

# PROJECT RESOURCES MANAGEMENT PLAN

CARR FORK LAKE, KENTUCKY

Appendix A  
to

Design Memorandum No. 6A

MASTER PLAN

May 1974



U.S. ARMY  
CORPS OF ENGINEERS  
LOUISVILLE DISTRICT



ORDCO-R (8 Jan 79) 1st Ind

GEE/jlb/FTS 684-3804

SUBJECT: Appendix A, Project Resource Management Plan for Carr Fork  
Lake, Kentucky

DA, Ohio River Division, Corps of Engineers, P.O. Box 1159, Cincinnati,  
OH 45201 11 April 1979

TO: District Engineer, Louisville, ATTN: ORLOP-R

1. The project resource management plan for Carr Fork Lake, Kentucky is approved. This approval in no way construes authority to develop new facilities proposed in the plan. Authorizations for new facilities are a function of master plan supplements and not appendices to the master plan.

2. The following comments should be considered and incorporated in the updated Appendix A to Carr Fork when this plan is revised:

a. Para 4-01, Dam and Tailwater. The proposal to expand the primitive camping area below the dam will require a master plan supplement as discussed above.

b. Para 5-02, User Fees. The techniques for fee collection, the use of an overflow area if planned, campground security and limiting the use of the campground to carrying capacity should all be discussed in more detail.

c. Para 5-10. Additional information should be provided on interpretive plans for the project as interpretation of our water resources is a major role of our resource management personnel.

d. Para 6-03, Environmental Considerations. The disposal of trash and the monitoring of sewage influent should be mentioned in this paragraph.

e. There is a need to discuss the operational concepts of the beach area. This is a major undertaking not common to Corps operation and should be discussed and described fully so that managers elsewhere may have benefit of the operational experience at Carr Fork Lake.

FOR THE DIVISION ENGINEER:

  
J. E. KIPER  
Chief, Construction-Operations Division

1 Incl  
wd 5 cy



ORD Comments On  
Appendix A  
The Project Resource Management Plan

1. Operational Concept. Operational concepts for Recreation Management should also be shown. Lake Activity Zoning, Private Docks and Controlled Swimming are some examples which may be described. The bar-graph showing visitation for each recreation area should be condensed into one chart listing the recreation areas on the left side of the chart and the years across the top. This information is better covered in the section entitled "Description of Public Use Lands."

Management activities undertaken to minimize the effect of conflicting purposes should also be reported in this section.

3/62 - 2. Land Acquisition Policy. The policy should be indicated by its common citation. It would be desirable to show the acreage of fee land above seasonal pool. The statement was made that there is insufficient recreation land. However, no recommendations have been made for additional acquisition as suggested by Appendix A of ER 1130-2-400. *not recommended due to rugged terrain uneconomical*

Detailed proposals for land acquisition should eventually be addressed and justified in the updating of the project master plan. Approval of this appendix alone does not constitute authority for land acquisition.

3. Description of Public Use Areas. The comments in this paragraph by the Resource Manager show considerable thought and concern about the management aspects of the access areas. The following items are equally important and should also be considered in future recommendations.

(a) Reorganization and concentration of facilities to phase out marginal size, low visitation and high maintenance areas.

(b) Removal or relocation of facilities to eliminate conflicts of use.

(c) Design changes required to improve prospects for visitor control and user fee administration.

Reference is made throughout this paragraph concerning the addition of facilities at minor recreation sites. The updating of this appendix, as well as the master plan, should address the possibility of phasing out the smaller uneconomical sites.

Throughout, it is suggested that campsites be moved closer to the water's edge. As campsites that are remote from the water are sometimes undesirable, so are campsites that are so close to the water's edge that they limit general access along the shore line.

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CARR FORK LAKE

*Refer to utilization report for additional acquisition*



Small islands are particularly vulnerable to over use caused by overnight residency of campers. It is suggested that camping be prohibited on islands except at a few of the larger islands which could be designated as boat camping areas.

It is desirable to indicate the acreage for each recreation area. An additional chart showing acreage, and types of facilities at each area could be attached to the appendix.

The inclusion of Future Management Considerations (paragraph 19) is commendable and the Topics Listed should be expanded upon the updating of this appendix.

Even though the Corps is not directly responsible for managing the major recreation facilities, it is still desirable to report trends in recreation use which may influence future development. Items of interest include changes in user preferences for camping equipment, boating equipment, and types of recreation facilities provided.

4. Maintenance, Storage and Administrative Facilities. More details are desirable in reporting maintenance facilities. A diagram of the service area is desirable. Square feet of storage or shop areas, capabilities of equipment and men to perform major repairs, fire and security precautions, and additional needs should be reported.

The Sketch of Maintenance and Storage Facilities should indicate their relationship to each other as well as the size of the fenced maintenance compound, number of parking stalls, etc. Mention should be made concerning facilities utilized by the State. If appropriate, mention should be made of any equipment or space utilized for monitoring sewage or water treatment facilities.

When appropriate, indicate if the administrative or maintenance facilities are arranged so that meetings could be held in those facilities. Indicate the capacity of the conference room.

5. Staffing and Organization. Mention should be made on adequacy of present staffing levels (grade and numbers) for long term operations. If present organization is adequate it should be so stated. This section should also make mention of the adequacy of the state organization at Rough River. The organization chart should indicate individual positions in the chain of command both for the existing organization and any proposed future organization.

The staffing of leased and licensed areas should also be briefly mentioned to indicate the magnitude of involvement by others.



6. Administration of User Fees. As a result of evolving user fee policy it is impractical to report on specific fees charged at each area. Items that should be reported include:

(a) Development and operational requirements for efficient administration of user fees in potential fee areas.

(b) Areas which are most likely to recover O&M costs through a fee program.

(c) Methods of collection proposed to administer a fee program.

(d) Policies established to determine campsite and campground capacity, use of overflow areas, use of group camps, and provisions for security.

It will be appropriate to provide details concerning the fee collection operation. Techniques used to collect fees, use of overflow areas, provisions of security, limiting use to capacity of the campground, determination of a family unit, and/or determination of the capacity of a campsite, all constitute management decisions related to this topic.

7. Cooperative Activities. If appropriate, indicate relationships with organizations other than the State, i.e., Civil Defense, rescue squads, Coast Guard Auxiliary, and boating safety organizations. Mention cooperation with law enforcement agencies and list the agencies. Details of enforcement activities should be covered in this paragraph.

This section should describe activities of a more informal nature, such as permitted through memorandums of understanding. Fish Stocking, Boat and Water Safety Patrols, Fire Protection, assistance from SCS, Forest Service, Coast Guard, Schools, University Extension, include possible areas of coordination where the Corps might effect cooperative efforts.

8. Law Enforcement. This paragraph should detail the responsibilities of the various enforcement agencies which may operate at the lake and which agency has primary authority. County Sheriffs, State Police, Conservation Officers, and Federal Rangers all patrol the lake; their interrelationship should be shown. It is also desirable to give a report upon the effective use of the citation program and how it might be improved. The responsible enforcement agency should be identified concerning drownings, vandalism, boating violations, and assaults or robberies.

It is suggested that the primary agency for law enforcement be identified. Indicate what procedures Corps personnel follow in contacting outside assistance, and if Corps vehicles are equipped to contact enforcement agencies via radio.

9. Safety. If state representatives are not attending the Corps safety meeting it may be desirable to offer this opportunity to them.



5.02. ADMINISTRATION OF USER FEE AREAS - Carr Fork Lake has two class "A" campgrounds, both of which have been designated as Federal User Fee Areas. Irishman Creek campground opened in May of 1978 and the Littcarr campground opened in May of 1980. There is a \$6 fee for each site and an additional \$1 for an electrical hookup. Fees are collected by roving rangers. The primitive camping area in the Dam and Tailwater area is available for overnight camping at no charge.

All campgrounds are secured by the use of a barricade with a combination lock. Combinations are changed on an irregular bases throughout the summer. Campers are given the new combinations. Maning the fee booths or using Ma and Pa contracts are uneconomical since the size of each campground is small and the cost of either of these methods would be to expensive.

There are no overflow camping facilities available and there hasn't been a need for any in previous years.



10. Encroachments. The means for correcting encroachment problems should be described. A local standing operating procedure (SOP) may be required to help alleviate the existing encroachment problems.

11. Training Programs. This section should indicate what measures are taken by Resource Managers to insure that new rangers are adequately trained in all phases of project management. Perhaps a checklist of ranger duties or topics with required knowledge would be appropriate.

Refer to the Ranger Training Manual prepared by the district. Consideration should be given to indicate the type of training received by maintenance personnel.

12. Visitor Education. Consideration should be given to reporting management plans for providing some interpretative services to the public. Campfire talks by the ranger, nature trails, litter campaigns, and speaking engagements before civic groups are all a part of Visitor education. Your personnel are probably providing some of these activities or others which should be reported.

13. Pest Control. More details to include herbicides used and application rates would be desirable. If lake personnel are trained or licensed in application of pesticides, it should be so indicated.

14. Miscellaneous. It is recommended that an additional section be added reporting on environmental considerations in managing the project. Appendix A is not an Environmental Impact Statement, but it should at least indicate the manager's concept for protecting the environment of the lake project.

On future plans which relate to projects where the Corps has a greater management role than described in this plan, many sections should be expanded to fully describe the Corps' full involvement in managing the project. Items which should be reported more fully include:

(a) Administrative and Conference facilities.

X (b) Administration of user fees to include techniques of fee collection, use of overflow areas, provision of security, limiting use to carrying capacity, etc.

(c) Changes recommended to improve recreation potential.

(d) Changes in user preferences and camping equipment.

(e) Range of development and services required by public.

(f) Reorganization and concentration of facilities.



It is suggested that the plan would be less subject to deterioration if it were bound in a durable cover. A project brochure could then be inserted into a pocket on the back cover of the appendix. The title page should also indicate the date of the plan and make reference to the Master Plan. Previous Indorsements should be included and bound as part of the plan.

It would be desirable for the district office to standardize the type of graphs presented in the various appendices concerning visitation and pool elevation. The paragraph identification system should be similar to that used in the Master Plan.

The final plan should be submitted with a durable cover and an up-to-date brochure inserted into a pocket on the back cover of the appendix. Seven copies of the final plan should be submitted for approval.





DEPARTMENT OF THE ARMY  
LOUISVILLE DISTRICT CORPS OF ENGINEERS  
P. O. BOX 59  
LOUISVILLE, KENTUCKY 40201

ORLOP-R

8 January 1979

SUBJECT: Appendix A, Project Resource Management Plan for  
Carr Fork Lake, Kentucky

Division Engineer, Ohio River  
ATTN: ORDCO-R

1. The Carr Fork Project Resource Management Plan is submitted in final form for approval.
2. A current project brochure is attached to the back cover for ready reference in reviewing this plan.

FOR THE DISTRICT ENGINEER:

Incl  
as (6)

A handwritten signature in dark ink, appearing to read "W. N. Whitlock", is positioned above the printed name.

W. N. WHITLOCK  
Chief, Operations Division



CARR FORK LAKE, KENTUCKY  
PROJECT RESOURCE MANAGEMENT PLAN  
APPENDIX A TO THE MASTER PLAN  
1978



CARR FORK LAKE, KENTUCKY  
PROJECT RESOURCE MANAGEMENT PLAN  
APPENDIX A TO THE MASTER PLAN

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# CARR FORK LAKE, KENTUCKY

## PROJECT RESOURCE MANAGEMENT PLAN

### APPENDIX A TO THE MASTER PLAN

#### SECTION I - INTRODUCTION

*Project Purpose*  
1-01. AUTHORIZATION - Carr Fork Lake is a unit in the comprehensive flood control plan adopted by the Flood Control Act approved 28 June 1938, Public Law No. 761, 75th Congress, Chapter 795, 3rd session. Development of Flood Control reservoir areas for recreational purposes was authorized by Section 4 of the Flood Control Act approved 22 December 1944, as amended. The project was constructed under authority of the Flood Control Act approved 23 October 1962, Public Law 87-874, 87th Congress, for the purposes of flood control, water quality control, general recreation, and fish and wildlife conservation.

1-02. PURPOSE - The purpose of this plan is to reappraise the resources, facilities and operational characteristics of Carr Fork Lake, and provide a basis for planning resource management. This resource management plan will relate conservation of natural resources, development of all recreational potential for public benefit, and management of property to the greatest benefit of all concerned, subject to the phases of the lake for flood control, recreation, and low flow augmentation.

#### SECTION II - PROJECT DESCRIPTION

2-01. LOCATION - Carr Fork Lake is located within Knott County in the mountainous coal mining region of southeastern Kentucky, 160 air miles southeast of Louisville, Kentucky. The dam site is located 8.8 miles above the mouth of Carr Fork, a tributary of the North Fork of the Kentucky River, about 16 miles upstream from Hazard, Kentucky. The lake is almost midway between the towns of Hazard and Whitesburg, Kentucky, and is easily accessible via Kentucky Highways 15 and 160 which parallel the lake's shoreline. Kentucky Highway 15 is intersected by Daniel Boone Parkway and ties in with Mountain Parkway to the north. Hazard and Whitesburg have the only airstrips in the project area.

2-02. SCENIC QUALITY - Carr Fork Lake is situated in an area of deep valleys with steep slopes surrounded by high ridges. Hilltop elevations range from 1,300 to 3,200 feet above sea level. By comparison, the seasonal pool of Carr Fork Lake is 1,027 feet. Most of the countryside is woodland.

2-03. NATURAL RESOURCES - Coal and natural gas are the only two mineral resources presently being developed in the Carr Fork Basin. Coal is the most important, although the coal deposits of the Carr Fork Basin are not extensive compared with those of adjoining fractions of the Eastern Kentucky Coalfield in Perry and Letcher Counties.



There has been and will continue to be a considerable amount of coal mining in the Carr Fork Lake watershed, both strip and deep mining. Such activity has increased due to higher coal prices because of the energy crisis. This could cause additional problems at Carr Fork Lake because of pollution, sedimentation, and decrease in aesthetic value associated with this type of mining.

2-04. HISTORICAL FEATURES - Settlement of the Carr Fork area began as early as the 1770's when trappers passed through Cumberland Gap and Pound Gap into the Eastern Kentucky hills. Carr Fork was probably named for William Carr, a well-known Long Hunter of that period. Many of the first settlers to the area moved farther west as populations of beaver and other furbearers declined. Those settlers that remained depended largely on farming of the narrow bottomlands for a living, and a limited trade was supported by several salt licks in the area. Demand for lumber in Kentucky's Bluegrass Region created a booming business for a time. In springtime great rafts of hardwood logs rode down flooded tributaries to the Kentucky River and on to Lexington, Frankfort, and other settlements along the river. When supply of logs became depleted, coal mining became and still remains the area's major industry.

Several historical sites are located near the project area. Just south of the project on Kentucky Highway 15 is a reconstructed pioneer village developed by the Knott County Development Association. Three of the log buildings in this village were originally located within the project area:

Old Johnson Place. Known as the oldest standing log cabin in Eastern Kentucky, was built at Cody, Kentucky in 1789. Because of its location and changing county and state boundaries, the cabin was located in two states and several counties before ever being moved from its original site.

Old Stamper Place. A two-story log structure used once as a home and slave quarters. Built between 1794 and 1800 at Littcarr, Kentucky.

Smith House. A large log house that was once a stopping place for travelers through the area. Built at Smithsboro in the 1820's.

The Amburgey Loghouse is also located nearby on Kentucky Highway 1410. This structure was built in 1840 on Little Carr Creek, and author James Still has lived and written there since 1939. The old Carr Creek High School building, located on Kentucky Highway 160, was the home of the first National High School Basketball Championship team in the 1920's.

None of these structures or sites are listed on the National Register of Historic Places.

2-05. EDUCATIONAL AND CULTURAL ASPECTS - Local primary and secondary educational facilities are good with several grade schools located throughout Knott County, and both a middle school and high school



located in Hindman, Kentucky. Higher education is available at Alice Lloyd College at Pippa Passes, Kentucky, and Hindman has the Carl D. Perkins Vocational Extension Center. Located at Jackson, Kentucky are Lee's Junior College, a Forestry and Wood Technician School, and a small Breathitt County Vocational School. Hazard Community College, a two-year extension of the University of Kentucky, is located in Hazard, Kentucky. Hazard also has the Hazard Area Vocational School. Pikeville College in Pikeville, Kentucky offers a four year course of study. Major colleges close to the area are the University of Kentucky, Lexington, Kentucky; Morehead State University, Morehead, Kentucky; and Eastern Kentucky University, Richmond, Kentucky.

Cultural opportunities in the area are limited. Hindman, Kentucky offers only a public library. Hazard, Kentucky has a public library, and the Hazard Community College offers a community concert series. In Jackson, Kentucky there is a public library, as well as a series of concerts and lectures offered by the Breathitt County Arts Council.

### SECTION III - PROJECT PURPOSES

3-01. OPERATIONAL CONCEPT - Carr Fork Lake is operated as a unit of the Upper Kentucky River Area, which consists of Carr Fork Lake, Buckhorn Lake, and Cave Run Lake. Carr Fork Lake has a minimum operating pool area of about 530 acres at elevation 1,009' m.s.l. and a seasonal or recreational pool of about 710 acres at elevation 1,027' m.s.l. Total storage is reached at elevation 1,055' m.s.l. with about 1,120 acres of surface area. The difference in elevation of minimum and seasonal pool is 18 feet. However, when not at seasonal pool, the level generally fluctuates only 10 feet between seasonal and winter pools. The difference between seasonal and maximum pool is 28 feet, and the total possible fluctuation between minimum and maximum pools is 46 feet. This fluctuation is necessary for project purposes, but has an adverse effect on Carr Fork Lake's recreation potential. Fluctuation of water level interferes with normal spring fishing and spawning, may reduce value of the marina facility, and could delay opening of the beach area. Water level fluctuation also affects aesthetic value as pool reduction creates mud flats, bank slides, and erosion problems, which will be counteracted to some extent with plantings of ryegrass. Long periods of high water can damage water intolerant trees and cause deposition of trash at several levels. Pool fluctuations probably affect recreation visitation also.

The outlet structure at Carr Fork Lake has multi-level gates. This selective withdrawal system allows for control of temperature and quality of the discharge water in the interest of the downstream aquatic environment.

3-02. LAND ACQUISITION POLICY - The joint Army-Interior Land Acquisition Policy was used to obtain lands for the Carr Fork Lake Project. Project lands consist of 3,872 acres of fee lands for the dam, lake, and associated facilities, plus an additional 130 acres in flowage easements. The acquisition line for fee lands was defined as the greater of either a line 300 feet horizontally from the elevation at



flood control pool (1,055 feet m.s.l.) or the contour line five feet vertically above flood control pool (1,060 feet m.s.l.). The project's boundary lines have been fully monumented. - *NEED REEVAL - 10' all monumented.*

3-03. RECREATIONAL CONCEPT - The Recreation Management aspect of the Carr Fork Lake Project is developed by the Corps of Engineers, except for five acres leased to ~~Irishman Creek Marina, Incorporated~~ for public marina facilities. All recreational development is being accomplished under guidelines outlined in the Design Memorandum No. 13, Public Use Plan, dated September 1971.

The planning and operation of all projects are now greatly concerned with the concept of recreation as one of the chief purposes of a multi-purpose dam. Demand for types of recreation offered by lakes such as Carr Fork will grow as society places increased emphasis on recreation. Each project must recognize and be able to attain its full recreational potential. Carr Fork Lake is just beginning to realize that potential as its facilities are completed and opened to the public. The Corps-operated beach area as well as the out-granted marina facilities first opened in the 1977 recreation season. One Class "A" campground and a primitive camping area were made available for the 1978 recreation season. Another Class "A" campground ~~is~~ *was* scheduled to open in the 1979 ~~so~~ season.

Boating and enforcement activities on Carr Fork Lake are managed by the Kentucky Water Police. They are assisted by the Corps of Engineers *X* who also patrol the lake by boat during the recreation season.

The Kentucky Department of Fish and Wildlife Resources enforces Federal and State laws governing hunting and fishing activities at Carr Fork Lake. Hunting is not allowed in any of the designated recreation areas. The Corps of Engineers is responsible for fish and wildlife management on Carr Fork Lake, but consults the Department of Fish and Wildlife on proper management techniques. See Attachments 1-4.

#### SECTION IV - EVALUATION OF EXISTING FACILITIES

4-01. PUBLIC USE AREAS - Public use lands at the Carr Fork Lake Project consist of ~~four~~ *three* recreation areas totaling approximately 271 acres. Other project lands designated for general wildlife management purposes and general shoreline acreage covers about 3,601 acres. Basic recreational facilities available to the public at each area are as follow. Also, see Attachments 5-12.

Dam and Tailwater, Site No. 1 totals 207 acres, 12 acres of which are creek bottom land. Currently available are a boat launching ramp, fishing platform, three comfort stations, a sewage treatment plant, potable water, ~~eight~~ *three* picnic sites, five paved parking lots with 138 car and 57 car/trailer spaces, and ~~five~~ *two* primitive camping sites. Future development plans call for improvement of the primitive camping area, making 26 additional sites available. See Attachments 6-8.

*playground  
X picnic shelter  
2 horseshoe  
basketball  
post for arch*

*this proposal requires a  
master plan agreement*



Highway 15 Overlook, Site No. 2 consists of a 2-acre area with eight picnic sites and a paved parking lot with 20 car and 5 car/trailer spaces. This area is heavily used by the public because of its proximity to Kentucky Highway 15. See Attachment 8.

Irishman Creek, Site No. 3 is a 32-acre area offering a 40-slip marina facility (leased to a private concessionaire), a public beach with bathhouse, 39 camping sites with washhouse, water and sewage treatment plants, sewage disposal station, potable water, an overlook area, 16 picnic sites, comfort station, and three parking lots to accommodate 156 cars and 110 car/trailers. See Attachments 9 and 10.

Littcarr, Site No. 4 consists of 30 acres with a boat launching ramp, 28 camp sites with washhouse, water and sewage treatment plants, sewage disposal station, potable water, 3 family picnic sites, two comfort stations, and three parking lots with 84 car and 38 car/trailer spaces. See Attachments 11 and 12.

Total visitation for Carr Fork Lake in 1977, second year of impoundment, was 705,577. See Attachment 13.

4-02. MAINTENANCE FACILITIES - Maintenance facilities at the Carr Fork Lake Project consist of a forced air, gas heated mechanic shop of about 3,440 square feet located in the shop and office building. Fuel for heat is supplied by a natural gas well located near the building. The shop area consists of a general working area, equipment room, well-water treatment facilities, mechanical room, locker and washroom. The mechanic shop serves as a carpenter shop, paint shop, and small sign shop, as there are no other buildings designated as such on the project. Major signs are made at the Barren River Lake Project in Kentucky. Equipment cleaning is done in the shop with ordinary cleaning facilities, as no special facilities are available. Equipment and men are adequate for general repair work. Major repair work of a specialized nature is accomplished by the Louisville Repair Station. The following is a list of equipment which is available:

<u>Quantity</u>	<u>Description</u>
1	Sears Heavy Duty Rototiller
1	Sears Self Propelled Mower
2	Gravely Tractors
3	Pickup Trucks, Dodge, 3/4 Ton
1	Pickup Truck, Dodge, 3/4 Ton With Utility Bed
1	Pickup Truck, Ford Supercab, 1/2 Ton
1	Dump Truck, International, 2-1/2 Ton
1	20 ft. Johnboat, with Trailer
1	12 ft. Johnboat
1	20 ft. Patrol Boat, Mercury 165 hp with Trailer
1	25 hp Evinrude Outboard Motor
1	4 hp Johnson Outboard Motor



- 1 JD 302A John Deere Tractor, with Backhoe, Bushhog, #450 Mower, Plow, Scraper, and Posthole Digger Attachments
- 1 \* Tractor/Trailer, International
- 1 \* Tilt Trailer
- 1 \* Model 1150B Case Crawler
- 1 \* Model BUHS26 Hydroseeder
- 1 \* Garwood Crane *sold*
- 1 \* Hough Payloader, with Bucket Attachment *B+L*
- 1 \* Huber-Warco Model 4D Motor Grader *4x4 1000 lb*

\* Denotes equipment available for use at all Upper Kentucky River Area projects.

4-03. STORAGE FACILITIES - Storage facilities at Carr Fork Lake consist of a fireproof paint storage area of about 83 square feet incorporated into the shop and office building. All other storage is outdoors. *+ storage building*

4-04. OFFICE AND ADMINISTRATIVE FACILITIES of the Corps of Engineers Carr Fork Lake, consists of about 1,170 square feet of office space in the shop and office building. The office area is forced air, gas heated and air conditioned, with lavatory facilities. The area is divided into a 24 feet long by 21 feet wide reception room, and the Resource Manager's office and the Ranger office, each of which are 21 feet long by 12 feet wide. See Attachment 6.

## SECTION V - ADMINISTRATION AND MAINTENANCE

5-01. STAFFING AND ORGANIZATION OF THE PROJECT - Staffing and organization of the Carr Fork Lake Project consists of one-third of the time of a GS-12 Area Resource Manager, and one-third of the time of a GS-06 Area Clerk. Full-time personnel include a GS-11 Resource Manager, *one* two GS-05/07/09 Park Rangers, *one* a WS-07 Maintenance Mechanic Foreman, a GS-05 Project Clerk, WG-10 Electrician, WG-10 Engineering Equipment Operator, WG-09 Maintenance Mechanic, WG-07 Maintenance Worker, and WG-05 Maintenance Mechanic Helper. Additional seasonal and temporary laborers are hired as required. See Attachments 14 and 15. *4 1/3 65 11 addit. Areas*

Administrative and management personnel from various branches in the Louisville District annually conduct compliance inspections of all facilities at the project. An annual post construction inspection of the dam and related facilities is conducted by personnel from the Louisville District and Cincinnati Division. Immediate recommendations are made on any unsafe conditions noted during these inspections. All project employees are instructed to be aware of any signs of possible structural changes or unsafe project conditions, not only for employee safety, but for the safety of the visiting public and of the downstream area.

5-02. ADMINISTRATION OF USER FEE AREAS - Carr Fork Lake has *one* Class "A" campground in operation and a second one in final stages of development, both of which have been designated as Federal User Fee Areas. *+ 610*



Irishman Creek Campground, Site #3, opened in May of 1978 and is available for overnight camping at a fee of \$3.50 per night. <sup>46.00</sup> <sup>200.00</sup> <sup>Site</sup> Litt-carr Campground, Site #4, is scheduled to open for the 1979 season, and a \$3.50 per night camping fee will be charged there also. The primitive camping area in the Dam and Tailwater Area, Site #1, is available for overnight camping at no charge.

5-03. COOPERATIVE ACTIVITIES WITH OTHER AGENCIES - Several agreements, both written and verbal, are in effect with other agencies. Of the written agreements the most important and most used is a Memorandum of Understanding between the Louisville District and the Kentucky Department for Natural Resources and Environment Protection. The Memorandum has three objectives:

- (1) To provide for a clear understanding of administrative procedures pertaining to strip mining, surface disturbance of underground mining and reclamation within the watersheds of Corps Water Resources Projects.
- (2) Provide information relating to proposed mining activities with the watersheds of Corps Water Resources Projects.
- (3) Provide the Corps with the opportunity to comment on proposed mining activities.

Other examples of cooperative activities are:

- (1) Talks on boating safety are given jointly with the State Water Police.
- <sup>no</sup>(2) The State Highway Department assists in clearing project roads of snow.
- (3) Various local agencies such as the Knott County Rescue Squad, Carr Creek Fish and Game Club, and Carr Creek Lions Club, etc. are worked with in activities such as lake clean up campaigns. <sup>ROTC - DONT COME</sup>
- (4) The U. S. Forest Service and Soil Conservation Service Experimental Station are often consulted for information on proper forestry practices, reclamation, proper shrubs to plant, etc.

5-04. RANGER ACTIVITIES - LAND AND WATER - The Park Ranger assigned to the Carr Fork Lake Project is responsible for the following activities: He regularly patrols the project area, both land and water, by foot, boat, or automobile. While on patrol the Ranger checks usage and condition of all access points, public use areas, the commercial marina, and other recreational areas for fire and safety hazards, sanitation, maintenance, and appearance. He also checks for compliance with all terms of licenses, permits, and leases issued, as well as violations of Federal and State public use regulations. He inspects for encroachments of unpermitted structures or



agricultural practices, removal of trees or vegetation, and destruction of property boundary posts, monumentation markers, and signs. When conditions are noted which require corrective action, the Resource Manager is notified.

The Park Ranger visits public use areas periodically, particularly during periods of heavy visitation. To accomplish this, he rotates his hours and days of work to coincide with the increased visitation during holidays and summer months. He advises the public of permissible activities, and is authorized to issue citations to violators of provisions of Section 234 of the Flood Control Act of 1970 and Chapter 3, Part 327 of Title 36, Code of Federal Regulations.

The Park Ranger maintains a Traffic Meter System, assists in Recreation Visitation Surveys, conducts tours and other interpretive activities, and maintains display cases and bulletin boards. Another responsibility of the Park Ranger is establishing and maintaining boundary markers and conducting surveys to determine easement and fee land boundary lines. He surveys monument and alignment markers at the dam, and surveys elevation points on the Smithsboro Bridge on Kentucky Highway 15.

The Park Ranger performs maintenance duties as necessary when circumstances dictate. Acting under specific instruction, he operates valves and gates in order to maintain proper pool levels and outflow conditions. He serves as an observer when flood conditions exist, and assists in all disaster control operations.

The Park Ranger is required to make field investigations of all applications for strip mining permits in the watershed due to an agreement between the Kentucky Department for Natural Resources and Environmental Protection and the Louisville District.

The Park Ranger is, most importantly, the Corps of Engineers' representative on the Carr Fork Lake Project. It is his responsibility above all to maintain good public relations and to present to the public an outstanding image of the Corps of Engineers.

5-05. LAW ENFORCEMENT ARRANGEMENTS AND PROCEDURES - Persons using the lands of Carr Fork Lake are subject to all applicable Federal, State, and local laws. The Kentucky State Police have handled most incidents of auto accidents, theft, vandalism, rowdyism, drowning incidents, etc. on the Carr Fork Lake Project. The Knott County Sheriff also has authority in such incidents. Primary authority for all fish and wildlife violations belongs to the Kentucky Department of Fish and Wildlife Resources. The Kentucky Water Police handle boating violations. Resource Managers and Park Rangers are empowered to issue written warnings and violation notices to appear before a United States Magistrate when aggravated cases are observed which violate the Provisions of Chapter III, Title 36, Part 327, Code of Federal Regulations at Civil Works Installations which are specifically designated by Division Engineers. This regulation



grants citation authority only, and does not grant authority to Corps of Engineers personnel to take an offender into custody. Weapons are not carried or used in the citation enforcement program. Federal, State, and local law enforcement agencies retain the statutory authority and responsibility to enforce all other laws and the Corps of Engineers does not engage in the actual enforcement of other laws.

5-06. SAFETY - VISITOR AND EMPLOYEES - Safety is stressed constantly at the Carr Fork Lake Project. The visiting public is advised through oral conversation, signs, and newspaper articles of unsafe acts and conditions. Should unsafe conditions be discovered, they are eliminated immediately whenever possible. Each month a safety meeting is conducted for all employees, and maintenance personnel have additional weekly safety meetings. All facets of safety are discussed and specific items in the safety manual are emphasized. The Louisville District Safety Office provides guidance, and a detailed safety plan will be included in Appendix "E" to the Master Plan.

5.07. CONCESSIONAIRE ACTIVITY - The only concessionaire activity at Carr Fork Lake is a commercial marina facility, Irishman Creek Marina, Incorporated. The marina offers gasoline, oil, sandwiches, soft drinks, snacks, bait and tackle, rental boats, and rental slips. The Irishman Creek Marina concession also has a vending area at Irishman Beach. *operates a concession stand at the I.C. Beach*

5-08. ENCROACHMENT AND VANDALISM - Encroachments are not a major problem at Carr Fork Lake. Minor encroachments that do occur usually are resolved in the field. Due to surveillance by the Park Rangers and the project being fully monumented, a serious problem with new encroachments is not anticipated.

Several acts of vandalism have occurred at Carr Fork Lake. Generally these acts have been of a minor nature. The project is patrolled regularly by the Park Rangers and the Kentucky State Police cooperate by patrolling the area. Through careful patrol of the project and use of the citation program, vandalism should be kept to a minimum. *Since 1982 there has also been a monument*

5-09. IN-SERVICE TRAINING PROGRAM AT PROJECT - Training for project personnel at Carr Fork Lake is usually scheduled at the Area Office and District Office level for formal classes, seminars, and conferences. Many items of training are given by qualified field or District Office personnel at the area or project level. Training has been provided to project personnel in the areas of basic surveying, fish and wildlife biology, recreation and forestry management. Water and sewage treatment, disaster recovery, and personnel management classes have provided training to all responsible project employees.

Future training will include further classes on the above items, plus additional training in administration such as report and letter



writing, supervision, public relations, first aid, water quality, pollution control, and general resource management.

*We do a lot more - tower, power house, etc. meet at 10:00 AM*

5-10. VISITOR EDUCATION AND INTERPRETATION - The Carr Fork Lake Project has an overlook located off Kentucky Highway 15. From this vantage point the visiting public can view the dam, outlet works, part of the lake, and other features. There is also a display which contains interpretive material for public inspection such as photographs, site and project operational literature. It is the goal of the project to keep information flowing to the public. Another way in which this is accomplished is informative talks and presentations with visual aids that are given at schools, churches, civic groups and other Federal, State, and local agencies.

5-11. PEST CONTROL PROGRAM - Carr Fork Lake has several pests, all of which are relatively minor, including mosquitos, poisonous snakes, poison oak and ivy, kudzu, and dandelions. Chemicals have been used in the past to control kudzu, dandelions, and other vegetation in certain locations. The Maintenance Mechanic Foreman at the Carr Fork Lake Project is a licensed pesticide applicator. Under his supervision chemicals will continue to be used to control growth of undesirable vegetation. An annual pest control summary report is submitted in the fall of each year in accordance with ER 1130-2-332. Those chemicals which have been used at the Carr Fork Lake Project and their rate of application are listed in Attachment 16.

*jap. beetles  
olive striped  
oak worms  
crows, jays*

5-12. SEDIMENTATION CONTROL PROGRAM - Because of the extensive mining that has taken place and still continues in the Carr Fork Lake Watershed, several streams leading into the lake carry heavy silt loads. The deposition of this silt into the lake is considered a major problem. In an effort to reduce the amount of sediment which actually reaches the lake, the Corps of Engineers has constructed sediment dams on Defeated Creek and Shingle Branch. The Corps maintains these structures and continues to study the feasibility of building others in order to keep sedimentation to a minimum, thus reducing the ecological damage and loss of recreation potential associated with this type of pollution.

*Shingle Branch*

## SECTION VI - PLAN FOR DEVELOPMENT

6-01. CHANGES SINCE PUBLIC USE PLAN DM 13 WAS FORMULATED (SEPT. '71) - Changes from DM 13 in the Dam and Tailwater Public Use Area include location of the residences near the shop and office building rather than their proposed sites east of the dam. The primitive camping area to be developed in the Dam and Tailwater Area was not included in DM 13. At both Irishman Creek and Littcarr Public Use Areas the layout of the camping areas were changed. The Cody Bridge Public Use Area, One Mile Public Use Area, and Big Bend Public Use Area outlined in DM 13 have not been developed. DM 13 is currently under consideration to be updated.

6-02. FUTURE USE REQUIREMENTS - A Visitor Center is needed at the Carr Fork Lake Project since lack of parking and office space



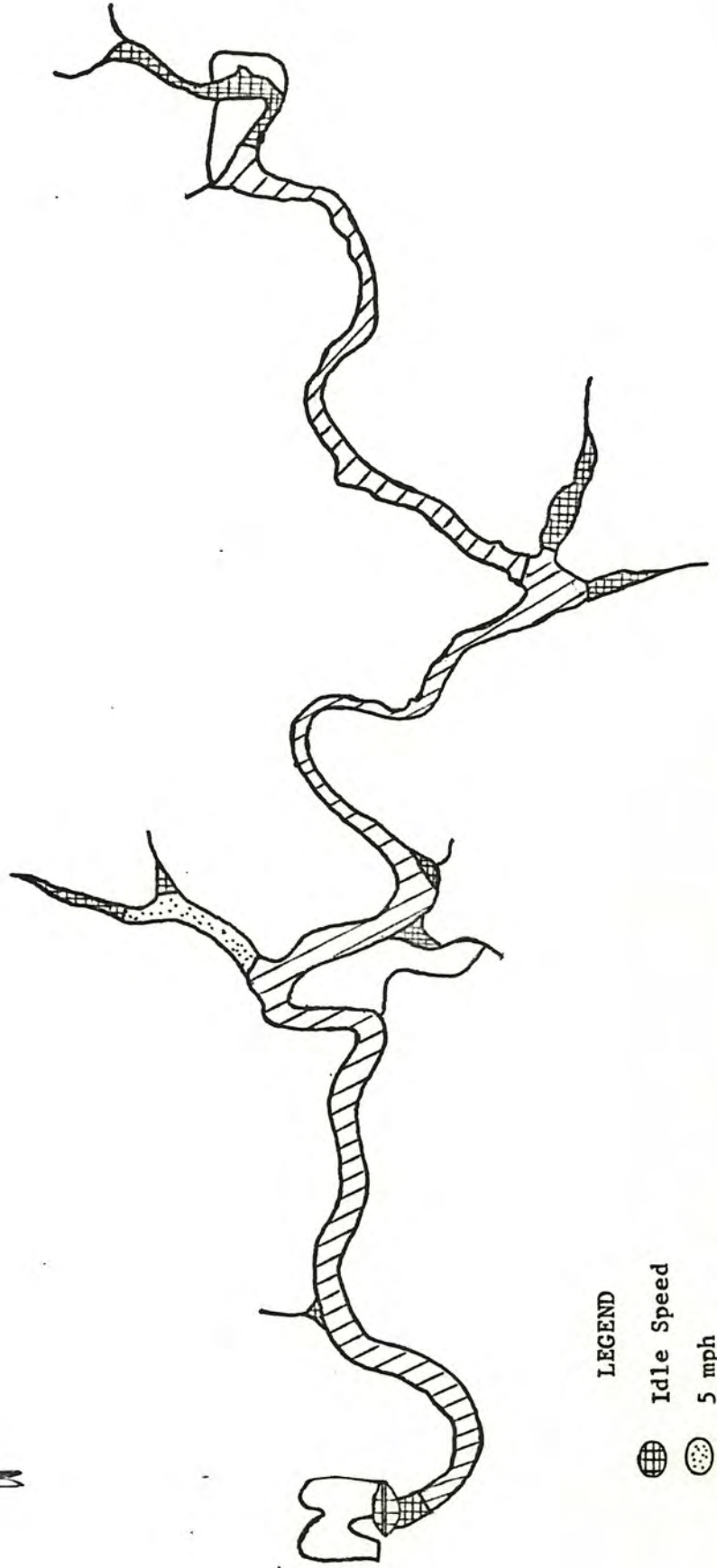
make the shop and office building inadequate for that function. When the primitive campground planned for the Tailwater Area is completed, the project should have adequate camping facilities. An amphitheater is needed at both the Irishman Creek and the Littcarr Campgrounds for interpretive programs. Placement of gabions at the tailwater is desirable to make a fishing pond.

6-03. ENVIRONMENTAL CONSIDERATIONS - To protect the environment of the Carr Fork Lake Project, the following measures are being practiced:




1. Continuous surveillance of all mining, logging, oil wells, etc. in the watershed.
2. Organized spring clean up of trash in and around the lake.
3. Tree and shrub landscape plantings near the shop and office buildings. *in recreation areas*
4. Wildlife plantings at various selected locations on the project.
5. Impartial enforcement of the provisions of Chapter III, Title 36, Part 327, Code of Federal Regulations.
6. Continuous monitoring of the lake to maintain water quality standards is done by the ~~Upper Kentucky River Area Water Quality Technician.~~ *Green River Area water quality & Park Dept. personnel*
7. Maintenance of existing and construction of additional sediment structures around the lake. *Beach.*

Continued use of corrective guidelines and regulations and continued cooperation between Governmental agencies and concerned citizens will help in the environmental improvement of the Carr Fork Lake Project.

LOUISVILLE DISTRICT    CORPS OF ENGINEERS
<p>CARR FORK LAKE</p> <p>Recreation Management Concept</p> <p>2000    0    2000</p> <p>Scale in feet</p>

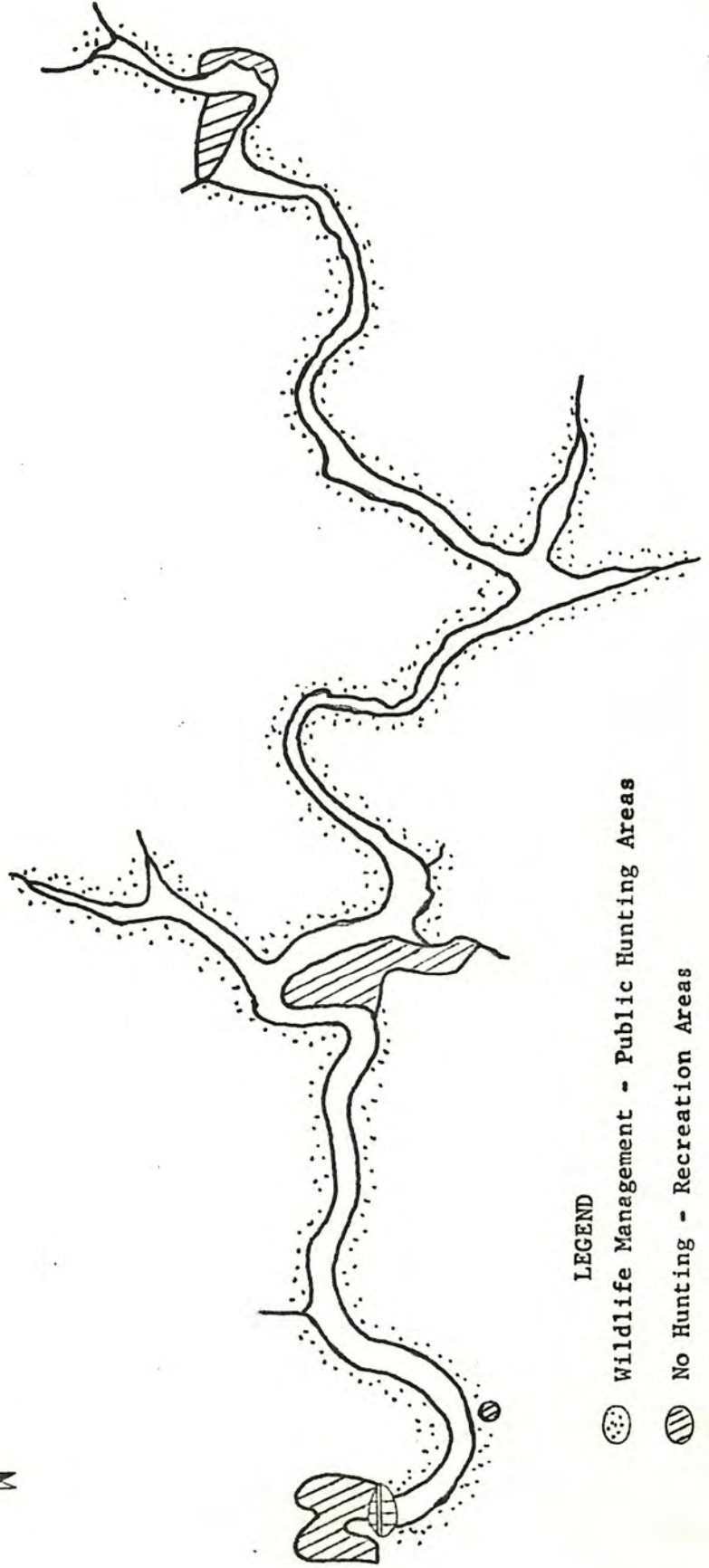
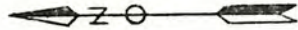


LEGEND

-  Idle Speed
-  5 mph
-  No Speed Limit



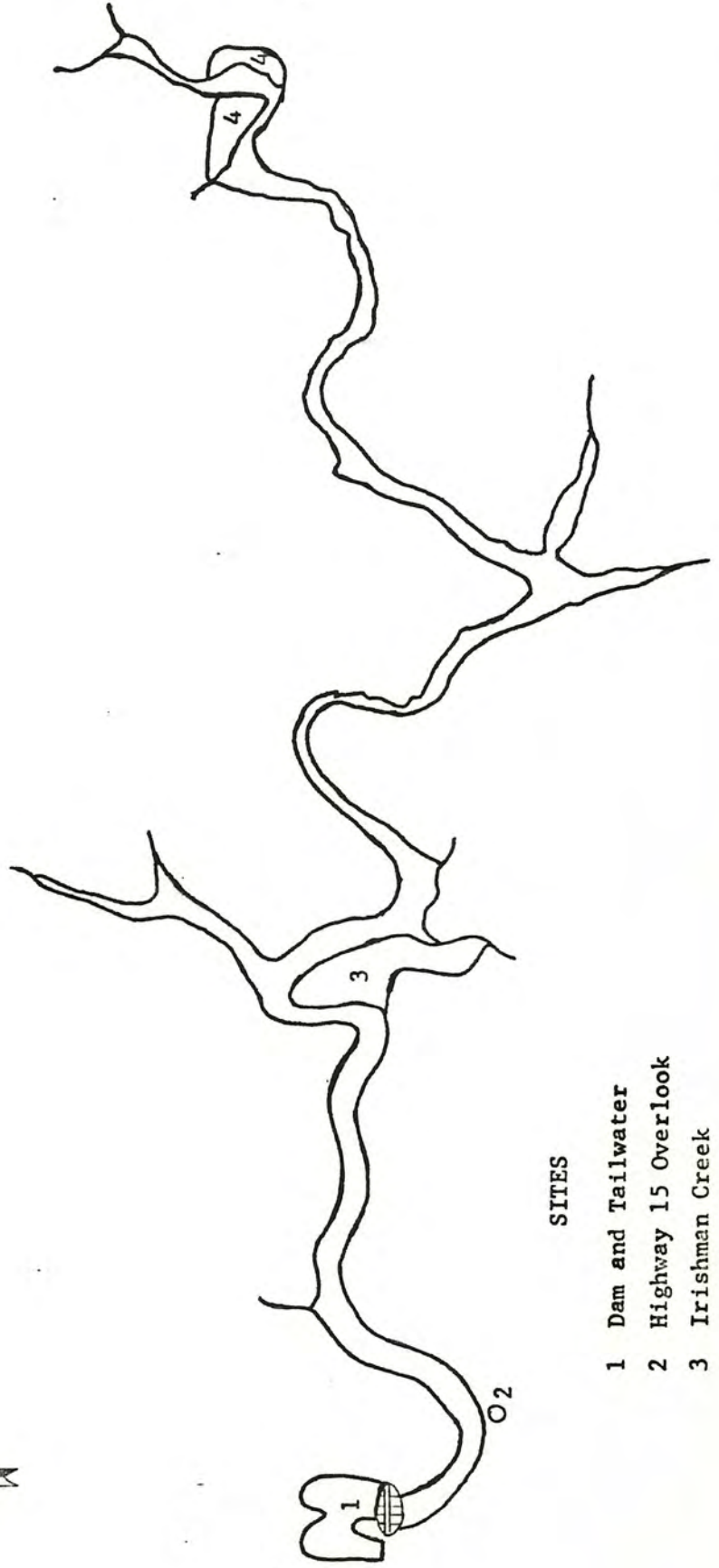
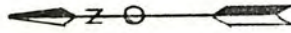
LOUISVILLE DISTRICT	CORPS OF ENGINEERS
<p>CARR FORK LAKE</p> <p>Recreation Management Concept</p> <p>2000 0 2000</p> <p>Scale in feet</p>	



# LEGEND

- Wildlife Management - Public Hunting Areas
- No Hunting - Recreation Areas

LOUISVILLE DISTRICT	CORPS OF ENGINEERS
<p>CARR FORK LAKE</p> <p>Recreation Area Locations</p> <p>2000 0 2000</p> <p>Scale in feet</p>	



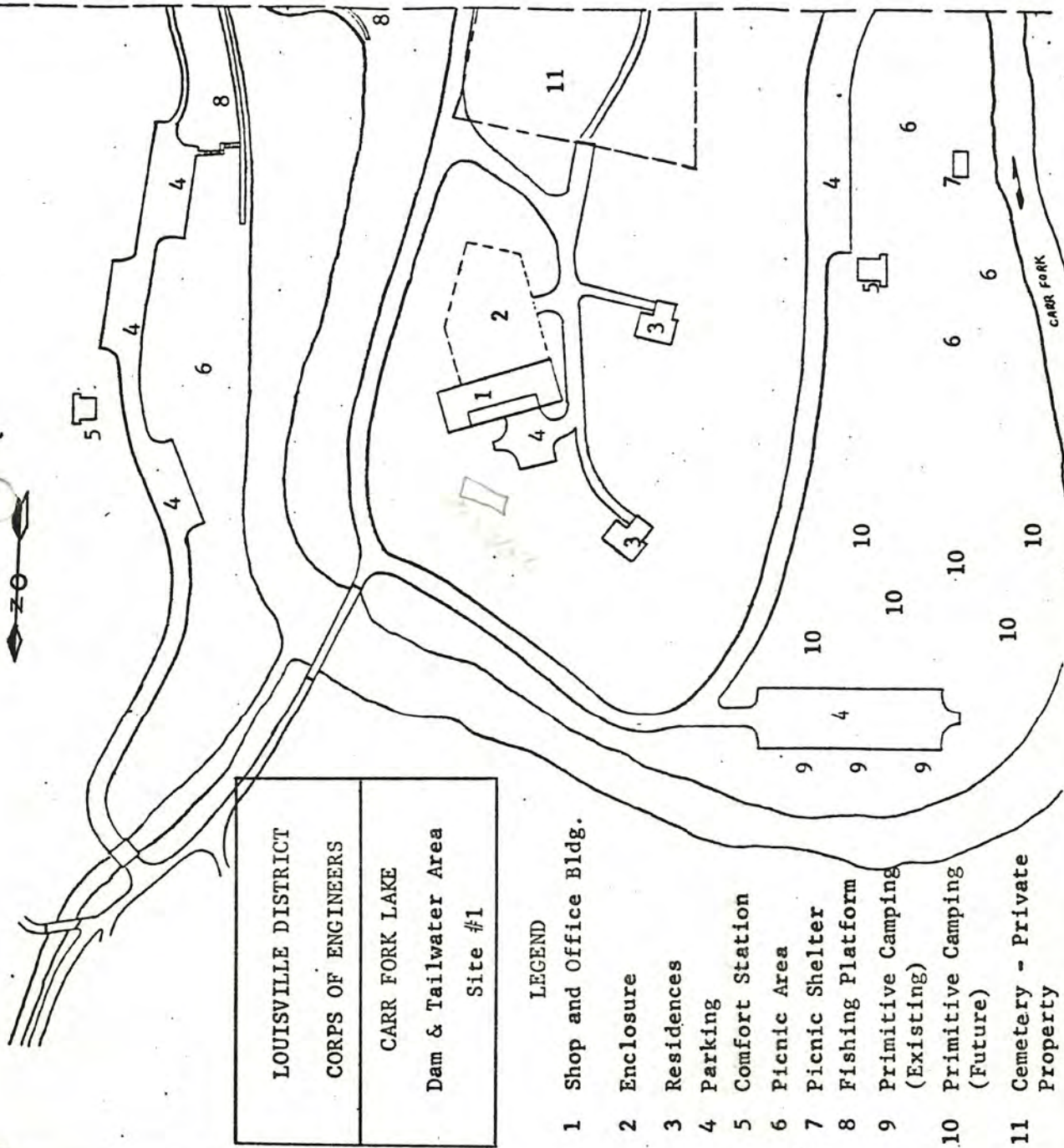
# SITES

- 1 Dam and Tailwater
- 2 Highway 15 Overlook
- 3 Irishman Creek
- 4 Littcarr

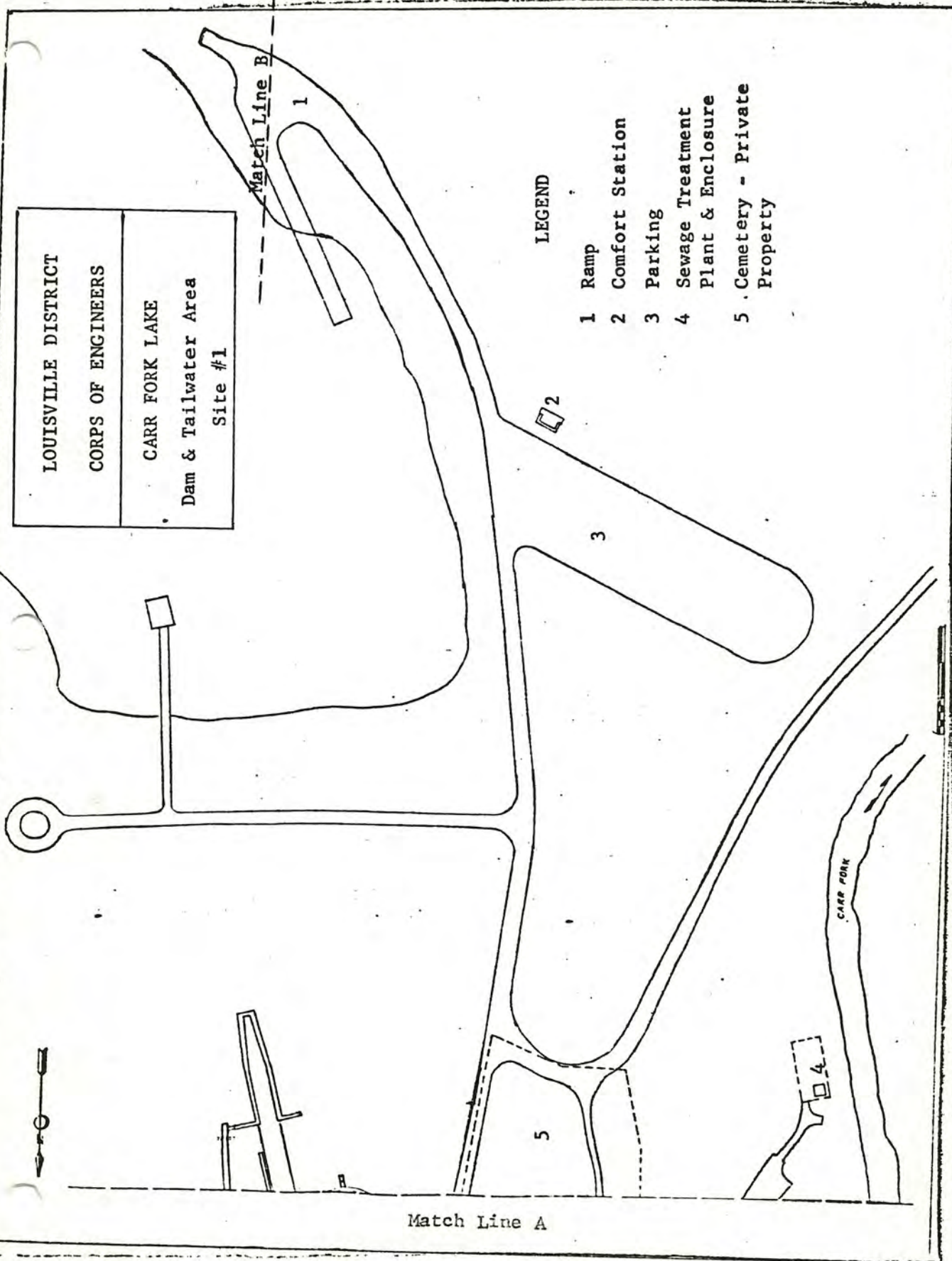


CARR FORK LAKE

Attachment 5







LOUISVILLE DISTRICT  
CORPS OF ENGINEERS  
CARR FORK LAKE  
Dam & Tailwater Area  
Site #1

LEGEND

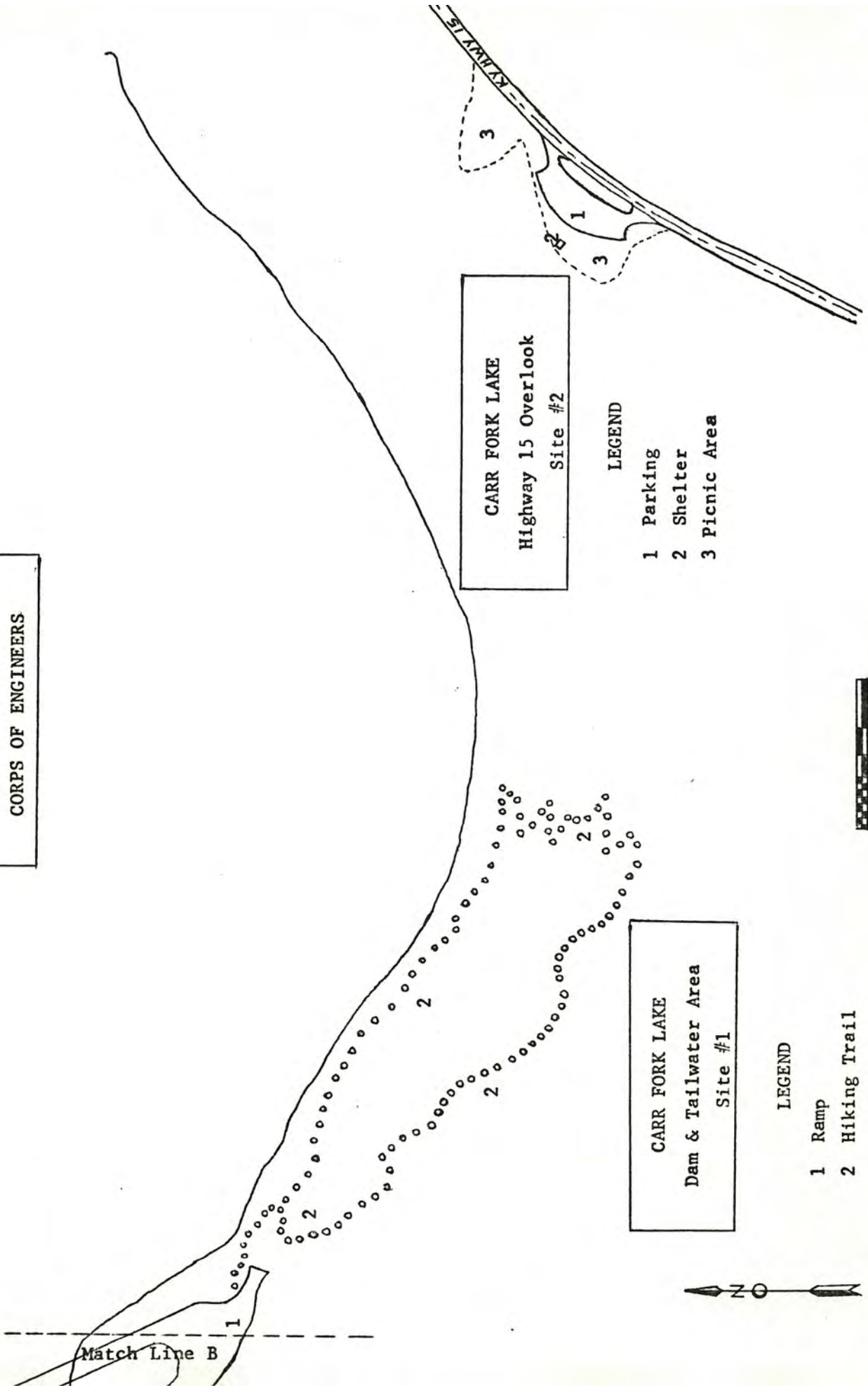
- 1 Ramp
- 2 Comfort Station
- 3 Parking
- 4 Sewage Treatment Plant & Enclosure
- 5 Cemetery - Private Property

Match Line A

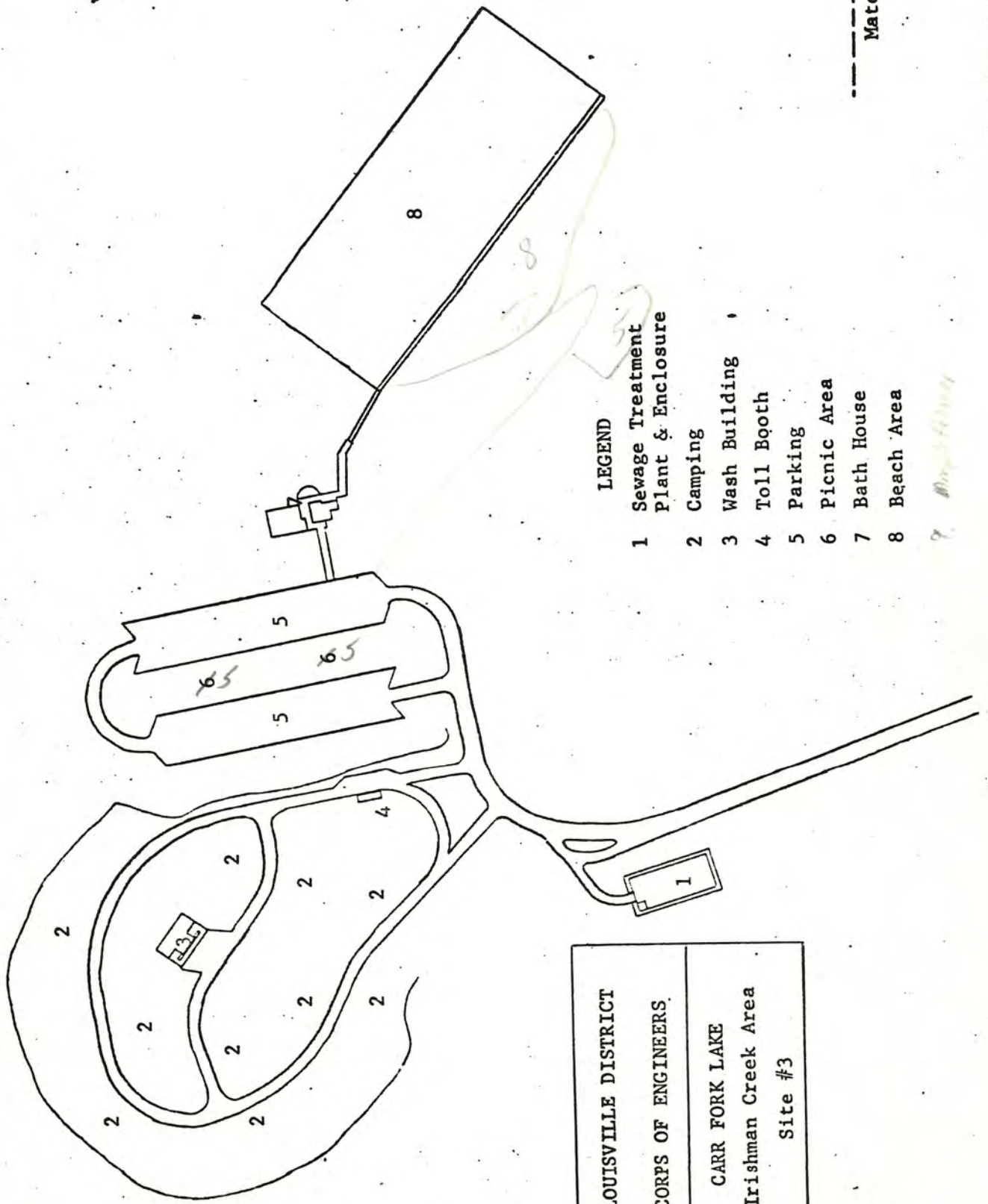
Match Line B

CARR FORK

LOUISVILLE DISTRICT  
CORPS OF ENGINEERS



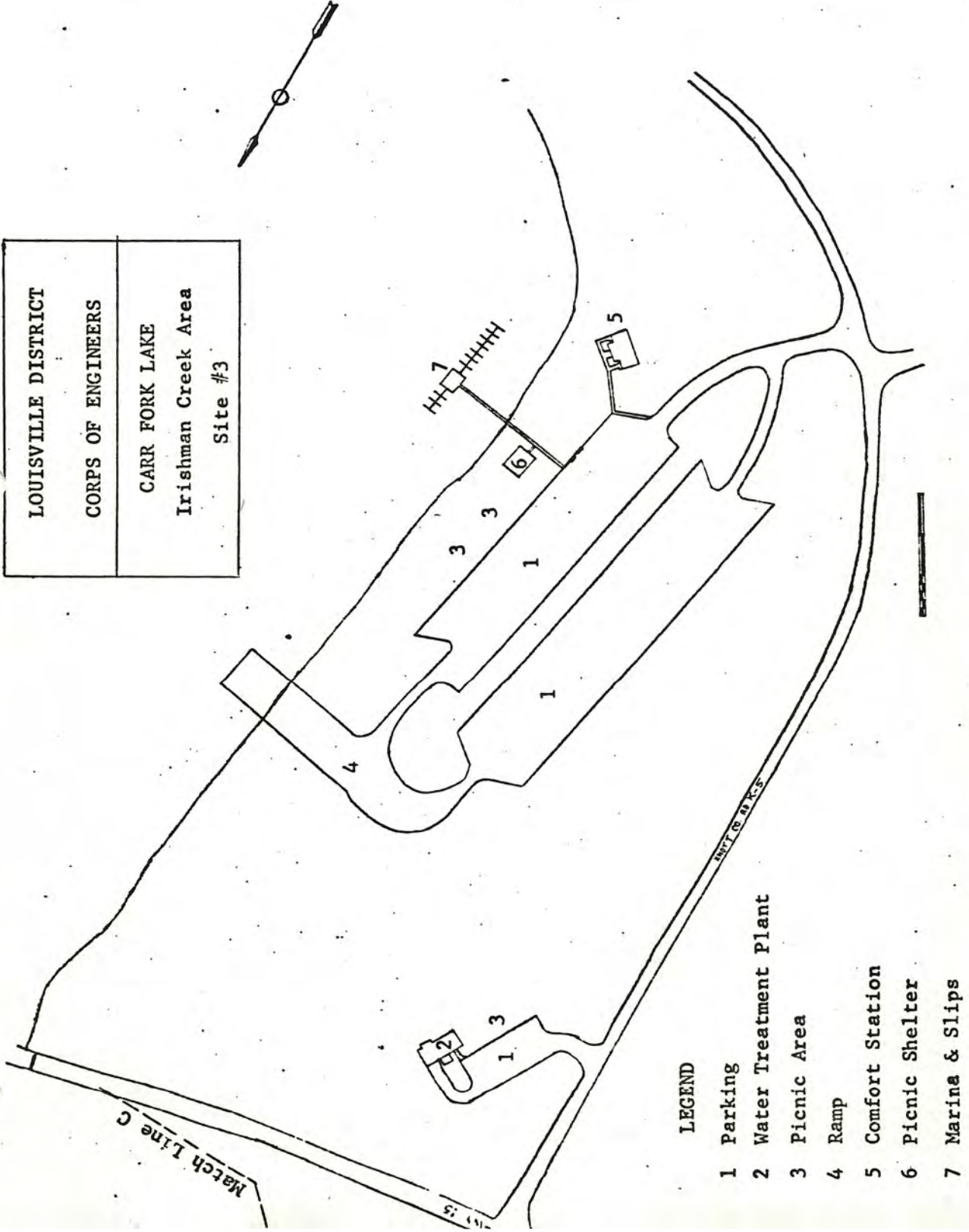




- LEGEND**
- 1 Sewage Treatment Plant & Enclosure
  - 2 Camping
  - 3 Wash Building
  - 4 Toll Booth
  - 5 Parking
  - 6 Picnic Area
  - 7 Bath House
  - 8 Beach Area

LOUISVILLE DISTRICT	
CORPS OF ENGINEERS	
CARR FORK LAKE	
Irishman Creek Area	
Site #3	

LOUISVILLE DISTRICT
CORPS OF ENGINEERS
CARR FORK LAKE
Irishman Creek Area
Site #3



#### LEGEND

- 1 Parking
- 2 Water Treatment Plant
- 3 Picnic Area
- 4 Ramp
- 5 Comfort Station
- 6 Picnic Shelter
- 7 Marina & Slips





# PROJECT FIRE PLAN

CARR FORK LAKE, KENTUCKY

Appendix C

to

Design Memorandum No. 6A

MASTER PLAN



U. S. ARMY  
CORPS OF ENGINEERS,  
LOUISVILLE DISTRICT

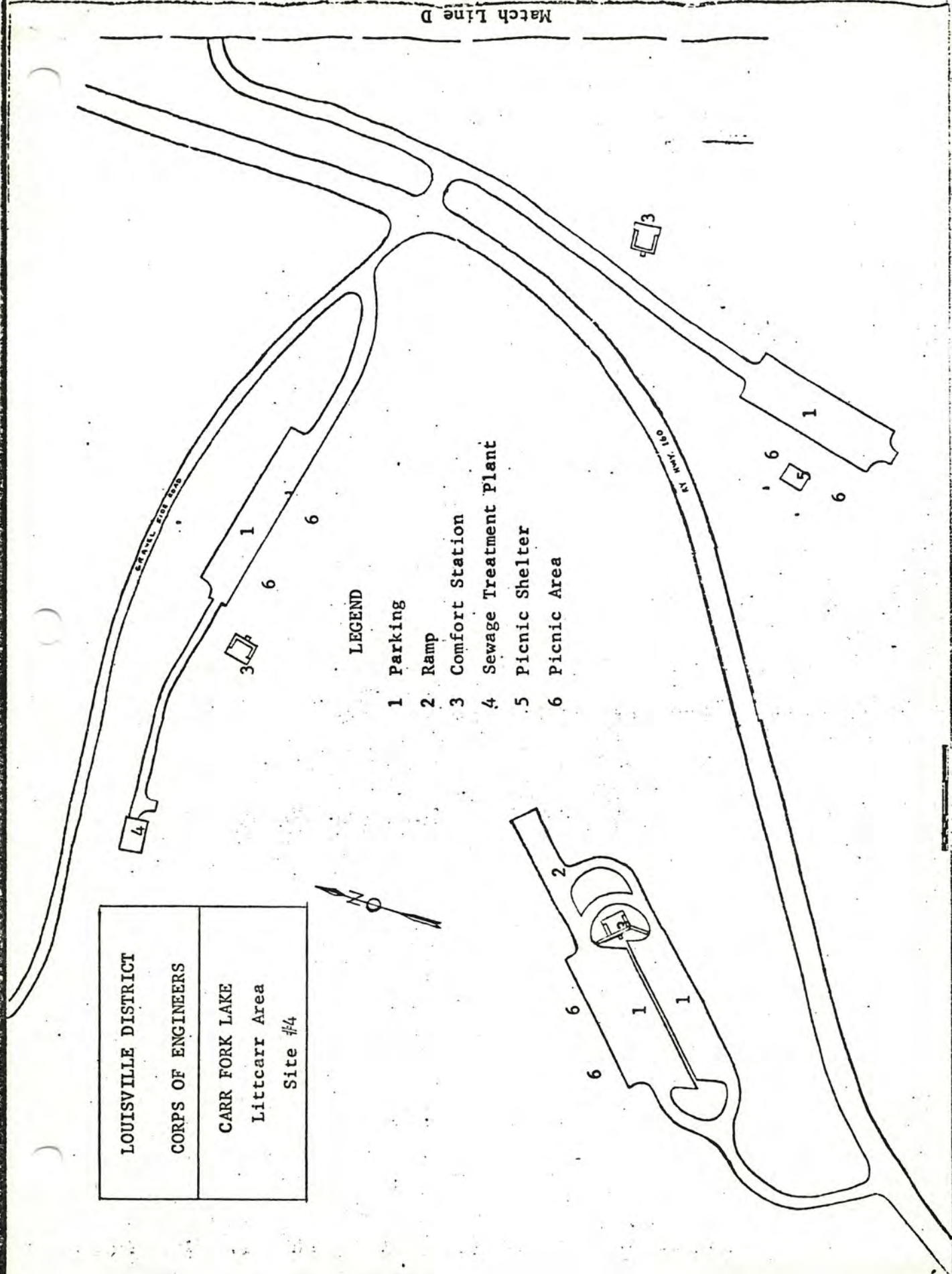


LOUISVILLE DISTRICT	
CORPS OF ENGINEERS	
CARR FORK LAKE	
Littcarr Area	
Site #4	



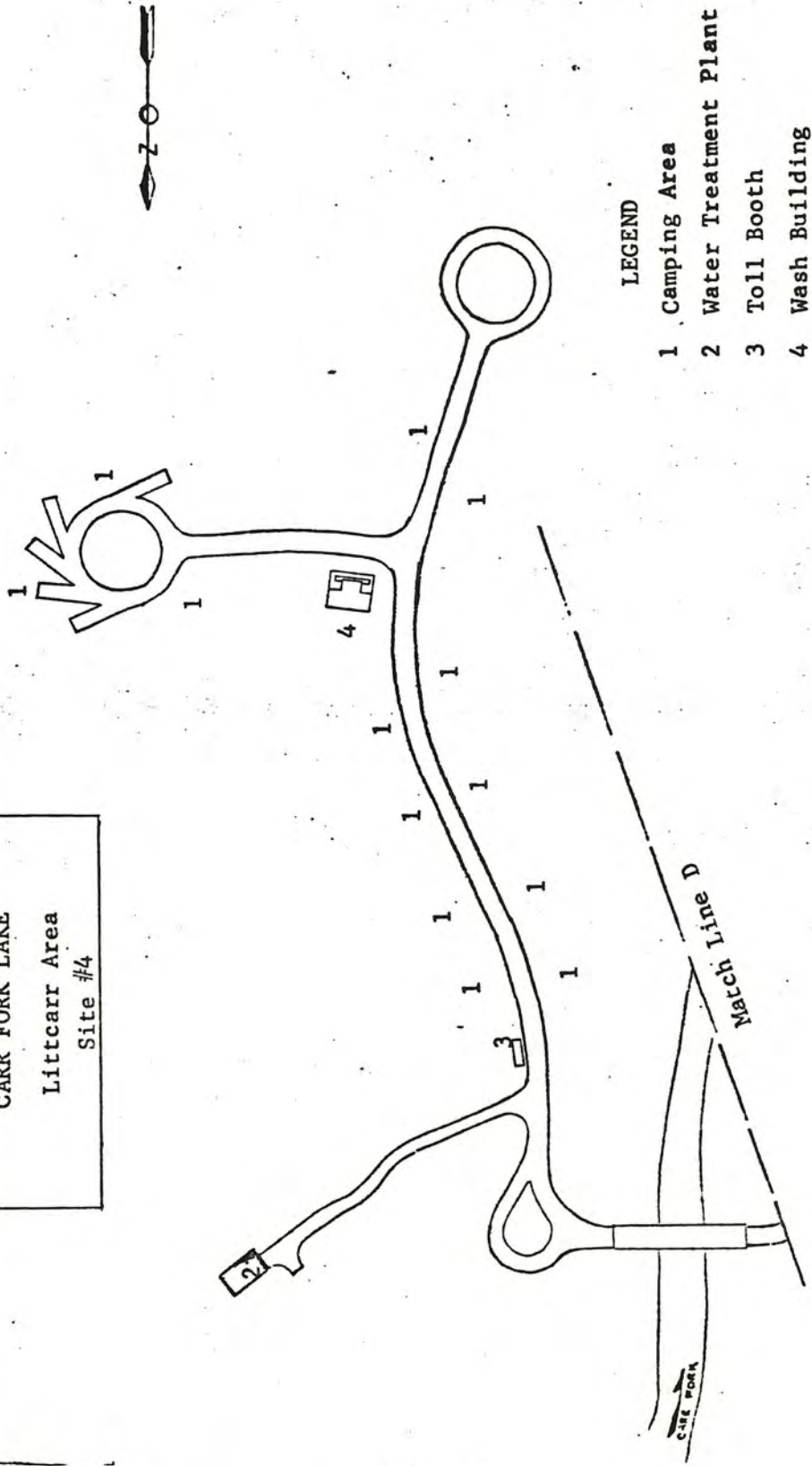
LEGEND

- 1 Parking
- 2 Ramp
- 3 Comfort Station
- 4 Sewage Treatment Plant
- 5 Picnic Shelter
- 6 Picnic Area





LOUISVILLE DISTRICT
CORPS OF ENGINEERS
CARR FORK LAKE
Littcarr Area
Site #4



Years	1976	1977
Sites	(In Thousands)	
#1 Dam & Tailwater	65,550	181,242
#2 Highway 15 Overlook	47,925	135,138
#3 Irishman Creek	Under Construction	339,784
#4 Littcarr	Under Construction	49,413
Total	113,475	705,577

Louisville District Corps of Engineers
CARR FORK LAKE VISITATION



TABLE OF ORGANIZATION - CARR FORK LAKE - EXISTING

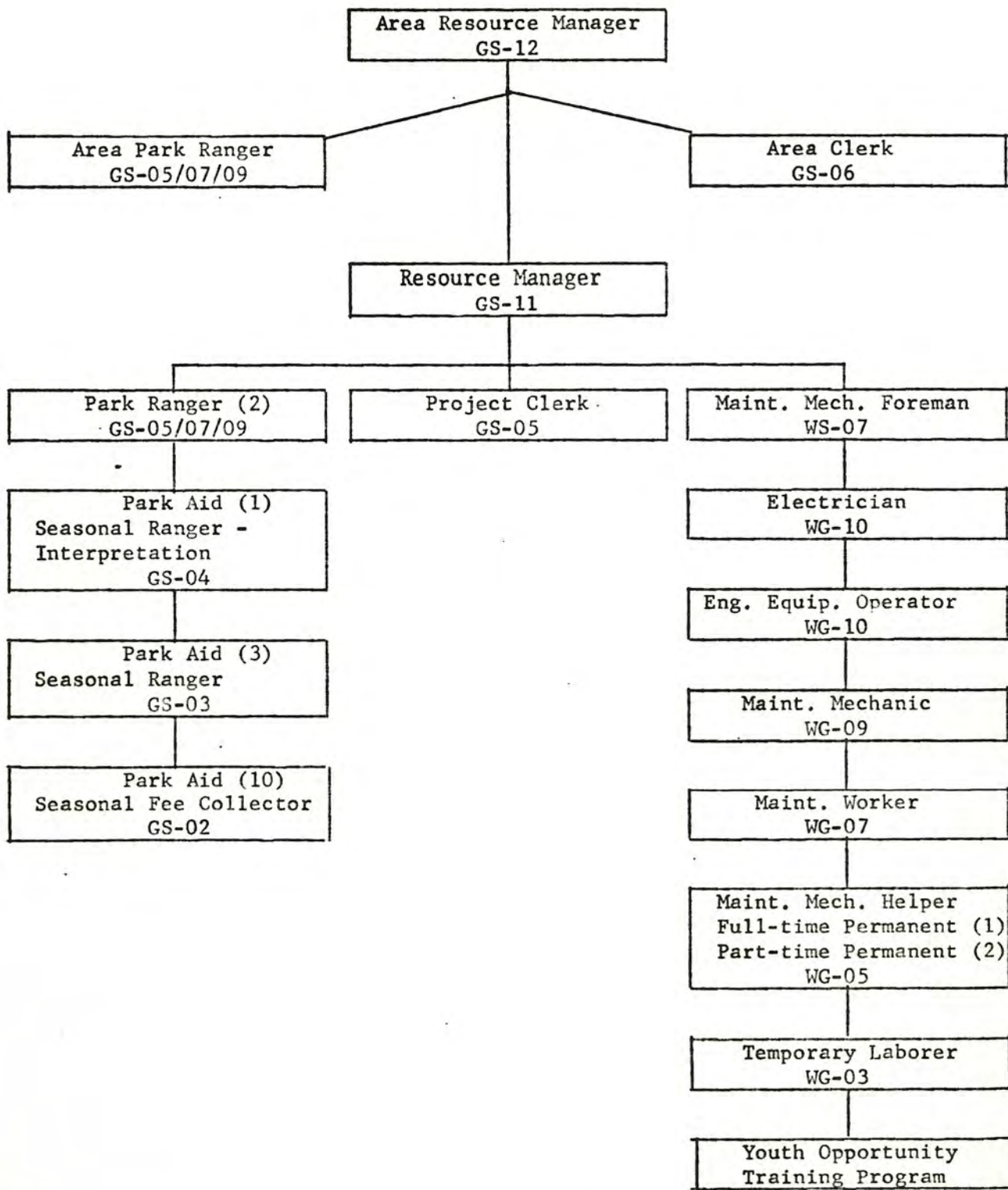
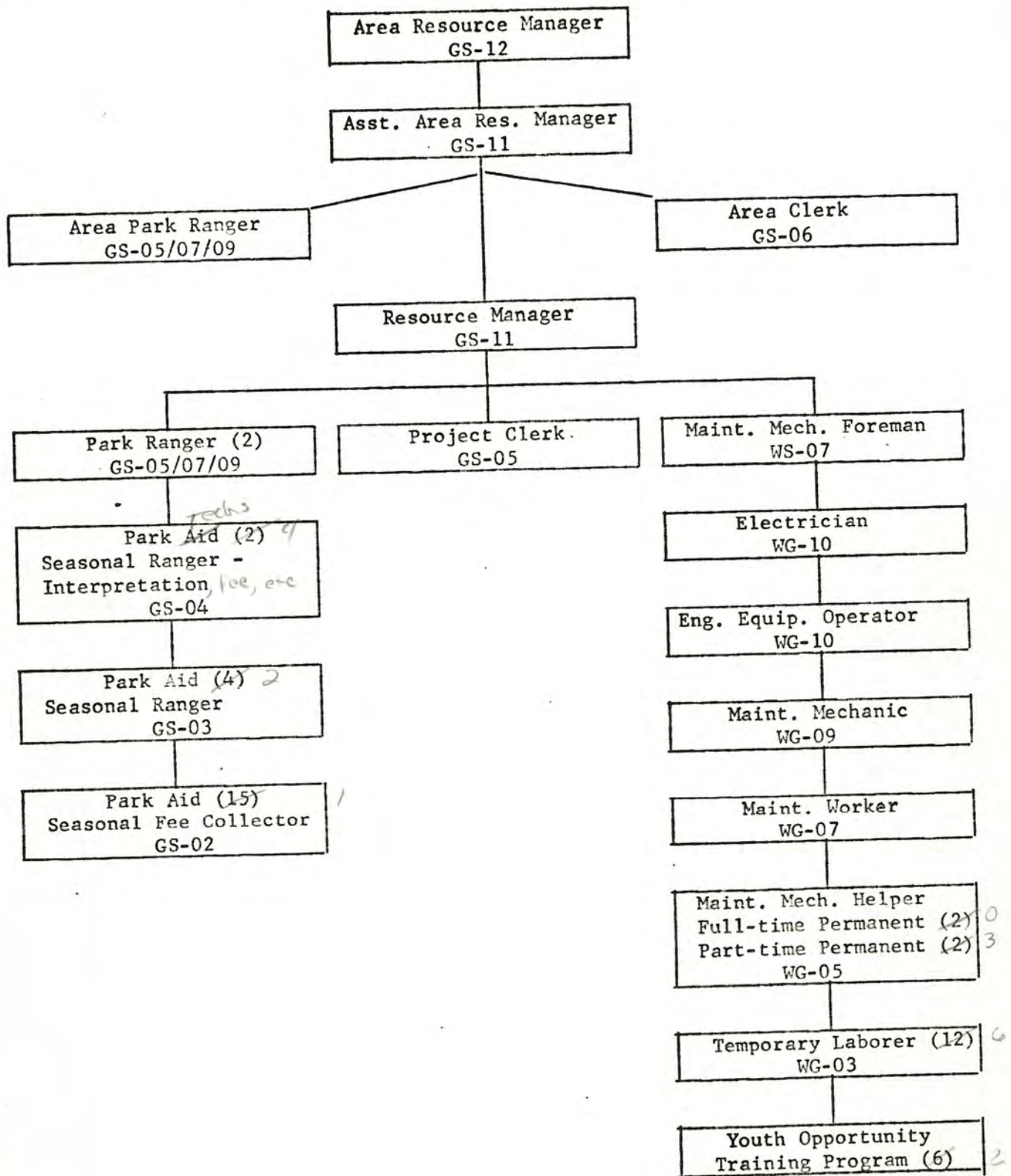


TABLE OF ORGANIZATION - CARR FORK LAKE - OPTIMUM





# CHEMICALS USED IN PEST CONTROL PROGRAM

## CARR FORK LAKE

<u>Target Pest</u>	<u>Chemical Used</u>	<u>Rate of Application</u>	<u>Method of Application</u>
(1) Kudzu	2, 4-D Amine Weed Killer	One pint Amine diluted with fifteen gallons of water to 53,000 square feet	Aerosol - Hand Compression Sprayer
(2) All vegetation in selected riprap areas	HYVAR-XL Bromacil Weed Killer	Two pounds of Bromacil per gallon of water	Ground - Hand Compression Sprayer
(3) Dandelions	2, 4-D Amine Weed Killer	One-half pint Amine diluted with fifteen gallons of water	Aerosol - Hand Compression Sprayer

*Use Roundup & Hyvar now*

OUTGRANTS

<u>Type</u>	<u>No.</u>	<u>Purpose</u>	<u>Term</u>
Lease	1	Commercial Concession - Public Marina; Vending Area	20 years
Easement	1	Road Right-of-Way	Indefinite
Easement	1	Telephone Line Right-of-Way.	Indefinite
Easement	1	Power Line Right-of-Way	Indefinite
Easement	2	Gas Pipeline Right-of-Way	Indefinite



Carr Fork Lake, Kentucky  
Project Fire Protection Plan  
Appendix C to the Master Plan

I - INTRODUCTION

*Add Carr Fork  
Vol. Fire  
Dept.*

1.1 AUTHORIZATION

The Fire Protection Plan, Appendix C to the Project Master Plan is authorized and outlined by ER 1130-2-400 dated 28 May 1971.

1.2 PURPOSE

The purpose of this plan is to provide a detailed guide for the prevention and suppression of wildfires on the Carr Fork Lake Project. It will delineate all equipment, phone numbers, personnel, and so forth necessary to fire fighting procedures.

II - FIRE SECURITY AGREEMENTS

2.1 COOPERATIVE AGREEMENT WITH OTHER AGENCIES

There are no written or contractual agreements with any Federal, State or local agency providing for fire protection on the Carr Fork Lake Project. There is a verbal agreement, however, with the Kentucky Department of Natural Resources, Division of Forestry, located in Hazard, Kentucky. The Louisville District will contact the Commonwealth of Kentucky to formalize a memorandum of understanding between the two agencies. Two local volunteer fire departments, Vicco and Hindman, have also expressed verbal commitment to fight fires affecting any government building or structure on the project. The Hazard Fire Department, as well as the Whitesburg Fire Department, has no agreement with the Corps of Engineers but will assist the Vicco and Hindman Departments should the need arise. None of the local fire departments has any agreement, written or otherwise, with the State of Kentucky.

III - PREVENTIVE POLICY

3.1 STATEMENT OF POLICY

The Resource Management preventive policy on the Carr Fork Lake Project is anticipatory in nature. Excepting naturally caused fires such as those started by lightning, most wildfires are man made and can be prevented. The policy of this project is to anticipate these causes and through signs, public contact and other illustrative material eliminate them before a fire results.



## IV - PRESUPPRESSION

### 4.1 STATE AND LOCAL ORGANIZATION

The Kentucky State Division of Forestry can provide up to four crews, each consisting of six persons, in this district. Each crew includes a Fire Crew Leader who is responsible for the fighters and the procedures they follow. Their equipment includes fire rakes, brush axes, leaf blowers and a fire plow which is of marginal use in rough terrain.

The Hindman Volunteer Fire Department offers twenty-eight (28) fire fighters (not all professional). They can be on the scene in twenty minutes.

The Vicco Volunteer Fire Department offers fifteen (15) fire fighters in fifteen minutes. Their equipment and phone numbers follow in the Attachments. (Attachment 3)

The Pippa Passes Volunteer Fire Department offers twenty (20) fire fighters in thirty minutes. Their equipment and phone number follow in the Attachments. (Attachment 3)

### 4.2 EQUIPMENT AND LOCATION

Corps owned equipment is stored in the storage building. Maintenance Mechanics are responsible for the care of all equipment. A complete list of all tools presently owned, ordered and suggested is inclosed. (Attachment 3)

### 4.3 OBSERVATION, DETECTION AND DISPATCH

The Carr Fork Lake Project area is currently observed by aerial detection by the Kentucky Department of Natural Resources, Division of Forestry. All fires observed on or near Corps land will be reported to the State fire dispatcher at Hazard, Kentucky. This information will be relayed to the Resource Manager's office.

In addition to the State observers, Ranger patrol, local residents and visitors will serve the purpose of detection.

All Corps personnel will immediately report any fire to the dispatcher in the Corps office. The dispatcher, in turn, will do the following:

a. Contact, by telephone, the State Division of Forestry and/or the local fire departments depending on the location of the fire.

b. Dispatch a crew of Corps personnel. The size of the crew depends on the need as reported by the observer.

c. Contact, by radio or telephone, the UKRA Manager at Jackson, Kentucky.



### 3.2 SIGNS

Warning signs reminding visitors and campers of the danger and possibility of fire through negligence will be placed in all appropriate areas such as campgrounds. Fire posters will be put up twice annually at the start of the Spring and Fall fire seasons. These posters will inform the public what to do and whom to call in the event of a fire. All bulletin boards and public access areas will be supplied with these posters.

### 3.3 EDUCATIONAL POLICY

The Kentucky Department of Natural Resources, Division of Forestry, has expressed an interest in co-operating with Corps personnel in contacting the public through schools, libraries and civic groups. Lectures and displays could be provided to inform the public of the danger of wildfires and educate them in fire prevention.

### 3.4 PREVENTION PROBLEMS

The Carr Fork Lake Project is in an area that is designated as a high fire occurrence area, residents and hunters being the major cause of wildfires. The topography of the land also proves to be problematic. Steep slopes and rugged terrain dictate the use of hand tools and man power instead of trucks and dozers.

### 3.5 FIRE LAWS AND ENFORCEMENT AGENCIES

Education of the public is not entirely adequate for fire prevention. Proper law enforcement is useful in keeping the public aware of the fact that negligent and malicious causing of wildfires is punishable by law.

Corps personnel on the Carr Fork Lake Project enforce Title 36 of the Code of Federal Regulations. Visitors are also subject to the Kentucky State Penal Code, Chapter 513 and Forest Protection Laws of Kentucky. (Confer Attachment 1)

### 3.6 CONTROLLED FIRES

Fires are allowed on the Carr Fork Lake Project in designated areas such as campgrounds and picnic sites. No other fires are permitted.

### 3.7 PROJECT FIRE PERMITS

Burning and clearing permits will be issued when necessary. ORL Form 503 is used for this purpose. (Attachment 2)



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#### 4.7 FIRE TELEPHONE NUMBERS

##### Corps of Engineers

Carr Fork Lake Office  
Area Office, Jackson

606/642-3308, 3309  
606/666-7830, 7831

##### Department of Natural Resources

Division of Forestry  
Headquarters, Hazard  
District Forester - David Peercy  
Fire Control Assistant - James Turner  
Unit Ranger - Homer Hall  
County Ranger - Austin Sloan  
County Guard - Johnny Sloan

439-1385, 1386  
439-4779  
666-7548  
447-2732  
368-2785  
785-5323

##### Volunteer Fire Departments

Vicco  
Hindman  
Pippa Passes

476-2775  
785-3133  
368-2121

##### County Police Department

Sheriff (Knott)

785-5354

##### Kentucky State Police

Hazard Office

439-2343, 2344

##### Fire Departments

Hazard  
Whitesburg  
Chief  
Emergency and Rescue Squad

436-2211  
633-2126  
633-2203  
447-2856

#### V - SUPPRESSION

##### 5.1 SEASONAL PROCLIVITY

There are two designated fire occurrence seasons: October 1 through December 15 in the Fall and March 1 through May 15 in the Spring. Aerial observation and Ranger patrols will increase during these times.

##### 5.2 RESPONSE, CONTROL AND MOP-UP

Size permitting, all fires are to be extinguished by the observer. Otherwise, radio contact with the dispatcher will inform Corps personnel as to the location and size of the fire. A Corps fire crew will be dispatched



d. Maintain contact with the Corps fire crews until they have returned and the danger designated is over.

e. Provide, as expeditiously as possible, all equipment and manpower requested by the Fire Boss.

f. On any fire adjacent to Corps owned land responded to and controlled by a State or local agency, the dispatcher will send the Corps Fire Boss. This person will maintain contact with the Corps office and inform them of any need for Corps equipment or personnel. The Fire Boss will remain at the fire until it is under control or extinguished and will provide a fire report to the LDO.

#### 4.4 ORGANIZATION OF PROJECT PERSONNEL

The Project personnel will be organized in the following manner:

- a. Fire Boss (in order of rank)
  - 1. Resource Manager
  - 2. Park Ranger, GS-5/7/9
  - 3. Maintenance Mechanic Foreman, WS-7
- b. Dispatcher
  - 1. Clerk
  - 2. Maintenance Mechanic Foreman, WS-7
  - 3. Maintenance Mechanic, WG-9
- c. Maintenance and Storage of Equipment
  - 1. Maintenance Mechanic, WG-9
  - 2. Maintenance Mechanic, WG-7
- d. Fire Fighters

All permanent and permanent seasonal employees except the dispatcher.

#### 4.5 FIRE ACCESS

Most of the Corps owned land at the Carr Fork Lake Project is readily accessible. State highways interlace with county roads throughout the project. In addition, gas well and coal mine access roads lead to the more remote areas of the lake. A map of these roads follows in the Attachments. (Attachment 4)

#### 4.6 FIRE CREW TRAINING

It is the responsibility of the UKRA Manager to see that all Carr Fork Lake personnel are properly trained in fire fighting.



immediately. If assistance from State or local departments is necessary they will be contacted by the dispatcher. When a Corps fire crew is dispatched to a fire they will adhere to the following procedure:

1. Upon arrival, the Fire Boss (as designated in Section 4.4) will survey the fire and decide how it is to be brought under control. If more personnel and equipment are needed it will be reported to the dispatcher by the Fire Boss.

2. The method of attack is limited in Eastern Kentucky due to steep slopes and rugged terrain. Usually the crew is sent to the head of fire and a fire line is constructed with fire rakes. Starting a back fire to consume unburned fuel is also effective. One or two fighters are sent to the leeward side of the fire to clear burned debris and topple smoldering trees. The remainder of the crew and the Fire Boss will attack the head of the fire on the windward side. Even though fires may differ in cause and nature, the Division of Forestry makes two general classifications for simplicity. These are Home fires and Hunter fires. The former, usually started by residents, burns from the hollow to the top of the ridge and is the faster type of fire. The latter, usually started by hunters, burns from the ridge down. The Fire Boss will determine the type of fire and deploy fire fighters accordingly.

3. Natural barriers such as roads, trails, creeks, and the lake will be used as advantageously as possible. Strip mine benches can afford limited advantage in retarding the fire. If the bench has been reclaimed with grasses it would burn quickly and spread the fire. Depending on the degree of growth on the bench it could impede access to the fire. The rock highwall, on the other hand, could serve as a barrier. The Fire Boss will consider all of these factors when determining the method of attack.

4. The wind and temperature affect the fire fighting methods. When the Fire Boss deems the windward side of the fire too hot, the crew will cease operations and return after sunset to fight the blaze. Personnel will be familiarized with dangerous areas (ie., cliffs, ravine, loose rock) at the fire site to minimize the safety hazard of working in the dark. All personnel will be supplied with flashlights for additional safety.

5. Whenever possible, water will be used to extinguish flames and dampen unburned fuel.

6. All fire lines are to be patrolled with the exception of natural barriers.

7. The most effective mop-up is executed at night when fire and glowing embers are clearly visible.



8. When a State Fire Crew Leader is present, the Corps Fire Boss will relinquish direction of the attack to the State Crew Leader. Only one person will direct the fire fighting activities.

9. The Corps fire crew will not leave the fire until the mop-up is completed and the fire deemed extinguished.

10. After mop-up is completed the burned area should be checked to determine the need for reclamation activities to minimize erosion. If reclamation is deemed necessary the appropriate action should be taken as quickly as possible. Cooperation with State Agencies will be encouraged.

### 5.3 FIRE FIGHTING SAFETY

The Corps Fire Boss is responsible, first and foremost, for the welfare and safety of the crew. The Fire Boss will exercise the following precautions:

a. While responding to a fire, undue haste is to be avoided. All laws and safety precepts are to be obeyed.

b. While approaching the fire through the woods, the crew will adhere to a disciplined mode of movement. They will walk in single file at regular intervals.

c. All tools will be carried so as not to present any danger to any member of the crew. Sharp edged tools will be covered when possible.

d. No member of the crew will be exposed to flame or smoke so as to endanger any life. The Corps Fire Boss will observe the fighters for signs of exhaustion.

e. The crew will be provided with water continuously and food when possible.

f. No member of the crew will be without the following: long sleeved shirt, gloves, hard-hat and safety boots. Lanterns and jackets are necessary for nocturnal activity. A first aid kit will be accessible to all members of the crew.

g. The Corps Fire Boss will see that no crew member is left without an escape route.

h. All members of the crew will be relieved periodically for rest. All members will be rotated to different areas so as to divide the more difficult tasks evenly. No fire fighter will work a shift longer than eight (8) hours.



#### 5.4 FIRE REPORT

The Corps Fire Boss will complete a Disposition Form and submit it to the Chief, Operations Division (ORLOP-R).

### VI - REVISION AND RECOMMENDATIONS

#### 6.1 REVISION

The Project Fire Protection Plan will be reviewed annually and updated every five (5) years by the Resource Manager. Special attention will be given to the preventive policy, prevention problems, revisions in Corps, State or local organization and phone numbers. Equipment will be kept in good condition.



## EQUIPMENT LIST

### CORPS EQUIPMENT

#### PRESENT SUPPLIES

10 helmets  
6 shovels  
2 spades  
4 axes  
6 fire rakes  
3 back pack pumps  
6 head lanterns

#### ON ORDER

6 brush axes

#### SUGGESTED

6 swatters  
4 head lanterns

### Vicco Volunteer Fire Department

Hagan Davidson - Chief

1 pump 385 gal/min under 85 lb. pressure  
1000 ft. of hose 1-1/2 in.  
50 ft. of 4 in. hose for pump  
1974 Ford truck

### Hindman Volunteer Fire Department

Winford Napier - Chief

1 truck 500 gal/min pumper  
w/portable pumps 300 gal/min  
1 truck with Beam equipment  
750 gal/min w/portable pump 350 gal/min  
750 gal. booster  
Each unit has 2000 ft. of 2-1/2 in. hose  
300 ft. of 1-1/2 in. hose

### Pippa Passes Volunteer Fire Department

Meniffee Huff - Chief



ORD Comments  
Appendix C  
The Fire Protection Plan

*might not a negative as far as*  
A survey should be made of Urban, Rural, Township or Civil Defense Fire Fighting Organizations to determine if their authority extends on project land. List equipment and manpower available and attach any written agreements between the Corps and the Fire Department to the Plan. Indicate type of help available from the State and attach any memoranda of Understanding between the Corps and State. *4.1*

*5.1* Report the months that fire danger is greatest and indicate extra precautions taken during high fire danger periods.

*4.7* Attach an emergency Fire Telephone Directory.

*5.2(1)* Attach a Fire Danger Classification System used by Forestry officials in the area and indicate what precautionary actions, if any, are taken during high hazard periods.

*can't be used for operation*  
Tools and Equipment. No mention is made of any type of truck-mounted water pump and tank. Consideration should be given to mounting this equipment on a suitable project truck during high fire danger periods.

*might not a negative reply*  
Organization. If a fire danger rating chart showing definitions of the different fire danger classes is available, it should be attached. The fire protection plan should include lists of Fire Wardens, Fire Towers, and any other organizations that are normally called during a fire. The type of surveillance carried out during high fire danger should be described, including the procedure used to notify Corps personnel of a fire situation. If the state uses fire towers, the degree of project coverage should be indicated. *4.3*

*3.4* The fire history of the project should be described, indicating the source of most fires. Prevention activities should then be directed towards controlling this source.

*Bill of 1980 - we lost some good ones*

RECEIVED  
SEP 11 1981

CARR FORK LAKE

*8*

ORDCO-R (2 Dec 75) 1st Ind


SUBJECT: Appendix C, Project Fire Protection Plan for Carr Fork  
Lake, Kentucky

DA, Ohio River Division, Corps of Engineers, P.O. Box 1159, Cincinnati,  
OH 45201 13 May 1976

TO: District Engineer, Louisville, ATTN: ORLOP-R

1. The subject Fire Protection Plan is approved subject to the following comments.
2. Approval of the plan is not intended to impose criteria upon any licensee or lessee. A copy of the approved document, which has been coordinated with the primary state agency, should be furnished that agency for information.
3. The Louisville District should contact the Commonwealth of Kentucky in regard to formalizing a memorandum of understanding, as suggested in para 6.2c, in cooperation with the districts involved.
4. Interim discussions and instructions should be inserted into this plan covering the need and criteria for fire breaks and reclamation as necessary after major fires to prevent erosion and sedimentation. Paragraph 6.2a should be expanded that training is in cooperation with local and state agencies.
5. In the first update of this plan, these comments should be included as permanent conditions.

FOR THE DIVISION ENGINEER:

  
P. H. CARIGAN

Chief, Construction-Operations Division





DEPARTMENT OF THE ARMY  
LOUISVILLE DISTRICT CORPS OF ENGINEERS  
P. O. BOX 59  
LOUISVILLE, KENTUCKY 40201

ORLOP-R

2 December 1975

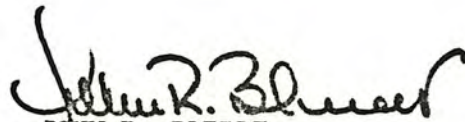
SUBJECT: Appendix C, Project Fire Protection Plan for Carr Fork Lake,  
Kentucky

Division Engineer  
Ohio River Division  
ATTN: ORDCO-R

1. The Carr Fork Lake Fire Protection Plan is submitted in final form for review and approval.
2. A current project brochure is attached to the back cover for ready reference in reviewing this plan.

FOR THE DISTRICT ENGINEER:

1 Incl  
as (7)

  
JOHN R. BLEIDT  
Chief, Operations Division



CARR FORK LAKE, KENTUCKY  
PROJECT FIRE PROTECTION PLAN  
APPENDIX C TO THE MASTER PLAN

U. S. Army  
Engineer District, Louisville  
Corps of Engineers

1975



Carr Fork Lake, Kentucky  
Project Fire Protection Plan  
Appendix C to the Master Plan

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## ATTACHMENTS

- 1 Fire Laws
- 2 Clearing and Burning Permit
- 3 Equipment List
- 4 Fire Access Map
- 5 Fire Report



Carr Fork Lake, Kentucky  
Project Fire Protection Plan  
Appendix C to the Master Plan

I - INTRODUCTION

1.1 AUTHORIZATION

The Fire Protection Plan, Appendix C to the Project Master Plan is authorized and outlined by ER 1130-2-400 dated 28 May 1971.

1.2 PURPOSE

The purpose of this plan is to provide a detailed guide for the prevention and suppression of wildfires on the Carr Fork Lake Project. It will delineate all equipment, phone numbers, personnel, and so forth necessary to fire fighting procedures.

II - FIRE SECURITY AGREEMENTS

2.1 COOPERATIVE AGREEMENT WITH OTHER AGENCIES

There are no written or contractual agreements with any Federal, State or local agency providing for fire protection on the Carr Fork Project. There is a verbal agreement, however, with the Kentucky Department of Natural Resources, Division of Forestry, located in Hazard, Kentucky. Two local volunteer fire departments, Vicco and Hindman, have also expressed verbal commitment to fight fires affecting any government building or structure on the project. The Hazard Fire Department, as well as the Whitesburg Fire Department, has no agreement with the Corps of Engineers but will assist the Vicco and Hindman Departments should the need arise. None of the local fire departments has any agreement, written or otherwise, with the State of Kentucky.

III - PREVENTIVE POLICY

3.1 STATEMENT OF POLICY

The Resource Management preventive policy on the Carr Fork Project is anticipatory in nature. Excepting naturally caused fires such as those started by lightning, most wildfires are man made and can be prevented. The policy of this project is to anticipate these causes and through signs, public contact and other illustrative material eliminate them before a fire results.

### 3.2 SIGNS

Warning signs reminding visitors and campers of the danger and possibility of fire through negligence will be placed in all appropriate areas such as campgrounds. Fire posters will be put up twice annually at the start of the Spring and Fall fire seasons. These posters will inform the public what to do and whom to call in the event of a fire. All bulletin boards and public access areas will be supplied with these posters.

### 3.3 EDUCATIONAL POLICY

The Kentucky Department of Natural Resources, Division of Forestry, has expressed an interest in co-operating with Corps personnel in contacting the public through schools, libraries and civic groups. Lectures and displays could be provided to inform the public of the danger of wildfires and educate them in fire prevention.

### 3.4 PREVENTION PROBLEMS

The Carr Fork Project is not yet operational and problems in fire prevention cannot be fully realized. It is a fact, however, that this area is designated as a high fire occurrence area, residents and hunters being the major cause of wildfires. The topography of the land also proves to be problematic. Steep slopes and rugged terrain dictate the use of hand tools and man power instead of trucks and dozers.

### 3.5 FIRE LAWS AND ENFORCEMENT AGENCIES

Education of the public is not entirely adequate for fire prevention. Proper law enforcement is useful in keeping the public aware of the fact that negligent and malicious causing of wildfires is punishable by law.

Corps personnel on the Carr Fork Project enforce Title 36 of the Code of Federal Regulations. Visitors are also subject to the Kentucky State Penal Code, Chapter 513 and Forest Protection Laws of Kentucky. (Confer Attachment 1)

### 3.6 CONTROLLED FIRES

Fires are allowed on the Carr Fork Project in designated areas such as campgrounds and picnic sites. No other fires are permitted.

### 3.7 PROJECT FIRE PERMITS

Burning and clearing permits will be issued when necessary. ORL Form 503 is used for this purpose. (Attachment 2)



## IV - PRESUPPRESSION

### 4.1 STATE AND LOCAL ORGANIZATION

The Kentucky State Division of Forestry can provide up to four crews, each consisting of six men, in this district. Each crew includes a Fire Crew Leader who is responsible for the men and the procedures they follow. Their equipment includes fire rakes, brush axes, leaf blowers and a fire plow which is of marginal use in rough terrain.

The Hindman Volunteer Fire Department offers twenty-eight (28) fire fighters (not all professional). They can be on the scene in twenty minutes.

The Vicco Volunteer Fire Department offers fifteen men in fifteen minutes. Their equipment and phone numbers follow in the Attachments. (Attachment 3)

### 4.2 EQUIPMENT AND LOCATION

Corps owned equipment is stored in the shop and office building. Maintenance Mechanics are responsible for the care of all equipment. A complete list of all tools presently owned, ordered and suggested is inclosed. (Attachment 3)

### 4.3 OBSERVATION, DETECTION AND DISPATCH

The Carr Fork Project area is currently observed by three State controlled towers: Dixon Knob, Adams and Troublesome Creek. Next year aerial detection will be initiated by the Kentucky Department of Natural Resources, Division of Forestry. All fires observed on or near Corps land will be reported to the State fire dispatcher at Hazard, Kentucky. This information will be relayed to the Resource Manager's office.

In addition to the State observers, Ranger patrol, local residents and visitors will serve the purpose of detection.

All Corps personnel will immediately report any fire to the dispatcher in the Corps office. The dispatcher, in turn, will do the following:

a. Contact, by telephone, the State Division of Forestry and/or the local fire departments depending on the location of the fire.

b. Dispatch a crew of Corps personnel. The size of the crew depends on the need as reported by the observer.

c. Contact, by radio or telephone, the UKRA Manager at Jackson, Kentucky.

d. Maintain contact with the Corps fire crews until they have returned and the danger designated is over.

e. Provide, as expeditiously as possible, all equipment and manpower requested by the Fire Boss.

f. On any fire adjacent to Corps owned land responded to and controlled by a State or local agency, the dispatcher will send the Corps Fire Boss. This man will maintain contact with the Corps office and inform them of any need for Corps equipment or personnel. This man will remain at the fire until it is under control or extinguished and will provide a fire report to the LDO.

#### 4.4 ORGANIZATION OF PROJECT PERSONNEL

The Project personnel will be organized in the following manner:

a. Fire Boss (in order of rank)

1. Resource Manager
2. Park Ranger, GS-7
3. Park Ranger, GS-5
4. Maintenance Mechanic Foreman, WS-7

b. Dispatcher

1. Clerk
2. Maintenance Mechanic Foreman, WS-7
3. Maintenance Mechanic, WG-9

c. Maintenance and Storage of Equipment

1. Maintenance Mechanic, WG-9
2. Maintenance Mechanic, WG-7

d. Fire Fighters

All permanent employees except the dispatcher.

#### 4.5 FIRE ACCESS

Most of the Corps owned land at the Carr Fork Project is readily accessible. State highways interlace with county roads throughout the project. In addition, gas well and coal mine access roads lead to the more remote areas of the lake. A map of these roads follows in the Attachments. (Attachment 4)

#### 4.6 FIRE CREW TRAINING

It is the responsibility of the UKRA Manager to see that all Carr Fork personnel are properly trained in fire fighting.



10/4/78

## 4.7 FIRE TELEPHONE #

### CORP OF ENGINEERS

Carr Fork Office	606 / 642-3951
Area Office, Jackson	606 / 666-7830, 7831*

### DEPARTMENT OF NATURAL RESOURCES

Division of Forestry HQ, Hazard	439-1385, 1386*
District Forester - David Peercy	No # at this time
Fire Control Assistant - James Turner	666-7548*
Unit Ranger - Homer Hall	447-2732
County Ranger - Austin Sloan	368-2785
County Guard - Johnny Sloan	785-5323*
Law Enforcement Officer - Chavis Davis	668-6364*
Whitesburg Ranger Station	CLOSED

### VOLUNTEER FIRE DEPARTMENTS

VICCO	476-2775
CARR FORK	2912
Hindman	642-3100
	785-3133*

### COUNTY POLICE DEPARTMENT

Sheriff (Knott)	785-5354
-----------------	----------

### KENTUCKY STATE POLICE

Hazard office	439-2343, 2344
---------------	----------------

### FIRE DEPARTMENTS

Hazard	436-2345
Whitesburg	633-2126

#### 4.7 FIRE TELEPHONE NUMBERS

##### Corps of Engineers

Carr Fork Office	606/642-3951
Area Office, Jackson	606/666-7830

##### Department of Natural Resources

Division of Forestry	436-4443, 439-1385
Headquarters, Hazard	
District Forester (home)	436-4237
Fire Control Assistant (home)	436-4681
Unit Ranger (home)	447-2732
County Ranger (home)	368-2785
County Guard (home)	358-3701
Law Enforcement Officer (home)	668-6695
Whitesburg Ranger Station	855-4305

##### Volunteer Fire Departments

Vicco	476-2551
Hindman	785-3889
<i>CARR CREEK</i>	<i>642-3100</i>

##### County Police Department

Sheriff (Knott)	785-5354
-----------------	----------

##### Kentucky State Police

Hazard Office	439-2343
---------------	----------

#### V - SUPPRESSION

##### 5.1 SEASONAL PROCLIVITY

There are two designated fire occurrence seasons: October 1 through December 15 in the Fall and March 1 through May 15 in the Spring. Aerial observation and Ranger patrols will increase during these times.

##### 5.2 RESPONSE, CONTROL AND MOP-UP

Size permitting, all fires are to be extinguished by the observer. Otherwise, radio contact with the dispatcher will inform Corps personnel as to the location and size of the fire. A Corps fire crew will be dispatched immediately. If assistance from State or local departments is necessary they will be contacted by the dispatcher. When a Corps fire crew is dispatched to a fire they will adhere to the following procedure:



1. Upon arrival, the Fire Boss (as designated in Section 4.4) will survey the fire and decide how it is to be brought under control. If more men and equipment are needed he will report such need to the dispatcher.

2. The method of attack is limited in Eastern Kentucky due to steep slopes and rugged terrain. Usually the crew is sent to the head of fire and a fire line is constructed with fire rakes. Starting a back fire to consume unburned fuel is also effective. One or two men are sent to the leeward side of the fire to clear burned debris and topple smoldering trees. The remainder of the crew and the Fire Boss will attack the head of the fire on the windward side. Even though fires may differ in cause and nature, the Division of Forestry makes two general classifications for simplicity. These are Home fires and Hunter fires. The former, usually started by residents, burns from the hollow to the top of the ridge and is the faster type of fire. The latter, usually started by hunters, burns from the ridge down. The Fire Boss will determine the type of fire and deploy his men accordingly.

3. Natural barriers such as roads, trails, creeks and the lake will be used as advantageously as possible. Strip mine benches can afford limited advantage in retarding the fire. If the bench has been reclaimed with grasses it would burn quickly and spread the fire. Depending on the degree of growth on the bench it could impede access to the fire. The rock highwall, on the other hand, could serve as a barrier. The Fire Boss will consider all of these factors when determining the method of attack.

4. The wind and temperature affect the fire fighting methods. When the Fire Boss deems the windward side of the fire too hot, the crew will cease operations and return after sunset to fight the blaze.

5. Whenever possible, water will be used to extinguish flames and dampen unburned fuel.

6. All fire lines are to be patrolled with the exception of natural barriers.

7. The most effective mop-up is executed at night when fire and glowing embers are clearly visible.

8. When a State Fire Crew Leader is present, the Corps Fire Boss will relinquish direction of the attack to him. Only one man will direct the fire fighting activities.

9. The Corps fire crew will not leave the fire until the mop-up is completed and the fire deemed extinguished.



### 5.3 FIRE FIGHTING SAFETY

The Corps Fire Boss is responsible, first and foremost, for the welfare and safety of his crew. He will exercise the following precautions:

a. While responding to a fire, undue haste is to be avoided. All laws and safety precepts are to be obeyed.

b. While approaching the fire through the woods, the crew will adhere to a disciplined mode of movement. They will walk in single file at regular intervals.

c. All tools will be carried so as not to present any danger to any member of the crew. Sharp edged tools will be covered when possible.

d. No member of the crew will be exposed to flame or smoke so as to endanger his life. The Corps Fire Boss will observe the men for signs of exhaustion.

e. The crew will be provided with water continuously and food when possible.

f. No member of the crew will be without the following: long sleeved shirt, gloves, hard-hat and safety boots. Lanterns and jackets are necessary for nocturnal activity. A first aid kit will be accessible to all members of the crew.

g. The Corps Fire Boss will see that no man is left without an escape route.

h. All members of the crew will be relieved periodically for rest. All members will be rotated to different areas so as to divide the more difficult tasks evenly. No man will work a shift longer than eight (8) hours.

### 5.4 FIRE REPORT

The Corps Fire Boss will complete a Reservoir Fire Report, DA Form 2496, and submit it to the Chief, Operations Division (ORLOP-R).

## VI - REVISION AND RECOMMENDATIONS

### 6.1 REVISION

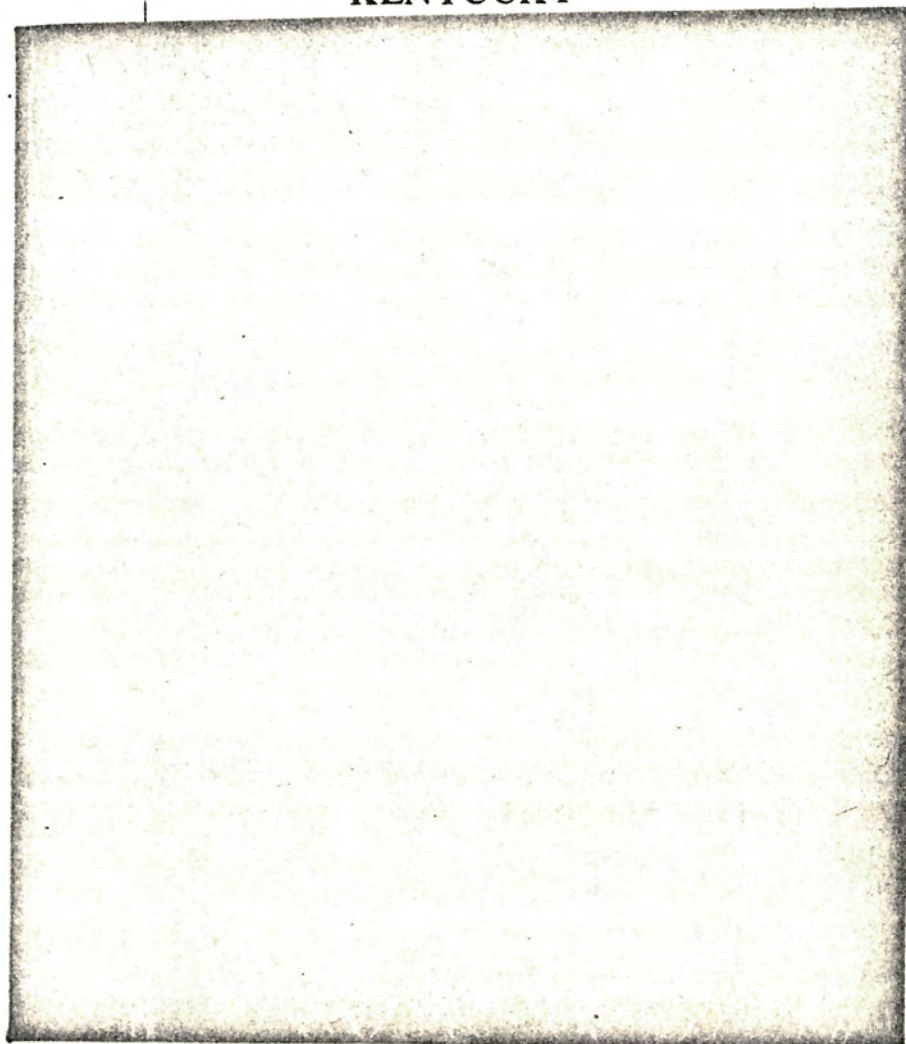
The Project Fire Protection Plan will be updated annually by the Resource Manager. Special attention will be given to the preventive policy, prevention problems, revisions in Corps, State or local organization and phone numbers. Equipment will be kept in good condition.



## 6.2 RECOMMENDATIONS

- a. Fire fighting training should be conducted at the District level.
- b. Each project in an area should be provided with a standard list of fire fighting equipment. This list would not be a standard for the entire District as each area needs different and specific equipment depending on the topography of the land.
- c. A Memorandum of Understanding should be prepared between the Kentucky Division of Forestry and the Ohio River Division providing fire protection on Corps owned land. Any Memorandum written at the District level would result in piecemeal interaction as there are three Districts within the State of Kentucky.

FOREST PROTECTION LAWS  
OF  
KENTUCKY





**RULES AND REGULATIONS  
GOVERNING PUBLIC USE OF**

**CORPS OF ENGINEERS LAKES**

**TITLE 36 - PARKS AND FORESTS**

**Chapter III - Corps of Engineers,  
Department of the Army**

**Part 327 - Public Use of Water  
Resource Development Projects**

Part 327, Chapter III, of Title 36 of the Code of Federal Regulations is revised to read as follows:

**327.10 Fires.**

(a) Gasoline and other fuels, except that which is contained in storage tanks of vehicles, vessels, camping equipment, or hand portable containers shall not be stored within the water resource development project areas without written permission of the District Engineer.

(b) Fires shall be confined to fireplaces, grills, or other facilities designed for this purpose and shall in addition be confined to those areas designated by the District Engineer.

(c) The gathering of wood for use as fuel at campsites or picnic areas is prohibited except for the gathering of dead material on the ground.

**327.13 Explosives, Fire Arms, other Weapons and Fireworks.**

(a) The possession of loaded firearms, ammunition, projectile firing devices, bows and arrows, cross bows, and explosives of any kind is prohibited unless: (1) in the possession of a law enforcement officer or Government employee on official duty; (2) used for hunting or fishing during the hunting or fishing season as permitted under section 327.8 of this regulation, or (3) unless written permission has been received from the District Engineer.

(b) The possession or use of fireworks is prohibited unless written permission has been received from the District Engineer.

KENTUCKY PENAL CODE

CHAPTER 513

ARSON AND RELATED OFFENSES

513.010 - Definitions.

The following definition applies in this chapter unless the context otherwise requires:

- (1) "Building", in addition to its ordinary meaning, means any structure, vehicle, watercraft or aircraft:
  - (a) Where any person lives; or
  - (b) Where people assemble for purposes of business, government, education, religion, entertainment or public transportation; or
  - (c) Which is used for overnight accommodation of persons.
- (2) Where a building consists of two or more units separately secured or occupied, each unit shall not be deemed a separate building. (Enact. Acts 1974, Ch. 406, Sec. 113)

513.020 - Arson in the first degree.

(1) A person is guilty of arson in the first degree when he intentionally damages a building by starting a fire or causing an explosion, and when he knows or has reason to believe that another person, not an accomplice, is present in the building at the time.

(2) Arson in the first degree is a Class B felony. (Enact. Acts 1974, Ch. 406, Sec. 114)

513.030 - Arson in the second degree.

(1) A person is guilty of arson in the second degree when he intentionally damages a building by starting a fire or causing an explosion.

(2) In any prosecution under this section, it is a defense that:

(a) No person other than the defendant had a possessory or proprietary interest in the building, or, if other persons had such an interest, all of them consented to the defendant's conduct; and

(b) The defendant's sole intent was to destroy or damage the building for a lawful purpose.

(3) Arson in the second degree is a Class C felony. (Enact. Acts 1974, Ch. 406, Sec. 115)

513.040 - Arson in the third degree.

(1) A person is guilty of arson in the third degree when he wantonly damages a building by intentionally starting a fire or causing an explosion.



(2) In any prosecution under this section, it is a defense that no person other than the defendant had a possessory or proprietary interest in the building, or, if other persons had such an interest, all of them consented to defendant's conduct.

(3) Arson in the third degree is a Class D felony. (Enact. Acts 1974, Ch. 406, Sec. 116)

DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS  
LOUISVILLE DISTRICT

PERMIT

LOCATION:

TRACT NO.: \_\_\_\_\_ LOT NO.: \_\_\_\_\_

PERMIT NO.:

ISSUE DATE:

EXPIRATION DATE:

ISSUED TO:

ADDRESS:

CITY & STATE:

Permission is granted to \_\_\_\_\_

subject to the following conditions:

1. This permit is not transferable, is revocable at will, in no way grants exclusive use and is not in any way to prevent, interfere or deny the public use and enjoyment of the area.

2. That the contemplated work shall be subject to prescribed regulations and shall be without cost, expense or obligation on the part of the United States.

3. That the initiation, scope and performance of the work be coordinated with and inspected for compliance by the Reservoir Manager, and that any interference with or damage to property under Department of Army control caused by the work shall be promptly corrected.

4. That the United States reserves the perpetual right to flood the permitted area as may be necessary for maintenance and operation of the project.

5. That the permittee shall not construct, erect or maintain structures other than any specifically permitted herein, nor conduct any commercial business on the premises or in the water adjacent thereto. Any structures herein permitted will, upon revocation or termination of this permit be removed by the permittee at the discretion of, and the site restored in a manner satisfactory to the Reservoir Manager.

6. This permit does not grant any rights, either in property or real estate.

7. The permittee shall save the Government harmless from any and all claims resulting from the rights herein granted.

CONCURRENCE OF LICENSEE, IF ANY:

FOR THE DISTRICT ENGINEER  
U.S. ARMY ENGINEER DISTRICT  
LOUISVILLE

\_\_\_\_\_  
(Authorized Representative)

\_\_\_\_\_  
(Authorized Representative)

REMARKS:



## EQUIPMENT LIST

### CORPS EQUIPMENT

#### PRESENT SUPPLIES

6 shovels  
2 spades  
4 axes

#### ON ORDER

6 fire rakes  
4 back pack pumps  
6 brush axes

#### SUGGESTED

6 swatters  
10 helmets  
10 head lanterns

### Vicco Volunteer Fire Department

Hagan Davidson - Chief

1 pump 385 gal/min under 85 lb. pressure  
1000 ft. of hose 1-1/2 in.  
50 ft. of 4 in. hose for pump  
1974 Ford truck

### Hindman Volunteer Fire Department

Winford Napier - Chief

1 truck 500 gal/min pumper  
w/portable pumps 300 gal/min  
1 truck with Beam equipment  
750 gal/min w/portable pump 350 gal/min  
750 gal. booster  
Each unit has 2000 ft. of 2-1/2 in. hose  
300 ft. of 1-1/2 in. hose

DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS  
LOUISVILLE DISTRICT

PERMIT

LOCATION:

TRACT NO.: \_\_\_\_\_ LOT NO.: \_\_\_\_\_

PERMIT NO.:

ISSUE DATE:

EXPIRATION DATE:

ISSUED TO:

ADDRESS:

CITY & STATE:

Permission is granted to \_\_\_\_\_

subject to the following conditions:

1. This permit is not transferable, is revocable at will, in no way grants exclusive use and is not in any way to prevent, interfere or deny the public use and enjoyment of the area.
2. That the contemplated work shall be subject to prescribed regulations and shall be without cost, expense or obligation on the part of the United States.
3. That the initiation, scope and performance of the work be coordinated with and inspected for compliance by the Reservoir Manager, and that any interference with or damage to property under Department of Army control caused by the work shall be promptly corrected.
4. That the United States reserves the perpetual right to flood the permitted area as may be necessary for maintenance and operation of the project.
5. That the permittee shall not construct, erect or maintain structures other than any specifically permitted herein, nor conduct any commercial business on the premises or in the water adjacent thereto. Any structures herein permitted will, upon revocation or termination of this permit be removed by the permittee at the discretion of, and the site restored in a manner satisfactory to the Reservoir Manager.
6. This permit does not grant any rights, either in property or real estate.
7. The permittee shall save the Government harmless from any and all claims resulting from the rights herein granted.

CONCURRENCE OF LICENSEE, IF ANY:

FOR THE DISTRICT ENGINEER  
U.S. ARMY ENGINEER DISTRICT  
LOUISVILLE

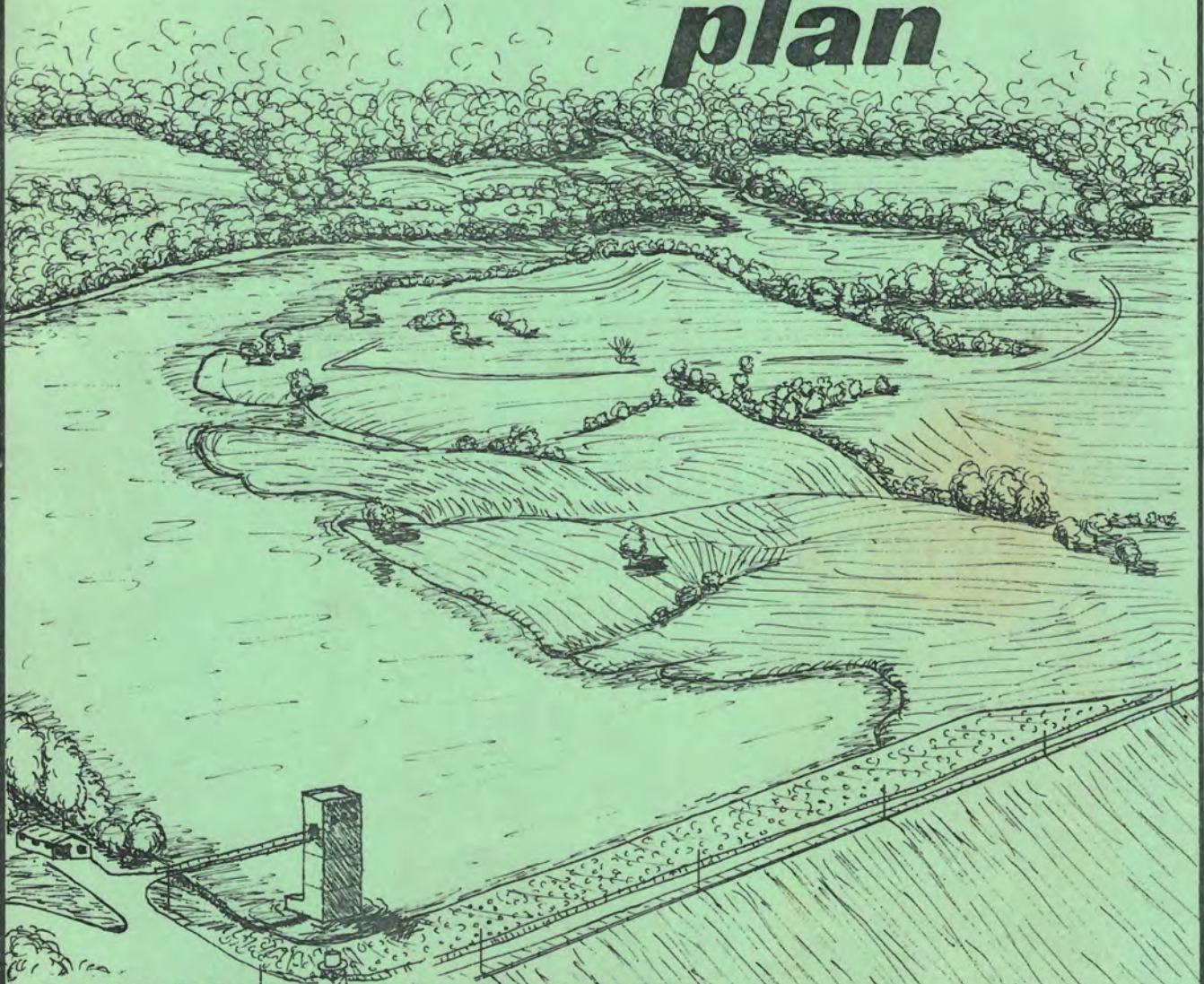
\_\_\_\_\_  
(Authorized Representative)

\_\_\_\_\_  
(Authorized Representative)

REMARKS:



# ***project safety plan***



**CARR FORK LAKE, KENTUCKY**

**Appendix E**

**to**

**Design Memorandum No. 6A**

**MASTER PLAN**



**U. S. ARMY  
CORPS OF ENGINEERS,  
LOUISVILLE DISTRICT**



ORDCO-R (30 Oct 78) 1st Ind

GEE/mfh/FTS 684-3804

SUBJECT: Appendix E, Project Safety Plan for Carr Fork Lake

DA, Ohio River Division, Corps of Engineers, P.O. Box 1159, Cincinnati,  
OH 45201 30 November 1978

TO: District Engineer, Louisville, ATTN: ORLOP-R

1. The Carr Fork Lake Safety Plan is approved as submitted.
2. Upon updating the Safety Plan, the following items should be incorporated into the update:

a. Attachment F should be updated as follows: Reference "a." is no longer applicable as it was written as additional guidance to the 1971 edition of the National Electric Code.

b. Reference "b.", ORDR 385-1-16, has been rescinded per ORDC 310-1-66, dated 21 February 1978.

c. Reference "d." is the 1975 edition of NEC. A new 1978 edition is now in effect. It is suggested that the NEC should be referenced, thus "the latest edition of" and avoid referencing particular sections as they may change from edition to edition.

FOR THE DIVISION ENGINEER:

P. H. CARIGAN  
Chief, Construction-Operations Division



HINDMAN

Rt. 160

Rt. 582

Rt. 1410

Flood Pool

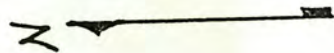
Rt. 1231

Minimum  
Pool

HAZARD  
VICCO  
JACKSON

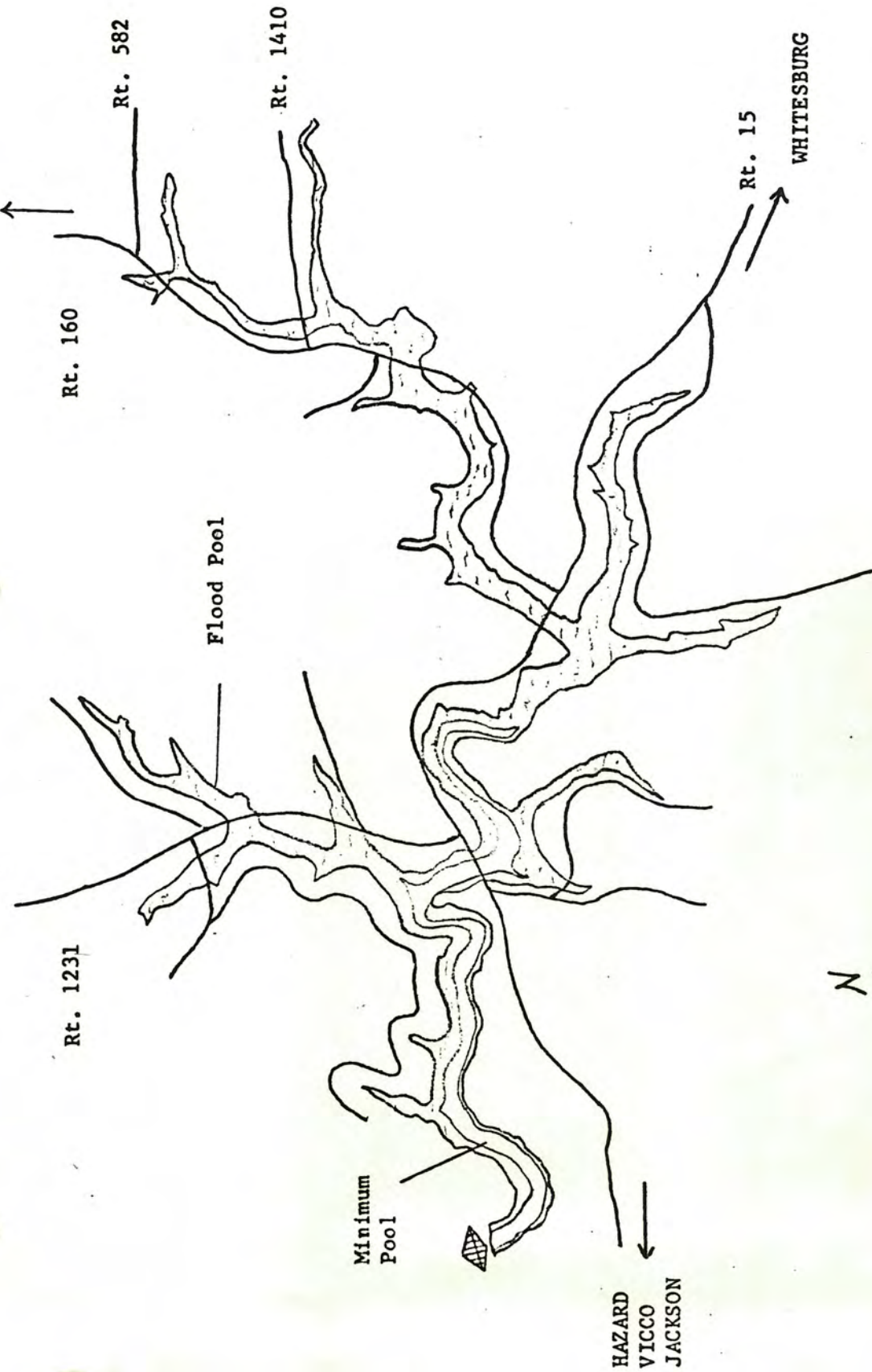
Rt. 15

WHITESBURG



CARR FORK LAKE  
Fire Access Roads

Access Roads



# DISPOSITION FORM

For use of this form, see AR 340-15; the proponent agency is The Adjutant General's Office.

REFERENCE OR OFFICE SYMBOL

SUBJECT

ORLOP-R

Reservoir Fire Report,

TO Chief, Operations Division  
ATTN: ORLOP-R

FROM

DATE

CMT 1

The following information is furnished in connection with fire number \_\_\_\_\_ which occurred on \_\_\_\_\_.

1. Segment \_\_\_\_\_ Tract \_\_\_\_\_

2. Total acres burned \_\_\_\_\_

3. Fire fought by (Agency ) \_\_\_\_\_  
\_\_\_\_\_

4. Reported by \_\_\_\_\_

5. Discovered by \_\_\_\_\_

6. Arrival time \_\_\_\_\_

7. Fire out time \_\_\_\_\_

8. Cause of fire (Check applicable box)

// Debris burning  
// Lightening  
// Machine use  
// Other \_\_\_\_\_

// Campfire  
// Smoking  
// Unknown

9. Type of area (in acres)

a. Forest lands \_\_\_\_\_  
c. Game Refuge \_\_\_\_\_  
e. Waste land \_\_\_\_\_

b. Fields \_\_\_\_\_  
d. Recreation \_\_\_\_\_

10. Damage Estimates: \$ \_\_\_\_\_

11. Fire Suppression Costs: (total) \$ \_\_\_\_\_

12. Labor, tools & equipment: \$ \_\_\_\_\_

13. Vehicle Mileage: \$ \_\_\_\_\_

REMARKS: (Additional sheet may be used)

Signed \_\_\_\_\_

DA FORM 2496  
1 FEB 62

REPLACES DD FORM 24, EXISTING SUPPLIES OF WHICH WILL BE  
ISSUED AND USED UNTIL 1 FEB 63 UNLESS SOONER EXHAUSTED.

☆ GPO 1970 O - 399-410

Attachment 5



ORLOP-R, CFR

PROJECT SAFETY PLAN - CARR FORK LAKE

Chief  
Rec/Res Mgmt Br

Resource Manager  
Carr Fork Lake

17 OCT 1978

BRYSON/vle  
606/642-3951

THRU: Area Resource Manager  
Upper Kentucky River Area

1. Attachments to Appendix "E", Project Safety Plan for Carr Fork Lake, are resubmitted as requested for your review and approval.
2. District SOP for Dam Failure Evacuation, Attachment "X", will be added when it becomes available.

1 Incl  
as

CALVERT

CARR FORK LAKE, KENTUCKY  
PROJECT SAFETY PLAN  
APPENDIX E TO THE MASTER PLAN

U. S. Army  
Engineer District, Louisville  
Corps of Engineers

1978



Carr Fork Lake, Kentucky  
Project Safety Plan  
Appendix E to the Master Plan

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Carr Fork Lake, Kentucky  
Project Safety Plan  
Appendix E to the Master Plan

ATTACHMENTS

A	LEDR 385-1-34	District Safety Program, Policies and Procedures
B	ORLR 385-1-37	Reporting Unsafe or Unhealthful Working Conditions
C-1		Fire Extinguisher Locations (Shop, Office, Dwellings)
C-2		Fire Extinguisher Locations (Dam and Tailwater Area)
D	LEDR 385-1-35	Stretchers
E	DR 385-1-14	Fire Protection
F	ORLM 385-1-3	Electrical Grounding
G	DR 385-1-24	Tornadoes and High Wind Protection
H	ORDC 1130-2-1	Sewage Treatment Monitoring in Public Use Areas
I	LEDR 385-2-3	Education, Instruction and Training in Safety
J	ORLM 385-2-1	Testing, Licensing of Equipment Operators
K	DR 385-2-1	Protective Clothing and Equipment
L-1	DR 385-1-17	Safety Hat Policy
L-2	ORLR 385-1-26	Prescription Ground Safety Spectacles
L-3	LEDR 385-1-36	Foot Protection
M	ORLR 385-1-22	Accident Notification, Investigation and Reporting
N	CA-1	Federal Employees Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation Forms
O	DR 385-1-29	Accident Prevention Signs
P-1		Kentucky Public Swimming Pool Regulations
P-2		Check List of Potential Sources of Pollution for Natural Bathing Areas
P-3		Natural Bathing Beaches
P-4		Calculations
P-5		Bathing Beach Sanitation
Q	DR 385-1-28	Safety Color Code for Marking Physical Hazards
R		Emergency Telephone Numbers and Directions to Assistance
S	ENG 4337	Incident Report
T	ORLC 385-1-19	Safety Films, Cassettes and Slide Sets
U	ORLSB Letter	Safety Success in 1976
V		Safety Indoctrination to New Employees
W-1		Job Hazard Analysis (Maintenance Mechanic, Maintenance Worker, Laborer)
W-2		Job Hazard Analysis (Engineer Equipment Operator)
W-3		Job Hazard Analysis (Electrician)
W-4		Job Hazard Analysis (Ranger)
X		District SOP for Dam Failure Evacuation
Y	ORLOP-R D/F	Dam Safety, Louisville District



Carr Fork Lake, Kentucky  
Project Safety Plan  
Appendix E to the Master Plan

I - INTRODUCTION

1.1 AUTHORIZATION

This appendix is authorized and outlined by ER 1130-2-400 dated 28 May 1971.

1.2 PURPOSE

The purpose of this plan is to assist in creating a safe environment for all project personnel and visitors at the Carr Fork Lake Project.

1.3 GENERAL SAFETY PROGRAM

All safety procedures and precautions will be conducted in accordance with the Corps of Engineers General Safety Requirements contained in EM 385-1-1 and applicable U. S. Army and Corps of Engineers regulations such as LEDR 385-1-34 (District Safety Program, Policies and Procedures), Attachment "A".

II - SAFETY-PERSONNEL AND FACILITIES

2.1 SAFETY OFFICER

The Park Ranger is designated as the Project Safety Officer in accordance with ER 1130-2-400. The Project Safety Officer will develop plans and programs designed to implement and enforce pertinent provisions of EM 385-1-1 and other applicable safety regulations such as ORLR 385-1-37 (Reporting Unsafe or Unhealthful Working Conditions), Attachment "B". Planning will encompass two general areas, i.e., (1) Contractor and Corps employees operations and (2) Programs designed to provide a hazard free environment for the visiting public.

2.2 ADMINISTRATIVE FACILITIES

At Carr Fork Lake, the Corps of Engineers has one maintenance shop and project office combined, the dam control structure and two employee residences. See Attachments "C-1 and C-2". Every effort will be made to keep all of these areas, structures and facilities in a safe, neat and sanitary condition. The facilities are equipped with first aid kits, fire extinguishers and other protective items. A safety patrol boat has been obtained and it is anticipated that a docking facility will be constructed near the dam. This docking facility as well as the safety patrol boat will be equipped with the necessary safety items.



During daily operations personnel will be alert for any hazardous conditions and take appropriate corrective action. The following questions will be used as a general guideline for daily operations:

1. Are all areas orderly and clean?
2. Are doors and drawers closed?
3. Are walkways, steps and work areas free of tripping hazards?
4. Are electrical fixtures and wiring in good repair and rooms and entrances properly lighted?
5. Are heating, plumbing, waste treatment and chlorination systems in good operating condition?
6. Are fire fighting extinguishers properly maintained and located at strategic and easily accessible places?
7. Are adequate first aid kits properly located and maintained?
8. Are ladders, hoists and carts well maintained?
9. Are tools, equipment and vehicles serviced and maintained in safe working condition?
10. Is safety clothing and equipment worn or used when necessary?
11. Are safety signs located at hazardous areas and safety guardrails installed and used where necessary?
12. Are "Slow Moving Vehicle" signs used on tractors and flashers working on vehicles?
13. Are bulletin boards current?
14. Are rollover protection and reverse alarms operating properly?

In addition to the questions above personnel will also follow the instructions for various safety items contained in LEDR 385-1-35 (Stretchers), Attachment "D"; DR 385-1-14 (Fire Protection), Attachment "E"; ORLM 385-1-3 (Electrical Grounding), Attachment "F"; and DR 385-1-24 (Tornadoes and High Wind Protection), Attachment "G", as well as others.

## 2.3 STRUCTURES

All initial structures were designed and constructed by the Corps of Engineers. Safety and sanitary considerations were incorporated into these structures. Periodic inspections will be made to determine additional safety items or precautions required and they will be provided as needs are determined.

## 2.4 SANITATION

Potable water for the facilities at Carr Fork Lake is derived from two sources. A drilled well adjoining the shop and office is the source of water for the dam and tailwater areas. This water is purified through chlorinators located in the same building as the water supply tank. The second source of water is from the lake itself, with water purification accomplished by water treatment plants adjoining facilities at the Irishman Creek and Litt Carr Recreation Areas.

Sewage disposal is accomplished by sewage treatment plants designed and constructed by the Corps of Engineers. These plants will be operated in accordance with ORDC 1130-2-1 (Sewage Treatment Monitoring in Public Use Areas).



Attachment "H". Water treatment and sewage disposal plants will be checked regularly to insure that fences and locks are properly secured and in good repair. Drinking water supplies for all areas will be sampled once a month on a random sample basis and sent to the Kentucky State Laboratories, Kentucky State Department of Health.

Solid waste from all Corps of Engineer's facilities is to be collected as the need arises (daily during peak season). This solid waste will be removed from the project area by contract haulers.

Insect control, poisonous plant control and use of pesticides and herbicides will be used only at the direction and approval of the Louisville District Office and applied under the supervision of a licensed operator. An annual pest control report is submitted in the fall of each year to the Louisville District Office. It identifies target pest areas to be treated, treatment material to be used and method of application.

## 2.5 EDUCATION AND TRAINING

All employees will receive continuing instruction and training in safety (LEDR 385-2-3), Attachment "I". A sufficient number of personnel will be certified to give first aid as required by paragraph 04. E. 04, EM 385-1-1. All operators of watercraft will be trained and maintain a valid license as required by ORLM 385-2-1, Attachment "J". All equipment and vehicles will be used by licensed operators and will be operated in accordance with EM 385-1-1 and other applicable regulations. All new personnel will be thoroughly oriented in safety regulations and procedures and will receive safety indoctrination in accordance with ORLSB letter dated 08 January 1976, Attachment "U".

## 2.6 SAFETY MEETINGS

A monthly safety meeting will be held with all employees present when possible. State and county agencies, local groups and interested individuals will be welcome to participate when appropriate. Selections of safety films, cassettes and slide sets contained in ORLC 385-1-16, Attachment "T", will be shown at these monthly safety meetings. Weekly safety meetings will be held by the Project Safety Officer to discuss and plan maintenance operations to minimize hazards.

## 2.7 SAFETY SURVEYS AND INSPECTIONS

The Project Safety Officer will make continuous surveys of all project activities (operations, maintenance, contractor and public areas) to insure compliance with EM 385-1-1 and other safety regulations. Any existing hazard is to be identified, recorded and corrected. The project Park Rangers will make periodic patrols by patrol boat or motor vehicle to insure a safe environment for the visiting public.

## 2.8 JOB HAZARD ANALYSIS

The Project Safety Officer will conduct a "Job Hazard Analysis" survey prior to the beginning of any new work or upon changes in existing work.



This survey will be conducted in accordance with Appendix A of DR 385-2-1, Attachment "K". The analysis will be added as an inclosure to the Project Safety Plan and reviewed annually. See Attachments "V-1, 2, 3, 4".

## 2.9 PROTECTIVE CLOTHING, EQUIPMENT AND FOOTWEAR

The Project Safety Officer will be responsible for providing necessary protective clothing, equipment or physical safeguards as indicated by applicable regulations such as DR 385-1-17 (Safety Hat Policy), Attachment "L-1"; ORLR 385-1-26 (Prescription Ground Safety Spectacles), Attachment "L-2"; LEDR 385-1-36 (Foot Protection), Attachment "L-3"; and DR 385-2-1 (Protective Clothing and Equipment), Attachment "K".

## 2.10 ACCIDENT REPORTING

The Project Resource Manager will be immediately notified of all accidents that occur on Carr Fork Lake project lands or that involve Corps of Engineers operations or activities. All accidents that occur are to be reported in accordance with ORLR 385-1-22, Attachment "M". The Project Safety Officer will keep a log of all Government and contractor first aid cases. Special emphasis will be placed on recommending and taking corrective action to prevent accidents. In cases of injury to a Corps employee, Form CA-1 (Federal Employees Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation) will be completed and submitted to the Project Resource Manager within eight (8) hours following the accident, (see Attachment "N"). All Government or Contractor lost time injuries and all public injuries on project lands will be reported immediately to the Louisville District Office by telephone or radio.

# III - PUBLIC SAFETY

## 3.1 PUBLIC ACCESS

Visitor access to Carr Fork Lake is entirely through state, county and Corps of Engineers constructed roads. The highway departments of the State of Kentucky and Knott County will maintain roads leading into and through the project lands. The Corps of Engineers presently maintains all access drives, parking areas and boat ramps for public use facilities. In addition to these areas a low water vehicular bridge, providing campground access at the Litt Carr Site, is to be maintained by the Corps of Engineers. Appropriate warning signs will be placed about the bridge area and Rangers will notify campers of possible weather conditions which might cause the area to become inundated. The bridge will also be inspected regularly for structural failure or other hazardous conditions and closed during the winter months.

Traffic and visitor control signs that are the responsibility of the Corps of Engineers will be kept in repair and comply with the Division Handbook ORDP 1130-2-4 (October 1974). Instruction is also available from DR 385-1-29 (Accident Prevention Signs), Attachment "O".



The nature trail above the Damsite boat ramp will be periodically inspected and hazards reported to the Project Safety Officer for immediate repair or appropriate posting. Steps which have been provided on the trail in areas of steep slope will be inspected often and repaired or replaced before they become unsafe.

Security fences have been installed around the spillway parking lot to protect visitors from getting close enough to the highwall to be endangered by falling rocks, and at the top of a highwall at Irishman Creek Recreation Site to prevent slipping or falling off of the highwall. Each of these fences will be inspected at frequent intervals and repairs made as necessary.

### 3.2 PUBLIC USE FACILITIES

The Corps of Engineers maintains all public facilities at Carr Fork Lake with the exception of the Irishman Creek Marina which is leased to a private concessionaire. The Corps-operated facilities include one fishing site, a hiking trail, two camping areas, four picnic areas, three boat launching ramps, two overlook areas and a public beach. These facilities are to be inspected daily for safety hazards and sanitation according to applicable Louisville District policy and regulations. Conditions for which to be observant include presence of dead trees and limbs, poisonous plants, fallen rock or mud slides, clean sanitary facilities, properly tested potable water, proper wastewater treatment, tripping hazards, fire hazards and watercraft safety hazards.

In the operation and maintenance of the swimming beach the following items will apply:

1. Sanitation standards for the bathhouses, dressing rooms, toilet facilities and precautions against the spread of disease shall be in accordance with Kentucky Public Swimming Pool Regulations (401 KAR 6:030), Attachment "P-1".
2. Before opening the beach each season and once a month afterwards a sanitary survey will be conducted using the outline provided by the Kentucky Department for Natural Resources and Environmental Protection entitled "A Check List of Potential Sources of Pollution to Natural Bathing Areas", Attachment "P-2".
3. Samples of bathing beach water will be taken once a week, on Mondays, and sent to the Kentucky State Laboratories, Kentucky State Department of Health for testing.
4. In order to insure that analyses of samples of bathing waters are intelligently interpreted and are of value, full consideration will be given to conditions when samples are collected and conditions which may have existed at other times. Conditions that would affect the interpretation of bathing water samples are contained in the Kentucky Department for Natural Resources and Environmental Protection handout entitled "Natural Bathing Beaches", Attachment "P-3".



5. The need for chlorination of the swimming area will be determined from the interpretation of sampling data obtained from the bathing water. However, when reports show bacterial concentration of more than 1,000 coliforms per 100 ml. the beach will be closed and bathing water heavily chlorinated until bacteriological examinations show a reduction of the coliform count.

6. Chlorination of the bathing water at the beach will be accomplished by using a solution of calcium hypochlorite (or H. T. H., High Test Hypochlorite). The procedure for application and calculations to be used in determining the amount of H. T. H. to be used are contained in Kentucky Department for Natural Resources and Environmental Protection handouts entitled "Natural Bathing Beaches", Attachment "P-3" and "Calculations", Attachment "P-4".

7. Because the sand beach can become a dangerous source of athlete's foot and other infections the beach sand will be chlorinated at frequent intervals using H. T. H.. The procedure to be used in disinfecting artificial and natural sand is contained in Kentucky Department for Natural Resources and Environmental Protection handout entitled "Bathing Beach Sanitation", Attachment "P-5". If treatment should require the application of dry H. T. H. powder to the sand, boots will be worn while carrying out the disinfecting operation.

8. Bathhouse sanitation will be in accordance with "Bathing Beach Sanitation", Attachment "P-5".

9. Signs will be posted stating "Warning, No Lifeguard on Duty, Swim at Own Risk".

10. One resuscitator unit (one adult resuscitator and one children's resuscitator) will be kept in the beach bathhouse and one unit kept in the patrol boat during recreation season. At other times one unit will be kept in the administration office and one unit kept in the vehicle of a Ranger who is in radio contact at all times.

11. The swimming area will be adequately buoyed and posted. A shallow or children's area will be divided from the adult area.

12. All obstructions beneath the surface of the water will be removed from the swimming area.

13. "No Boat" buoys will be present and adequately maintained to restrict boats from the swimming area.

14. A sufficient number of life rings with sixty (60) feet of line will be provided at the beach. In addition, one life ring with sixty (60) feet of line and one life preserver will be kept in the vehicle of each Ranger at all times.



ORD Comments  
Appendix E  
Project Safety Plan

It is noted that each of the plans are identical except for the last page. This constitutes a District safety program for all reservoir projects rather than a project safety plan for each project as directed by paragraph 5g, ER 1130-2-400. Paragraph 7 of Appendix A to the referenced ER directs that reference be made concerning specific safety requirements as presented in the accompanying outline. Many of these requirements will be identical for all projects, others will vary with the size, method of management and geography of the project.

Coordination with the State's Boating Law Administration Office should be indicated. Memorandum of Understanding concerning boating regulations, lake zoning, etc., may be included as attachments.

It is appropriate to describe the pre-arranged procedure for emergency evacuation of seriously injured accident victims to the nearest hospital or medical treatment facility. A standard operating procedure should also be developed for search and rescue operations and severe weather warnings.

Indicate emergency equipment rangers should carry in their vehicle.

Indicate safety programs carried out by project personnel to benefit the recreationist. Comments may relate to National Safe Boating Week or cooperation with U.S. Coast Guard Boat inspection programs.

It would be desirable to attach the list of emergency numbers provided on the recreation area bulletin boards. These numbers can then be readily checked for accuracy upon updating the appendix.

Indicate status of Water Safety Councils. Also show organizations represented on councils and degree of success of each council.

Indicate that all new employees will be given safety indoctrination and will be required to qualify as licensed operators before they will be assigned to operate vehicles and equipment.

Describe type of storage areas in which flammable liquids will be kept. Indicate what safeguards have been taken to reduce the possibility of fire.

*Prepare Emergency Evacuation Plans in case of Dam failure*

RECEIVED  
SEP 11 1981

CARR FORK LAKE

9



Launching ramps will be kept clear of all obstructions and driftwood. No swimming, wading or fishing will be permitted in the launch ramp areas. Project bulletin boards will have a statement warning of the danger of a vehicle slipping or rolling off of the ramp and into the lake.

Navigation aids will be installed at appropriate points. Bridge pilings will be marked with reflective material as specified in DR 385-1-28, Attachment "Q". "No Wake" buoys will be installed at launch ramps and marinas. "No Boat" buoys will be installed at the swimming beach area.

Danger zones, hazardous areas, swimming areas, launching and boating areas and No Ski zones will be marked with informational buoys and markers as required by Federal, State and local laws and in accordance with the Uniform Waterway Marking System.

Marina facilities at the project are under lease to a private concessionaire. Corps of Engineers personnel will make an annual inspection of this and any future additional concessionaire operations to insure compliance with the conditions of the lease and all Federal, State and local codes. The following items will be checked for proper safety requirements during marina inspections:

1. Fuel storage and dispensing facilities.
2. Electrical installation and appliances.
3. Sanitary facilities properly functioning and adequate supplies.
4. Food facilities safe and sanitary.
5. Adequate signs - traffic, no smoking at fuel pump, etc.
6. Potable water.
7. Access ways (guard rails, nonskid surface free of tripping hazards, etc.).
8. Safe rental boats.
9. Personal floatation devices for rental boats and throwable floatation devices available.
10. Fire extinguishers (adequate number, properly located and maintained).
11. Parking areas (bumpers, guards, identified spaces).
12. Dead trees and limbs removed.
13. Sufficient lighting.
14. Proper waste disposal.

Special emphasis will be placed on cooperation and coordination between Corps of Engineers project personnel and the Kentucky State Department of Transportation, Division of Water Enforcement. Corps of Engineers personnel will assist Division of Water Enforcement personnel in the administration and enforcement of State boating laws. Rangers and other personnel who deal frequently with the public will be familiar with all current State boating laws and regulations and be prepared to explain them to project visitors.

"No Hunting" areas will be designated at all recreational and public use facilities. Possession of loaded firearms, ammunition, projectile firing



devices, bows and arrows, cross bows and explosives of any kind will be prohibited in "No Hunting" areas. Carr Fork Lake personnel will cooperate with the Kentucky Department of Fish and Wildlife Resources in inspecting hunting areas, educating the public in hunting safety and promoting the use of firearms and other hunting devices in a safe manner.

### 3.3 PUBLIC INFORMATION

Informational signs to inform the visiting public of property rules, hazards and general information will be placed in appropriate and easily viewed locations. Physical hazards will be marked in accordance with DR 385-1-28, Attachment "Q".

During project tours, public speaking engagements and informal visitor contact, safety will be made an important part of the informational contact between visitor and Corps of Engineers personnel. Corps of Engineers personnel will promote, assist and cooperate with all Federal and State law enforcement officers and all clubs and organizations supporting recreational safety. Corps personnel will provide movies and be available to make personal presentations on water safety to the general public for educational purposes. Also, special emphasis will be made to assist and promote the development of local "Water Safety Councils".

Project bulletin boards will be constructed in the immediate future. These bulletin boards will provide a current list of "Emergency Telephone Numbers and Directions to Assistance", Attachment "R".

Fire protection is provided by local fire departments and by the Kentucky Department of Natural Resources, Division of Forestry in Hazard, Kentucky. The coverage areas for fire protection are listed in Appendix "C" of the project Fire Protection Plan.

### 3.4 FIRST AID

All vehicles, boats and major structures throughout the project will have a complete first aid kit. Ambulance service is available from local cities as outlined in "Emergency Telephone Numbers and Directions to Assistance", Attachment "R". A sufficient number of Corps of Engineers personnel will be certified to administer first aid and be readily available through radio contact.

### 3.5 SEARCH AND RESCUE OPERATIONS

Incidents of drowning or missing persons reported to Corps personnel will be immediately forwarded to the Project Resource Manager. The Project Resource Manager will, in turn, notify the State and County Police, Knott County Rescue Squad, the District Conservation Officer and the District Office. Corps of Engineers personnel will assist with equipment and manpower as needed. The Resource Manager will complete an "Incident Report", ENG 4337, Attachment "S", with a copy of the State, County or Conservation Officer's report attached. In fatal cases, a copy of the Certificate of Death will accompany the report. All public fatalities will be reported on ENG 3394 (Accident Report) in accordance with ORLR 385-1-22 dated 26 March 1975.



### 3.6 CROWD CONTROL

Observations of civil disturbances by Corps of Engineers personnel will be reported immediately to local law enforcement agencies and the Project Resource Manager. At special events, local law enforcement agencies will be notified to assist in traffic flow and direction. Civil disturbances will be documented by the Project Resource Manager who will provide a written report to the Louisville District Office.

### 3.7 LAW ENFORCEMENT

Title 36 of the Federal Code of Regulations will be enforced by Corps of Engineers Park Rangers. Corps of Engineers Park Rangers will assist State and local police in administration and enforcement of State and local laws on the project. State and county law enforcement officers frequently patrol the project area and will respond when needed.

## SECTION IV - MISCELLANEOUS

### 4.1 REVISION

This safety plan will be reviewed at least annually and necessary revisions made as needed. The plan will be kept updated by additions and deletions as warranted by new or changing conditions.

### 4.2 RECOMMENDATIONS

It is recommended that yellow caution lights be installed at the following locations:

1. At the intersection of old State Highway 15 and relocated State Highway 15 at the dam site.
2. At the intersection of Irishman Creek Recreation Area access road and State Highway 15.
3. At the intersection of Knott County Road K-5 and State Highway 15.
4. At the intersection of State Highway 1231 and State Highway 15.

These lights are recommended due to the facts that (1) Highway 15 is a high speed highway; (2) Fog is a severe problem due to the proximity of the lake; (3) The roads intersecting Highway 15 have limited visibility due to the deep road cuts; and (4) Several accidents have already been recorded by the State Police at these locations. Since the Corps of Engineers is not directly involved in corrective action in this case, the Project Resource Manager verbally notified the District Engineer for the Kentucky State Department of Transportation, Bureau of Highways, P. O. Box 2468, Pikeville, Kentucky 41501, of the above mentioned problem areas. The Bureau of Highways has informed him that an evaluation of the areas will be made.



It is also recommended that a turning lane be constructed at location (1) above. Vehicles north-bound on relocated State Highway 15 turning into old Highway 15, leading to the dam site, face a very real danger of being hit from the rear. The approach to old Highway 15 while on relocated Highway 15 is down a very steep hill. Heavily-laden coal trucks, as well as other vehicles, have trouble slowing down for a vehicle turning into old Highway 15. The matter is made worse by the fact that the turn into old Highway 15 is at the foot of the hill. Since, again, the Corps of Engineers is not directly involved in corrective action it is suggested that the Bureau of Highways be contacted regarding the aforementioned problem.

Another recommendation is that the guardrail be extended along the steep area above Carr Creek on the access road to the dam site. The Bureau of Highways has been contacted on this matter also and has stated that such an extension will be made.

#### 4.3 DAM SAFETY

Carr Fork Dam will be inspected weekly when pool levels are at or below normal seasonal pool levels, and inspected daily during periods of flood storage at elevations at greater than normal seasonal pool levels as per ORLOP-R DF dated 30 January 1978, Attachment "X". Should unusual conditions be noted during these inspections, reporting procedures as outlined in above DF will be followed.

District SOP for Dam Failure Evacuation will be added to the Safety Plan as Attachment "X" whenever it becomes available.



DEPARTMENT OF THE ARMY  
Louisville District, Corps of Engineers  
P. O. Box 59  
Louisville, Kentucky 40201

LEDR 385-1-34

ORLSB

25 May 1973

Regulation  
No. 385-1-34

**SAFETY**

**District Safety Program, Policies and Procedures**

1. Purpose. This regulation prescribes the policy for maintaining and administering a comprehensive safety program in the District.

2. Applicability. It is applicable to all installations and activities of the Louisville District.

3. References.

- a. AR 385 series
- b. ER 385 series
- c. LEDR 385 series
- d. EM 385-1-1

4. Policy.

a. Supervisors at each installation or activity will maintain an aggressive program to reduce and keep to a minimum manpower, monetary and resource losses and to provide for the safety of all persons while they are on premises under control of the Corps of Engineers.

b. The basic safety policy is to create and maintain safe operating conditions and working environment to contractor and Corps of Engineers employees.

5. Responsibilities.

a. Safety Office is responsible for the management of the Safety program, providing safety engineering technical services and evaluating safety activities. The safety program will be applied in such a manner as to provide for maximum use of accident prevention controls by engineering, operational, and administrative procedures within the regular framework of the organization, their function and duties, rather



than by establishing such controls as a separate entity. Integrating accident prevention measures into all activities and operational procedures is the basic concept of the Corps of Engineers' Safety Program.

b. Supervisors are responsible for correcting hazards and enforcing safety requirements. Hazards or problems extending beyond the authority of the supervisor will be brought to the attention of the District Office. The enforcement of safety requirements on every job is mandatory.

c. Plans, design and specifications prepared by the Corps of Engineers will provide for the safety of the ultimate user.

#### 6. General.

a. Basic requirements for the District Safety Program are published in EM 385-1-1 and the 385 series of District Regulations.

b. The safety program is directed towards prevention of accidents. Positive measures will be taken to control hazards which might cause accidents to:

(1) Government and contractor employees during their employment on premises under control of the Corps of Engineers.

(2) Members of the public at facilities controlled by the Corps of Engineers.

(3) Persons or property employed in operations which utilize plans or techniques, for which the Corps of Engineers is responsible.

(4) Equipment, structures, facilities for which the Corps of Engineers is responsible for initial design, construction, or use.

c. Emphasis will be directed towards the control of hazards in those functions within the purview of the Corps of Engineers which could result in

(1) Fire and/or explosion involving facilities and equipment.

(2) Adverse effects on health from noise, dust, toxic chemicals, radiation, or other environmental factors.

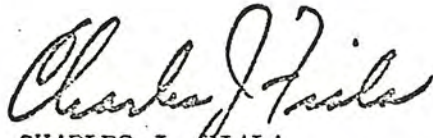
(3) Health hazards of water supplies, sewage, and mosquito or other insect breeding areas.

(4) Navigation hazards on waterways for which Corps of Engineers is responsible.

ATTACHMENT "A", Page 2 of 3



- (5) Injuries from operations over or adjacent to water.
- (6) Injuries and property damage from motor vehicle accidents.
- (7) Injuries and property damage from operation of mechanical equipment.
- (8) Injuries resulting from falls and from contact with electric current.
- (9) Injuries resulting from accidents or hazards associated with water sports, camp sites, or other recreational environments in Corps controlled areas.



CHARLES J. FIALA  
Colonel, Corps of Engineers  
District Engineer

DISTRIBUTION:  
X  
All supervisors



DEPARTMENT OF THE ARMY  
Louisville District, Corps of Engineers  
P. O. Box 59  
Louisville, Kentucky 40201

ORLR 385-1-37

ORLSB

17 March 1975

Regulation  
No. 385-1-37

Safety

REPORTING UNSAFE OR UNHEALTHFUL WORKING CONDITIONS

1. Purpose. The purpose of this regulation is to establish a channel of communication between Louisville District employees and the District Safety Officer in order to assure prompt analysis and response to reports of unsafe or unhealthful working conditions. However, it is emphasized that before filing a written report to notify the District Safety Officer of unsafe or unhealthful working conditions, employees must discuss the condition with their supervisor and allow reasonable time for corrective action to be completed or initiated except in cases where imminent danger is involved and prompt action is not being taken.

2. Applicability. This regulation applies to all Louisville District employees.

3. References.

a. EO 11807

b. Code of Federal Regulations, Title 29, Part 1960. Department of Labor regulations on Federal Worker Safety and Health Provisions.

c. EC 385-1-145

4. Definitions.

a. "Safety Officer" means the individual responsible for the management of the District's safety and health program.

b. "Safety and health inspector" means any person authorized to perform inspections for the purpose of this regulation. The person may be the District Safety Officer, Safety Specialist or a District technical or professional employee.

c. "Imminent danger" means any condition or practice of employment which could reasonably be expected to cause death or serious physical harm immediately.



17 March 1975

5. General. Many safety and health problems can be eliminated as soon as they are identified if there is an open channel of communication. Creating this channel of communication is intended to supplement oral reports of unsafe or unhealthful working conditions made by employees to their supervisors; it is not intended to act as a substitute for such reports. Before filing a written report to notify the District Safety Officer of unsafe or unhealthful working conditions, employees must discuss the condition with their supervisor and allow reasonable time for corrective action to be completed or initiated except in cases where imminent danger is involved. At the same time, however, an employee should not be required to await the outcome of oral reports before filing a written report pursuant to the provisions of this regulation. Nothing in this regulation is intended to interfere in any way with the prior, simultaneous or subsequent use by any employee of the District's grievance procedures or of the District's collective bargaining agreements as a means of requesting correction of alleged unsafe or unhealthful working conditions.

6. Procedure for Filing Reports.

a. Any employee or representative of employees who believes that an unsafe or unhealthful working condition exists in any workplace where such employee is employed, is authorized to request an inspection of such workplace by giving notice of the alleged unsafe or unhealthful working condition to the District Safety Officer. Any such report shall be legibly written, shall set forth with reasonable particularity the grounds for the report and shall be signed by the employee or representative of employees. In cases of imminent danger, as defined in par. 4c, employees are permitted to make telephonic reports to the District Safety Officer and reduce such reports to writing as soon as practicable thereafter. Upon the request of the person making such report, the Safety Officer or his designee for this purpose shall not disclose the name of such person or the names of individual employees referred to in the report to anyone other than authorized representatives of the Secretary of Labor, except as provided in par. b of this section. In order to better protect the confidentiality of employees, mailed reports should have the following legibly printed on the bottom front of envelopes: DO NOT OPEN IN MAIL ROOM.

b. The District Safety Officer shall consider the report and determine within five working days after receipt of such report whether there are reasonable grounds to believe that the alleged unsafe or unhealthful working condition exists. If he does so determine, he shall cause an inspection to be made as soon thereafter as possible to determine if such alleged unsafe or unhealthful working condition does in fact exist. If the inspector is unable to locate the alleged unsafe or unhealthful working condition without the assistance of the person who submitted the report, the Safety Officer may give the inspector the name of such person if the Safety Officer is satisfied that the name of the person submitting the report and the names



of the individual employees referred to in the report will not be disclosed to anyone else. In the event the employee report, whether oral or in writing, describes an unsafe or unhealthful working condition which may present imminent danger to the safety or health of employees, the Safety Officer shall make an immediate determination as to whether there are reasonable grounds to believe that the alleged unsafe or unhealthful working condition exists; and if he does so determine, he shall cause an immediate inspection to be made.

c. Inspections initiated pursuant to this regulation will not be limited to matters referred to in the report of alleged unsafe or unhealthful working conditions. Prior to or during any inspection of a workplace initiated pursuant to this regulation, any employee employed in such workplace, or representative of employees, shall be permitted to notify the safety and health inspector of any other unsafe or unhealthful working condition which he has reason to believe exists in such workplace. The safety and health inspector is authorized to utilize the services of additional district technical and professional personnel to assist the inspector in evaluating the safety and health of working conditions during the inspection.

d. If the Safety Officer determines that there are no reasonable grounds to believe an unsafe or unhealthful working condition exists, or if an inspection is made on the basis of a report alleging such condition but no such condition is determined to exist, the employee or representative of employees who filed the report shall be so notified in writing. The employee or representative of employees shall be given an opportunity for prompt and informal review of such determination by appropriate officials, including final review by the Safety Officer. Any determination made during this review process shall be in the form of a written statement setting forth the reasons for such disposition.

e. Any employee or representative of employees who file a report alleging an unsafe or unhealthful working condition, and is dissatisfied with the District's final disposition may contact in writing the Office of Federal Agency Safety Programs, Department of Labor (with a copy to the District Safety Officer) describing in detail the entire processing of the report and setting forth any objections thereto.

#### 7. Participation Safeguard.

a. No employee will be subject to restraint, interference, coercion, discrimination or reprisal by virtue of such employee's participation in filing of reports of unsafe or unhealthful working conditions..



ORLR 385-1-37  
17 March 1975

b. Employees who feel that they have been treated unfairly because of participating in this program have grievance and appeal rights for prompt consideration and equitable decision as outlined in Chapter 10 of ORLR 690-1-1, subject: Civilian Personnel Regulation, dated 1 March 1974.

c. Supervisors who are proven to have treated employees unfairly because of the employee's participation in this program shall be subject to disciplinary action.

8. Contact Information.

a. The District Safety Officer, Mr. Allan G. Bailey, may be contacted by mailing reports to:

Department of the Army  
Corps of Engineers, Louisville District  
ATTN: Safety Officer  
P. O. Box 59  
Louisville, Ky. 40201

b. The Safety Officer may be contacted on the following telephone number: AC 502, 582-5617.

c. In the absence of the Safety Officer, the Safety Specialist, Mr. Frank R. McCann, will act as the Safety Officer's designee for the purpose of this regulation.

d. The Office of Federal Agency Safety Programs, U. S. Department of Labor, Washington, DC 20210.

FOR THE DISTRICT ENGINEER:

  
WILLIAM F. POLLARD  
Executive Assistant

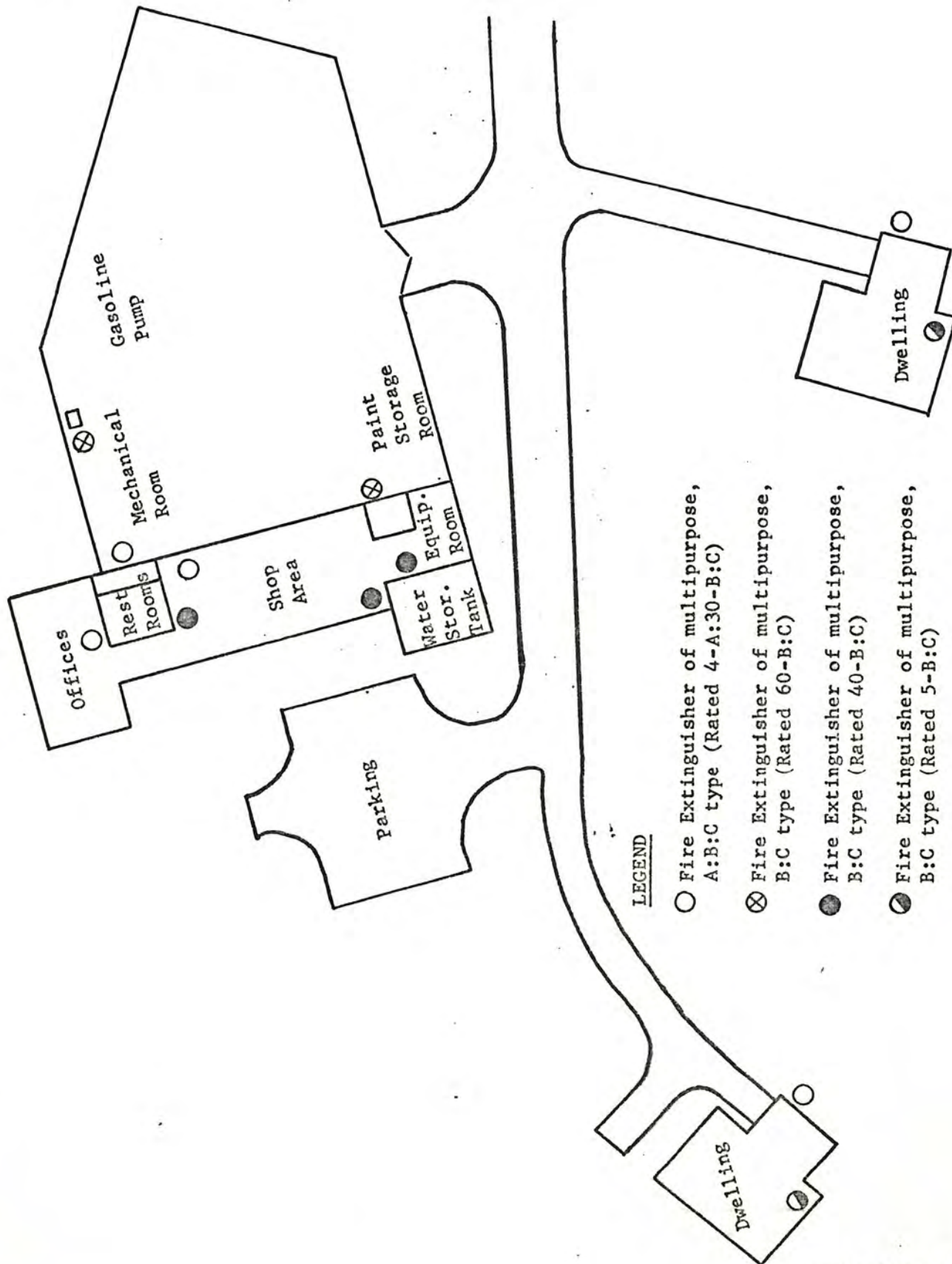
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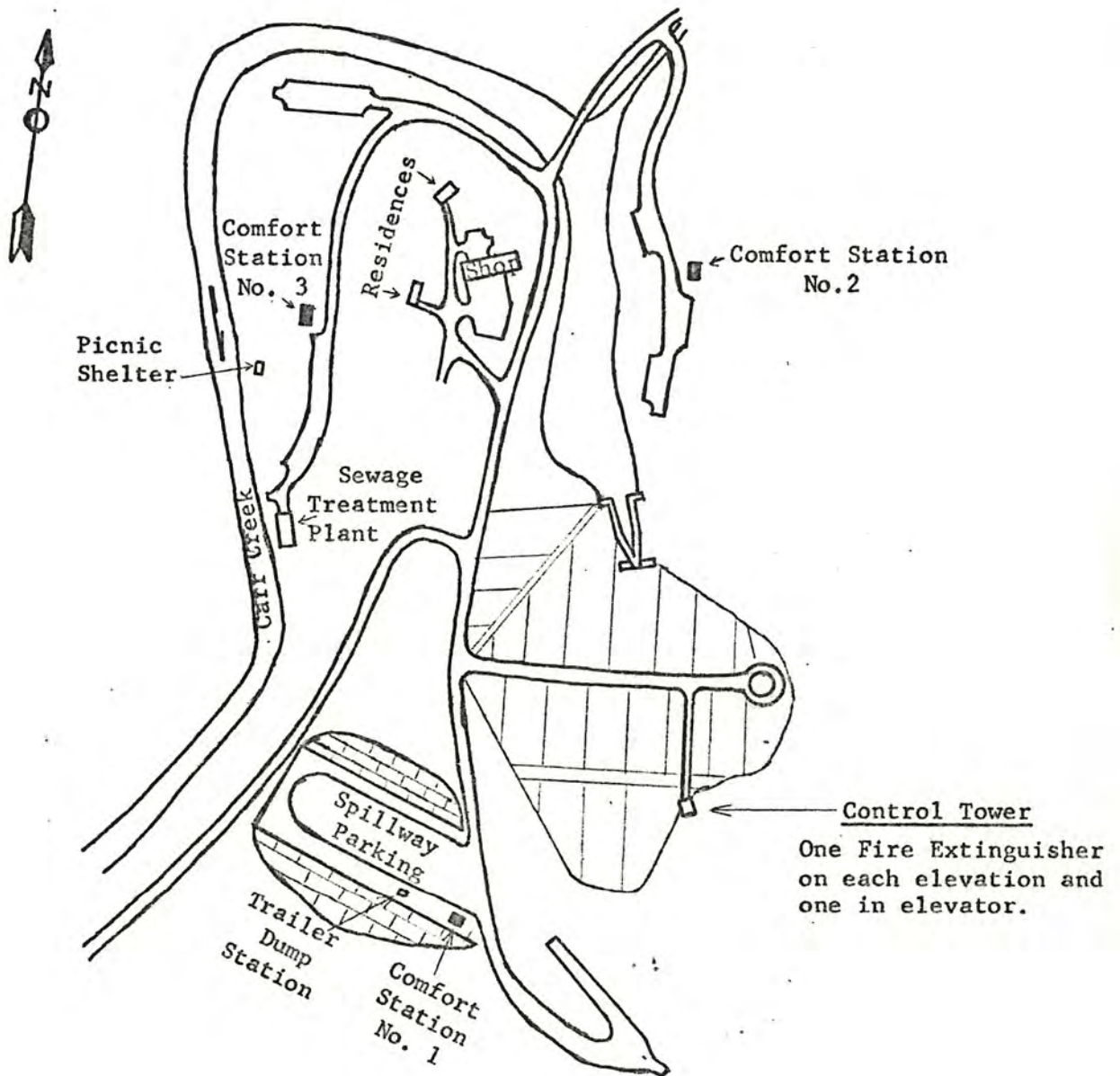
+ all bulletin boards for posting

ATTACHMENT "B", Page 4 of 4









#### Comfort Stations

One Fire Extinguisher  
in pipe chase room of  
each comfort station.



DEPARTMENT OF THE ARMY  
Louisville District, Corps of Engineers  
P. O. Box 59  
Louisville, Kentucky 40201

LEDR 385-1-35

ORLSB

Regulation  
No. 385-1-35


3 July 1973

Safety

STRETCHERS

1. Purpose: To establish policy for the type, inspection and care of stretchers.
2. Applicability: This policy is applicable to all Government field installations in the Louisville District.
3. Policy: The policy for the type, inspection and care of stretchers is:
  - a. Type of Stretchers: Only the wire-basket type stretchers will be used.
  - b. Inspection and Care: The wire-basket type stretchers must be inspected every six months. If the stretcher shows any signs of rust, it should be repainted. The straps should also be checked and if it is rigged to be used by maneuverboat or crane the rigging should also be checked, and if the straps or rigging show any signs of deterioration they should be replaced.
4. Responsibility: The supervisor in charge of the stretchers will see that the stretchers are inspected and maintained in accordance with paragraph 3b, above.

FOR THE DISTRICT ENGINEER:

  
GEORGE D. SHIELDS  
LTC, Corps of Engineers  
Deputy District Engineer

DISTRIBUTION:  
X  
All Field Supervisors  
Div/Ofc Chiefs  
ORLAS-G (2 cys)

ATTACHMENT "D"

---

This Regulation rescinds LEDR 385-1-21, 17 February 1969



DEPARTMENT OF THE ARMY  
Louisville District, Corps of Engineers  
F. O. Box 59  
Louisville, Kentucky 50201

\*ORLR 385-1-14

ORLSB

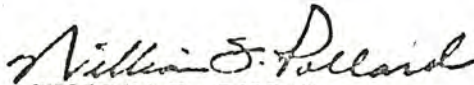
6 November 1975

Regulation  
No. 385-1-14

SAFETY  
Fire Protection

1. Purpose. To insure adequate fire protection.
2. Applicability. This regulation is applicable to all field installations in the Louisville District.
3. Reference. EM 385-1-1
4. Policy. The maintenance and inspection of fire fighting equipment, training and drills, and coordination with local fire departments shall be done in accordance with Section 13 and Appendix L of EM 385-1-1.
5. Procedures.
  - a. First Aid fire extinguishers and fire hose are to be inspected monthly. Semiannually, fire extinguishers are to be weighed and fire hose tested. Deficiencies should be corrected and the tags on fire extinguishers should be signed and dated after each inspection. A responsible employee at each installation should be designated to make the inspections.
  - b. Every five years fire extinguishers are to be hydrostatically tested by an approved service company.
  - c. Annually, demonstrations and training should be conducted to insure that all employees are familiar with and capable of using fire-fighting equipment.
  - d. Coordination with local fire departments should be made and emergency telephone numbers and reporting instructions conspicuously posted.

FOR THE DISTRICT ENGINEER:

  
WILLIAM F. POLLARD  
Executive Assistant

DISTRIBUTION:

X  
Resident Offices  
Locks & Dams  
Lakes  
R.E. Project Offices  
L.R.S.

\*This regulation supersedes DR 385-1-14, 10 September 1968

ATTACHMENT "E"



DEPARTMENT OF THE ARMY  
Louisville District, Corps of Engineers  
P. O. Box 59  
Louisville, Kentucky 40201

\*ORLM 385-1-3

ORLSB

Memorandum  
No. 385-1-3

24 November 1975

Safety

ELECTRICAL GROUNDING AND GROUND-FAULT CIRCUIT PROTECTION

1. Purpose. To promulgate the requirements for grounding and ground-fault circuit protection.
2. Applicability. This regulation is applicable to Government and contractor activities and public use areas operated on Government property in the Louisville District.
3. References.
  - a. Engineer Technical Letter No. 1110-2-166
  - b. ORDER 385-1-16
  - c. EM 385-1-1
  - d. All applicable provisions of the 1975 National Electrical Code including Sections 210-2, 210-7, 210-8, 215-9, 250D, 250E, 250F, 550-6, 550-9, 555-3, 555-7, 680-6, 680-20 and 680-21.
4. Policy. Proper electrical grounding and ground-fault circuit protection shall be provided to protect all personnel.
5. Procedures.
  - a. Electrical grounding shall be accomplished in accordance with reference 3c and 3d above.
  - b. The resistance to ground for all wiring systems and portable power plants shall not exceed 25 ohms.
  - c. All permanent and temporary receptacles installed on 15- and 20- ampere single phase branch circuits shall be of the 3 wire grounding type and shall have ground-fault circuit-interrupters to provide protection for service to:
    - (1) Maintenance and Fabrication Shops

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\*This memorandum rescinds ORLR 385-1-15, dated 13 September 1968

ATTACHMENT "F", Pg 1 of 3



- (2) Power, portable and semi-portable, tools and equipment
- (3) Outdoors
- (4) Damp or wet locations or locations near water
- (5) Conductive locations consisting of exposed structural steel or other large grounded metallic surfaces such as Can-Type Pumping Plants
- (6) Laboratory facilities
- (7) Bathrooms and laboratories
- (8) Laundries and hand dryers
- (9) Swimming pools
- (10) Mobile homes and recreational vehicles

d. The trip level for all ground-fault circuit-interrupters shall be 5 milliamperes  $\pm$  1 milliampere.

e. Portable generators shall be grounded and shall have ground-fault circuit-interrupters for personnel protection on all circuit conductors.

6. Types of Devices. The ground-fault circuit-interrupter can be obtained built-in the circuit breaker or it can be interlinked with the grounding type receptacle which is recommended or a portable receptacle unit with ground-fault circuit-interrupter for personnel protection can be utilized.

7. Implementation. All divisions shall assure that the required protection for personnel is implemented at locations under their jurisdiction and on all Government leased facilities including private concessions throughout the District. All necessary time and economic constraints shall be considered in setting up a reasonable timetable for installation of the ground-fault circuit-interrupters and the 3 wire grounding type receptacles. In the meantime, portable receptacle units with ground-fault circuit-interrupters shall be used to satisfy the requirements of this memorandum.

8. Follow-up.

a. These requirements shall be included in the Special Provisions of all service and construction contracts. (See Appendix A)

b. A qualified electrician shall install both the 3 wire grounding type receptacles and the ground-fault circuit-interrupters as well as make the measurements indicated below at all installations.



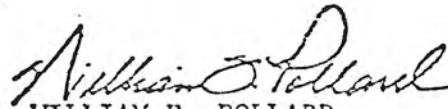
c. The polarity of all 3 wire grounding type receptacles shall be checked to ascertain correct installations, the trip readings of all ground-fault circuit-interrupters installed shall be made to verify acceptable operation at 5 milliamperes and the ground resistance shall be measured to assure the resistance to ground does not exceed 25 ohms.

d. All problems encountered with installation on the 3 wire grounding type receptacles and the ground-fault circuit-interrupters shall be documented along with the action taken to resolve the problems.

e. The problems along with the documentation shall be forwarded through channels to the Safety Office.

FOR THE DISTRICT ENGINEER:

1 Appendix  
APP A Special Provisions

  
WILLIAM F. POLLARD  
Executive Assistant

DISTRIBUTION:  
X  
All Supervisors



DEPARTMENT OF THE ARMY  
Louisville District, Corps of Engineers  
P. O. Box 59  
Louisville, Kentucky 40201

DR 385-1-24

ORLSB

7 April 1969

DISTRICT REGULATION  
NO. 385-1-24

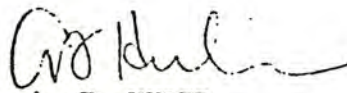
SAFETY

Tornadoes and High Wind Protection

1. Purpose. To establish a uniform policy in protecting trailers, walls, scaffolds and other temporary structures from tornadoes and high winds.
2. Scope. This regulation includes all office trailers, walls, scaffolds and other temporary structures.
3. Applicability. This regulation is applicable to all Government and Contractor operations in the Louisville District.
4. Application.
  - a. Trailers. Where trailers are used as field offices or to house personnel, the trailer shall be anchored after spotting and blocking up by installation of four 8-way expanding anchors with rods and cable, one under each of the four corners of the trailer. The anchors shall be not less than 3 feet under the surface of the ground with anchor rod extending to the ground surface. The trailer shall be securely anchored down by installation at each anchor of a 1/2-inch cable attached to the longitudinal frame member of the trailer by passing the cable over the frame member or to an eyebolt fastened to the frame, and then tightened by use of a turn-buckle or other approved means as necessary to prevent movement. Details of proposed method of anchoring shall be shown on the shop drawings submitted for approval.
  - b. Newly constructed walls, scaffolds, and other temporary structures will be braced, tied down, or otherwise suitably protected from high wind damage.

FOR THE DISTRICT ENGINEER:

DISTRIBUTION  
X  
All Field Supervisors

  
A. F. HUBER  
Executive Assistant

ATTACHMENT "G"



*cc: A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z*  
10/1 EA, BB, IM, DE  
10/1 PD

DEPARTMENT OF THE ARMY

ORDC 1130-2-1

OHIO RIVER DIVISION, CORPS OF ENGINEERS

P.O. BOX 1159

CINCINNATI, OH 45201

ORDED-T/ORDCO-R

Circular

No. 1130-2-1

1 October 1974

EFFECTIVE UNTIL 31 DECEMBER 1975 UNLESS SOONER RESCINDED OR SUPERSEDED

Project Operation  
SEWAGE TREATMENT MONITORING IN PUBLIC USE AREAS

1. Purpose. The primary purpose of this circular is to furnish information and guidance for monitoring the performance of sanitary waste treatment facilities at Corps of Engineers operated public access sites. Data obtained from the testing program will be used, in part, to report on required parameters to the U.S. Environmental Protection Agency under the NPDES permit program authorized by Public Law 92-500 and to achieve efficient operational control. The data will also have some limited use for evaluating design assumptions and developing future design guidance.
2. Applicability. This circular applies to all ORD Districts.
3. References.
  - a. National Environmental Policy Act of 1969 (Public Law 91-190).
  - b. Federal Water Pollution Control Act (33 USC 466 et seq.).
  - c. Federal Water Pollution Control Act Amendments (Public Law 92-500).
  - d. Executive Order 11507, "Protection, Control and Abatement of Air and Water Pollution at Federal Facilities," 4 February 1970.
  - e. Executive Order 11514, "Protection and Enhancement of Environmental Quality," 5 March 1970.
  - f. ER 1125-2-302, "Marine Sanitation."
  - g. "National Pollutant Discharge Elimination System," Federal Register, Part III, Title 40, 22 May 1973 (40 CFR 125).
  - h. "Secondary Treatment Information," Federal Register, Part II, Title 40, 17 August 1973 (40 CFR 133).

ATTACHMENT "H", Page 1 of 6

This circular supersedes ORDC 1130-2-1 dated 1 August 1973.



APPENDIX B

QUESTIONNAIRE NO. 2

NAME: \_\_\_\_\_ JOB TITLE: \_\_\_\_\_  
OFFICE: \_\_\_\_\_ DATE: \_\_\_\_\_

INSTRUCTIONS

Each question will be answered true or false by circling the appropriate letter following each question. The General Safety Requirements handbook (EM 385-1-1, 1 March 1967) will be used as a reference in answering the questions. The handbook reference paragraph number which reflects your answer will be recorded on the line to the right of your answer. The questions are so arranged that they may be answered one after the other as you read the EM and, therefore, all reference paragraph numbers will be in ascending order as you progress through the questionnaire. Questions begin with paragraph 15.C.02, page 45.

QUESTIONS

1. Electrical distribution cabinets shall be provided with an electrical ground for its noncurrent carrying metallic parts. T F \_\_\_\_\_
2. The grounding conductor on portable electric tools shall be identified. T F \_\_\_\_\_
3. Tools protected by an approved system of double insulation or its equivalent need not be grounded. T F \_\_\_\_\_
4. Temporary wiring shall be guarded or isolated by elevation to prevent accidental contact by workmen or equipment. T F \_\_\_\_\_
5. Extension cords shall be of a type listed by the Underwriters' Laboratories for the purpose in which they are used. T F \_\_\_\_\_
6. Electric power or distribution lines shall be placed underground in areas where there is extensive use of equipment having capability of encroachment on the clear distance specified in 15.E.08. T F \_\_\_\_\_
7. Only nonsparking tools shall be used in locations where sources of ignition may cause fire or explosion. T F \_\_\_\_\_
8. Hand wheels without projecting spokes, pins, or knobs shall be used on hand-powered winches or hoists. T F \_\_\_\_\_

ATTACHMENT "I", Page 7 of 17



LEDR 385-2-3

APP B

10 May 1971

- |                                                                                                                                                              |   |   |       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|-------|
| 9. A tool rest on a power grinder shall not be more than 1/8-inch distance from the wheel;                                                                   | T | F | _____ |
| 10. Grinding wheels shall not be operated in excess of their rated safe speed.                                                                               | T | F | _____ |
| 11. Tool and hose connections shall be safety lashed on all pneumatic tools.                                                                                 | T | F | _____ |
| 12. Explosive actuated tools shall be used, operated, repaired, serviced and handled only by authorized personnel.                                           | T | F | _____ |
| 13. A moused or closed hook shall be used to support human loads.                                                                                            | T | F | _____ |
| 14. When a broken wire is found adjacent to the socket or end fitting on a wire rope, this rope shall be removed from service or resocketed (see Change 1).  | T | F | _____ |
| 15. Wire rope clips attached with U-bolts shall be re-tightened immediately after initial load carrying use.                                                 | T | F | _____ |
| 16. Fiber rope that has been subjected to excessive heat or acids shall not be used for load carrying purposes.                                              | T | F | _____ |
| 17. Records of tests and inspections of any mechanized equipment placed in use shall be maintained at the job site.                                          | T | F | _____ |
| 18. Bulldozer scraper blades shall be lowered to rest when not in use.                                                                                       | T | F | _____ |
| 19. Machinery guards will not be removed while the power is still being applied so that immediate repairs, lubrications, or adjustments may be accomplished. | T | F | _____ |
| 20. All guards and safety devices must be replaced immediately after completion of repairs and adjustments.                                                  | T | F | _____ |
| 21. Bulldozers used in clearing operations shall be equipped with operator protective canopies.                                                              | T | F | _____ |
| 22. Rollover protection on pneumatic tired earth movers shall support at least two times the weight of the prime mover (see Change 1).                       | T | F | _____ |
| 23. All points requiring lubrication during operation shall have the fittings so located or guarded to be accessible without hazardous exposure.             | T | F | _____ |



24. Mobile type equipment shall have a braking system capable of stopping the fully loaded equipment on any grade of operation.

T F \_\_\_\_\_

25. An emergency brake system is required on all heavy duty haulage equipment equipped with air service brakes (see Change 1).

T F \_\_\_\_\_

26. Operators shall leave the cab whenever the equipment is being loaded by crane or dragline.

T F \_\_\_\_\_



APPENDIX C

QUESTIONNAIRE NO. 3

NAME: \_\_\_\_\_ JOB TITLE: \_\_\_\_\_  
OFFICE: \_\_\_\_\_ DATE: \_\_\_\_\_

INSTRUCTIONS

Each question will be answered true or false by circling the appropriate letter following each question. The General Safety Requirements handbook (EM 385-1-1, 1 March 1967) will be used as a reference in answering the questions. The handbook reference paragraph number which reflects your answer will be recorded on the line to the right of your answer. The questions are so arranged that they may be answered one after the other as you read the EM and, therefore, all reference paragraph numbers will be in ascending order as you progress through the questionnaire. Questions begin with paragraph 18.M.06, page 66.

QUESTIONS

1. All conveyors shall be equipped with guards designed to catch and hold any load of material that may fall or become dislodged from the conveyor. T F \_\_\_\_\_
2. Conveyor tunnels under stock piles of materials shall be open at both ends. T F \_\_\_\_\_
3. Cabs, cab shields, and other protection shall be provided on all vehicles to protect driver from the elements and falling or shifting materials. T F \_\_\_\_\_
4. A holding device to prevent accidental lowering of the body while maintenance or inspection work is being done shall be provided on all dump trucks. T F \_\_\_\_\_
5. Seats securely anchored, a rear end gate, and guardrails are considered essential equipment on trucks being used to transport personnel. T F \_\_\_\_\_
6. Pressurized equipment shall be inspected and tested before being placed in service. T F \_\_\_\_\_
7. The reliability of pressure gauges, relieving, and control devices on pressurized systems shall be demonstrated during preliminary performance testing. T F \_\_\_\_\_
8. Pilot check valves, holding valves, or positive mechanical locks to prevent movement in case of pressure system failure shall be installed on all pressurized boom actuating cylinders, outriggers, or other load supporting appliances. T F \_\_\_\_\_



LEDR 385-2-3

APP C

10 May 1971

9. Empty compressed gas cylinders which have contained the same gas shall be stored in a segregated group. T F \_\_\_\_\_
10. Cylinders containing oxygen need not be separated from cylinders containing fuel gases. T F \_\_\_\_\_
11. Compressed gas cylinders transported by crane may be carried with slings, chains, or magnets. T F \_\_\_\_\_
12. Acetylene cylinders shall be in an upright position (see Change 1). T F \_\_\_\_\_
13. Leaking cylinders shall be tagged "DEFECTIVE". T F \_\_\_\_\_
14. Oxygen or compressed gases may be used as a substitute for compressed air. T F \_\_\_\_\_
15. Oxygen cylinder and fittings shall be kept away from oil or grease. T F \_\_\_\_\_
16. Scaffolds, platforms or temporary floors shall be provided for all work except that which can be done safely from the ground or other substantial footing. T F \_\_\_\_\_
17. All work areas shall be provided with a safe means of access. T F \_\_\_\_\_
18. Scaffold work surfaces shall be at least 18 inches wide. T F \_\_\_\_\_
19. Scaffolds independent of the building shall be braced or guyed to prevent sway. T F \_\_\_\_\_
20. The use of scaffolds for the support of an outrigger boom is prohibited. T F \_\_\_\_\_
21. Lean-to and prop scaffolds are prohibited. T F \_\_\_\_\_
22. Masonry blocks, brick or tile shall not be used as scaffold footing or supports. T F \_\_\_\_\_
23. Scaffold planking shall be supported to prevent excessive deflection. T F \_\_\_\_\_
24. Scaffold planking shall extend from the toeboard to not more than six inches from the face of the building or structure. T F \_\_\_\_\_
25. No scaffold planking shall be less than 2x8 dressed lumber. T F \_\_\_\_\_



26. Work surfaces more than six feet above an adjoining surface shall be effectively guarded with guardrail, intermediate rail, and toeboard.

T F \_\_\_\_\_

27. Synthetic or natural fiber ropes or other similarly flexible materials shall not be used as guardrails.

T F \_\_\_\_\_

28. Wire or fiber rope used to support scaffolds shall be capable of supporting at least eight times the intended load.

T F \_\_\_\_\_

29. Planking on metal scaffolding shall be cleated at both ends to prevent movement.

T F \_\_\_\_\_

30. Positive locking devices are required on metal scaffolds to prevent accidental movement while the scaffold is in use.

T F \_\_\_\_\_

31. The height of a free standing, scaffold working platform shall not exceed the smallest base dimension.

T F \_\_\_\_\_

32. During roof construction, protective devices shall be provided which will prevent workmen from falling from the roof.

T F \_\_\_\_\_

33. Lifelines, crawling boards, ladders, temporary decking, or any other device that will furnish positive protection are acceptable devices for preventing workmen from slipping and falling from the roof.

T F \_\_\_\_\_

34. Guarded level platforms shall be provided at the landing area on the roof.

T F \_\_\_\_\_

35. Suspended scaffolds shall be supported by wire ropes secured to outrigger beams. A minimum safety factor of two is required for suspension rope.

T F \_\_\_\_\_

36. Guardrail, intermediate rail and toeboards shall be installed on all suspended scaffolds.

T F \_\_\_\_\_

37. Scaffold machines, either powered or hand-powered, shall be worm geared or powered both ways. Design must be such that when the power is stopped the scaffold cannot move.

T F \_\_\_\_\_

38. Every suspended scaffold shall be tested with the maximum load before being put in operation.

T F \_\_\_\_\_

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39. Each workman on suspended scaffolds, except those scaffolds with overhead protection, shall be secured by a safety belt and line to an independently supported safety line. There shall be a safety line for each workman.

T F \_\_\_\_\_

40. The sides of excavations do not have to be sloped to angle of repose or otherwise protected unless eight feet or more in depth.

T F \_\_\_\_\_

41. Excavated material shall be stored and retained at least one foot from the edge of the excavation.

T F \_\_\_\_\_



APPENDIX D

QUESTIONNAIRE NO. 4

NAME: \_\_\_\_\_ JOB TITLE: \_\_\_\_\_  
OFFICE: \_\_\_\_\_ DATE: \_\_\_\_\_

INSTRUCTIONS

Each question will be answered true or false by circling the appropriate letter following each question. The General Safety Requirements handbook (EM 385-1-1, 1 March 1967) will be used as a reference in answering the questions. The handbook reference paragraph number which reflects your answer will be recorded on the line to the right of your answer. The questions are so arranged that they may be answered one after the other as you read the EM and, therefore, all reference paragraph numbers will be in ascending order as you progress through the questionnaire. Questions begin with paragraph 23.A.16, page 91.

QUESTIONS

1. Personnel required to work in excavations in excess of 20 feet in depth shall be provided with ramps, stairs, or mechanical man hoists for access. T F \_\_\_\_\_
2. At least two means of exit shall be provided for men working in excavations. T F \_\_\_\_\_
3. Mechanical ventilation shall be used to change the air in shafts. Compressed air from an untested source shall not be used. T F \_\_\_\_\_
4. The handling, storage, and use of explosives shall be directed and supervised by a person of proven experience and ability in blasting operations. T F \_\_\_\_\_
5. Permission shall be obtained from the Government representative in charge before any explosives are brought on the job. T F \_\_\_\_\_
6. All blasts shall be fired electrically with an electric blasting machine or properly designed electric power source. T F \_\_\_\_\_
7. Detonating cord must be fired with an electric blasting cap. T F \_\_\_\_\_
8. Blasting operations may continue during the approach or progress of a thunderstorm or severe dust storm. T F \_\_\_\_\_

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9. Only the blaster shall have access to his blasting machine. T F \_\_\_\_\_
10. Warning signs shall be provided at points of access to blasting area. T F \_\_\_\_\_
11. Insulated solid core wires of appropriate gage in good condition shall be used for all lines. T F \_\_\_\_\_
12. All loading and firing of explosives shall be directed and supervised by one designated person. T F \_\_\_\_\_
13. Prior to initiation of vibration controlled blasting operations, a written plan for monitoring the operations shall be established. T F \_\_\_\_\_
14. Blasting caps or other detonators shall not be transported in the same vehicle with other explosives. T F \_\_\_\_\_
15. Flammable substances, acids, or oxidizing or corrosive compounds shall not be carried in the bed of any vehicle transporting explosives. T F \_\_\_\_\_
16. All vehicles transporting explosives shall be equipped with at least two 6-BC rated fire extinguishers. T F \_\_\_\_\_
17. No vehicle shall be refueled while explosives are on the motor vehicle except in an emergency. T F \_\_\_\_\_
18. Explosive containers may be opened with carbon steel crowbars. T F \_\_\_\_\_
19. Primers shall not be made up in excess of immediate need for holes to be loaded. T F \_\_\_\_\_
20. Primers shall not be made up in or near magazine or excessive quantities of explosives. T F \_\_\_\_\_
21. The minimum distance between magazine storing detonators and explosives shall be 100 feet unbarricaded or 50 feet barricaded. T F \_\_\_\_\_
22. There is no limit to the quantity of explosives permitted aboard a drill boat at any one time. T F \_\_\_\_\_
23. Explosives shall be arranged in the magazine so that the oldest stock is used first. T F \_\_\_\_\_
24. Explosive tamping shall be done with a wooden stick. T F \_\_\_\_\_



25. Detonating cord shall be cut from the supply reel before loading the remainder of the charge. T F \_\_\_\_\_
26. Every electric blasting cap shall be tested with an approved galvanometer. Before being placed in the primer, the leg wires shall be short circuited by twisting the bare ends together, and they shall remain twisted until ready to be connected into the blasting circuit, preparatory to connecting to the firing line. T F \_\_\_\_\_
27. The firing line shall not be smaller than No. 14 B & S gage copper wire, No. 12 B & S gage aluminum, or equivalent. T F \_\_\_\_\_
28. The complete blasting circuit including all caps shall be tested with an approved galvanometer before being connected to the firing line. T F \_\_\_\_\_
29. No lead wire shall be connected to the circuit until it has been grounded to dissipate any static charge. T F \_\_\_\_\_
30. No firing line shall be connected to the blasting machine or other power source until the shot is to be fired. T F \_\_\_\_\_
31. All persons in the blasting area shall be warned and ordered to a safe distance prior to the firing of a shot. T F \_\_\_\_\_
32. A warning signal, blast signal, and all clear signal shall be incorporated into all blasting operations. T F \_\_\_\_\_
33. Warning signals for blasting shall be posted at all access points. T F \_\_\_\_\_
34. Flagmen shall be posted at all access points to the blasting area prior to each shot. T F \_\_\_\_\_
35. Drill boats shall be moved a safe distance from the blasting range or area prior to the firing of a shot. T F \_\_\_\_\_
36. No firing line may be left attached to the blasting machine after a blast if it is to be used to shoot another loaded field in the immediate area or where power switches are used, they shall be locked open. T F \_\_\_\_\_
37. Before work in confined spaces is attempted, the hazards of toxic material and vapors, flammable materials and vapor, asphyxiating, corrosive, or radioactive material and oxygen deficiency shall be considered. T F \_\_\_\_\_

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38. A safe clearance is an operating procedure by which a person acting individually or as a representative of a crew may have a designated system or equipment removed from and held out of service until released by him.

T F \_\_\_\_\_

39. Portable ladders used as temporary access shall extend at least three feet past the landing.

T F \_\_\_\_\_

40. Portable metal ladders shall not be used for electrical work or where they may contact electrical conductors.

T F \_\_\_\_\_

41. Ladders shall be secured by top, bottom, and sufficient intermediate fastenings to hold them rigidly in place and to support the loads which will be imposed upon them.

T F \_\_\_\_\_

42. Any fixed ladder more than 20 feet in height or any fixed ladder where the fall distance can be more than 20 feet shall be provided with a ladder climbing safety device.

T F \_\_\_\_\_

43. On all structures or work levels 20 feet or more in height, stairways shall be provided during the construction period. Where permanent stairways are not installed concurrently with the construction of each floor, a temporary stairway shall be provided to the work level.

T F \_\_\_\_\_

44. All floor and roof holes and openings into which persons can accidentally work shall be guarded by a securely anchored inclosure guard or covered with material and bracing of sufficient strength to support any load which may be imposed. Coverings for floor and roof openings shall be secured in place to prevent accidental removal or displacement.

T F \_\_\_\_\_



1 Oct 74

i. "Methods for Chemical Analysis of Water and Wastes," April 1971, Environmental Protection Agency, Water Quality Office, Analytical Quality Control Laboratory, NERC--Cincinnati, Ohio 45268.

j. "Standard Methods for the Examination of Water and Wastewaters," 13th Edition, 1971, American Public Health Association, New York, New York 10019.

k. "Simplified Laboratory Procedures for Wastewater Examination," Water Pollution Control Federation, 3900 Wisconsin Avenue, Washington, DC 20016.

4. Types of Wastewater Treatment Facilities. A 1973 ORD-wide survey of existing and proposed sanitary waste treatment facilities indicated that they can generally be classified into the categories which follow, depending on the type and extent of treatment provided. Monitoring these facilities depends somewhat on the nature of the facility.

a. Septic Tanks with Tile Field Installations--No specific testing is anticipated for these facilities, except general inspection of the tile field area for possible indications of faulty operation. Consideration should be given to measurement of influent at selected installations to furnish information about the adequacy of original design flow assumptions. Sludge accumulation in septic tanks should be checked every two months and the tank should be cleaned when necessary.

b. Septic Tanks with Subsurface Sand Filters--All plants should be inspected around 1 May and every two months thereafter as a regular maintenance item. At a limited number of plants with different design capacities, all waste flow quality parameters mentioned in paragraph 6 should be monitored for both influent and effluent.

c. Biological and Physical/Chemical Treatment Plants--All treatment systems falling into these categories should be subject to monitoring of the waste flow quality parameters provided for in paragraph 6. Both influent and effluent should be tested. At plants followed by "polishing" facilities, consideration should be given to testing influent to and effluent from those facilities, to allow development of information on performance.

5. Waste Flow Quantity Measurement. Adequate definition of wastewater loads and treatment plant efficiency requires both proper sampling and measurement of flow. Simple flow measuring devices should be used. It is important that these devices be capable of measuring both high and low flows with reasonable accuracy. Simple weirs or Parshall flumes appear to be a suitable choice for most installations, provided adequate maintenance (cleaning of weirs, etc.) can be insured. Where sewage is



pumped to treatment plants, flow can be approximated by calibrating pumps and metering their operating time. Wherever possible, recording devices to show diurnal variations in flow patterns should be installed on metering devices.

6. Waste Flow Quality Parameters. To insure compliance with water quality standards and requirements of NPDES permits, the performance efficiency of waste treatment facilities must be ascertained by monitoring, as a minimum unless otherwise specified, the following parameters.

- a. Suspended Solids.
- b. BOD<sub>5</sub>.
- c. pH.
- d. Fecal Coliform.
- e. Total Coliform.
- f. Chlorine Residual.
- g. Temperature.

Items a through d are normally the minimum requirements of the NPDES permit program administered by U.S. EPA and results must be reported to that agency as required. Other optional parameters which may be included depending on specific problem areas are chemical oxygen demand (COD), dissolved oxygen (including that in the receiving water, upstream and downstream), toxic substances and nutrients. In selected situations where adequate data is available to establish a statistical correlation, it may be possible to substitute COD for BOD<sub>5</sub> (with concurrence of EPA). Additional parameters may be considered for monitoring if their determination might lead to upgrading of the facility.

7. Sampling Procedures. Sample collection should be the responsibility of the Operations Division and may be accomplished by contract and/or by project personnel. Should test results repeatedly indicate questionable performance of the facility, sampling procedures will be monitored by the Engineering Division to insure correct sampling technique.

a. Location of Samples--Laboratory results are no better than the sample. Samples must be representative of the waste flow; therefore, they must be collected where they represent what they are purported to represent and, equally important, they must originate in a well-mixed segment of the flowstream. Samples should be collected at the same location(s) each time that they are taken so that valid comparisons are possible. As a general rule, influent samples should be collected before any treatment (except screening and possibly comminution) and effluent samples should be collected after all treatment is completed.



1 Oct 74

As a process check, where the treatment involves more than one treatment step, occasional sampling at a point between the different treatment steps may be desirable.

b. Frequency of Sampling--In general, the sampling schedule should be staggered to cover weekdays, weekends, and holiday weekends with especially large flow volumes. On newly installed units, samples should be taken at least once each week for a period of two months or until reasonably stable operation is indicated. The minimum frequency of sampling, in any case, will be as specified on the NPDES permit issued by EPA..

c. Type of Samples--The usual practice in wastewater treatment plant operation is the hourly composite sample--that is, a sample is taken hourly and poured into a gallon bottle to be kept refrigerated until samples for each hour of the day can be added. This method has obvious shortcomings where a facility is not manned continuously. Instead, the sampling system where manual sampling is practiced should be a composite sample taken at two or three hour intervals over a minimum period of eight hours (including that of the expected maximum flow). An alternative method is to collect at maximum flow periods, grab samples--spacing the influent-effluent samples to allow the detention in the treatment facility. Simultaneous sampling of influent and effluent by the "grab" method should not be considered satisfactory; the results do not indicate treatment efficiency and will not lend themselves to meaningful interpretation. Coliform samples can be "grab" samples, as can tests which must be run in the field (e.g. chlorine residual). Where analyses are required to satisfy NPDES permit conditions, the appropriate sample types are usually specified as a condition of the permit.

d. Preservation of Samples--Samples to be removed from the immediate site of sampling for the purpose of analysis shall be collected in clean, one-gallon polypropylene bottles having a mouth diameter of at least 48 millimeters. Care should be taken to avoid the entrapment of air in the collection of samples. Upon completion of sampling, the one-gallon bottle should be nearly full; therefore, composite samples will require apportionment of available space. Between the addition of portions of a composite sample and for preservation during transportation to an off-site laboratory, the sample bottle should be capped and stored in a cooler chest maintained below 40°F. Between sampling and initiation of analytical work, care should be taken to avoid unnecessary agitation of samples.

e. Field Testing, Equipment and Procedures--The use of portable field testing field kits is encouraged; however, their use should not adversely influence the accuracy of test results. Parameters such as BOD<sub>5</sub>, Suspended Solids, and Fecal Coliform can be checked off-site if delay is minimized and care is taken in handling the samples.



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8. Samples Requiring Special Handling or Field Analysis. Accuracy in analytical results for certain parameters can only be assured if the analysis is run immediately or if special steps are taken to preserve the sample. The listing which follows addresses only those parameters listed in paragraph 6 which need special handling. Should analyses not on that list be required, reference i includes information on sample preservation.

a. Coliform (Total and Fecal)--Coliform analyses are essentially counts of bacterial colonies. Sewage provides an excellent media for bacterial growth, therefore coliform analyses should begin as soon as possible after sample collection. Samples should be kept on ice until that time. Where chemicals (see reference i) are used to preserve samples for special analyses (e.g.  $HgCl_2$  is used as a preservative for phosphorus analysis), the coliform sample should be separated prior to "fixing" of the regular sample.

b. Chlorine Residual--Chlorine in water solutions is not stable. As a result, its concentration in samples will decrease rapidly. Exposure to sunlight, strong light, or agitation will reduce further the quantity of chlorine present in solutions. Therefore, samples to be analyzed for chlorine cannot be stored, and tests must be started immediately after grab sampling. Excessive light and agitation must be avoided.

c. pH--Sample preservation for pH is not considered appropriate, therefore, it must be measured on the site. pH can be measured either colorimetrically or electrometrically. The former method is less expensive, but is less reliable because of interference, deterioration of chemicals, and range limitations. However, it may be suitable for rough estimation, especially where conditions are relatively constant. Many electrometric instruments are commercially available, ranging from small, inexpensive portable units to fixed installations with recording meters. Selection of a suitable method of pH measurement should be based on need at the particular location.

d. Dissolved Oxygen--Where dissolved oxygen analyses are required. It is necessary to make the determinations at the time of sample collection. The analysis is relatively simple and can be done by preparing a "kit" or by the use of commercially available probes.

e. Temperature--Temperature measurements may be made with any good grade of mercury-filled or dial type centigrade thermometer or a thermistor. Temperature measurement is necessary to the dissolved oxygen analysis; if that analysis is taken, temperature should be reported also.

9. Laboratory. Where analytical work is carried out by contract, a close check should be kept on the contracting laboratory to insure, insofar as possible, that accurate results are received. All analytical

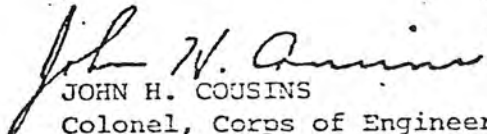


1 Oct 74

methods should comply with references i and/or j. The laboratory performing the work should have an established procedure for checking standardized solutions and must be adequately equipped. A good indicator of laboratory operation is neatness. Reporting of repetitious or cyclic results should be viewed with suspicion. Where doubts exist regarding a laboratory's reliability, a desired range of values should never be indicated. ...

10. A complete record of test results should be kept on the projects and in the District Office. The test results should be forwarded to ORD quarterly together with a brief summary covering the District's analysis of system performance. In design evaluation, the summary shall contain data on the estimated visitation of each sanitary facility served by the treatment facility on the day of sampling. Test results shall also be provided to EPA on forms provided by that agency.

FOR THE DIVISION ENGINEER:

  
JOHN H. COUSINS  
Colonel, Corps of Engineers  
Deputy Division Engineer

DISTRIBUTION:

A

B

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ATTACHMENT "H", Page 6 of 6

DEPARTMENT OF THE ARMY  
Louisville District, Corps of Engineers  
P. O. Box 59  
Louisville, Kentucky 40201

\* LEDR 385-2-3

ORLSB

10 May 1971

DISTRICT REGULATION  
NO. 385-2-3

SAFETY

Education, Instruction and Training in Safety

1. Purpose. To insure that all employees receive sufficient safety instructions and training to enable them to perform their work in a safe manner.
2. Applicability. This regulation is applicable to all Government operations and activities in the Louisville District.
3. References:
  - a. EM 385-1-1
  - b. ORDR 385-1-14
4. Policy. The safety policy of the Louisville District is to provide a safe, healthy work environment for all employees and to keep manpower, material and equipment losses through accidents to a minimum. To improve our present safety record and to effectively apply the above policy, each employee shall be provided initial indoctrination and such continued instructions as will enable him to perform his work in an efficient and safe manner.
5. Media.
  - a. All new employees shall be provided initial safety indoctrination to include:
    - (1) Safety requirements and practices.
    - (2) Reporting of all accidents.
    - (3) Obtaining first aid and medical treatment.
    - (4) Their responsibility for accident-free operations.



LEDR 385-2-3  
10 May 1971

b. All employees shall be given continuing instruction to enable them to conduct their work safely. Special safety instructions shall be given to employees at the beginning of a new work assignment to cover the hazards that may be encountered.

c. A minimum of one 15-minute on-the-job safety meeting shall be conducted each week for all field employees of the Construction, Operations, and Engineering Divisions by field supervisors.

d. At least monthly, a regularly scheduled safety meeting shall be held for all field employees by field supervisors. These meetings will cover specific sections of the Safety Requirements, EM 385-1-1. After reading and discussing the assigned sections and related guidelines, a set of written questions will be given to each attendee to answer (sample questionnaires, Appendices A-D). The correct answers will then be discussed with employees to assure accurate uniformity in interpretation of the applicable safety requirement.

6. Responsibility.

a. Supervisors will take the actions necessary to make certain their employees receive the required instruction and training.

b. Field supervisors will maintain a record of scheduled monthly safety meetings.

FOR THE DISTRICT ENGINEER:



MAX BOHRER  
Executive Assistant

4 Appendices

- APP A Questionnaire No. 1
- APP B Questionnaire No. 2
- APP C Questionnaire No. 3
- APP D Questionnaire No. 4

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X

Division and Office Chiefs  
Field Supervisors

ATTACHMENT "I", Page 2 of 17

APPENDIX A

QUESTIONNAIRE NO. 1

NAME: \_\_\_\_\_ JOB TITLE: \_\_\_\_\_  
OFFICE: \_\_\_\_\_ DATE: \_\_\_\_\_

INSTRUCTIONS

Each question will be answered true or false by circling the appropriate letter following each question. The General Safety Requirements handbook (EM 385-1-1, 1 March 1967) will be used as a reference in answering the questions. The handbook reference paragraph number which reflects your answer will be recorded on the line to the right of your answer. The questions are so arranged that they may be answered one after the other as you read the EM and, therefore, all reference paragraph numbers will be in ascending order as you progress through the questionnaire. Questions begin with paragraph 01.A.01, page 1.

QUESTIONS

1. Each employee shall be provided initial indoctrination and such continuing instruction as will enable him to conduct his work in a safe manner. T F \_\_\_\_\_
2. Initial indoctrination shall include instruction in project safety practices, accident reporting, availability of medical facilities, and individual responsibility for accident-free operations. T F \_\_\_\_\_
3. Field supervisors or foremen shall conduct five minute on-the-job safety meetings for all workers at least once a week. T F \_\_\_\_\_
4. All persons shall be instructed in the required response to emergency signals. T F \_\_\_\_\_
5. All persons required to handle or use flammable liquids shall be fully instructed in the safe handling and use of these flammable liquids. T F \_\_\_\_\_
6. In areas where insects, vermin, snakes, or rodents are present, all persons shall be instructed regarding the potential hazards and first aid procedures. T F \_\_\_\_\_
7. In areas where poisonous plants are present, all persons shall be instructed in the proper identification of the plants and personal protective measures. T F \_\_\_\_\_



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APP A

10 May 1971

8. Personnel required to enter confined spaces shall be instructed in accordance with Section 28 of the safety manual. T F \_\_\_\_\_
9. All persons required to be in areas of potential exposure to electromagnetic or ionizing radiation shall be instructed in the potential hazards and in the safeguards. T F \_\_\_\_\_
10. Accidents which result in loss of life, large property damage, or embarrassment to the Government shall be immediately investigated by the local sheriff. T F \_\_\_\_\_
11. Toilet facilities shall be provided at each project office in the ratio of not less than one for each 30 persons or fraction thereof. T F \_\_\_\_\_
12. Chemical toilets cannot be used on construction sites. T F \_\_\_\_\_
13. Minimum qualification for a first aid attendant shall be any certificate in first aid issued by the American Red Cross or the U.S. Bureau of Mines. T F \_\_\_\_\_
14. Hoisting equipment operators shall be at least 21 years of age. T F \_\_\_\_\_
15. Hoisting equipment operators may work 12 hours in any 24 hour period. T F \_\_\_\_\_
16. High visibility belts or apparel shall be worn by signalmen, spotters, servicemen, inspectors, and others exposed to vehicular traffic. T F \_\_\_\_\_
17. Personnel engaging in metal grinding operations shall wear goggles with safety lenses. T F \_\_\_\_\_
18. The use of safety belts and life lines is always an acceptable substitute for safety nets (see Change 1). T F \_\_\_\_\_
19. Safety nets are required where public traffic or workmen are required to be under a work area. T F \_\_\_\_\_
20. The U.S. Navy Diving Manual dictates diving procedures. T F \_\_\_\_\_
21. Bituminous-material melting kettles shall be used outside of buildings and at least 25 feet from buildings or other combustible material. T F \_\_\_\_\_
22. Containers used in the handling and transportation of hot substances shall not be filled higher than 4 inches from the top. T F \_\_\_\_\_

10 May 1971

23. Manual (hand) signals may be used when the distance between the operator and signalman is not more than 60 feet. T F \_\_\_\_\_
24. The predominating color of danger signs shall be red. T F \_\_\_\_\_
25. The Government representative in charge shall keep airport owners and/or operators informed as to changes in contractor's operations on the air field. T F \_\_\_\_\_
26. Flammable liquids shall be stored at least 50 feet from other stored materials. T F \_\_\_\_\_
27. Daily removal and disposal of scrap lumber, rubbish and waste material shall be accomplished at all construction sites. T F \_\_\_\_\_
28. One-story nonfire resistant temporary buildings shall be separated at least 40 feet. T F \_\_\_\_\_
29. Flammable storage tanks and systems shall be mechanically bonded and grounded. T F \_\_\_\_\_
30. Hand containers for the handling of flammable liquid shall be equipped with flame arrestors. T F \_\_\_\_\_
31. Flammable liquids with a flash point above 100° F. shall be used for cleaning purposes. T F \_\_\_\_\_
32. Paint-soiled clothing, when not in use, shall be stored in well-ventilated steel cabinets. T F \_\_\_\_\_
33. LP gas containers and equipment shall not be used in unventilated spaces. T F \_\_\_\_\_
34. Each welding unit shall be equipped with a compatible fire extinguisher. T F \_\_\_\_\_
35. Electrically driven welding machine noncurrent carrying metal parts shall always be grounded. T F \_\_\_\_\_
36. Circuits from welding machines used for other than welding tools shall always be grounded. T F \_\_\_\_\_
37. All electrical wiring installations shall be in accordance with the National Electric Code. T F \_\_\_\_\_
38. All electrical wiring shall be done by qualified workmen. T F \_\_\_\_\_



LEDR 385-2-3

APP A

10 May 1971

39. Plugs and receptacles shall not be interchangeable between circuits with different voltage and current ratings. T F \_\_\_\_\_

40. All incoming electrical service or supply circuits shall be provided with a manually operated, readily accessible switch. T F \_\_\_\_\_

DEPARTMENT OF THE ARMY  
Louisville District Corps of Engineers  
P. O. Box 59  
Louisville, Kentucky 40201

ORLM-385-2-1

ORLAS

District Memorandum  
No. 385-2-1

12 January 1976

Safety  
TESTING AND LICENSING OF EQUIPMENT OPERATORS

1. Purpose. This memorandum prescribes the policy, responsibilities and procedures for training, testing and licensing of operators of self-propelled land or floating type equipment which is owned or leased and operated by the Corps of Engineers.
2. Applicability. This memorandum is applicable to all Government employees of the Louisville District who are required to operate self-propelled equipment.
3. References.
  - a. AR 385-55 and OCE Supplement
  - b. AR 600-55
  - c. AR 611-5
4. Policy.
  - a. Corps of Engineers personnel operating U.S. Government owned or leased self-propelled equipment will have in their possession an authenticated U.S. Government Motor Vehicle Operator's Identification Card (SF 46) covering the type of equipment being operated.
  - b. Employees having a current state driver's license may operate a Government vehicle where emergency conditions exist.
  - c. U.S. Government issued licenses shall be valid for a period of three years. Renewal of such licenses is required upon expiration of the validation period.
  - d. No person will be issued a U.S. Government driver's license unless they are in possession of a current state driver's license and are at least 18 years of age. Operators licensed to operate motorboats which are designated and equipped to carry ten or more passengers shall be at least 21 years of age.

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This memorandum supersedes LEDR 385-2-8 dated 11 May 1972.

ATTACHMENT "J," Pg 1 of 4



5. Responsibilities.

a. The Office of Administrative Services will be responsible for:

- (1) Administering all Battery II and psychophysical tests.
- (2) Giving road tests, as required, for all passenger vehicles including trucks up to 3/4 ton capacity.
- (3) Furnish and grade written examination for motorboat operator licenses.
- (4) Maintain employee records related to the testing and licensing program.

b. The operational element concerned will:

- (1) Provide on-the-job training as required.
- (2) Maintain records of employee's permit number and advise the Chief, OAS at least 30 days in advance of the permit expiration date in order to allow for scheduling of the necessary retesting.
- (3) Designate qualified "road test" examiners for self-propelled construction and material handling equipment, industrial or agricultural tractors 35 hp or less, vehicles over 3/4 ton and for motorboats. Names of examiners designated will be furnished to the Chief, OAS.
- (4) Administer "road tests" in connection with issue of licenses for the equipment noted in paragraph 5b(3) above.

c. The Safety Office will coordinate the licensing program and assure that adequate standards are maintained.

6. Vehicle Operator Testing Procedure. Applicants for new operator permits will:

- a. Submit, to the Chief, OAS, a Standard Form 47, signed by the applicant and the supervisor.
- b. Complete the Motor Vehicle Driver Selection Test, Battery II, and psychophysical tests administered by the Office of Administrative Services. A minimum score of 80 is required to pass the Battery II tests.
- c. A driver performance test will be given by the designated examiner, to all applicants, for operation of self-propelled equipment noted in paragraph 5b(3) above.



12 January 1976

d. The Battery II, Motor Vehicle Driver Selection Tests, are not required to be retaken on applications for license renewal nor in the case of issue of Incidental Licenses. The Examiner may require these tests where past driver performance or other related record, i.e., employees health, indicates this need.

7. Licenses Issued. Two types of operator permits may be issued:

a. The standard permit will be issued to all operators, including those employees whose primary duty is other than driving, and will be valid for a period of three years.

b. An incidental permit may be issued to new or temporary employees who will be required to operate vehicles for a short period of time only. An applicant for the incidental permit may be licensed without taking the Battery II tests providing he has in his possession a current state driver's permit. The supervisor concerned will assure that each employee issued an incidental permit is a qualified driver and operates government vehicles in a safe manner. Incidental permits will not be issued for periods in excess of 6 months. Standard Form 47 will be completed, as required in paragraph 6a of this memorandum.

8. Operator Permits for Self-propelled Heavy Duty Equipment.

a. Physical Requirements - In addition to successfully completing the visual judgement and two hand coordination portions of the Battery II tests, all equipment operators will have full use of both hands, arms, feet and legs and have a minimum vision of 20/30 in each eye.

b. Training Requirements - The office responsible for the operation of specific types of equipment will assure that applicants being tested have received necessary training in handling the equipment. This will include boats, construction and material handling equipment.

9. Renewal of Operator Permits. Applicants for renewal of operator permits will complete and submit a Standard Form 47, through the supervisor, to the Chief, OAS, thirty days prior to expiration date of the current permit. Upon receipt, the Chief, OAS will schedule the required psychophysical tests. Where deemed necessary, the Chief, OAS, may extend an expired permit, pending retesting and issue of a new license. Such extensions will not be in excess of 90 days.

10. Floating Plant Operators. A U.S. Coast Guard or Corps of Engineers license for motorboats is required for floating plant operators. The following are the requirements for obtaining a floating plant license:

a. Coast Guard Motorboat License - Applications will be made at the nearest marine inspection bureau. Upon completion of Coast Guard testing and issue of a license the applicant concerned will report the license number and expiration date to the Chief, OAS.

ATTACHMENT "J", Page 3 of 4



b. Corps of Engineers License -

(1) Successfully complete the Battery II testing. Operators with red-green blindness or night vision deficiency shall be limited to daytime operation only. Visual acuity in each eye of not less than 20/30 is required.

(2) On the job training to include reading of Coast Guard references 184 and 258 prior to taking written examination.

(3) Successful completion of written and boat handling tests.

11. Renewal of Floating Plant Operator Licenses.

a. Coast Guard License - Application for renewal must be made through the nearest Coast Guard Office.

b. Corps of Engineers License -

(1) Applicant must successfully complete the psychophysical testing and have a minimum of 20/30 visual acuity in each eye.

(2) Must certify that he has operated a motorboat at least three months in the last two years.

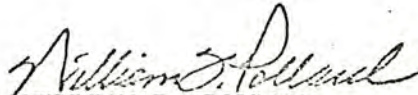
12. Suspension or Revocation of Licenses. Self-propelled vehicle and motorboat licenses may be revoked or suspended for any of the following reasons:

a. Reckless, negligent or careless operation of a vehicle or motorboat.

b. Violation of Coast Guard Rules of the Road.

13. Termination. As part of the clearance procedures, employees terminating their employment with the U.S. Government are required to turn in operator permits issued by the Louisville District Office. Employees transferring to another U.S. Government agency may retain such permits for use at their new duty station.

FOR THE DISTRICT ENGINEER:

  
WILLIAM F. POLLARD  
Executive Assistant

DISTRIBUTION:

A

DEPARTMENT OF THE ARMY  
Louisville District, Corps of Engineers  
P. O. Box 59  
Louisville, Kentucky 40201

DR 385-2-1

ORLSB

25 November 1970

DISTRICT REGULATION  
NO. 385-2-1

SAFETY

Protective Clothing and Equipment

1. Purpose. This regulation establishes policies and procedures for the use of protective clothing and equipment.
2. Applicability. Applicable to all Government employees of the Louisville District.
3. References.
  - a. AR 385-32
  - b. EM 385-1-1
  - c. DR 385-1-26
  - d. ORD Regulation 385-1-5
4. Policy. It is the policy of the Chief of Engineers to provide and require the use of protective clothing and equipment as a means of preventing or minimizing injuries to personnel. Protective clothing and equipment are essential to all operations which are inherently hazardous or which are made hazardous by existing conditions such as temperature, footing, illumination and visibility, noise, ventilation, flying particles, atmospheric contaminants, and skin contaminants, etc. The survey for determining the hazards and corrective measures needed will be known as a "Job Hazard Analysis."
5. Procedures.
  - a. The responsible field installation or activity supervisor will conduct the "Job Hazard Analysis" survey, listing all duties, hazards involved and corrective measures needed, using the format of Appendix A, attached.
  - b. The survey will then be forwarded to the Safety Office, through Branch and Division Chiefs, for evaluation and approval.
  - c. The approved "Job Hazard Analysis" will then be made a portion of the "Operation and Maintenance Manual."



DR 385-2-1  
2 Nov 70

d. The field installation or activity supervisor shall be responsible for providing the necessary protective clothing, equipment or physical safeguards and enforce the use of them.

e. Items of protective clothing or equipment required will be furnished without costs to employees and use of said protective clothing and equipment will be mandatory.

FOR THE DISTRICT ENGINEER:



MAX BOHRER  
Executive Assistant

1 Appendix  
Appendix A  
Job Hazard Analysis

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DR 385-2-1  
25 November 1970

APPENDIX A  
JOB HAZARD ANALYSIS

Location \_\_\_\_\_

Supervisor \_\_\_\_\_

Job Title and brief description

<u>Duties Performed</u>	<u>Physical and Procedural Hazards Involved</u>	<u>Protective Clothing, Equipment or Physical Safeguards Required</u>



DEPARTMENT OF THE ARMY  
Louisville District, Corps of Engineers  
P. O. Box 59  
Louisville, Kentucky 40201

DR 385-1-17  
Change 1  
4 May 1970

ORLSB

DISTRICT REGULATION  
NO. 385-1-17


SAFETY

Safety Hat Policy

The following pen and ink change should be made to DR 385-1-17, 15 Oct 68:

Delete: Last sentence paragraph 7, page 2, "All aluminum hats - - - - -  
- - - - - furnish immediately."

FOR THE DISTRICT ENGINEER:

  
A. F. HUBER  
Executive Assistant

DISTRIBUTION:  
X  
All supervisors

DEPARTMENT OF THE ARMY  
Louisville District, Corps of Engineers  
P. O. Box 59  
Louisville, Kentucky 40201

DR 385-1-17

ORLSS

15 October 1968

DISTRICT REGULATION  
NO. 385-1-17

## SAFETY

## Safety Hat Policy

1. Purpose: To establish a uniform District policy on procurement, marking and wearing of safety hats.
2. Scope: To include all media contained in this regulation outlining the policy of safety hats in the Louisville District.
3. References: EM 385-1-1, subsection 07.C  
ER 385-1-6
4. Applicability: This regulation is applicable to all activities in the Louisville District. All field employees of the District, except clerical employees and others whose normal tour of duty is completed at a fixed location where no head hazard exists, will be furnished and required to wear safety hats while on the job. All District Office employees visiting field installations will wear safety hats.
5. Color and Style: All safety hats will be white. In the interest of uniformity, Helmet Electrical Workers, Fed. Spec. GGG-H-177a, Type II, brimless with visor, adjustable headband and chinstrap have been selected as the style to be worn by all District employees. Aluminum hats are not approved for District use under provisions of EM 385-1-1, dated 1 March 1967.
6. Markings: A one-inch band of red reflective tape will extend around the base of the hat crown, leaving an approximate five-inch break at the front. A red Corps of Engineers' insignia, one inch high and one and one-half inches wide, will be centered horizontally at the front of each protective hat. The base of the insignia will be 3/4-inch above the base of the hat crown. Permanent employees will have their last name placed above the insignia in white, 1/2-inch, embossed, capital letters on black tape, and his organizational title or element will be placed below the insignia in the same manner. The Corps of Engineers insignia and proper size tapes are available from the District Stockroom. Approximately 17 inches of tape are required for each hat.
7. Responsibility: Each installation will keep a reasonable number of extra safety hats on hand for issue to visitors. These hats will be

ATTACHMENT "L-1", Page 2 of 3



15 Oct 68

maintained in serviceable condition and, before being reissued or stored shall be clean and in good repair. All aluminum hats now in use will be expeditiously replaced by the type shown in paragraph 5 above. The Stock Room has a supply of these hats which they can furnish immediately.

*Rich. E. F. C. 1*

FOR THE DISTRICT ENGINEER:

*A. F. Huber*  
A. F. HUBER  
Executive Assistant

DISTRIBUTION  
X  
All supervisors

COPIES OF ENGINEERS  
DISTRICT

Oct 15 1 55 PM '68

CE 2

ATTACHMENT "L-1", Page 3 of 3

DEPARTMENT OF THE ARMY  
Louisville District, Corps of Engineers  
P. O. Box 59  
Louisville, Kentucky 40201

ORLR 385-1-26

ORLSB

Regulation  
No. 385-1-26

20 March 1974

Safety  
PRESCRIPTION-GROUND SAFETY SPECTACLES

1. Purpose. To establish policy and procedures whereby prescription-ground safety spectacles are furnished to employees whose work assignments require the use of eye protection.
2. Applicability. This regulation is applicable to all employees in the Louisville District in accordance with the policy described in paragraph 4 below.
3. References.
  - a. AR 385-32
  - b. ER 385-1-40
  - c. EM 385-1-1
4. Policy. District employees requiring prescription lenses, and whose work assignments involve frequent activities similar to those listed in EM 385-1-1, Section VII, paragraphs 07.A.10 thru 07.A.13, may be furnished prescription-ground safety spectacles. Employees required to work in close proximity to such activities would also be eligible for this safety equipment. Employees not requiring prescription lenses to perform their work will be furnished regular safety spectacles. Employees (outside of office environment) having monocular vision will be required to wear eye protection at all times during the work day.
5. Media.
  - a. Supervisors will submit requests to their respective Branch or Division Chief, who, by initialing the request, will indicate his concurrence. The requests will list activities performed by the employee.
  - b. Upon approval of the request, the safety spectacles will be procured as follows:
    - (1) The employee will secure and pay for the prescription.

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This regulation supersedes ORLR 385-1-26, 20 June 1969

ATTACHMENT "L-2", Page 1 of 2



ORLR 385-1-26  
20 Mar 74

(2) The supervisor will procure the safety spectacles by the use of ORL Form 584 (subject to all existing limitations for the use of this form). The prescription will be attached to the ORL Form 584.

(3) Developed sources of supply for these spectacles that can effect a savings to the Government, will be utilized by Procurement Branch, Procurement and Supply Division.

c. Loss or damage of the spectacles occurring during duty status, if not due to negligence of the employee, will be replaced or repaired at Government expense. If damage or loss occurs during off-duty hours, the expense of replacement or repair will be borne by the employee.

d. If an employee's eyes change to an extent that a new prescription is required, a letter from his doctor certifying the change will be submitted to his supervisor. The new lenses will be installed in existing frames if practicable. Supervisors will then submit a new request for approval in accordance with paragraph 5a above.

FOR THE DISTRICT ENGINEER:



MAX BOHRER  
Executive Assistant

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X

All Supervisors

ATTACHMENT "L-2", Page 2 of 2

(3) Lock and Dam personnel to include Lockmasters and Assistant Lockmasters, Lock and Dam Equipment Repairers, Lock Operators, Leaders and Laborers. Superintendents of Locks and Dams are also eligible.

(4) Navigation and Permits personnel to include Hydrographic Survey Party and Inspectors on inspection of completed works and permit programs.

(5) Construction Division personnel to include all field employees (except clerical and office) and all District Office employees required to visit field installations on a regular basis as part of their assigned duties.

(6) Employees of the District Stock Room.

(7) Engineering Division personnel to include drill crews and other field employees such as survey party.

d. Summer Aid Employees are not required to wear safety shoes. Supervisors will procure safety toe caps (information on availability will be furnished upon request) and will require these employees to wear these caps where foot hazards are present. Caps are Government property and shall be returned to the installation supervisor when employee is not engaged in activities involving foot hazards.

5. Procurement. Safety shoes may be procured either by requisition or by the use of SF-44. Field supervisors shall contact their Branch or Division Chiefs for detailed procurement instructions. In all cases, the name of the individual, brand name, size, and style of shoe shall be noted on the requisition or SF-44.

6. Procurement Restrictions. Safety shoes are made in a wide variety of styles and prices. A good quality work-type safety shoe can generally be procured within the price range of \$20.00 to \$30.00. Supervisors who are unable to locate shoes within this price range should contact their Branch or Division Chief at the District Office for instructions. Increased cost of nonstandard shoes (unusual size or fit, arch supports, etc.) will be at the individual's expense.

7. Source of Supply. Where practicable, safety shoes will be procured from companies specializing in personnel protective apparel such as safety equipment companies.

8. Alternate Supply Procedure. At installations where a supplier of safety shoes is not located within a reasonable travel distance, requisitions will be submitted to the District Office for procurement.



Requisitions for shoes will show employee's name, size, style of shoe preferred (such as Oxford, 6-inch shoe, 8-inch boot, etc.). The style of shoe shall be controlled by the Branch or Division Chief involved.

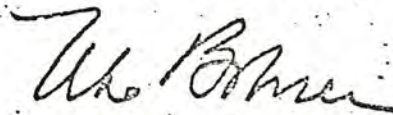
9. Repair and Replacement. Resoling or replacement of safety shoes will be at the discretion of the installation or activity supervisor. Only one pair of shoes will be provided to an employee in a twelve month period unless there are extenuating circumstances.

10. Administration.

a. Jacket files will be maintained by the responsible employees for safety footwear issued to employees under their supervision. The file will consist of a hand receipt for items issued. This can be the signature of the employee on a copy of the invoice, receiving report or other form such as ENG Form 3065, Property Loan Receipt, etc.

b. Supervisors will insure that employees furnished safety shoes under this program wear them at all times while on duty. Employees who are furnished safety shoes and report to work without them may be assigned to duties not requiring such shoes, or may be directed to take annual leave. Persistent and deliberate violation of this safety requirement may serve as a basis for appropriate disciplinary action.

FOR THE DISTRICT ENGINEER:



MAX BOHRER  
Executive Assistant

DISTRIBUTION:

X

5 copies each:

Ch, Construction Div  
Operations Div  
Engineering Div  
Ofc of Adm Svcs  
Supply Div  
Comptroller  
Safety Ofc  
ORDSB

1 copy each:

Construction Res Ofcs  
Locks & Dams  
Lakes  
LRS

DEPARTMENT OF THE ARMY  
Louisville District, Corps of Engineers  
P. O. Box 59  
Louisville, Kentucky 40201

\*ORLR 385-1-22

ORLSB

26 March 1975

Regulation  
No. 385-1-22

SAFETY

Accident Notification, Investigation and Reporting

1. Purpose. To establish policy and procedures for the prompt notification of all serious accidents and insure proper investigation and reporting procedures for all accidents. The causes of accidents should be determined and corrective measures developed and taken to prevent recurrence.

2. Applicability. This regulation is applicable to all installations and activities within the Louisville District.

3. References.

a. AR 385-40 and OCE Suppl. 1

b. EM 385-1-1

4. Policy. All accidents listed in paragraph 7, occurring on premises under the jurisdiction of the Corps of Engineers or incident to a Corps of Engineers activity or operation, will be investigated and reported in accordance with the procedures of paragraphs 6 and 7.

5. Responsibilities.

a. All accidents occurring to Government and contractor personnel, property or equipment must be reported to the supervisor-in-charge as soon as possible. All contractor accidents must be reported to the contracting officer's representative as soon as possible.

b. Employees are responsible for reporting accidents to their supervisors.

c. Supervisors are responsible for -

(1) Making employees knowledgeable of paragraphs 5a and b above.

(2) Investigation of accidents.

(3) Completing both verbal and written reporting procedures.

---

\* This regulation rescinds LEDR 385-2-6, 21 Jul 71, and supersedes ORLR 385-1-22, 10 Mar 74. ATTACHMENT "M", Page 1 of 8



ORLR 385-1-22  
26 Mar 75

(4) Recommending and taking corrective action to prevent recurrence of these accidents.

d. A log must be kept of all Government and contractor first aid cases.

6. Accident Report Form 3394 (1 Nov 74) - all others are obsolete.

a. Procedure for preparation -

(1) Government accidents only - a draft report will be prepared at the field installation level by the responsible supervisor and be forwarded to the branch or section chief (for Construction Division personnel, see 6c below).

(2) A finished report will be prepared by the branch or section chief from the information obtained from the draft report. The report will be signed by the branch or section chief (Item 42). The draft copy should be kept as a reference copy.

(3) The report will be reviewed by the division chief and signed (Item 43).

(4) The report will be analyzed, coded, and signed by Chief, Safety Office (Item 44).

(5) The report will be approved and signed by the District Engineer or Acting District Engineer.

(6) Each of the above will have an opportunity to comment in the section entitled "remarks" regarding corrective actions, etc.

b. After approval by the District Engineer, a copy will be sent back, through the above channels, to the field supervisor for review and action. Copies of the report will be retained by the Safety Office and Division or Branch level, and field office.

c. The Resident Engineer will prepare and sign all accident reports involving contractor and Government personnel responsible to him, using the same procedure described in 6a (3-5) and 6b above.

7. Types of Accidents.

	<u>1</u>	<u>2</u>	<u>2</u>
a. Fatality or permanent total disability injuries to or involving on-duty military, Government civilian, or contractor personnel, also off-duty if on premises or incident to a Corps of Engineers activity or operation.	x		x
b. Accidents in which 5 or more persons are hospitalized.	x		x
c. Damage of \$10,000 or more to Corps of Engineers or contractor's property and/or equipment.	x		x
d. Any accident, regardless of the consequences, if it is suspected it will result in unfavorable criticism of the Corps or the Army, or provoke questions at the Washington level.	x		
e. Contractor lost-time injuries.		x	x
f. Government lost-time injuries or where medical attention, other than first aid, is required.		x	x
g. Property damage, motor vehicle and navigation accidents (\$100.00 or more damage).		x	x
h. Public fatalities.		x	x

8. Notification and Reporting Procedures.

a. The District Safety Office will be notified immediately by telephone of all accidents covered in column 1, paragraph 7. During non-duty hours, A. G. Bailey, Chief, Safety Office or F. R. McCann, Assistant Chief, Safety Office, will be notified at 812-282-6758 or 812-944-8318 respectively.

b. The District Safety Office will be notified as soon as possible on the day of the accident during duty hours or if after duty hours notification will be made promptly the next work day for all accidents covered in column 2, paragraph 7.

c. All accidents covered in column 3, paragraph 7, will be reported on ENG Form 3394 within five days of the occurrence.



ORLR 385-1-22  
26 Mar 75

FOR THE DISTRICT ENGINEER:

1. Appendix  
APP A - Instructions on  
Completion of ENG-3394

*William F. Pollard*  
WILLIAM F. POLLARD  
Executive Assistant

DISTRIBUTION:  
A

ATTACHMENT "M", Page 4 of 8

APPENDIX A

Instructions on Completion of ENG-3394 (Accident Report)

Field supervisors and branch or section chiefs will leave blank the section prior to Section A. This will be completed by the Safety Office.

SECTION A

Items 1, 2, 3 - self explanatory.

Item 4 - Government employees assigned duty station.

Item 5 - self explanatory except for navigation accidents, then "other privately employed" will be used.

Items 6, 7, 8, 9 - self explanatory.

Item 10 - any appropriate training employee has received and the date he received this training. (Example - first aid course, defensive driving training, construction safety course, etc.)

Item 11 - blanks 1 or 2 should be completed only when Government or contractor's employees are involved. All other accidents should be not applicable.

Item 12.

1. Supervised by Corps of Engineers should be used for Government operations under direct supervision. (Example - L/Ds, launch ramps and camping grounds, construction sites, etc.)

2. Not supervised by Corps of Engineers should be used for Government operations under direct supervision. (Example - state and county roads across project, lease operations to the state or private concessions, buoys, warning signs, mooring cells, etc.)

3. Not applicable should be used when accident occurs on non-government owned or operated areas. (Example - county, state or federal highways, up or down river from the lock approach, open river conditions, areas outside of construction sites, travel or the movement of equipment or material from one project to another, etc.)



ORLR 385-1-22

APP A

26 Mar 75

Item 13 - what the person, referenced in Item 1, was doing at the time of the accident. (Example - repair and maintenance, locking M/V, operating frontend loader, operating motor vehicle or vessel, etc.)

Item 14 - a clear and complete account of the accident must be given using the instructions located in this section of the report.

Item 15 - a standard remark should not be used for corrective action. The supervisor should analyze the information available from the reporting employee and his investigation to establish this action. Also include the immediate supervisor's name and title.

Heading on page 2 to be completed by the Safety Office.

#### SECTION B -

Item 16 - self explanatory.

Item 17 - the installation name and the section of the installation where the accident occurred. (Example - upper river gate, McAlpine L/D, gatebay 3, Cannelton dam project, tailwater area, Barren River Lake, etc.)

Item 18 - Ky, In, Oh, Il, etc.

Item 19 - self explanatory.

Item 19A - navigation accidents will be classified as Marine accidents (#2). Government personnel injury accidents unless directly connected with one of the listed classification will be classified as other, and an explanation given (Example: operations, maintenance, inspection of contractor operations, etc.).

Item 19B - this pertains to contractor accidents and construction division employees (Government) only, all others will be classified #21 (not applicable).

Item 20 - if a motor vehicle was not involved in the accident, classification #6 (not applicable) will be used.

#### SECTION C -

Item 21 - identify the damaged equipment in the left column listing Government owned vehicle, equipment or property first (if any) and

ATTACHMENT "M", Page 6 of 8

26 Mar 75

contractor or privately owned second. In columns 29-38-47-56 place the applicable number from the ownership column. Damage to each item will then be described and dollar amount of damage listed in column at right side of section using only the open space (do not place any marking in the small boxes). Do not delay report for a completed estimate. If no property damage occurs, leave blank.

## SECTION D -

Item 22 - self explanatory (except classification #4 and #6 - this means they can return to the job when recovered or released by the doctor).

Item 23 - estimate of lost-time days obtained from the attending physician (on hernia, permanent disability, and fatal accidents leave blank, a standard time charge will be used).

Items 24, 25, 26 - example: 24-fracture, 25-foot, 26-dropped length of pipe on foot.

SECTION E - Leave blank - to be completed by the Safety Office.

SECTION F - To be completed for navigation accidents only, leave blank on other accidents.

Item 33 - self explanatory.

Item 34 - record in center boxes the number of loaded and empty barges.

Item 35 - self explanatory

Item 36 - this information may be obtained from the pilot, if not the Waterways Management Branch may have to obtain it from the towing company, or it may have to be estimated.

Item 37 - self explanatory.

Item 38 - navigation aids other than the lock and approaches and dams are classed as nonsupervised. This will also be true when open river conditions prevail. Buoys, mooring cells, etc., are usually nonsupervised.

Item 39 - tow was either waiting for lockage or underway, up or down river, (way on means underway).

Item 40 - self explanatory.

(ATTACHMENT "M", Page 7 of 8



ORLR 385-1-22

APP A

26 Mar 75

Items 41, 42, 43, 44 - "Remarks" and "Approved by" are explained in paragraph 6 of this regulation.

/ ATTACHMENT "M", Page 8 of 8

APPENDIX I  
DANGER SIGNS

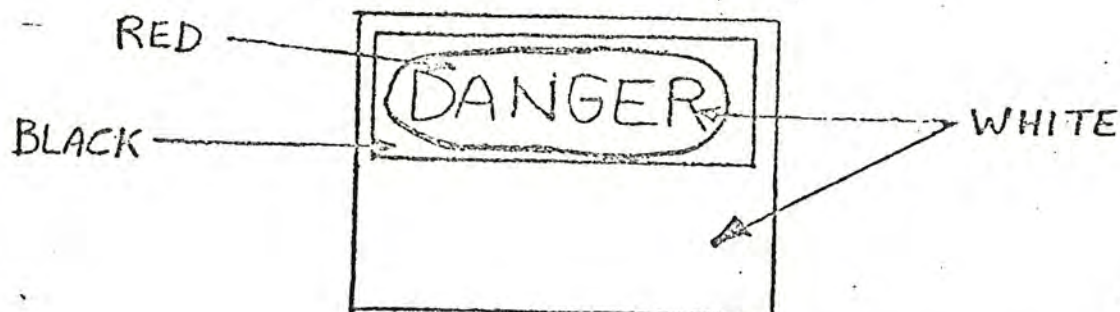
Sign Size (Inches)		Black Rectangular Panel (Inches)		Red Oval (Inches)		Word "Danger" Height of Letters (Inches)	Maximum Space Available For Sign Wording (Inches)	
Height	Width	Height	Width	Height	Width		Height	Width

HORIZONTAL PATTERN

7	10	3-1/4	9-3/8	2-7/8	8-1/2	1-7/16	2-3/4	9-3/8
10	14	4-3/8	13-3/8	4-1/8	11-7/8	2-1/16	4-1/4	13-3/8
14	20	6-1/2	19-3/8	5-3/4	17	2-7/8	6-1/4	19-3/8
20	28	9-1/4	27-3/8	8-1/4	23-7/8	4-1/8	9-1/8	27-3/8

UPRIGHT PATTERN

10	7	2-3/8	6-3/8	2-1/8	5-7/8	1-1/16	6-3/8	6-3/8
14	10	3-1/4	9-3/8	2-7/8	8-1/2	1-7/16	9-1/2	9-3/8
20	14	4-5/8	13-3/8	4-1/8	11-7/8	2-1/16	14	13-3/8
28	20	6-1/2	19-3/8	5-3/4	17	2-7/8	20-1/4	19-3/8





APPENDIX II  
CAUTION SIGNS

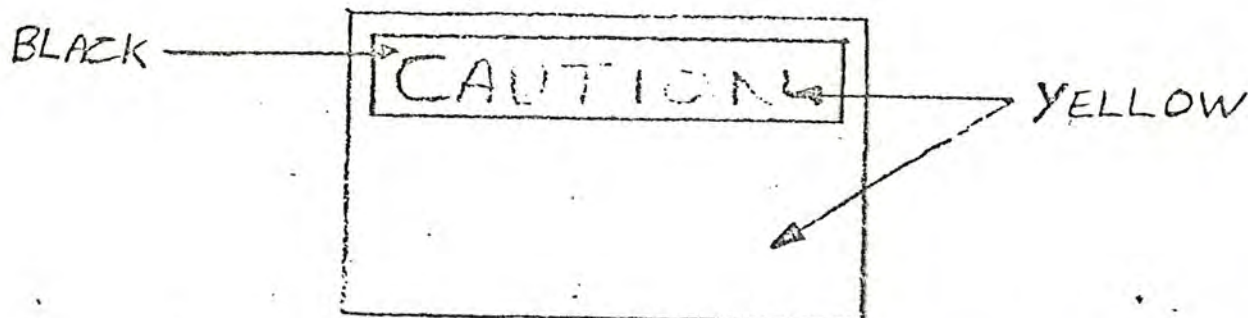
Sign Size (Inches)		Black Rectangular Panel (Inches)		Word "Caution" Height of Letters (Inches)	Maximum Space Available For Sign Wording Below Panel (Inches)	
Height	Width	Height	Width		Height	Width

HORIZONTAL PATTERN

7	10	2-1/4	9-3/8	1-5/8	3-1/4	9-3/8
10	14	3-1/4	13-3/8	2-1/4	5-1/2	13-3/8
14	20	3-3/4	19-3/8	2-3/4	9	19-3/8
20	28	4-1/4	27-3/8	3-1/4	14-1/2	27-3/8

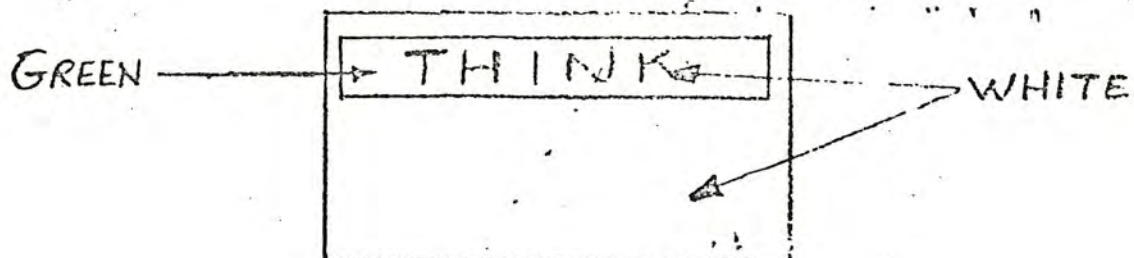
UPRIGHT PATTERN

10	7	1-5/8	6-3/8	1-1/8	7	6-3/8
14	10	2-1/4	9-3/8	1-5/8	10-1/2	9-3/8
20	14	3-1/4	13-3/8	2-1/4	15-1/2	13-3/8
28	20	3-3/4	19-3/8	2-3/4	24	19-3/8



APPENDIX III  
SAFETY INSTRUCTION SIGNS

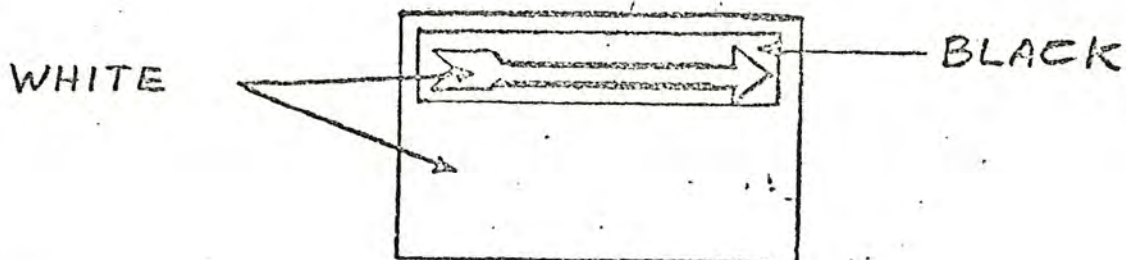
Sign Size (Inches)		Green Rectangular Panel (Inches)		Word "Think" Height of Letters (Inches)	Maximum Space Available For Sign Wording Below Panel (Inches)	
Height	Width	Height	Width		Height	Width
7	10	2-1/4	9-3/8	1-5/8	3-1/2	9-3/8
10	14	3-1/4	13-3/8	2-1/4	5-1/2	13-3/8
14	20	3-3/4	19-3/8	2-3/4	9	19-3/8
20	28	4-1/4	27-3/8	3-1/4	14-1/2	27-3/8





APPENDIX IV  
DIRECTIONAL SIGNS

Sign Size (Inches)		Black Rectangular Panel (Inches)		White Arrow (Inches)						Maximum Space For Sign Word- ing Below Panel (Inches)	
Height	Width	Height	Width	Overall Length	Arrow Head		Arrow Shaft Height	Arrow Tail		Height	Width
					Height	Width		Height	Width		
6-1/2	14	3-1/4	13-3/8	12-5/8	2-3/4	3	1-1/8	2-3/8	3-1/4	2-1/4	13-3/8
9	20	4-1/2	19-3/8	18-5/8	3-3/4	4-1/8	1-5/8	3-1/4	4-1/2	3-3/8	19-3/8
12	28	6	27-3/8	26-5/8	5-1/8	5-5/8	2-1/8	4-3/8	6	4-3/4	27-3/8
15	36	7-1/2	35-3/8	34-5/8	6-3/8	6-7/8	2-5/8	5-1/2	7-1/2	6-1/4	35-3/8



1. Name of Injured Employee (last, first, middle)		2. Date of Birth (mo., day, year)	3. <input type="checkbox"/> Male <input type="checkbox"/> Female	4. Social Security Number
Employee's Home Mailing Address (No., street, city, state, Zip Code)			5. Home Telephone Area Code: Number:	
7. Name and Address of Employing Agency		8. Place Where Injury Occurred (e.g., 2nd floor, Main Post Office Bldg., 12th & Pine)		
9. Date and Hour of Injury (mo., day, year) <input type="checkbox"/> AM <input type="checkbox"/> PM	10. Date of This Notice (mo., day, year)	11. Dependents Wife/Husband <input type="checkbox"/> Children Under 18 Years Old <input type="checkbox"/>		12. Employee's Occupation
13. Cause of Injury (Describe how and why the injury occurred)		14. Nature of Injury (Identify the part of the body injured, e.g., fractured left leg, etc.)		
15. If This Notice And Claim Was Not Filed With The Employing Agency Within 2 Working Days After The Injury, Explain The Reason For The Delay.				
16. I certify that the injury described above was sustained in performance of duty as an employee of the United States Government and that it was not caused by my willful misconduct, intent to injure myself or another person, nor by my intoxication. I hereby claim medical treatment, if needed, and the following, as checked below, while disabled for work:  <input type="checkbox"/> a. Sick and/or annual leave  <input type="checkbox"/> b. Continuation of regular pay not to exceed 45 days and compensation for wage loss if disability for work continues beyond 45 days (if my claim is denied, I understand that the continuation of my regular pay shall be charged to sick or annual leave, or be deemed an overpayment within the meaning of 5 USC 5584).				
Signature of Employee or Person Acting on His/Her Behalf				
17. Statement of Witness (Describe what you saw, heard or know about this injury)				
18. Witness' Signature		19. Witness' Address		20. Date Signed (mo., day, year)



# OFFICIAL SUPERIOR'S REPORT OF TRAUMATIC INJURY

21. Department or Agency		22. Bureau or Office	
23. Name and Address of Reporting Office (No., street, city, state, Zip Code)			
24. Regular Work Day Begins <input type="checkbox"/> AM <input type="checkbox"/> PM Ends <input type="checkbox"/> AM <input type="checkbox"/> PM		25. Number of Hours Worked Per Day	26. Circle Days Paid Per Week S M T W T F S
27. Date and Hour of Injury (mo., day, year) <input type="checkbox"/> AM <input type="checkbox"/> PM	28. Date Reporting Office Received Notice of Injury (mo., day, year)	29. Date and Hour Stopped Work (mo., day, year)	30. If Pay Has Been Terminated, Give Date (mo., day, year)
31. 45 Day Period Begins (mo., day, yr.)	32. Pay Rate When Employee Stopped work \$ _____ per _____	33. Date and Hour Employee Returned to Work (mo., day, year) <input type="checkbox"/> AM <input type="checkbox"/> PM	34. Name of Supervisor At Time of Injury
35. Was Employee In Performance of Duty At The Time of Injury? <input type="checkbox"/> Yes, <input type="checkbox"/> No. If No, Furnish A Detailed Explanation Or A Copy of Employing Agency's Investigation Report.			
36. Was Injury Caused By Willful Misconduct, Intoxication or Intent To Injure Self or Another? <input type="checkbox"/> Yes <input type="checkbox"/> No. If Yes, Furnish Detailed Report.			
37. Was Injury Caused By Third Party? <input type="checkbox"/> Yes <input type="checkbox"/> No. If Yes, Furnish Name and Address of Party Responsible.			
38. Date Employee First Obtained Medical Care for The Injury (mo., day, year)	39. Name and Address of Physician First Providing Medical Care		40. Do Medical Reports Show Employee is Disabled For Work? <input type="checkbox"/> Yes <input type="checkbox"/> No
41. Does Your Knowledge of The Facts About This Injury Agree With The Statements of The Employee And/ Or Witness? <input type="checkbox"/> Yes <input type="checkbox"/> No. If No, Furnish A Detailed Explanation.			
42. Does The Employing Agency Controvert Continuation of Pay? <input type="checkbox"/> Yes <input type="checkbox"/> No. If Yes, Give Full Explanation For Basis of Controversion (See Item 6 of Instruction Sheet). Attach Additional Sheets If More Space Is Needed.			
43. Signature of Supervisor		44. Title and Office Phone Number	45. Date (mo., day, year)



IMPORTANT: The employee and official superior (supervisor) should read all of the following instructions before completing this form.

1. The employee, or someone acting on his/her behalf, shall complete items 1 through 16 and give the form to the employee's supervisor for completion of items 21 through 45.
2. Upon receiving the completed form the supervisor shall complete "Receipt of Notice of Injury" at the bottom of this page, detach the page and give it to the employee. The supervisor is also responsible for obtaining the witness information in items 17 through 20.
3. Upon completion of items 21-45, the supervisor should advise the employee whether pay will continue or will be controverted and terminated. If pay is controverted and stopped, the supervisor shall explain to the employee the basis for the action.
4. Where pay is continued, the employing agency may require medical evidence, via Form CA-17, "Duty Status Report," as often as circumstances indicate.
5. Form CA-1, fully completed, shall be forwarded to the appropriate OWCP District Office within 2 working days following receipt by the supervisor if:
  - a. The injury causes disability for work beyond the day or shift it occurred, or
  - b. It appears that the injury will result in prolonged treatment, permanent disability or serious disfigurement of the head, face, or neck, or
  - c. The injury has resulted, or appears it will result, in a charge for medical or other related expense.

If none of the above occur or appear likely, the form shall be retained in the employee's official personnel file.

6. Note: The employing agency may properly controvert and terminate the employee's pay if:
  - a. Disability results from an occupational disease or illness; or
  - b. The employee is excluded by 5 USC 8101(1) B or E; or
  - c. The employee is neither a citizen nor a resident of the United States or Canada; or
  - d. The injury occurred off the employing agency's premises and the employee was not involved in official "off premise" duties; or
  - e. The injury was caused by the employee's willful misconduct, intent to bring about injury or death of self or another person, or was proximately caused by employee's intoxication; or
  - f. The injury was not reported on Form CA-1, within 30 days following the injury; or
  - g. Work stoppage first occurred six months or more following the injury; or
  - h. The employee initially reports the injury after his/her employment has terminated; or
  - i. The employee is enrolled in the Civil Air Patrol, Peace Corps, Job Corps, Youth Conservation Corps, Work Study Programs or other similar groups.

7. If additional space is required to explain or clarify any point, attach a supplemental statement to the form.

RECEIPT OF NOTICE OF INJURY		
THIS ACKNOWLEDGES RECEIPT OF NOTICE OF INJURY SUSTAINED BY _____ <span style="float: right; font-size: small;">(Name of injured employee)</span>		
WHICH OCCURRED ON _____ AT _____ <span style="float: left; font-size: small;">(Mo., day, year)</span> <span style="float: right; font-size: small;">(Location)</span>		
SIGNATURE OF OFFICIAL SUPERIOR	TITLE	DATE (Mo., day, year)
ATTACHMENT "N", Page 3 of 4		



DISABILITY BENEFITS FOR EMPLOYEES UNDER THE FEDERAL  
EMPLOYEES' COMPENSATION ACT (FECA)

The FECA, which is administered by the Office of Workers' Compensation Programs, (OWCP) provides the following benefits for disabling, job-related, traumatic injuries:

1. Continuation of pay for disability resulting from traumatic, job-related injury, not to exceed 45 calendar days. (To be eligible for continuation of pay, the employee, or someone acting on his/her behalf, must file Form CA-1 within 30 days following the injury; however, to avoid possible interruption of pay, the form shall be filed within 2 working days. If the form is not filed within 30 days, compensation will be substituted for continuing pay.)
2. Payment of compensation for wage loss after the 45 days, if disability extends beyond such period.
3. Payment of compensation for permanent impairment of certain organs, members, or functions of the body (such as loss or loss of use of an arm, kidney, loss of vision, etc.) or for serious disfigurement of the head, face, or neck.
4. Vocational Rehabilitation and related services where necessary.
5. Full medical care from either Federal medical officers and hospitals, or private hospitals or physicians, of the employee's choice. Generally, 25 miles from the place of injury, place of employment, or employee's home is a reasonable distance to travel for medical care; however, other pertinent factors must also be considered in making selection of physicians or medical facilities.

At the time an employee stops work following a traumatic, job-related injury, he or she may request continuation of pay or use sick or annual leave credited to his or her record. Where the employing agency continues the employee's pay, the pay must not be interrupted until:

1. The employing agency receives medical information from the attending physician to the effect that disability has terminated;
2. The OWCP advises that pay should be terminated; or
3. At the expiration of 45 calendar days following initial work stoppage.

If the disability exceeds, or it is anticipated that it will exceed, 45 days, and the employee wishes to claim compensation, Form CA-7, with supporting medical evidence, must be filed with the OWCP. To avoid interruption of income, the form should be filed not later than 5 working days following the expiration of the 45 day period. Form CA-3 shall be submitted to the OWCP when the employee returns to work, disability ceases, or upon expiration of the 45 day period.

For additional information, review the regulations governing the administration of the FECA (Code of Federal Regulations, Title 20, Chapter 1) or Chapter 810 of the Civil Service Commission's Federal Personnel Manual.



DEPARTMENT OF THE ARMY  
Louisville District, Corps of Engineers  
P. O. Box 59  
Louisville, Kentucky 40201

DR 385-1-29

ORLSB

10 December 1969

DISTRICT REGULATION  
NO. 385-1-29

SAFETY

Accident Prevention Signs

1. Purpose. The purpose of this regulation is to obtain maximum safety through the use of uniform accident prevention signs. Reaction to signs should be automatic and it should not be necessary to stop, read and analyze the meaning of each particular warning. Sign uniformity is of great importance. It should be clearly understood, however, that signs are not to be considered the only steps to be taken against particular hazards. Whenever possible, hazards should be eliminated or provided with safeguards.
2. Scope. The scope of this regulation includes the design, application, and use of signs or symbols intended to indicate and, insofar as possible, to define specific hazards of a nature such that failure to designate them may lead to accidental injury to workers or the public, or both, or property damage. All safety signs are included in this regulation except those designated for street, highways, railroads and marine regulations. Bulletin boards and safety posters are also exempt from this regulation. For specifications on radiation warning signs, contact the Safety Office.
3. Applicability. This regulation applies to all Government and Contractor Activities in the Louisville District.
4. References.
  - a. AR 385-30
  - b. EM 385-1-1
  - c. USAS Z 35.1
5. Policy. Each supervisor will assure that accident prevention signs described in paragraphs 6-11 and Appendixes I-IV are used within his area of responsibility in accordance with the purpose, scope and applicability of this regulation.
6. Types of Signs. The categories of signs below are typed according to the purpose for which they are intended. The examples are to be used as guides when choosing the correct sign design for the message to be displayed. The wording of any sign should be concise and easily read, but it should contain sufficient information to be easily understood. The wording should, whenever possible, afford a positive rather than a negative suggestion.



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a. Danger Signs. To warn of specific dangers only.

Examples of Wording

(See Appendix I For Design of Signs)

Danger - High Voltage  
Danger - Keep Off, Electric Current  
Danger - No Smoking, Matches, or Open Light\*  
Danger - Men Working Above  
Danger - Not Room Enough Here to Clear Man on Cars  
Danger - Keep Away  
Danger - Man in Boiler  
Danger - Insufficient Clearance  
Danger - 2,300 Volts  
Danger - Keep Out  
Danger - Crane Overhead  
Danger - Keep Off  
Danger - Use No Open Light - Flammable  
Danger - Artillery Firing in Progress  
Danger - Small Arms Firing in Progress  
Danger - Ammunition Dud Area  
Danger - Blasting  
Danger - Do Not Operate, Man Working on Repairs  
Danger - Hands Off Switch, Man Working on Line

b. Caution Signs. To warn of possible dangers or unsafe practices.

Examples of Wording

(See Appendix II For Design of Signs)

Caution - Goggles Must Be Worn When Operating This Machine  
Caution - This Door Must Be Kept Closed  
Caution - Electric Trucks, Go Slow  
Caution - This Space Must Be Kept Clear At All Times  
Caution - Stop Machinery To Clean, Oil, Or Repair  
Caution - Keep Aisles Clear

\*Note. For signs reading "No Smoking" a rectangular sign using white letters on a red background will be acceptable except in high hazard areas.

Caution - Operator Of This Machine Shall Wear Snug Fitting Clothing -  
No Gloves  
Caution - Close Clearance  
Caution - Watch Your Step  
Caution - Eye Protection Required, Intense Light  
Caution - Electric Fence  
Caution - Hearing Protection Required

c. Safety Instruction Signs. To provide information relating to general safe practices.

Examples of Wording

(See Appendix III For Design of Signs)

Report All Injuries to the First Aid Room at Once  
Walk - Don't Run - Avoid Injury  
Report All Injuries No Matter How Slight  
Make Your Workplace Safe Before Starting the Job  
Report All Unsafe Conditions to Your Foreman  
Help Keep This Plant Safe and Clean  
Lock Out Controls Before Making Electrical Repairs  
Number of Consecutive Days Without a Disabling Injury ( )  
Three Causes of Injuries:

I Didn't Look  
I Didn't Ask  
I Didn't Listen

d. Directional Signs. To indicate the way to stairways, fire escapes, exits, and other locations.

Examples of Wording

(See Appendix IV For Design of Signs)

This Way Out (below arrow panel).  
This Way (inside arrow) Out (below arrow panel).  
To The (inside arrow) First Aid Station (below panel).  
Manway (below arrow panel).  
This Way To (inside arrow) First Aid Room (below arrow panel).

e. Informational Signs. To carry messages of a general nature such as rules, regulations, and markers, when such postings do not conflict with danger or caution purposes.

7. Required Sign Colors. A sign will have sufficient of the applicable specific color in its makeup so that it will be the predominating color of the sign. The following colors will be used:

- a. Danger signs. Red
- b. Caution signs. Yellow
- c. Safety instruction signs. Green



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d. Directional signs. Black

e. Informational signs. May be a variety of colors, except that neither red nor yellow will be used.

8. Sign Design. a. Danger Signs. Paints with phosphorescent content or other highly reflective materials may be used when safety considerations fully justify a need for assuring visibility of signs in darkened areas or at night.

(1) Danger signs will have a white background covering the face of the sign. The word DANGER will appear in white letters on a red oval. The red oval should be placed inside a black rectangular panel. (White line separating the outside edges of the red oval from the adjacent edge of the black panel may be used.)

(2) The danger panel should be placed at the top of the sign.

(3) The sign wording should be in black letters on the white background.

(4) The size of the red oval containing the word DANGER and the size of the letters used for the word DANGER will vary with the outside dimensions of the sign (Appendix I).

(5) The sign wording or message will be as brief as possible, but will convey all necessary information. The expression may include what the danger is, where it is and, in some cases, how to avoid it.

b. Caution Signs.

(1) Caution signs will have a yellow background covering the face of the sign. The word CAUTION will appear in yellow letters on a black rectangular panel.

(2) The caution panel should be placed at the top of the sign.

(3) The sign wording should be in black letters on the yellow background.

(4) The size of the black rectangular panel containing the word CAUTION and the size of the letters used for the word CAUTION will vary with the outside dimensions of the sign (Appendix II).

c. Safety Instruction Signs.

(1) Safety instruction signs should have a white background covering the face of the sign. If words such as THINK or BE CAREFUL are used, they should be in white letters on a green rectangular panel.



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(2) The green panel should be placed at the top of the sign. The sign wording should be placed below the panel in black letters on the white background.

(3) The size of the green panel and the size of letters for the word or words should vary with the outside dimensions of the sign (Appendix III).

d. Directional Signs.

(1) Directional signs should have a white background covering the face of the sign. The arrow pointing at the direction should be in white on a black rectangular panel. Any wording in the arrow or below the panel should be in black.

(2) The black panel should be placed at the top of the sign.

(3) The size of the panel and the arrow should vary with the outside dimensions of the sign (Appendix IV).

e. Informational Signs. Informational signs may be in any of a variety of designs and colors, except that neither red nor yellow will be used.

f. Marker Signs. Frequently signs are used to designate certain locations such as offices, entrances, and toilets. These signs may be of any convenient size and of any desired design except that they will be distinct from any of the special groupings listed elsewhere in this regulation.

9. Sign Uses. a. Danger Signs.

(1) A danger sign should be used only where an immediate hazard exists. There should be no variations in the type or design of signs posted to warn of specific dangers.

(2) All personnel will be instructed that danger signs indicate immediate danger and that special precautions are necessary.

b. Caution Signs.

(1) Caution signs should be used only to warn against potential hazards or to caution against unsafe practices.

(2) All personnel will be instructed that a caution sign indicates a possible hazard against which proper precautions will be taken.

c. Safety Instruction Signs. A safety instruction sign should be used where there is a need for general instructions and suggestions relative to safety measures.



d. Directional Signs. Directional signs in sufficient numbers should be used to indicate the way to locations.

e. Informational Signs. Informational signs should be used where it is advisable to convey general information on a subject not necessarily of a safety nature and where their use will tend to eliminate confusion and misunderstanding. Signs marked toilets, offices, entrances, and locker rooms are in this classification.

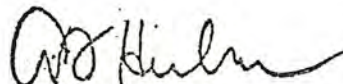
10. Sign Inspection and Maintenance. Signs should be inspected regularly and maintained in good condition, they should be kept clean, well illuminated, and legible. Damaged or broken signs should be replaced.

11. Design of Signs. a. Location. The size of a sign should be determined by the location at which the sign is to be placed, the character of the hazard involved, the purpose of the sign, the distance at which the sign should be legible, and the amount of wording the sign is to contain.

b. Dimensions. When choosing a sign size, consideration should be given to dimensions that will permit economic use of standard sized materials.

c. Size Data. Appendixes I-IV provide data from which signs of good proportions can be made.

FOR THE DISTRICT ENGINEER:

  
A. F. HUBER  
Executive Assistant

4 Appendixes  
Appendix I  
Danger Signs  
Appendix II  
Caution Signs  
Appendix III  
Safety Instruction Signs  
Appendix IV  
Directional Signs

DISTRIBUTION:  
X  
All Supervisors

A CHECK LIST OF POTENTIAL SOURCES OF POLLUTION  
TO NATURAL BATHING AREAS

Before opening the bathing beach, a complete sanitary survey must be conducted of the shore area surrounding the beach. The various sources of potential pollution which could affect the bacteriological quality of the bathing water through surface and subsurface drainage are as follows:

Storm Water Drainage

Roadways

Bridle Paths

Picnic Areas

Camping Areas

Barns

Waste from Bathhouse Adjacent to Bathing Area

Seepage from Septic Tanks and Drain Fields  
Serving Shore Installations

Nearby Boat Docks and Marinas

Inoperative Sewage Lift Stations

Broken Sewer Lines

Refuse Dumps

To the above list of pollution sources, others can be added which may be characteristic to the individual bathing area. Pollution can also occur by wild and domestic animals and birds.



## NATURAL BATHING BEACHES

The term "bathing beach" as commonly used includes all waters sufficiently deep for complete emersion of the body and used collectively by numbers of persons for swimming and recreational bathing. The shores, bathing equipment and appurtenances are also considered a part of the bathing area. In Kentucky, bathing areas may be divided into two classes:

1. Natural or impounded lakes (such as bathing beaches already in existence which are permitted to operate as long as the coliform counts do not exceed the acceptable levels and the sanitary conditions around the bathing area are satisfactory). No new bathing areas have been approved since 1963 when the Kentucky Public Swimming Pool Regulations became effective.
2. Outdoor and indoor swimming pools, which are artificially constructed and which are covered under the state public swimming pool regulations. (8-hour complete turnover is required.) Swimming pool systems include filtration and chlorination. Fill-and-draw and flow-through pools are not approved under the state regulations.

Natural lakes and impoundments are necessarily dependent upon natural flow or upon temperature, wind and wave action for circulation of the water. In the control of sanitation, certain broad principles apply to both swimming pools and

bathing areas. The same precaution against the possible spread of diseases should apply for both the artificially constructed swimming pool and the natural bathing area. At public bathing beaches or natural waters, the same sanitation standards should apply to bath houses, dressing rooms, toilet facilities, and the handling and caring of bathing suits, towels and other articles, as would be required at the artificial swimming pool. Sanitary drinking fountains with a supply of safe potable water should be installed at all bathing places.

Sources of Pollution . In a swimming pool whose water is derived from a public water supply of unquestioned quality, it may be assumed that the presence of organisms indicates pollution by human sewage particles. The presence of such bacteria in outdoor bathing places, however, may be due to surface drainage which may be relatively harmless. Harmful contamination may be caused by sewage from boats, sewerage systems from shore installations, refuse dumping and the bathers themselves. (See list of potential sources of pollution.)

Collection of samples from outdoor bathing places . Analyses of samples of bathing waters intelligently interpreted are of great value but full consideration should be given to conditions when samples are collected and conditions which may have existed at other times. The replenishment of the bathing water by stream flow, by wind and temperature current, the contamination introduced by the bathers themselves and the intermittence of the various sources of sewage pollution are all of importance in considering danger from sewage pollution of bathing areas. It is well to emphasize that time is a factor of great importance. The hazard from a relatively small amount of sewage pollution in close proximity to the bathing



areas is far greater than a less amount at a considerable distance.

Bacteriological standards for outdoor places. In evaluating waters of outdoor places three aids are available:

1. The results of the chemical analysis of the water;
2. The results of the bacteriological analysis of the water; and
3. Information obtained by a sanitary survey of the sources of pollution, consideration of flow currents, etc.

Chemical analysis may in some cases be of value but are not ordinarily used. It is not considered practicable nor desireable to recommend any absolute standard of safety for waters of outdoor bathing places on any of the three mentioned above. Before definite conclusions are drawn, there must be epidemiological evidence.

In appraising bacteriological conditions of bathing waters, allowances must be made and distinction drawn as to contamination introduced by large bathing loads and pollution derived from sewer discharges or other sources. Stirring up of the bottom sediment by bathers may result in greatly increasing the bacteria count in the water. Bathing in natural bodies of waters, subjected to gross animal pollution, should not be permitted because of the possible danger of animal-borne virus diseases. Many inlet waters have been found to show a high content of coliform organisms due to the effects of pasturage and contamination from domestic and wild animals, rather than human sewage pollution. This again calls attention to the need for consideration, both analytical findings and sanitary survey data.

Extent - prevalence of disease transmission by bathing waters. In discussing

possible disease transmission by bathing waters, consideration should be given to those diseases which might be spread from one bather to another, and those diseases which might be caused where there are dangers from bathing waters polluted by sewage from sewerage systems or other extraneous sources. The usual type of diseases considered in connection with bathing areas are: eye, ear, nose, and throat infections; skin infections, such as ringworm, etc.; and, gastrointestinal disorders.

#### Bather Load

While no specific amount of diluting water for such beaches can be recommended, it is probably reasonable to say that less than 500 gals. per bather per day is too small a diluting volume without disinfection.

#### Disinfection of Large Bodies of Waters

The disinfection of relatively large bodies of waters by use of a boat has been employed with some success. In some locations large bathing areas have been disinfected satisfactorily by the use of an extensive piping system along the water bottom either for distribution of chlorine, disinfecting solutions, or for distribution of large amounts of pumped water drawn from the bathing area and disinfected in the pump suction with chlorine in what is practically a recirculation system. Where such disinfection is feasible, it should be considered. The use of disinfecting agent may be developed to guard against dangers from pollution by the bathers themselves in densely populated bathing areas which are not subject to major water changes due to flow.

#### Application of H.T.H. in Bathing Area

In applying a solution of calcium hypochlorite (or H.T.H. High-Test Hypochlorite) in natural bathing areas, reasonable care must be exercised to distribute



the chemical uniformly throughout bodies of water being treated. The most effective and simplest method is to feed the solution by gravity from a corrosion resistant polyethylene tank equipped with plastic faucet at the bottom. Plastic tubing is attached to the faucet and used to discharge the solution by gravity a minimum of 12 inches below the surface of the water. During the very warm days, the solution should be discharged 2 to 3 feet under the surface of the water to prevent quick dissipation of chlorine by sunlight. A weight or sinker may be needed at the end of the discharge hose to keep the hose down to the desired depth. The solution crock may be 15 to 50 gallons in size, whichever is convenient, and may be placed in a stable part of the boat, either the rear or middle seat. Usually a 30 gallon crock is used. The solution crock may be filled in the boat using lake water thus eliminating the task of carrying heavy loads of solution from the shore. Other methods besides gravity-fed may be employed for discharging the solution from the crock. These include the use of a plastic siphon, plastic pump, or boat bailer.

If a motor boat can be used for this, application will be better and distribution of the chlorinated solution can be obtained due to the churning action of the propeller. Pontoon boats operated by foot paddles may also be used. The boat should follow a zig-zag or criss-cross pattern as to triangulate the surface of the water and distribute the amount of solution as uniformly as possible. The wind, waves, diffusion and gravity will help spread the solution throughout. This method has been found to be very effective but it is essential that the chemical be well distributed. The paths the boat follows across the water must not be wider than 20 ft. (See Figures 1 and 2)

SUGGESTED BOAT PATTERN FOR APPLYING  
CHLORINE SOLUTION TO LARGE BATHING AREAS

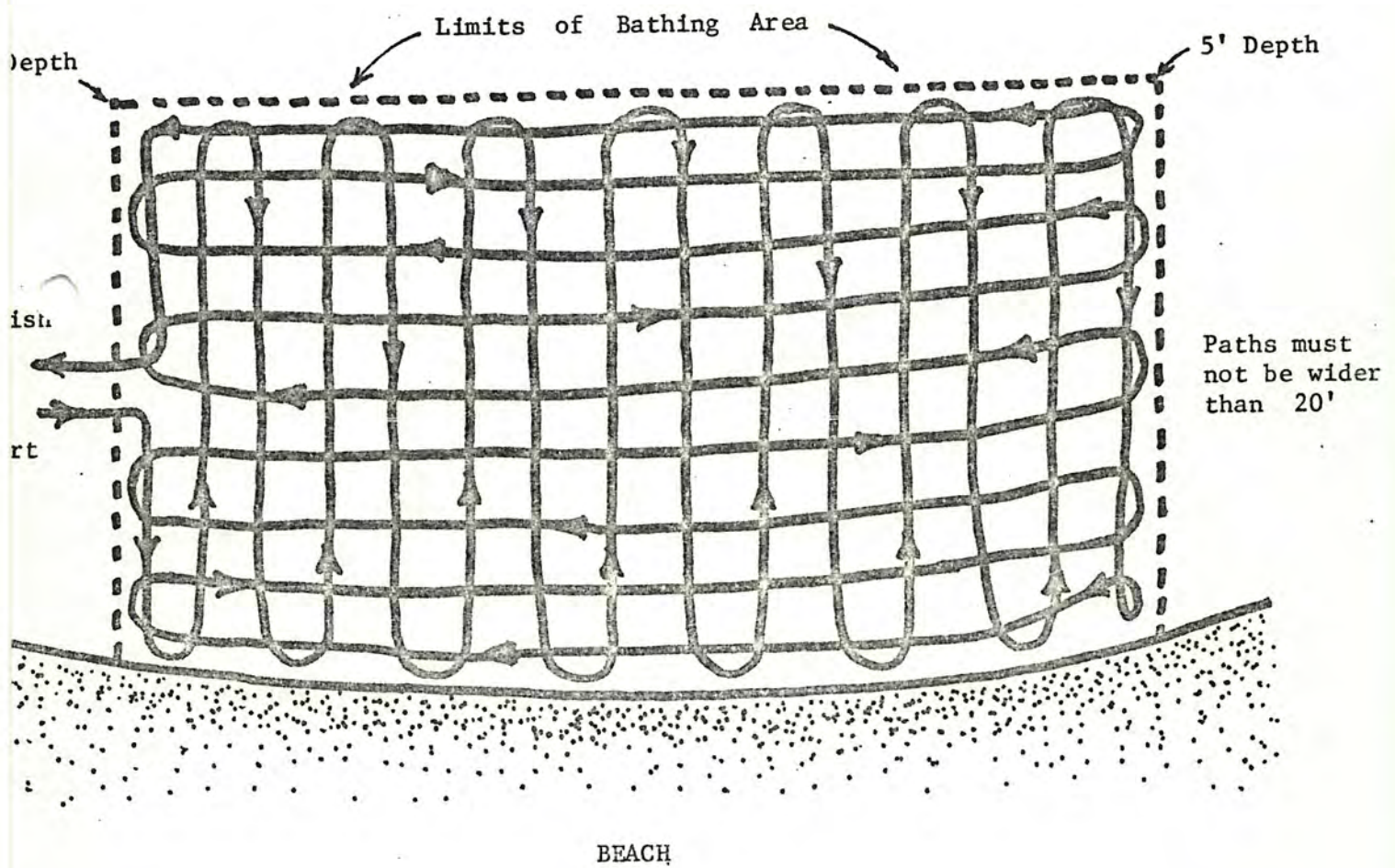


Fig. 1



SUGGESTED BOAT PATTERN FOR APPLYING  
CHLORINE SOLUTION TO SMALL BATHING AREAS

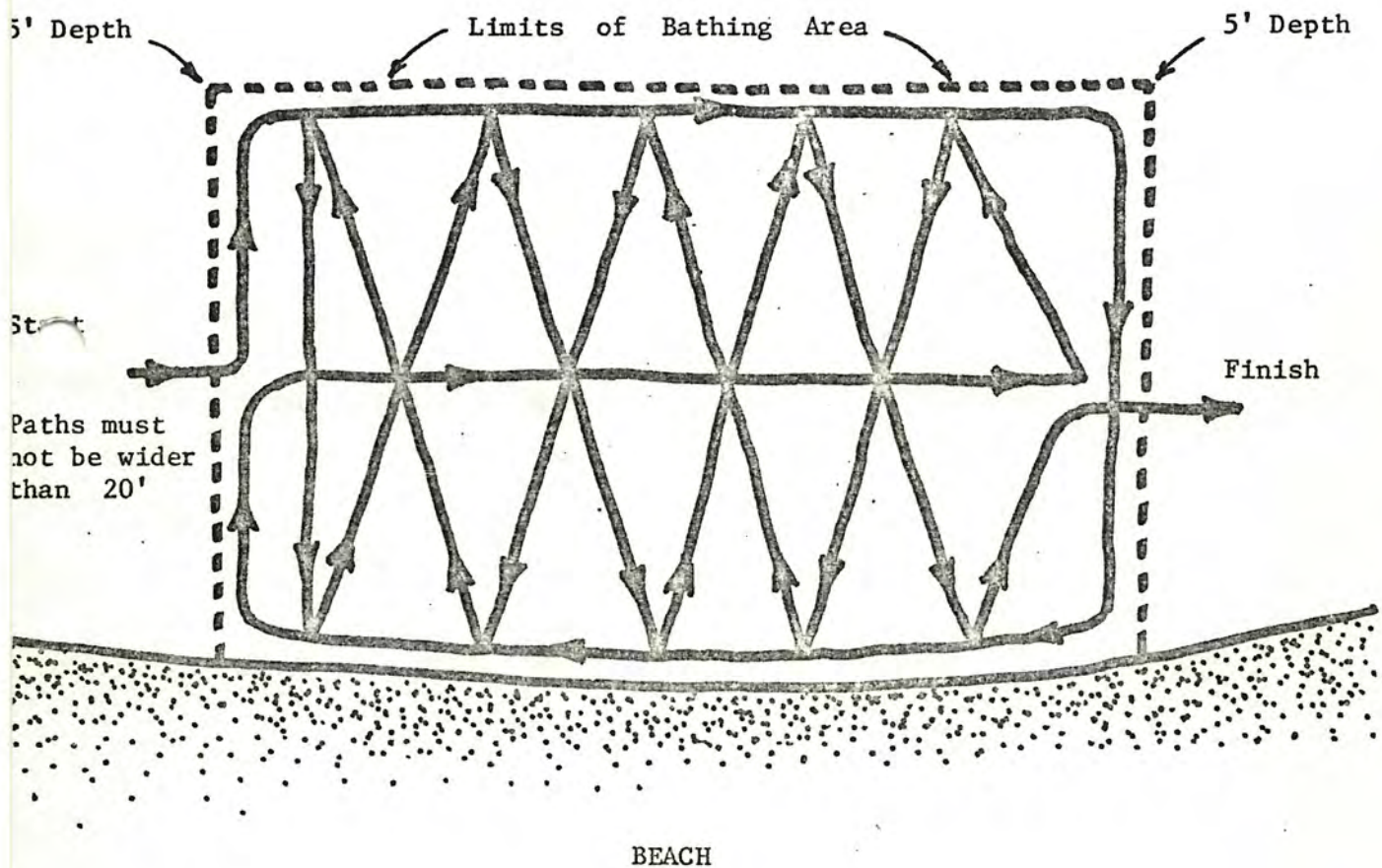


Fig. 2

## CALCULATIONS

The amount of H.T.H. (70% available chlorine) to use will depend on the volume of water to be treated within the bathing area. The volume may be calculated by keeping two conversion factors in mind.

1 cu.ft. contains 7.5 gallons of water

1 gallon of water weighs 8.34 lbs.

First, estimate the area of the bathing beach enclosed by life lines, markers or buoys out to the 5 ft. depth. (Some bathing areas have 6 ft. depths.) If the slope from the shore to the 5 ft. depth is uniform, an average depth of 2.5 ft. depth is assumed. The 2.5 ft. depth is multiplied by the total number of sq.ft. of surface area to obtain the number of cu.ft. The number of cu.ft. is then multiplied by 7.5 to find the number of gallons. This will generally be over a million gallons for large swimming areas. If the slope is not uniform, soundings of the depth must be taken at various points. An average depth can then be determined by adding the number of feet of all the depths and dividing by the number of soundings.

EXAMPLE #1: A beach area is 300 ft. long and 200 ft. wide. It has an average depth of 2.5 ft. Calculate volume of water and lbs. of H.T.H. to give 1.0 p.p.m. (parts per million)

$$\begin{aligned}\text{Volume} &= 300 \text{ ft.} \times 200 \text{ ft.} \times 2.5 \text{ ft.} \times 7.5 \text{ gals/cu.ft.} = \\ &1,125,000 \text{ gallons}\end{aligned}$$

(It has been calculated that 12 lbs. of H.T.H. will give 1.0 p.p.m. to



1,000,000 gallons - - See Calculations Example #6) Therefore, based on 12 lbs. of H.T.H. for 1,000,000 gallons for 1.0 p.p.m., the following calculations are used to determine the lbs. of H.T.H. for 1,125,000 gallons.

$$\begin{aligned}\frac{12}{1.0} &= \frac{x}{1.125} \\ x &= 12 \times 1.125 \\ x &= 13.5 \text{ lbs. of H.T.H.}\end{aligned}$$

EXAMPLE #2: A beach area is 500 ft. long, 300 ft. wide and has an average depth of 3.0 ft. Calculate volume of water and lbs. of H.T.H. to give 1.0 p.p.m.

$$\begin{aligned}\text{Volume} &= 500 \text{ ft.} \times 300 \text{ ft.} \times 3.0 \text{ ft.} \times 7.5 \text{ gal/cu.ft.} = \\ &3,375,000 \text{ gallons}\end{aligned}$$

Since 12 lbs. of H.T.H. per 1.0 million gallons gives 1.0 p.p.m.

$$\begin{aligned}\frac{12}{1.0} &= \frac{x}{3.375} \\ x &= 12 \times 3.375 \\ x &= 40 \text{ lbs. of H.T.H.}\end{aligned}$$

H.T.H. must be applied in not less than 1.0 parts per million. Application must be once or twice daily depending on general conditions and bather loads. The entire application should be completed in not less than 30 minutes before opening in the morning and again in the afternoon when the area is closed and reopened.

Application is usually in 1% solution of H.T.H. Such a solution can be prepared by thoroughly mixing 5 lbs. of H.T.H. in 42 gallons of water. (See calculations of Example #3 below) H.T.H. mixed in this solution can then be applied in a number of batches until the total number of lbs. of H.T.H. needed to treat the area is used up. A 2% solution of H.T.H. can also be used if a stronger solution is desired.

EXAMPLE #3: Prepare a 1% solution of H.T.H. (70% available chlorine in H.T.H.) in a 42 gallon crock.

$$\frac{42 \text{ gals.} \times 8.34 \text{ lbs/gal} \times .01 \text{ sol.}}{.70 \text{ available chlorine in H.T.H.}} = 1 \text{ lbs. of H.T.H.}$$
$$1 \text{ lbs. of H.T.H.} = 5$$

EXAMPLE #4: Prepare a 1% solution of H.T.H. in a 30 gallon crock.

$$\frac{30 \text{ gals.} \times 8.34 \text{ lbs/gal} \times .01 \text{ sol.}}{.70} = 1 \text{ lbs. of H.T.H.}$$
$$1 \text{ lbs. of H.T.H.} = 3.6$$

EXAMPLE #5: Prepare a 2% solution of a calcium hypochlorite powder which has 65% available chlorine (instead 70%) in a 50 gallon crock.

$$\frac{50 \text{ gals.} \times 8.34 \text{ lbs/gal} \times .02 \text{ sol.}}{.65} = 1 \text{ lbs. of hypochlorite}$$
$$1 \text{ lbs. of hypochlorite} = 12.8$$



EXAMPLE #6: The number of lbs of H.T.H. (70% available chlorine) necessary to apply one part per million to one million gallons of water may be calculated as follows:

$$\frac{.70 \text{ (available chlorine)} \times (\text{lbs. of H.T.H.})}{1,000,000 \text{ gals. of water} \times 8.34 \text{ lbs/gal}} \times 1,000,000 = 1.0 \text{ p.p.m.}$$

(to get (parts  
parts per per  
million) million)

$$\frac{.7 \times (\text{lbs. of H.T.H.})}{8.34} = 1.0 \text{ parts per million}$$

$$\text{lbs. of H.T.H.} = \frac{8.34 \times 1.0}{.7}$$

$$\text{lbs. of H.T.H.} = 12$$

EXAMPLE #7: Using the above formula, determine lbs. of calcium hypochlorite powder (65% available chlorine) necessary to treat 2,000,000 gallons of water at 1.5 p.p.m.

$$\frac{.65 \times (\text{lbs. of calcium hypochlorite})}{2,000,000 \text{ gals. of water} \times 8.34 \text{ lbs/gal}} \times 1,000,000 = 1.5 \text{ p.p.m.}$$

$$\frac{.65 \times (\text{lbs. of calcium hypochlorite})}{16.68} = 1.5 \text{ p.p.m.}$$

$$\text{lbs. of calcium hypochlorite} = \frac{16.68 \times 1.5}{.65}$$

$$\text{lbs. of calcium hypochlorite} = 38.5$$

## BATHING BEACH SANITATION

Testing and Sampling of Water: pH and chlorine residuals should be run several times a day and the results of the tests recorded. Samples of water from the bathing beach for bacteriological examinations, must be sent to the State Laboratories, Kentucky State Department of Health, Frankfort, Kentucky, in accordance with predetermined schedule. Occasionally, one gallon sample for complete chemical analysis may be required. Samples should be dipped several inches under the surface of the water in a swooping motion for a good composite sample. Obtaining the sample under the surface of the water will also avoid picking up floating matter. The entire swimming area should be sectionalized and samples be taken in each section at varying depths and during different bathing loads. The samples should be taken once or more a week. If the reports of the bacterial samples show 1000 or less coliforms per 100 ml, the water may be considered acceptable for bathing unless the sanitary survey discloses immediate danger from human or animal pollution. When the coliform count runs 1000 or more, the beach should be closed and bathing water heavily chlorinated until further bacteriological examinations show a reduction of the coliform count.

Lifeguards and Safety Equipment: Public bathing beaches must have one or more lifeguards on duty during the bathing hours. The guards must be certified and not be in the water except in the line of duty. It is recommended that one guard be provided for each 100 yards of beach line. Lifeguards should be separated from beach crowds by using elevated seats or towers. The seats or towers must be sufficiently high as to give the guards an unobstructed view of the bathing area. Lifeguards should not be on duty for over one hour without being relieved.

A sufficient number of life rings must be provided at the bathing beach. These rings must be about 15 inches in diameter with at least 75 feet of 3/16 inch



manila line attached to each. Ring buoys when not used must be hung on racks. Other safety equipment, such as rescue buoys, diamond or torpedo type, equipped with 100-300 feet of 1/8 inch specially prepared stout line be at each life-guard's stand. At least one square sterned boat, equipped with oars, oar locks and life ring be ready for use. Paddle board and surf boards should be kept in readiness at strategic points along the beach. First aid kits must be provided, along with respirators. All electrical wiring and lighting near and around the beach must comply with standard electrical codes.

#### BEACH AREA SANITATION

Before the bathing beach is opened, all algae and weeds must be removed from the water and beach. Sometimes new sand is placed on the beach from several inches to several feet in depth. The artificial sand beach can become a dangerous source of athlete's foot and other infections. At frequent intervals the beach should be sprayed with a calcium hypochlorite solution made by diluting 2 gallons of 2% HTH solution in 40 gallons of water. Smaller beach areas can be sprinkled by means of a watering can, using a solution of similar strength. The sand should be thoroughly soaked with the treating solution. Spraying beaches with this solution will eliminate foot infections and keep down flies and other insects. However, stronger solutions are ordinarily required in disinfecting natural sand because of the presence of more organic matter. Sometimes the dry powder is placed on the sand and then the sand is raked just before a rain. Water is also sprinkled on the dry powder over the sand. Boots must be worn while carrying out this operation.

Bathhouse Sanitation: In areas along the water's edge where uncontrolled swimming may occur, signs stating "NO SWIMMING" should be posted. Signs should also state, "WATER UNSAFE FOR SWIMMING". If possible people should be made to get out of the water.

All locker room floors, benches, baskets, toilets and hand basins should be cleaned and disinfected. A solution for this purpose is made by dissolving a 1% solution of HTH in 5 gallons water. Dry calcium hypochlorite sprinkled in urinals and toilet bowls at intervals will keep down odors and remove stains. Locker rooms should be ventilated and opened to sunlight. All toilet fixtures must be operative and hot water must be furnished.

When unsanitary conditions appear, the State Health Department should be notified at once.



DEPARTMENT OF THE ARMY  
Louisville District, Corps of Engineers  
P. O. Box 59  
Louisville, Kentucky 40201

DR 385-1-28

ORLSB

5 December 1969

DISTRICT REGULATION  
NO. 385-1-28

SAFETY

Safety Color Code for Marking Physical Hazards

1. Purpose. The purpose of this regulation is to make known the required procedures in supplementing proper guarding or elimination of hazardous conditions by use of standard colors. These colors will aid in the recognition of specific hazards by the process of association. The marking of a physical hazard by a standard color warning should never be accepted as a substitute for the complete elimination or the guarding of the hazard wherever this is possible.
2. Scope. This safety color code defines the application of colors to specific purposes in connection with accident prevention and gives the colors to be used for such purposes as the marking of physical hazards, the location of safety equipment, and the identification of fire and other protective equipment, etc. It is not intended that this code be in conflict with any generally accepted standards or regulations with respect to the use of color or shape of markers in water or air navigation, or in railroad or in highway transportation.
3. Applicability. This regulation is applicable to all Government and Contractor Activities in the Louisville District.
4. References.
  - a. AR 385-30
  - b. EM 385-1-1
  - c. USAS Z53.1
5. Policy. Each supervisor will assure that the color coding listed in paragraph 6 below is complied with in accordance with the purpose, scope and applicability of this regulation in his area of responsibility.
6. Colors. a. Paint colors used for this code will be in accordance with safety colors listed in table XI, Federal Standard No. 595, 1 March 1956, published by General Services Administration. (Red No. 11136 and Yellow No. 13538 may be used in lieu of Red No. 11105 and Yellow No. 13655 shown in table XI.) The use of high visibility (fluorescent) paint in the appropriate similar color is authorized where instantaneous recognition is deemed essential. Luminous (phosphorescent) paint may be used when essential for



5 Dec 69

marking the location of dangerous areas, exits, or emergency equipment in darkened areas. Use of materials other than paint, such as decals and tapes, to achieve economies is acceptable provided appropriate similar colors are utilized.

b. Red will be used as the basic color for identification of --

(1) Fire protective equipment and apparatus.

(a) Fire alarm boxes (pull boxes).

(b) Fire blanket boxes.

(c) Fire extinguishing containers.

(d) Fire extinguishers, unless painting of the extinguisher is unnecessary. In any event, in large areas color will be used on the housing wall or support above the extinguisher to identify the location when the extinguisher is not readily visible to the area occupants. An exception is in officers and NCO open messes, service clubs, and other occupancies where red painting would clash with the harmony of interior decoration.

(e) Firehose locations.

(f) Fire pumps.

(g) Fire sirens, except vehicular mounted.

(h) Fire buckets or pails.

(i) Fire reporting telephone stations.

(j) Safety cans or other portable service-type containers of flammable liquids having a flash point at or below 80° F. — ICC Red Label will be painted red with a yellow band around the can or the name of the contents conspicuously stenciled or painted on the can in yellow.

(2) Danger.

(a) Danger signs

(b) Red or amber lights (flashing or fixed) and/or red or orange reflective material on barricades or temporary obstructions and on temporary construction. (Flares or torches may be used when it is impossible or impractical to install red or amber lights.)



(3) Stop.

(a) Stop buttons for electrical switches used for emergency stopping of machinery.

(b) Emergency stop bars on hazardous machines.

c. Yellow will be used as the basic color for designating caution; for marking dangerous chemicals and physical hazards such as striking against, stumbling, falling, tripping, and "caught in between." The following is a list of examples where solid yellow, yellow and black stripes, or yellow and black checkers in optional dimensions may be used interchangeably in accordance with whichever will attract the most attention in the particular environment:

(1) Caution.

(a) Where particular caution is needed -- handrails, guardrails, or top and bottom treads of stairways.

(b) Fire hydrant barrels

(c) Caution signs

(d) Piping systems containing flammable material (MIL-STD-101<sup>3</sup>).

(e) Waste containers for highly combustible materials will be painted yellow, with identity of contents labeled thereon in black lettering.

(f) Containers of hazardous chemicals with toxic vapors (such as trichlorethylene) will be painted yellow with identity of contents labeled thereon in black lettering.

(2) Physical hazards.

(a) Materials handling equipment.

(b) Lower pulley blocks and cranes.

(c) Coverings and guards for guy wires.

(d) Stripe along sides of freight car loading plates or runways.

(e) Pillars, posts, or columns which are physical or industrial hazards.

(f) Fixtures suspended from ceiling or walls which extend into normal operating areas (within the clearance diagrams of plant traffic).

- (g) Corner markers for storage piles.
- (h) Lips on horizontally closing elevator doors.
- (i) Exposed and unguarded edges of platforms, pits, and wells.

d. Green will be used as the basic color for designating safety equipment and operator devices to include location of first aid, and first aid equipment (other than firefighting equipment and ambulance vehicular marking). The following is a partial list of examples where solid green, green and white stripes, green cross on white background, or white cross on green background, as appropriate, will be used:

- (1) First aid. Location of --
  - (a) First aid equipment.
  - (b) First aid dispensaries.
  - (c) Stretchers.
  - (d) Personnel deluge showers. A predominance of white color to aid visibility is preferable.
- (2) Other.
  - (a) Protective masks.
  - (b) Safety starting buttons, such as inching button on dough mixers, metal planers, boring mills, and laundry equipment.
  - (c) Safety instruction signs.
  - (d) Fire exit signs. An exception may be made to comply with local laws or when current facilities provide red exit signs.

e. Black and white will be used as the basic colors for designating housekeeping and traffic markings. The following is a partial list of examples where solid white, solid black, single color striping, alternate stripes of black and white, or black and white checkers, as appropriate, will be used:

- (1) Traffic.
  - (a) Location and width of aisleways.
  - (b) Deadends of aisles or passageways.



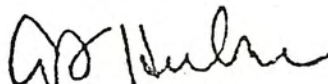
- (c) Directional signs
- (2) Housekeeping.
  - (a) Location for refuse cans.
  - (b) White corners for rooms or passageways.
  - (c) Clear floor areas around first aid, firefighting, and other emergency equipment.
- f. Black, white, and yellow will be used for designating street and highway markings in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways". High reflective paints, tapes, and similar materials, in appropriate color, may be used.
- g. Green may be used as the basic color for machinery such as lathes, presses, milling and other shop machines. Focal parts and/or point of operation moving parts, operating arms, levers, etc., should be highlighted yellow.
- h. Blue will be used for the exterior of switch boxes and electrical controls which are the starting point or power source for hazardous electrical machinery and equipment. This requirement does not apply to quarters, barracks, or office-type occupancy nor to stop buttons and bars covered by b(3) above.
- i. Orange may be used as the basic color for designating dangerous parts of machines or energized equipment, including electrical conduits, which may cut, crush, shock, or otherwise injure and to emphasize such hazards when enclosure doors are open or when gear, belt, or other guards around moving equipment are open or removed, exposing unguarded hazards.
- j. Magenta will be used for marking radiological hazards.
- k. The color scheme indicated below will be used for fire hydrants to reflect flow capacity (based upon a residual pressure of 10 pounds per square inch) and will be used for new construction and as repainting of existing hydrants becomes necessary.
  - (1) Hydrant barrels -- yellow.
  - (2) Hydrant tops and nozzle caps (classification based on individual flow test that usually produces the cited quantity).
    - (a) Class A: 1,000 gallons per minute or greater -- green.

DR 335-1-28  
5 Dec 69

(b) Class B: 500 to 1,000 gallons per minute -- orange.

(c) Class C: Less than 500 gallons per minute -- red.

FOR THE DISTRICT ENGINEER:



A. F. HUBER  
Executive Assistant

DISTRIBUTION:

X

All Supervisors  
ORLAS-G (2)



ORLOP-R, CFR

PROTECTIVE SERVICES REPORT

Chief  
Rec/Res Mgmt Branch

Resource Manager  
Carr Fork Lake

14 FEB 1978

vle/642-3951

THRU: Area Resource Manager  
Upper Kentucky River Area

Facility: Carr Fork Lake, Knott County, Kentucky

Jurisdiction:

<u>Official</u>	<u>Address</u>	<u>Telephone</u>	<u>Arrival Time</u>
Kentucky State Police, Post #13 Captain James Gay	Hazard, Kentucky	439-2343/ 439-2344	20 minutes
Knott County Sheriff's Office Conley Anderson, Sheriff Henry Hall, Deputy Harry Wicker, Deputy	Hindman, Kentucky Kite, Kentucky Kite, Kentucky Pippa Passes, Ky.	785-5354 447-2457 447-2897 368-2566	35 minutes 45 minutes 45 minutes 45 minutes
Stables Clyde Baker, District #1 Worthy Williams, District #2 Vollie Combs, District #3 Danny Smith, District #4	Hindman, Kentucky Redfox, Kentucky Leburn, Kentucky Pippa Passes, Ky.	785-3669 642-3310  368-3941	35 minutes 15 minutes 40 minutes 45 minutes
Knott County Judge's Office Foster Galhoun, Judge Pearl Combs, Pro Tem	Hindman, Kentucky Leburn, Kentucky Hindman, Kentucky	785-5592 785-5728 785-5441	
Magistrates Romer Sawyers, District #1 Burton G. Gibson, District #2 Christopher Stone, District #3 Edsel Sparkman, District #4	Hindman, Kentucky Pinetop, Kentucky Housie, Kentucky Pippa Passes, Ky.	785-3304 642-3824 785-5223 368-2678	
Civil Defense Director C. Winfred Napier	Hindman, Kentucky	785-3889	
Fire Departments Hindman Volunteer Fire Dept. Vicco Volunteer Fire Dept. Hazard Fire Department Whitesburg Fire Department	Hindman, Kentucky Vicco, Kentucky Hazard, Kentucky Whitesburg, Ky.	785-5827/ 785-3133 476-2414/ 476-2775/ 476-2912 436-2345 633-2126	35 minutes 20 minutes 30 minutes 30 minutes

OP-R, CFR  
Protective Services Report  
14 February 1978

Knott County Emergency and  
Rescue Squad  
George Kestel, Captain  
Chester Watts, Co-Captain

Dema, Kentucky 447-2852  
Pippa Passes, Ky. 368-3330

Knott County Conservation Officer  
Cordell Gayheart

Hindman, Kentucky 785-5220

Ambulance Service

Knott Funeral Home	Hindman, Kentucky	785-3111	30 minutes
Hindman Funeral Home	Hindman, Kentucky	785-3133	30 minutes
Brashear Funeral Home	Viper, Kentucky	476-2525	20 minutes
Engle Funeral Home	Hazard, Kentucky	436-2131	25 minutes
Haggard Funeral Home	Hazard, Kentucky	436-2171	25 minutes
Banks Funeral Home	Whitesburg, Ky.	633-2201	25 minutes
Blair Funeral Home	Whitesburg, Ky.	633-2284	25 minutes

Assistance provided:

Kentucky State Police, Post #13, has four (4) troopers serving Knott County and nine (9) troopers serving Perry County.

Knott County Sheriff's Office has two (2) or more deputies available at all times.

Ambulance service and fire departments are always available.

CALVERT



<b>INCIDENT REPORT</b> For use of this form, see OCE Suppl 1 to AR 190-13		INCIDENT REPORT NUMBER <hr/> DATE OF REPORT	
THRU: DIVISION ENGINEER ATTN: TO: HQDA (DAEN-PM) WASH DC 20314		FROM: DISTRICT ENGINEER	
<p>The Privacy Act of 1974 requires each individual asked or required to furnish personal information to be advised of the following:</p> <p>Authority: Section 234 of Flood Control Act of 1970 (PL 91-611 84 STAT 1818).</p> <p>Principal Purpose(s): Enforcement of rules and regulations under the provisions of the Flood Control Act of 1970. It further may provide appropriate local law enforcement agencies a report of an incident beyond the jurisdiction of Corps of Engineers personnel for appropriate disposition.</p> <p>Routine Uses: Compilation of statistics to identify types and locations of incidents in order to determine corrective measures needed to preclude future incidents. Provides local law enforcement agencies information needed to assist in resolving appropriate incidents and returning lost/stolen property that may be recovered during the investigation to the rightful owner.</p> <p>The age and social security number are used for law enforcement purposes, as an additional means of identification of subjects, suspects, witnesses, or complainants.</p> <p>Mandatory or Voluntary Disclosure and Effect on Individual Not Providing Information. No effect on the individual not providing information requested.</p>			
1. INCIDENT AND LOCATION (Must be a Corps of Engineers Installation or activity)			TIME <hr/> DATE
2. PERSONS RELATED TO REPORT (Insert category of relationship letter opposite name. Continue on reverse side) A - SUBJECT   B - VICTIM   C - CORPS EMPLOYEE   D - WITNESS   E - REPORTED BY   F - INVESTIGATED BY   G - OTHER			
NAME	CODE	AGE	SSAN      ADDRESS
3. TYPE OF REPORT <input type="checkbox"/> INITIAL <input type="checkbox"/> SUPPLEMENTARY <input type="checkbox"/> TERMINAL <input type="checkbox"/> ADD-ON			
4. DETAILS (Who, What, When, Where, How, Why) (Do not attach reports used for other purposes or prepared by other agencies. Photographs may be attached.) (Continue on reverse side)			
5. PREVENTIVE/CORRECTIVE MEASURES (Continue on reverse side)			

RECEIVED

JAN 12 1978

CARR FORK LAKE

DEPARTMENT OF THE ARMY

Louisville District, Corps of Engineers

P. O. Box 59

Louisville, Kentucky 40201

Can Fork

Calvert

ORLC 385-1-19

ORLSB

4 January 1978

Circular  
No. 385-1-19

EFFECTIVE UNTIL 31 DECEMBER 1978 UNLESS SOONER RESCINDED OR SUPERSEDED

SAFETY

Safety Films, Cassettes and Slide Sets

1. Purpose. This circular lists safety cassettes received from O.C.E., safety films and slide sets available for supervisor's use in conducting safety meetings.

2. Applicability. This circular applies to all field installations and District Office supervisors.

3. References.

a. AR 358 Series.

b. EM 385-1-1.

c. ER 385 Series.

d. LEDR 385-1-34.

e. LEDR 385-2-3.

4. General. The safety policy of the Louisville District is to provide a safe, healthy work environment for all employees and to eliminate manpower, material, and equipment losses from accidents. A minimum of one 15-minute on-the-job safety meeting is to be conducted each week for all field employees of the Construction, Operations, and Engineering Divisions by field supervisors; these employees are to be given continuing instructions to enable them to conduct their work safely. At least monthly, a regularly scheduled safety meeting will be held to cover specific sections of the safety requirements, EM 385-1-1. To aid in these safety meetings, the Safety Office has received safety cassettes from Office Chief of Engineers and has purchased various safety films and 8 slide sets which are listed in Paragraph 5. Supervisors receive the Ohio River Division Engineer's safety letter; safety letters from the District Engineer; resumes and abstracts of accidents; and National Safety Council Publications (Industrial Supervisor, Family Safety Magazine, Safe Driver, Safe Worker and other seasonal pamphlets) to assist in the safety education and training of their employees.



CARR FORK LAKE  
FISHERIES MANAGEMENT PLAN  
1982

I. Management Activities

Management activities will include holding the lake level stable during the first two weeks of May to enhance bass spawning and spawn survival. Ten thousand (10,000) threadfin shad may be stocked in late May or early June, if available. General fish evaluation will be made through the cove rotenone study (Defeated Creek, 4.04 acres) in August. Cut and cabled trees may be placed on the shoreline to provide fish habitat. The lake will be fertilized with an aquatic fertilizer (21-53-0) at prescribed intervals at a rate of 50 pounds per acre total. The fertilizer will be purchased by the Department and the labor provided by the U.S. Army Corps of Engineers.

II. Budget

Funds will be provided jointly by the Federal Aid to Fish and Wildlife Act and the Department's annual budget.

III. Personnel

One fishery biologist, one fishery aide and one summer aide are assigned to the lake on a part-time basis to conduct fish population studies. One conservation officer is assigned to the area on a full-time basis to patrol the lake.

IV. Area Supervision

Will be provided by the Eastern Fishery District biologist, the state-wide research biologist, and the district supervisor of Law Enforcement. Patrolling and policing will be carried out by the conservation officers.

RECEIVED  
FEB 31 1982

CARR FORK LAKE



CARR FORK LAKE - 1982 FERTILIZATION PROGRAM

Diammonium phosphate (21-53-0)

47,400 pounds, 948 bags (50 lb.)

Rate: 1 bag per 6 acres

<u>DATE</u>	<u>AMOUNT</u>
April 15, 1982	120 bags, (6000 lb.)
April 29, 1982	120 " "
May 13, 1982	120 " "
June 3, 1982	120 " "
June 24, 1982	120 " "
July 15, 1982	120 " "
August 12, 1982	120 " "
September 9, 1982	108 " (5,400 lb.)

*Follow Schedule*

*CUT OFF BETWEEN BEACH + DAM  $\frac{1}{2}$  way.*

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FEB 31 1982

CARR FORK LAKE



ORLC 385-1-19  
4 January 1978

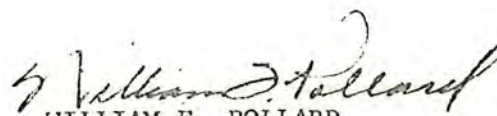
- |      |                                                                                          |                                          |
|------|------------------------------------------------------------------------------------------|------------------------------------------|
| (3)  | It's an Order -----                                                                      | Supervisor Training - B&W, 10 Minutes    |
| (4)  | Running the Team -----                                                                   | Supervisor Training - B&W, 10 Minutes    |
| (5)  | You and Office Safety -----                                                              | Office Safety ----- Color, 9 Minutes     |
| (6)  | If you Hear the Explosion,,the Danger<br>has Passed --- Maintenance Unsafe Actions ----- | Color, 10 Minutes                        |
| (7)  | An Interest in Safety -----                                                              | Public Recreation --- Color, 12 Minutes  |
| (8)  | Find A Float -----                                                                       | Water Safety ----- Color, 12 Minutes     |
| (9)  | Not By A Dam Site -----                                                                  | Water Safety ----- Color, 15 Minutes     |
| (10) | River of Return -----                                                                    | Water Safety ----- Color, 12 Minutes     |
| (11) | Locks & Lines -----                                                                      | Lock Operations ----- Color, 15 Minutes  |
| (12) | Developing a Safe Rock Slope-                                                            | Construction ----- Color, 12 Minutes     |
| (13) | Tree Clearing -----                                                                      | Construction ----- Color, 15 Minutes     |
| (14) | Safety With Nets -----                                                                   | Construction ----- Color, 12 Minutes     |
| (15) | Locking Through -----                                                                    | Lock Operations ----- Color, 12 Minutes  |
| (16) | Risk Management -----                                                                    | Safety Management! --- Color, 15 Minutes |
| (17) | Roofing -----                                                                            | Construction ----- Color, 10 Minutes     |
| (18) | Learn Not To Burn -----                                                                  | Fire Safety ----- Color, 10 Minutes      |

c. SAFETY SLIDE SETS. (All are 35 mm.)

- |     |                                                       |                                                                               |                                       |
|-----|-------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------|
| (1) | Test Your SEE Power -----                             | Traffic Safety -----                                                          | Color, 30 Minutes                     |
| (2) | Trenching & Shoring -----                             | Excavation Safety ---                                                         | Color, 60 Minutes                     |
| (3) | Guard Your Sight -----                                | Eye Safety -----                                                              | Color, 10 Minutes                     |
| (4) | It's Your Hearing -----                               | Hearing Protection --                                                         | Color, 10 Minutes                     |
| (5) | Guard Your Hands -----                                | Hand Safety -----                                                             | Color, 10 Minutes                     |
| (6) | Your Feet are Your Fortune --                         | Foot Protection -----                                                         | Color, 10 Minutes                     |
| (7) | Construction Safety & Health<br>Training Course ----- | 4 Sets of slides covering most<br>every phase of construction<br>Safety ----- | From 1 to 120 hours<br>of Instruction |
| (8) | Chain Saw Safety -----                                |                                                                               | Color, 10 Minutes                     |

6. Procedure. Supervisors are urged to take advantage of these training aids. by requesting them from the Safety Office for weekly and monthly safety meetings. The only information necessary to receive the material is designation of item; presentation date; and title of film, cassette, or the slide set desired. If your request cannot be fulfilled, you will be contacted for possible alternates. All films, cassettes and slide sets should be returned to the Safety Office as soon as possible after presentation in order that others may use them.

FOR THE DISTRICT ENGINEER:

  
WILLIAM F. POLLARD  
Executive Assistant

DISTRIBUTION:  
X



DEPARTMENT OF THE ARMY  
Louisville District, Corps of Engineers  
P. O. Box 59  
Louisville, Kentucky 40201

ORLSB

8. January 1976

SUBJECT: Safety Success in 1976

All Supervisors

1. The success of the safety program depends on a team effort between you and your employees. Your attitude toward safety will in large measure determine the attitudes of your employees and their safety performance. They look to you to set the tone and caliber of the team safety effort. Your seriousness about safety really means a lot to them.
2. Some of the things you can do to get your employees to adopt your feelings and actions about safety are contained in the following list:
  - a. A safety indoctrination for new employees is one of the most important things you can do. This should be done before explaining duties, pay, leave, etc. You have their attention now more than you will ever have later on. Also by putting safety first, you have demonstrated its importance to you. A "safety indoctrination" for your use is inclosed along with an "acknowledgment" for your employees to read and sign.
  - b. The example that you set for employees is very important.
  - c. Continue to emphasize safety from day to day.
  - d. Listen to your employees, encourage safety suggestions and take action when appropriate.
  - e. Talk about safety. Make safety a familiar subject so that your employees feel free to discuss it with you not only during safety meetings but anytime. Informal discussions about safety at lunch or during breaks may help a great deal.
  - f. Use weekly safety meetings as an important tool to:
    - (1) Review accidents and near mishaps since the last meeting.
    - (2) Consider current hazards.
    - (3) Answer questions regarding safety or current safety problems.

ATTACHMENT "U", Pg.1



ORLSB

SUBJECT: Safety Success in 1976

- (4) Compliment your employees for good safety practices and results.
- (5) Encourage individual participation in safety discussions.
- (6) Plan on how to cope with future problems.
- (7) Consider general safety information and policies.

g. Recognize good safety performance. This is very important in developing the proper attitude toward safety and it promotes good morale too.

h. Investigate accidents promptly. This is not only your responsibility but it also demonstrates to your employees your concern for them and your interest in safety.

i. Follow-up on safety instructions. Consistent enforcement of the safety requirements and attention to the use of safe work practices offer multiple benefits. First, you can prevent an accident that may have been imminent. Other benefits are a feed-back on the effectiveness of your safety instructions and an opportunity to give your employees additional safety knowledge. Last, but not least in importance, you will be demonstrating to them that you are really serious about their safety.

3. The above safety check list will assist you in developing the proper safety attitudes of your employees and in maintaining their safety awareness.

2 Incls  
as



JAMES N. ELLIS  
Colonel, Corps of Engineers  
District Engineer

## SAFETY INDOCTRINATION TO NEW EMPLOYEES

1. I welcome you to the Louisville District and I assure you I am interested in your well-being. It is my wish that your work experience will be enjoyable, productive, and a safe one too. In order to assist in this, you will need to take an active part in the Safety Program.
2. I will briefly discuss the safety program with you. The purpose of the Corps' safety program is to reduce and keep to a minimum accidental manpower and monetary losses; thus, providing more efficient utilization of resources and relieve human suffering. The basic policy is to create and maintain a safe and healthful working environment for all employees. It is my responsibility to provide you with instructions and to insure you are familiar with the safe work practices which are required.
3. At this time I am going to give you a copy of the Corps of Engineers' General Safety Requirements and I will point out to you the sections included in it.
4. I will mention a few things that you will be expected to do:
  - a. You should read and become familiar with the General Safety Requirements.
  - b. Be responsible for the prevention of accidents to yourself, property, equipment, or to your fellow workers.
  - c. Comply with the safety rules willingly and cooperate wholeheartedly in the prevention of accidents.
  - d. Consider it an official duty to call unsafe acts, unsafe conditions, and any hazards to the attention of any other employee and to report unsafe conditions to your supervisor.
  - e. Comply with sound advice from fellow workers regarding safe working practices.
  - f. Report all accidents to your supervisor.
  - g. Keep work areas clean and keep rubbish in proper containers.
  - h. Use proper equipment and tools; improvising may cause an accident.
  - i. Request and use protective equipment when needed; also wear proper clothing.
  - j. Report all personal injuries, regardless of severity, to the first aid station.



## SAFETY INDOCTRINATION TO NEW EMPLOYEES -

k. Attend safety meetings.

5. I will cover a few of the specific safety requirements now and will provide detailed instructions on the job and at weekly safety meetings.

a. The proper method of lifting must be used in order to prevent injuries to the back.

b. Personal protective equipment - safety shoes and hard hats are to be worn at all times. Safety belts are required when working on unguarded elevated surfaces and while climbing ladders over twenty feet high. Work vests must be worn whenever there is danger of falling into the water. Goggles and paint respirators are to be used when necessary.

c. Before operation of any equipment, such as lawn mowers or tractors, you will be given instructions and will be checked to insure that you can operate the equipment safely.

d. Before operating a Government motor vehicle you must be physically capable of safe operation, thoroughly familiar with the vehicle and safe driving practices. The use of seat belts is required while operating a motor vehicle.

e. You should know the location of and how to use fire extinguishers.

f. You should know where to receive first aid and what to do in the event of a fire, serious injury to someone, or other emergency.

6. If you would like to ask any questions about the safety program at this time, I will do the best I can to answer them.

7. In conclusion, I ask that you read and sign an acknowledgment of your indoctrination in safety.

ACKNOWLEDGMENT OF SAFETY INDOCTRINATION

1. I have received the Louisville District's Safety Indoctrination for new employees.
2. I have heard the District's Safety Policy read.
3. I have received and will read the Corps of Engineers' General Safety Requirements.
4. I will wear my hard hat, seat belt and other protective devices as required.
5. I know where first aid fire extinguishers and emergency telephone numbers are located.
6. I know the procedure for reporting accidents and for obtaining first aid.

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Name of Employee



# JOB HAZARD ANALYSIS

Location Carr Fork Lake

Supervisor Stephen N. Calvert

04 January 1978

## Job Title and brief description

Maintenance Mechanic and Maintenance Worker - General project operations and maintenance duties

Laborer - Assists with project maintenance duties

Duties Performed	Physical and Procedural Hazards Involved	Protective Clothing, Equipment or Physical Safeguards Required
General Operation and Maintenance	Gas and Electric Welding	Wear goggles or helmet with proper shade of glass
	Work in inclement weather	Wear rain suit and boots
	Working near or in water	Wear buoyant work vest
	Using grinding equipment, sledging and hammering	Wear goggles or face-guards
	Handling sharp edged material	Use hand protective gear
	All locations of possible falling objects	Wear hard hat
	At all times while on duty	Wear safety shoes

# JOB HAZARD ANALYSIS

Location Carr Fork Lake

Supervisor Stephen N. Calvert

04 January 1978

## Job title and brief description

Engineer Equipment Operator - Operates and performs daily preventive maintenance on heavy equipment of various types. Aids in simple construction activities by performing carpentry, painting, masonry and general laboring duties.

Duties Performed	Physical and Procedural Hazards Involved	Protective Clothing, Equipment or Physical Safeguards Required
General work with heavy equipment	Operates heavy equipment	Wear hard hat and safety belt at all times
General maintenance	Gas and electric welding	Wear goggles or helmet with proper shade of glass
	Work in inclement weather	Wear rain suit and boots
	Work near or in water	Wear buoyant work vest
	Using grinding equipment, sledging and hammering	Wear goggles or face-guards
	Handling sharp edged material	Use hand protective gear
	All locations of possible falling objects	Wear hard hat
	At all times while on duty	Wear safety shoes



# JOB HAZARD ANALYSIS

Location Carr Fork Lake

Supervisor Stephen N. Calvert

04 January 1978

## Job title and brief description

Electrician - Performs maintenance and repair on fixed or portable electrical equipment or fixtures normally associated with lake projects. Works with other maintenance personnel in repair or construction of above items which may require some rough carpentry, masonry work, concrete work, etc.

Duties Performed	Physical and Procedural Hazards Involved	Protective Clothing, Equipment or Physical Safeguards Required
General electrical	At all times while on duty	Wear shock-resistant safety shoes; does not wear rings or jewelry
	Wiring control panels	Wear thin, shock-resistant gloves and safety glasses
General maintenance	Gas and electric welding	Wear goggles or helmet with proper shade of glass
	Work in inclement weather	Wear rain suit and boots
	Working near or in water	Wear buoyant work vest
	Using grinding equipment, sledging and hammering	Wear goggles or face-guards
	Handling sharp edged material	Use hand protective gear
	All locations of possible falling objects	Wear hard hat

# JOB HAZARD ANALYSIS

Location Carr Fork Lake

Supervisor Stephen N. Calvert

04 January 1978

## Job title and brief description

Ranger - Recreation/Resource Management, and alternate for  
Maintenance Mechanic and Maintenance Worker

<u>Duties Performed</u>	<u>Physical and Procedural Hazards Involved</u>	<u>Protective Clothing, Equipment or Physical Safeguards Required</u>
General recreation/ resource management	When on water in patrol boat or working near water	Wear life jacket or buoyant work vest
	Inspecting strip mine areas	Wear hard hat and safety shoes
General operation and maintenance	Gas and electric welding	Wear goggles or helmet with proper shade of glass
	Work in inclement weather	Wear rain suit and boots
	Using grinding equipment, sledging and hammering	Wear goggles or face-guards
	Handling sharp edged material	Use hand protective gear
	All locations of possible falling objects	Wear hard hat



# DISPOSITION FORM

For use of this form, see AR 340-15; the proponent agency is The Adjutant General's Office.

REF OR OFFICE SYMBOL

SUBJECT

ORLOP-R

Dam Safety, Louisville District

Area Managers  
All Lakes

FROM Chief, Recreation--  
Resource Management  
Branch

DATE 30 Jan 78

CMT 1

1. Two non-Corps constructed dams recently failed with catastrophic results. Although no such failure is anticipated for any Corps dam in the District, nothing can be left to chance. Therefore, until further notice, the following inspection procedure will be in effect. The dam will be inspected weekly when pool levels are at or below normal seasonal pool levels. Dams will be inspected daily when flood storage is at elevations greater than normal seasonal pool levels. Saddle dams and dikes will be inspected daily when flood storage elevation reaches the toe of the saddle dam or dike.

2. Any unusual condition such as, but not limited to, boils, seeps, springs, running muddy water, cracks, or unusual settlement will be reported immediately, day or night. Reporting procedures are as follows:

a. Projects should report the unusual condition to the Area Manager. (In the event that the Area Manager cannot be contacted, the condition should be reported directly to District Office personnel.)

b. Area Managers should report the condition to the District Office, then make an immediate personal investigation to determine the extent and magnitude of the problem.

c. District Office personnel to be notified, by priority, are as follows:  
(Only one need be notified.)

- (1) F. R. Huelson, Chief, Recreation-Resource Management Branch  
Office: 502-582-5584 or 502-582-6292  
Home: 812-944-7332
- (2) G. E. Bayes, Assistant Chief, Recreation-Resource Management Branch  
Office: 502-582-5584 or 502-582-6292  
Home: 502-937-4293
- (3) K. Mathews, Assistant Chief, Operations Division  
Office: 502-582-5605 or 502-582-6291  
Home: 502-896-4503
- (4) W. N. Whitlock, Chief, Operations Division  
Office: 502-582-5605 or 502-582-5606  
Home: 502-491-6327
- (5) Eugene Miller, Acting Chief, Geotechnical Branch  
Office: 502-582-5711 or 502-582-5712  
Home: 812-282-3745
- (6) Noah M. Whittle, Acting Chief, Engineering Division  
Office: 502-582-5701 or 502-582-5702  
Home: 502-521-9544

ATTACHMENT "Y", Page 1 of 2

ORLOP-R

30 January 1978

SUBJECT: Dam Safety, Louisville District

d. In the unlikely event that none of the above personnel can be contacted, and in the opinion of the Area Manager, structural failure of the dam appears likely, the Deputy District Engineer or District Engineer will be notified.

e. Any unusual condition should be monitored continuously until directed otherwise. Pictures of the problem should be taken and conditions noted entered into the operating log book. Dam inspections should also be noted in the operating log book.

f. The schedule of instrument data collection previously furnished shall be followed. Should it be determined that additional readings are required, you will be notified by this office.

g. This DF will be brought to the attention of all personnel immediately. Appropriate telephone numbers will be extracted and kept permanently posted on the bulletin board.

  
HUELSON