasting caps, electric blasting caps, or any explosives that have been water soaked even if they have been dried out.

5. When Drilling and Loading:

(a) Do carefully examine the surface or face before drilling to determine the possible presence of unfired explosives. Never drill into explosives.

(b) Do check the bare hole carefully with wooden tamping pole or a measuring tape to determine its condition before loading.

(c) Don't stock surplus explosives near working areas during loading.

(d) Do cut from the spool the line of detonating fuse extending into bare hold before loading the remainder of the charge.

(e) Don't load a bare hole with explosives after springing (enlarging the hole with explosive) or upon completion of drilling without making certain that it is cold and that it does not contain any hot metal, or burning smoldering material.

(f) Don't spring a bare hole loaded with explosives.

(g) Don't force explosives into a bare hole or through an obstruction in a bare hole. Any such practice is particularly hazardous in dry holes and when the charge is primed.

(h) Don't slit, drop, deform or abuse the primer. Don't drop a large size heavy cartridge directly on the primer.

(i) Do avoid placing any necessary part of the body over the bare hole during loading.

(j) Don't load any bare holes near electric power line unless the firing line, including the electric blasting cap wire, is so short that it cannot reach the power wires.

(k) Don't connect blasting caps or electric blasting caps to detonating fuse except by methods recommended by the manufacturer.

LOADING OF EXPLOSIVES IN BLAST HOLES

All drill holes shall be sufficiently large to admit freely the insertion of the cartridges of explosives.

Tamping shall be done only with wooden rods without exposed metal parts, but non-sparking metal connectors may be used for jointed poles. Plastic tamping poles may be used, provided they have been approved by the authority having jurisdiction. Violent tamping shall be avoided. Permit cartridges shall not be tamped.

When loading blasting agents pneumatically over electric blasting caps, semiconductive delivery hose shall be used and equipment shall be bonded and grounded. No holes shall be loaded except those to be fired in the next round of blasting. After loading, all remaining explosives shall be immediately returned to an authorized magazine.

Drilling shall not be started until all remaining butts of old holes are examined with a wooden stick for unexploded charges, and if any are found, they shall be refired before work proceeds.

No person shall be allowed to deepen drill holes which have contained explosives.

After loading for a blast is completed, all excess blasting caps or electric blasting caps and other

explosives shall immediately be returned to their separate storage magazine.

INITIATION OF EXPLOSIVES CHARGES

Only electric blasting caps shall be used for blasting operations in congested districts, or on highways, or adjacent to highways open to traffic, except where sources of extraneous electricity make such use dangerous.

When fuse is used, the blasting cap shall be securely attached to the safety fuse with a standard ring type cap crimpes [sic]. All primes shall be assembled at least fifty feet from any magazine.

Primes shall be made up only as required for each round of blasting.

No blasting cap shall be inserted in the explosives without first making a hole in the cartridge for the cap with a wooden punch of proper size or standard crimpes [sic].

Explosives shall not be extracted from a hole that has once been charged or has misfired unless it is impossible to detonate the unexploded charge by insertion of a fresh additional primer.

If there are any misfired while using cap and fuse, all persons shall remain away from the charge for at least one hour. If electric blasting caps are used and a misfire occurs, this waiting period may be reduced to thirty minutes. Misfires shall be handled under the direction of the person in charge of the blasting and all wires shall be carefully traced and search made for unexploded charges.

Blasters, when testing circuits to charged holes, shall use only blasting galvanized meters designed for this purpose. Only the man making leading wire connections in electrical firing shall fire the shot. All connections should be made from bare hole back to the source of firing current, and the leading wires shall remain shorted and not be connected to the blasting machine or other source of current until the charge is to be fired.

WARNING REQUIRED

BEFORE A BLAST IS FIRED, A LOUD WARNING SIGNAL SHALL BE GIVEN BY THE PERSON IN CHARGE, WHO HAS MADE CERTAIN THAT ALL SURPLUS EXPLOSIVES ARE IN A SAFE PLACE, ALL PERSONS AND VEHICLES ARE AT A SAFE DISTANCE OR UNDER SUFFICIENT COVER, AND THAT AN ADEQUATE WARNING HAS BEEN GIVEN.

STORAGE AT USE SITES

Empty boxes and paper and fiber packing materials which have previously contained high explosives shall not be used again for any purpose, but shall be destroyed by burning at an approve isolated location out of doors, and no person shall be near than 100 feet after the burning has started.

Containers of explosives shall not be opened in any Magazine or within 50 feet of any Magazine. In opening keys or wooden cases, no sparking metal tools shall be used. Wooden wedges and either wood, fiber or rubber mallets shall be used. Non-sparking metallic slitters may be used for opening fiber board cases.

NO EXPLOSIVES SHALL BE ABANDONED.

USE OF EXPLOSIVES AND BLASTING AGENT

The handling of explosives may be performed by the person holding a permit to use explosives or by other employees under his direct supervision provided that such employees are at least 21 years of age.

While explosives are being handled or used, smoking shall not be permitted and no one near the explosives shall possess matches, open light or other fire or flame. No person shall handle explosives while under the influence of intoxicating liquors, narcotics, or other dangerous drugs.

Original containers or class II magazines shall be used for taking detonators and other explosives from storage magazine to the blasting area.

When blasting is done in congested areas or in close proximity to a structure, railway, or highway or any other installation that may be damaged, the blast shall be covered before firing with a mat constructed so that it is capable of preventing fragments from being thrown.

Persons authorized to prepare explosive charges or conduct blasting operations shall use every reasonable precaution, including but not limited to warning signals, flags, barricades, or woven wire mats to insure the safety of the general public and workmen.

Blasting operations, except by special permission of the authority having jurisdiction, shall be conducted during daylight hours.

Whenever blasting is being conducted in the vicinity of gas, electric, water, fire alarm, telephone, telegraph and steam utilities, the blaster shall notify the appropriate representatives of such utilities at least 24 hours in advance of blasting, specifying the location and intended time of such blasting. Verbal notice shall be confirmed with written notice. In an emergency this time limit may be waived by the local authority issuing the original permit. Due precautions shall be taken to prevent accidental discharges of electric blasting caps from current induced by radar, radio transmitters, lightning, adjacent power lines, dust storms, or other source of extraneous electricity. These precautions shall include:

1. THE SUSPENSION OF ALL BLASTING OPERATIONS AND REMOVAL OF PERSONS FROM THE BLASTING AREA DURING THE APPROACH AND PROGRESS OF AN ELECTRIC STORM.
2. THE POSTING OF SIGNS WARNING AGAINST THE USE OF MOBILE RADIO TRANSMITTERS ON ALL ROADS WITHIN 350 FEET OF THE BLASTING OPERATIONS.
3. COMPLIANCE WITH THE LATEST RECOMMENDATIONS OF THE INSTITUTE OF MAKERS OF EXPLOSIVES WITH REGARD TO BLASTING IN THE VICINITY OF RADIO TRANSMITTERS OR POWER LINES.

INDUSTRIAL SAFETY PROCEDURE NO. 9-123

CONSTRUCTION

A. Engineering

The direct responsibility to build maximum safety into new facilities, and review of all construction plans and designs to avoid creation of hazards, is placed with Engineering and Construction Services. Advice on the correction of existing physical hazards and consultation with the design section, and assistance in the review of construction plans to reveal any accident and health hazards in the planning stages, will be the responsibilities of the Director of Public Works and the District Director of Public Works.

B. Construction and Alteration of Building

The integration of safety engineering features in the design and plan of new construction or alteration will:

1. Provide maximum safety at minimum cost for occupant, maintenance and operating personnel.
2. Insure certain results not obtainable later at any cost.
3. Eliminate changes in construction after completion. It shall be the responsibility of the Department Head concerned, who contemplates the building of any structure, to first check with the District Director of Public Works to ensure that the designs and plans incorporate the safety features that are needed.

C. Scaffolds

1. Scaffolds shall be provided for workmen engaged in work that cannot be performed safely from the ground or from solid construction, except short period work which can be performed safely from ladders.
2. The erection, alteration and removal of scaffolds shall be performed under the supervision of men experienced in scaffold work.
3. All scaffolds and their supports shall be capable of supporting the load, they are designed to carry with a safety factor of at least four times a loads.
4. Guard rails and toeboards [sic] shall be furnished on all scaffolds which are 6 feet or more in height measured from the ground of supporting areas, or which are erected over or adjacent to deep holes, excavation, mortar beds, railroad tracks, furnaces, vats, high tension electric wire, machinery, or similar sources of danger. Guardrails and toeboards [sic] shall extend the entire length of the outside of the ends of scaffolds except for necessary openings for delivery of material.
5. All scaffolds and other devices mentioned or described herein shall be maintained in safe condition.
6. Guard rails shall not be less than 36" or more than 40" in height measured from decks to the tops of rails with an intermediate rail one half the way from the deck, and with supporting uprights not more than 8' on center and both substantially constructed on 2" X 4" timber.

7. Any scaffolds damaged or weakened from any cause shall be immediately repaired and workmen shall not be allowed to use them until repairs have been completed.

8. All lumber used in the construction of scaffold shall be spruce, fir, long leaf yellow pine, Oregon pine, or wood of equal strength. Hemlock, short leaf yellow pine, or short fiber lumber shall not be used.

9. All lumber used in the construction of scaffolds, including the platform plan, shall be sound. Straight grained, free from crossgrain shakes and large, loose or dead knots [sic]. It shall also be free of dry rot, large checks, worm holes or other defects impairing its strength and durability.

10. All lumber shall be inspected before being used in the construction of scaffolds.

11. All lumber nails used in the construction of scaffold staging and support, shall be sampled size and length and used in sufficient quantities at each connection to develop the designed strength of the scaffold.

12. The pole scaffolds shall be securely and rigidly braced to prevent swaying and displacement.

13. When men are working on a scaffold with other men engaged above, the scaffold shall have an overhead covering of planking as a protection to the men working thereon.

14. Men shall not be permitted to work on a scaffold during a storm or very high wind.

15. When it is necessary for workmen to work or pass under a scaffold upon which other men are working, there shall be a screen or other protection suspended from the scaffold to catch material that may fall from above. Screens shall extend a sufficient distance beyond the edge of the scaffold to catch any material that may fall over the edge.

16. Side screens shall be provided on scaffolds erected in places adjacent to passageways or thoroughfares to guard against falling materials.

17. Scaffolds shall be kept clear of necessary tools, materials, and rubbish.

18. Shore or lean-to scaffold shall not be used.

19. All scaffolds constructed of materials other than wood construction and no scaffold shall be used for the storage of material except that being currently used and at no time shall any scaffold be overloaded.

20. All rolling scaffolds shall be provided with a suitable device to control movement of the scaffold, and all scaffolds supported independently shall be securely fastened to a structure or guyed to prevent over turning.

21. Unless otherwise specified, plans used for platforms, or scaffold shall not be less than 2 X 10-inch plank, with a minimum of two planks, laid close together.

D. Scaffold Ladders

1. Suitable ladders, secured in place, shall be provided for access to scaffold platform.

2. Ladders shall be provided to give access to above or below ground locations for short

period work that can be performed safely from a ladder.

(a) Construction - Ladders will be made of seasoned wood, free from weakening defects and splinters, or of substantial metal, free from sharp edges. Ladders with weakened, broken, or missing treads, rungs or seats, or broken side rails, shall not be used, and ladders which have developed defects shall be withdrawn from service. Ladders shall be inspected regularly, repaired immediately when in need of repair and stored properly.

(b) Rungs - Each rung or step will be sturdy enough to withstand the weight imposed upon it. Braces will be installed where necessary.

(c) Single Ladders - Non-slip bases will be provided and ladders will be lashed to a sturdy support when required to insure stability.

(d) Extension Ladders - Extension ladders will be equipped with two substantial automatic locks and a metal shackler [sic], pulley and rope. No extensions will exceed 70 feet. At least a 3-foot overlap for 38-foot extensions, a 4-foot overlap for ladders up to 45-foot and a 5-foot overlap for those above 45-foot will be allowed.

(e) Step Ladders - Step ladder treads will be level with the ground when the ladder is open. Step ladders will not be used as a substitute for ware stands.

(f) Locking Device - An automatic spreader or locking devices will be provided to lock step ladders in the open position.

(g) Fixed Ladders - Fixed ladders 20 feet or more in length which are frequently used, shall be provided with a cage guard.

(h) Metal Ladders - Metal ladders conduct electricity and will not be use for work around electrical conductors or devices.

(i) Two-Hand Work - Work on ladders which requires the use of both hands will be performed only on step or platform ladders if a more secure method of approach is not available.

(j) Slipping - Someone will be designated to hold the ladder whenever there is danger of slipping.

(k) Placement - Portable ladders shall not be used with a pitch such that the horizontal distance from the wall to the foot of the ladder, unless it is securely braced to prevent sagging or slipping.

(l) Location - A ladder will never be placed against a window pane or sash. A board will be fastened to the ladder so that it spans the window and is supported on the frame and wall. A ladder will not be placed in front of a door unless the door is locked, or otherwise guarded.

(m) Soft Ground - Ladders will not be placed on soft ground, movable objects, or slippery spots without first correcting the deficiency.

(n) Ascending-Descending - When ascending or descending, the employee will face the ladder and use both hands.

(o) Defects - Ladders with defective or missing rungs, split rails, or any structural defects will not be used.

(p) Painting Wooden Ladders - Where necessary, fixed ladders may be painted. Portable ladders will not be painted as this practice conceals defects in the ladder. It is recommended that ladders be coated with clear lacquer, linseed oil or shellac for preservation.

(q) Leaning - Ladders will not be leaned against an unsafe or unstable support such as packing crates or loose objects.

(r) Unattended - Ladders will not be left unattended for a long period of time. In areas where personnel or vehicles are working, access will be restricted by roping off the area.

(s) Carrying - The front end of a ladder being carried will be kept elevated to prevent the unexpected striking of persons. Caution will be exercised when proceeding through doorways.

E. Excavating

1. The sides of excavation, 5 feet or more in depth, shall be supported by substantial and adequate sheeting, sheet piling, bracing, shoring, etc., or the sides sloped to the angle of repose. Substantial and adequate sheeting, sheet piling, bracing, shoring, etc., shall be based upon calculations of pressures exerted by and the conditions of the materials to be retained.

2. Foundations, adjacent to where excavation is to be made below the depths of the foundation, shall be supported by shoring, bracing, or underpinning as long as the excavation shall remain open.

3. Excavated or other material shall not be stored nearer than 2 feet from the edge of the excavation.

4. Bridges or walkways with guard rails shall be provided where men or equipment must cross trenches, ditches, etc. Temporary guard rails or barricades and red lights or torches, maintained from sunset to sunup, shall be placed at all excavations which are exposed to paths, walkways, sidewalks, driveways, or thoroughfares.

5. Materials used for sheeting and sheet piling, bracing, shoring and underpinning shall be in good serviceable condition and timbers used shall be sound, free from large or loose knots, and of the required dimension. The material specifications are the minimum requirements and the spacing of material members is the maximum allowable in securing trenches against slips, cave-ins and slides. Where conditions are encountered which require materials of greater strength or closer spacing of timbers to hold the soils securely in place, the size of timbers in such areas shall be increased to compensate for the overload.

F. Trench Excavation

1. The following provision for shoring and bracing of trenches shall not apply where solid rock, hard slag, or hard shale is encountered or in which employees are not required to be or to work.

2. The sides of trenches, in material other than those listed in subparagraph 6 below, which are 5 feet or more in depth and 18 feet or more in length, shall be securely held by shoring and bracing, or sloped to the angle of repose of the material being excavated.

3. If the unit tunnel method is used, the length of earth left in place between the separate unit trenches shall not be less than one-half in depth of the trench and shall be considered as taking the place of shoring and bracing.

4. Whenever or wherever the unit tunnel method is used and where there is apparent danger of slips, or cave-ins, trenches or tunnels in which men are employed shall be shored and braced or otherwise retained as may be necessary to prevent caving.

5. Trenches over 8 feet in length and 5 feet or more in depth in hard compact material shall be braced at intervals not exceeding 8 feet, with 20-inch by 6-inch planks or heavier material placed vertically in the trench opposite each other, braced-up by 2-inch by 10-inch planks bearing against the wall at the same intervals as cross braces, struts, or trench jacks. These braces shall, if possible, extend to the bottom of the trench and be supported by horizontal cross braces or struts. Bracing and shoring of trenches shall be carried along with the excavation and must in no case be omitted, except where a mechanical digger is used, the shoring shall be placed within 6 feet to the lower end of the boom. Undercutting shall not exceed 6 inches on either side of the trench.

6. When trenches are partly saturated, filled with unstable soils or where running material is encountered, such as quicksand, loose gravel, loose shale or completely saturated material, the sides of the trenches 4 feet or more in depth shall be secured by the use of continuous vertical sheet piling and suitable braces. In trenches over 4 feet in depth, wooden sheet piling shall not be less than 2 inches in thickness.

7. Sheet piling shall be held in place by longitudinal beams at vertical intervals of 4 feet. The longitudinal beams shall in turn be supported by the cross braces or struts spaced at maximum of 4 feet. The longitudinal beams shall be in no case less in strength than that of a 4-inch beam, and when the longitudinal distance between cross braces or struts exceed 4 feet and less than 6 feet, the longitudinal beam shall not be less than a 4 by 6 inch beam.

8. Vertical braces and longitudinal beams in trenches shall be supported by horizontal cross braces or struts, screw jacks, or timber placed at right angles to both braces, cleated and rigidly screwed or wedged. The timbers or struts shall not be less in strength than the following trade size:

| <u>WIDTH OF TRENCH</u> | <u>SIZE OF CROSS BRACE</u> |
|------------------------|----------------------------|
| 1 foot to 33 feet | 4 X 4 inches |
| 3 feet to 6 feet | 4 x 6 inches |
| 6 feet to 8 feet | f [sic] x 6 inches |

9. One horizontal cross brace or strut shall be required for each 4 feet of depth or major fraction thereof.

10. In case it is desired to increase the vertical spacing between longitudinal beams or cross struts in longitudinal beams, cross struts and vertical piling shall be increased in size to compensate for the overload.

11. Additional precautions by way of shoring and bracing shall be taken to prevent slides or cave-ins when excavations or trenches are made in locations adjacent to backfilled excavations or subjected to vibration from railroad or highway traffic, the operation of machinery, or any other source.

12. Ladders, extending from the floor of trench excavation to not less than 5 feet above the top ground source, shall be placed in the trench excavation at 50-foot intervals to be used as a means of entrance and exit therefrom.

INDUSTRIAL SAFETY PROCEDURE NO. 9-124

SAFETY CODE FOR FIXED LADDERS

The American Standard Safety Code for Fixed Ladder will be followed in the design of all ladders, appurtenances and fastenings.

1. The minimum design live load shall be a single concentrated load of 200 pounds.
2. The number and position of additional concentrated live load units of 200 pounds each, as determined from anticipated usage of the ladder, shall be considered in the design.
3. The live loads imposed by persons occupying the ladder shall be considered to be concentrated at such point or points as will cause the maximum stress in the structure member being considered.
4. The weight of the ladder and attached appurtenances together with the live load shall be considered in the design of rails and fastenings.

District Industrial Safety Inspector will make periodic checks to insure that existing ladders comply with the standard.

[Trust Territory medical referral and injury report forms in appendices i through vii are not included]

END