

CHRISTIAN COUNTY WATER DISTRICT

P.O. Box 7
Hopkinsville, KY 42241-0007

Phone: 270-886-3696

Fax: 270-886-0708

Water Commissioners

Ashbel Brunson
Chairman

Steve Hunt
Secretary

J. David Johnson
Treasurer

Barbara Morris

Ronald Adams

December 29, 2005

RECEIVED

JAN 03 2006

PUBLIC SERVICE
COMMISSION

Kentucky Public Service Commission

P O Box 615

211 Sower Blvd.

Frankfort, KY. 40601

RE: Information submittal

Case No. 2006-00032

Enclosed, please find the various policies, forms, agreements, and descriptive aids utilized by our customers and our employees. To ensure that the policies, procedures, training aids, forms and requirements are made available for public review, we are submitting these items to the Commission.

1. Requirements of Customers on the Christian County Water District System
2. Contract for Water Service
3. Bill Payment Contract
4. Customer Meter Reading Agreement
5. Leak Payment Contract
6. Transfer of Account/Security Deposit
7. Employee Policy Manual
8. Employee Safety Manual and training aids

Sincerely



James Owen

General Manager

Case No. 2006-00032

FOR ENTIRE SERVICE AREA
Community, Town or City

P.S.C. KY. NO. _____

_____ SHEET NO. _____

CHRISTIAN COUNTY WATER DISTRICT
(Name of Utility)

CANCELLING P.S.C. KY. NO. _____

_____ SHEET NO. _____

RULES AND REGULATIONS

Christian County Water District has various policies, procedures, manuals, and forms which affect both its customers and its employees. To ensure that the policies, procedures, manuals, forms and requirements are available for public review, we are submitting these items to the Commission.

The following items are included under this Tariff Sheet:

1. Requirements of Customers on the Christian County Water District System
2. Contract for Water Service
3. Bill Payment Contract
4. Customer Meter Reading Agreement
5. Leak Payment Contract
6. Transfer of Account/Security Deposit
7. Employee Policy Manual
8. Employee Safety Manual with descriptive aids

DATE OF ISSUE _____
Month / Date / Year

DATE EFFECTIVE _____
Month / Date / Year

ISSUED BY _____
(Signature of Officer)

TITLE _____

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
IN CASE NO. _____ DATED _____

**REQUIREMENTS OF CUSTOMERS ON THE CHRISTIAN COUNTY WATER
DISTRICT SYSTEM**

1. A SECURITY DEPOSIT OF \$50.00 FOR WATER SERVICE IS REQUIRED. IF THE CUSTOMER HAS PAID THE BILL ON TIME, WE WILL REFUND THIS DEPOSIT WITH INTEREST UPON THE FIRST YEAR'S ANNIVERSARY. IF THE CUSTOMER HAS NOT PAID BILLS ON TIME, THE INTEREST FOR THE FIRST YEAR WILL BE APPLIED TO THE BILL. EACH ACCOUNT WILL BE EVALUATED ANUALLY.
2. A SERVICE CHARGE OF \$20.00 IS REQUIRED TO ESTABLISH SERVICE IF THE SERVICE HAS BEEN DISCONTINUED FOR ANY REASON. THIS FEE IS NON-REFUNDABLE.
3. NOTICE AND A FORWARDING ADDRESS MUST BE GIVEN TO THE DISTRICT'S OFFICE UPON MOVING FOR DISCONNECTION OF THE SERVICE.
4. THE WATER METER SERVICE BELONGS TO THE WATER DISTRICT. THE DISTRICT WILL BE RESPONSIBLE FOR MAINTENANCE OF THE WATER SERVICE. THE CUSTOMER IS RESPONSIBLE FOR HIS PERSONAL WATER LINE FROM THE METER TO THE RESIDENCE.
5. TAMPERING WITH THE METER, SERVICE, OR VALVES CONSTITUTES DISCONNECTION OF SERVICE AND IS CONSIDERED A FELONY.
6. THERE WILL BE NO OTHER CONNECTIONS ALLOWED FROM OUTSIDE WATER SOURCES. THIS IS A STATE REGULATION.
7. ONLY ONE RESIDENCE IS ALLOWED TO HOOK TO THE METER. THE CUSTOMER WILL BE CHARGED AN ADDITIONAL \$15.00 MINIMUM FOR EACH ADDITIONAL RESIDENCE/BUILDING HOOKED UP.
8. CUSTOMERS ARE REQUIRED TO **READ THEIR OWN METERS**. ALL THE NUMBERS ARE TO BE READ EXCEPT THE LAST ZERO. THIS ZERO IS PRINTED ON THE BILL.
9. BILLS ARE PAYABLE BY THE _____ OF THE MONTH. FAILURE TO RECEIVE BILL DOES NOT EXCUSE PAYMENT. A 10% PENALTY WILL BE CHARGED ON THE WATER USAGE AFTER THE DUE DATE. UPON A FIVE DAY NOTIFICATION OF DELINQUENCY, SERVICE WILL BE DISCONNECTED.
10. CUSTOMERS ARE ALLOWED **ONE LEAK ADJUSTMENT PER 12 MONTH PERIOD**. IN ORDER TO RECEIVE AN ADJUSTMENT, THE CUSTOMER MUST SUPPLY A REPAIR BILL OR RECEIPT FOR SUPPLIES. AN ADJUSTMENT WILL BE MADE AFTER THE AVERAGE BILL IS REMOVED. THE CUSTOMER PAYS 60% AND THE DISTRICT WILL ABSORB 40% OF THE LEAK.
11. UPON REQUEST, A COPY OF THE CHRISTIAN COUNTY WATER DISTRICT RULES AND REGULATIONS WILL BE GIVEN TO CUSTOMERS.

CONTRACT FOR WATER SERVICE

PLUMBING PERMIT # _____
(HOMEOWNER, PLUMBER, FARM EXEMPT)

This CONTRACT is made and entered into this Day _____ of _____, 20____ between
_____ whose address is

(Hereinafter "CUSTOMER"), and the Christian County Water District, P O Box 7, Hopkinsville, KY 42241-0007, (Hereinafter "CCWD")

WITNESSETH:

The Customer hereby agrees to connect to the CCWD'S Water System. The Tap-on fee of CCWD'S Water System is \$_____.

1. It is understood and agreed that the CCWD reserves the right to determine the size of the service connection to be used to supply water to the CUSTOMER. A _____" meter will be used unless the CUSTOMER contracts for a larger meter. **A SEPARATE METER MUST BE INSTALLED FOR EACH RESIDENCE.**
2. CUSTOMER agrees to purchase water from the CCWD and CCWD agrees to furnish water to the CUSTOMER. CUSTOMER further agrees to pay a monthly water rate based upon the amount of water used or **pay a minimum bill until said water is used,** and said rate shall be approved by the Kentucky Public Service Commission. Deposits to insure payment of monthly water bills and penalties on delinquent water accounts shall be as the CCWD may hereafter prescribe.
3. CUSTOMER rights hereunder are subject to such further rules and regulations as the CCWD may prescribe. CCWD may terminate service to any customer failing to pay a water bill when thirty (30) days past due or for violating CCWD regulations.
4. CUSTOMER understands that they are to pay their net water bills on or before the due date each month, and that a ten (10%) per cent late charge will be added for all bills not paid by that due date each month. It is further understood that late payments may not be reflected in the billing, and failure to receive bills will not avoid payment on the part of CUSTOMER. It is further agreed that all past due bills are subject to collection and trip fee charges paid in full before service is restored, in the event the service is terminated *due to failure to pay water bill within thirty (30) days past due, or for violations of CCWD regulations.* It is further understood that CUSTOMER shall be required to pay all charges incurred by CCWD, which includes a reasonable, approved reconnection fee in the event service has been terminated for lack of payment.
5. CUSTOMER further agrees to grant bargain, sell, transfer and convey unto CCWD, it's

THE CHRISTIAN COUNTY WATER DISTRICT

BILL PAYMENT CONTRACT

ACCOUNT NO. _____

DATE _____

I _____ agree to pay the CHRISTIAN COUNTY WATER DISTRICT _____ per month toward my large bill in the amount of _____. This is in addition to my regular monthly water bill. This amount along with the regular monthly bill must be paid on time.

Should I fail to pay the agreed amount plus the normal water usage bill, the CHRISTIAN COUNTY WATER DISTRICT has the right to shut off my water service.

This contract agreement must be paid in full three months from this date.

AMOUNT PAID

DATE

BALANCE

CUSTOMER METER READING AGREEMENT

DATE: _____

I, the undersigned, have paid the necessary fees needed to acquire water services from CHRISTIAN COUNTY WATER DISTRICT.

I have been instructed on how to read the water meter and I understand that it is my responsibility to read the water meter EVERY MONTH.

Should I not read the meter as required, it will be my responsibility to pay for any and all water that has been used or has run through this meter should it be read by The Christian County Water District's personnel.

Should I not use any water from this service, I understand I will still be responsible to pay the required minimum bill for this service.

Signature _____

Print name _____

THE CHRISTIAN COUNTY WATER DISTRICT

LEAK PAYMENT CONTRACT

ACCOUNT NO. _____

DATE _____

I _____ agree to pay the Christian County Water District _____ per month toward the water leak in the amount of _____. This is in addition to my regular monthly water bill. If the agreed amount along with the regular monthly bill is paid on time, the penalty levied against the account will be removed.

Should I fail to pay the agreed amount plus the normal water usage bill, the CHRISTIAN COUNTY WATER DISTRICT has the right to shut off my water service.

This contract agreement must be paid in full three months from this date.

AMOUNT PAID

DATE

BALANCE

CHRISTIAN COUNTY WATER DISTRICT

P.O. Box 7
Hopkinsville, KY 42241-0007
Phone: 270-886-3696
Fax: 270-886-0708

Water Commissioners

William Lite
Chairman

Austin Young
Secretary

J. David Johnson
Treasurer

Steve Hunt

Ashbel Brunson

TRANSFER OF ACCOUNT/SECURITY DEPOSIT

DATE _____

ACCOUNT # _____

I, _____ AGREE TO THE TRANSFER OF
MY ACCOUNT/SECURITY DEPOSIT TO THE FOLLOWING NAME _____

SIGNATURE _____

WITNESSED BY: _____

I _____ AGREE TO ACCEPT THE TRANSFER OF
ACCOUNT # _____ INTO MY NAME.

DATE _____

SIGNATURE _____

WITNESS BY _____

"Hard of Hearing, Speech Impaired, or Deaf users, call the Kentucky Relay Service at
(800) 648-6056. Ask the Communications Assistant to call us at 270/886-3696."

**CHRISTIAN COUNTY WATER
DISTRICT**

**EMPLOYEE POLICY
MANUAL**

**(REVISED)
JANUARY 1, 2003**

**CHRISTIAN COUNTY WATER
DISTRICT**

**EMPLOYEE POLICY
MANUAL**

JANUARY 1. 2002

CHRISTIAN COUNTY WATER
DISTRICT

EMPLOYEE POLICY
MANUAL

EMPLOYEE POLICIES

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Employee Policies

Employment and Compensation

Christian County Water District (CCWD) has the right to employ both full time and temporary personnel, all of whom are terminable at will. "Terminable at will" means that CCWD or the employee may at any time terminate the employer/employee relationship with or without cause. This handbook is only a guideline and is not to be construed as a contract or guarantee of employment. The policies and benefit plans set forth in this handbook are subject to change, without notice, at the sole discretion of CCWD.

A full time employee whether on a salary or paid hourly, is eligible for CCWD benefits after he/she is hired and reports to work. Temporary employees are not eligible for company provided benefits, but temporary employees may be entitled to holiday pay. (see sick/vacation/holiday sections of this handbook.)

Hourly employees are paid for the total number of hours worked in a given week. The normal workday starts at 8:00 AM and ends at 4:30 PM Monday through Friday. Each employee may receive up to one hour per day for lunch (dependent upon the workload and condition and location of employees' task at lunchtime). No employee shall be denied the availability or obtaining at least a thirty-minute lunch break. Should circumstances prevent an employee from obtaining a thirty-minute lunch break, that employee would be entitled to paid compensation for that time worked or compensation time, which can be taken for one hour for each unpaid hour of work. This compensation time can be accumulated and used as needed by the employee with his/her supervisor's permission.

Performance Review

Wage and salary adjustments may be made from time to time, at the sole discretion of the management, on the basis of merit, accomplishment, and/or length of service. Employees will receive annual evaluations each January; however reviews on a case by case basis can be done more often if changes in classification occur. An example of this would be when an employee receives additional training or certification; therefore making this employee a more valuable employee to the employer. Wages and salaries shall be reviewed at least once a year but may or may not be adjusted at that time.

Time Sheet / Pay Periods

The payroll period is a two-week period, beginning on Saturday morning (12:01 a.m.) and ending on Friday (12:00 midnight).

Each Employee is responsible to maintain an accurate record of time worked as well as any absences. It is the employee's responsibility to complete the time sheet and submit it to the supervisor for approval.

Payroll Checks

Payroll checks are distributed on the Wednesday following the pay period ending date

CCWD is required by law to deduct certain deductions from your paychecks. You may request voluntary deductions, in writing, to be withheld from your paychecks. The ability for management to do this will be reviewed on a case by case basis. All requests will be considered, but if the payroll program does not have the capacity or the ability to do so, CCWD reserves the right to refuse the request.

The manager may, if requested by an employee, allow an employee to receive his/her payroll check earlier than the normal distribution day. An employee would be allowed to receive his/her check early under the following conditions: 1) where an employee will be on vacation on that day and has made arrangements in advance for planned leave, or 2) due to a financial hardship where the delay would worsen that hardship. Special circumstances only apply if the checks have been processed and all appropriate authorities are present to sign the checks. The CCWD reserves the right to refuse any or all requests.

Attendance

Regular attendance and punctuality are imperative. If you must be late or absent from work, call your supervisor at least one hour before your scheduled work time to explain why you will be absent and to discuss the probable time of your return to work. If you are off more than two days, you may be required to provide a doctor's statement or supporting documentation.

All employees are expected to report to work daily. Should road conditions prevent you from arriving to work on time or missing a day's work, you will be expected to make the missed time up or use a vacation day for the time missed. An employee may take that time without pay with the approval of his/her supervisor.

Failure to comply with these requirements may result in disciplinary action.

Employee Complaints

Employees should discuss any complaints with their immediate supervisor. Should the problem not be resolved in discussions with the supervisor, you should submit a written

complaint to your supervisor. The supervisor should then review the complaint and provide you with a written response.

If the employee and the immediate supervisor are not able to resolve this complaint, the complaint shall be taken to the District's General Manager by the supervisor. He/She will then have the responsibility to resolve the issue.

The General Manager, at his/her discretion, may request guidance from the District Board if it is felt that the matter warrants their intervention. The Board should be given prior notice to the need of a personnel meeting so that they can research and familiarize themselves with the background data of the complaint. The complaint to be reviewed by the Board must be in writing and must have been reviewed by the General Manager. The complaint will then be taken to the Board for discussion in a personnel meeting. The Board members have the right to review the written complaint and, if the board feels that no further action is warranted, let the decision stand.

Sexual Harassment

It is CCWD's policy that all employees are responsible for assuring that the workplace is free from sexual harassment. Any employee who has a complaint of sexual harassment at work by anyone- including supervisors, co-workers, or visitors-must immediately bring the problem to the attention of his or her supervisor or the General Manager.

All information reported will be held in the strictest confidence and will be disclosed only as necessary to investigate and resolve the matter. Any person who has been found, after investigation, to have sexually harassed an employee will be subject to appropriate disciplinary action depending upon the circumstances.

Any retaliatory action of any kind taken by a person as a result of any employee's having made a report of sexual harassment is prohibited and shall be regarded as a separate and distinct cause for complaint.

Equal Employment Opportunity

CCWD is committed to providing Equal Employment Opportunity for all applicants and employees without regard to race, color, gender, religion, age, ancestry, national origin, marital status, or handicap. It is the intent of CCWD to comply with the requirements and spirit of the law in the implementation of all facets of equal opportunity and affirmative action.

If you have a problem related to equal employment opportunity, you must immediately report the problem to your supervisor or to the General Manager.

Drug-Free Workplace Policy

CCWD and its subsidiaries are committed to insuring that its employees are provided a workplace free from the harmful effects of drug and alcohol abuse. The following is our policy regarding the work-related effects of drug use and unlawful possession of controlled substances at CCWD's facilities. CCWD facilities for the purpose of the policy is defined as all property owned, rented, or leased by CCWD including, without limitation, its offices, parking areas, vehicles, hotel/motel rooms or apartments.

Employees may be required to sign a separate form or affidavit to uphold CCWD's drug-free policy.

Statement of Policy:

Employees are expected and required to report to work on time and in appropriate mental and physical condition for work. It is our intent and obligation to provide a drug-free, healthful, safe, and secure work environment.

The unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance on CCWD's premises or while conducting CCWD's business off CCWD's premises is absolutely prohibited. Violations of this policy will result in disciplinary action, up to and including termination, and may have legal consequences.

CCWD recognizes drug and alcohol dependency as an illness and a major health problem. Also CCWD recognizes drug and alcohol abuse as a potential health, safety, and security problem. Employees needing help in dealing with such problems are encouraged to seek assistance. Conscientious efforts to seek such assistance will not jeopardize any employee's job and will not be noted in any personnel record.

Employees must, as a condition of employment, abide by the terms of the above policy and report any conviction under a criminal drug statute for violations occurring on or off CCWD's premises while conducting CCWD's business. A report of conviction must be made within five (5) days after the conviction. (This requirement is mandated by the Drug-Free Workplace Act of 1988.) "Conviction" means a finding of guilt or imposition of sentence, or both, by any judicial body with the responsibility to determine violations of federal, state, or local criminal drug statutes.

Drug and Alcohol Testing Assessment

Screening tests to detect the use of alcohol and illegal drugs by employees may be performed under the following circumstances:

- It is done in conjunction with a routine physical examination, either pre-employment, initial or annual, in which case affected employees shall be notified prior to the examination that it will include drug and alcohol screening.
- Immediately after the occurrence of a serious accident, including, but not limited to, those involving company vehicles.
- There is reasonable suspicion that the employee's performance and conduct on the job are being affected by drugs or alcohol
- It is required by law or regulation.
- Anytime at the discretion of the employer.

Confidentiality

CCWD will utilize its best efforts, consistent with the circumstances, to insure that drug and alcohol screening tests are conducted in a manner, which will preserve the employee's privacy and confidentiality.

Legal Drugs

Employees who are taking medication prescribed by a physician or over-the-counter drugs, which may adversely affect their ability to perform their job safely, must inform their immediate supervisor.

Drug-Free Awareness Program

This Policy is an integral part of the CCWD's Drug-Free Awareness Program. Employees will be informed about the dangers of drug abuse in the workplace and other legally required information, including the employment consequences of an employee's refusal or failure to comply with the requirements of this Policy and the Drug-Free Workplace Act.

Employee Assistance

Any employee convicted of a workplace drug violation, as earlier stated, will face disciplinary action. If CCWD allows that employee to return to work, that employee must seek rehabilitation or therapy before he/she can return. A listing of the drug/alcohol rehabilitation services and resources available will be maintained by the Human Resources Department for the use of all employees.

This rehabilitation therapy may be at the employee's own expense.

Telephone

Much of CCWD's business is transacted by telephone. The telephones are intended for customer service calls; therefore, it is necessary to limit employee personal calls to an absolute minimum. Brief personal calls (2 to 3 minutes) may be received and made when absolutely necessary; however, no long-distance personal calls may be made at all unless billed to the employee's home phone or personal telephone credit card. Any personal calls billed to the company must be reimbursed and may be deducted from paychecks if not directly reimbursed. Abuse of this policy may result in disciplinary action. Repeated abuse may result in dismissal.

Physical Property

Company Property

The employee must exercise due care in using CCWD's property and must use such property only for authorized purposes. CCWD's property that is issued to the employee is the responsibility of the employee and must be returned, upon the request of your supervisor, to the CCWD at the time of termination of employment or sooner.

Company Vehicles

CCWD vehicles are to be used exclusively for CCWD business. Because of the nature of our business and the need to occasionally transport state and federal employees, contractors, engineers, and other necessary personnel to support our organization, these cases are acceptable. Any use of a CCWD vehicle for personal use is strictly prohibited without express permission from the manager. No unauthorized occupant may accompany any employee in a CCWD vehicle without express authorization from the manager. Failure to comply with this policy may result in disciplinary action.

Visitors

Visitors are not permitted in the work areas without a supervisor's express permission.

Dress Code

Employees are required to dress appropriately for their job. Clothing should be neat, clean, tasteful, and safe. Safety equipment such as hard hats, safety glasses, steel-toed

shoes, vests, etc., may be required in certain jobs or in specified areas. Failure to use proper safety equipment may result in dismissal.

To comply with Public Service requirements, some employees, due to their job classification, may be required to wear company uniforms. If any employee is required to wear uniforms, these uniforms will be supplied by CCWD.

Confidentiality

CCWD is a service-oriented utility company. Our customers need and deserve confidentiality regarding their account information. No one other than the customer may be given information relating to the customer's account. Release of information to anyone other than the customer will require written approval from the customer. CCWD may at times have to release this information to various state and federal agencies, as well as to companies working on behalf of CCWD. The release of information under these circumstances will not be determined to have violated the customer's right to privacy.

Failure to observe this policy may result in disciplinary action.

Safety Program

All employees are responsible for implementing this policy. While this policy does not list the requirements of various federal and state laws and regulations with which we must comply, it does list the minimum safety activities required of employees.

Statement of Policy:

Purpose: To preserve the health of every employee and to prevent bodily injury to any employee during work performance.

Scope: This Safety Policy includes and covers the total organization of CCWD. The standards, rules, regulations, work practices, programs, operating methods, and procedures which are established to implement and enforce the Safety Policy, will apply equally to each and every employee.

Policy: CCWD will utilize its resources to protect its employees from health hazards and from bodily injury by:

- Compliance with appropriate federal, state, and company safety standards, rules, regulations, and programs.
- Elimination, prevention, or control of existing or potential hazards from any source.

- Planning, implementing, and maintaining approved standards for operating methods and procedures.
- Assigning employees to work alone only after they are qualified both in job skills and in safe work practices by providing a planned program for skills training and safety-on-the-job orientation to all inexperienced employees.
- Developing a Safety Team under the direction of a Safety Director which is safety conscious and makes a group effort to prevent on-the-job accidents.

Accident Policy

CCWD has a fleet of company vehicles, to be used only for company-related services. All company vehicles are insured for accidents to cover CCWD personnel and liabilities during use in the course of employment.

If you are driving or riding in a CCWD vehicle which are involved in an accident, you must call the police so that a report can be made. All employees involved in the accident must also make a written report of the accident to their supervisors. Employees may be required to respond to a formal inquiry by the Safety Director or by an Accident Review Board which may impose penalties if necessary. Penalties may range from partial or complete payment of deductible amount to termination of employment, depending upon the circumstances.

When payment of the deductible is required, up to one hundred percent (100%) of the deductible will be taken from the employee's check in an amount not less than \$25.00 per check, until the full amount has been paid.

Any employee involved in an accident who does not file an accident report within five (5) working days may be required to pay one hundred percent (100%) of the deductible amount.

Employees are required to wear seat belts at all times while riding in or driving CCWD vehicles.

An employee driving under the influence of intoxicating substances (including but not limited to alcohol or prescription medications) may be subject to immediate termination of employment even if no accident has occurred.

Benefit Program

Holidays

Christian County Water District observes the following legal holidays by closing its office:

New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day (July 4)
Labor Day
Thanksgiving Day
The Friday after Thanksgiving Day
Christmas Eve
Christmas Day

When an observed holiday falls on a Sunday, offices will be closed the following Monday. An observed holiday that falls on a Saturday will generally be observed on the preceding Friday, but an alternate arrangement may be prescribed.

Full-time employees will be given the holiday off with no deduction in pay if the employee works on the working day prior to and the working day following the holiday, or if he or she has previously arranged for an excused absence on either or both of these days.

CCWD has the sole discretion to excuse other absences which occur immediately prior to or following a holiday. For example, an employee's illness documented by a doctor's statement or bill evidencing consultation during the absence may be sufficient to avoid forfeiture of the employee's holiday pay.

Temporary employees who have been with the company at least thirty (30) days are eligible for holiday pay. Holiday pay for these employees is based on the hours the employee would have worked if the holiday had been a normal working day. For example, an employee who normally works four (4) hours a day would receive four (4) hours of holiday pay; an employee who does not normally work on Friday would not be paid for a Friday holiday.

Temporary employees must also work the time normally or actually scheduled on the working days immediately preceding and immediately following the paid holiday to be eligible for holiday pay, with the exception of a previously arranged or excused absence on either or both of those days.

Non-exempt and hourly employees who are required to work on New Year's Day, Memorial Day, Independence Day, Labor Day, or Thanksgiving Day will be compensated

at 1.5 times their regular pay rate. They will receive two (2) times their regular pay if required to work on Christmas Day. Exempt employees will not normally be paid for time worked on an observed holiday; however, another day may be designated as a holiday substitute.

Vacations

Only full-time employees receive vacation time. No employee is eligible for vacation until he or she has completed at least six (6) months of continuous service. A full-time employee must be employed the last working day of the month in order to earn vacation allowance for that month.

A full-time employee will earn vacation time at the following levels:

- one (1) year of service = five (5) days, or forty (40) hours
- two (2) years of service = ten (10) days, or eighty (80) hours
- ten (10) years of service = fifteen (15) days, or one hundred twenty (120) hours

Vacation leave must be requested and approved by your supervisor in advance. Any request for a vacation of more than five (5) consecutive working days will also require the approval of the General Manager. You must submit requests for changes in previously approved vacation schedules to your supervisor for approval as soon as possible.

A paid holiday occurring during an employee's vacation will be counted as such, giving the employee an additional day of vacation to be taken at that time or at some later date, as scheduled. Illness occurring during an employee's scheduled vacation does not convert the absence to sick leave.

Every effort will be made to allow you to take your vacation as requested. However, in order to maintain efficient operations, your specific request may be denied or modified. In the event of conflict, preference as to the dates of vacation will be given to those employees with the most seniority or the employee who requested that time slot the earliest with his/her immediate supervisor. Vacation days will be charged in no less than: a) one-half (1/2) day for salaried employees; and b) four (4) hours for hourly employees. Pay is based upon your regular base pay for an eight (8) hour day, or equivalent, without regard to overtime or any special forms of compensation such as incentives, bonuses or shift differentials.

Up to and not to exceed eight (8) days or a total of sixty-four (64) hours of vacation leave time may be accumulated and carried over from year to year. All other vacation time should be taken in the year it was accumulated. Cash payment in lieu of vacation days will not be granted. (At the management's discretion if due to unforeseeable circumstances or for the convenience of CCWD, an employee may be allowed to carry over some days to be used within the next three (3) months of the new year.) (Revised 12-5-02)

In the event that an eligible employee requests a leave under the Family and Medical Leave provisions by reason of any qualifying event thereunder and such leave is granted, vacation pay shall qualify as paid leave under the Family and Medical Leave and shall be counted against the employee's twelve (12) weeks entitlement thereto.

Compensatory Time

Due to the nature of our business and the need to respond to emergency situations, hourly employees may be required to work or choose to work during his/her lunch hour to facilitate the needs of our customer(s). When these situation do occur, the employee may (a) take his/her lunch break at the earliest convenience or (b) notify his/her supervisor and use this time as compensatory time at a later date. Salaried employees, such as supervisors, who do not have access to overtime, may accumulate compensatory time and use that time as their work schedule permits.

This leave must be scheduled in hourly increments.

Leaves of Absence

Sick Leave

Only full-time employees are entitled to sick leave and no employees other than managers or department heads are eligible for paid sick leave before completing six (6) months of continuous service. All eligible employees will be credited with sick leave from the hire date. Sick leave will be charged in no less than two (2) hour increments. Pay is based upon your regular base pay for an eight (8) hour day, or equivalent, without regard to overtime or any special forms of compensation such as incentives, bonuses or shift differentials. At the company's option, an employee may be required to furnish satisfactory medical evidence of the illness in order to receive sick leave for that day.

An eligible employee is entitled to receive up to twelve (12) days of paid sick leave per calendar year. No more than one hundred twenty (120) days of sick leave may be carried forward from one calendar year to the next. In the event that an eligible employee requests a leave of absence under the Family and Medical Leave provisions by reason of such employee's serious medical condition and such leave is granted, all accrued but not taken sick leave shall qualify as paid leave under said Family and Medical leave and shall be counted against the employee's twelve (12) weeks entitlement thereto after the vacation pay is counted against said entitlement. As provided in this paragraph, accumulated sick leave will not be paid out upon termination of employment and may not be used for any other kind of absence.

Upon retirement or separation with twenty (20) years of service or more, sick leave will be paid in full up to one hundred twenty (120) days. Anyone with less than twenty (20) years of service will not receive their remaining sick leave when leaving the company.

As previously stated in this policy, if you are unable to be at work, you must notify your immediate supervisor at least one hour before the scheduled work time. In the absence of circumstances beyond your control, failure to so notify may result in loss of sick leave pay for that day.

Family and Medical Leave

All employees who have worked for the CCWD for at least twelve (12) months and at least 1,250 hours during the prior twelve (12) months may be eligible to take up to twelve (12) weeks of unpaid leave (FMLA leave) for one or more of the following reasons:

- Because of the birth of a son or daughter of the employee and in order to care for such son or daughter;
- Because of the placement of a son or daughter with employee for adoption or foster care;
- Person has a serious medical condition; for purposes hereof, such person(s) hereinafter may be referred to as family member(s).
- Because of a serious health condition that renders the employee unable to perform the functions of the employee's position.

Any FMLA leave taken by an employee during the preceding twelve (12) month period will be used to determine the amount of available leave pursuant to applicable federal law. For example, if an employee used four weeks of leave beginning February 1, 1999, four weeks beginning June 1, 1999, and four weeks beginning November 1, 1999, the employee would not be entitled to any additional leave until February 1, 2000. On February 1, 2000 such employee would be entitled to four weeks of leave and on June 1, the employee would be entitled to an additional four weeks, etc.

The right to FMLA leave for the birth or placement and care of a son or daughter into an employee's family may be taken only within the twelve (12) month period after the date of the birth or placement. In the case of unpaid leave for the birth or placement of a son or daughter, intermittent leave or working a reduced number of hours is not permitted unless agreed to by the company and the employee. If both spouses are employed by the company, the combined leave shall not exceed twelve (12) weeks.

For purposes of this policy, a serious health condition means an illness, injury, impairment, or physical or mental condition that involves:

- Any period of incapacity or treatment in connection with or consequent to inpatient care in the hospital, hospice, or residential medical care facility;
- Any period of incapacity requiring absence from work or other regular daily activities for more than three (3) calendar days that also involves continuous treatment by or under the supervision of a healthcare provider; or
- Continuous treatment by or under the supervision of a healthcare provider for a chronic long-term health condition that is incurable or so serious that if not treated would result in a period of incapacity of more than three (3) calendar days.

For purposes of this policy, the term "healthcare provider" means:

- A doctor of medicine or osteopathy who is authorized to practice medicine or surgery (as appropriate) by the State in which the doctor practices.
- Any other person determined by the Secretary of Labor to be capable of providing health care services, specifically being: (a) podiatrists, dentists, clinical psychologists, optometrists, and chiropractors (limited to treatment consisting of manual manipulation of the spine to correct a subluxation as demonstrated by x-ray to exist) authorized to practice in the State and performing within the scope of their practice as defined under State law; (b) nurse practitioners and nurse-midwives who are authorized to practice under State law and who are performing within the scope of their practice as defined by State law; and (c) Christian Science practitioners listed with the First Church of Christ, Scientist in Boston, Massachusetts. Where an employee or qualified family member is receiving treatment from a Christian Scientist practitioner, an employee may not object to the company's exercise of its option to require the employee or qualified family member to submit to examination (but not treatment) to obtain a second or third certification from a healthcare provider other than a Christian Science practitioner.
- In the case of leave for serious health conditions, the leave may be taken intermittently or on a reduced hours basis only if such leave is medically necessary. When an employee requests intermittent leave or leave on a reduced hours basis due to family member's or the employee's own serious health condition, the company has the option, in its sole discretion, to require the employee to transfer to a temporary alternative job for which the employee is qualified and which better accommodates the intermittent leave or reduced hours basis leave than the employee's regular job.
- Employees are required to use their available vacation time during the twelve (12) week FMLA leave taken by reasons of any qualifying event and, in addition, to use their available sick leave when FMLA leave is taken because the employee's serious health condition is the qualifying event. That portion of the FMLA leave

which is vacation time/sick leave will be with pay in accordance with the company's policies regarding vacation and sick leave.

- When the necessity of leave is foreseeable due to the expected birth or placement of a son or daughter, the employee must provide the company with at least thirty (30) days of notice of the employee's intention to take leave. If the date of birth or placement requires the employee's leave to begin in less than thirty (30) days from the date of notice, the employee must provide such notice as soon as practicable. When the necessity for leave is due to a family member's or employee's own serious health condition and is foreseeable based upon planned medical treatment, the employee must:
 - Give at least thirty (30) days notice, or as soon as practical if treatment starts in less than thirty (30) days; and make a reasonable effort to schedule the treatment so as not to unduly disrupt the company's operation, subject to the approval of the healthcare provider.

Where the need for leave is unforeseeable, the employee must give notice as soon as practicable. Any leave request based on a family member's or employee's own serious health condition must be supported by certification from a healthcare provider. The employee must provide a copy of the certification to the Human Resources Department within fifteen (15) calendar days of notice. The required certification must contain:

- The date the serious health condition began;
- The appropriate medical facts regarding the condition;

If the leave is based on the care of a family member, a statement that the employee needs to provide the care and an estimate of time that such need will continue.

In the case of intermittent leave or leave on a reduced hours basis for planned medical treatment, the date the treatment is expected to be given and the duration of the treatment.

At its discretion and at its expense, the CCWD may require a second healthcare provider opinion. If the two certification (opinions) differ, CCWD, at its expense, may require the opinion of a third healthcare provider, approved by the company and the employee. The third opinion will be binding.

During FMLA, CCWD will continue to pay its portion of the health insurance premiums and if the employee shares in any portion of these premiums, such as for family coverage, the employee must continue to pay his/her share of the premium. If the employee fails to pay said share of the premium on or before the tenth (10th) day of each month, said failure may result in loss of that type of coverage for which the employee was responsible. If the employee does not return to work after expiration of FMLA, the employee will be required to reimburse CCWD for payment of health insurance premiums paid by CCWD

during the leave unless the employee does not return because of the presence of a serious health condition which prevents the employee from performing the functions of his/her job or due to circumstances beyond the employee's control.

During FMLA leave, the employee shall not accrue employment benefits such as additional vacation pay, sick leave, pension, etc. Employment benefits accrued by the employee prior to the date on which FMLA leave begins will not be lost.

An employee on FMLA leave must report bi-weekly to his/her supervisor of his/her status and of the employee's intention to return to work, as well as monthly recertification of the medical condition. An employee taking leave due to his/her own serious medical condition is required to obtain certification from a healthcare provider that the employee is able to resume work prior to the return from any FMLA leave.

An employee who returns to work from FMLA leave within or on the business day following the expiration of the twelve (12) weeks is entitled to be restored to his/her job or an equivalent position without loss of benefits or pay level.

Any questions not answered herein should be directed to the manager of CCWD.

Jury Duty

In order to protect your earnings while serving jury duty during your regularly scheduled work day, CCWD will pay your regular daily compensation. However, while not actually serving jury duty, you are expected to report to work as usual. Should you be released from jury service any normal workday prior to 3:00 PM, you are to report to work to complete your normal work shift or forfeit your right to be compensated for jury duty.

The rate of pay will be regular straight time. No jury pay will be paid for days when the employee is not scheduled to work.

Upon notification to appear for jury duty, you should advise your supervisor so that plans may be made for your absence.

An employee must supply verification to his/her supervisor of the days he/she actually was summoned to appear and that he/she did comply with that summons. He/She will be required to turn in the time they were required to stay.

Funeral Leave

In the event of a death in the employee's or spouse's immediate family (spouse, parent, child, grandparent, brother, sister, aunt, uncle), the employee will be compensated for the time deemed necessary to be away from his job, up to three (3) days.

All funeral leave must be approved by the immediate supervisor.

The rate of pay will be the regular straight-time rate. No funeral pay will be granted for days when the employee is not scheduled to work.

Military Leave for Reserve Training

Leaves will be granted in accordance with the provisions of the Universal Military Training and Service Act, without pay. An employee may use accrued vacation time for reserve training with the approval of the immediate supervisor.

Personal Leaves of Absences (without pay)

They will be granted to employees on a case by case basis as approved by the Board of Commissioners.

Personal Leaves of Absences (with pay)

CCWD provides sixteen (16) hours, two (2) days, of personal leave compensation for all full time employees per each calendar year. These can be taken in hourly increments for any type of personal business an employee may desire to conduct. Examples are doctor visits, banking business, loans, car purchases, etc. These paid absences do require the approval of your supervisor and are not transferable nor do they accumulate. An employee will not be compensated or paid for personal leave if separation from employment occurs.

Worker Compensation Coverage

If you sustain a compensable injury in an accident arising out of and in the scope of your employment, you may be eligible to receive benefits under Workers' Compensation. The cost of this coverage is supported entirely by the company. Workers' Compensation funds will pay for medical, hospital, and surgical expenses.

If you are injured on the job, you should report it immediately to your supervisor (within 24 hours) so that medical attention can be provided and so that you receive the benefits to which you are entitled under Workers' Compensation laws. An "Employer's First Report of Injury and Illness" must be completed by the injured employee's supervisor and forwarded to the Workman's Compensation Insurance for our company within twenty-four (24) hours of notification by the employee. All medical bills for job-related injuries

should be forwarded to the General Manager for submittal to the Workers' Compensation carrier.

Tuition Reimbursement

For those who are interested, CCWD offers a plan for its employees to continue their education. In order to take advantage of this opportunity, the interested employee must put his or her request in writing to the CCWD Board of Commissioners. The request should be detailed giving all pertinent information including course or courses, and how it will relate to the employee's work.

Medical, Life, and Accidental Death & Dismemberment Insurance Plans

Group Insurance coverage for Medical, Life, and Accidental Death & Dismemberment is provided to all full time employees through the current insurance company. The following is a brief interpretation of these plans. For full explanations please refer to the current insurance booklet. You, as an employee will be notified of these changes and will be supplied with a new coverage booklet, when they are made available to CCWD.

Eligibility: All full-time employees are eligible to participate in the Health Group Insurance program after completing thirty (30) days of continuous, full-time service. Eligible employees who elect to enter the plan should apply for enrollment immediately upon attaining full-time employee status. No medical examination is required if you enroll within thirty (30) days of the date of full-time status. If you apply at a later day, you must submit satisfactory evidence of good health for yourself and for each of you dependents before coverage can be effective.

You can refuse medical coverage for you and your dependents and still elect the life and accidental death & dismemberment coverage. However, you cannot refuse the life and accidental death and dismemberment coverage and have medical coverage.

All group insurance is automatically canceled at the beginning of the personal leave of absence. The employee may continue the group health coverage at his or her expense under the provisions of COBRA for a maximum of eighteen (18) months. Group health continuation forms will be mailed to the employee by the Human Resources Department.

Medical

Cost: CCWD pays one hundred percent (100%) of the premium costs for the full time employee's coverage. Coverage for dependents (the employee's spouse; unmarried

children age 19 or under; children age 24 or under if they are unmarried, attending school, and solely supported by the employee; and/or unmarried children of any age if incapable of self-support due to mental retardation or physical handicap which began prior to reaching the limiting age) is available with the cost of this dependent coverage borne 100% by the employee through payroll deductions. This coverage is provided to all full-time employees who request coverage and who are accepted by our insurance carrier. An application form must be completed and submitted at the beginning of each new enrollment period within thirty (30) days to obtain benefit coverage. The failure to do this will hurt an employee's availability to this program.

Basic Provisions: See your Group Plan Booklet provided by our insurance carrier.

Precertification: See your Group Plan Booklet provided by our insurance carrier.

Claims Procedure: See your Group Plan Booklet provided by our insurance carrier.

Dental

Dental Insurance is provided by CCWD. For a full explanation of the benefits please refer to the plan booklet for the current carrier CCWD is using.

Eligibility: All full-time employees are eligible to participate in the Dental Group Plan Insurance program after completing thirty (30) days of continuous, full-time service. Eligible employees who elect to enter the plan should apply for enrollment immediately upon attaining full-time employee status. All employees must meet the precertification requirement of the current company. Any employee can refuse dental coverage for him/her and dependants. This should be done in writing and forwarded to our Human Resources Department.

Cost: CCWD pays one hundred percent (100%) of the premium costs for the employee's coverage. Coverage for dependents (the employee's spouse; unmarried children age 19 or under; children age 24 or under if they are unmarried, attending school, and solely supported by the employee; and/or unmarried children of any age if incapable of self-support due to mental retardation or physical handicap which began prior to reaching the limiting age, is available with the cost of this dependent coverage borne by the employee through payroll deduction. This coverage is provided to all full-time employees who request coverage, and an application form must be completed and submitted at the beginning of each new enrollment period with thirty (30) days to obtain benefit coverage. Failure to do this will drastically curtail an employee's availability to this program.

Basic Provisions: See your group plan booklet provided by our dental insurance carrier.

Our dental insurance carrier may change periodically. When a change occurs in our carrier, each eligible employee will receive a new plan booklet with information concerning coverage, deductible amount, and claim filing procedures.

Life

Covered under the Medical, Life, and Accidental Death & Dismemberment Insurance plans.

Retirement Plan

CCWD participates in the Kentucky Retirement System. This is a mandatory program for all full-time permanent employees. Only permanent full-time employees are eligible for this benefit program.

CERS, is a component unit of the Commonwealth of Kentucky with a cost-sharing multiple employer defined benefit plan. CERS provides retirement and disability benefits, annual cost-of-living adjustments, and death benefits to plan members and beneficiaries. Under the provisions of the KRS Section 61.645, the Board of Trustees of Kentucky Retirement Systems (KERS) administers the CERS. The CERS issues a publicly available financial report that includes financial statement and required supplementary information. CERS' report may be obtained by writing to Kentucky Retirement Systems, Perimeter Park West, 1260 Louisville Road, Frankfort, KY 40601-6124 or by calling (502) 564-5656.

Funding Policy: CERS plan members are required to contribute 5.0% of their covered salary. The District is required to contribute to the CERS. The contribution rate is actuarially determined. The rate for January 1 to June 30, 1999 was 8.22% of annual covered payroll. The rate for July 1, 1999 through December 31, 1999 was 7.28%. The contribution requirements of the plan members, the District and Commonwealth of Kentucky are established and may be amended by the Plan's Board of Trustees.

401 K Retirement Plan

This Plan is offered to all full time employees on a voluntary participation basis. It is one hundred percent (100%) employee funded and is offered through the Kentucky deferred compensation program. The program now allows part time employees to participate. Upon request from the employee, the Kentucky Deferred Compensation Program will be contacted by CCWD to confirm that the employee fulfills the criteria for enrollment. Enrolled information can be obtained at your request.

GLOSSARY

CCWD – Christian County Water District

FMLA – Family and Medical Leave

CERS – Commonwealth Employees Retirement System

KERS – Kentucky Employees Retirement System

It is also the responsibility of each employee to familiarize themselves with the contents of the Drug-Free Workplace Act of 1988 as adopted by the Christian County Water District. This is a mandatory requirement for employment with the Christian County Water District. The policies provided in this act shall be strictly adhered to and failure to comply with this policy can lead to disciplinary action and/or termination of employment. The Drug-Free Workplace Act of 1988 is listed on the following pages and should be reviewed in its entirety.

CHRISTIAN COUNTY WATER DISTRICT

DRUG-FREE WORKPLACE ACT OF 1988

POLICY STATEMENT

It shall be the policy of the Christian County Water District that its workplace shall be drug-free in compliance with the Drug-Free Workplace Act of 1988 (PL 100-690, Title V, Subtitle D), including any future amendments. This publication provides details of this policy, a statement on dangers of drugs in the workplace, sources of information and assistance and is the basis of a form each employee is required to sign assuring compliance. Drugs for the purpose of this document include all controlled substances as described in paragraph two.

It is the policy of the Christian County Water District that no employee shall engage in unlawful manufacture, distribution, dispensing, possession or use of a controlled substance in the workplace of the Christian County Water District.

The purpose of this policy is to avoid the dangers of drugs in the workplace as described further in this publication. Another purpose is to advise employees of available sources of counseling, rehabilitation and employee assistance.

Each employee is notified hereby that they shall notify the Executive Director within five (5) days of such employees criminal drug statue conviction for a violation in the workplace. Within thirty (30) days, the Christian County Water District must take appropriate action.

Any employee violating the terms of this policy statement is subject to immediate dismissal.

Employees found to be abusing drugs, but not convicted of any drug statute violations, shall be subject to appropriate personnel action up to and including termination or be required to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes.

Abuse shall be defined as the use of any illegal controlled substance as defined in Kentucky Statutes or in the United States code and in addition shall be defined to include the use of controlled substances that are legally prescribed in an unprescribed manner. In other words, the use of prescribed medications in a manner not prescribed by the treating physiцианн or psychiatrist.

DRUG FREE WORKPLACE: BACKGROUND AND RATIONALE

"The war on drugs cannot be won alone by soldiers in the jungles of South America, or police officers in the alleys of our cities, or lab technicians in the health departments or our businesses. Skirmishes can be fought there, but the war must be won in the conscience, the attitude, the character of Americans as a people. So long as we tolerate drugs, think they are sophisticated or mildly risqué, we will never rid ourselves of this national albatross."--Lois Haight Herrington, Chairman, The White House Conference for a Drug Free America. Final Report, 1988.

DRUG FREE WORKPLACE REQUIREMENTS

Drugs threaten to destroy the very fabric of the United States. America is at war--and the war may be a hopeless cause without immediate and effective action now. Our employees shall be advised of the following mandated legal requirements upon the agency and its employees pursuant to the Drug-Free Workplace Act of 1988. The Law (and the agency) requires:

- * Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace...;
- * Establishing a drug-free awareness program...;
- * Making it a requirement that each employee engaged in the performance of a federal grant award be given a copy of the agency's drug-free workplace statement;
- * Notifying the employee that he or she must abide by the terms of the agency's drug-free workplace policy and notify the employer of his or her drug statute conviction for violations occurring in the workplace no later than five (5) days after occurrence;
- * Notifying the federal agency within ten (10) days after receiving any notice of a funded employee's actual conviction of a drug statute offense; and
- * Certain actions, such as personnel action, up to and including termination, or voluntary participation in a drug rehabilitation program, within thirty (30) days with respect to employees so convicted.

ANNUAL CERTIFICATION REQUIREMENT

Staff must individually certify each year that they are aware of the requirements of and that they are in compliance with the provisions of the Drug-Free Workplace Act of 1988.

REPORTING CERTAIN PRESCRIPTION DRUGS

Any employee taking medications on the controlled substances list on order of their physician must report such prescribed use of these medications to the Christian County Water District prior to bringing such medications on premises.

REPORTING REQUIREMENT

Employees must report any incidence of drug abuse, including alcohol at Christian County Water District offices or facilities, whether involving employees, customers or the public, to:

James Owen
Christian County Water District
1960 Dawson Springs Road
Hopkinsville, KY 42240

Telephone: (502) 886-3696

THIS UPDATED EMPLOYEE POLICY FOR THE CHRISTIAN
COUNTY WATER DISTRICT GOES INTO EFFECT JANUARY
1, 2002.

I _____, have received and will read and
familiarize myself with the contents of the Christian County Water
District employee manual. I agree to the terms and conditions as
set forth therein.

Signature

Date

THIS UPDATED EMPLOYEE POLICY FOR THE CHRISTIAN
COUNTY WATER DISTRICT GOES INTO EFFECT JANUARY
1, 2002.

I _____, have received and will read and
familiarize myself with the contents of the Christian County Water
District employee manual. I agree to the terms and conditions as
set forth therein.

Signature

Date

Please sign the above and return this portion to your employee.

EQUAL OPPORTUNITY EMPLOYER

Statement of Employment Opportunities

Christian County Water District is an equal opportunity employer. Christian County Water District is committed to providing Equal Employment Opportunity for all applicants and employees without regard to race, color, gender, religion, age, ancestry, national origin, marital status, or handicap.

When Can I Apply:

Christian County Water District has an open employment pool. In other words, you may apply for employment with the Christian County Water District at any time during normal business hours. Resumes are also accepted, however, an application must also be completed. Occasionally Christian County Water District may advertise in a newspaper of local circulation for an applicant pool. This type of advertisement may be ran to notify potential applicants of our utilities physical location and that we are a equal opportunity employer, or, should we not have a sufficient applicant pool for the position or positions currently available. You do not have to wait until an applicant pool advertisement is ran; you may apply at any time. All interviews and hiring would be done from this open applicant pool.

You are allowed to update your application. The process to update your application would be to complete a new application. If you wish to reference your preexisting application currently on file, you may do so.

Currently all applications are retained indefinitely. Should at some future time Christian County Water District not be afforded the space for application storage, Christian County Water District reserves the right to destroy employment applications it has determined to be four years old or older.

Christian County Water District has the right to employ both full time and temporary personnel, all of whom are terminable at will. "Terminable at will" means that Christian County Water District or the employee may at any time terminate the employer/employee relationship with or without cause.

All completed applications should be returned to Christian County Water District, P O Box 7, 1960 Dawson Springs Road, Hopkinsville, KY. 42241

CHRISTIAN COUNTY WATER DISTRICT

SAFETY PROGRAM

.... This safety program is a compendium of data taken from Safe Practice for Water Utilities of the American Water Works Association, Kentucky Administrative Regulations, OSHA Safety Guidelines and personal observations of many professional persons and workers subjected to the everyday hazards of the work place.

CHRISTIAN COUNTY WATER DISTRICT

513 WEBER STREET
HOPKINSVILLE, KENTUCKY 42240
Phone 502-886-3696

WATER COMMISSIONERS

EVERETT C. WELLS
C. D. BURKHEAD
JAMES M. WHITE
WILLIAM R. CLAXTON
ROY D. FRANKLIN

TO: Each Employee, Christian County Water District

RE: Policy Statement on Safety Program

The Water District is severally committed to a program of employee practice which enhances:

- * Organizational Safety-Prevention of injury to employees both on and off the job.
- * Fleet Safety-Prevention of automobile or equipment accidents.
- * Public Safety-Prevention of injury to the general public.

A Safety program initiated, monitored and enforced by management, with the full cooperation of each employee will stimulate efficiency, improve service, build employee morale and promote better relations.


The Christian County Water District hereby make a committment to you, the employee, to provide proper equipment and safe working practices.

Foremost in all our minds must be the fact that the human factor of unsafe acts is the primary cause of accidents, thus emphasizing the employees responsibility to perform the job safely.

The managers responsibility is two-edged. That manager is responsible to perform safely as well as to ensure that those whom he supervises also work in an environment of safety awareness.

Safety of the employees of the Christian County Water District and the general public is a matter of continuing interest to the water district commissioners and manager. We sincerely urge you to make the Safety Program one of your primary interests.

General Manager
Christian County Water District


Chairman
Christian County Water District

CHRISTIAN COUNTY WATER DISTRICT

513 WEBER STREET
HOPKINSVILLE, KENTUCKY 42240
Phone 502-886-3696

WATER COMMISSIONERS

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ROY D. FRANKLIN

SAFETY PROGRAM

This information herein is drawn from sources believed to be reliable. The safety rules are based on the injury-prevention experience of professional safety engineers, water utility superintendents, and others. Individual herein are specific statements of rules that are mandatory to safe work practices. The Christian County Water District makes no guarantee of results and assumes no liability inconnection with the information herein contained. However, it should not be assumed that every safety procedure is discussed herein, or that abnormal or unusual circumstances may not warrant or require other procedures. Where conflicts occur between the contents of this program and the state or national regulation, the latter shall prevail and these local procedures shall be amended accordingly.

SAFETY - A condition of being safe; freedom from danger or hazard, or the quality of being devoid of whatever exposes one to danger or harm.

This safety program is developed with the implicit intent of providing a safe working environment for the employees of the Christian County Water District and of providing positive means of ensuring the public safety from exposure to the hazards of those daily operations accomplished by management, staff and employees of the Christian County Water District.

This program addresses three (3) general areas of safety:

- *Organizational Safety - the prevention of injury to employees, both on and off the job site.
- *Fleet Safety - Prevention of automobile or equipment accidents.
- *Public Safety - Prevention of injury to the general public.

This safety program establishes certain minimum requirements aimed toward providing the enjoyment of an accident free work environment, but no program may ever be expected to supplant a careful, alert and aware conduct exercising good sound judgement tempered with a generous application of common sense.

PART ONE - GENERAL

Safety is everyone's responsibility and each employee from general manager to the newest trainee/hiree shares in that responsibility not only for personal safety but for group safety.

This safety program will be published in loose leaf form and distributed as follows:

One copy to each employee

One copy to each separate plant or facility excluding vehicles, lift stations and unmanned pumping facilities.

Upon publication each employee shall receive formal presentation outlining the contents of the safety program contained herein. New hirees will be briefed on the contents of this publication during the hiree's initial job orientation.

Rodney Hamby is the designated safety official for the Christian County Water District. Responsibilities in that regard include:

- A: Retain the master copy of this publication
- B: Conduct reviews of safety education materials, new state and federal regulations and initiate appropriate changes to the Safety Program.

- C: Distribute and ensure the posting of changes to this program made subsequent to its publication. Supervise the preparation of reports and records.
- D: Cause records and reports concerning safety and/or accidents to be filed in a recoverable file in the central office of the district.
- E: Draft and finalize all reports, routine recurring or special reports, that must be submitted to outside agencies and ensure that the distribution is timely.
- F: Procure or cause to be procured safety related promotional materials that abet or enhance safety awareness.
- G: Advise the general manager and ultimately the commissioners on the status of the safety program.
- H: Develop and maintain an individual safety awards program.
- I: Analyze and classify each accident report by a systematic method.
- J: Recommend disciplinary or administrative action to the general manager where accident review indicates serious, repeated or flagrant violation of this program or other pertinent safety doctrine.
- K: Act as chairperson for a safety committee consisting of one supervisor from each field division such as purification, distribution, service, sewer operations, etc. At least one person from the office/clerical force shall also be appointed to the safety committee.
 - (1) The safety committee shall meet formally during a regular work period no less frequently than each calendar quarter.
 - (2) The Safety Committee at a minimum will:
 - (a) Advise the safety official in determining the safety needs of the organization.
 - (b) Plan, develop and recommend safety programs of specific activities for groups of employees.
 - (c) Evaluate the effectiveness of safety plans and programs.
 - (d) Review reports of accidents and recommend means to prevent recurrence.
 - (e) Canvass workers in their specific areas of employment for suggestions that enhance the safety environment in that area.
 - (f) Assist the immediate supervisor in the investigation of accidents.

PART TWO - RECORDS AND REPORTS

The responsibility for reporting injury rests with the injured employee. The responsibility for proper recording rests with the immediate supervisor.

The following procedures are established for reporting and recording accidents.

- A. A simple card file will be established for the basic purpose of maintaining a chronological accident report of each employee.
 - (1) As a minimum the card will contain the following information: Employees name, date of hire, chronological listing of date and type of accident and whether the accident was the result of an unsafe act or condition.
- B. An Occupational - Injury Report, regardless of the severity of the occupational injury will be completed by the immediate supervisor of the injured person. The report shall be maintained in the active card file (A, above) during the term of employment of the injured person. They are retired to a record file to be maintained for the period of district's liability for injury.
- C. Supervisor's Report of Injury Requiring Doctors Attention. The supervisor's report will provide a detailed description of the accident probable cause and recommendation for reducing the hazard. This form will be filed and retained in the manner described in B, above.
- D. Vehicle Accident or Damage Reports will be completed for each motor vehicle accident or incident of damage to the vehicle regardless of severity or number of vehicles involved. The report will be filed with the employee's accident card and maintained during the period of employment.
- E. Public Injury Report will be completed in narrative form and at the earliest feasible moment after injury occurs to a person not employed by the district.

PART THREE - SAFETY EDUCATION - TRAINING

Safety training or education will bring the importance of safety to the employees and constantly review them of that importance.

Safety training or education may be formal or informal.

Minimum requirements for employees of Christian County Water District shall include:

- A. Prominent posting of safety posters and reminders in each work area.
- B. Procurement and distribution of promotional material on publications which emphasize job safety.
- C. Each supervisor will, with all the employees for whom he is directly responsible, conduct a monthly safety talk of at least fifteen (15) minutes duration. These talks will be on safety subjects of the supervisor's choosing and will pertain to the immediate work area in which the people are involved. (For Example: The Safety talk could be done on the first Monday of each month.)

Topics to be included, but not limited to the following:

1. Proper use of tools
 2. Safe entry procedures for confined space
 3. CPR Training/Demonstration
 4. First Aid
 5. Motor - Vehicle Accident Prevention
 6. Pipe and Material Handling
 7. Safe handling of water treatment chemicals
 8. Cave in protection during trenching
 9. Traffic Control
 10. Preventing back injury - proper lifting
 11. Plant safety
 12. Electrical Safety
- D. Posting of pertinent safety rules and regulations in each work area.

PART FOUR - WHAT TO DO IN CASE OF ACCIDENT

The first concern is the welfare of the injured person.

The senior employee present and uninjured will direct the efforts of all others toward first aid for the injured party, reducing the hazard, if it continues to exist and insuring the safety of others in the area.

Render first aid, if required and applicable, but DO NOT EXCEED your competence. You may aggravate the injury through well-meaning but ignorant treatment.

Immediately contact the dispatcher to request emergency vehicles or police support if required.

Immediately notify the general manager through the dispatcher if persons not employed not employed by the district are injured, regardless of the severity of the injury.

After the injured is under competent medical care, the supervisor or senior employee present will begin an immediate preliminary investigation of the accident, recording identities of witnesses.

Follow-up the incident by timely refilling of your first aid kit and properly storing the kit in the designated location.

PART FIVE - THE INJURED EMPLOYEE

When the injured employee requires medical care, it is also necessary to determine the employee's duty status.

Injured employee's will be returned to a "light duty" or restricted duty status as early as a doctor may advise. As the employee becomes physically fit the employee will be returned to the full duty status.

Procedure governing the administration of the sick and injury leave program are outlined in the Employee Handbook.

This district is committed to a program of rehabilitation of seriously injured employees within the scope of district capability to rehabilitate, insuror requirements and sound fiscal policy.

Compensation for injury and/or subsequent disability is administrated in consonance with the Commonwealth's Workers Indemnity Compensation Program.

Vehicular accidents and claims of personal injury or property damage liability are the responsibility of the Fleet Insurance carrier.

Employees are directed to report all vehicular accidents immediately to your first-line supervisor. At the scene of an accident:

1. The employee is directed to assist in care for injured at the scene of the accident, provide the other party with the name of the insuror and the employee's personal identification data.
2. The employee will not voice any personal opinion or to the cause of the accident or where responsibilities rest.
3. Record the identity of persons and equipment involved in the accident and record the names of witnesses.

PART SIX - SAFETY RULES AND PROCEDURES IN THE WORK PLACE

This part of the safety program is composed of a series of sheets which outline the rules of job safety and practices on specific job sites or types of activities.

As a general rule, this safety program will be available to the employee at each job site or facility. Part Six, Pages 2- are general safety practices and equipment necessities and will be available as a part of the written safety program.

The remaining pages of this part are detachable annexes pertaining to a specific operation or facility and may be posted separately at the work place or activity to which the procedure pertains.

INDEX OF SAFETY AND EQUIPMENT PROCEDURES

<u>Page Number</u>	<u>Title</u>
6-1	Index of Safety and Equipment Procedures
6-2	General Safety Practice as Equipment

GENERAL SAFETY PRACTICES AND EQUIPMENT

The overriding concern of any accident prevention program is prevention of accidents that harm persons or property.

Each person must carefully consider the job from their viewpoint of performing the task safely and efficiently. To assist you in safe performance, we urge you to be aware of the following:

1. Be Aware - Be Alert - Be Conscious of your safety and the safety of your fellow citizen.
2. Read the safety signs and obey them.
3. Use your brains and senses to eliminate unsafe practices.
4. Use tools designed for the task at hand and use them properly. DO NOT OVERLOAD!
5. Wearing personal protective equipment when specified for a task or area is not a personal option. The wear or use of such equipment as ear, eye, face, head, or other body element protection is MANDATORY, when the equipment is specified.
6. Hard hats will always be worn in areas where construction is in progress or where dangers exist from the falling of tools or equipment from higher elevations. Visitors are not exempt from the requirements.
7. Goggles will be worn for all activity that presents a danger to the eyes. Should goggles of a shade recommended by the manufacturer will be used for all welding, grinding or chemical handling operations.
8. Hands, body and feet, when required will be protected by gloves, protective clothing and safety shoes.
9. Respiratory equipment of proper design is provided at the job site for hazardous operations. USE THEM - Restore or replace them for the safety of the next user.
10. Safety belts, fall preventers, and personnel lifting devices are available, not optional - USE THEM!
11. First aid kits are available in each work area and on each vehicle. Know how to use them and insure that used items are immediately replaced. First aid kits will meet the standards of ANSI Standard Z 308.1 - 1978 including burns and snake bite.

12. The utility will establish a first aid training program through cooperation with the local Red Cross, Fire and Police Departments.

13. Lifting or Lowering Objects

- A. Use mechanical handling equipment when possible and
 - (1) Check for equipment capacity
 - (2) Use slings or lift devices designed for the job and never use frayed rope or wire
 - (3) Stand clear while lifting over head

- B. When hand lifting of lowering:
 - (1) Get a good footing
 - (2) Place feet shoulder width apart
 - (3) Bend at the knees or grasp the weight
 - (4) Keep the back straight
 - (5) Get a firm hold
 - (6) Lifting by straightening the legs or lower by bending them
 - (7) Turn entire body - Do not twist the back to change directions with a heavy load.
 - (8) If its too heavy - get help!

14. Fall Prevention

- A. Use safety belts and fall preventors for slopes of more than 15 degrees steepness.

- B. Never run on stairs or inclined surfaces.

- C. Develop safe habits of neat and orderly housekeeping. Wipe up oil spots, pick up or bend down nails. Remove extraneous matter such as rope, wire, lumber, tools or unused machinery from the work area.

- D. Keep one hand on handrails or stair rails.

- E. Use a flashlight in dark areas.

15. Running and Walking

- A. Do not run except in extreme emergencies.

- B. Do not jump across ditches, scaffolds or platforms.

- C. Use ladder to get in or out of trenches.

- D. Never run or hurry downstairs or upstairs.

16. Keep stairs and walk ways free of grease, wet or slippery materials and never store tools or other materials on stairways.

17. Inspect hand rails and safety rails for condition.
18. Take only one step at a time.
19. Report all loose treads, risers or handrails.
20. Keep aisles and walkway clear of obstructions.

CHRISTIAN COUNTY WATER DISTRICT
CONFINED SPACE ENTRY PROCEDURE

OBJECTIVE

- 1) To outline a procedure for safe entry into a confined space.
- 2) To outline a procedure for rescue in the event of an emergency.

Prior to entering any confined space the following steps must be taken;

A. Job Site Preparation

1. Whenever maintenance or operational work is being performed the job site must be protected from adjacent hazards. Such hazards could be traffic or construction materials.
2. All loose objects should be moved at least 2 feet from the entrance to the confined space.
3. Gather all safety equipment at the site. This equipment will include gas detection meters, manlifts, full body safety harness with lifeline and ventilation equipment.
4. Do not smoke within 20 feet of a manhole or lift station or while inside.

B. Environmental Testing

1. Test the environment in all confined spaces for explosive gasses, toxic gases, and oxygen deficiency using the "available" meters. NOTE: When using meters, lower into confined space slowly. (Do not bump against walls.) Keep instrument dry at all times, this is a very sensitive and fragile piece of equipment.
2. If any test indicates the presence of toxic gases, explosive gases or a oxygen deficiency; ventilate the confined space at least 5 minutes and then retest.

Continue this sequence until all test indicate no toxic, explosive gases or an oxygen deficiency in the confined space.

C. Entrance Into The Confined Space

1. Ventilate at least 15 minutes before entering any confined space. Continue ventilating as long as work is being performed.
2. Manlift must be readily available to the confined space.
3. All person(s) entering the confined space will wear a full body harness with attached lifeline. The harness must fit properly.
4. Enter the confined space using steps or ladder, do not use manlift to lower person(s) into the confined space.
5. At least 2 trained persons must be at the site before a confined space can be entered.
6. One person will be present outside of the confined space to operate the manlift and assist the person in the confined space. This person will remain on top in voice or visual contact with the person in the confined space.
7. The confined space will be tested continuously if possible. It must be tested at least every 20 minutes.
8. The confined space entry checklist on the following will be completed for each space entry and forwarded to the assistant general manager for retention on appropriate disposition.
9. A third person must be available at the site or by radio contact.

NO DEVIATION FROM THIS PROCEDURE ARE ALLOWED WITHOUT THE PRIOR APPROVAL OF THE DIVISION ADMINISTRATOR

10. Any employee of the Christian County Water District who violates the above procedures will be considered at formal hearing for dismissal.

D. Emergency and Rescue

In the event a person is down in the confined space the following emergency rescue procedures should be used:

1. Immediately notify the base radio.
2. Then begin lifting person out of the confined space with the manlift using lifeline to guide the person away from obstacles. Speed is important, however make every attempt not to "catch" the person on any obstacle thus making retrieval difficult. If two persons are on top, one person will operate the manlift while the other person guides the person out with the lifeline.
3. Once the person has reached the top of the confined space "clear" the person from the confined space.
4. Immediately begin appropriate first aid. Interrupt first aid only to call for assistance. If two persons are present, one can call for assistance while the other performs the first aid.

NEVER ENTER A CONFINED SPACE WITHOUT A SELF-CONTAINED BREATHING UNIT ON WHEN A RESCUE IS IN PROGRESS!

SAFETY IS A SYSTEM OF:

ATTITUDES...

AWARENESS...

APPROACHES...

CONFINED SPACES

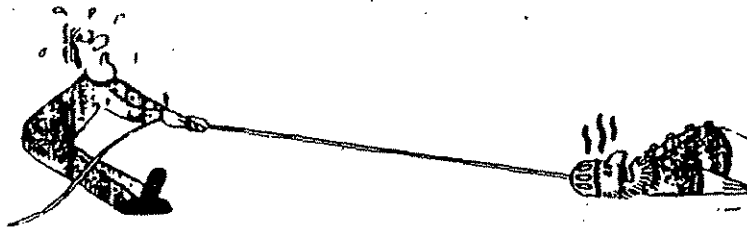
1998

Louisville and Jefferson County
Metropolitan Sewer District

MSD provides training in both setting up and rescue from a confined space worksite. If you must rescue a fellow worker

Remember . . .

Remove victim with harness and ropes rather than going into the area yourself.



Get more help before going in to rescue someone. Don't even try if you are not trained or equipped.

Wear respirator and protective clothing.

Make sure ventilation equipment is operating.

Once victim is out, give artificial respiration if necessary

Get emergency medical help

Close off the area

MSD HEALTH AND SAFETY RULEBOOK

10. CONFINED SPACE, TANK ENTRY AND RESCUE

- a. A "confined space" is a space having limited means of entry or exit, and so enclosed that adequate ventilation does not exist. Confined spaces encountered by MSD personnel include, but are not limited to, pump wet wells, sludge digestion tanks, incinerator storage pits, and sewers.
- b. Any space with limited access and limited ventilation shall be considered dangerous until tested and evaluated according to guidelines and procedures established by the Loss Control Administrator.
- c. Before sending personnel into a confined space, the supervisor shall ensure that the work area is tested for oxygen deficiency, toxic gases and the presence of combustible gases.
 - (1) If an oxygen deficiency (O_2 less than 19.5%) is indicated, self-contained or supplied air respiratory protection shall be provided and used.
 - (2) If a combustible, explosive or toxic atmosphere is indicated, no employee shall enter, and ventilation shall begin immediately.
- d. BEFORE ANY MSD employees enter a confined space or manhole, they shall provide the appropriate Base radio operator with the following information:
 - (1) LOCATION of work site.
 - (2) Time of ENTRY
- e. Upon EXITING a confined space or manhole, the appropriate Base radio operator shall be notified.

2. Test the air in the confined space

Your company has special instruments for testing the levels of oxygen, combustibility, and toxicity in confined spaces. Be sure to check the accuracy of these instruments before and after every use.

Here are some tips for pretesting confined spaces:

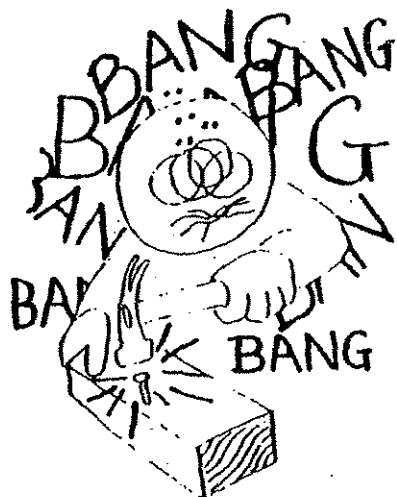
- 1. Test for oxygen and combustibility before you open the space by probing with test instruments near the entry.**
- 2. Once the space is opened, test the air from top to bottom. Don't forget to test all the little corners and spaces-pipes, ducts, etc.,-where gases might accumulate. Some gases are heavy, like propane and butane, and they will sink to the bottom of the enclosure. Light gases like methane will rise to the top.**
- 3. After you're sure that the oxygen level is adequate and that there's nothing combustible in the space, test for toxicity.**
- 4. If these pretests find any risks in the confined space you can't protect against, advise your supervisor. Chances are he'll want you to ventilate, clean and test again before permitting you to enter.**
- 5. Continue to test at frequent intervals-or if something seems unusual.**

11. MANHOLE ENTRY

- a. The atmosphere of any confined space, as defined in 10a, shall be tested for permissible oxygen, combustible and toxic, gas levels before entry. No confined space atmosphere is assumed to be safe. A calibrated instrument such as the Exotox 40 shall be used to determine the levels of oxygen, combustible gases and hydrogen sulfide.**
- b. The atmosphere inside of a manhole shall be constantly tested for oxygen, combustible gases and hydrogen sulfide while employees are in the manhole.**
- c. The supervisor must be notified immediately when a hazardous atmosphere is determined to exist. If the Supervisor suspects a hazardous chemical spill has occurred, tests should be taken throughout the work day in the work area to determine the extent or existence of an oxygen deficient atmosphere.**
- d. The use of respiratory protection equipment is mandatory whenever a oxygen level of less than 19.5% exists in any work area. Periodic oxygen level readings, with the oxygen meter, should be taken throughout the work day in the work area to determine the extent or existence of an oxygen deficient atmosphere.**
- e. No attempt shall be made to enter a work area containing a potentially explosive atmosphere or environment, as determined by a combustible gas meter, even though using the life support unit. Entry shall be made using the life support unit only after the work area involved has been properly and thoroughly ventilated and verified through combustible gas meter readings that indicate that no potential explosion hazard remains.**

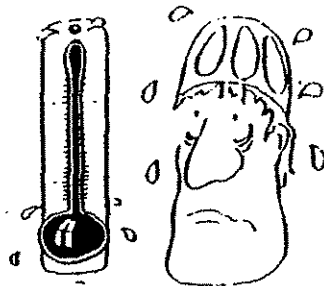
Noise

Sounds reverberate and you could develop hearing problems from too much noise exposure. And even if your hearing is just temporarily affected, you might not be able to hear important directions or warnings.



Heat and other problems:

Temperatures can build up quickly in a confined space and cause exhaustion, dizziness, etc. Snakes, rodents and spiders could bite you. Live wires could cause electrocution.



Falling:

If you stumble and fall in a confined space, you could easily be trapped - especially if you're in an area with low oxygen levels or toxic gases. Rungs and railings in damp environments may not be sound - don't trust them!



What is a Confined Space?

Confined spaces have the following elements:

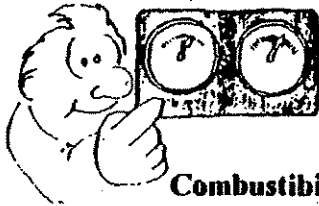
1. Limited openings for entry and exit.
2. Unfavorable natural ventilation.
3. Not designed for continuous worker occupancy.

Because of potentially life threatening elements, the following are considerations before entering a confined space:

1. **TRAINED PERSONNEL AND ADVANCED PREPARATION** - This includes first aid and CPR training, and a respiratory protection program featuring equipment selection, fit test, medical certification and respiratory training.
2. **HAZARD ASSESSMENT** - This includes atmospheric testing; means of entry and exit; ventilation; hidden physical hazards and hazards resulting from work being conducted.
3. **PERSONAL PROTECTIVE EQUIPMENT** - This includes boots, gloves, rainwear, hardhats, respiratory protection, harness equipment and wristlets.
4. **REQUIRED TOOLS AND OTHER EQUIPMENT** - This includes low lighting system, battery, and explosion proof lighting; communications systems; tools, gauges, ventilation and other miscellaneous equipment.
5. **RESCUE EQUIPMENT** - This includes hoisting equipment, first aid supplies, backboards, self contained breathing apparatus (SCBA) and other rescue devices.

**THE FOUR MAJOR DANGERS
IN CONFINED SPACES ARE:**

Oxygen Deficiency



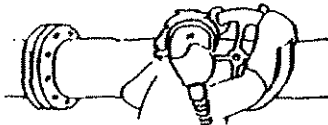
Combustibility



Toxicity



Physical Hazards



Why are confined spaces DANGEROUS?

Dangerous vapors and gases can accumulate in confined spaces. Fires, explosions and physical hazards can also injure or kill an unprotected person.

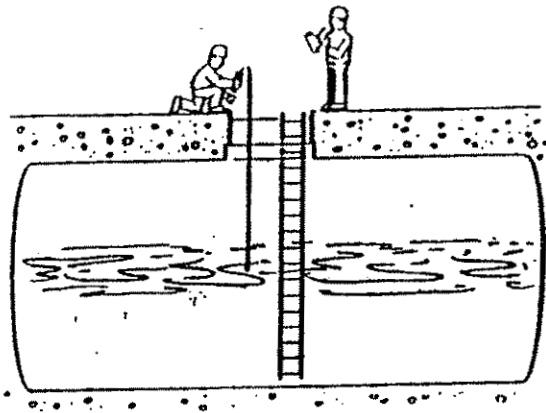
When hazardous materials are used or stored in or near confined areas, the danger is even greater.

Even empty, well-cleaned spaces can present risks.

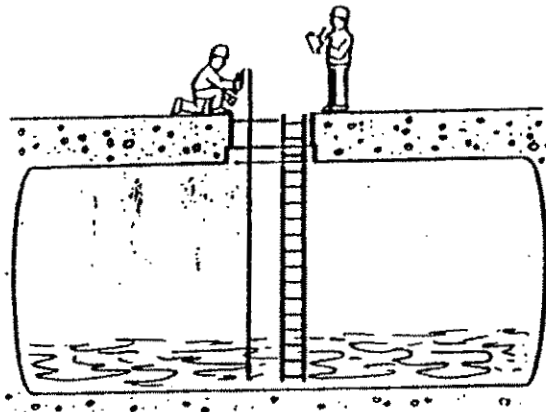
Any untested area should be considered **Immediately Dangerous to Life and Health (IDLH)**.

Problems happen because workers enter confined spaces infrequently. Before entering you must be thoroughly trained and checked out by your supervisor.

Always expect the unexpected in a confined space! Consider it DANGEROUS because it probably is!



Carbon Monoxide (CO)
(slightly lighter than air)



Hydrogen Sulfide (H₂S)
(heavier than air)

Remember to put your trust in a properly calibrated instrument and not your senses. You can't see or smell many toxic gases, combustible gases or determine how much oxygen is present without a reliable instrument.

Here are four common toxics that can be especially dangerous in confined spaces.

Carbon monoxide is a colorless, odorless, tasteless chemical created by internal combustion.

Carbon dioxide is a natural by-product of fermentation. It's also used in refrigeration and fire fighting.

Sulfur dioxide is colorless, but has a heavy smell. It is toxic even in small amounts.

Hydrogen sulfide is produced in petroleum and sewage treatment and other industrial processes. It can cut off your breathing once it gets into your body.

Physical hazards can kill too.

Moving parts in confined spaces are dangerous. This equipment must be locked out/tagged out before entering.

Valves and pipes must be disabled too. If not, entering gases, liquids, or solids could drown you or cause an explosion.

Engulfment is a problem too. Even though your head may be above the surface, the pressure on your chest could prevent you from breathing.

SMALL TOOLS AND EQUIPMENT

Industry-wide hand tools are responsible for 10% of compensable injuries. In water-sewer operations, the percentage is twice that.

The following general rules apply to the safe use of small tools and equipment.

1. Always select the proper tool for the job.
2. Maintain tools in good condition and repair as frequently as necessary.
3. Stop machinery before using tools on the machinery.
4. Check clearance at the work place to prevent injury if the tool slips.
5. When applying pressure or torque to tools or wrenches make certain you have firm footing to foretell slipping or falling.
6. Wear gloves except when using a hammer. Remove rings.
7. Keep sharp or pointed tools covered except when in use.
8. Keep sharp or pointed tools pointed away from the body.
9. Clean tools and store them when not in use.
10. Keep the work place clean and free of discarded equipment.
11. Wear eye protection when using impact tools.
12. Learn and follow the correct way to use and maintain all hand tools.
13. Use tools made of nonsparking materials when fire is a hazard.
14. Portable electric hand tools present the additional problem of electrical shock. Grounding, safe placement of electrical cords, and proper tool selection help to prevent injury.
15. Do not use tools you have not been trained to properly operate. When in doubt - ASK YOUR SUPERVISOR!

LARGE TOOLS AND EQUIPMENT

Use of mobile equipment in operation of this utility is limited. However, employees may be exposed to a significant degree when working near utility contractors. Observe the following general practices when working with or around mobile tools and equipment.

1. Wear hard hats in the presence of over head hazards.
2. Do not overload.
3. Perform pre-operations inspection of equipment.
4. Keep hands away from moving parts of equipment.
5. Keep all manufacturers safety quads in place.

VEHICLE OPERATION AND MAINTENANCE

A good driver checks and maintains a vehicle properly, uses all safety equipment shows courtesy to the other driver, signals well in advance of directional changes, and takes pride in developing driving skills. These general rules apply:

1. Pre-operations checks of any vehicle to be operated will include, at the beginning of the shift, these inspections.
 - a. Check for leaks under the vehicle.
 - b. Check for operation of lights, wipers, horns.
 - c. Check for proper tire inflation.
 - d. Ensure the proper safety equipment is on board the vehicle.
 - e. Check the braking system and exhaust system.
 - f. If you are uncertain about the safety of your vehicle, CHECK WITH SUPERVISOR BEFORE OPERATING.
 - g. Do not load vehicle beyond manufacturers specifications.

2. During operation listen for unusual noises and note any peculiarity in operation.
 - a. Be certain that sufficient clearances exist in areas where vehicle is operating.
 - b. Warn all present before reversing direction of vehicle.
 - c. If you need wipers to keep the windshield clean, you need headlights on as a warning to other motorists and pedestrians.
 - d. Observe all laws concerning vehicle operations.
 - e. Drivers will not operate vehicles while under the influence of alcohol or drugs prescribed or illegal.
 - f. Drivers will inform management of any action that threatens the validity of the driver's license and privilege to operate a vehicle on public property.
 - g. Utility vehicles even in emergency have no authority to exceed speed limits or violate road warning devices.

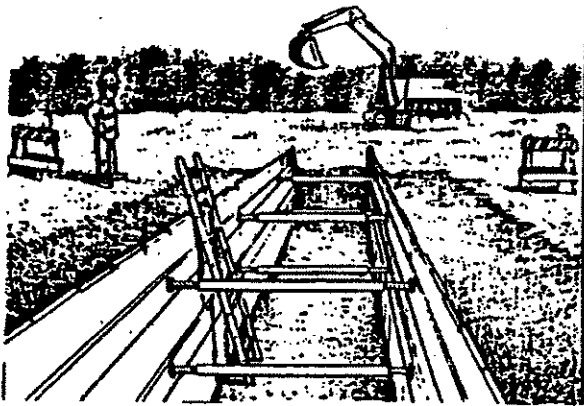
3. Passenger safety is a primary responsibility of the vehicle driver.
 - a. Seat belts will be worn by the driver and cab passengers.
 - b. In vehicles with bench seats, the cab capacity is three, if seat belts are installed. Do not exceed capacity.
 - c. Hauling passengers in the truck bed is discouraged. If necessary to haul passengers, the driver must ensure that those passengers are seated in the truck bed, their combined weight does not exceed manufacturers specification for the vehicle, and that unsafe materials or equipment has been removed from the truck bed.

- d. The practice of passenger sitting on truck bed sides, or tail gates is specifically forbidden. The driver is instructed to refuse to operate the vehicle if such a condition exists.
4. After operations checks of vehicles will be accomplished by each driver at shift change. Irregularities will be reported to the immediate supervisor. If the vehicle is not safe to operate, the supervisor will gather and retain all vehicle ignition keys until the unsafe condition is corrected.

TRENCH CONSTRUCTION

1. Wear approved hard hats when working in or around trenches.
2. Use tools that are sharp and in good condition.
3. Maintain a safe working distance from other workers.
4. Do not jump into a trench. Use a ladder or in shallow trenches, sit on the side of the trench and slide in.
5. Ladders will be provided for entry to and exit from trenches exceeding three feet in depth.
6. Do not pile loose soil less than two feet from trench banks.
7. If undercutting of banks is necessary, keep all personnel out of undercut area.
8. Keep tools, equipment and people out of traffic lanes.
9. Erect sufficient warning equipment to insure the safety of motorists, pedestrians and fellow workers.
10. Brace trench walls when trench exceeds four feet in depth and personnel must enter the trench.
11. Know where you are digging. Check for underground utility lines or electric cable before digging.
12. Keep children and onlookers out of construction area.

**EXCAVATING
TRENCHING
and
SHORING**



**Louisville & Jefferson County
Metropolitan Sewer District**

Introduction

If you work in a trench and haven't seen one cave-in, chances are that you will. If a cave-in does happen, what you do may mean the difference between life and death.



In this handbook you will learn what to do and what not to do if a trench collapses and someone is trapped. But, before we review safe trench emergency procedures, we'll look at some basic facts about trenches and explain the dangers trench excavations pose.

EXCAVATION

An excavation is defined as a man-made cavity or depression in the earth's surface, including its sides, walls or faces, formed by earth removal and producing unsupported earth conditions by reasons of the excavation. If installed forms or similar structures increase the depth-to-width relationship, an excavation may become a trench.

TRENCH

A trench is defined as a narrow excavation made below the surface of the ground. In general, the depth is greater than the width, provided the width is less than 15 feet. (If the width is greater than 15 feet, the "trench" becomes an "excavation".)

Before performing work requiring excavating, trenching, drilling, boring, etc., the employee shall consider the probability of contacting hidden hazards, such as voids under pavements and walks, electric cables, communication lines, gas lines, water lines, etc. Special precautions shall be taken to protect these facilities. Any damage to them shall be promptly reported. Call before you dig (BUD) first (1-800-752-6007).

Employees shall be on the alert for possible hazards, such as wire, glass, and scrap metal, that may be found in the sidewalls of excavations and trenches.

Materials used for sheathing, bracing, and shoring shall be in good serviceable condition. Timbers used shall be free from large or loose knots and shall be installed to the bottom of the excavation or trench.



The walls and faces of excavations or trenches in which employees are exposed to danger from moving ground shall be guarded by a shoring system, sloping of the ground, or some other equivalent means (trench boxes for example).

Walkways shall be kept clear of excavated material or other obstructions. They shall not be undermined, unless properly shored.

Excavations or trenches in which employees may be exposed to danger of moving earth shall be frequently inspected by a qualified person, particularly after rains or freezing and thawing conditions.



In excavations or trenches which employees may be required to enter, **excavated or other material shall be effectively stored and retained at least two (2) feet from the edge of the excavation or trench.** An effective barrier or other retaining device may be used as an alternate to the two (2) foot clearance to prevent excavated or other material from falling into the excavation or trench.

When heavy equipment, materials, or other objects are operated or placed near an excavation or trench, the excavation or trench shall be shored, sheathed, and braced as necessary to prevent cave-ins.

Suitable fire extinguishers shall be readily available whenever the probability of fire exist when employees are working in an excavation or trench.

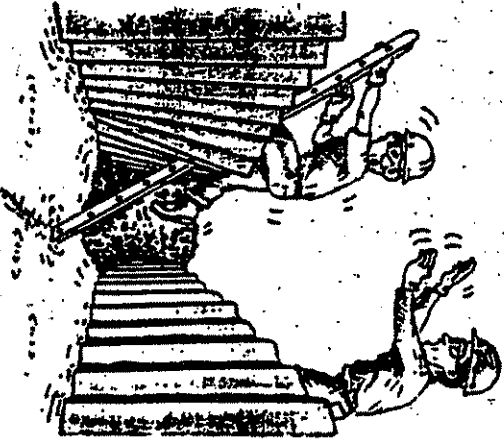
Excavation or trench banks more than five (5) feet high shall be shored, laid back to a stable slope, or provided with some other equivalent means of protection where employees may be exposed to moving ground or cave-ins. Excavations or trenches less than five (5) feet in depth shall also be effectively protected when examinations of the ground indicate hazardous ground movement may be expected.

When employees are required to be in excavations or trenches more than four (4) feet deep an adequate means of exit, such as a ladder or steps, shall be provided and located so as to require no more than 25 feet of lateral travel by the employees.

Ladders used in excavation or trenches shall be:

- (1) In good condition.
- (2) Extended from the floor of the excavation to three feet above the surface.

The size and shape of excavations or trenches shall be made so that the covers (steel plates, etc.), whenever needed, can be used in a safe manner.



6

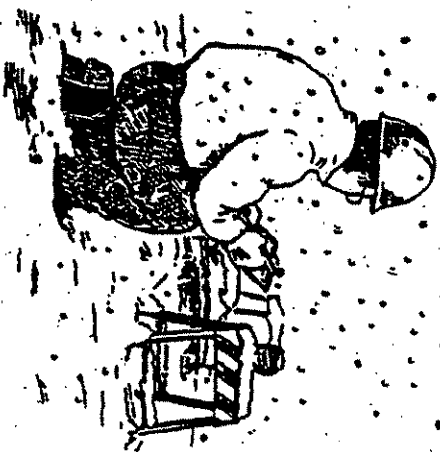
WATER & WEATHER

Water can cause site cave-ins or worker drownings.

- Protect site
- Divert surface water
- Drain standing water
- Use life line or retrieval line/harness

Weather can change excavation conditions quickly and cause drowning, cave-in or slip and falls.

- Inspect site after each weather change
- Take necessary corrective steps
- Install support systems



7

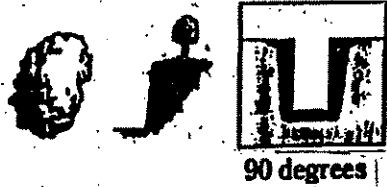
SOIL STABILITY AS A SAFETY MEASURE

Classifying a soil's stability is an important part of evaluating the site. In general, soil is divided into four classes, from most stable to least stable:

Soil classification may be done only by a competent person.

Stable Rock

Solid mineral matter



90 degrees

Type A

Cohesive soils, such as clay, silty clay and hardpan



53 degrees

Type B

Granular soils, silt, sandy loam, unstable rock, any unstable or fissured Type A soil



45 degrees

Type C

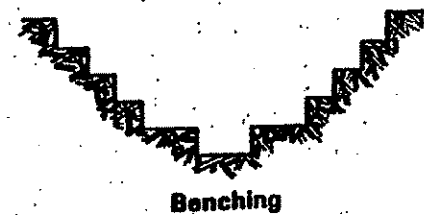
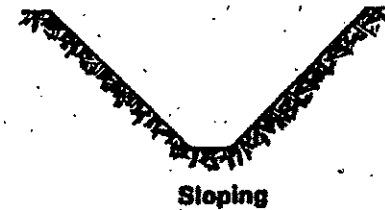
Gravel, loamy soil, submerged soil, sand and any soil that is part of a layered, steeply sloped system



34 degrees

SLOPING AND BENCHING

To slope and bench a site means cutting the walls of your excavation back at an angle to its floor. Sloping uses straight cuts. Benching uses a series of one or more steps. Angled cuts for excavations up to 20 feet deep are allowed by OSHA:



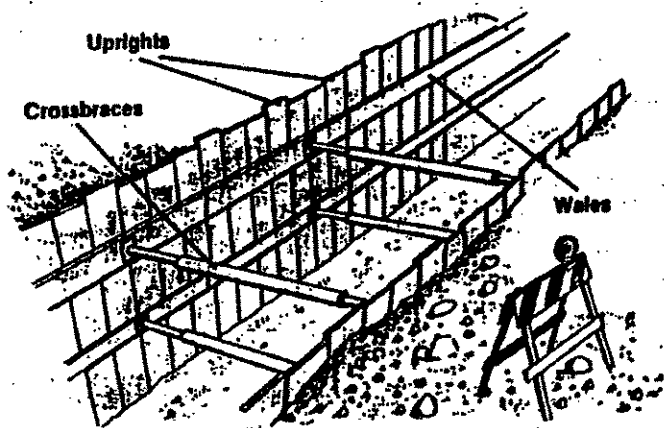
**EVACUATE ANY EXCAVATION
WHOSE WALLS SHOW SIGNS OF DISTRESS.**

SHORING

Shoring:

Provides a framework.
Uses wales, crossbraces and uprights.
Supports excavation walls.

Basically, the closer shores are placed together, the greater the support. Shores placed side by side are known as closed sheeting. Sheeting, too, can be pre-manufactured (metal plates, shorform panels, sheet metal and metal plate supports are examples of pre-manufactured sheeting).



DON'T FORGET:

Remove shoring from the bottom up.

Pull sheeting out from above.

Back fill every excavation immediately after the support system is removed.

SHIELDING:

Shielding is a structure providing sheeting and shoring in one package.

Shields used in trenches are trench boxes or trench shields.

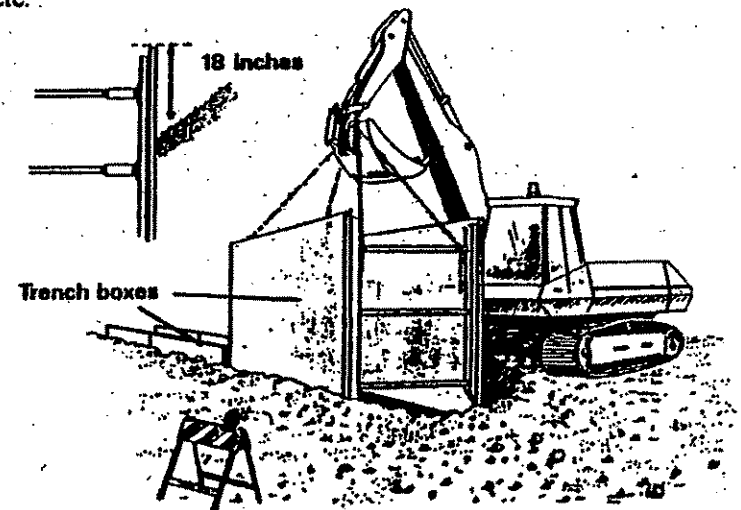
Heavy equipment is always used to place shields into your excavation.

Be sure shields of the vertical trench walls project at least 18 inches above the lowest point where the excavation face begins to slope.

The bottom of the shield shall not exceed more than two feet from the bottom of the trench.

DON'T FORGET:

No one should enter the shield during installation or removal. If a trench needs shielding, it is not safe for you to enter until after the shielding is complete.



REQUIRED FOR YOUR SAFETY

Inspections must be made before each shift begins and after any changes in the excavation environment.

Do not go underneath loads handled by heavy equipment or walk under walkways bridging a trench.

Do not work above a co-worker on a sloped or benched excavation unless your co-worker is protected from falling material.

Wear protective clothing and equipment such as hard hats, steel toe work boots and safety glasses.

Walkways or bridges with guard rails must be provided anywhere you or your co-workers will cross over a trench.

Excavated material and other objects must be at least two feet away from the edge of an excavation or be restrained by a restraining device.

Excavations at depths greater than 20 feet must be designed by a professional engineer.

Exits, such as ramps or ladders, must be located within 25 feet of the worker in excavations more than four feet deep and extend three feet above excavation edge.

WHEN THERE IS AN EMERGENCY

At 4' deep or more the excavation is considered a confined space and atmosphere monitoring is required. If an atmosphere hazard exist, then follow the Permit Required Confined and Specific Procedures.

Following these procedures in case of emergency will make working in or around a trench safer for everyone:

1. Immediately call 911 and your immediate supervisor.

Report:

Exact Location
Number of Victims
Trench Measurements
Special Hazards

2. Keep all life-support and de-watering systems operating.
3. Clear workers away from the excavation.
4. Shut down the heavy equipment.
5. Be prepared to meet and brief rescue personnel.

What NOT to do:

1. Never try to dig the victim out with heavy equipment.
2. Never allow others into the trench.
3. Don't panic.

REMEMBER:

Your co-worker is depending on your cool head.

Notes

QUIZ

1. True False Soil that is not stable will move downward and inward.
2. True False All soil types have the same stability.
3. True False OSHA requires that only a competent/trained person classify soil.
4. True False Grain size, water content, stability and strength under pressure are all factors to be considered when classifying soil.
5. True False All tests done to classify soil are visual tests; for example, looking for cracks or standing water.
6. True False For manual tests the soil sample is taken from the spoil pile.
7. True False Both the ribbon and thread test determine the cohesive qualities of the soil.
8. True False Sloping is another manual test used to decide which protective system to use in a trench.
9. True False A bench system is a series of steps carved into the soil at an excavation which protects workers from cave-ins.
10. True False The ratio of the angle of a sloped protective system is based on both soil class and site restrictions.
11. True False When cracking is observed at a sloped or benched excavation, work in the trench should continue without interruption or risk.
12. True False Shoring or shielding are protective measures which need to be added to every trench.

- | | | | |
|-----|------|-------|---|
| 13. | True | False | Uprights, wales and cross braces are supports used for a storing protective system. |
| 14. | True | False | Shields are portable steel structures or trench boxes placed in the trench by heavy equipment. |
| 15. | True | False | Steel sheeting can safely be used to extend the height of a trench box. |
| 16. | True | False | Hazardous atmosphere which can be harmful must be tested and controlled before you enter a trench. |
| 17. | True | False | It is required to locate and mark underground utilities at an excavation site. |
| 18. | True | False | Trenches over four feet deep must have exits within 25' of every worker. |
| 19. | True | False | Hard hats are not necessary in trenches. |
| 20. | True | False | A Top Person outside a trench can see moving ground and warn workers to leave the trench until hazards can be controlled. |
| 21. | True | False | The only time an employee may enter in an unprotected trench is when installing the brace and shoring? |
| 22. | True | False | The spoil pile must be at least 24 inches from the excavation edge. |
| 23. | True | False | It is acceptable for an employee to disregard MSD's trenching/excavation safety if instructed to do so by their supervisor. |
| 24. | True | False | There are occasions when it is acceptable for employees to leave a job site unprotected (i.e. open trench). |

ACKNOWLEDGMENT OF TRAINING

I have read and understand the training handbook, **Excavating Trenching and Shoring**. I have also completed and passed the comprehensive quiz at the conclusion of this handbook.

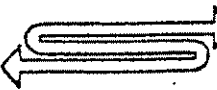
Employee's Signature

Date

Trainer's Name

Date

NOTE: This record may be included in the employee's personnel or training file.

SPEED  SHORE™

C O R P O R A T I O N

MANUFACTURER'S
TABULATED
DATA

SHORING SHIELDS™

October 12, 1993

COPYRIGHT, U.S.A., SPEED SHORE CORPORATION, 1993
7002 Easthaze, P.O. Box 152191, Houston, Texas 77207
(713) 943-0750 USA Toll Free (800) 231-6662 Fax (713) 943-8443

3.0 SOIL CLASSIFICATIONS

3.1 In order to use the data presented in the tables, the soil type, or types, in which the excavation is cut shall first be determined by the *competent person* according to the O.S.H.A. soil classifications as set forth in CFR 29, Part 1926, Subpart P, Appendix A.

3.2 Tables are also for use in Type C-60 soil (see 3.3 for definition).

3.3 Type C-60 soil is a moist, cohesive soil or a moist dense granular soil which does not fit into Type A or Type B classifications and is not flowing or submerged. This material can be cut with near vertical sidewalls and will stand unsupported long enough to allow the Shoring Shield to be properly installed. The *competent person* must monitor the excavation for signs of deterioration of the soil as indicated by, but not limited to, freely seeping water or flowing soil entering the excavation around or below the shield. An alternate design for less stable Type C soil will be required where there is evidence of deterioration.

4.0 PRESENTATION OF INFORMATION

4.1 Information is presented in tabular form in Tables SS-1 and SS-1SS. Table SS-1 is for the earlier style Shoring Shields with hydraulic cylinder, spring and steel tubes separate. Table SS-1SS is for the newer style Shoring Shields with the hydraulic cylinder and spring encased inside the steel tube strut, called a Speed Strut. These tables present the maximum excavation depths that Shoring Shields may be used in either the "hydraulic mode" or the "static mode". Also included are maximum depths when there are soil loads against the Speed Strut, End Beams. The depths are shown for O.S.H.A. Type A, B and C soils and Type C-60 soil (see 3.3 for definition).

4.2 These tables are not considered adequate when loads imposed by structures, or by stored material adjacent to the trench weigh in excess of the load imposed by 3-feet of soil surcharge. The term "adjacent" as used here means the area within a horizontal distance from the edge of the trench equal to the depth of the trench.

4.3 Using these tables, the *competent person* determines the respective load capacities and maximum allowable excavation depths.

5.0 BASIS AND LIMITATIONS OF THE DATA

5.1 The Shoring Shields may be used in the "hydraulic mode" with the hydraulic cylinders pressurized or in the "static mode" with the steel tube spreaders pinned.

5.2 All Speed Struts, and hydraulic cylinders must be pressurized when the Shoring Shield is used in the "hydraulic mode".

5.3 When Shoring Shield is used in the "static mode", all steel spreaders must be pinned.

5.4 The maximum operating width of standard Shoring Shields is 7 feet, 7 inches.

5.5 The bottom of the Shoring Shield may be a maximum of 2 feet above the bottom of the excavation in soil Types A, B and C-60.

E.C.

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6.0 EXAMPLE TO ILLUSTRATE THE USE OF THE TABLE:

Problem: Shoring Shields are rated by their capacity, which is shown in lateral soil loads (pounds per square foot). Table SS-1SS converts the Load Capacity to maximum allowable depths for four soil types. Determine the maximum allowable depth that a Speed Shore Shoring Shield model number 8x12-H-SS may be installed in Type C-60 soil in the "hydraulic mode".

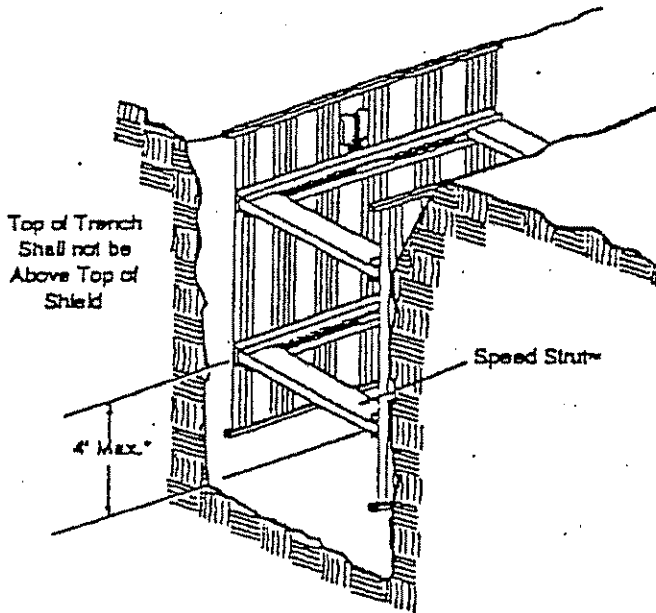
Study tables: Read down under column "Model" to line "8x12-H-SS". Read across to column "Load Capacity and Excavation Depth - Hydraulic Mode, Allowable Depth, Soil C-60" to find the answer: 17 feet.

Conclusion: Model 8x12-H-SS may be installed to a maximum allowable depth of 17 feet in Type C-60 soil.

Table SS-1 is used in identical manner as Table SS-1SS.

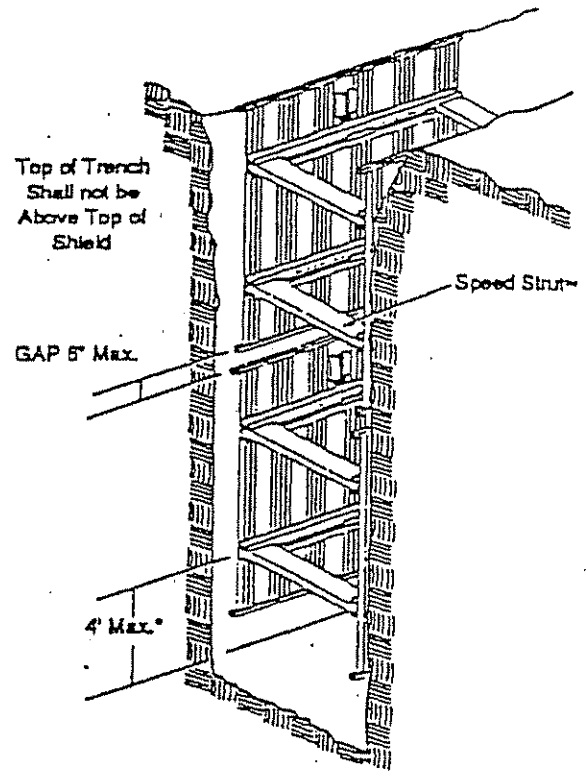
EXAMPLES OF SHORING SHIELDS WITH SPEED STRUTS.

Soil Type A, B, C, and C-60
Shoring Shield In
An Unslanted Trench



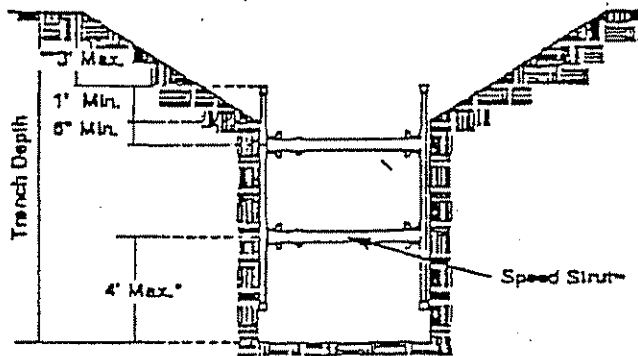
* For Soil Type C see note (5)
 —Shown With New Speed Strut—
 Shields May Be Furnished With Static Square Steel Tubes.

Soil Type A, B, C, and C-60
Shoring Shield
Stacked Hydraulically



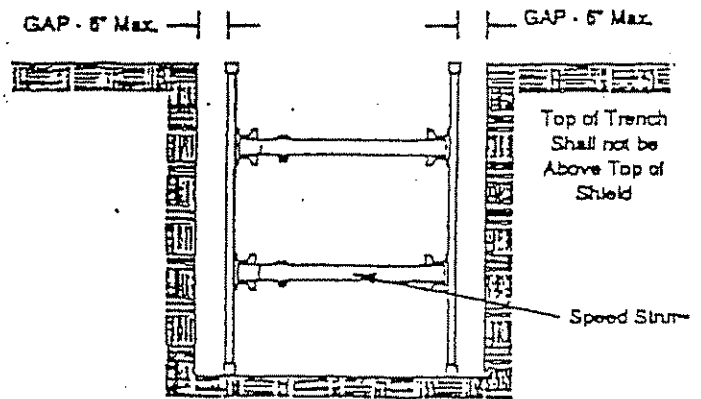
* For Soil Type C see note (5)

Soil Type A, B, C, and C-60
Shoring Shield In a
Combination Sloped Excavation
With Vertically Sided Lower Portion



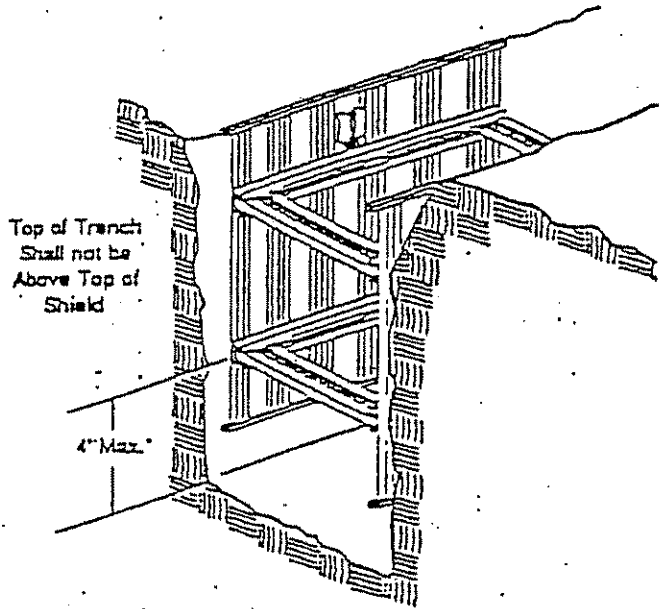
* For Soil Type C see note (5)
 —Zero feet for C-Soil

Soil Type A, B, and C-60
Shoring Shield Installed
In the "Static Mode"



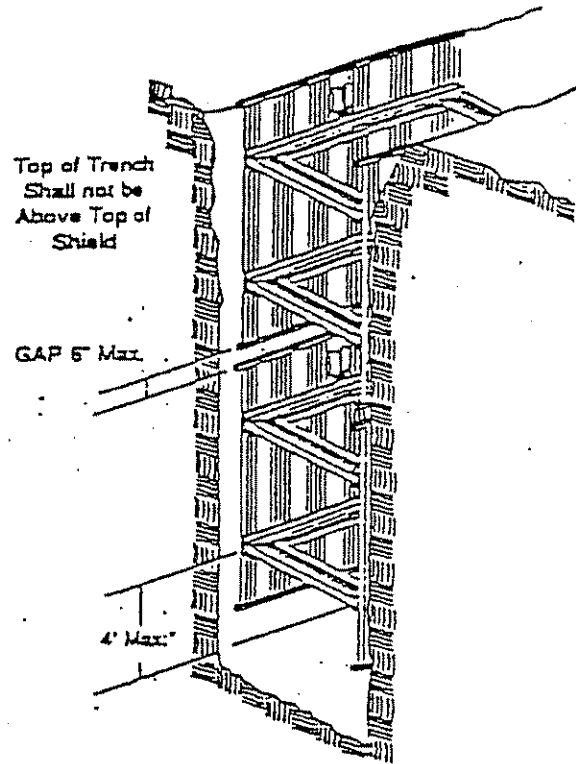
EXAMPLES OF SHORING SHIELDS WITH EXPOSED CYLINDERS

Soil Type A, B, C, and C-60
Shoring Shield in
An Unslanted Trench



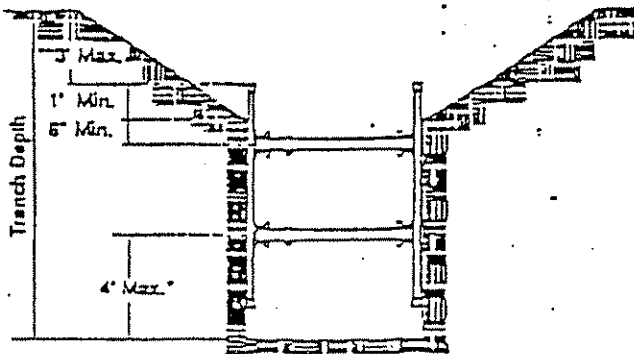
* For Soil Type C see note (5)

Soil Type A, B, C, and C-60
Shoring Shield
Stacked Hydraulically



* For Soil Type C see note (5)

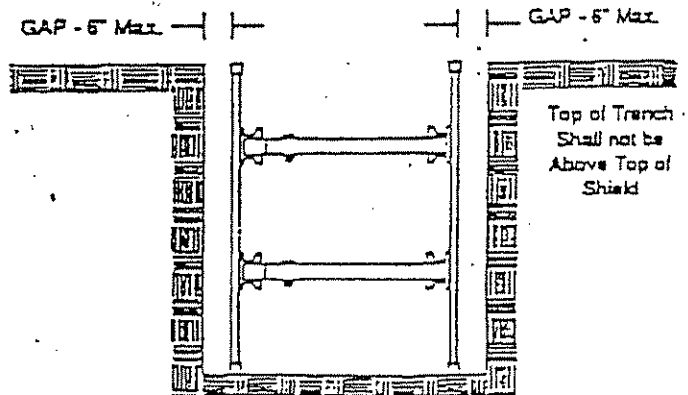
Soil Type A, B, C, and C-60
Shoring Shield in a
Combination Sloped Excavation
With Vertically Sided Lower Portion

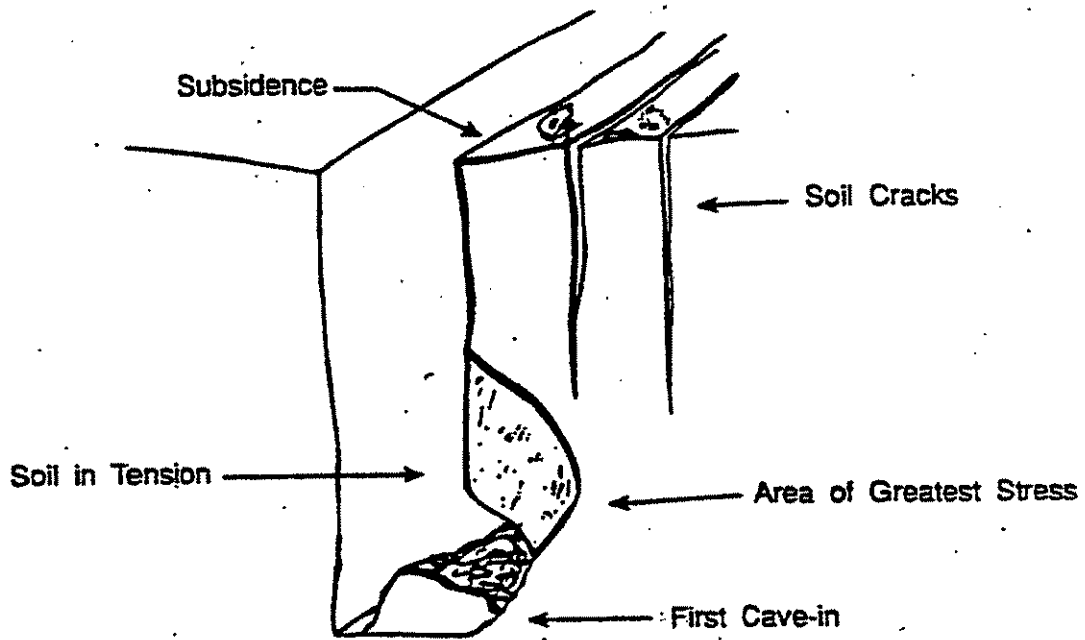
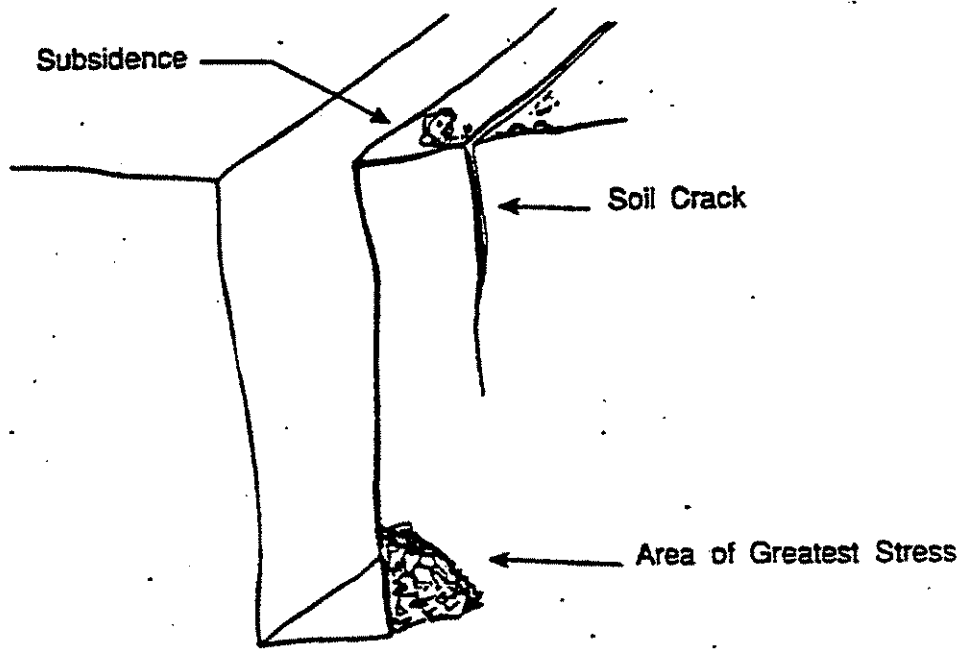


* For Soil Type C see note (5)

** Zero feet for C-Soil

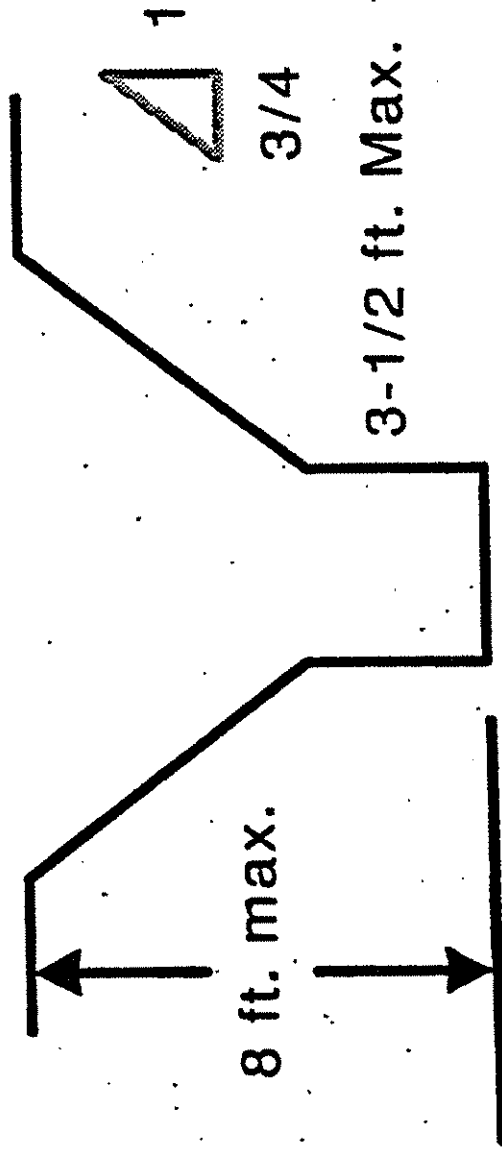
Soil Type A, B, and C-60
Shoring Shield installed
in the "Static Mode"





Unsupported Vertically Sided Lower Portion Type A Soil

8 ft. or less in depth
Maximum vertical side of 3-1/2 feet



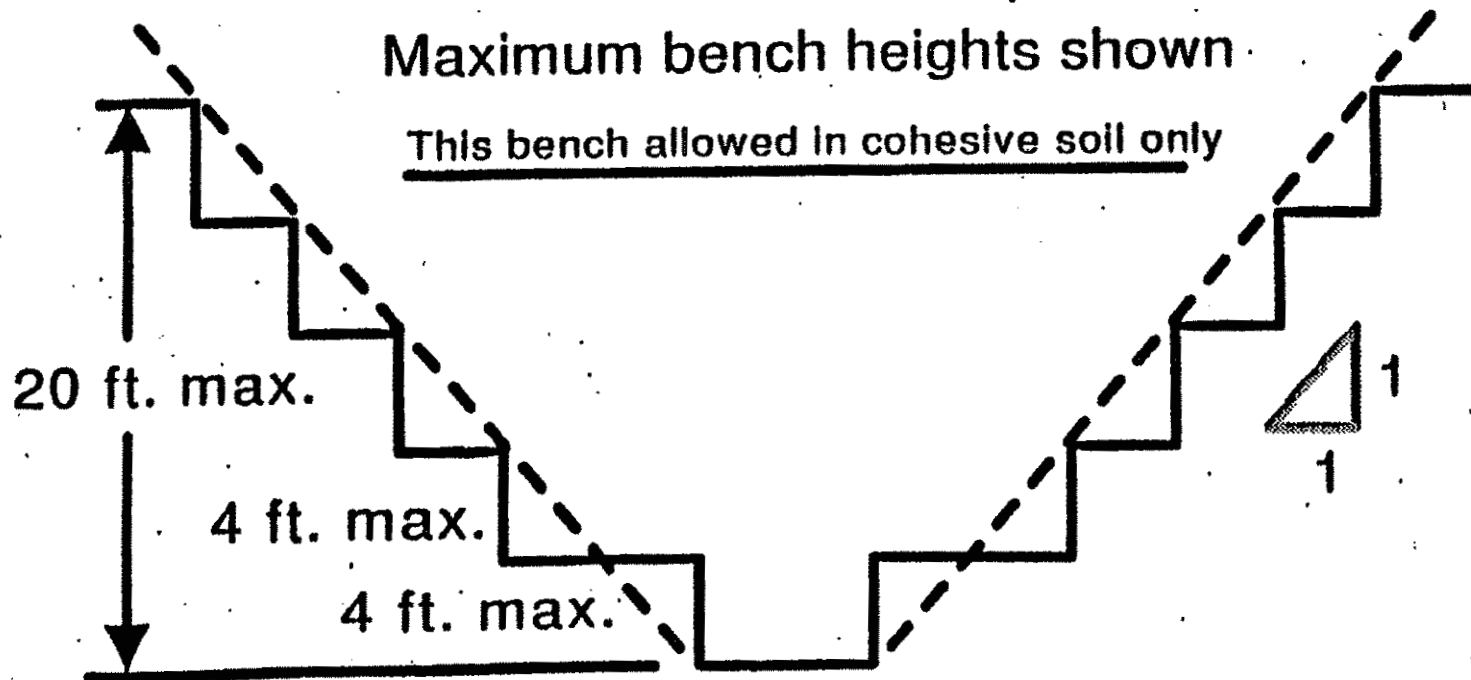
Multiple Bench Type B Soil

20 ft. or less in depth

Maximum allowable slope of 1:1

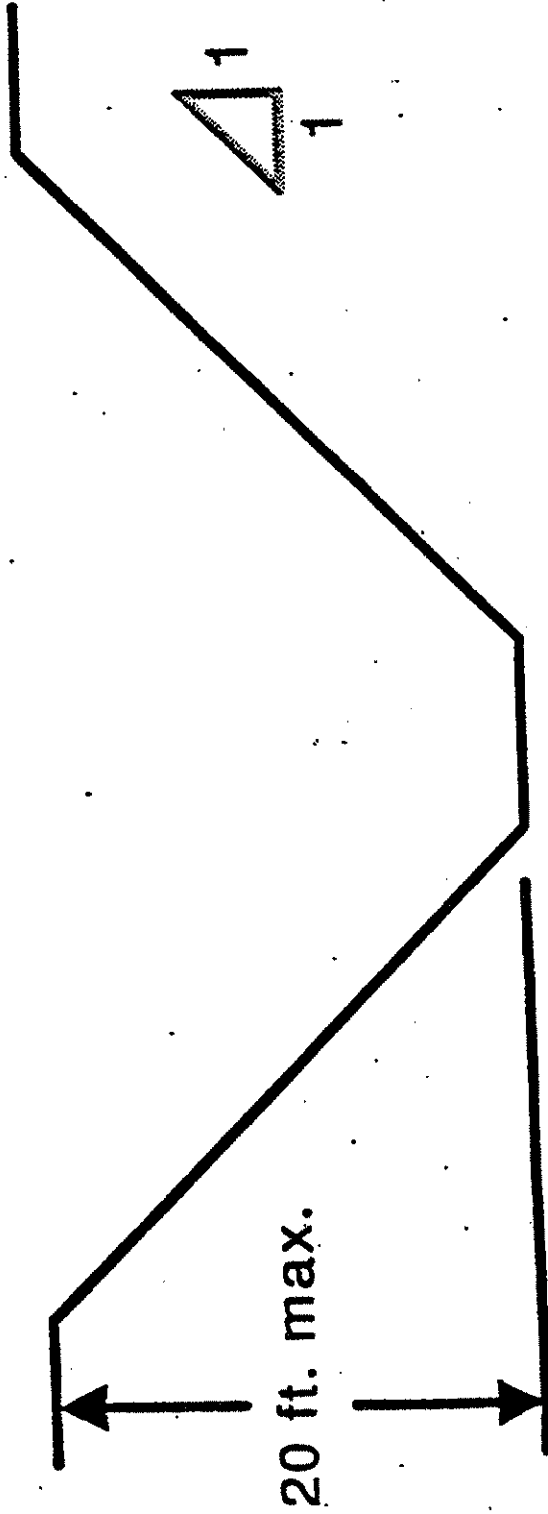
Maximum bench heights shown

This bench allowed in cohesive soil only



Simple Slope Type B Soil

20 ft. or less in depth
Maximum allowable slope of 1:1



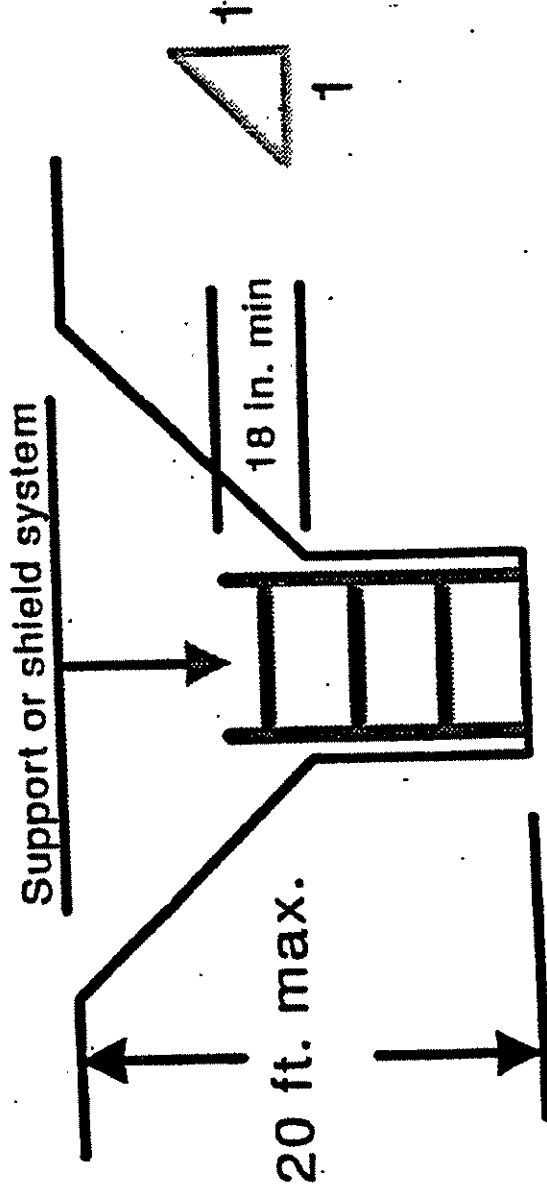
Supported or Shielded Vertically Sided Lower Portion Type B Soil

Type B Soil

20 ft. or less in depth

Maximum allowable slope of 1:1

Support or shield system must extend
at least 18 in. above vertical side

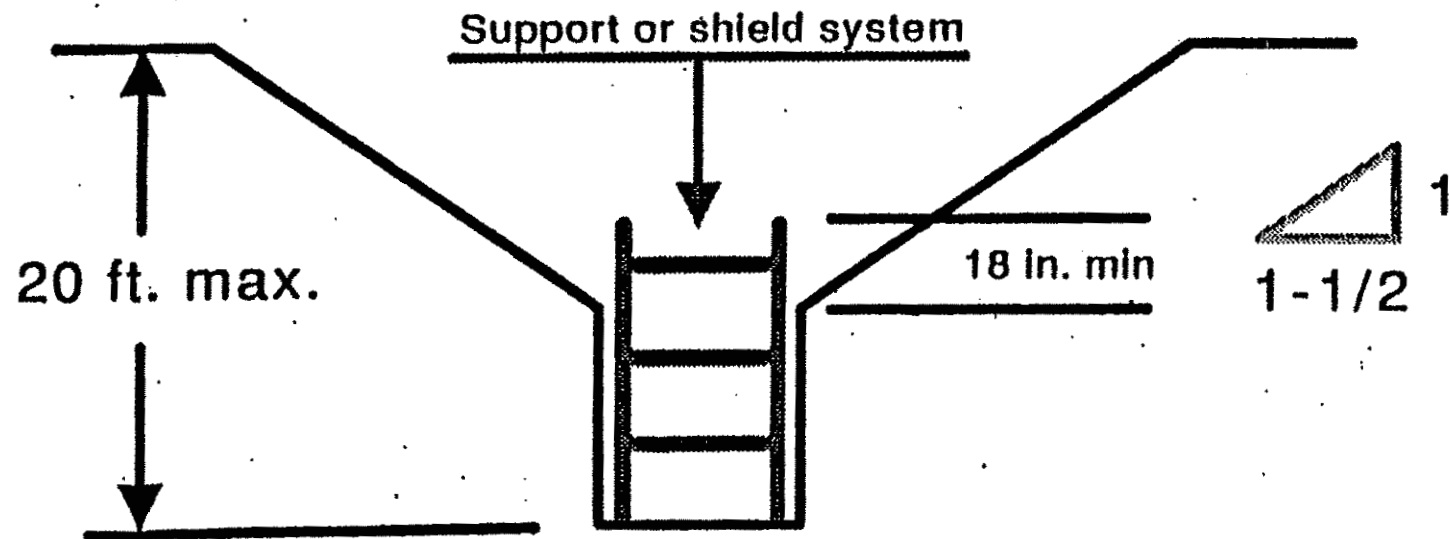


Supported or Shielded Vertically Sided Lower Portion Type C Soil.

20 ft. or less in depth

Maximum allowable slope of 1-1/2:1

Support or shield system must extend
at least 18 in. above vertical side

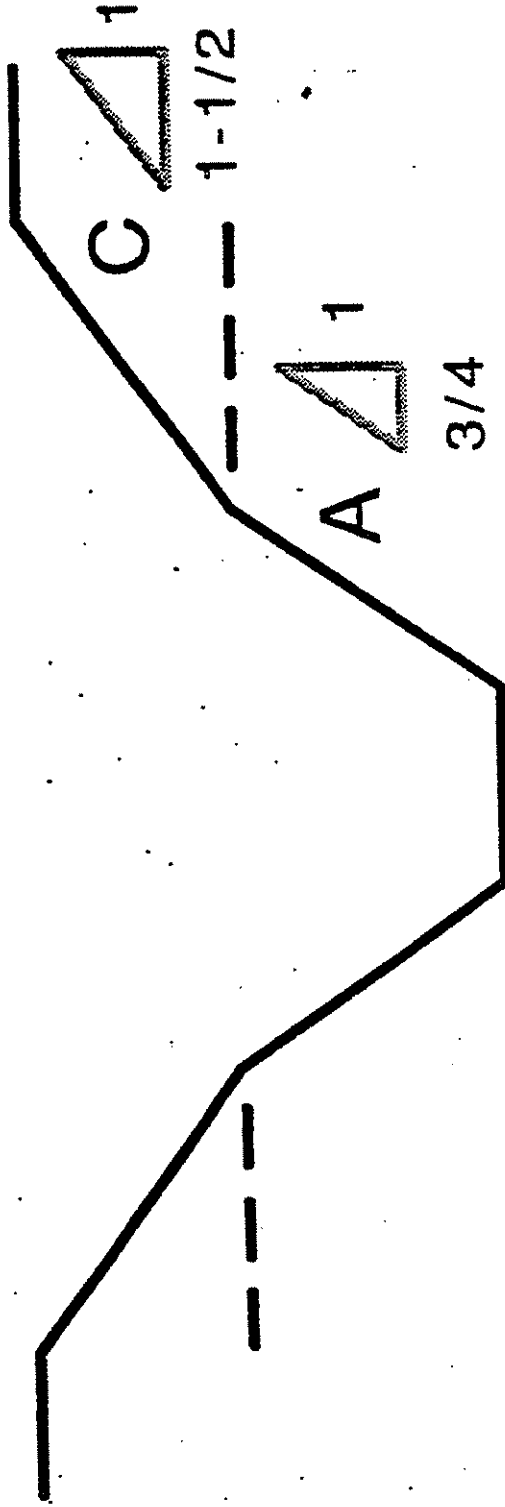


Layered Soils

C over A

20 ft. or less in depth

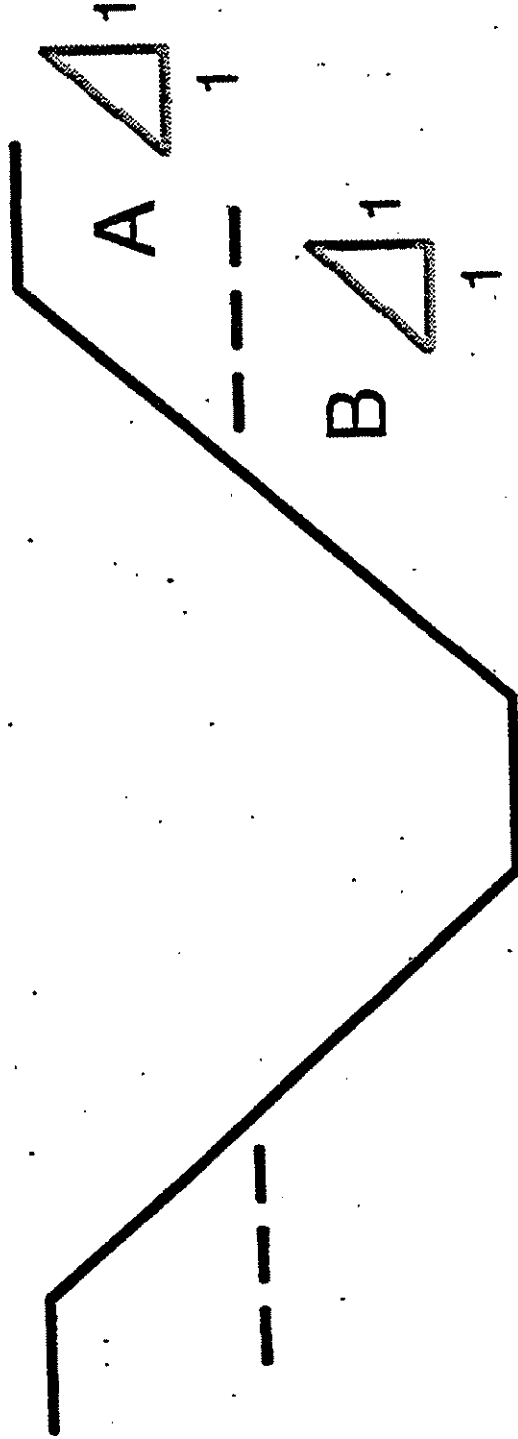
Maximum allowable slope for
each layer shown below



Layered Soils A over B

20 ft. or less in depth

Maximum allowable slope for
each layer shown below

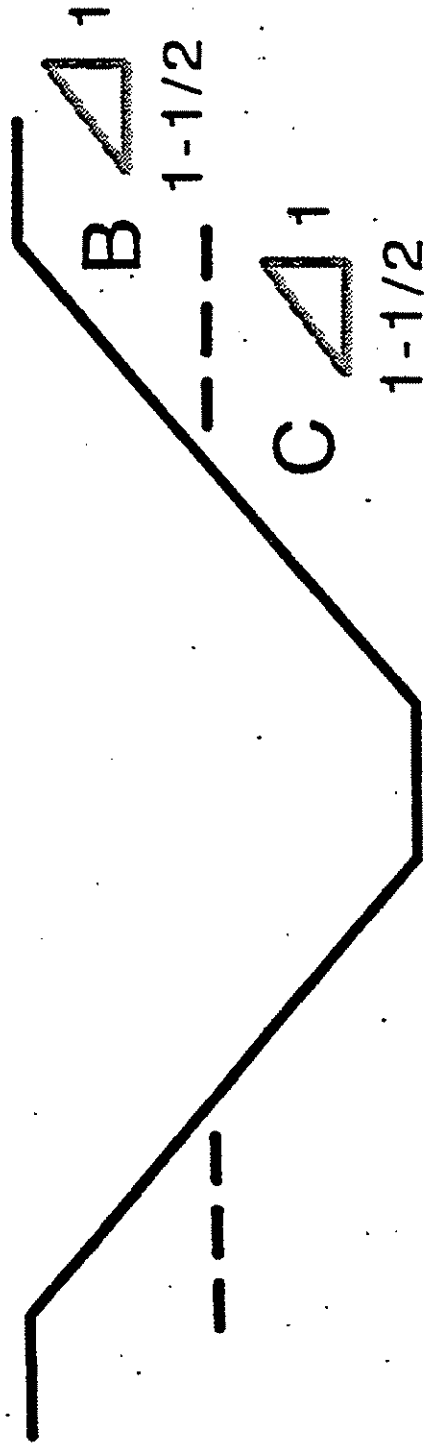


Layered Soils

B over C

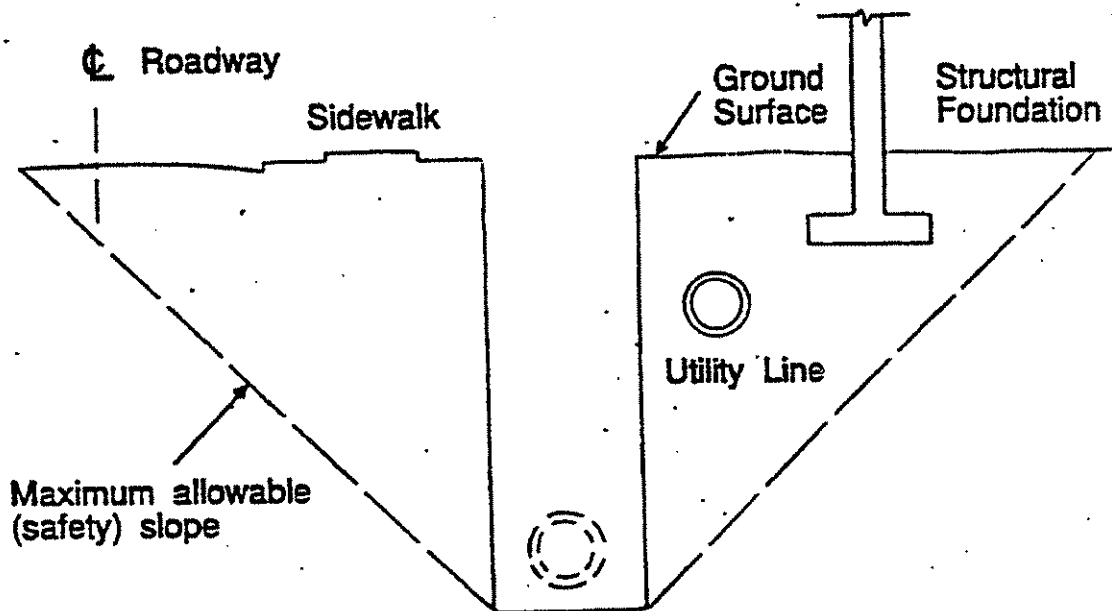
20 ft. or less in depth

Maximum allowable slope for each layer shown below



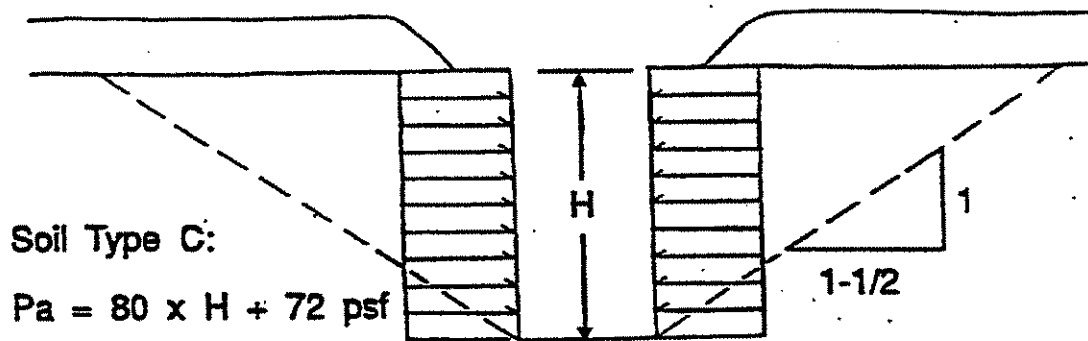
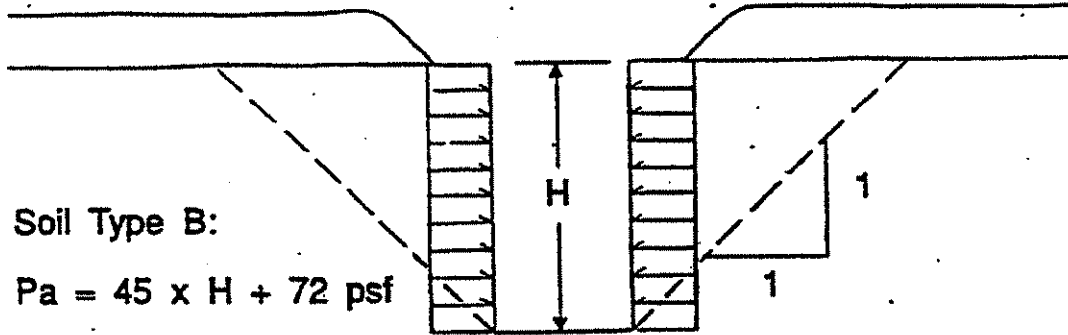
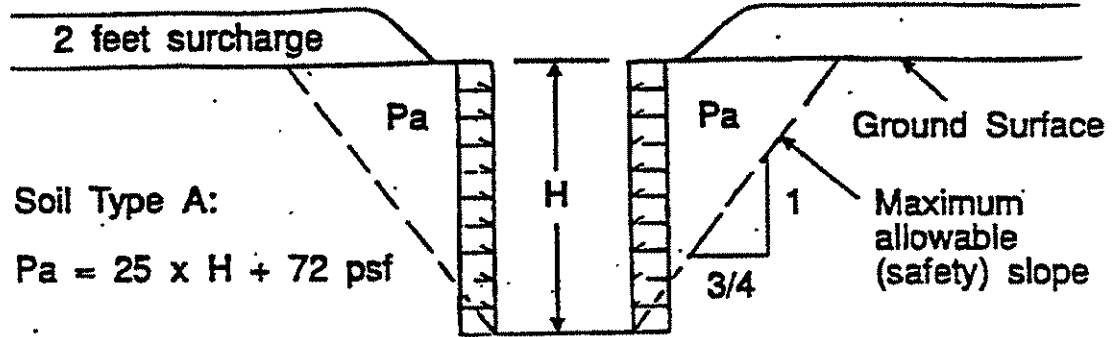


TIMBER SHORING FOR TRENCHES



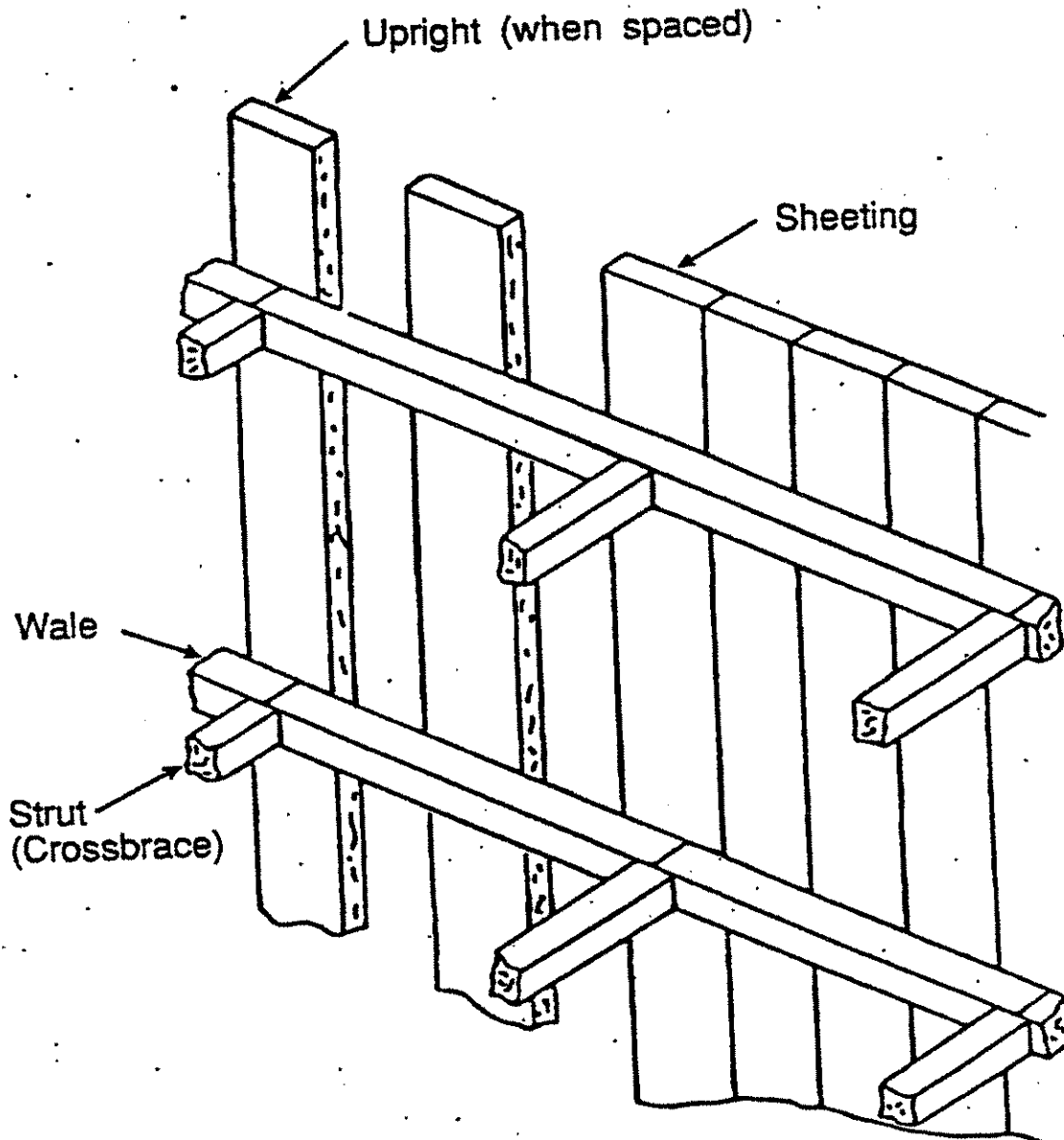
Why does it have to be a vertical face trench excavation?

- Existing utility lines, roadways, or structural foundations above the maximum allowable slope.
- No right-of-way permit for sloped excavation.



H = Total depth of excavation \leq 20 feet

Components of Shoring Systems





APPENDIX D

ALUMINUM HYDRAULIC SHORING



Use of Tables

- Selection is based on the soil type, and on the depth and width of the trench.
- The user may have the choice of the horizontal spacing of the hydraulic cylinder.
- Tables D-1.1 and D-1.2 for vertical shores are used in Type A and B soils that do not require sheeting.
- Type B soils that may require sheeting and Type C soils that always do are presented in Tables D-1.3 and D-1.4.



MECHANICS OF A CAVE-IN. AN EXAMPLE

An open excavation is an unnatural situation. The average landscape shows no vertical or near vertical slopes.

Soil or dirt is a very heavy material. A cubic foot can easily weigh 114 pounds and a cubic yard can be as heavy as a pick-up truck.

Consider a column of soil which is one foot by one foot and several feet high. At one foot of depth a horizontal plane one foot by one foot is carrying the cubic foot which lies over it. The stress, or load per unit area is 100 lbs. per square foot (psf). At a depth of two feet the horizontal plane is carrying two cubic feet or 200 psf. At a depth of five feet the vertical stress is 500 psf, and so on.

The column described would soon collapse if not supported by similar adjacent columns. Stresses are developed which act horizontally on the column. These lateral stresses can be considered $\frac{1}{2}$ as large as the vertical stresses. At a depth of five feet the vertical stress is 500 psf and the lateral, or horizontal stress is 250 psf.

Undisturbed soil may be visualized as an infinite number of columns of soil adjoining and supporting one another. The system is in equilibrium and is perfectly stable.

When an excavation is cut the system is disturbed. Lateral stresses which existed on the excavation wall are removed as the excavation is done. The soil in the excavation wall immediately begins to move, however slowly, into the excavation.

At the same time the surface of the ground next to the excavation subsides, creating an unnatural situation. The surface of the ground is in tension and some of the weight of the soil in the excavation wall is transferred to the soil



TRENCH SHIELDS



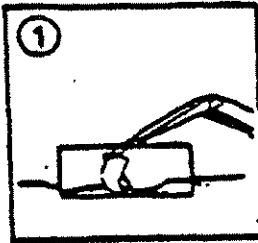
General Description

- A trench shield is a movable box strong enough to protect the employee inside, but light enough to handle easily in the trench.
- Ideally, the width of a trench is approximately 4 inches wider than the width of the trench shield to reduce possible friction during movement. Thus, the trench shield cannot effectively prevent soil cave-ins outside the box.

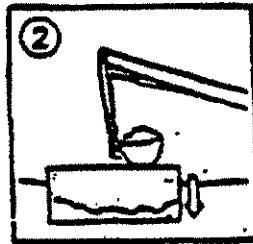


Shield Installation and Movement

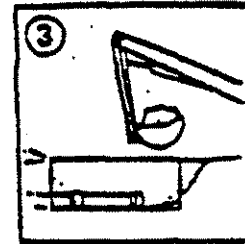
By excavating inside the shield in Type B and Type C soils, contractors are able to greatly reduce the amount of soil removed. This technique is also used on narrow street work as it helps to minimize environmental damage and restoration costs.



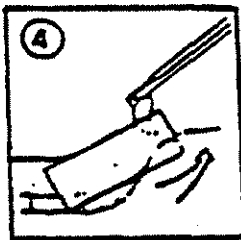
① Place the shield in-line and dig from within



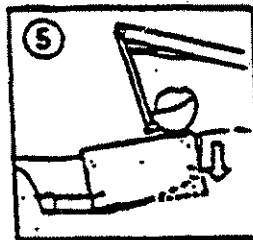
② . . . tamping the shield down after each bucketful



③ When the shield attains grade, install pipe.



④ Then, pull the shield forward and up approximately 45 degrees.



⑤ . . . and continue excavating inside, tamping the front of the shield again to grade for setting the next length of pipe.

As you continue this process, backfilling can proceed at the rear.

SAMPLE -- Excavation Checklist

EXCAVATION CHECKLIST

(To be completed by a "Competent Person")

SITE LOCATION:

DATE:

TIME:

COMPETENT PERSON:

SOIL TYPE (See attached form):

SOIL CLASSIFICATION:

EXCAVATION DEPTH:

EXCAVATION WIDTH:

TYPE OF PROTECTIVE SYSTEM USED:

Indicate for each item: YES -- NO -- or N/A for not applicable)

1.) General Inspection of Jobsite:		
A.	Excavations, adjacent areas, and protective systems inspected by a competent person daily prior to the start of work.	
B.	Competent person has the authority to remove employees from the excavation immediately.	
C.	Surface encumbrances removed or supported.	
D.	Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	
E.	Hard hats worn by all employees.	
F.	Spoils, materials, and equipment set back at least 2 feet from the edge of the excavation.	
G.	Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	
H.	Walkways and bridges over excavations 4 feet or more in depth are equipped with standard guardrails and toeboards.	
I.	Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	
J.	Employees required to stand away from vehicles being loaded or unloaded.	
K.	Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	
L.	Employees prohibited from going under suspended loads.	
M.	Employees prohibited from working on the faces of sloped or benched excavations above other employees.	
2.) Utilities:		
A.	Utility companies contacted and/or utilities located.	
B.	Exact location of utilities marked.	
C.	Underground installations protected, supported, or removed when excavation is open.	

H. Excavations below the level of the base or footing supported, approved by an RPE.	
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	
J. Backfilling progresses with removal of support system.	
K. Excavation of material to a level no greater than 2 feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	
L. Shield system placed to prevent lateral movement.	
M. Employees are prohibited from remaining in shield system during vertical movement.	

CORRECTIVE ACTION AND REMARKS:

NOTE: The following unconfined compressive strength tests should be performed on undisturbed soils.

Thumb Test used to estimate unconfined compressive strength of cohesive soil:

Test performed:	Yes _____	No _____
_____	Type A -- soil indented by thumb with very great effort.	
_____	Type B -- soil indented by thumb with some effort.	
_____	Type C -- soil easily penetrated several inches by thumb with little or no effort. If soil is submerged, seeping water, subjected to surface water, runoff, exposed to wetting.	

Penetrometer or Shearvane used to estimate unconfined compressive strength of cohesive soils:

Test performed:	Yes _____	No _____	Device used:
_____	Type A -- soil with unconfined compressive strength of 1.5 tsf or greater.		
_____	Type B -- soil with unconfined compressive strength greater than 0.5 tsf and less than 1.5 tsf.		
_____	Type C -- soil with unconfined compressive strength of 0.5 tsf or less. If soil is submerged, seeping water, subjected to surface water, runoff, exposed to wetting.		

NOTE: Type A -- no soil is type A if soil is fissured, subject to vibration, previously disturbed, layered dipping into excavation on a slope of 4H:1V.

SOIL CLASSIFICATION

Stable Rock _____ Type A _____ Type B _____ Type C _____

SELECTION OF PROTECTIVE SYSTEM (Appendix F)

Protective System:	_____ Sloping (Appendix B)	Specify angle _____
	_____ Timber shoring (Appendix C)	
	_____ Aluminum hydraulic shoring (Appendix D)	
	_____ Trench shield	Maximum depth in this soil _____

NOTE: Although OSHA will accept the above tests in most cases, some states will not. Check your state safety requirements for trenching regulations.

SAMPLE -- OSHA Inspection Report

OSHA INSPECTION REPORT

DATE: _____ TIME: _____

PLACE: _____

COMPLIANCE OFFICER'S NAME: _____

BADGE NUMBER: _____

OFFICE ADDRESS: _____

Did OSHA Compliance Officer wait for manager? Yes _____ No _____ If yes, how long? _____

Was opening conference held? Yes _____ No _____

Who was the Competent Person: _____

Depth of trench entered by employees: _____ Width of trench: _____

Type of soil: Stable Rock _____ Type A _____ Type B _____ Type C _____

Type of soil test taken: Pocket Penetrometer _____ Other _____

Employees in trench? Yes _____ No _____

Water in trench? Yes _____ No _____ If yes, was it controlled? Yes _____ No _____

Were pictures taken? Yes _____ No _____ If yes, how many? _____

Was spoil back two feet? Yes _____ No _____

Did competent person do daily jobsite inspection prior to OSHA visit? Yes _____ No _____
If no, why not? _____

If the ditch was over five feet deep, was it:
• Sloped? Yes _____ No _____ At what angle? _____
• Shored? Yes _____ No _____ Was it our system? Yes _____ No _____
• Other? _____
• Was there a ladder? Yes _____ No _____
If no, why not? _____

Were all employees wearing hard hats? Yes _____ No _____

Were barricades and signs used properly? Yes _____ No _____

COMMENTS:

SIGNED (Competent Person/Manager: _____

PLANT SAFETY

The plant deserves special consideration as a hazardous work place. Most of the conditions which create unsafe conditions exist in any plant area. Safety of the work environment can be enhanced by:

1. BE ALERT- BE AWARE - TAKE IMMEDIATE ACTION TO CORRECT UNSAFE CONDITIONS.
2. Keep the work area clean and orderly.
3. Replace safety guards on moving machinery.
4. Wear ear, eye, and body protection where required.
5. Provide safe storage for hazardous chemicals and use them only in accordance with proper direction.
6. Know where safety devices are located and how to use them.
7. Never leave an unsafe condition for someone else to find the hard way.
8. Wipe up spills immediately.
9. Report unsafe work practice by others.
10. Keep safety posters and warning devices in a condition where they serve the employee.
11. Do not violate posted rules.

Sample Written Program
for
Control of Hazardous Energy
(Lockout/Tagout)

provided as a public service by

OSHCON

Occupational Safety and Health Consultation Program



Publication No. HS02-011B(3-03)
Revised 3/06/03

1910.147

The Control of Hazardous Energy (Lockout/Tagout)

The following lockout/tagout program is provided only as a guide to assist employers and employees in complying with the requirements of 29 CFR 1910.147, as well as to provide other helpful information. It is not intended to supersede the requirements of the standard. An employer should review the standard for particular requirements which are applicable to their individual situation and make adjustments to this program that are specific to their company. An employer will need to add information relevant to their particular facility in order to develop an effective, comprehensive program.

1910.147

The Control of Hazardous Energy (Lockout/Tagout) Procedure
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Christian Co. Water District

Lockout/Tagout Procedure

I. OBJECTIVE

The objective of this procedure is to establish a means of positive control to prevent the accidental starting or activating of machinery or systems while they are being repaired, cleaned and/or serviced. This program serves to:

- A. Establish a safe and positive means of shutting down machinery, equipment and systems.
- B. Prohibit unauthorized personnel or remote control systems from starting machinery or equipment while it is being serviced.
- C. Provide a secondary control system (tagout) when it is impossible to positively lockout the machinery or equipment.
- D. Establish responsibility for implementing and controlling lockout/tagout procedures.
- E. Ensure that only approved locks, standardized tags and fastening devices provided by the company will be utilized in the lockout/tagout procedures.

II. ASSIGNMENT OF RESPONSIBILITY

- A. _____ will be responsible for implementing the lockout/tagout program.
- B. _____ are responsible for enforcing the program and insuring compliance with the procedures in their departments.
- C. _____ is responsible for monitoring the compliance of this procedure and will conduct the annual inspection and certification of the authorized employees.
- D. _____ (those listed in Attachment A) are responsible for following established lockout/tagout procedures. An authorized employee is defined as a person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under 1910.147, The Control of Hazardous Energy (lockout/tagout).
- E. _____ (all other employees in the facility) are responsible for insuring they do not attempt to restart or re-energize machines or equipment that are locked out or tagged out. An affected employee is defined as a person whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

III. PROCEDURES

The ensuing items are to be followed to ensure both compliance with the OSHA Control of Hazardous Energy Standard and the safety of our employees.

A. Preparation for Lockout or Tagout

Employees who are required to utilize the lockout/tagout procedure (see Attachment A) must be knowledgeable of the different energy sources and the proper sequence of shutting off or disconnecting energy means. The four types of energy sources are:

1. electrical (most common form);
2. hydraulic or pneumatic;
3. fluids and gases; and
4. mechanical (including gravity).

More than one energy source may be utilized on some equipment and the proper procedure must be followed in order to identify energy sources and lockout/tagout accordingly. See Attachment F for specific procedure format.

B. Electrical

1. Shut off power at machine and disconnect.
2. Disconnecting means must be locked or tagged.
3. Press start button to see that correct systems are locked out.
4. All controls must be returned to their safest position.
5. Points to remember:
 - a. If a machine or piece of equipment contains capacitors, they must be drained of stored energy.
 - b. Possible disconnecting means include the power cord, power panels (look for primary and secondary voltage), breakers, the operator's station, motor circuit, relays, limit switches, and electrical interlocks.
 - c. Some equipment may have a motor isolating shut-off and a control isolating shut-off.
 - d. If the electrical energy is disconnected by simply unplugging the power cord, the cord must be kept under the control of the authorized employee or the plug end of the cord must be locked out or tagged out.

C. Hydraulic/Pneumatic

1. Shut off all energy sources (pumps and compressors). If the pumps and compressors supply energy to more than one piece of equipment, lockout or tagout the valve supplying energy to the piece of equipment being serviced.
2. Stored pressure from hydraulic/pneumatic lines shall be drained/bled when release of stored energy could cause injury to employees.
3. Make sure controls are returned to their safest position (off, stop, standby, inch, jog, etc.).

D. Fluids and Gases

1. Identify the type of fluid or gas and the necessary personal protective equipment.
2. Close valves to prevent flow, and lockout/tagout.
3. Determine the isolating device, then close and lockout/tagout.
4. Drain and bleed lines to zero energy state.
5. Some systems may have electrically controlled valves. If so, they must be shut off and locked/tagged out.
6. Check for zero energy state at the equipment.

E. Mechanical Energy

Mechanical energy includes gravity activation, energy stored in springs, etc.

1. Block out or use die ram safety chain.
2. Lockout or tagout safety device.
3. Shut off, lockout or tagout electrical system.
4. Check for zero energy state.
5. Return controls to safest position.

F. Release from Lockout/Tagout

1. Inspection: Make certain the work is completed and inventory the tools and equipment that were used.
2. Clean-up: Remove all towels, rags, work-aids, etc.
3. Replace guards: Replace all guards possible. Sometimes a particular guard may have to be left off until the start sequence is over due to possible adjustments. However, all other guards should be put back into place.
4. Check controls: All controls should be in their safest position.
5. The work area shall be checked to ensure that all employees have been safely positioned or removed and notified that the lockout/tagout devices are being removed.
6. Remove locks/tags. Remove only your lock or tag.

G. Service or Maintenance Involving More than One Person

When servicing and/or maintenance is performed by more than one person, each authorized employee shall place his own lock or tag on the energy isolating source. This shall be done by utilizing a multiple lock scissors clamp if the equipment is capable of being locked out. If the equipment cannot be locked out, then each authorized employee must place his tag on the equipment.

H. Removal of an Authorized Employee's Lockout/Tagout by the Company

Each location must develop written emergency procedures that comply with 1910.147(e)(3) to be utilized at that location. Emergency procedures for removing lockout/tagout should include the following:

1. Verification by employer that the authorized employee who applied the device is not in the facility.
2. Make reasonable efforts to advise the employee that his/her device has been removed. (This can be done when he/she returns to the facility).
3. Ensure that the authorized employee has this knowledge before he/she resumes work at the facility.

I. Shift or Personnel Changes

Each facility must develop written procedures based on specific needs and capabilities. Each procedure must specify how the continuity of lockout or tagout protection will be ensured at all times. See 1910.147(e)(4).

J. Procedures for Outside Personnel/Contractors

Outside personnel/contractors shall be advised that the company has and enforces the use of lockout/tagout procedures. They will be informed of the use of locks and tags and notified about the prohibition of attempts to restart or re-energize machines or equipment that are locked out or tagged out.

The company will obtain information from the outside personnel/contractor about their lockout/tagout procedures and advise affected employees of this information.

The outside personnel/contractor will be required to sign a certification form (see Attachment E). If outside personnel/contractor has previously signed a certification that is on file, additional signed certification is not necessary.

K. Training and Communication

Each authorized employee who will be utilizing the lockout/tagout procedure will be trained in the recognition of applicable hazardous energy sources, type and magnitude of energy available in the work place, and the methods and means necessary for energy isolation and control.

Each affected employee (all employees other than authorized employees utilizing the lockout/tagout procedure) shall be instructed in the purpose and use of the lockout/tagout procedure, and the prohibition of attempts to restart or re-energize machines or equipment that are locked out or tagged out.

Training will be certified using Attachment B (Authorized Personnel) or Attachment C (Affected Personnel). The certifications will be retained in the employee personnel files.

L. Periodic Inspection

A periodic inspection (at least annually) will be conducted of each authorized employee under the lockout/tagout procedure. This inspection shall be performed by the _____ . If _____ is also using the energy control procedure being inspected, then the inspection shall be performed by another party.

The inspection will include a review between the inspector and each authorized employee of that employee's responsibilities under the energy control (lockout/tagout) procedure. The inspection will also consist of a physical inspection of the authorized employee while performing work under the procedures.

The _____ shall certify in writing that the inspection has been performed. The written certification (Attachment D) shall be retained in the individual's personnel file.

ATTACHMENT B

**Certification of Training
(Authorized Personnel)**

I certify that I received training as an authorized employer under CCWD
Lockout/Tagout program. I further certify that I understand the procedures and will
abide by these procedures.

AUTHORIZED EMPLOYEE SIGNATURE

DATE

Personal Protective Equipment

Contents

- Introduction
- Hazard Assessment
- Training
- Head Protection
- Eye and Face Protection
- Ear Protection
- Respiratory Protection
- Torso Protection
- Arm and Hand Protection
- Foot and Leg Protection
- Other Related Issues
- Conclusion
- Other Sources of OSHA Assistance

Introduction

The goal of the Occupational Safety and Health Act of 1970 is to ensure safe and healthful working conditions for working men and women in the nation. This Act, which established the Occupational Safety and Health Administration (OSHA) in the Department of Labor, provides for research, information, education, and training in the field of occupational safety and health and authorizes enforcement of OSHA standards.

The Act covers more than 90 million employees throughout the United States. This landmark legislation, the first national safety and health law, establishes standards requiring employers to provide their workers with workplaces free from recognized hazards that could cause serious injury or death. It also requires the employees to abide by all safety and health standards that apply to their jobs.

Although the aim of this booklet is to assist in providing a safe and healthful workplace, the scope is restricted to preventing employee exposure to unsafe equipment and situations. Words such as "must," "shall," "required," and "necessary" indicate requirements under the OSHA standards. Procedures indicated by "should," "may," "suggested," and "recommended" constitute generally accepted good practices.

Much of the personal protective equipment (PPE) information in this booklet is framed in general terms and is intended to complement relevant regulations and manufacturers' requirements. For more specific information, refer to the OSHA standards collected in Title 29, Code of Federal Regulations (CFR), Parts 1900-1999. In some instances, the standards or this booklet refer to specifications by the American National Standards Institute (ANSI), 11 West 42nd St., New York, NY 10036, and the American Society for

employees use properly fitted personal protective equipment suitable for protection from these hazards.

Employers must certify in writing that a workplace hazard assessment has been performed. Defective or damaged personal protective equipment shall not be used.

Training

Before doing work requiring use of personal protective equipment, employees must be trained to know; when personal protective equipment is necessary; what type is necessary; how it is to be worn; and what its limitations are, as well as know its proper care, maintenance, useful life, and disposal. In many cases more than one type of personal protective equipment will provide adequate protection. In those instances employees should be given a choice.

Employers are required to certify in writing that training has been carried out and that employees understand it. Each written certification shall contain the name of each employee trained, the date(s) of training, and identify the subject of the certification.

Head Protection

Prevention of head injuries is an important factor in every safety program. A survey by the Bureau of Labor Statistics (BLS) of accidents and injuries noted that most workers who suffered impact injuries to the head were not wearing head protection. The majority of workers were injured while performing their normal jobs at their regular worksites.

The survey showed that in most instances where head injuries occurred employers had not required their employees to wear head protection. Of those workers wearing hard hats, all but 5 percent indicated that they were required by their employers to wear them. It was found that the vast majority of those who wore hard hats all or most of the time at work believed that hard hats were practical for their jobs. According to the report, in almost half of the accidents involving head injuries, employees knew of no actions taken by employers to prevent such injuries from recurring.

The BLS survey noted that more than one-half of the workers were struck on the head while they were looking down and almost three-tenths were looking straight ahead. While a third of the unprotected workers were injured when bumping into stationary objects, such actions injured only one-eighth of hard hat wearers. Elimination or control of a hazard that led to or might lead to an accident should, of course, be given first consideration, but many accidents causing head injuries are of a type difficult to anticipate and control. Where these conditions exist, head protection must be provided to eliminate injury.

Head injuries are caused by falling or flying objects, or by bumping the head against a fixed object. Head protection, in the form of protective hats, must do two things resist penetration and absorb the shock of a blow. This is accomplished by making the shell of

Materials used in helmets should be water-resistant and slow burning. Each helmet consists essentially of a shell and suspension. Ventilation is provided by a space between the headband and the shell. Each helmet should be accompanied by instructions explaining the proper method of adjusting and replacing the suspension and headband. The wearer should be able to identify the type of helmet by looking inside the shell for the manufacturer, ANSI designation and class. For example:

Manufacturer's Name
ANSI Z89.1-1969 (or later year)
Class A

Fit Headbands are adjustable in 1/8-size increments. When the headband is adjusted to the right size, it provides sufficient clearance between the shell and the headband. The removable or replaceable type sweatband should cover at least the forehead portion of the headband. The shell should be of one-piece seamless construction and designed to resist the impact of a blow from falling material. The internal cradle of the headband and sweatband forms the suspension. Any part that comes into contact with the wearer's head must not be irritating to normal skin.

Inspection and Maintenance

Manufacturers should be consulted with regard to paint or cleaning materials for their helmets because some paints and thinners may damage the shell and reduce protection by physically weakening it or negating electrical resistance.

A common method of cleaning shells is dipping them for at least a minute in hot water (approximately 140 F) that contains a good detergent. Shells should then be scrubbed and rinsed in clear hot water. After rinsing, the shell should be carefully inspected for any signs of damage.

All components, shells, suspensions, headbands, sweatbands, and any accessories should be visually inspected daily for signs of dents, cracks, penetration, or any other damage that might reduce the degree of safety originally provided.

Users are cautioned that if unusual conditions occur (such as higher or lower extreme temperatures than described in the standards), or if there are signs of abuse or mutilation of the helmet or any component, the margin of safety may be reduced. If damage is suspected, helmets should be replaced or representative samples tested in accordance with procedures contained in ANSI Z89.1-1986. This booklet references national consensus standards, for example, ANSI standards, that were adopted into OSHA regulations. Employers are encouraged to use up-to-date national consensus standards that provide employee protection equal to or greater than that provided by OSHA standards.

Gas metal arc welding and flux cored arc welding	More than 8/32	250-500	11
		Less than 60	7
		60-160	10
		160-250	10
Gas tungsten arc welding		250-500	10
		Less than 50	8
		50-150	8
		150-500	10
Air carbon arc cutting	Light	Less than 500	10
	Heavy	500-1000	11
Plasma arc Welding		Less than 20	6
		20-100	8
		100-400	10
		400-800	11
Plasma arc Cutting	Light**	Less than 300	8
	Medium**	300-400	9
	Heavy**	400-800	10
Torch brazing			3
Torch soldering			2
Carbon arc welding			14

OPERATION	INCHES	MILLIMETERS	MINIMUM PROTECTIVE* SHADE
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Gas welding:			
Light	Under 1/8	Under 3.2	4
Medium	1/8-1/2	3.2-150	5
Heavy	Over 1/2	Over 12.7	6
Oxygen cutting:			
Light	Under 1	Under 25	3
Medium	1-6	25-50	4
Heavy	Over 6	Over 150	5

* As a rule of thumb, start with a shade that is too dark to see the weld zone (the darkest lens carries a value of 10). Then go to a lighter shade which gives sufficient view

Many hard hats and nonrigid helmets are designed with face and eye protective equipment.

Design, construction, tests, and use of eye and face protection purchased prior to July 5, 1994, must be in accordance with ANSI Z87.1-1968 USA Standard Practice for Occupational and Educational Eye and Face Protection. Protective eye and face devices purchased after July 5, 1994, must comply with ANSI Z87.1-1989, American National Standard Practice for Occupational and Educational Eye and Face Protection.

Fit

Fitting of goggles and safety spectacles should be done by someone skilled in the procedure. Prescription safety spectacles should be fitted only by qualified optical personnel.

Inspection and Maintenance

It is essential that the lenses of eye protectors be kept clean. Continuous vision through dirty lenses can cause eye strain often an excuse for not wearing the eye protectors. Daily inspection and cleaning of the eye protector with soap and hot water, or with a cleaning solution and tissue, is recommended.

Pitted lenses, like dirty lenses, can be a source of reduced vision. They should be replaced. Deeply scratched or excessively pitted lenses are apt to break more readily.

Slack, worn-out, sweat-soaked, or twisted headbands do not hold the eye protector in proper position. Visual inspection can determine when the headband elasticity is reduced to a point below proper function.

Goggles should be kept in a case when not in use. Spectacles, in particular, should be given the same care as one's own glasses, since the frame, nose pads, and temples can be damaged by rough usage.

Personal protective equipment that has been previously used should be disinfected before being issued to another employee.

Also, when each employee is assigned protective equipment for extended periods, it is recommended that such equipment be cleaned and disinfected regularly.

Several methods for disinfecting eye-protective equipment are acceptable. The most effective method is to disassemble the goggles or spectacles and thoroughly clean all parts with soap and warm water. Carefully rinse all traces of soap, and replace defective parts with new ones. Swab thoroughly or completely and immerse all parts for 10 minutes in a solution of germicidal deodorant fungicide. Remove parts from solution and suspend in a clean place for air drying at room temperature or with heated air. Do not

Torso Protection

Many hazards can threaten the torso: heat, splashes from hot metals and liquids, impacts, cuts, acids, and radiation. A variety of protective clothing is available: vests, jackets, aprons, coveralls, and full body suits.

Selection

Wool and specially treated cotton are two natural fibers that are fire-resistant and comfortable since they adapt well to changing workplace temperatures.

Duck, a closely woven cotton fabric, is good for light-duty protective clothing. It can protect against cuts and bruises on jobs where employees handle heavy, sharp, or rough material.

Heat-resistant material, such as leather, is often used in protective clothing to guard against dry heat and flame. Rubber and rubberized fabrics, neoprene, and plastics give protection against some acids and chemicals.

It is important to refer to the manufacturers' selection guides for the effectiveness of specific materials against specific chemicals.

Disposable suits of plastic like or other similar synthetic material are particularly important for protection from dusty materials or materials that can splash. If the substance is extremely toxic, a completely enclosed chemical suit may be necessary. The clothing should be inspected to ensure proper fit and function for continued protection.

Arm and Hand Protection

Examples of injuries to arms and hands are burns, cuts, electrical shock, amputation, and absorption of chemicals.

There is a wide assortment of gloves, hand pads, sleeves, and wristlets for protection against various hazardous situations.

Employers need to determine what hand protection their employees need. The work activities of the employees should be studied to determine the degree of dexterity required, the duration, frequency, and degree of exposure to hazards and the physical stresses that will be applied.

Also, it is important to know the performance characteristics of gloves relative to the specific hazard anticipated; e.g., exposure to chemicals, heat, or flames. Gloves' performance characteristics should be assessed by using standard test procedures.

According to the BLS survey, most of the workers in selected occupations who suffered foot injuries were not wearing protective footwear. Furthermore, most of their employers did not require them to wear safety shoes. The typical foot injury was caused by objects falling fewer than 4 feet and the median weight was about 65 pounds [4, p. 1]. Again, most workers were injured while performing their normal job activities at their worksites.

For protection of feet and legs from falling or rolling objects, sharp objects, molten metal, hot surfaces, and wet slippery surfaces workers should use appropriate footguards, safety shoes, or boots and leggings. Leggings protect the lower leg and feet from molten metal or welding sparks. Safety snaps permit their rapid removal.

Aluminum alloy, fiberglass, or galvanized steel footguards can be worn over usual work shoes, although they may present the possibility of catching on something and causing workers to trip. Heat-resistant soled shoes protect against hot surfaces like those found in the roofing, paving, and hot metal industries.

Safety shoes should be sturdy and have an impact-resistant toe. In some shoes, metal insoles protect against puncture wounds. Additional protection, such as metatarsal guards, may be found in some types of footwear. Safety shoes come in a variety of styles and materials, such as leather and rubber boots and oxfords.

Safety footwear is classified according to its ability to meet minimum requirements for both compression and impact tests. These requirements and testing procedures may be found in American National Standards Institute standards. Protective footwear purchased prior to July 5, 1994, must comply with ANSI Z41.1-1967, USA Standard for Men's Safety-Toe Footwear. Protective footwear purchased after July 5, 1994, must comply with ANSI Z41-1991, American National Standard for Personal Protection-Protective Footwear.

Other Related Issues

A Coast Guard-approved life jacket or buoyant work vest should be used if there is danger of falling into water while working. For emergency rescue operations, boats and ring buoys with at least 90 feet of line must be provided.

Night workers and flagmen who might be struck by moving vehicles need suits or vests designed to reflect light.

Cost Assumption

OSHA interprets its general personal protective equipment standard, as well as specific standards, to require employers to provide and to pay for personal protective equipment required by the company for the worker to do his or her job safely and in compliance with OSHA standards. Where equipment is personal in nature and usable by workers off the job, the matter of payment may be left to labor-management negotiations.

The guidelines identify four general elements that are critical to the development of a successful safety and health management program:

- *Management commitment and employee involvement;
- *Worksite analysis;
- *Hazard prevention and control; and
- *Safety and health training.

The guidelines recommend specific actions, under each of these general elements, to achieve an effective safety and health program. A single free copy of the guidelines can be obtained from U.S. Department of Labor, OSHA/OSHA Publications, P.O. Box 37535, Washington DC 20210 by sending a self-addressed mail label with your request.

References

- *U.S. Department of Labor. Bureau of Labor Statistics. Accidents Involving Head Injuries. Report 605. Washington, DC: U.S. Government Printing Office, July 1980. 17 Pp.
- *Accidents Involving Eye Injuries. Report 597. Washington, DC: U.S. Government Printing Office, April 1980. 23 Pp.
- *Accidents Involving Face Injuries. Report 604. Washington, DC: U.S. Government Printing Office, May 1980. 20 Pp.
- *Accidents Involving Foot Injuries. Report 626. Washington, DC: U.S. Government Printing Office, January 1981. 22 Pp.

HAZARD COMMUNICATION PROGRAM

INTRODUCTION

CCWD HAZARD COMMUNICATION PROGRAM

GENERAL COMPANY POLICY

The purpose of this notice is to inform you that our company is complying with the OSHA Hazard Communication Standard, 29 CFR 1910.1200, as adopted by 803 KAR 2:320, by compiling a hazardous chemicals list, by using material safety data sheets (MSDS), by ensuring that containers are labeled, and by providing proper training.

This program applies to all work operations in our company where employees may be exposed to hazardous substances under normal working conditions or during an emergency situation.

The safety and health (S&H) manager is the program coordinator, acting as the representative of the general manager, who has overall responsibility for the program. The S&H manager will review and update the program as necessary. Copies of the written program may be obtained from CCWD at any time.

Under this program, you will be informed of the contents of the Hazard Communications Standard, the hazardous properties of the chemicals with which you work, safe handling procedures, and measures to take to protect yourselves from these chemicals.

LIST OF HAZARDOUS CHEMICALS

The S&H manager will make a list of all the hazardous chemicals and related work practices used on the job, and will update the list as necessary. Our list of chemicals identifies all of the chemicals that may be encountered on the job. A separate list is available for each pump station and is posted there. Each list also identifies the corresponding MSDS for each chemical. A master list of these chemicals will be maintained by, and is available from the S&H manager.

MATERIAL SAFETY DATA SHEETS (MSDS)

MSDS's provide you with specific information on the chemicals you use. The safety and health manager will maintain a binder in his office with an MSDS on every substance on the list of hazardous chemicals. The MSDS will be a fully completed OSHA Form 174 or equivalent. The General Manager will ensure that each work site maintains an MSDS for hazardous materials in that area. MSDS's will be made readily available to you at your work site during your work period. The safety and health manager is responsible for acquiring and updating MSDS's. He will contact the chemical manufacturer or vendor if additional research is necessary or if an MSDS has not been supplied with an initial shipment. The S&H manager must clear all new procurements for the company. A master list of MSDS's is available from the S&H manager.

LABELS AND OTHER FORMS OF WARNING

The safety and Health manager will ensure that all hazardous chemicals at CCWD are properly labeled and updated, as necessary. Labels should list at least the chemical identity, appropriate hazard warnings, and the name and address of the manufacturer, importer or other responsible party. The S&H manager will refer to the corresponding MSDS to assist you in verifying label

information. The supervisor, to make sure all containers are properly labeled, will check containers that are shipped from CCWD.

If there are a number of stationary containers within a work area that have similar contents and hazards, signs will be posted on them to convey the hazard information.

If you transfer chemicals from a labeled container to a portable container that is intended only for your immediate use, no labels are required on the portable container. Pipes or piping systems (hoses or tubing) will not be labeled but their contents will be described in the training sessions.

NON-ROUTINE TASKS

If you are required to perform hazardous non-routine tasks, a special training session will be conducted to inform you regarding the hazardous chemicals to which you might be exposed and the proper precautions to take to avoid exposure.

TRAINING

Everyone who works with or is potentially exposed to hazardous chemicals will receive initial training on the Hazard Communication Standard and the safe use of those hazardous chemicals by the S&H manager. Whenever a new hazard is introduced new training will be provided. Supervisors will be extensively trained regarding hazards and appropriate protective measures so they will be able to answer questions from employees and provide daily monitoring of safe work practices.

The training plan will emphasize these items:

- Summary of the standard and this written program
- Chemical and physical properties of hazardous materials (e.g., flash point, reactivity) and methods that can be used to detect the presence or release of chemicals.
- Physical hazards of chemicals (e.g., potential for fire, explosion, etc.)
- Health hazards, including signs and symptoms of exposure, associated with exposure to chemicals and any medical condition known to be aggravated by exposure to the chemical.
- Procedures to protect against hazards (e.g., personal protective equipment required, proper use, and maintenance; work practices or methods to assure proper use and handling of chemicals; and procedures for emergency response.)
- Work procedures to follow to assure protection when cleaning hazardous chemical spills and leaks; and
- Where MSDS's are located, how to read and interpret the information on both labels and MSDS's, and how employees may obtain additional hazard information.

The safety & health manager or designee will review our employee training program and advise the general manager on training and retraining needs. Retraining is required when the hazard changes or when a new hazard is introduced into the workplace, but it will be company policy to provide training regularly in safety meetings to ensure the effectiveness of the program. As part of the assessment of the training program, the S&H manager will obtain input from employees regarding the training they have received and their suggestions for improving it.

CONTRACTOR EMPLOYEES

The S&H manager, upon notification by the general manager, will advise outside contractors in person of any chemical hazards that may be encountered in the normal course of their work on the premises, the labeling system in use, the protective measures to be taken, and the safe handling procedures to be used. In addition, the S&H manager will notify these individuals of the

location and availability of MSDS's. Each contractor bringing chemicals on-site must provide us with the appropriate hazard information on these substances, including the labels used and the precautionary measures to be taken in working with these chemicals.

ADDITIONAL INFORMATION

All employees, or their designated representative, can obtain further information on this written program, the hazard communication standard, applicable MSDS's, and chemical information lists from CCWD.

MSDS DATE: 8/21/94
 CHANGE NO.: 12068

For Assistance, Contact:
 Regulatory Affairs Dept.
 PO Box 907 Ames, IA 50010
 (800) 227-4224

Emergency Telephone #
 Rocky Mountain Poison Ctr.
 (505) 625-5716

I. PRODUCT IDENTIFICATION

PRODUCT NAME: DPD Free Chlorine Reagent
 CAS NO.: NA CHEMICAL NAME: Not applicable
 FORMULA: Not applicable CHEMICAL FAMILY: Not applicable
 MSDS NUMBER: H00109

latex gloves

II. INGREDIENTS

Carboxylate Salt (Trade Secret)
 PCT: 48 TO 76 CAS NO.: Confidential SARA: NOT LISTED
 TLV: Not established PEL: Not established
 HAZARD: Toxicity unknown

VII. FIRST AID

EYE AND SKIN CONTACT: Immediately flush eyes with water for 15 minutes. Call physician. Remove contaminated clothing. Wash skin with soap and plenty water.
 INGESTION: Give large quantities of water. Call physician immediately.
 INHALATION: Remove to fresh air.

Sodium Phosphate, Dibasic, Food Grade
 PCT: 50 TO 60 CAS NO.: 7558-79-4 SARA: NOT LISTED
 TLV: Not established PEL: Not established
 HAZARD: Moderately toxic; may cause irritation

VIII. SPILL AND DISPOSAL PROCEDURES

IN CASE OF SPILL OR RELEASE: Sweep up powder. Avoid breathing material. Dissolve in water. Flush down the drain with excess water. DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.

Salt of N,N-Diethyl-p-Phenylenediamine
 PCT: 1 TO 5 CAS NO.: Confidential SARA: NOT LISTED
 TLV: Not established PEL: Not established
 HAZARD: Moderately toxic; may cause skin sensitization

IX. TRANSPORTATION DATA

D.O.T. PROPER SHIPPING NAME: Not Currently Regulated
 HAZARD CLASS: NA ID: NA GROUP: NA

Ethylenediaminetetraacetic Acid, Disodium Salt, Dihydrate
 PCT: 1 TO 5 CAS NO.: 6361-92-6 SARA: NOT LISTED
 TLV: Not established PEL: Not established
 HAZARD: Moderately toxic; may cause irritation

I.C.A.O. PROPER SHIPPING NAME: Not Currently Regulated
 HAZARD CLASS: NA ID: NA GROUP: NA

I.M.O. PROPER SHIPPING NAME: Not Currently Regulated
 HAZARD CLASS: NA ID: NA GROUP: NA

III. PHYSICAL DATA

STATE: solid APPEARANCE: White to pale pink powder ODOR: None
 SOLUBILITY IN: WATER: Soluble ACID: Soluble OTHER: Not determined
 BOILING POINT: NA MELTING PT.: 110 C decomp SPEC GRAVITY: 1.76
 pH: 6.40 (1% aq soln @ 25°C) VAPOR PRESSURE: Not applicable
 VAPOR DENSITY (air=1): NA EVAPORATION RATE: NA
 METAL CORROSIVITY - ALUMINUM: ND STEEL: ND STABILITY: Stable
 STORAGE PRECAUTIONS: Store in a cool, dry, dark place.

X. REFERENCES

- 1) TLV's Threshold Limit Values and Biological Exposure Indices for 198-1989. American Conference of Governmental Industrial Hygienists, 198
- 2) Air Contaminants, Federal Register, Vol. 54, No. 12, Thursday, Janus 19, 1989, pp. 2532-2903.
- 3) In-house information
- 4) Technical judgment

IV. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT.: Not applicable METHOD: NA
 FLAMMABILITY LIMITS - LOWER: NA UPPER: NA
 SUSCEPTIBILITY TO SPONTANEOUS HEATING: None
 SHOCK SENSITIVITY: None AUTOIONIZATION PT.: ND
 EXTINGUISHING MEDIA: water, dry chemical, alcohol foam or carbon dioxide
 FIRE/EXPLOSION HAZARDS: May emit toxic fumes in fire
 HAZARDOUS DECOMP. PRODUCTS: May emit toxic fumes of phosphorus oxides in fire
 OXIDIZER: No NFPA Codes: Health: 1 Flammability: 1 Reactivity: 0
 CONDITIONS TO AVOID: Extreme temperatures, excess moisture, exposure to light

SPECIAL NOTE: HMRC Registry #2785 - 6/11/91

V. HEALTH HAZARD DATA

THIS PRODUCT MAY BE: irritating to eyes and respiratory tract, and may cause allergic skin reaction.
 ACUTE TOXICITY: Moderately toxic
 ROUTES OF EXPOSURE: ingestion, inhalation
 TARGET ORGANS: Not determined
 CHRONIC TOXICITY: Not determined
 ROUTES OF EXPOSURE: ingestion, inhalation
 TARGET ORGANS: Not determined
 CANCER INFORMATION: Not determined
 ROUTES OF EXPOSURE: Not determined
 TARGET ORGANS: Not determined
 OVEREXPOSURE: Contact may cause eye and respiratory tract irritation, skin sensitization
 MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Allergy or sensitivity to salts of N,N-Diethyl-p-Phenylenediamine; pre-existing eye and respiratory conditions

VI. PRECAUTIONARY MEASURES

Avoid contact with eyes.
 Avoid prolonged or repeated contact with skin.
 Do not breathe dust.
 Wash thoroughly after handling.
 PROTECTIVE EQUIPMENT: adequate ventilation, lab grade goggles, disposable

**USA BlueBook Stock #
 32050
 Call 1-800-548-1234
 To Reorder**



Attention: Right to Know Compliance Manager & Environmental Coordinator

Timely Communication of health and safety information in a Material Safety Data Sheet (MSDS) is an important part of Ulrich Chemical's product safety program. We provide this information to our direct customer and encourage them to become familiar with the contents of the MSDS and the laws pertaining to its use in the workplace.

Further, the Emergency Response and Community Right-to-Know provisions of the Superfund Amendments and Reauthorization Act (SARA Title II) require that all facilities within certain industrial classification codes notify their customers of the presence of Toxic Chemicals subject to the reporting of Section 313 of SARA Title III. The enclosed MSDS should be reviewed to determine if the product contains a SARA 313 chemical.

Enclosed is the revised MSDS for the product(s) you buy from Ulrich Chemical. This replaces the MSDS which have been sent to you by Ulrich Chemical in the past. This new MSDS should be utilized for all your future needs. This MSDS may also contain information that you need in order to complete reports required by SARA.

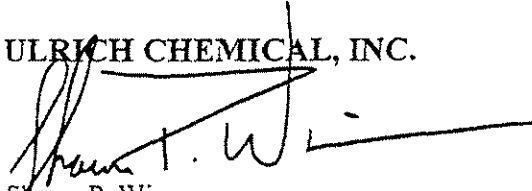
For those of you who resell or repackage these products, you are obligated to convey a copy of the Material Safety Data Sheet to your customers and affiliates.

Employers using this material in their operations must make the MSDS available to all employees working with or otherwise handling this product. Additionally, training in the characteristics and safe use of this product is required.

Should you have any questions, or wish to discuss the content of the MSDS, please feel free to contact us at 317/898-8632.

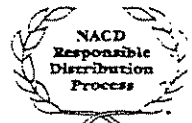
Sincerely,

ULRICH CHEMICAL, INC.


Shawn P. Wiram
Director of Environmental Services

SPW/sac

Enclosure(s)





ULRICH CHEMICAL, INC.
3111 NORTH POST ROAD
INDIANAPOLIS, IN 46226
PHONE #: (317) 898-8632
CHEMTREC #: 1-800-424-9300

MATERIAL SAFETY DATA SHEET

SECTION - I - PRODUCT IDENTIFICATION

TRADE NAME: SODIUM HYPOCHLORITE 12.5%

Revision Date: 3-14-01
Product Code: 695201

SECTION - II - INGREDIENTS AND HAZARDS

COMPONENTS	CAS #	% By Weight	OSHA TWA (ppm)	NIOSHA STEL (ppm)
SODIUM HYPOCHLORITE	7681-52-9	12.5 %	---	---

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: 100 C for 15 % NaOCl	Vapor Pressure (mm Hg.): Vapor Pressure of water plus decomposition product vapor pressure.
Vapor Density (Air=1): No Data	Solubility in Water: Complete
Appearance and Odor: Light yellow-green, pungent odor like chlorine.	Specific Gravity (H ₂ O=1): 1.10
Volatiles, % by Weight: Not Applicable	Evaporation Rate: Not Applicable

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Flammable Limits	LEL	NA
None	Not Applicable	UEL	NA

Extinguishing Media: Suitable for surrounding fire.

Special Fire Fighting Procedures: Avoid fumes from spilled or exposed liquid, dilute copiously, ventilate and be prepared to use respiratory protection if needed. Acid contamination will produce very irritating fumes similar to chlorine gas.

Unusual Fire and Explosion Data - Bleach decomposes when heated; decomposition products may cause containers to rupture or explode. Vigorous reaction possible with organic materials or oxidizing agents; may result in a fire.

SECTION V - REACTIVITY DATA

Stability: Unstable:	Stable:	X	Conditions to Avoid: Solutions of Sodium Hypochlorite are fairly stable in concentrations below 1%. Stability decreases with concentration, heat, light exposure, decrease in pH, and contamination with heavy metals, such as, nickel, cobalt, copper, and iron.
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Incompatibility (Materials to Avoid): Avoid contamination with heavy metals (act as catalysts), reducing agents, organics, ether, ammonia, acids.

Hazardous Decomposition Products - Hypochlorous acid (HOCl), chlorine, hydrochloric acid. Composition depends upon temperature and decrease in pH. Additional decomposition products, which depend upon pH, temperature and time, are sodium chloride, sodium chlorate and oxygen.

Hazardous Polymerization:	May Occur:	May Not Occur:	X
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Conditions to Avoid: None Known

SECTION VI - HEALTH HAZARD DATA

Probable Route(s) of Entry: Eye Contact, Skin Contact, Inhalation, Ingestion

Effects of Overexposure (Acute and Chronic):

Eye: Severe irritation.

Inhalation - Fumes from spills are very irritating to mucous membranes. Very little hazard for properly stored solution.

Skin - Irritant, reddening of skin, skin damage.

Ingestion - Causes irritation of membranes of the mouth, throat, and stomach pain and possible ulceration. LD50 (oral, rat) for 5.25% NaOCl is approximately 13 g/kg body weight and for 12.5% NaOCl is approximately 5 g/kg body weight.

Carcinogenicity:

NTP?	Not Listed. See other health data.
IARC Monograph?	Not Listed. See other health data.
OSHA Regulated?	Not Listed. See other health data.

Other Health Data

Acute: irritating effects increase with strength of solution and time of exposure.

Chronic: Constant irritant to eyes and throat.

Medical Conditions Generally Aggravated by Exposure: None Identified.

Emergency and First Aid Procedures:

Eye Contact: Flush eyes with large amounts of water for at least 15 minutes. Consult an eye specialist immediately.

Skin Contact: Remove contaminated clothing and launder before reuse. Flush affected areas with large amounts of flowing water. If irritation develops, contact a physician.

Inhalation: Remove victim to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen, if qualified. Get medical attention.

Ingestion: If accidentally swallowed, drink water, milk, and obtain immediate medical attention. Do not use baking soda or acidic antidotes.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled - Use appropriate protective equipment, including respiratory protection. Collect all free liquid or flush with water to dilute as much as possible. Reduce with bisulfites or ferrous salt solutions. Note: This will produce some heat. Do not allow material to enter waterways or sewers without permission from regulatory authority. Avoid heat and contamination with acid materials. Do not use combustible materials such as sawdust to absorb hypochlorite.

Waste Disposal Method - Observe all local, state, and federal regulations. Contact local EPA representative agency for additional information.

SECTION VIII- CONTROL MEASURES

Respiratory Protection - When fumes are present use NIOSH approved respirator with acid type canister or self-contained breathing apparatus. Situation and concentration will dictate required equipment.

Ventilation - No special ventilation required unless bleach is exposed to decomposition conditions; ie. spills or acidic conditions.

Local Exhaust - To maintain exposure below PEL or TLV.

Special - Not Applicable.

Mechanical (General) - To maintain exposure below PEL or TLV.

Other - Not Applicable.

Protective Gloves - Use rubber or plastic gloves.

Eye Protection - Use chemical resistant goggles. Use in vicinity of emergency eyewash/safety shower.

Other Protective Clothing or Equipment - Use rubber apron or other appropriate equipment to protect body from splashing conditions. Use rubber protective shoes if spills occur.

Hygienic Work Practices - Wash thoroughly after handling.

SECTION IX - SPECIAL PRECAUTIONS AND COMMENTS

Storage and Handling Information - Store in vented, closed, clean, non-corrosive containers in a cool, dry location, away from direct sunlight and not adjacent to chemicals which may react with bleach if spillage occurs. If shipped, must comply with DOT, etc. shipping regulations. If closed containers becomes heated, the containers should be vented to release decomposition products (mainly oxygen under normal decomposition). Do not mix or contaminate with ammonia, hydrocarbons, acids, alcohol, ethers.

Other Precautions - Read and follow all label instructions. Use in vicinity of emergency eyewash/safety shower.

NSF Standard 60 - Drinking Water Treatment Chemicals: Sodium Hypochlorite has been certified for use in potable water by the NSF if repackaged at Ulrich Chemical, Inc.'s Indianapolis, Bartonville, Evansville, Terre Haute, or Fort Wayne facilities. The maximum use level for this product is not to exceed 84 mg/L.

SARA Notification. The following is a list of toxic chemicals found in this blend which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372.

<u>Chemical Name</u>	<u>Chemical Abstract Service Registry Number</u>	<u>Percentage By Weight in Product</u>
None	N/A	N/A

DOT CLASS: HYPOCHLORITE SOLUTION (12.5%) / 8 / UN1791 / PG III / RQ (100 LBS.)

NAERG Guide #154

This product may not be regulated as a hazardous material if shipped in 4x1 gallon cases per 49 CFR 173.154 (c). However, the material may be classified as an "ORM-D Consumer Commodity".

NFPA RATING:

HEALTH:	2
FLAMMABILITY:	0
REACTIVITY:	1
OTHER:	NA

Judgments as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of such information, Ulrich Chemical, Inc. extends no warranties, makes no representations and assumes no responsibility as to accuracy or suitability of such information for application to purchaser's intended purposes or for consequences of its use.

**BLOODBORNE PATHOGENS EXPOSURE CONTROL
PLAN FOR COLLATERAL JOBS**

CHRISTIAN COUNTY WATER DISTRICT

REVISED: SEPTEMBER 30, 2003

1. PURPOSE

The purpose of this exposure control plan is to eliminate or minimize employee occupational exposure to blood or other potentially infectious material as detailed in the Bloodborne Pathogens standard. This exposure control plan is only a guideline and may be reviewed or altered at any time. As a responsibility of each employee's continued employment this guideline should be reviewed at least annually or more often if required by management.

2. EXPOSURE DETERMINATION

OSHA requires employees to perform an exposure determination concerning which employees may incur occupational exposure to blood or other potentially infectious materials. The exposure determination is made without regard to the use of personal protective equipment (i.e. employees are considered to be exposed even if they wear protective equipment.). The exposure determination is required to list all job classifications in which all employees may be expected to incur such occupational exposure, regardless

of frequency. At this facility the following job classifications (e.g. first aid responders, .) are in this category.

3. IMPLEMENTATION SCHEDULE AND METHODOLOGY

OSHA also requires that this plan also include a schedule and method of implementation for various requirements of the standard. The following complies with this requirement:

COMPLIANCE METHODS

Universal precautions will be observed at this facility in order to prevent contact with blood or other potentially infectious materials. All blood or other potentially infectious material will be considered infectious regardless of the perceived status of the source individual.

Handwashing facilities are also available to the employees who incur exposure to blood or other potentially infectious materials. OSHA requires that these facilities be readily accessible after incurring exposure. At this facility handwashing facilities are located:

- (A.) In the office restrooms areas.
- (B.) In the shop area.

After removal of the personal protective gloves, employees shall wash hands and any other potentially contaminated skin area immediately or as soon as feasible with soap and water.

If employees incur exposure to their skin or mucous membranes then those areas shall be washed or flushed with water as appropriate as soon as feasible following contact.

WORK PRACTICES

All procedures will be conducted in a manner which will minimize splashing, spraying, splattering and generation of droplets of blood or other potentially infectious materials.

Methods which will be employed at this facility to accomplish this goal are:

The victim will be kept as still and calm as possible.

The victim will be kept in one location if possible, to minimize the transfer of potentially infectious material.

If possible first aid will be administered to slow or stop the flow of blood or other potentially infectious materials.

Emergency Medical personnel will be summoned if necessary.

Once Emergency Medical personnel arrive on the scene Christian County Water District First Aid responder(s) should turn over responsibility of the individual(s) care to these professionals.

PERSONAL PROTECTIVE EQUIPMENT

All personal protective equipment used to eliminate the exposure to occupational exposure to blood or other infectious material, at this facility, will be provided without cost to employees. Personal protective equipment will be chosen based on the anticipated exposure to blood or other potentially infectious materials. The protective equipment will be considered appropriate only if it does not permit blood or other potentially infectious material to pass through or reach the employees' clothing, skin, eyes, mouth or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

Protective clothing will be provided to employees in the following manner:

Kits containing the following equipment and devices are located at these locations:

KITS

1 ea Clean-up Absorbent Pack	1 ea Disposal Cardboard Scraper
1 ea Disposal Apron	2 ea Red Biohazard Plastic Bags with Ties
1 ea Disposal Face Mask/Shields	1 ea 8oz Pour Bottle Chlorine Concentrate
1 pr Disposal Latex Gloves	3 ea Disposal Paper Towels
1 pr Disposal Shoe Covers	2 ea Benzalkonium Chloride Towelettes
1 ea Disposal Cardboard Scoop	

LOCATIONS

- Location # 1. Office first aid station
Location # 2. Vehicle/Service Truck – Metering setting and repair department.
Location # 3. Vehicle/Service Truck – Line installation department.

EMPLOYEES ARE TO USE THESE KITS AS A MEANS OF:

Quick, safe and sanitary removal of vomit, blood feces, urine and other potentially infectious substances. It is recommended that a 1:10 dilution of 5.25% Sodium Hypochlorite be in contact with bodily fluid spill for at least 10 minutes prior to the clean-up process. Employees are to read and follow the manufacturer Direction for use prior to using any products. This is solely the responsibility of the employee, any failure to comply with the recommendation of the manufacturer or to follow the manufacturer directions for use, can result in disciplinary action and/or termination of employment. First responders and employees who have completed annual safety and first aid training and who have familiarized themselves with the proper use of these kits and their contents may handle, use, and distribute these kits to trained and component employees.

All garments which are penetrated by blood shall be removed immediately or as soon as feasible. All personal protective equipment will be removed prior to leaving the work area. All used personal protective equipment should be properly disposed of strictly following the manufacturers recommendations and/or directions. At no time may any contaminated personal protective equipment leave the work area unless it has been double bagged as recommended and directed by the manufacturer. All material should be removed in a clearly labeled Biohazard plastic bag. These bags shall be inspected prior to removal from the work area to insure that no fluids of any substance can or has leaked from these bags. These bags/containers should also be inspected to insure that no sharp instrument or objects which could puncture or rupture these bags can make contact with the outside of these bags.

Gloves shall be worn and used for the following procedure: where it is reasonable anticipated that employees will have hand contact with blood, other potentially infectious materials, non-intact skin, and mucous membranes. Gloves will be available from: Locations # 1, # 2, # 3, listed

above as well as the supply/safety cabinet in the employee office area as well as the company provided vehicles.

Disposable gloves used at this facility are not to be washed or decontaminated for re-use and are to be replaced as soon as practical when they become contaminated or as soon as feasible if they are torn, punctured or when their ability to function as a barrier is compromised. Utility gloves may be decontaminated for re-use provided that the integrity of the glove is not compromised. Utility gloves will be discarded if they are cracked, peeling, torn, punctured or exhibit other signs of deterioration or when their ability to function as a barrier is compromised.

HOUSEKEEPING

Decontamination of areas which have been contaminated with blood or other potentially infectious materials will be accomplished by utilizing the following materials: Fresh bleach solutions or EPA registered germicides as well as material contained in the company supplied first aid and Bloodborne pathogens response kits (these non-individually identified products by name and description should only be used after an employee has familiarized themselves with the manufacturer recommendation for use and handling). It is the employee's responsibility to limit his/her level of exposure and risk by properly reading and following the manufacturer recommendations. Also all required PPE should be made ready and available and worn as recommended prior to any attempt to decontaminate any areas or surfaces. All contaminated work surfaces will be decontaminated as soon as feasible.

HEPATITIS B VACCINE

All first aid responders who are employees of Christian County Water District who have been identified as having exposure to blood or other potentially infectious materials will be offered Hepatitis B vaccine, at no cost to the employees.

Christian County Water District encourages all employees who function as properly trained first aid responders to request no later than ten (10) working days of their initial assignment as a first aid responder to have an appointment made for vaccination with and Hepatitis B vaccine. Exceptions are: (1.) The employee has previously had the vaccine. (2.) The employee

wishes to submit to antibody testing which shows the employee to have sufficient immunity. (3.) The employee is willing to sign a waiver which would exclude the employee from the vaccine until such a time as said employee feel its work place exposure has become great enough to warrant the vaccination series.

First Aid responder (employees) who are interested in obtaining information concerning the availability and location of clinics where the Hepatitis B vaccine can be obtained should contact the Safety Director or the General Manager. Currently this vaccine is offered by the Christian County Health Department. However, due to shelf life for many vaccines this vaccine may not be readily at all times. Your first source of contact should be the Safety Director for Christian County Water District who will assist you in locating a medical facility and scheduling an appointment for this vaccination.

4. EVALUATION OF CIRCUMSTANCES SURROUNDING EXPOSURE INCIDENTS

When the employee incurs an exposure incident, it should be reported to:

Safety Director: Rodney Hamby

Or if Mr. Hamby is readily unavailable to his designee or the: General Manager

The Safety Director has been designated to assure that the policy outlined herein is effectively carried out as well as to maintain records to this policy: If exposure has occurred to you as an employee you as a employee will be asked to convey to the Safety Director or in his absence his designee the following.

- You will be asked to document or provide documentation of the route of exposure and the circumstances related to the incident:
- If possible you will be asked to provide identification of the source individual and, if possible the status of the source individual. If the source individual will or has consented and consent can be obtained a HIV/HBV infectivity screening or testing may be conducted by certified or competent individuals or Health care professional(as allowed by law):

- If allowed by law, results of testing of the source individual will be made available to the exposed employee (as allowed by law) with the exposed employee informed about the applicable laws and regulations concerning disclosure of the identity and infectivity of the source individual. (To protect both the employee and the source individual, under certain circumstances this may be handled by competent and qualified Health Care professional)
- An exposed employee may be offered or can request the option of having their blood collected for testing of the HIV/HBV serological status. Also the employee may be offered or can request the blood sample be preserved for at least 90 days to allow the employee to decide if the blood should be tested for HIV serological status. However, if the employee will allow for testing of the HIV serological than any initially collected and stored sample can be discarded and a new sample collected.
- The affected employee will be advised by competent and professional Health Care providers on precautions such as but not limited to the use of post exposure prophylaxis in accordance with the current recommendations of the U.S. Public Health Service. (Should said providers not provide this information in a timely manner, you as an affected employees should request this information and if not provided report this failure to provide directly to the Christian County Water District Safety Director or his designee, so that the appropriate information can be obtained on your behalf.) As well as appropriate counseling concerning precautions to take during the period after the exposure incident. The employees should expect to receive and request if not presented information on the potential illnesses to be alert for and to report and related experiences to appropriate company personnel and or medical professionals, as soon as possible.

INTERACTION WITH HEALTH CARE PROFESSIONALS

Certain information is required to be provided to the health care professional responsible for providing an employee with the Hepatitis B vaccine and also certain information is required to be provided to the health care professional who conducts an evaluation of an employee following an exposure incident. Employees should be willing to cooperate with Health care professionals as listed in section 1910.1030 (f)(4) of the Kentucky Occupational Safety and Health Standards regulations. The employer will at all times do it best to

assist those Health care professional providing assistance to the employee to the best of the employer ability.

A written opinion shall be requested and obtained (if allowed by law) from the health care professional who evaluates employees of this facility.

Written opinions will be obtained in the following instances:

- 1) When the employee is sent to obtain the Hepatitis B vaccine.
- 2) Whenever the employee is sent to a health care professional following an exposure incident.

Health Care professionals shall be instructed to limit their opinions to:

- 1) Whether the Hepatitis B vaccine is indicated and if the employee has received the vaccine, or for evaluation following an incident
- 2) That the employee has been informed of the results of the evaluation, and
- 3) That the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials.

Christian County Water District is not desirous of the mention of any personal medical information concerning the affected employee. You as a employee have a right to request that your personally information remain personal. You may cautions any attending Health care professional to not disclose your personal health care information to your employer, and we as your employer will support and encourage you wishes be carried out in this matter.

TRAINING

Training for all employees will be conducted prior to initial assignment where occupational exposure may occur. Training will be conducted in the following manner:

Training will be conducted annually either as incorporated into the company annual CPR / First Aid training or as conducted by the Safety Director or other competent individuals and instructors.

Training may include but is not limited to the following:

- 1) The OSHA standard for Bloodborne Pathogens.
- 2) Epidemiology and symptomatology of bloodborne diseases.
- 3) Modes of transmission of bloodborne pathogens.
- 4) This Exposure control Plan, how to read, understand and work toward compliance with this plan.
- 5) Procedures which might cause exposure to blood or other potentially infectious materials.
- 6) Control methods which will be used at the facility to control exposure to blood or other potentially infectious materials.
- 7) Personal protective equipment available at this facility and who should be contacted concerning this equipment.
- 8) Post Exposure evaluation and follow-up.
- 9) Signs and labels used at the facility.
- 10) Hepatitis B vaccine program at the facility.

Training will be presented by Water District personnel, as well as out side agencies. Written material and video may be used to enhance our learning experience. The Safety Director of the Christian County Water District or his designee will conduct or supervise much of the inhouse training employee are encourage to sign up when work schedule allow for company approved outside training opportunities. These outside training opportunities must be approved by the Safety Director and the General Manager prior registration and attendance to receive compensation or reimbursement form the Christian County Water District.

Copies of all training material which maybe made available for review or independent study may be checked out from the resources available from the Safety Director.

RECORDINGKEEPING

All records required by the OSHA standard will be maintained by the Safety Director or his designee. These individuals have the responsibility to maintain records and for the ensuring that the confidentiality requirements of these standards are met.

Each employee has the responsibility to assist and fully cooperate with the Safety Director and the management of the Christian County Water District to insure that the Bloodeborne pathogen program is strictly adhered to. Any violation of this program may be grounds for disciplinary action and or termination of employment. Your full assist and cooperation is of the utmost important to protect not only yourself, your family but also your fellow employees.

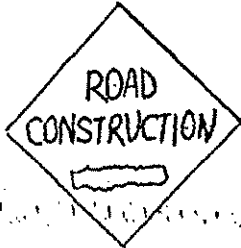
Signature

Date

APPROACH WARNING SIGNS ROAD CONSTRUCTION

ILLUSTRATION AND SPECIFICATIONS

ADVANCE ROAD CONSTRUCTION WORK SIGNS CW 20-1



CW 20-1
48" x 48"

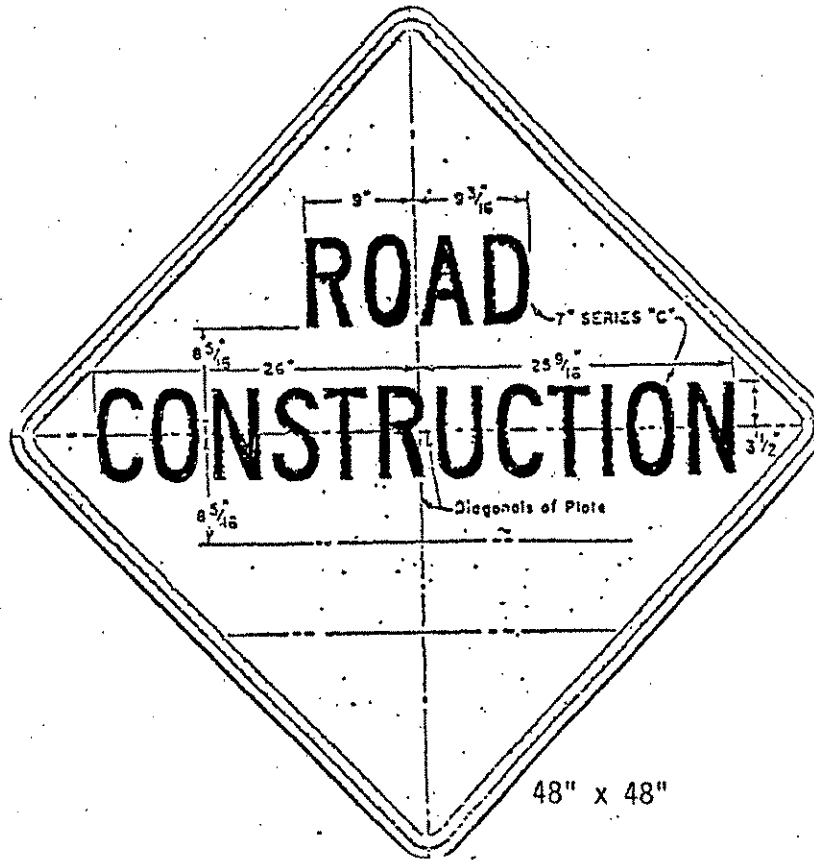
Advance Construction signs are to be erected in advance of all road construction projects through which traffic is maintained. These signs will be erected on right side of roadway on approaches to the point where the construction zone starts. Where traffic is heavy or the highway divided, signs will be erected on each side of roadway facing approaching traffic. All signs will be 48" x 48" diamond shape, orange reflectorized background with black legend and border. The letters are to be 7" Series C. CW 20-1a sign signifies 1500 feet, CW 20-1b sign signifies 1000 feet, CW 20-1c sign signifies 500 feet. Sign will have 3/4" border 1/2" from edge of sign.

THE ABOVE SIGNS ARE TO BE ERECTED AT 500 FOOT INTERVALS BEGINNING 1500 FEET IN EACH DIRECTION FROM THE CONSTRUCTION LIMITS ON ALL STATE MAINTAINED ROADS.

END CONSTRUCTION

The End Construction sign is to be erected approximately 500 feet beyond the end of a major construction or maintenance job to indicate the limit of any restrictions or special precautions that have been imposed. Often, it will suffice to place this sign on the back of the warning sign set up facing the opposite direction of traffic or on the back of a wing barricade.





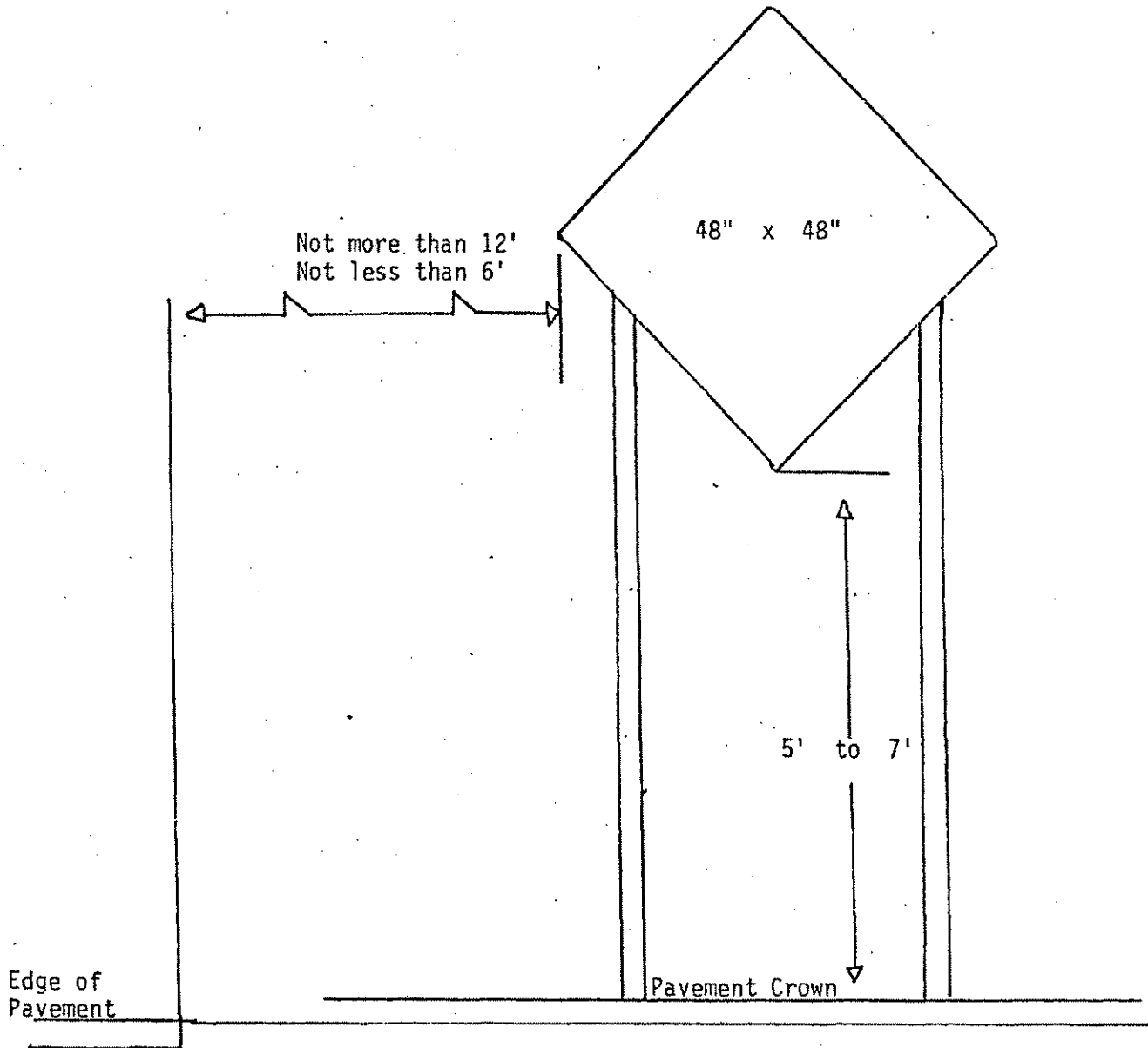
7" Series "C"

- (a) 500 FT
- (b) 1000 FT
- (c) 1500 FT
- (d) AHEAD

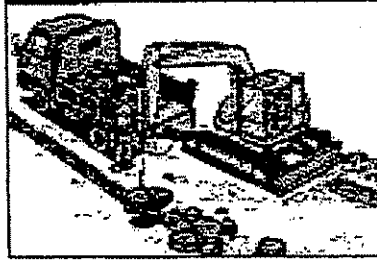
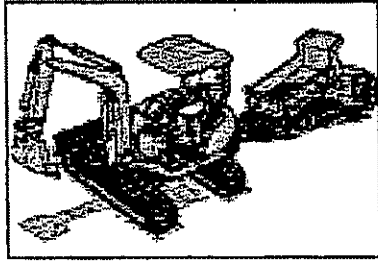
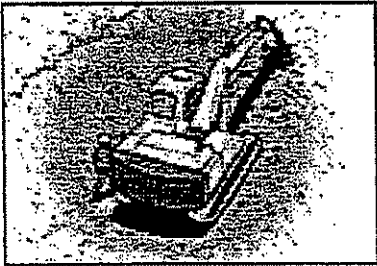
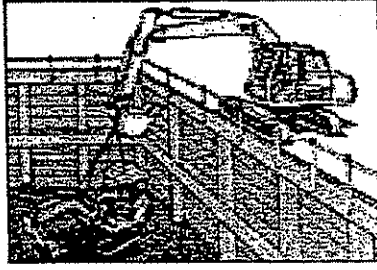
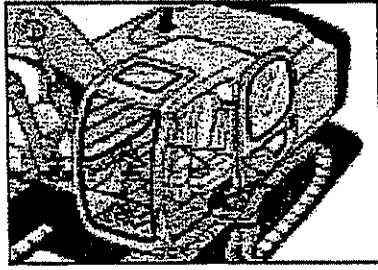
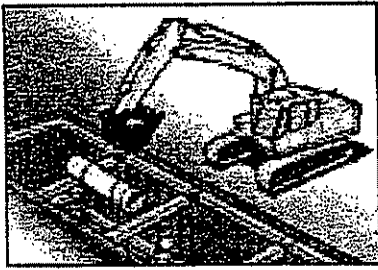
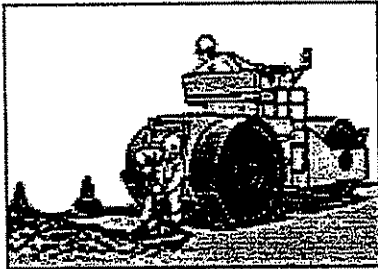
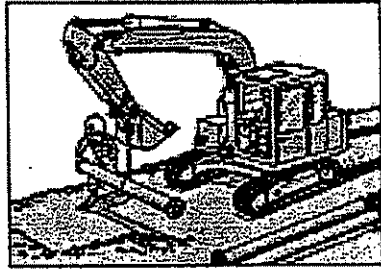
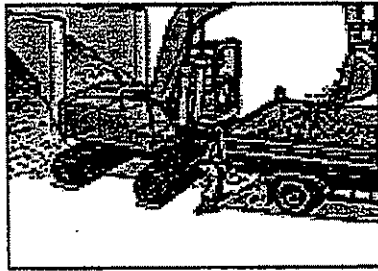
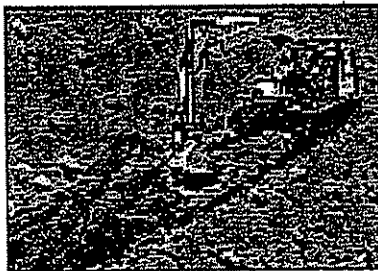
ROAD CONSTRUCTION SIGNS (ADVANCE WARNING) ARE TO BE 48" x 48" DIAMOND SHAPED ORANGE REFLECTORIZED BACKGROUND WITH BLACK LEGEND AND BORDER. THE LETTERS ARE TO BE 7" SIGNIFYING 1,500 ft., 1,000 ft. & 500 ft.

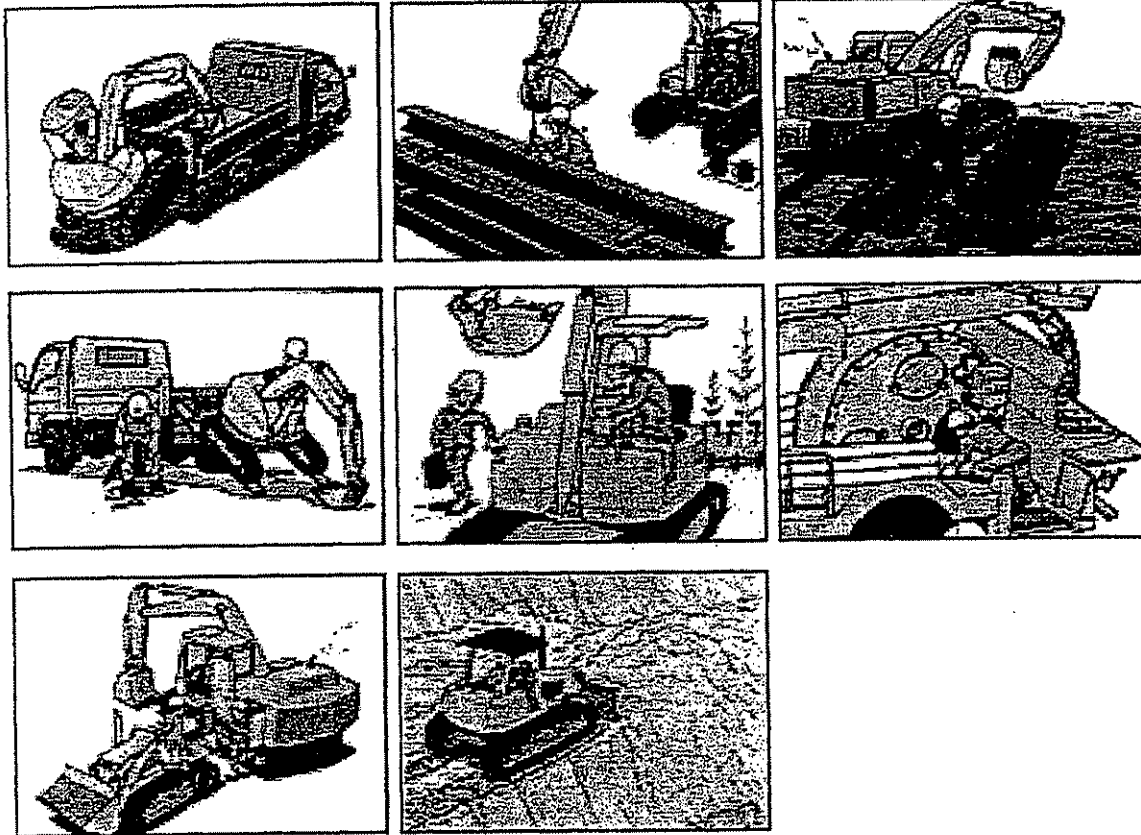
INSTALLATION ILLUSTRATION

WARNING SIGNS



Cases When Using Construction Vehicles click!



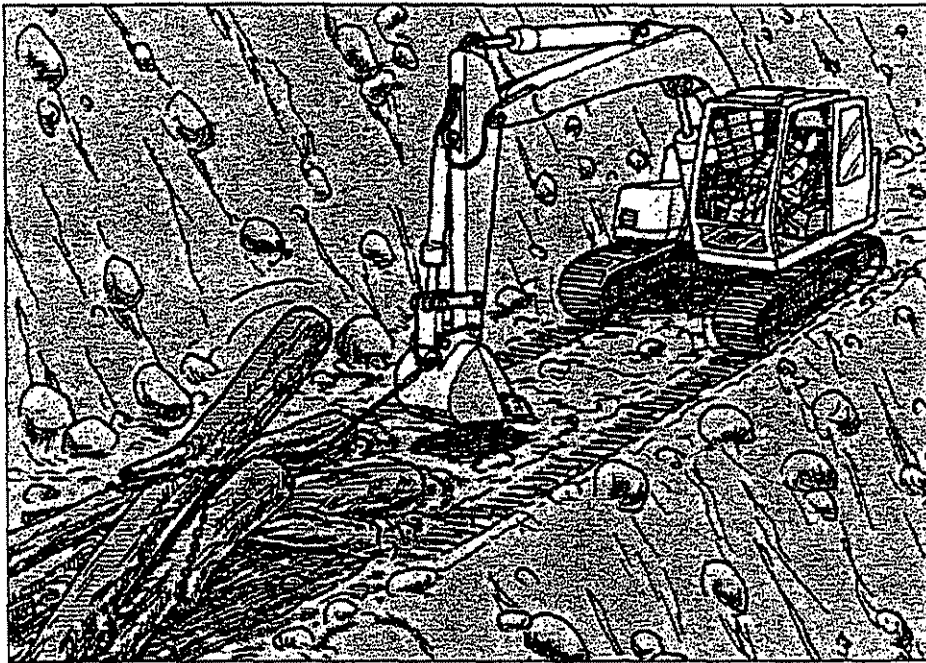


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Any accident foreseen in this frame?

This is a worksite for building a construction road. A hydraulic excavator is pulling hewn logs with a chain to remove them from the site.

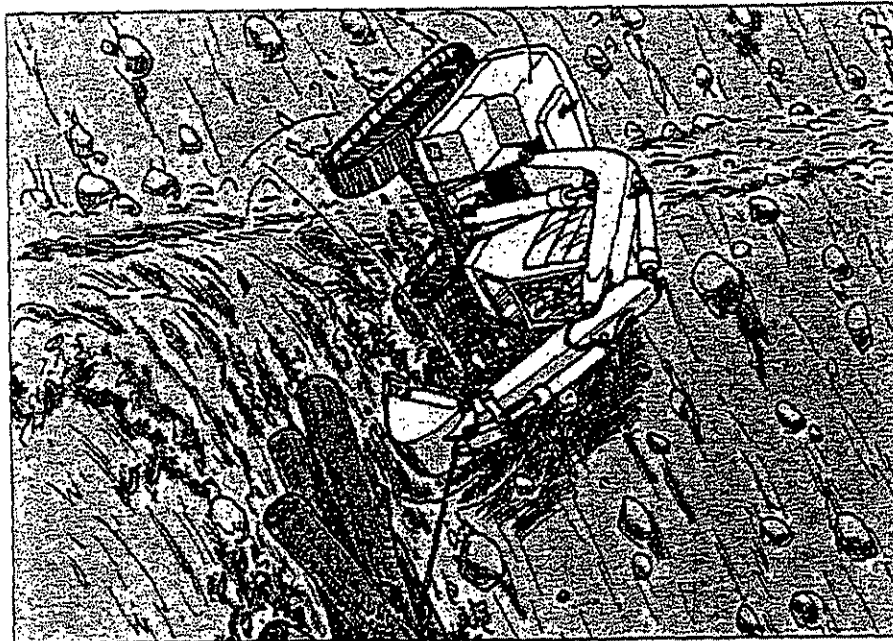
Now what accident do you anticipate from this picture?



This is the accident resulted!

The tugged logs were sent leaping and went down the slope on the valley side. Linked with a chain, the upper structure of the machine was then widely swung, then lost balance and rolled over. The operator was crushed under the fallen machine.

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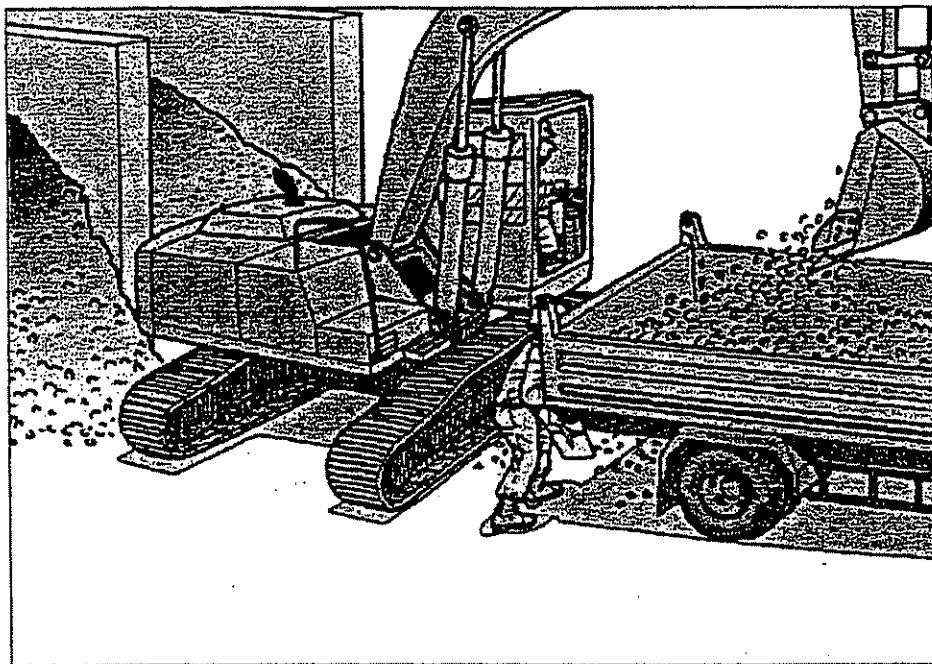
Tips for forestalling similar accidents

1. Use a special purpose machine for transport of logs such as skid loaders.
2. Operate a construction machine within its maximum capacity.
3. Fasten a wire rope securely to the logs.

Any accident foreseen in this frame?

A hydraulic excavator is loading crushed stones on a truck in a material stockyard. In between the hydraulic excavator and the truck a worker is collecting the spilt crushed stones with a shovel.

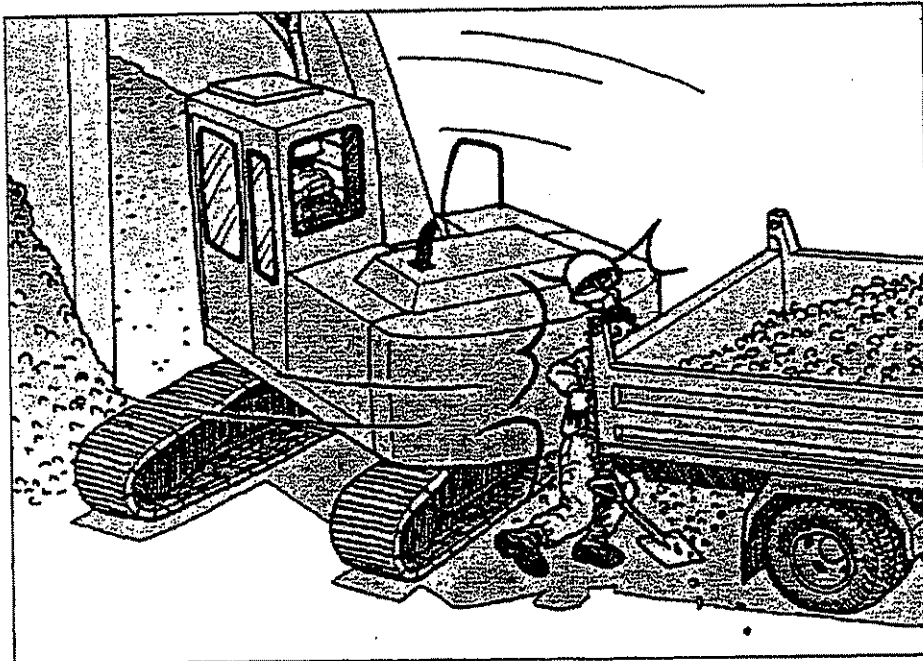
Now what accident do you foresee occurring in this frame?



This is the accident resulted!

The hydraulic excavator swung all of sudden. Then he was caught between the counterweight of the machine and the truck's rear gate, and killed.

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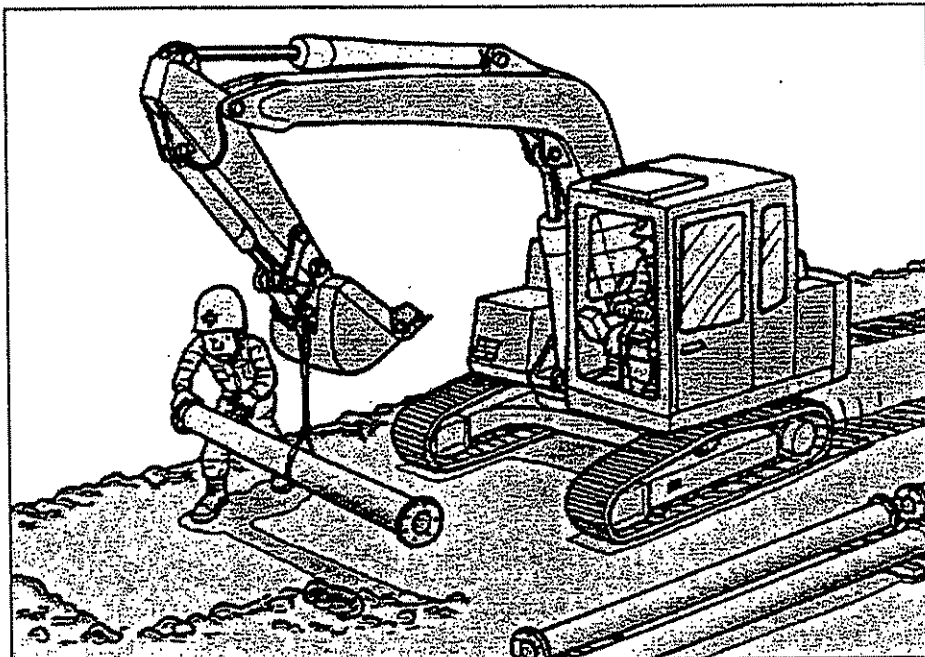


Tips for forestalling similar accidents

1. Make sure that nobody gets within the reach of the swinging upper structure.
2. If it becomes unavoidable for a worker to enter the reach, let the operator and the worker thoroughly confirm safety signals.

Any accident foreseen in this frame?

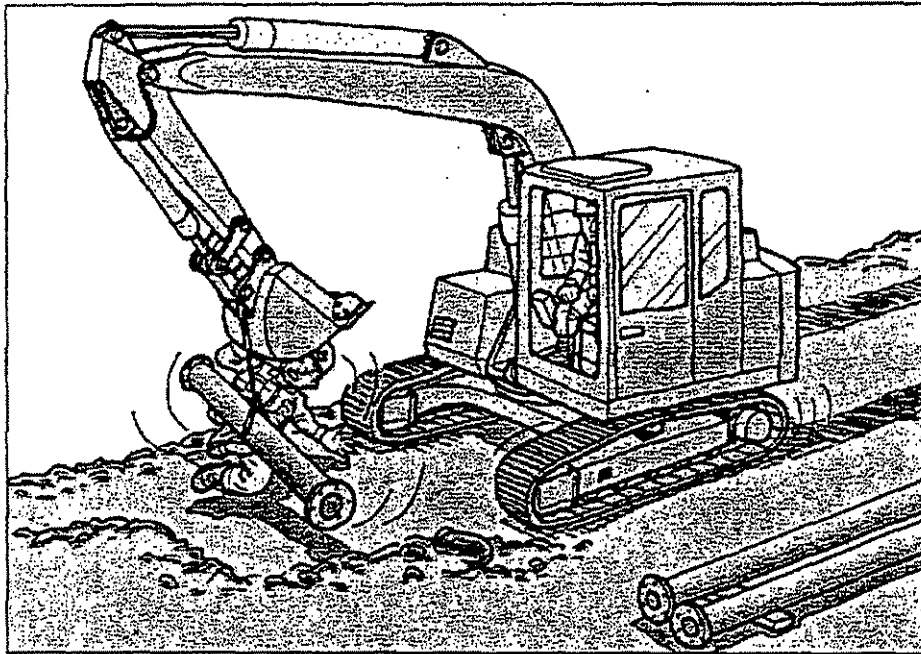
At a construction site of burying city water pipes, a hydraulic excavator is traveling with a pipe weighing 53 kg that is hung with a wire rope fixed at the center. A worker is holding the pipe with his hand to prevent it from swaying. Now what accident do you foresee occurring in this frame?



This is the accident resulted!

The operator suddenly changed the course to avoid a big stone ahead. Then the hung pipe made a big sway, pulling the worker down. He was run over by the excavator and killed.

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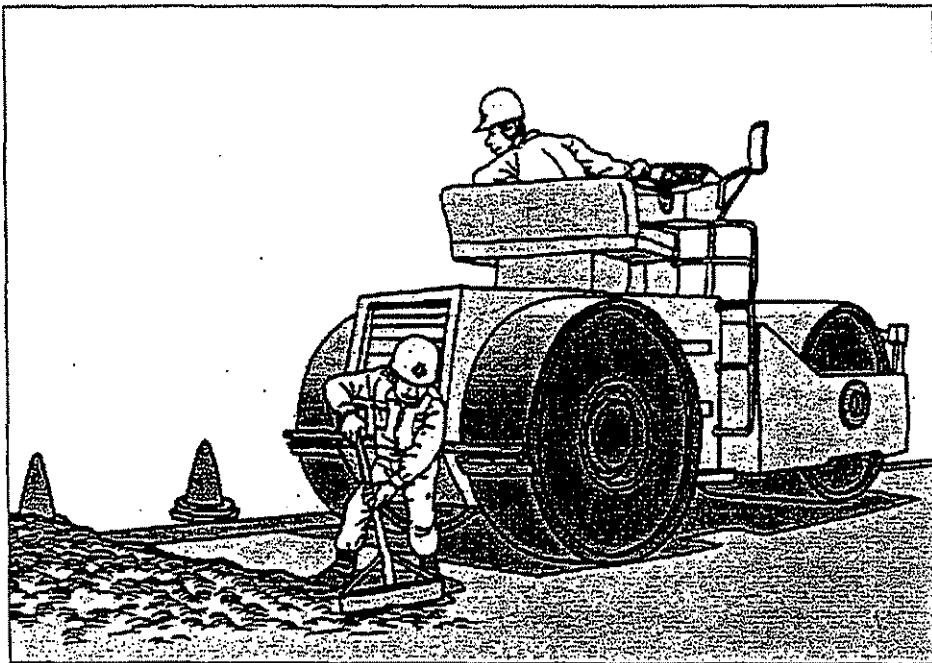


Tips for forestalling similar accidents

1. Strictly follow the rules restricting the use of hydraulic excavators in unintended applications (see the Article 164 of Rules of Industrial Safety and Health Law).
2. Take every precaution for safety at the worksite beforehand. In this instance remove, remove big stones lying on the planned traveling course.
3. Train operators thoroughly not to jerk hydraulic excavators as well as their work equipment.

Any accident foreseen in this frame?

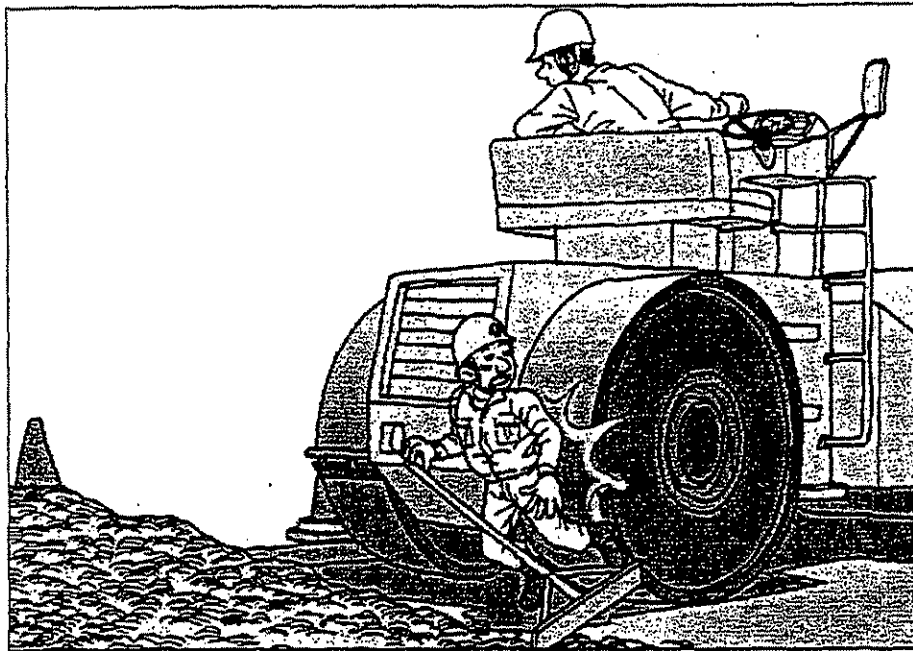
At a road construction worksite, a road roller has compacted the asphalt surface. Thereafter a worker is filling dents on the surface with asphalt using a rake nicknamed a "dragonfly". Now what accident do you foresee occurring in this frame?



This is the accident resulted!

The operator backed up the road roller without thoroughly checking the rear. Standing in the dead angle area for the operator, the worker was pushed down from behind by the roller and crushed beneath it.

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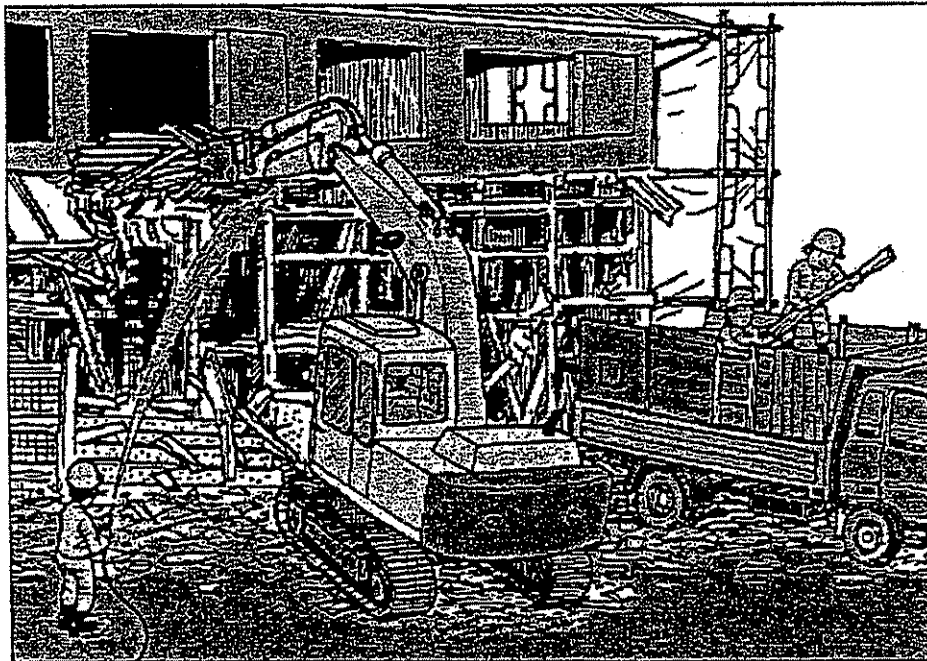
Tips for forestalling similar accidents

1. Do not allow workers to enter the working area of road rollers while in operation.
2. If it becomes definitely necessary to do so, post a work conductor at the site and let everyone follow his/her instructions.

Any accident foreseen in this frame?

Equipped with a fork grab, a hydraulic excavator is loading debris generated from the demolished wooden houses. In the truck body, two workers are spreading the wooden debris evenly.

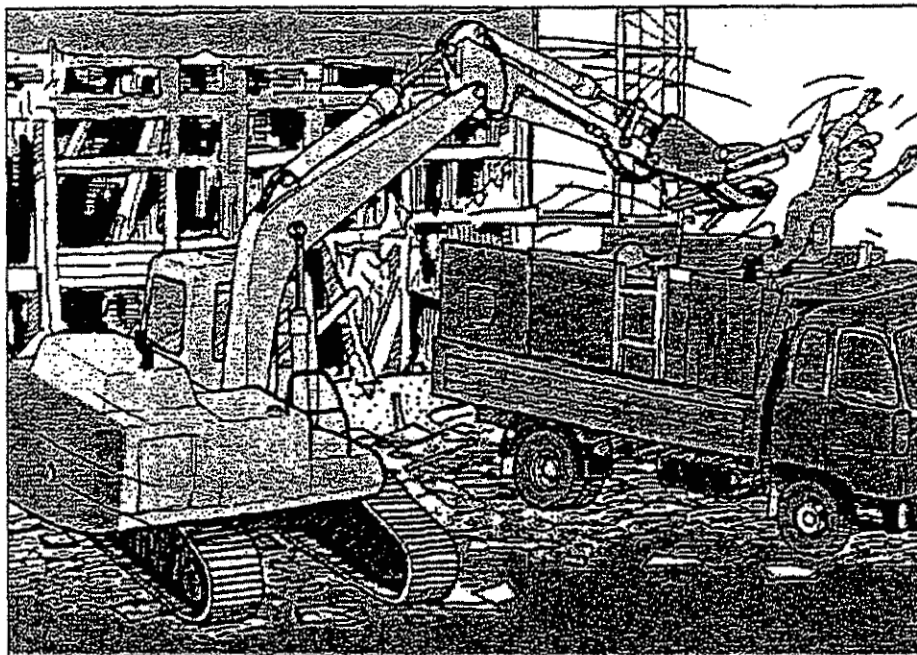
Now what accident do you anticipate occurring in this frame?



This is the accident resulted!

The hydraulic excavator suddenly swung to the right, grabbing the wooden debris, and hard hit one of the workers on the truck. He fell off the truck dead.

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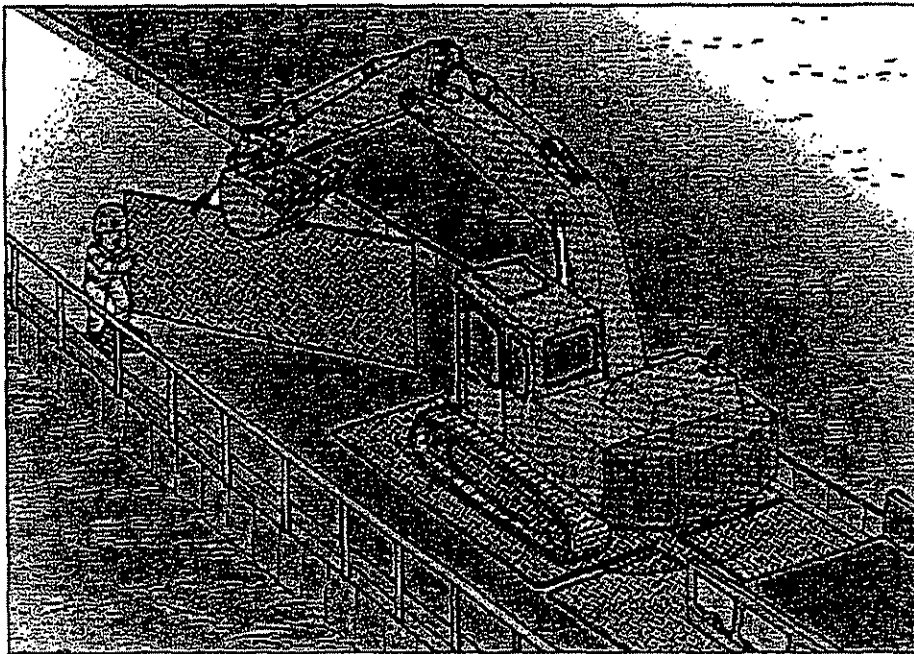
Tips for forestalling similar accidents

1. Do not allow anybody to come within the reach of the fork grab, while a hydraulic excavator is in operation.
2. Post a conductor at the worksite who controls the work.
3. Avoid a sudden and fast swing of hydraulic excavators.

Any accident foreseen in this frame?

In the construction of provisionally closing a dam, a hydraulic excavator is lifting up those steel plates that were spread over the embankment in order to load them on a truck waiting at the back. The size of one such plate is 6,000 mm in length x 1,500 mm in width x 20 mm in thickness.

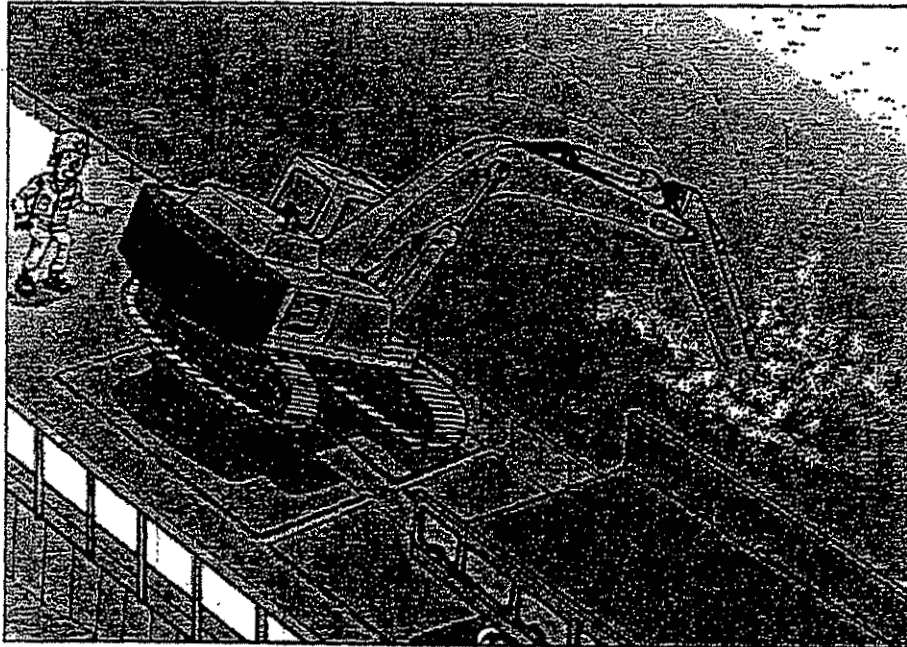
Now what accident do you anticipate occurring in this frame?



This is the accident resulted!

The hydraulic excavator lifted up a steel plate and began to swing to the right, when the left undercarriage was floated and fell into the lake together with the operator. He was drowned.

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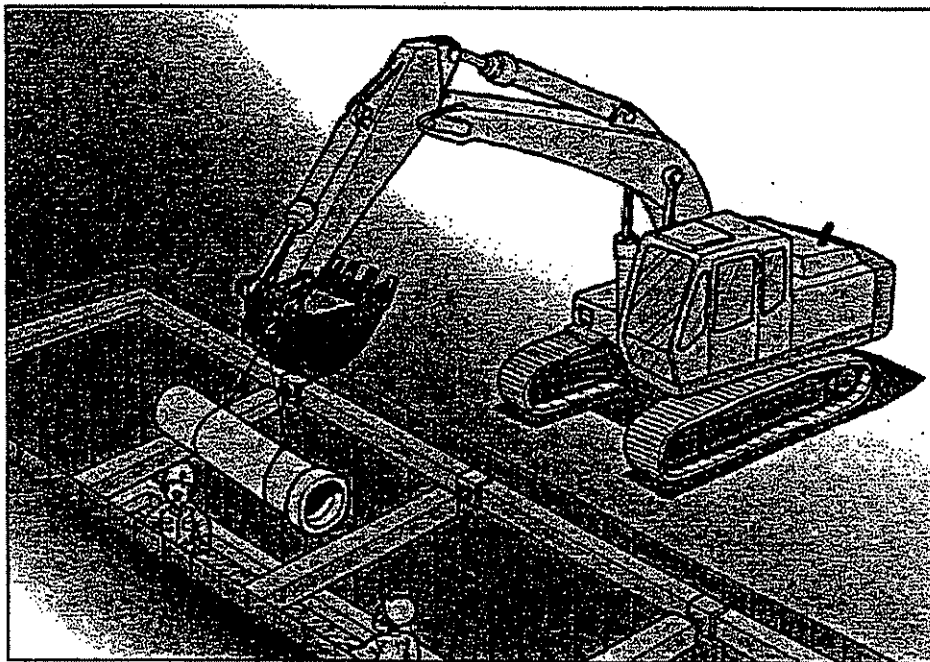
Tips for forestalling similar accidents

1. Use a special mobile crane with an ample capacity.
2. Observe the provisions set forth in the Article 164 of Ordinance on Industrial Safety and Health, when using a hydraulic excavator in lieu of cranes for lifting cargos.

Any accident foreseen in this frame?

A hydraulic excavator lifts up a concrete pipe weighing approx. 1.2 tons with a hook attached to the bucket and is about to lower it to a 4.7 meter-deep gutter for burial.

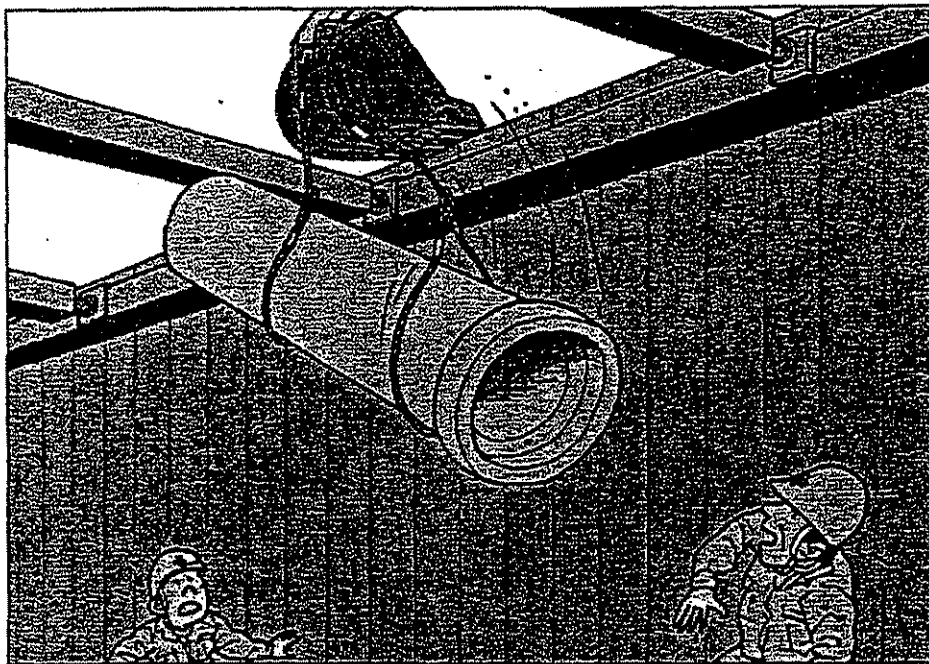
Now what accident do you anticipate from this picture?



This is the accident resulted!

While it was lowered, the concrete pipe hit a brace for the gutter. The wire rope slacked momentarily and let itself slip off the hook. It went straight down, directly hitting a worker below. He was killed.

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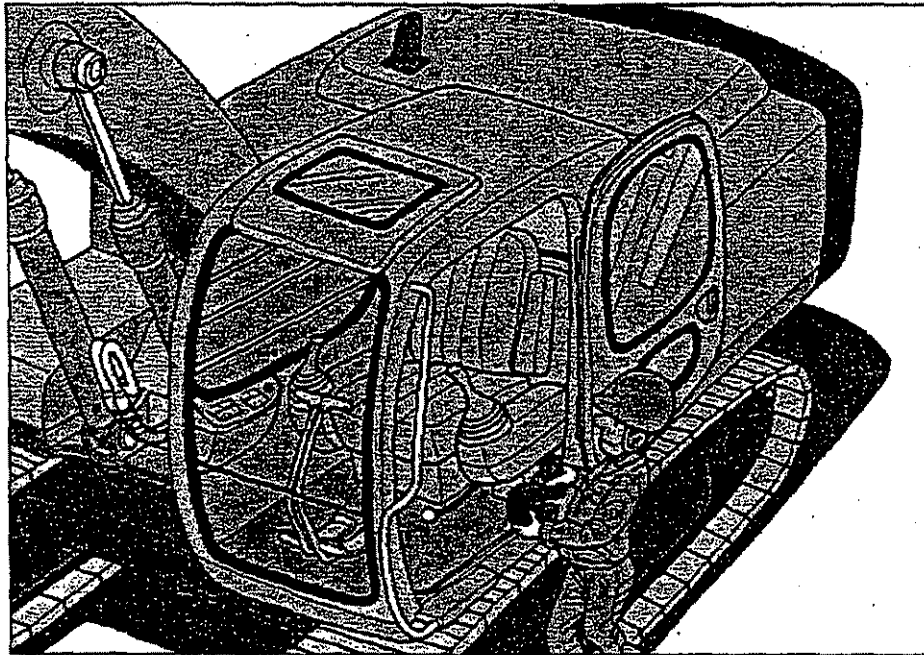
Tips for forestalling similar accidents

1. Do not make an unauthorized use of the hook attached to hydraulic excavators.
2. Carry out a check of the hook prior to the start of the day's work.
3. Always take good care of a latch system for the hook.
4. Limit the max. lifting weight to less than 1 ton. And do not exceed the machine's max. lifting capacity, either.
5. Do not go under hung object, while in operation.

Any accident foreseen in this frame?

An operator leaves his hydraulic excavator with the engine running. He wants to fetch a slinging clamp that was left unattended and puts it at the foot of the operator's seat for transportation.

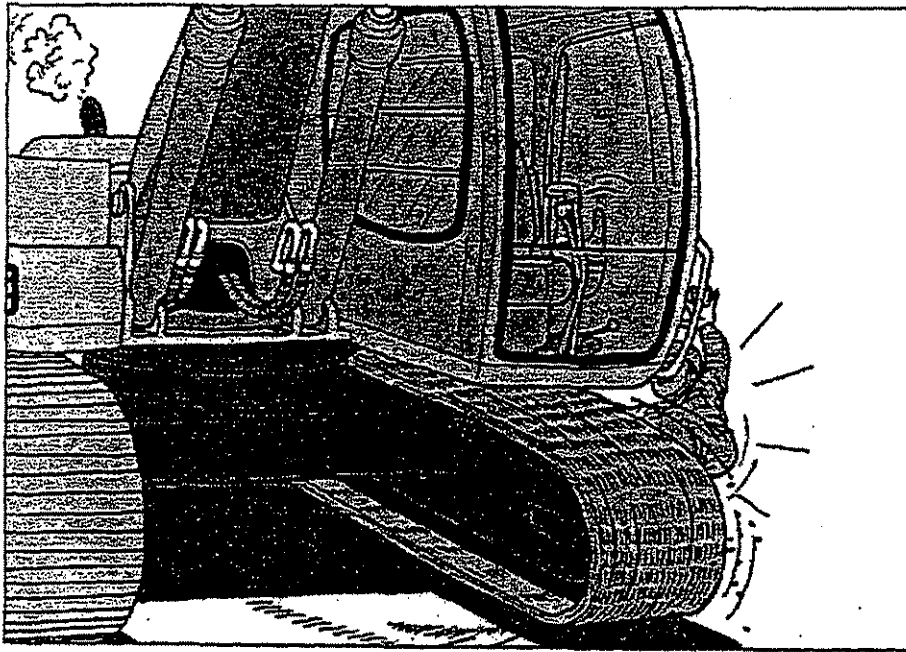
Now what accident do you anticipate from this picture?



This is the accident resulted!

When the operator put down the clamp on the floor, he placed it on the left travel control pedal by mistake. That started the machine to move backward and turn to the left. He was run over by the undercarriage and killed.

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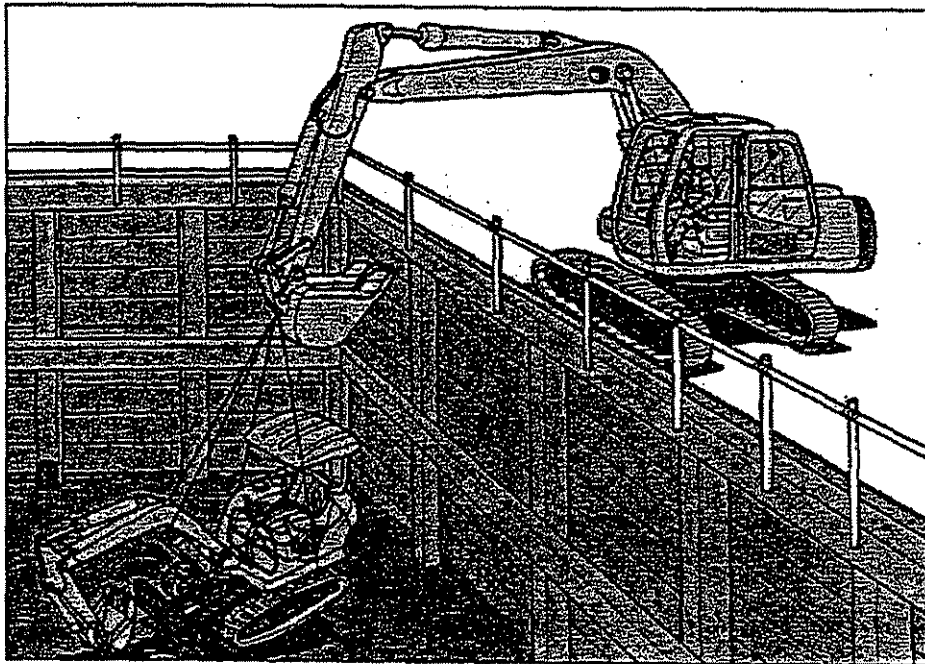
Tips for forestalling similar accidents

1. When leaving a construction machine, lower the bucket to the ground, stop the engine and pull out the ignition key.
2. Do not bring in any unnecessary items.

Any accident foreseen in this frame?

A hydraulic excavator was employed in an underground construction work. Workers are trying to pull it up with another hydraulic excavator. The former weighs 2.7 tons and the latter 11.5 tons.

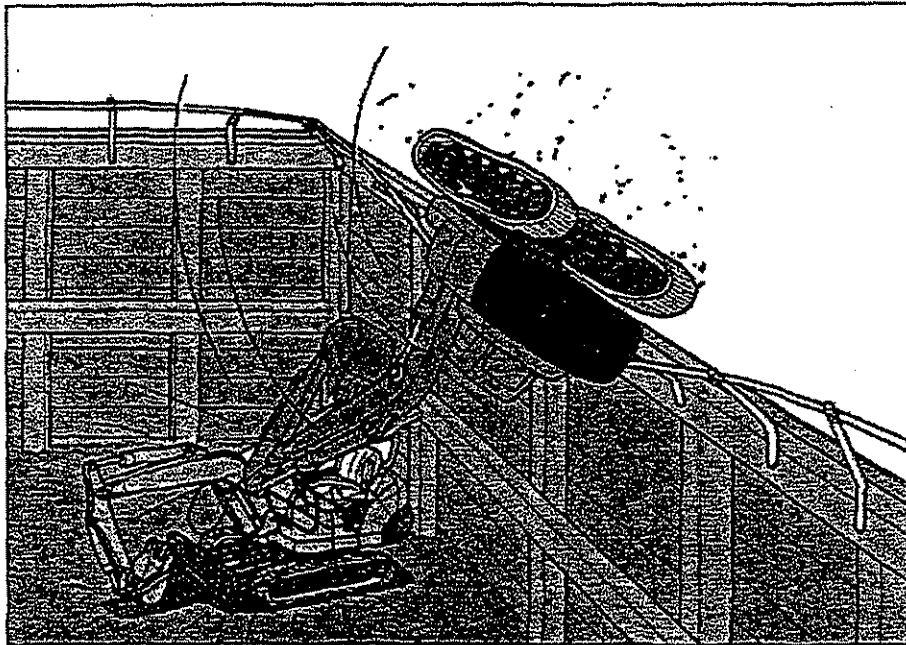
Now what accident do you anticipate from this picture?



This is the accident resulted!

The larger hydraulic excavator lifted up the small one and tried to swing, when the former lost balance all of sudden and fell off the ground. The lifting operator jumped out of the machine to escape the danger in vain. He was killed, sandwiched between the fallen machine and the wall.

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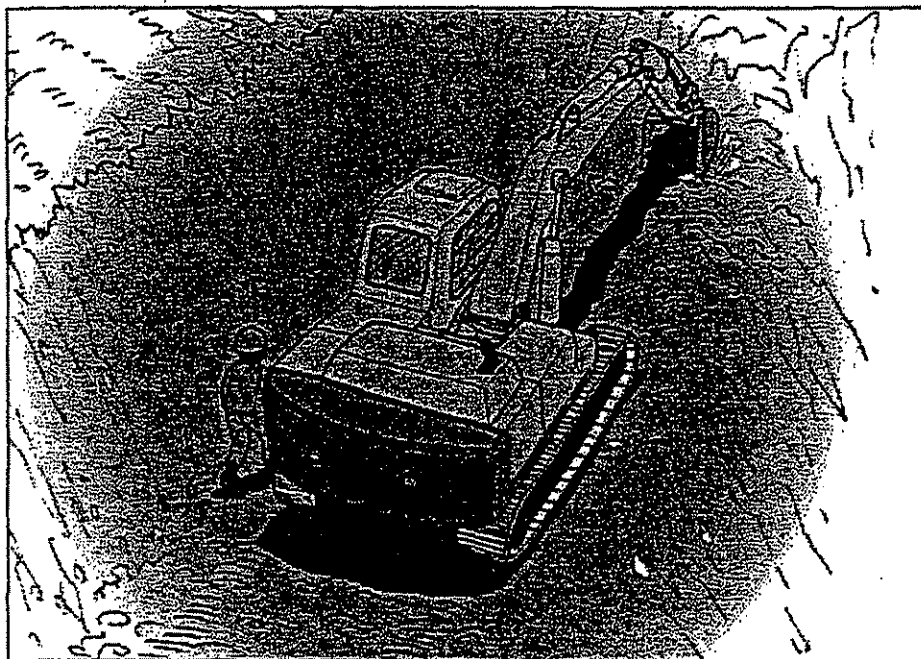
Tips for forestalling similar accidents

1. If an object weighing over 1 ton is to be lifted up, be sure to use a crane, not a hydraulic excavator.
2. When lifting up an object under 1 ton using a hydraulic excavator, observe the instructions set forth in the Article 164 of Ordinance on Industrial Safety and Health Law.

Any accident foreseen in this frame?

A hydraulic excavator is construction a 4 -meter wide forestry road. A mountain is on the left side and a valley is on the right side. A worker is just about to pass through between the mountain and the machine.

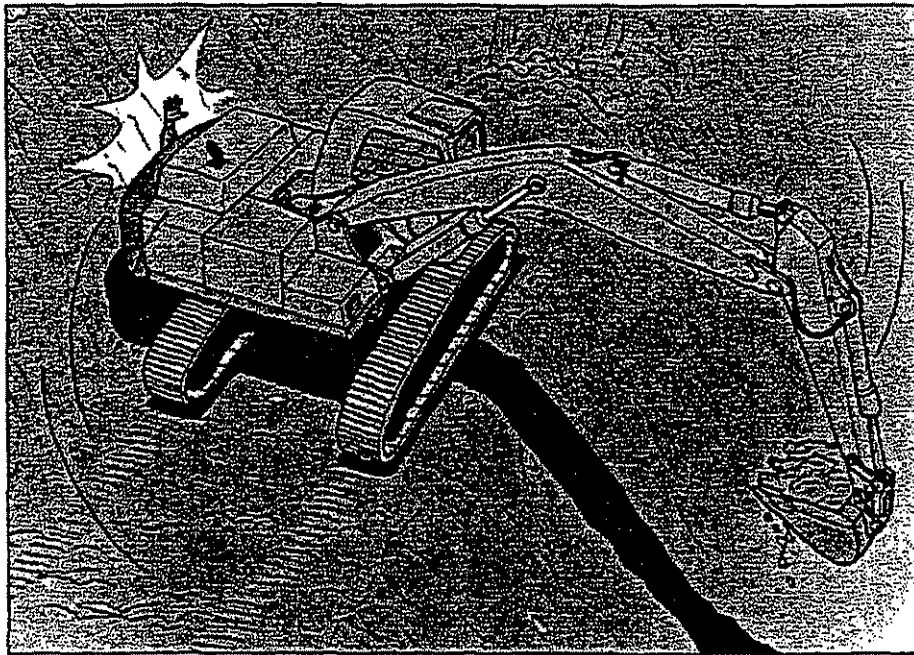
Now what accident do you anticipate from this picture?



This is the accident resulted!

While the worker was still walking through, the operator swung the machine, not noticing him. He was hard pressed against the slope with the swinging counterweight and crushed to death.

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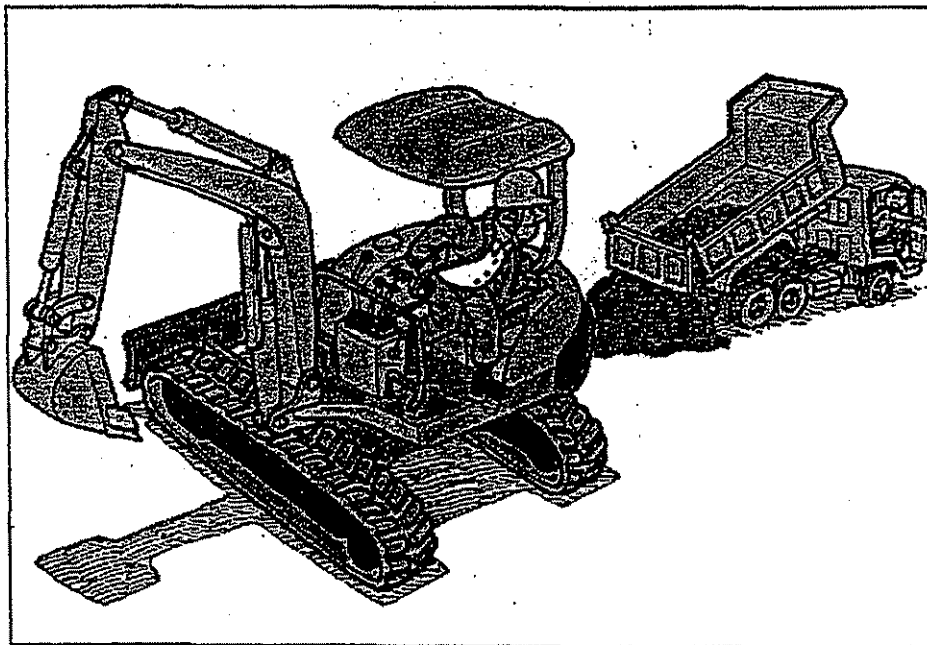
Tips for forestalling similar accidents

1. Make sure that nobody gets within the reach of the swinging upper structure.
2. Put up a barricade to prevent an entry.
3. Assign a work conductor to the construction site.

Any accident foreseen in this frame?

With a hydraulic excavator, an operator worker is leveling the earths that have been carried over there by a dump truck. Now that the driver of the dump truck calls him, he stops the work and steps down from the operator's seat.

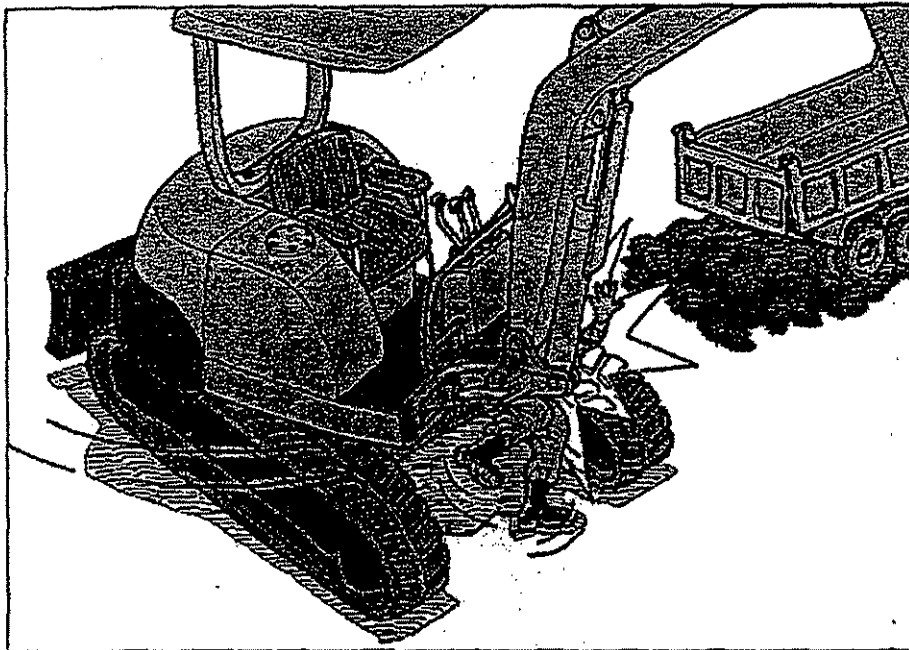
Now what accident do you anticipate from this picture?



This is the accident resulted!

The operator wore a windproof jacket, as it was in the cold season. When he was getting off, a fastening string got caught with the swing control lever, which automatically sent the machine swinging to the left. He was then caught up in between the swinging upper structure and the undercarriage, and killed.

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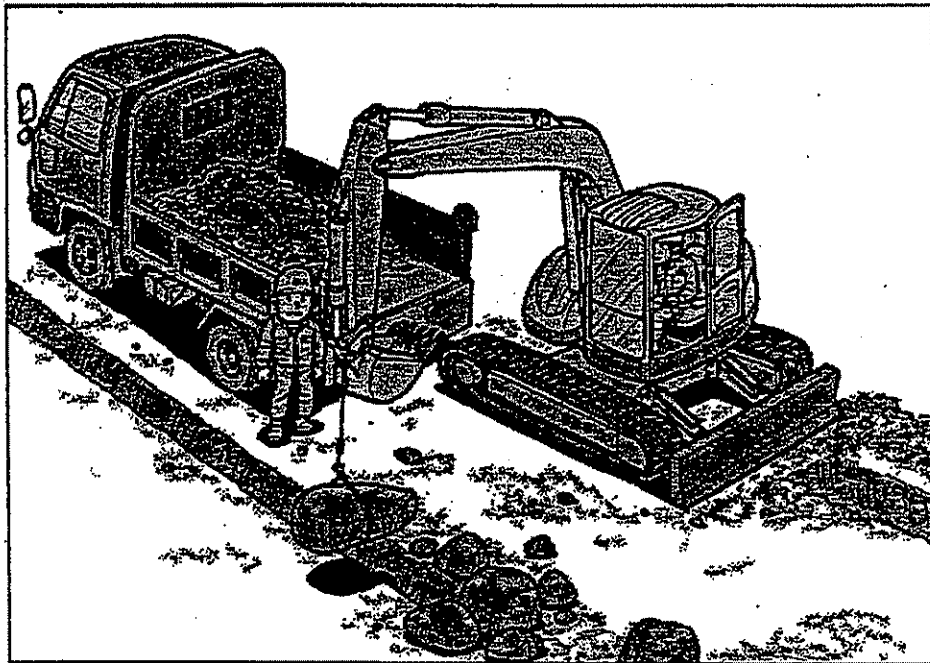


Tips for forestalling similar accidents

1. Take precautions for safety relative to machines such as lowering the bucket to the ground, stopping the engine, pulling out the engine starting switch key, locking the control levers, etc., when leaving the operator's seat of construction vehicle like a hydraulic excavator in this instance.
2. Wear working clothes neatly so that any part of them will not get caught with machine devices like control levers. Be sure to button the sleeves and hems as well as fasten a string.
3. Conduct intensive safety training and education for operators of construction vehicles.

Any accident foreseen in this frame?

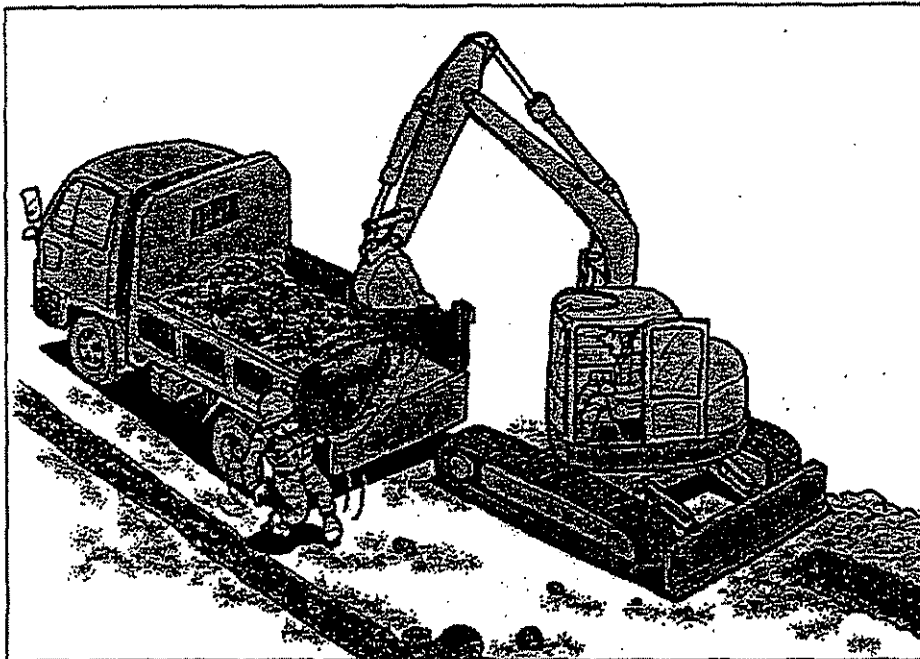
With a hydraulic excavator, an operator worker is digging a gutter for a city water pipe in a 4.1-meter wide road. He has dug out a boulder weighing approx. 200 kg. He is lifting it up with a chain and wire rope fixed to the bucket to load it on a truck, while another worker watches the work nearby. Now what accident do you anticipate from this picture?



This is the accident resulted!

The boulder slipped off the chain loop, because it was hung with a single chain and lost equilibrium. The falling boulder hit the worker and killed him.

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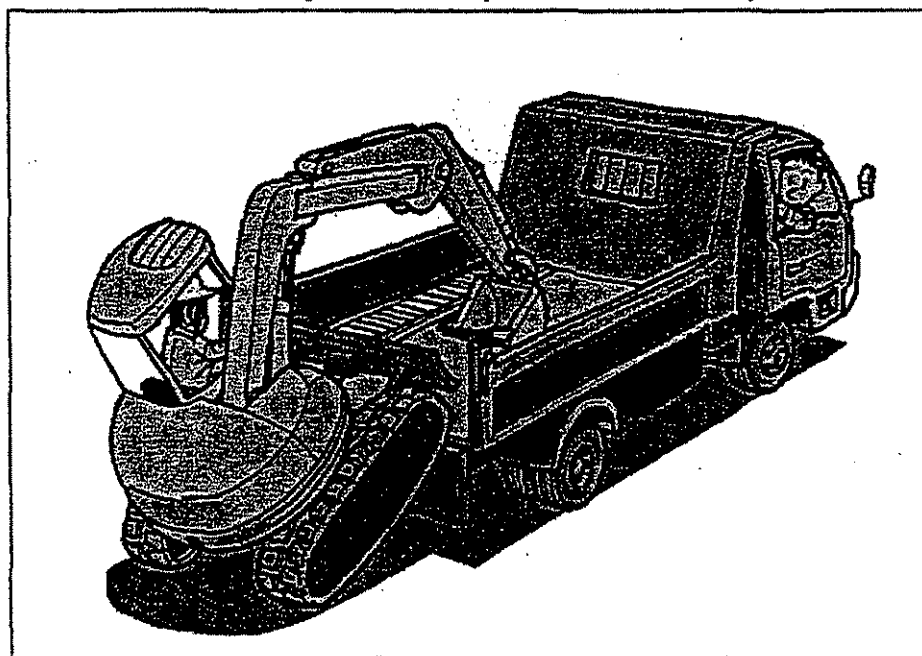
Tips for forestalling similar accidents

1. Lifting an object with a bucket is not the primary application of hydraulic excavators or the like. If it definitely becomes necessary to use them that way, observe the instructions set forth in the Article 164 (164-2-1 and 2, 164-3) of Regulation on Industrial Safety and Health.
Furthermore determine a set of signals for the work like the one cited above and appoint a signaller in advance, whose instructions the others follow in the work.
2. Never allow anybody to get close to the area at a worksite where he/she might be injured, should a hung object fall off.
3. When slinging work is required, thoroughly examine a sling, slinging work process, etc. beforehand and make sure that the conclusions reached be followed without fail.

Any accident foreseen in this frame?

An operator is trying to load a mini hydraulic shovel on a truck. His unique method of loading in such a case is; first of all he does not use ramps, but instead hang the tip of the undercarriage on the edge of a truck body with the help of the boom and arm, NEXT swing the upper structure to face the rear, then lift up the rear part of the machine again with the help of the boom and arm, and lastly let the machine travel forward to the center of the truck body.

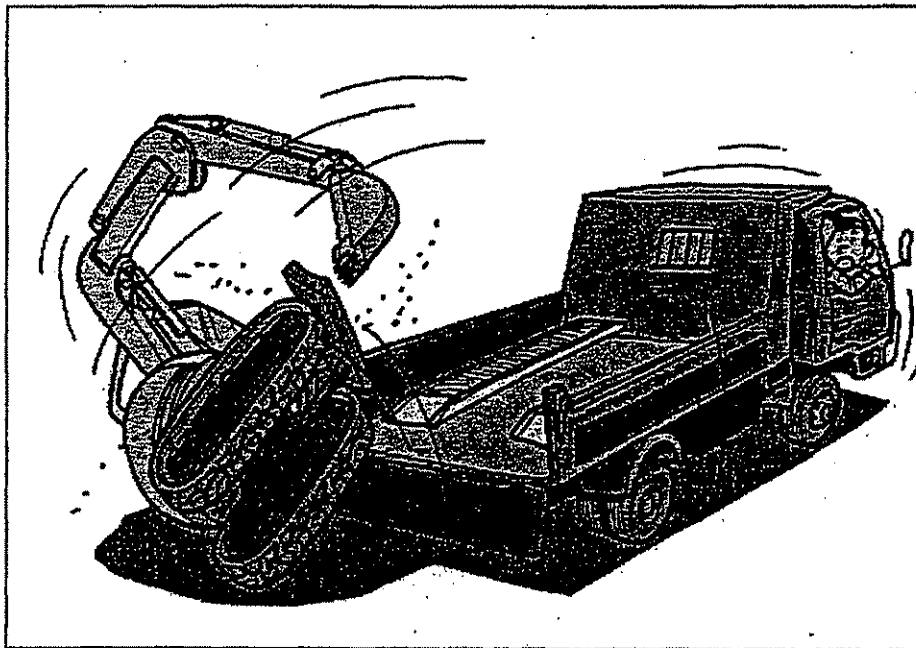
Now what accident do you anticipate from this picture?



This is the accident resulted!

When the operator swung the upper structure to the right, the machine was thrown off the balance and rolled over to the left side. He was thrown out of the operator's seat then and killed under the fallen machine.

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Tips for forestalling similar accidents

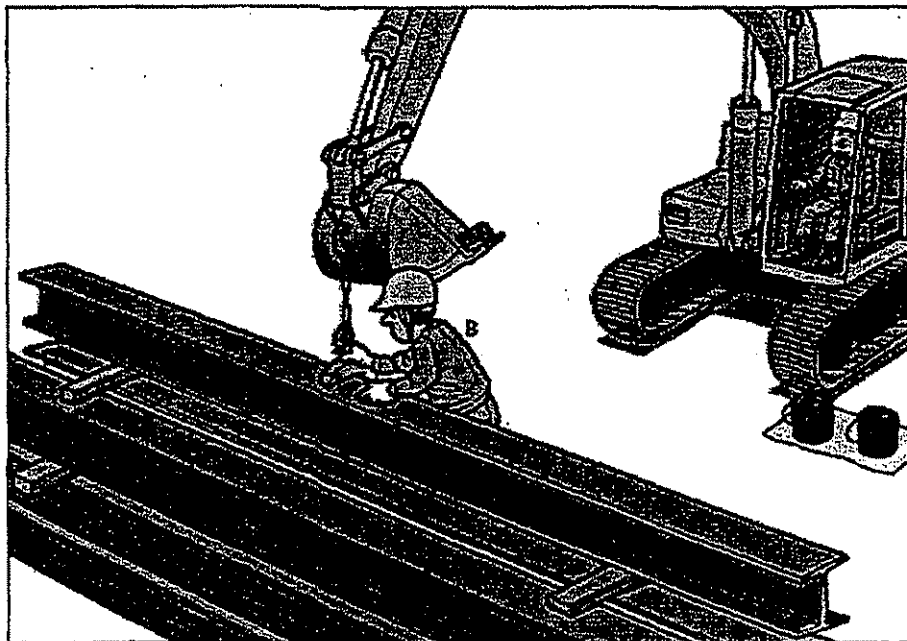
1. For transportation of construction vehicles, prepare for a special truck as well as use ramps for loading and unloading for the purpose of assuring safety.
2. Appoint a conductor for the work of loading and unloading of construction vehicle from a truck or trailer. All the parties concerned will follow his/her instructions. The conductor will decide the work procedures and method, and then have everyone understood them.
3. Implement safety education and training, in course of which various hazards resulting from the work and their causes are clearly indicated, so that the workers' safety awareness may be enhanced.

Any accident foreseen in this frame?

In a material stock yard, an operator worker A and another worker B are working in pair using a hydraulic excavator. Their job is to paint the surfaces of the I-beams one by one that are stacked up there. First the topside of an I- beam is painted. Then it is turned over with a lateral slinging clamp hung to a hook fixed to the bucket of the hydraulic excavator and the rear side is painted. After painting on both sides, it is stacked up using the same clamp.

The operator A has finished a special training course for operating movable type cranes, but has yet to finish a training course for operating construction vehicles, and so far has little experiences with them.

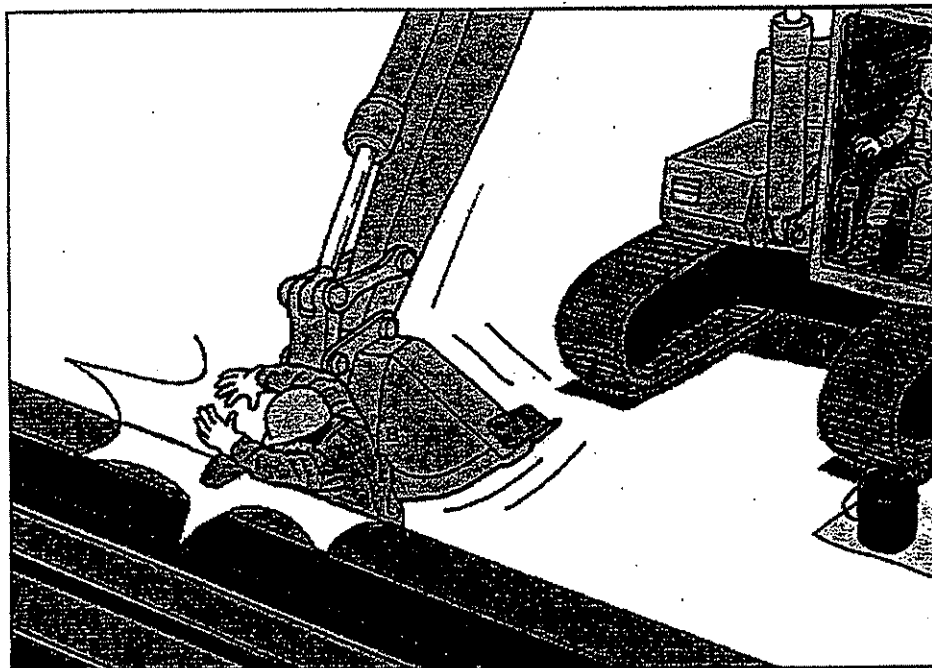
Now what accident do your anticipate from this picture?



This is the accident resulted?

The worker B was trying to unfasten the clamp from an I-beam that has finished painting, when the inexperienced operator A moved the bucket control lever by mistake. The bucket hit the worker B hard on the chest and killed him.

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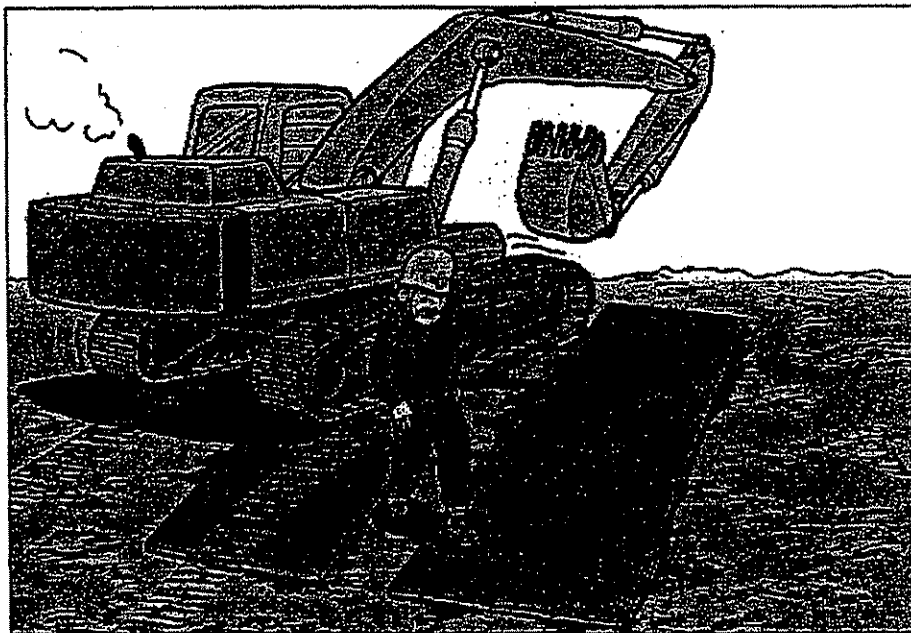
Tips for forestalling similar accidents

1. Do not allow any worker to operate construction vehicles without the required license.
2. Post a signalman where a job obliges a worker to enter and there is the danger of bodily injuries to him/her by a possible contact with a construction machine in operation.
3. Do not allow a construction machine to be used for any other purpose than its primary application.

Any accident anticipated in this frame?

A hydraulic excavator is traveling in a sewage treatment plant. Because of the soft ground, steel planks with the size of 1.5 m in width x 6 m in length and 1.6 ton in weight each are used to support the weight of the machine. It has reached the end of the planks and is about to make a right turn. Then a worker steps on one of the planks to cross the ground.

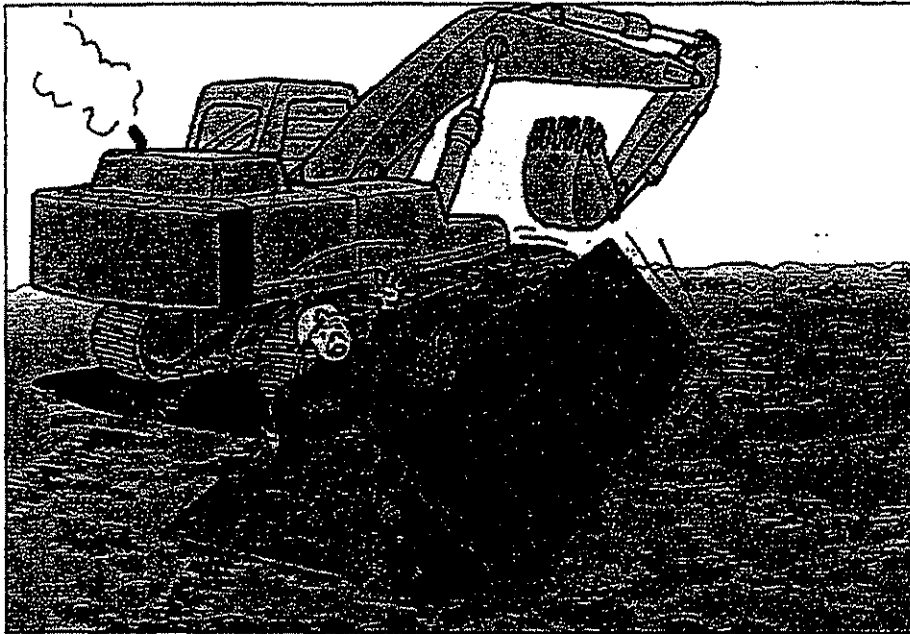
Now what accident do you anticipate from this picture?



This is the accident resulted!

The hydraulic excavator made a pivotal turn to the right, when a broken part of the track shoe assembly hooked the floating edge of the steel plank on which the worker stood. Now that the machine was moving rearward, it further pulled up the plank, tossing him off. He was then prostrated under the heavy plank and crushed.

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Tips for forestalling similar accidents

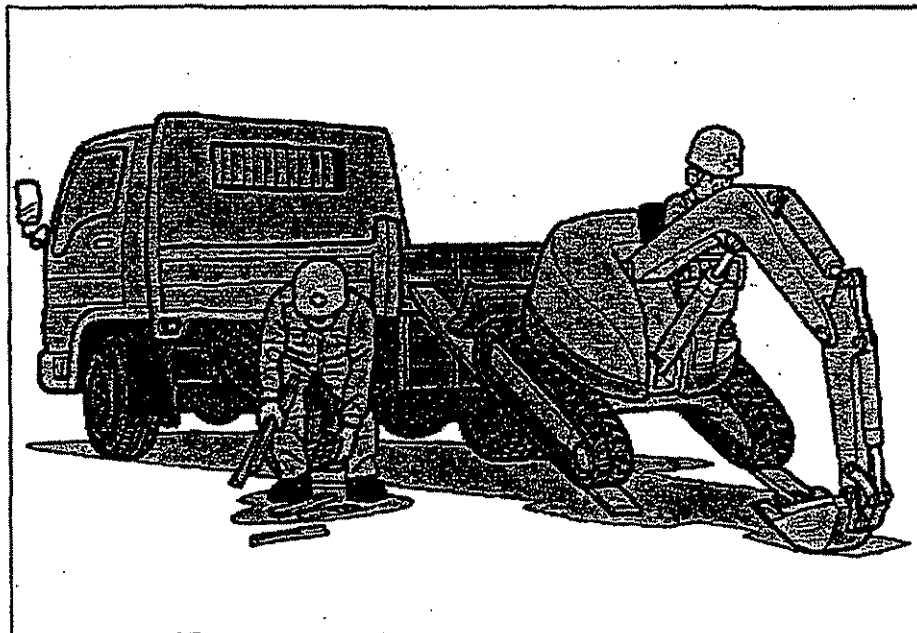
1. Check at a pre-operation inspection or a periodic voluntary inspection if there is any broken part on an undercarriage. If any, take necessary actions for the repair.
2. Level the ground before placing steel planks to assure they are set as evenly as possible.
3. Provide a separate passage for pedestrians and machines. If that is impractical due to the limited space, post a traffic controller in such a spot, who regulates the traffic, showing a priority.

Any accident foreseen in this frame?

An operator worker is about to load a mini excavator on a truck at the construction site of a housing complex. Because ordinary ramps are not available, he uses two plates originally used as concrete formwork. One of them is 17 cm in width x 1.6 m in length in size and the other is 17 cm in width x 1.45 m in length.

Meanwhile another worker is collecting the scattered shreds of construction materials to clean the site.

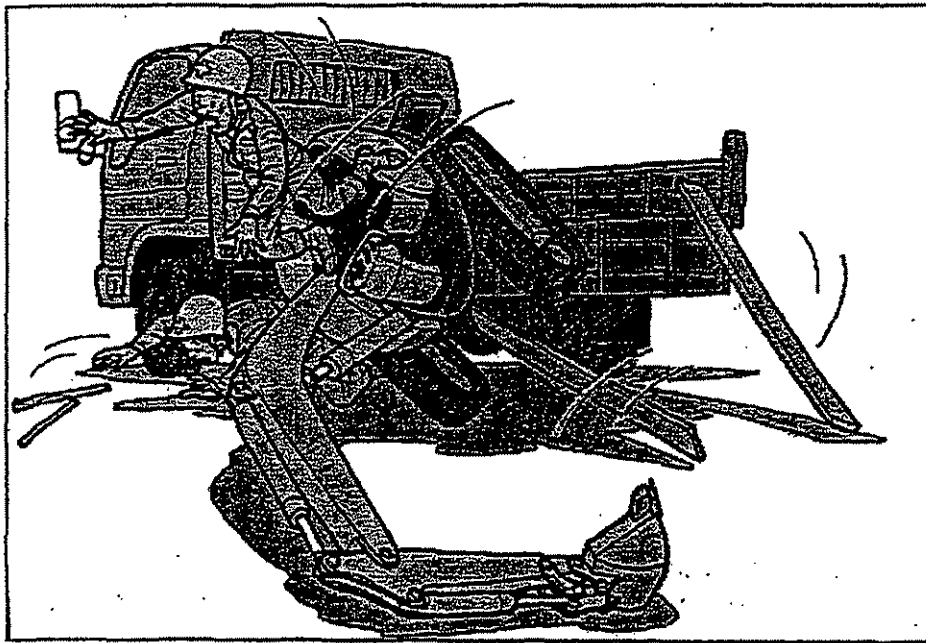
Now what accident do you anticipate from this picture?



This is the accident resulted!

A moment before the mini hydraulic excavator finished climbing over the edge of the truck, it suddenly lost balance and fell off on the ground on the right side. The operator jumped out of the machine unhurt in time, but the worker was crushed under the fallen machine.

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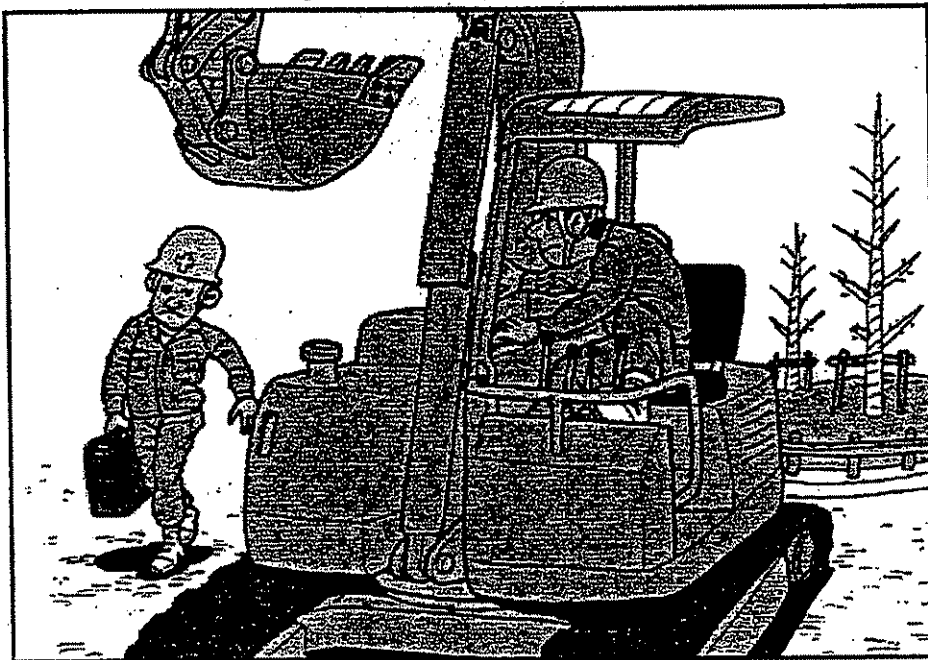
Tips for forestalling similar accidents

1. Choose ramps best suited to construction vehicle, when loading and unloading them on a truck or trailer, and install them securely in the truck/trailer at an angle lower than 15 degrees.
2. Post a conductor for the work, while off-limiting the working area.
3. Determine working procedures as well as method for the work beforehand, and make sure that they are disseminated among those concerned.

Any accident foreseen in this frame?

An operator worker is ready to start digging a U-shaped gutter at the construction site of a park, using a small size hydraulic excavator. It is in the morning, and there comes another worker this way with a polyethylene fuel container. He is supposed to fill the machine with fuel before the day's work. Unable to start the engine, the operator is waiting for him impatiently in the operator's seat. By the way an overhead acryl plate for protection is missing at the operator's side of the machine, since it had been broken and removed for replacement.

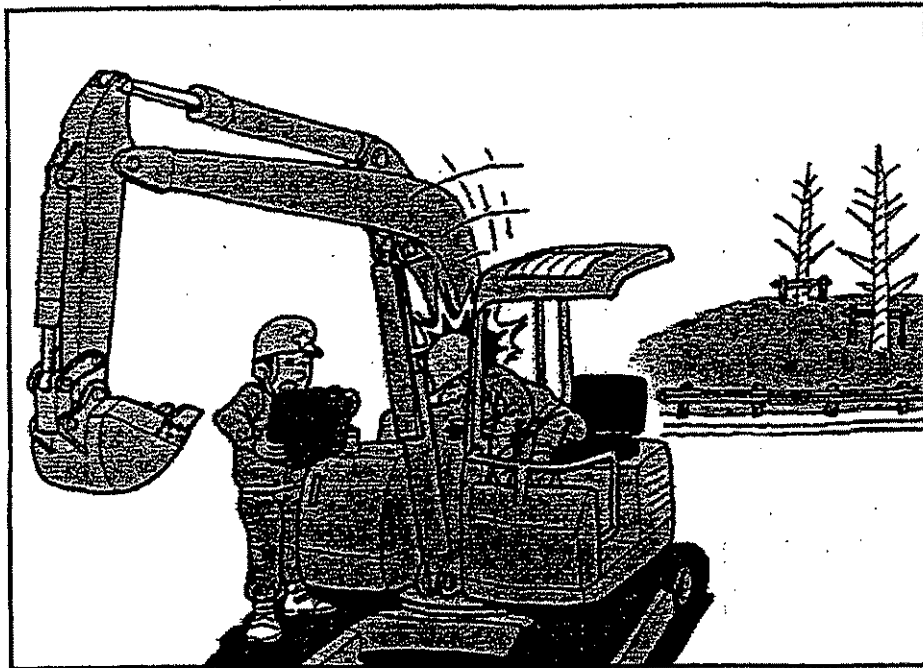
Now what accident do you anticipate from this picture?



This is the accident resulted!

While he was watching him filling fuel, he inadvertently touched the bucket control lever, which let down the bucket. He was caught in between the falling boom and one of the cab guard pillars and killed.

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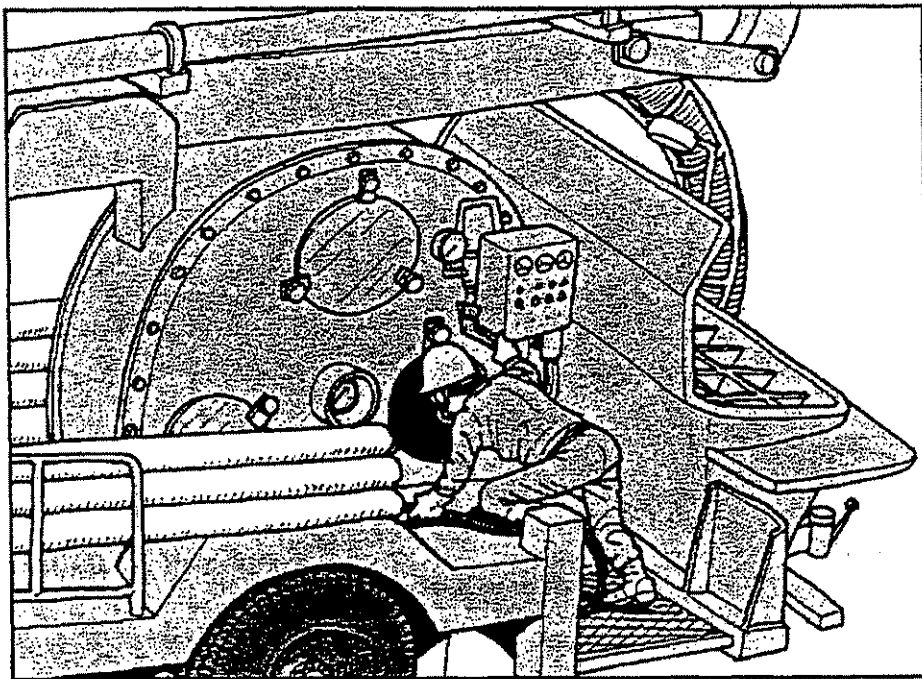
Tips for forestalling similar accidents

1. Should any of the protective devices be removed from construction vehicle, reinstall it immediately and never use them until after it is in place.
2. Make out working procedures for machine inspection, maintenance, refueling, etc. for safety assurance, and see that they are observed without fail.
3. If it cannot be avoided to carry out works under a raised bucket, secure it with support pillars or blocks to ensure safety.
4. Implement education and training for safety in machine inspection, maintenance, refueling, etc.
5. Create an organization responsible for inspection and maintenance that includes voluntary inspection of the machines.

Any accident foreseen in this frame?

A pumping tube has been broken on a squeeze type mobile concrete pump. A mechanic is trying to replace it with new one. He has removed the broken tube from within the pump case and is about wash out ready-mixed concrete spilt in the interior.

Now what accident do you foresee occurring in this frame?

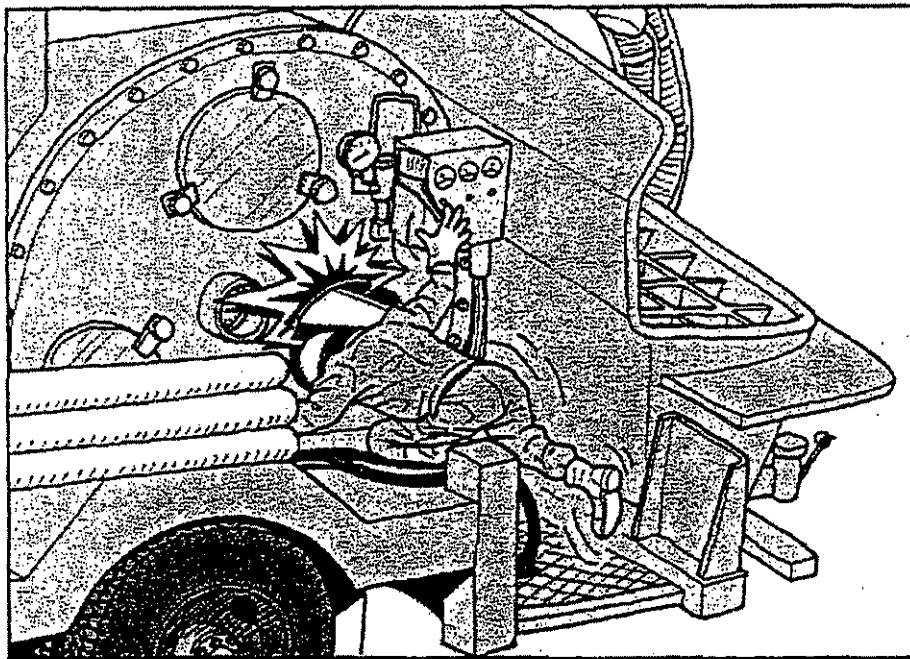




This is the accident resulted!

He stuck his head in the interior through an inspection hole at right, when his right hand inadvertently pressed the main switch on the control panel. The roller was then set in motion and he was guillotined.

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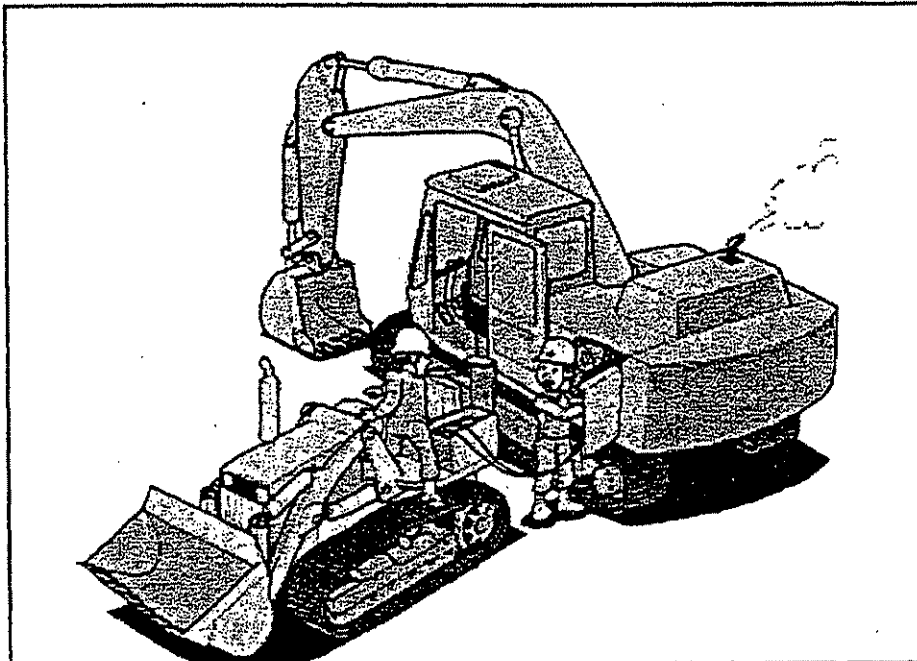
Tips for forestalling similar accidents

1. Stop the engine completely, when it becomes necessary to put in part of or the whole body in the interior of construction equipment for inspection or maintenance work.
2. For non-routines like inspection, maintenance, repairs, etc., too, prepare for the work procedures for safety in advance and see that they are followed.
3. Implement intensive safety education and training for non-routines such as inspection and repairs.

Any accident foreseen here?

A battery in a dozer shovel (otherwise called a traxcavator) has run down. The operator tries to charge it by connecting it with that of a nearby hydraulic excavator with an electric cable. Another worker standing on the dozer shovel proceeds to starting the engine.

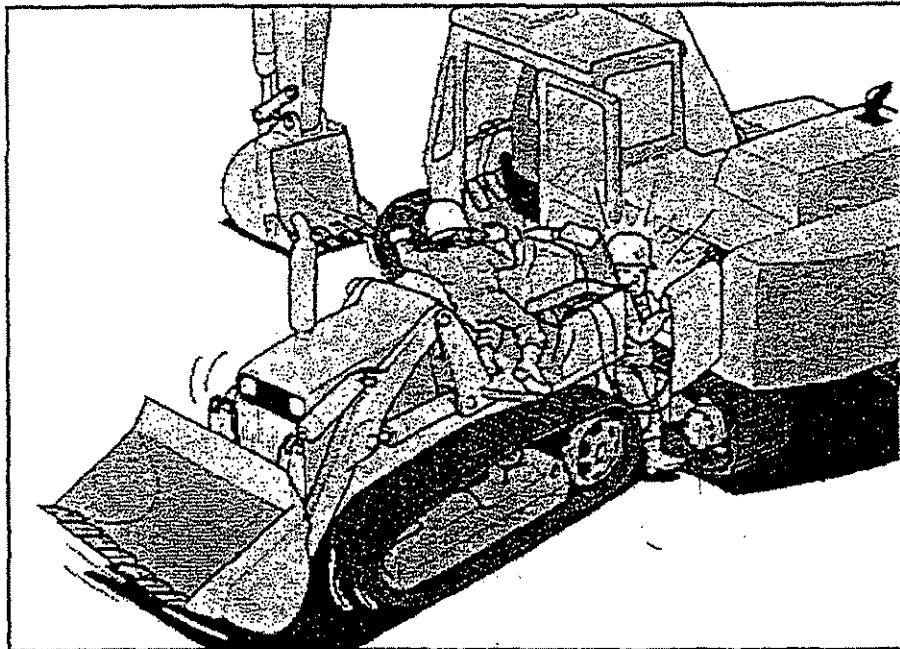
Now what accident do you anticipate from this picture?



This is the accident resulted!

The shift lever of the dozer shovel was in the REAR position. And what is worse, the parking brake had not been applied. Thus when the worker switched on the ignition key, the machine jerked backward. The operator was sandwiched between the two machines and killed.

Page 2 of 2



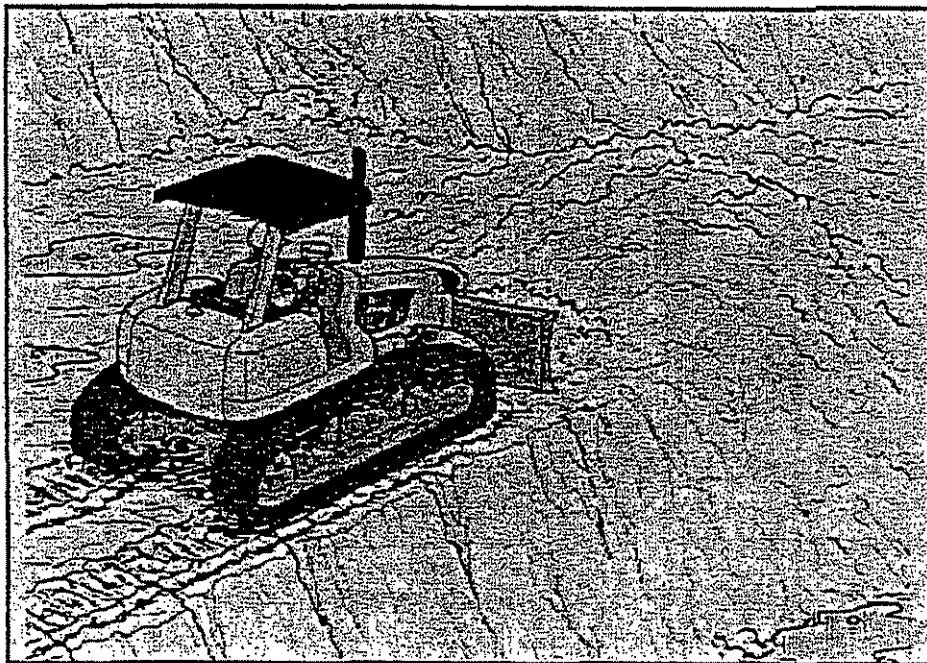
Tips for forestalling similar accidents

1. An operator of dozer shovels will surely take all precautions for preventing the machines from runaway such as applying the parking brake, when he/she leaves the operator's seat.
2. Check if the machine will not start all of sudden before switching on the engine.
3. Do not allow anybody an access to a construction vehicle in operation and the neighborhood, if and when there is the danger that he/she may be hurt through coming into contact with it.
4. Should a battery of construction vehicle run down while in use under the normal conditions, it should be replaced with new one.

Any accident foreseen here?

After rainfall on the previous day, a bulldozer is engaged in refilling work close to a road shoulder at a dam construction site.

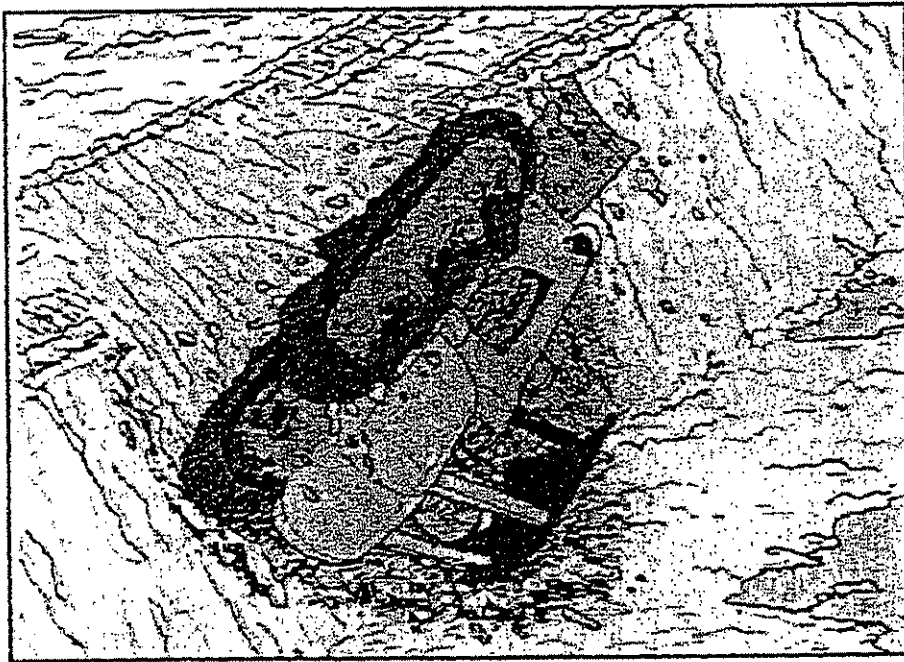
Now what accident do you anticipate from this picture?



This is the accident resulted!

The road shoulder gave in under the weight of the bulldozer and collapsed. It fell off on the lower ground, killing the operator who was thrown under the machine.

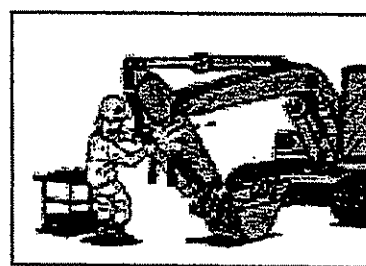
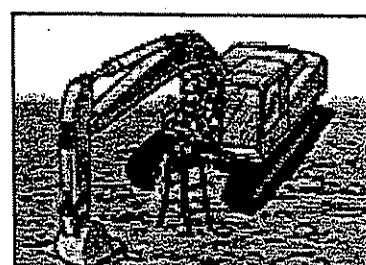
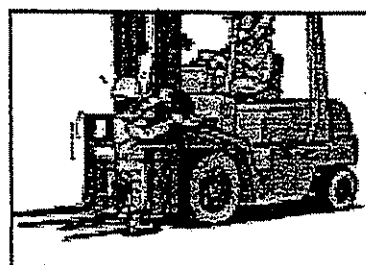
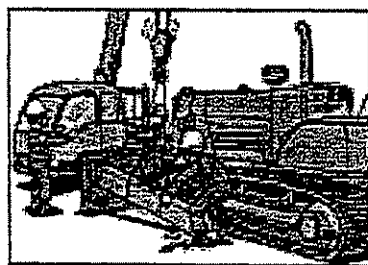
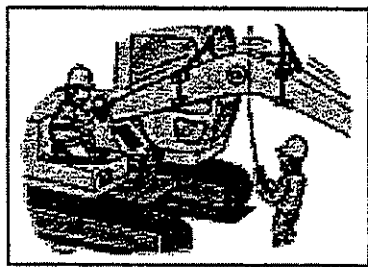
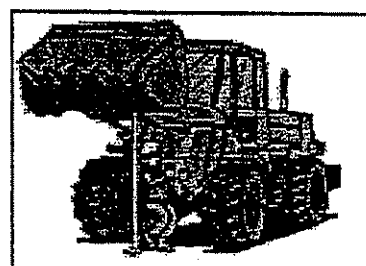
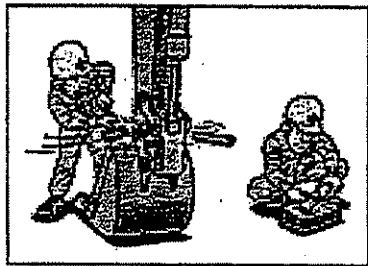
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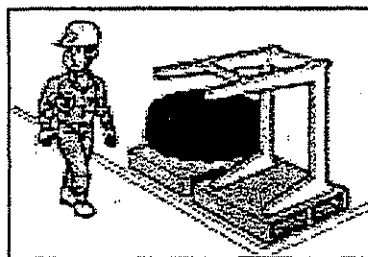
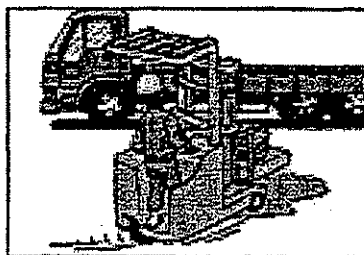
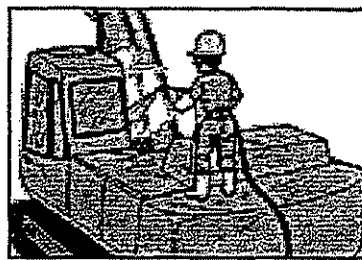
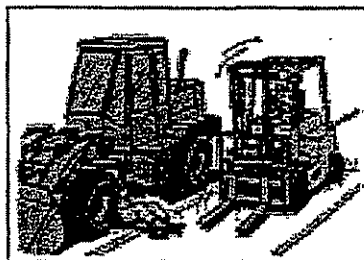
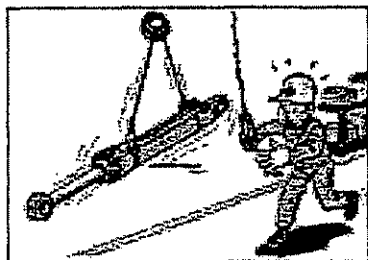


Tips for forestalling similar accidents

1. Check the ground conditions before starting with work.
2. Put up a marker showing the edge of the road.
3. Push earth at the right angle to the road shoulder.

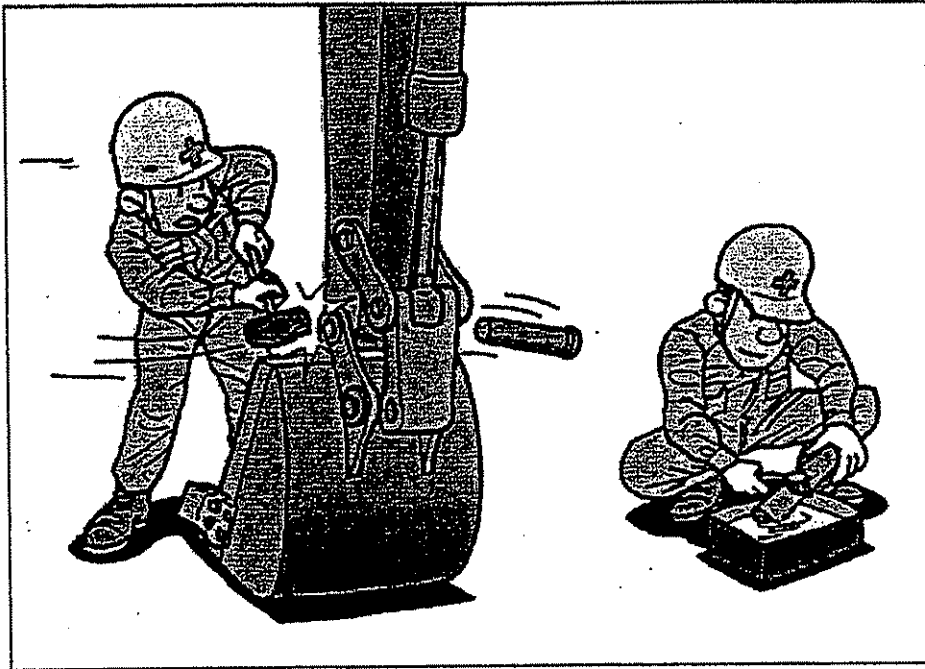
Cases for Near Miss or Near-Accident click!





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Examples for Escape from Near Misses or Near Accidents

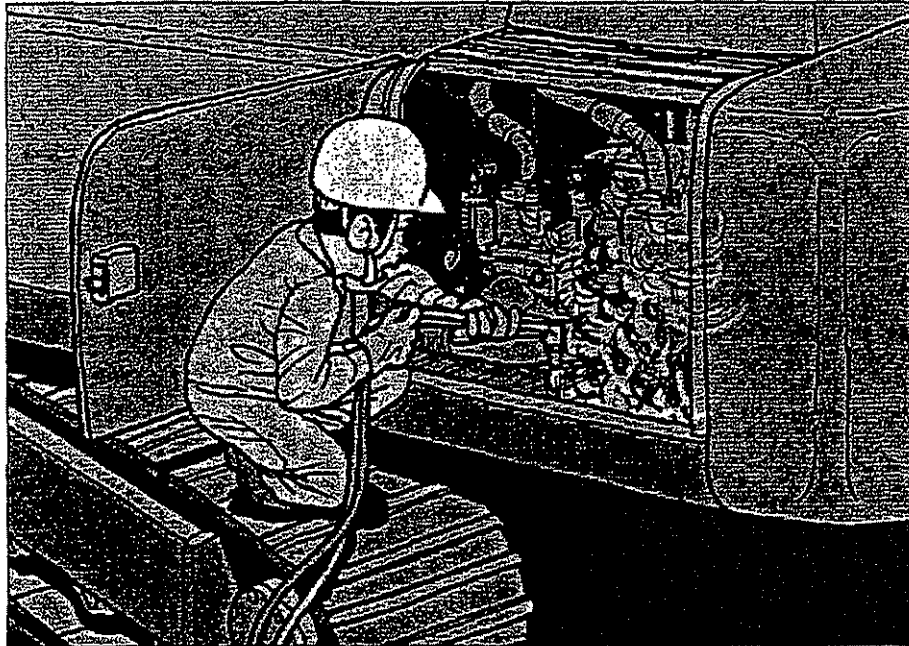


In the work of replacing the bucket securing pin, a mechanic hit the pinhead with a sledgehammer forcibly. The pin was driven out of the hole in a high speed and came near to hitting a fellow mechanic on the opposite side.

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Examples for Escape from Near Misses or Near Accidents

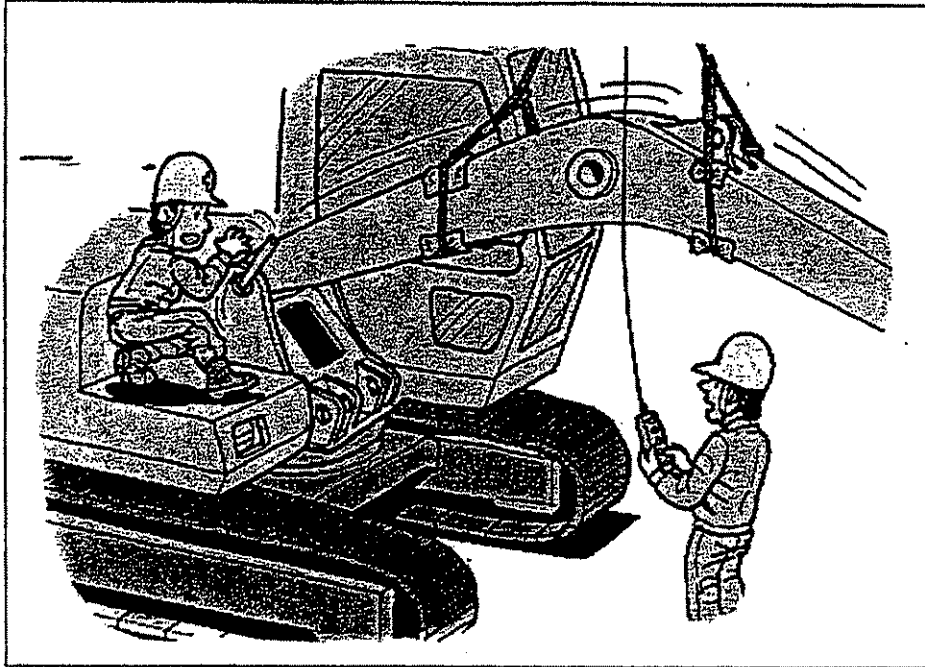


When a mechanic was flame-cutting a hydraulic pump undercover of hydraulic excavator, leaked oil and cleaning cloth caught fire and threatened to expand to the other part of the engine.

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Examples for Escape from Near Misses or Near Accidents

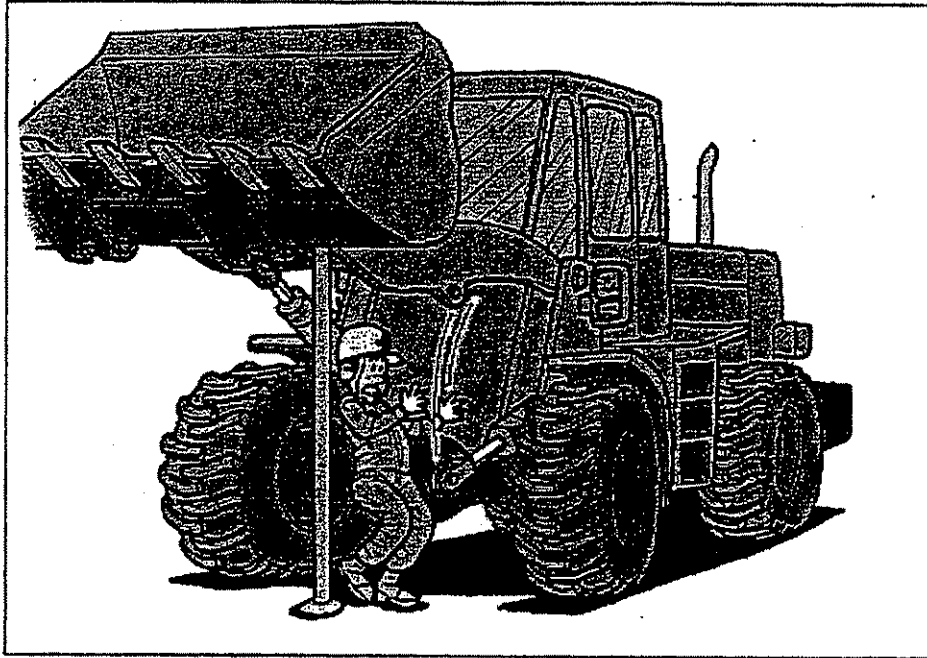


Two mechanics were installing a boom on a hydraulic excavator. One of them inserted a bar into the pinhole, when the other unexpectedly moved the crane hanging the boom. As a result the bar sprang up and almost hit the worker holding it.

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Examples for Escape from Near Misses or Near Accidents

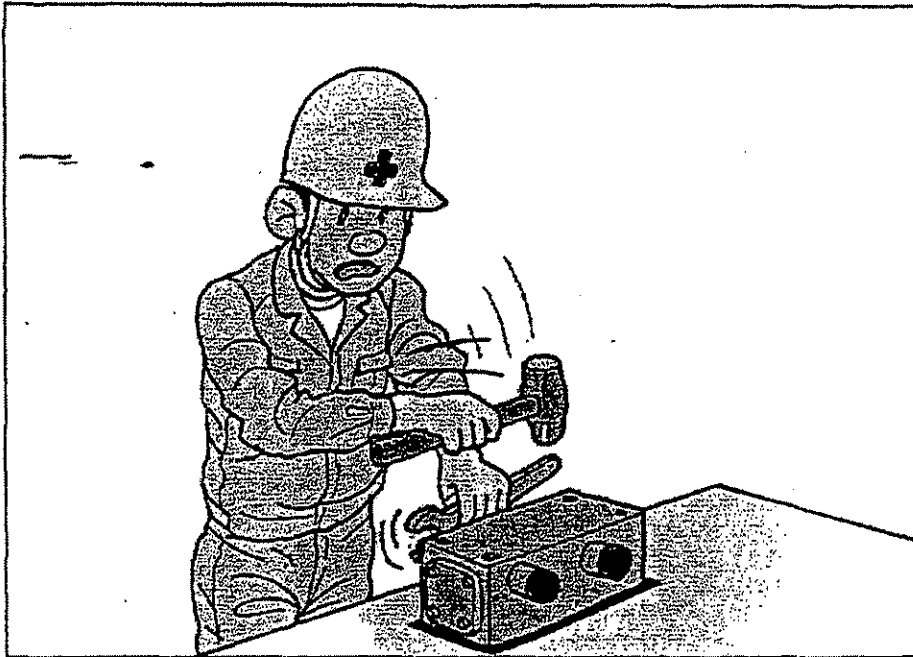


Remembering he has forgotten to support the boom cylinder on a wheel loader, a mechanic has come back to it and pulled the connecting pin. Then the cylinder dropped and nearly hit him.

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NEXT

Examples for Escape from Near Misses or Near Accidents



A mechanic was loosening the plug on hydraulic pump with a spanner. To do so, he hit the head of the spanner with a hammer. Then the spanner slipped off the plug head and he came near to hitting his own hand.

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Examples for Escape from Near Misses or Near Accidents

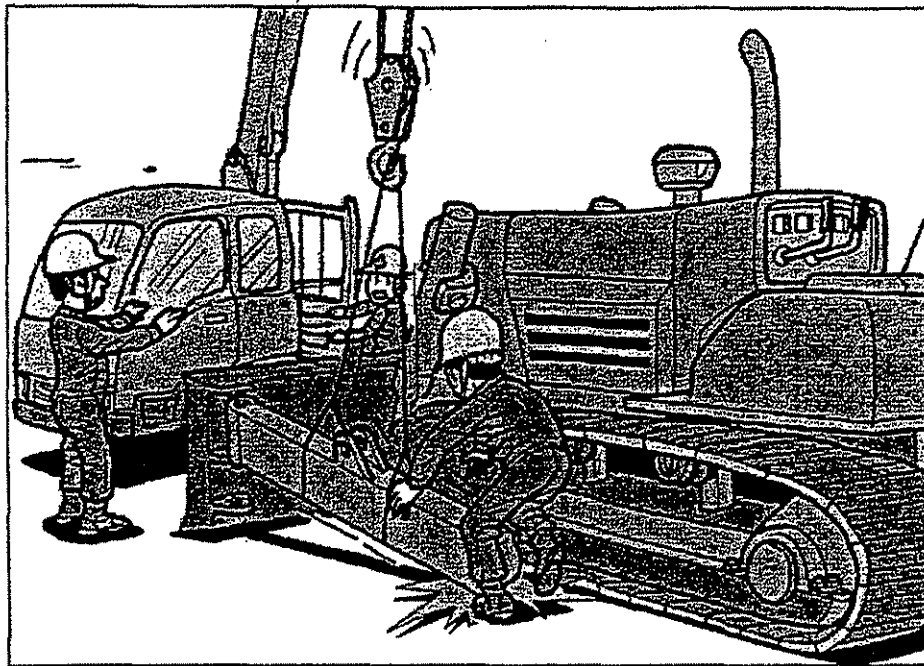


A mechanic was trying hard to build a planetary gear assembly in a transmission. The splines were suddenly aligned and the assembly dropped to fit in place. He had his fingers nearly pinched at that time.

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Examples for Escape from Near Misses or Near Accidents

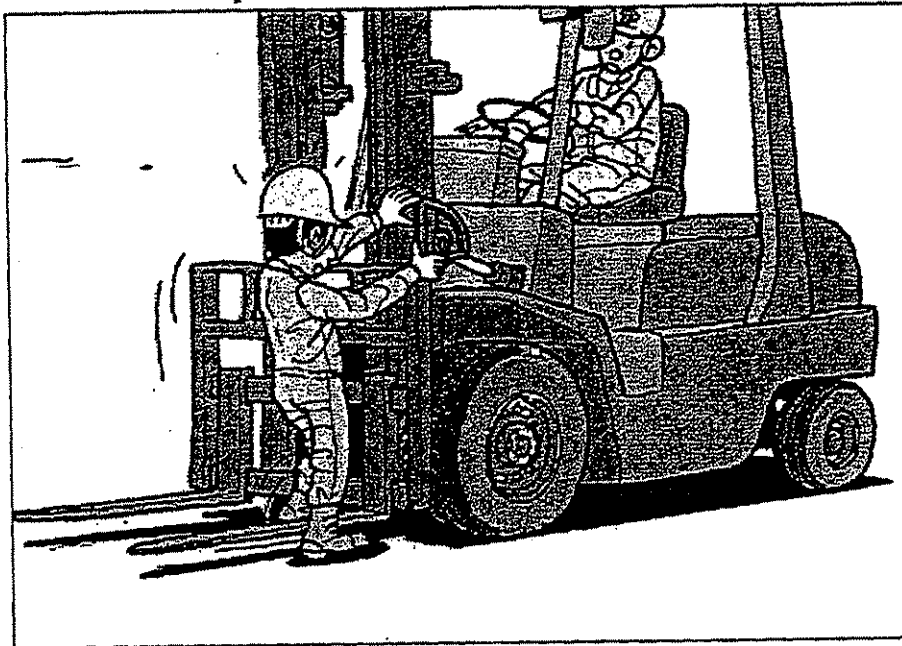


In the work of dismantling the straightdozer attachment, coordination between a signalman and a crane operator was not good enough. That resulted in a narrow escape of a worker from being sandwiched between the straight frame and the machine body.

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NEXT

Examples for Escape from Near Misses or Near Accidents

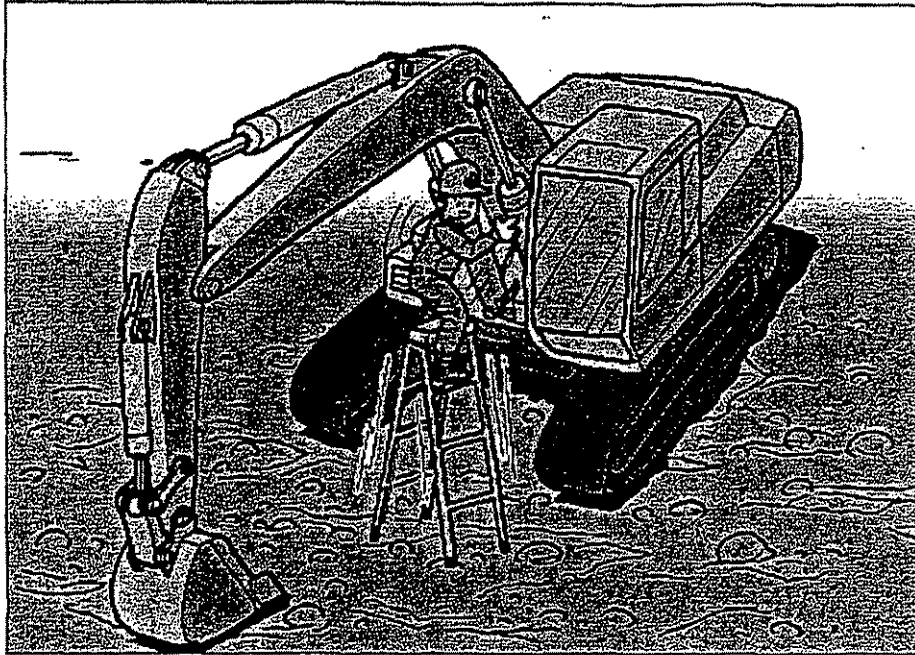


An operator and a mechanic were jointly conducting a performance inspection on a lift truck. While the mechanic was fixing a level on the mast, the operator operated the fork control lever by mistake. The fork dropped all of sudden and nearly crushed the mechanic's feet.

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Examples for Escape from Near Misses or Near Accidents

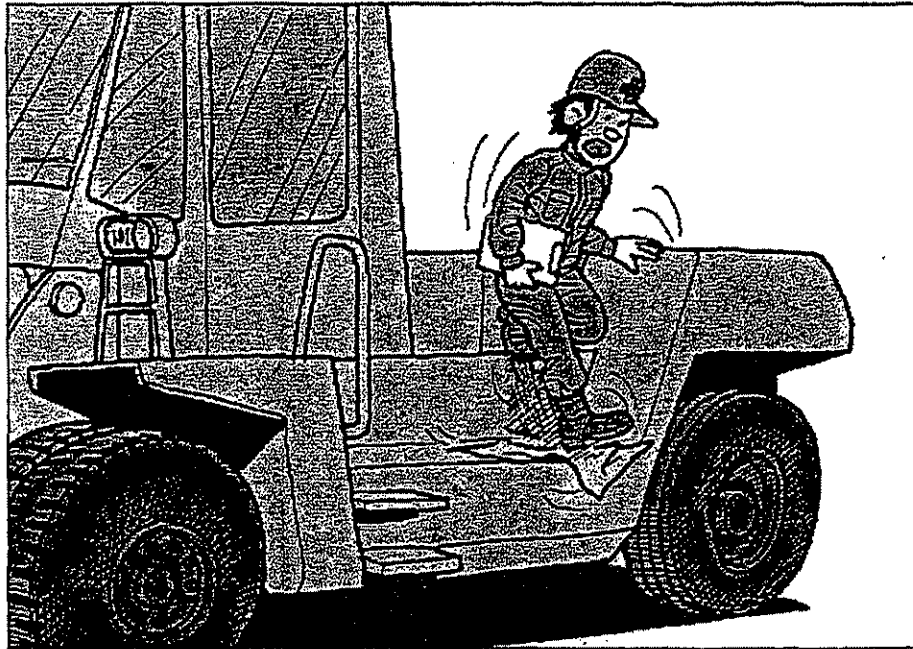


A mechanic climbed up a stepladder to clean the boom cylinder rod of a hydraulic excavator. Now that the stepladder was set on the uneven ground, it almost went toppling.

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Examples for Escape from Near Misses or Near Accidents

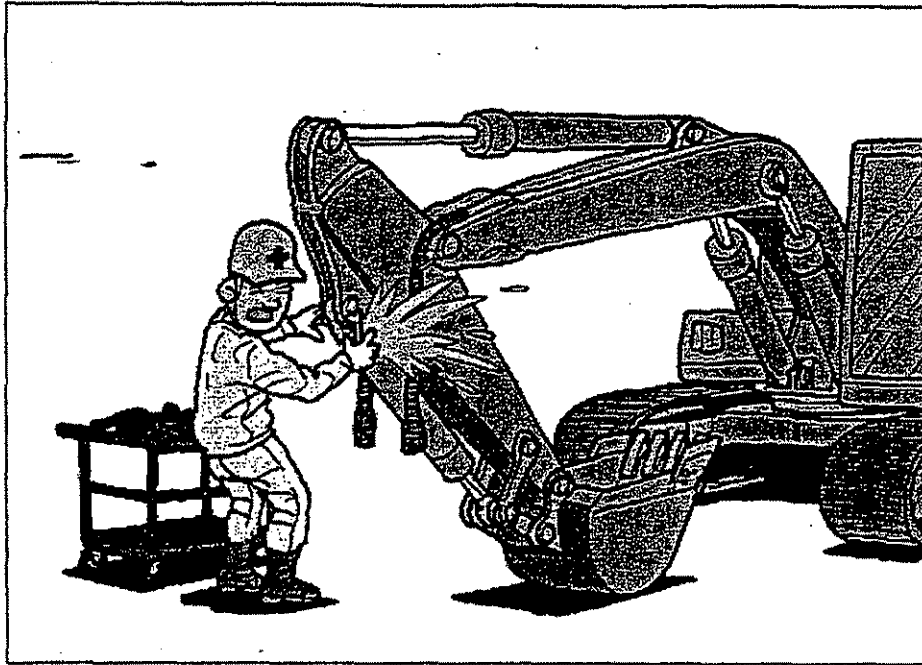


At the time of delivery inspection for a new lift truck, a service mechanic stepped on vinyl mat on the step. As the mat had a rainwater pool on it, his foot slipped off and he was almost thrown on the ground.

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Examples for Escape from Near Misses or Near Accidents

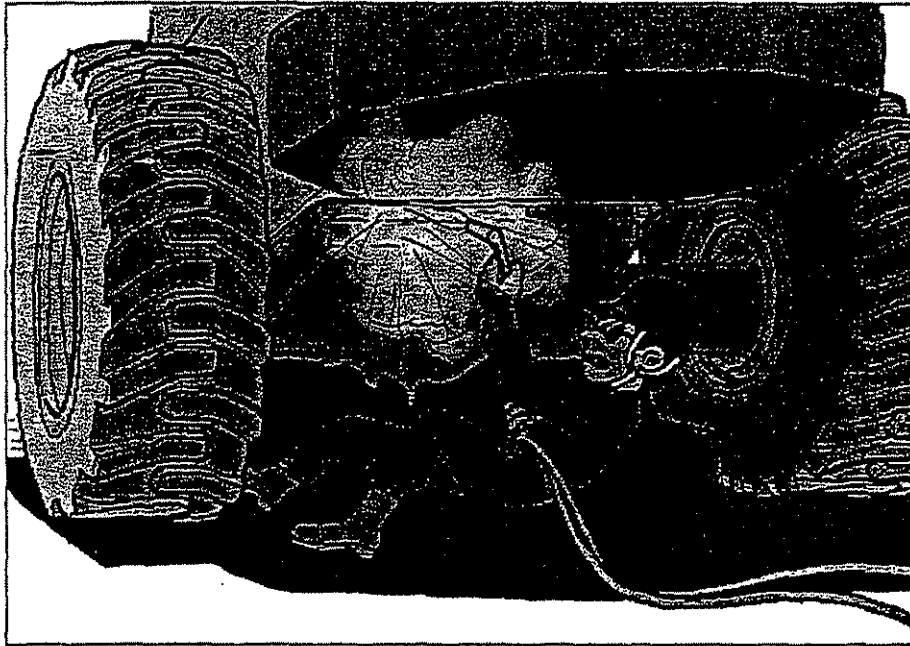


After repairing the arm of a hydraulic excavator, a mechanic was about to install it to the boom end, connecting the hydraulic hose of the bucket cylinder. Then a blind plug in the hose was blown off all of sudden due to the internal pressure of oil. He was nearly splashed with oil all over.

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Examples for Escape from Near Misses or Near Accidents

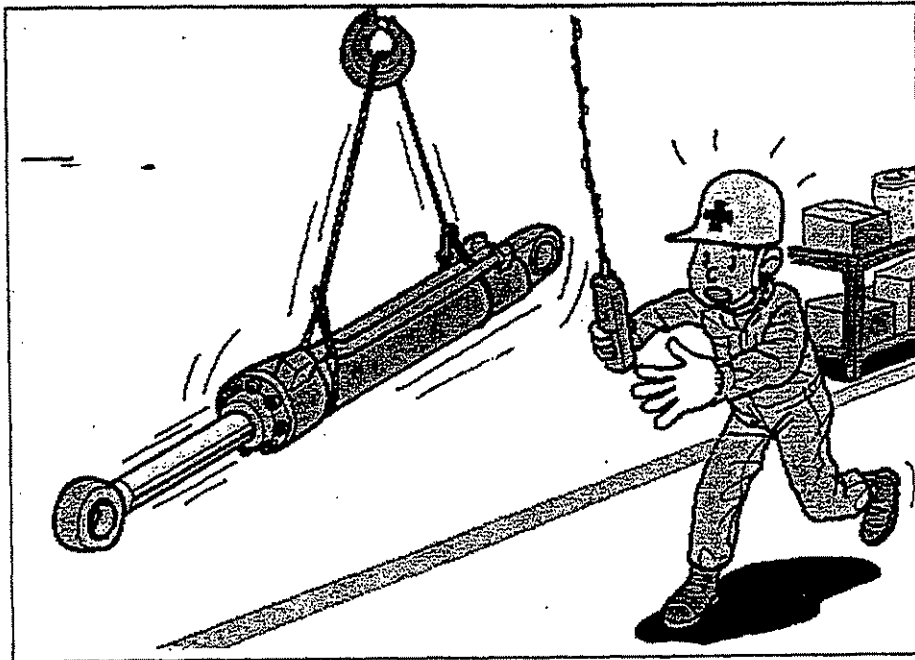


In order to replace the undercovers of a wheel loader, a mechanic was flame-cutting them to widen the boltholes. Then sparks threatened to fall in his eyes through opening of the safety glasses.

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Examples for Escape from Near Misses or Near Accidents

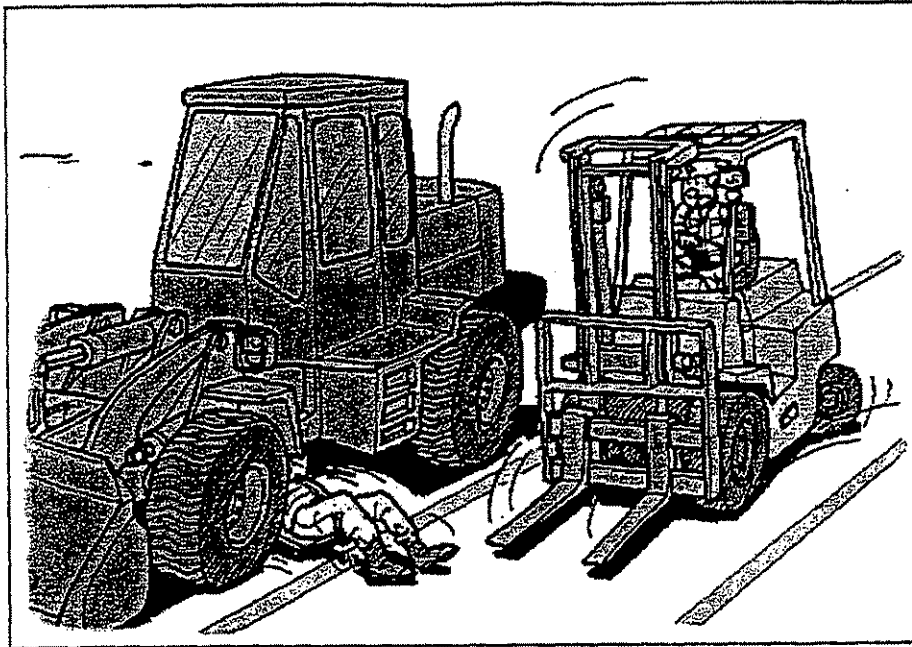


A worker was about to move a hydraulic cylinder for hydraulic excavators after lifting it up with a crane. Then the cylinder rod came out suddenly, disrupting the lift balance.

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Examples for Escape from Near Misses or Near Accidents

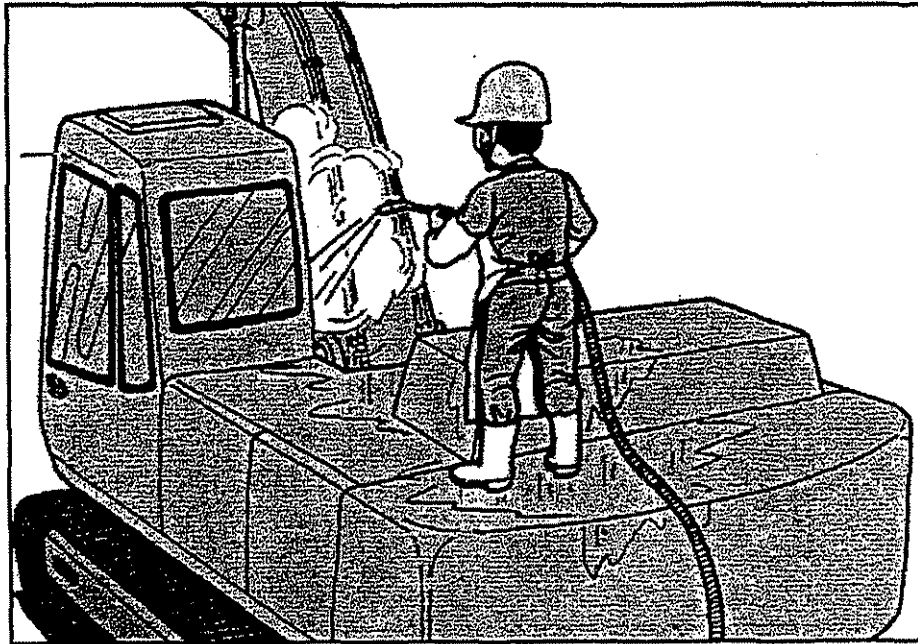


An operator came along, driving a lift truck, when he saw two legs sticking out suddenly from under a wheel loader while in maintenance.

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Examples for Escape from Near Misses or Near Accidents

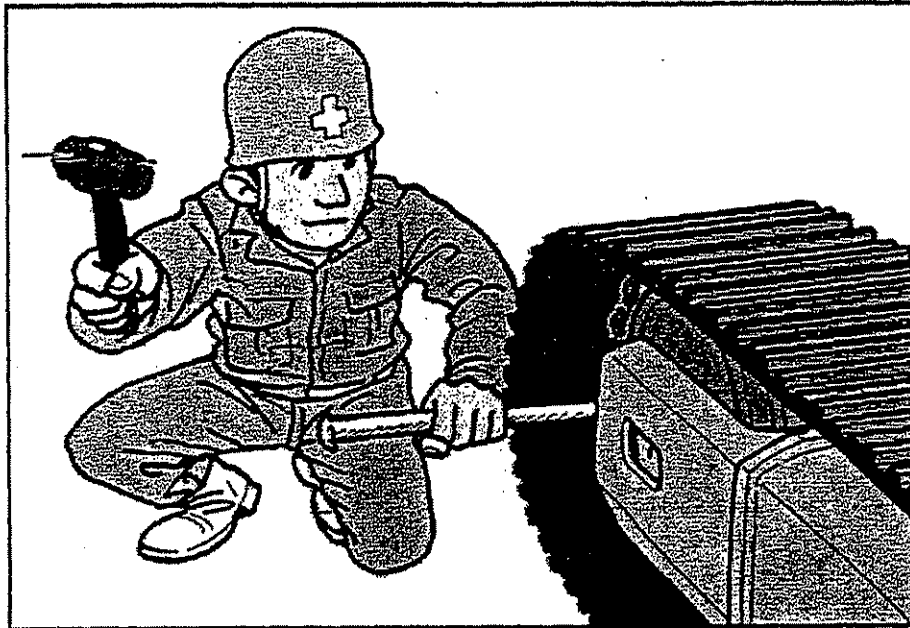


A worker was about to fall over on a hydraulic excavator, while he was washing the machine with a steam cleaner prior to the repair. That was in part because grease was sticking on the soles of his boots and in part because the strong washing water pushed him back.

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Examples for Escape from Near Misses or Near Accidents

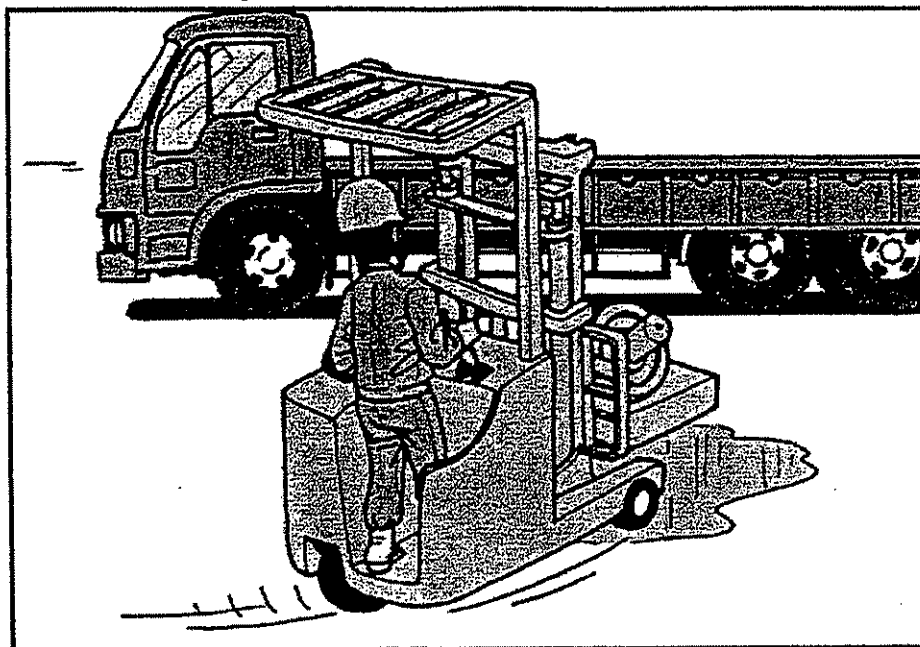


In the replacement work of track links on a hydraulic excavator, a mechanic applied a metal bar on top of a track link pin and hit it with a hammer. Then a metal piece was chipped away and flew away past his face.

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Examples for Escape from Near Misses or Near Accidents

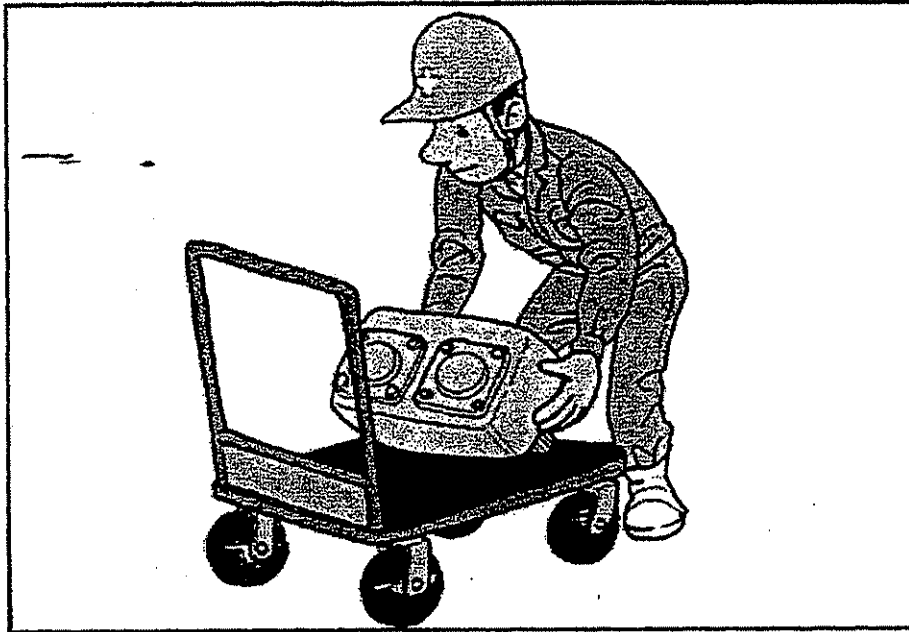


A worker was operating a reach forklift truck to load spare parts on a large truck. When he made a sharp turn in course of the work, the lift truck skidded and almost overturned.

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Examples for Escape from Near Misses or Near Accidents

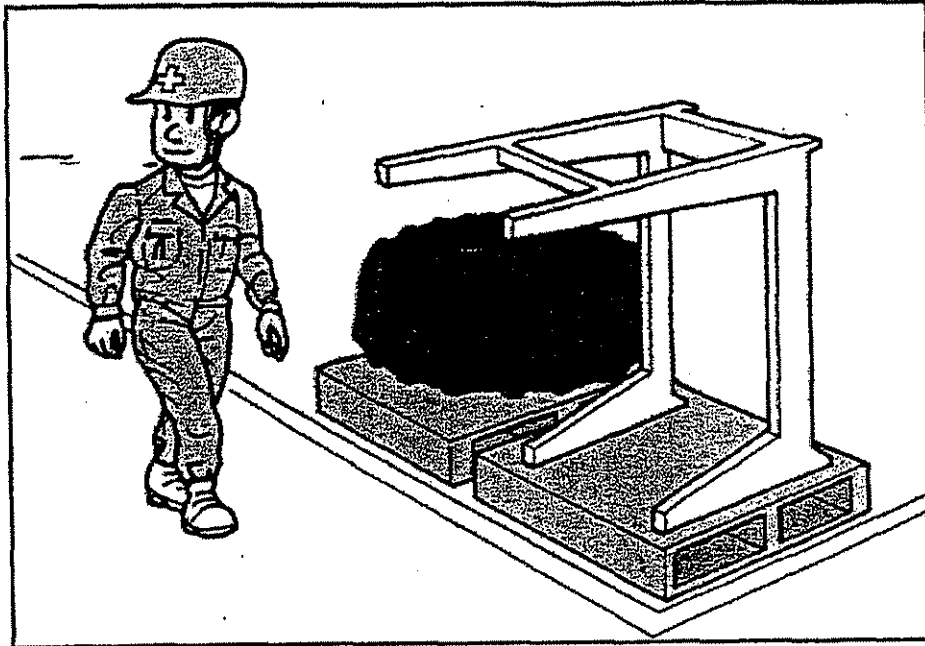


A worker tried turn over a heavy part on a bogie. As he did so without applying a stopper to the wheels, the bogie started to move forward. He almost let fall the parts on his foot.

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Examples for Escape from Near Misses or Near Accidents

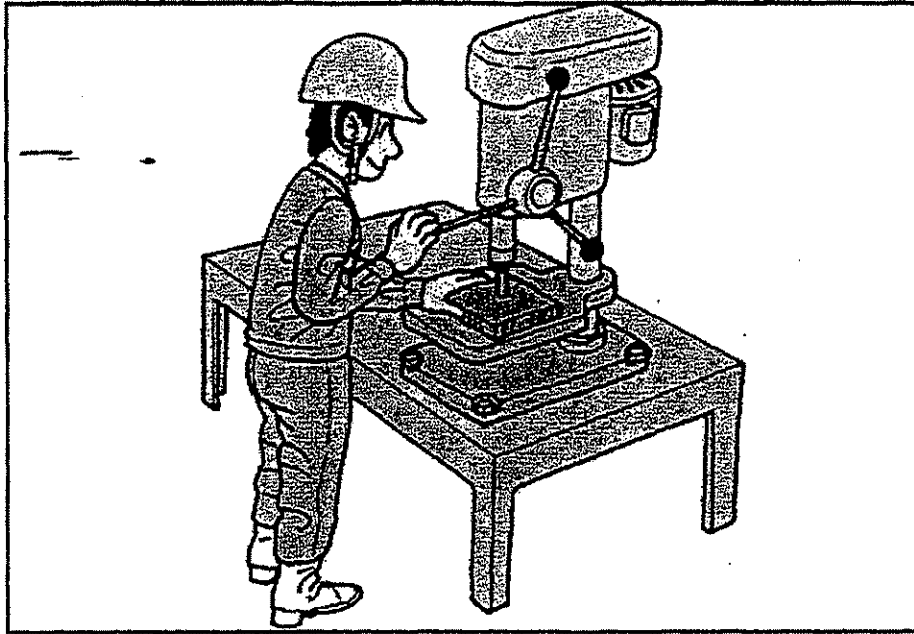


A wheel loader head guard was placed at the corner of an aisle in plant in preparations for the pre-delivery inspection. Its strut protruded over the aisle. A worker came along and he almost run against it.

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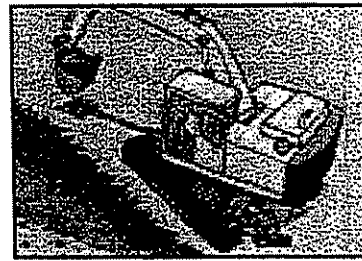
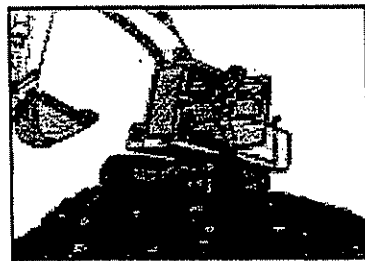
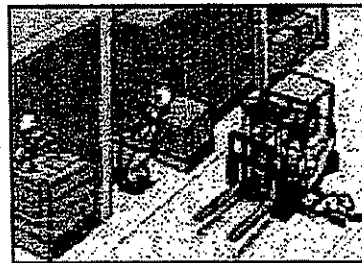
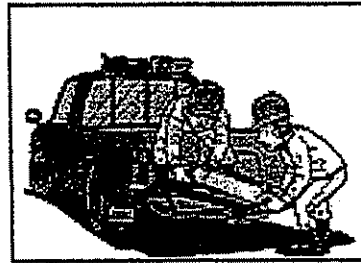
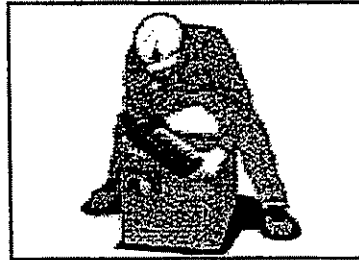
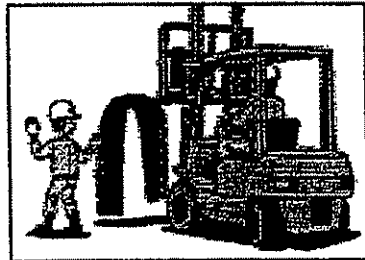
Examples for Escape from Near Misses or Near Accidents

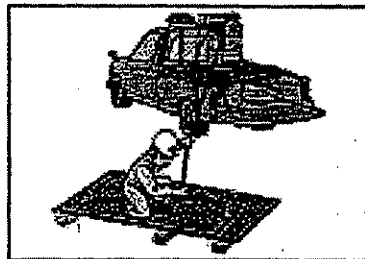
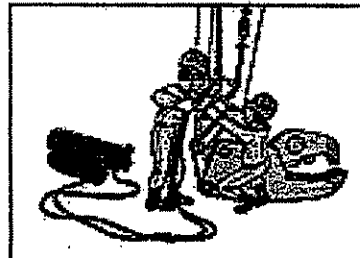
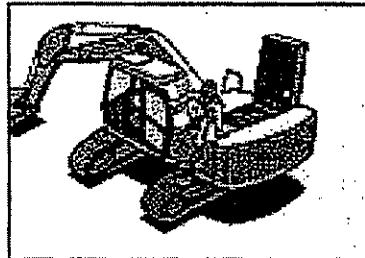
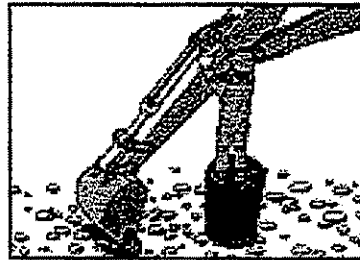
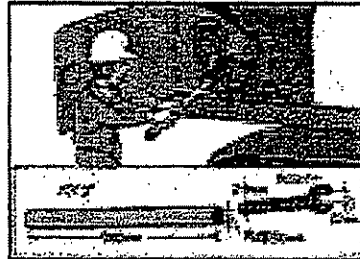
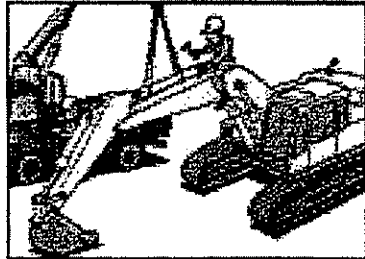
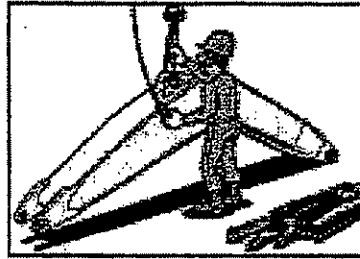
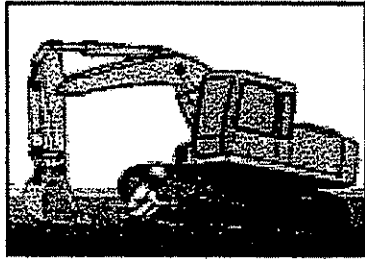


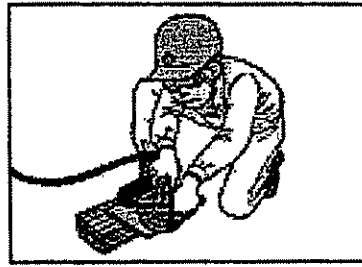
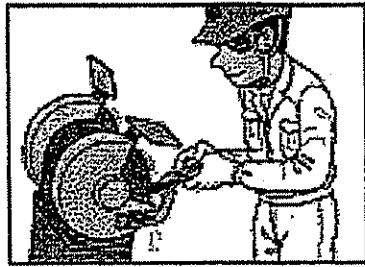
A worker was drilling hole on a plate with a drilling machine. When the drill went through the plate, it started to turn together. Then his left hand holding the plate was almost pulled in the revolution.

RETURN

Examples for Hazard Prediction Training click!



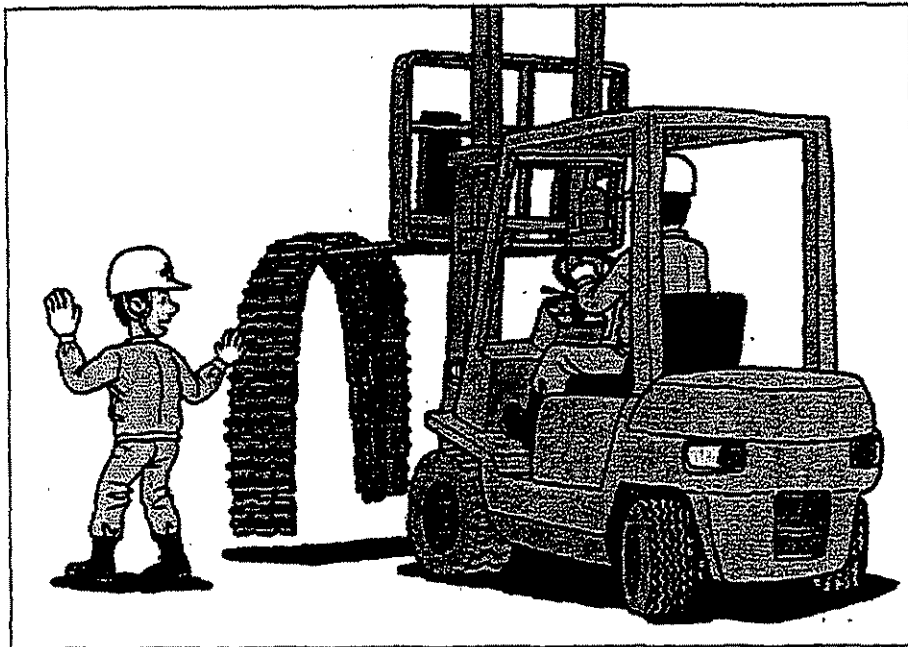




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Transport by lift truck

A worker sends signals to a lift truck operator in their joint effort to clear up a track shoe assembly.



Various Points of Hazard

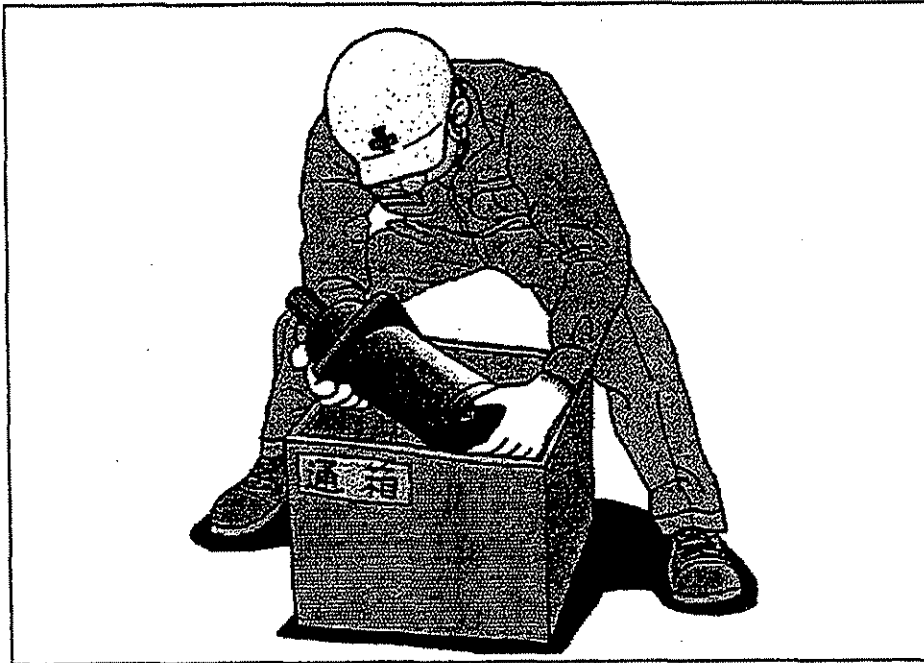
1. The track shoe assembly is not hung at the bottom of the fork tines. It may likely slip off and hurt the nearby signalman.
2. The signalman stands at a dangerous point. He is likely to get hurt, hit by the swinging track shoe assembly.

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NEXT

Transport of heavy parts

A worker is trying to put a rotary motor core (weight: 60 kg) first obliquely on the edge of a recyclable wooden box, and then put it in the box properly.



Various Points of Hazard

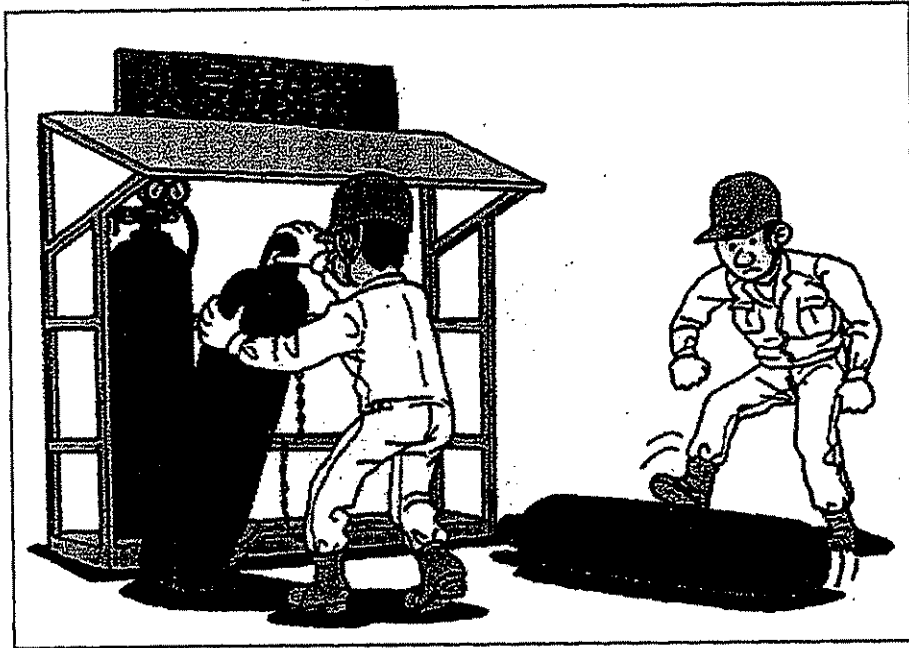
1. The worker obviously made a mistake in estimating the weight of the core and all likely gets his hands caught between the core and the box edge.
2. Taking an undesirable posture, the worker may have damage to his waist.

RETURN

NEXT

Moving oxygen cylinders

Workers A and B are replacing oxygen cylinders in a cylinder installation yard. Worker A is now taking down an empty cylinder weighing 50 kg, while Worker B is kicking off a new cylinder to move it to the yard. It is charged with oxygen at the pressure ratio of 150 kg/square cm.



Various Points of Hazard

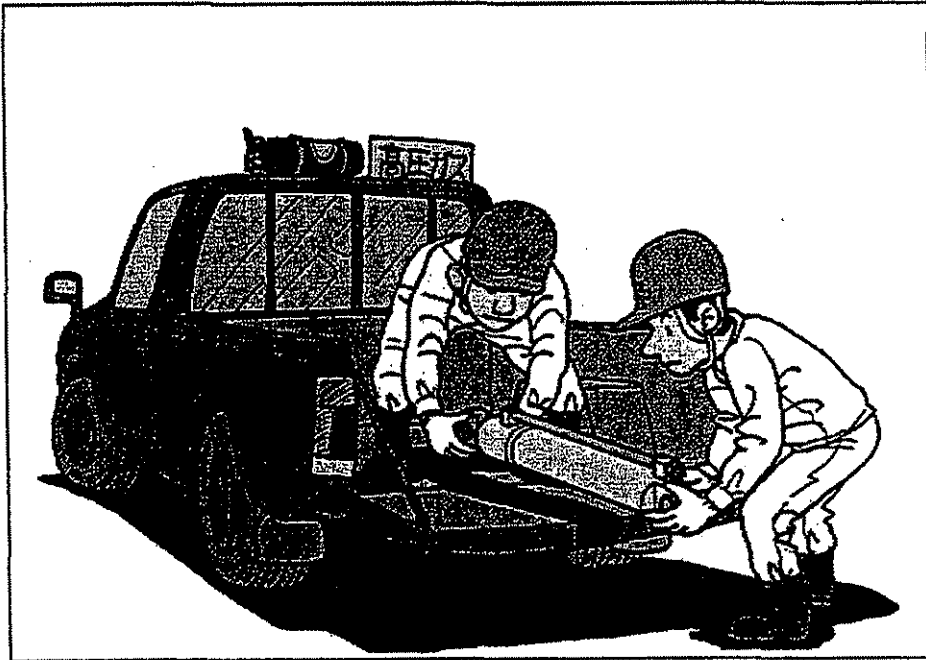
1. The two workers do not use a special cart for transporting gas cylinders. There is the danger of damage to both the workers and the cylinders alike.
2. If a highly pressurized gas cylinder is rolled over the ground, there is always the danger of gas leakage.

RETURN

NEXT

Unloading of boom cylinder

Two mechanics are unloading a boom cylinder weighing 73 kg from a service truck together. One is handing it over, standing on the truck body, while the other is receiving it on the ground.



Various Points of Hazard

1. The two workers stand on places of different height. The fact means the center of gravity of the boom cylinder shifts forward. For this reason, they may let it fall on the ground by mistake.
2. The weight may overpower the two workers, who may let it fall on the ground, unable to hold it any longer.

RETURN

NEXT

Cylinder check

While Mechanic A is checking a lift cylinder, Mechanic B is about to operate the fork control lever ready to lower it.



Various Points of Hazard

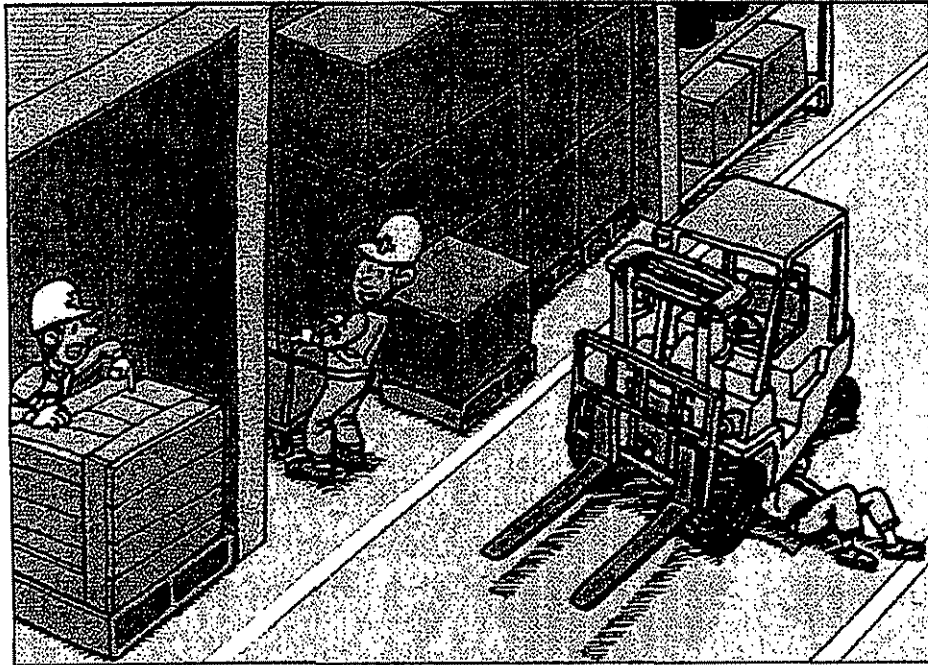
1. The tools are not laid in an appropriate place.
2. If Mechanic B makes a mistake in operating the fork control lever, there is the danger that Mechanic A is sandwiched.

RETURN

NEXT

Vehicle check

A mechanic crept under a lift truck parked on a road, and is inspecting it. Meanwhile a worker is asking another to carry a pile of cargos stacked on the roadside.



Various Points of Hazard

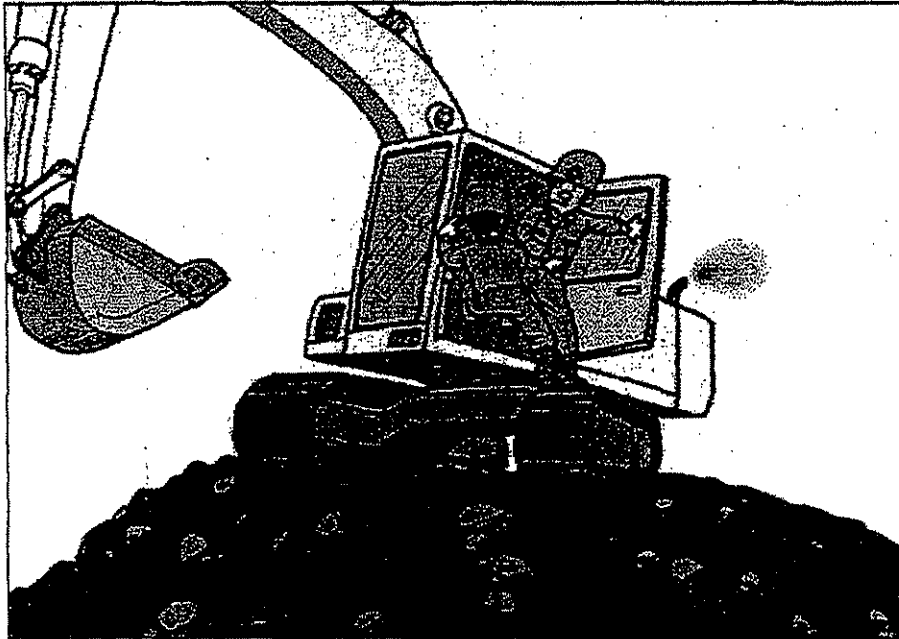
1. The mechanic is inspecting the lift truck in the middle of the road without putting up a fence around, nor any sign indicating an ongoing inspection work.
2. The fork is raised above the ground.
3. No chock is used to stop the vehicle.

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NEXT

Machine exterior check

A circuit service mechanic is climbing to the operator's seat to replace an operator for the purpose of checking the machine condition.



Various Points of Hazard

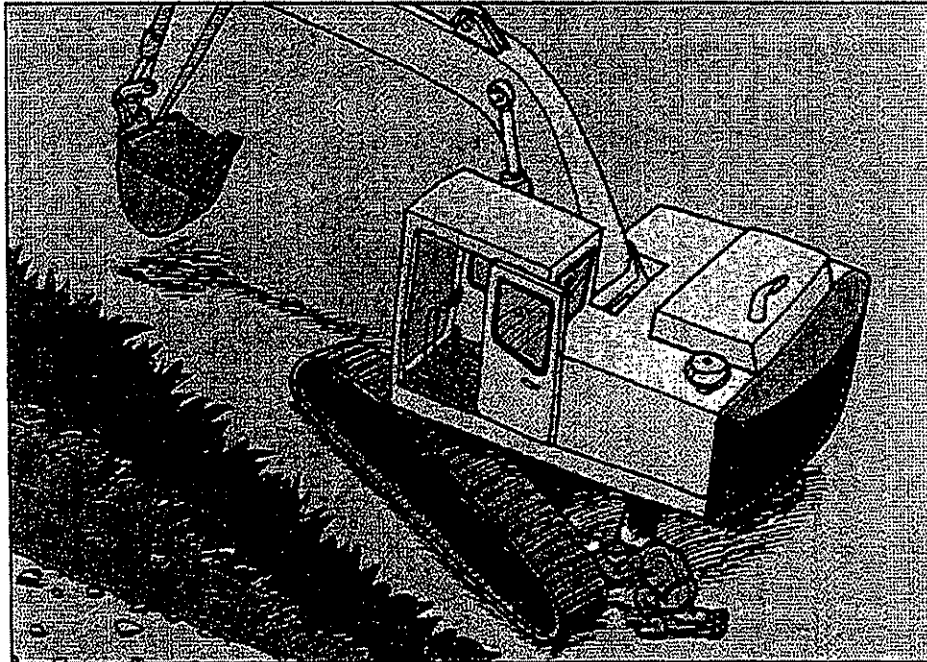
1. The engine has not been switched off.
2. The bucket is not lowered to the ground.
3. Both the mechanic and operator started to move simultaneously.
4. The upper structure is stopped, swung a bit to the right.

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NEXT

Inspection of machine parked on a slope

A mechanic has parked a hydraulic excavator on a slope and crept under it for inspection.



Various Points of Hazard

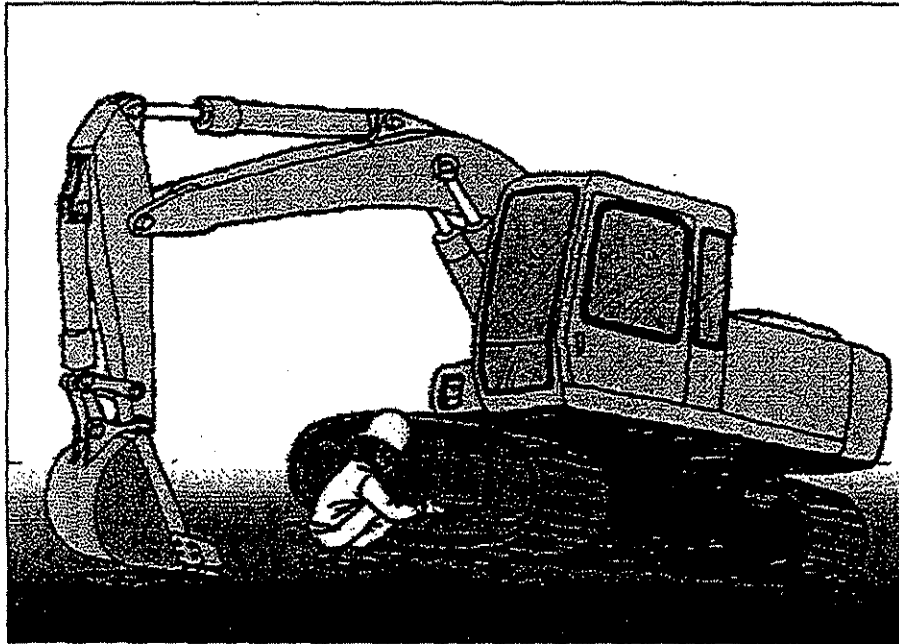
1. The bucket is not lowered to the ground.
2. The mechanic does not wear a hard hat.
3. The machine has no stoppers in place.

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NEXT

Inspection of track rollers

A mechanic is inspecting the carrier rollers of a hydraulic excavator, lifting up the undercarriage on one side.



Various Points of Hazard

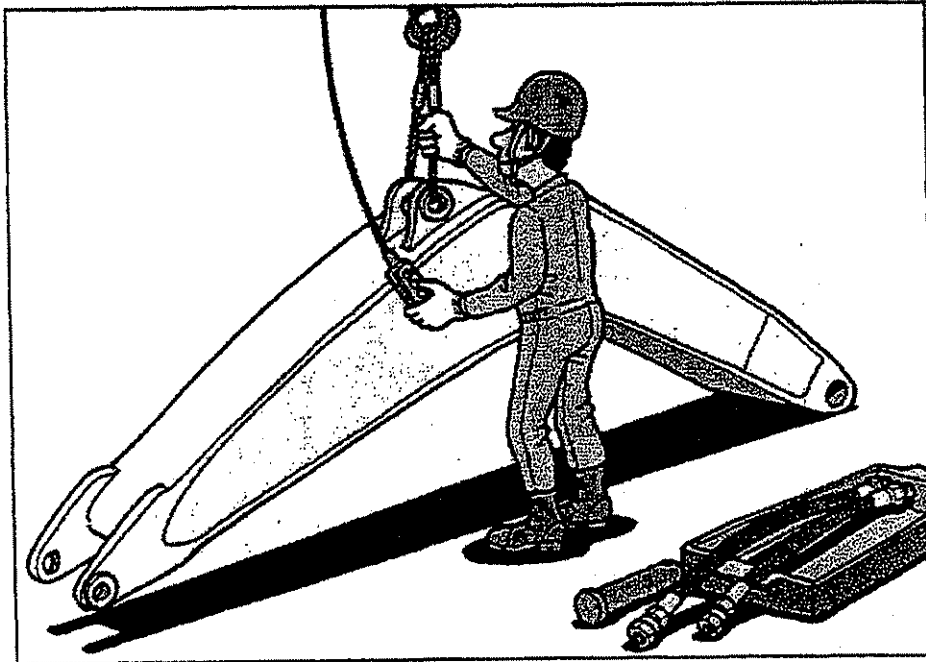
1. No pillars are provided to support the machine lest it should drop.
2. The bucket is not at the right angle for this application.

RETURN

NEXT

Transportation

Dismantled from a hydraulic excavator, a boom is going to be moved with an overhead crane.



Various Points of Hazard

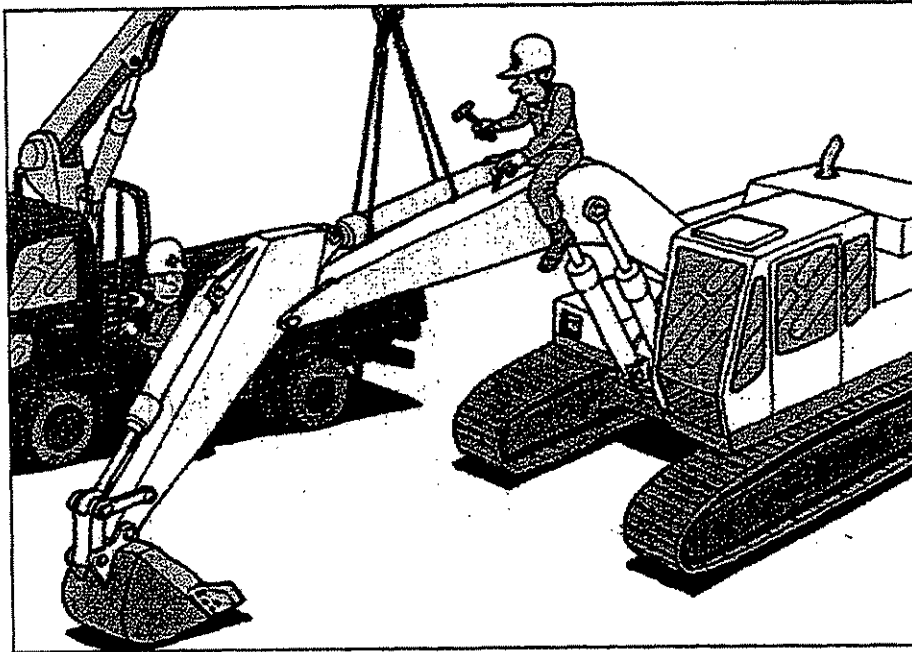
1. The boom is hung in an unsteady way. It can likely start to swing while in transport due to vibration.
2. The worker may get his right hand caught with the hanging wires.

RETURN

NEXT

Replacement of cylinder

A mechanic is driving a connecting pin in the arm cylinder replacement work.



Various Points of Hazard

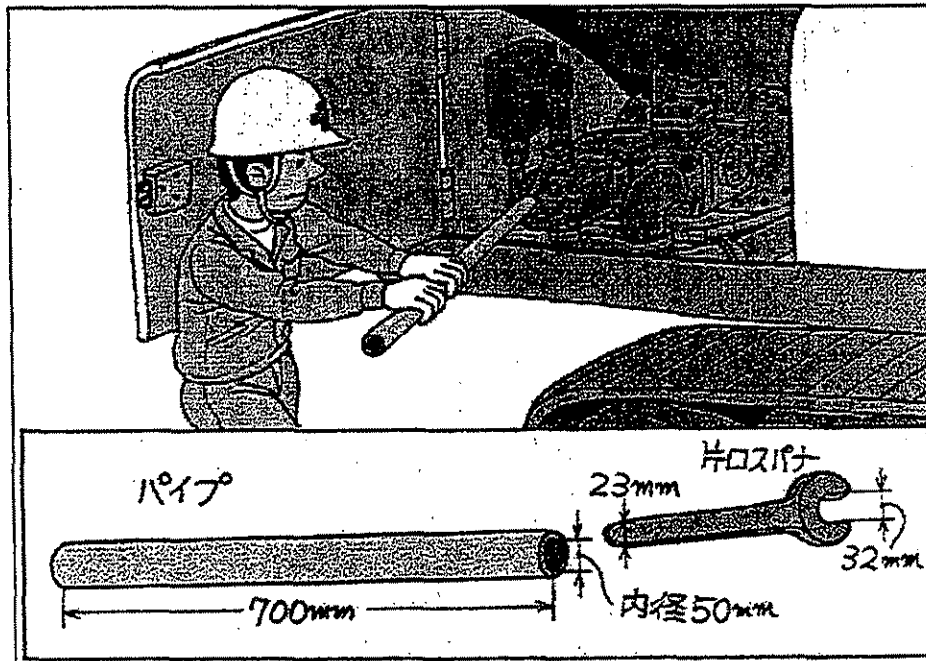
1. The mechanic is working with an unsteady posture at high elevation, so he may fall off, losing his balance.
2. The arm cylinder is hung in an unsteady way. The hanging wire ropes may slide back and forth.

RETURN

NEXT

Replacement of piping

A worker is tightening a bolt of hydraulic oil piping with a single ended spanner with an extension pipe.



Various Points of Hazard

1. The piping diameter is much larger than the grip of the spanner. It may slip off and the worker may be thrown down with his own force.

RETURN

NEXT

Driving out pin

One of the two workers is about to drive out a bucket link pin with a sledgehammer, while the other holds a bar applied on top of the pin.



Various Points of Hazard

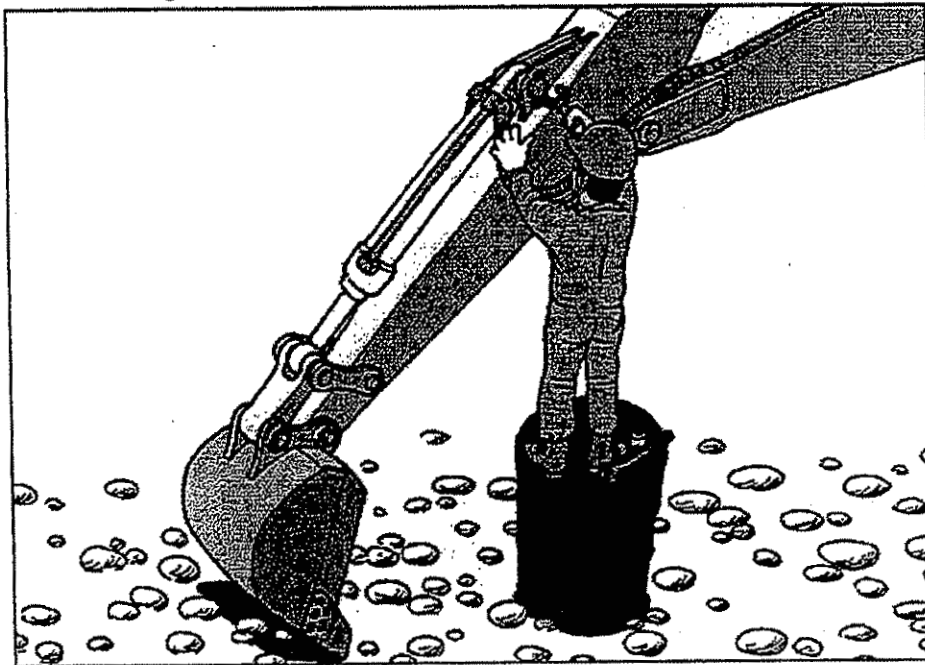
1. A regular bar is not used, so that it may likely spring up or strike the holding hands.

RETURN

NEXT

Bolt tightening

A worker is retightening a cylinder pin stopper bolt.



Various Points of Hazard

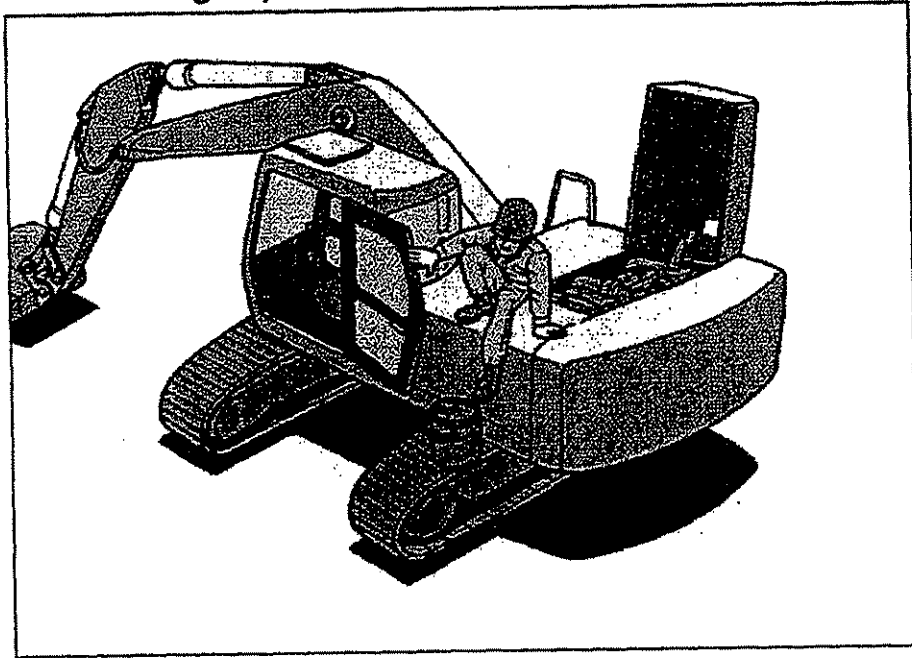
1. The worker let the bucket stand and work on the cylinder at a high position, taking an unsteady posture.
2. The worker does not use a regular scaffold or a stepladder. He may likely lose his balance and fall off on the ground, when the spanner slips off the stopper bolt.

RETURN

NEXT

Engine oil replacement

An operator is about to get off a hydraulic excavator, while the engine oil is being replaced.



Various Points of Hazard

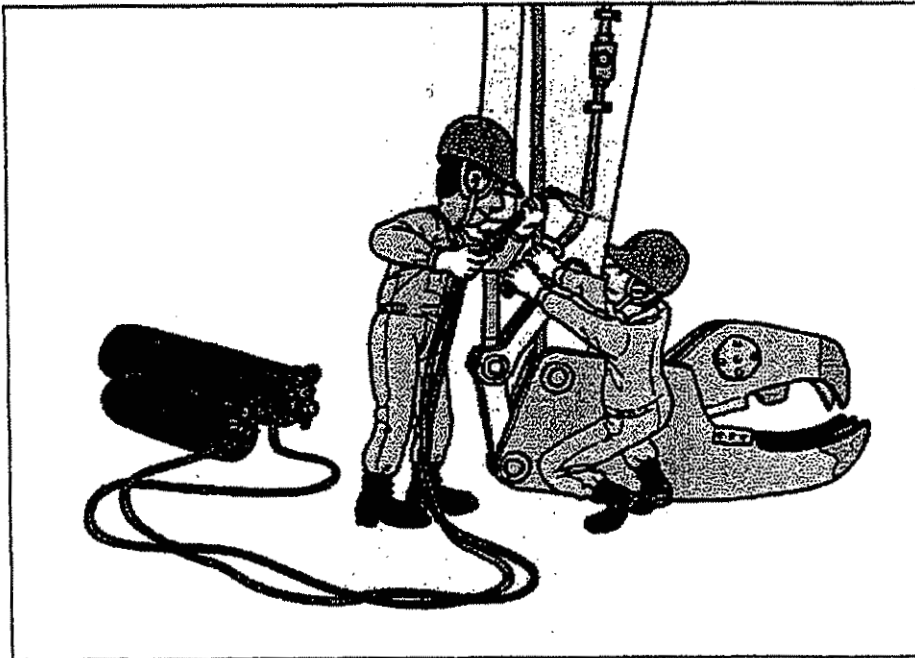
1. The operator can easily fall off, missing his step, now that he will not get off via stipulated route.
2. The operator clutches the edge of the cab door as a handrail, which can cause him to fall, too.

RETURN

NEXT

Heat treatment of parts for correction

Two workers are trying to straighten out a bent hydraulic piping by applying heat to it.



Various Points of Hazard

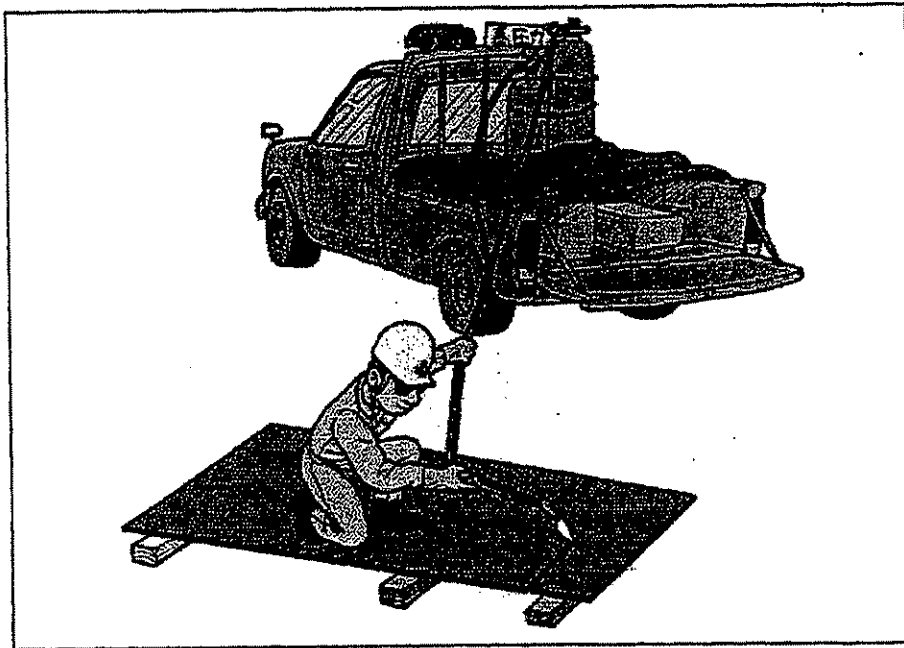
1. The acetylene cylinders are lying horizontally. Hence there is the danger of flashback.
2. The gas torch is directed toward the worker holding a bent piping. He may likely get a burn.

RETURN

NEXT

On-site gas welding work

A service mechanic is flame-cutting a steel plate at an in-field repair site.



Various Points of Hazard

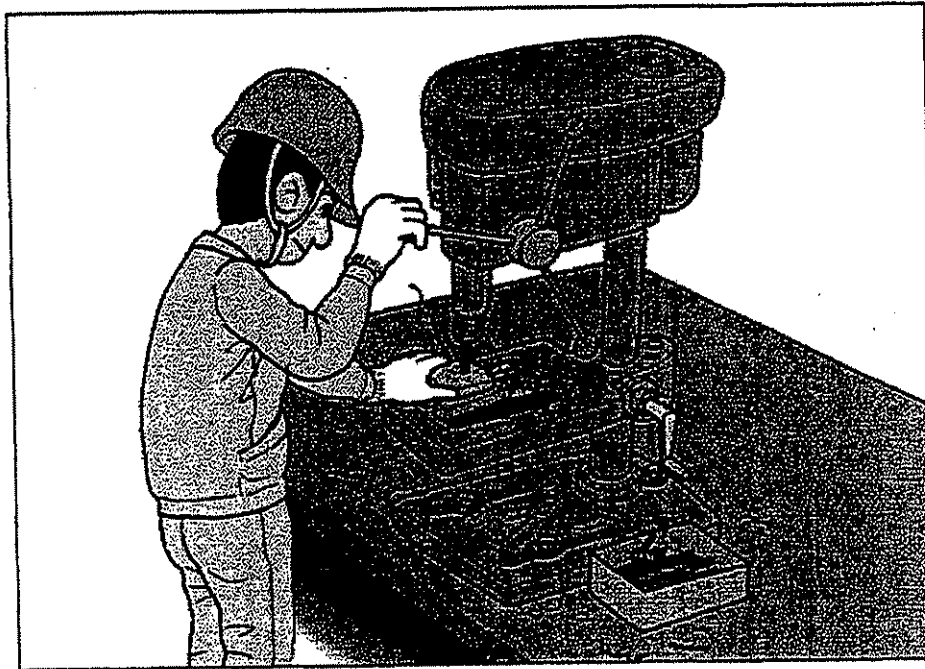
1. The hose is pretty tight. That can pull down the gas cylinders.
2. The mechanic is handling the gas torch with a single hand. He can hardly put out a possible flashback.

RETURN

NEXT

Drilling work with bench drilling machine

A worker is drilling a hole on work with a bench drilling machine.



Various Points of Hazard

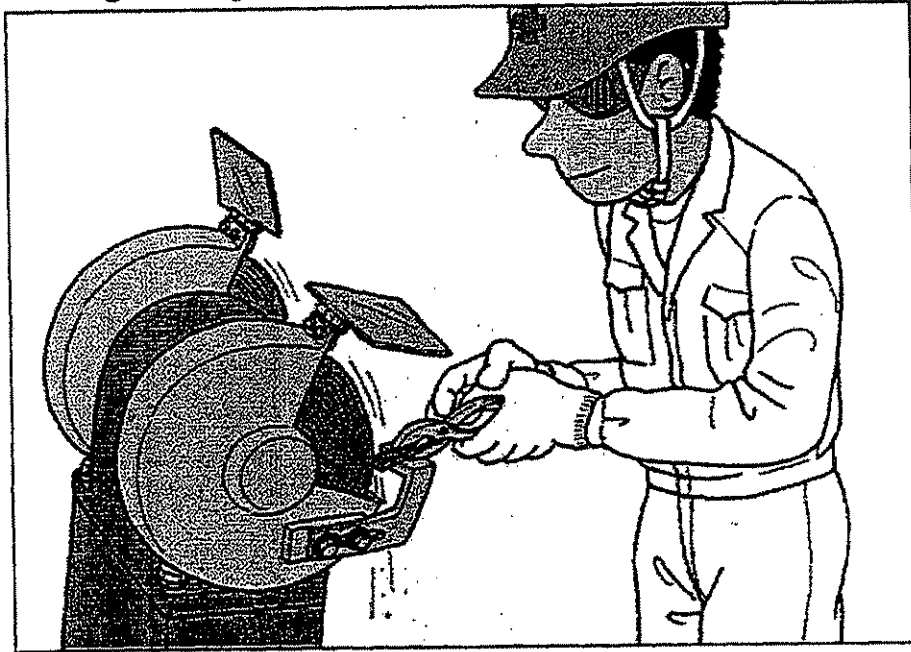
1. The worker does not wear safety glasses. A metal chip or powder may likely enter the eyes any moment.
2. The work is not fastened. The worker's left hand may be widely swung.
3. The worker is doing the work with a pair of gloves on. The gloved hands can easily get caught with the drilling machine.

RETURN

NEXT

Grinding work

A worker is grinding small parts, holding it with a plier.



Various Points of Hazard

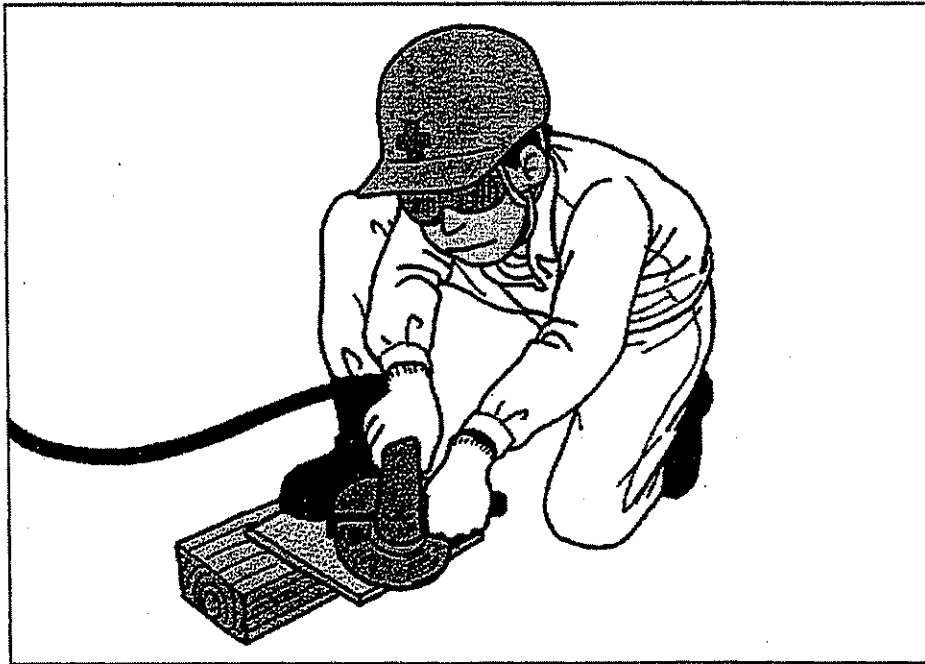
1. The work-supporting block is a bit too away from the grindstone. The work may be sent flying off.
2. The work cannot be secured with pliers completely. Hence it may be sent flying off.

RETURN

NEXT

Deburring work

A worker is deburring a steel plate with an air sander.



Various Points of Hazard

1. The work is not secured completely, so it may be sent flying off.
2. The air sander may spring up and hurt the worker's foot.

RETURN

BHN

Supervisor's Accident Investigation Report

(The Completion of this report is not an admission liability on the part of the employer.)

Employer					
Name of Injured					
Date of Injured	Hour	A.M. P.M.	Department		
Nature of Injury					
Describe Occurrence					
Please Check Appropriate Cause:					
	Unsafe Condition		Unsafe Practice		
Please Check Appropriate Answer:	Yes	No		Yes	No
Was a Known Safety Rule Violated?			Was Person Properly Instructed when assigned to work?		
Were Proper Safety Appliances in Use			Is Injured a Repeater?		
In YOUR opinion, What Actually Caused the Accident?					
What have YOU Done to Prevent a Similar Accident?					
Date of Report			Foreman's Signature		

SAFETY TALKS BRIEFING

TOPIC DISCUSSED:	
FACILITY:	DATE:
DEPARTMENT:	SHIFT/SCHEDULE:
START TIME:	END TIME:
DISCUSSION/QUESTIONS	ACTION TAKEN
EMPLOYEE SIGNATURES	
MANAGER/SUPERVISOR SIGNATURE:	

SAFETY TALKS BRIEFING

TOPIC DISCUSSED:	
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