



**US Army Corps  
of Engineers**

Memphis District

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# **BIRDS POINT - NEW MADRID**

## **FLOODWAY**

### **OPERATIONS**

#### **PLAN**

October 1986

U. S. ARMY  
CORPS OF ENGINEERS/MEMPHIS DISTRICT  
JANUARY 1986

TITLE: Birds Point - New Madrid Floodway Operations Plan

OPLAN 1 (ANNEX R - MDR 500-1-1, EMERGENCY EMPLOYMENT OF ARMY AND OTHER RESOURCES)

I. Situation.

A. General. This plan of operation provides for operational readiness of the Birds Point - New Madrid Floodway. It is the intent that operation occur only as absolutely essential to provide the authorized protection to all citizens.

B. Authority:

1. Legal Authority. Flood Control Act of 1928, 45 Stat, 534; Flood Control Act of 1965, 79 Stat. 1076.

2. Operational Intent. House Document No. 308, 88th Congress, 2nd Session, page 58:

"a. That the Floodway normally will not be placed in operation until flood heights in excess of 60 feet on the Cairo gage are predicted.

b. That the Federal Government reserves the right to ensure proper functioning of the Floodway by creation of artificial crevasses in the fuseplug levee or elsewhere when stages are at or above 58 feet on the Cairo gage."

C. Operational Responsibility.

1. Memphis District. The Memphis District is responsible for preparation and execution of the Birds Point - New Madrid Floodway Plan of Operation upon order of the President, Mississippi River Commission (MRC).

2. State of Missouri. The State of Missouri will be responsible for warning, evacuation and rescue of the occupants of the floodway, traffic control, control of access into the floodway area, and any necessary law enforcement (See Annex D).

3. Waterways Experiment Station (WES). Personnel trained in explosive technology will be made available by WES to assist the Memphis District in the explosive demolition of the crevasse sections of the Birds Point-New Madrid Floodway frontline levee. Notification of need for WES personnel will be made by the Memphis District Emergency Operations Staff after notification to begin operation has been ordered by the President, MRC.

4. Coast Guard. The Coast Guard will, when necessary, assist the Corps of Engineers (CE) and constituted authorities in evacuation, rescue and relief operations. As soon as the decision is made to place the floodway into operation, the Coast Guard will be notified by the Chief, River Operations Branch, Memphis District, so that river traffic can be advised and controlled.

## II. Execution.

A. Concept of Operations. On recommendation of the Memphis District Commander and order of the President, MRC, the Memphis District will dispatch a tow from Ensley Engineer Yard with material, equipment and personnel to place the Floodway into operation. Work crews will be deployed on top of the levee to locate and prepare the access wells to the pre-emplaced horizontal pipes. The slurry explosives will be mixed on the barge and pumped from the barge into the pipes. After completion of the pumping operation, and when deemed necessary, the pipes will be armed with booster charges and all final preparations will be made for artificial crevassing. It is expected that natural overtopping of the fuseplug section will be allowed to occur prior to determining the necessity to artificially crevasse the frontline levee. Upon order of the President, MRC, crevasses will be accomplished as required by hydrologic conditions.

B. Timetable. The timetable for operation is based on the rate of rise from the project design flood (PDF) curve. A faster rate of rise or other emergency situation would necessitate expediting the preparation of the Floodway. Conversely, if the rate of rise is slower than expected during the PDF, additional preparation time will be available. (See Annex B)

### C. Sequence of Operations:

1. Dispatch equipment, material, and personnel, from Memphis, TN. Upon arrival and issuance of competent order begin preparing Inflow Crevasse (will require approximately 15 hours).
2. At approximate 60 feet on the Cairo gage, the Inflow Crevasse will have been completely prepared for operation.
3. Preparation of the Inflow/Outflow Crevasses will require approximately 15 hours.
4. Arming shall not occur until it is absolutely necessary for execution of the crevasse.
5. Artificial crevassing will be upon order of the President, MRC.

D. Coordinating Instructions. This plan will be reviewed annually by the Memphis District staff and updated by Emergency Operations Branch. Any changes will be submitted to MRC for approval.

III. Administration and Logistics.

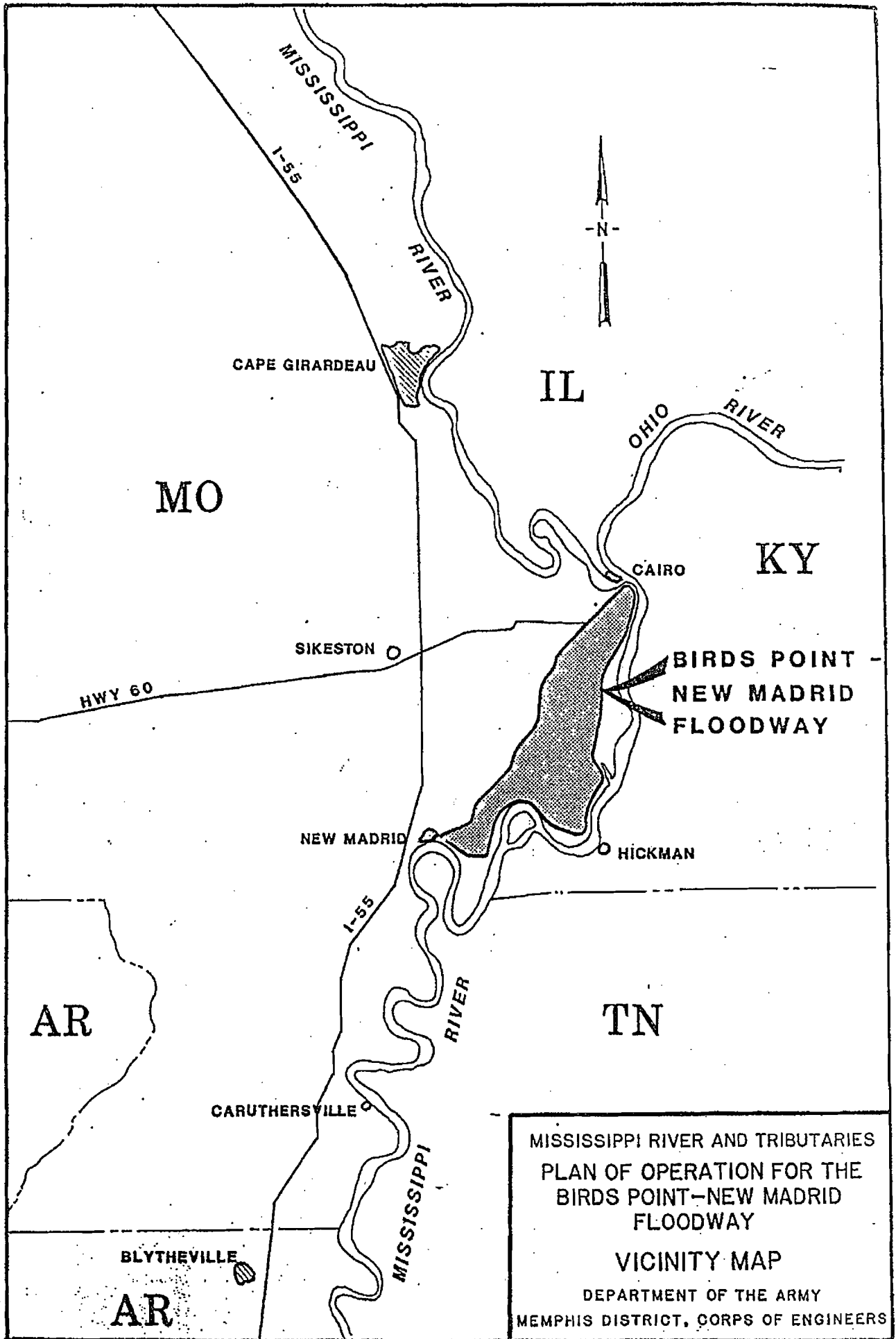
Annex C, Logistics  
Annex D, State Support  
Annex F, Public Affairs

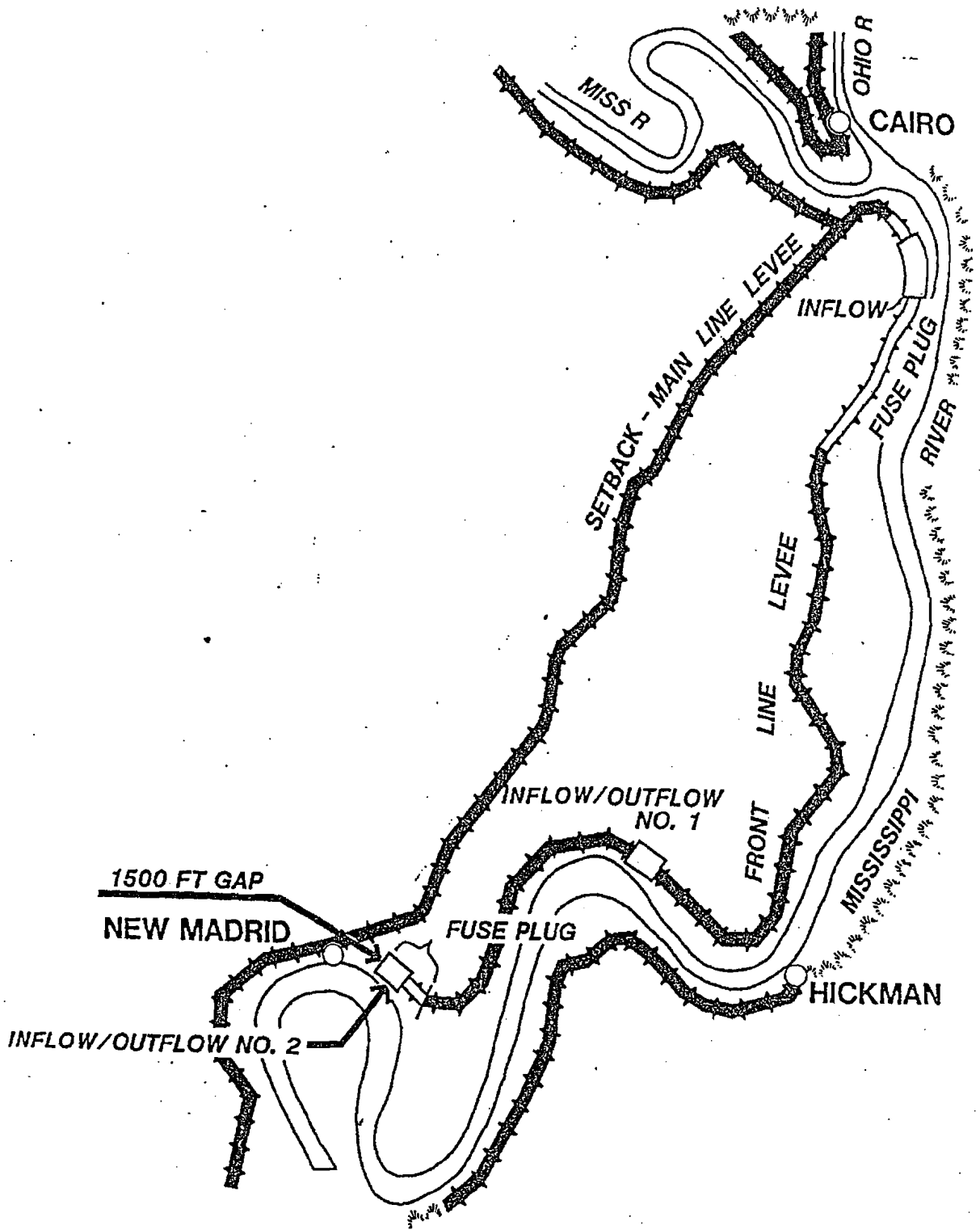
OFFICIAL:

DALE F. MEANS  
Colonel, Corps of Engineers  
Commanding

*Kenneth G. Williams*  
KENNETH G. WILLIAMS  
Emergency Operations Manager

ANNEXES: A - Concept of Operation  
B - Timetable  
C - Logistics  
D - State Support  
E - Safety  
F - Public Affairs  
G - Communications





MISSISSIPPI RIVER AND TRIBUTARIES  
 PLAN OF OPERATION FOR THE  
 BIRDS POINT-NEW MADRID FLOODWAY

GENERAL MAP

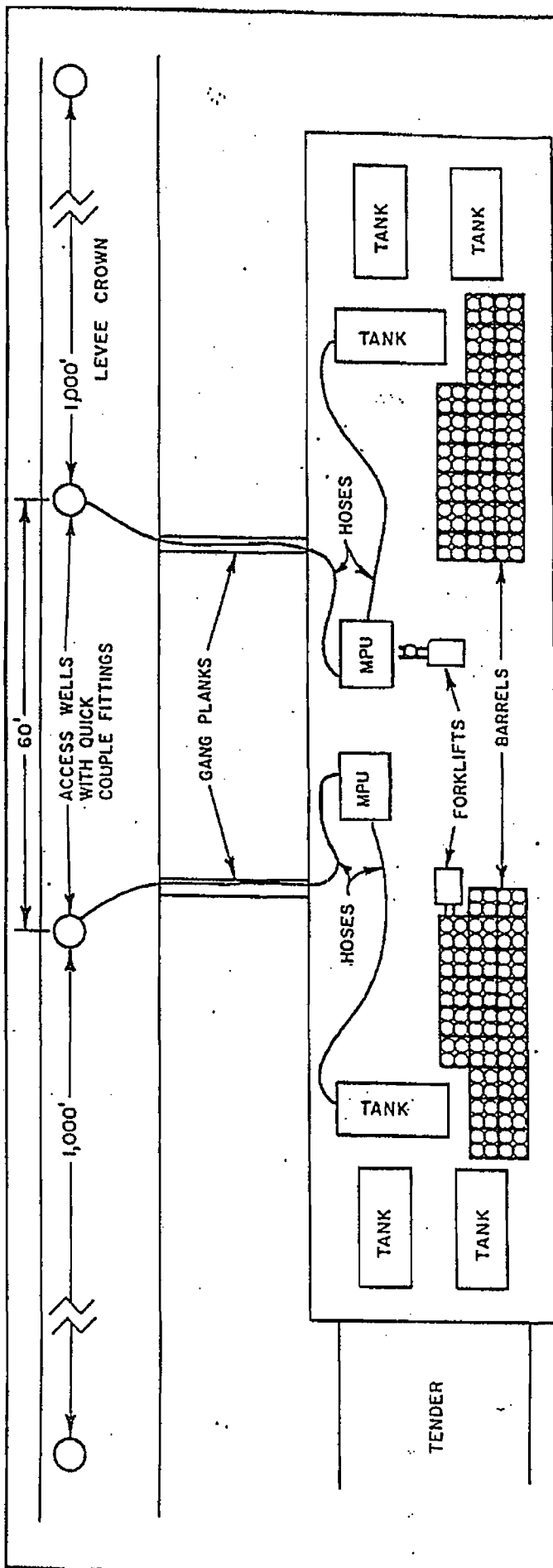
DEPARTMENT OF THE ARMY  
 MEMPHIS DISTRICT, CORPS OF ENGINEERS.  
 MEMPHIS, TENNESSEE

ANNEX A (CONCEPT OF OPERATION) to the Birds Point-New Madrid Floodway Operations Plan

1. Upon order of Commander, Memphis District, all equipment and materials will be loaded on 2 modified mat barges and one equipment barge. Each mat barge will be loaded with 192 barrels of aluminum powder (4 barrels per pallet), six 2,500 gallon fiberglass tanks of the liquid component, two mix-pump units (MPUs) with protective covering, and two forklifts with rotating heads and accessories. Two dozers and two backhoes will be loaded on the equipment barge. These barges, along with one empty barge, the M/V Strong, Tender Goodwin and M/V Mississippi will be made up in a tow ready to depart for the Floodway.
2. On the recommendation of the Commander, Memphis District, and order of the President, MRC, the tow will depart Ensley Engineer Yard, Memphis Harbor for the Floodway. All required operational personnel not on the tow will meet the tow at the Inflow Crevasse. Upon arrival of the tow at the Floodway, the M/V Mississippi will be utilized as the Command Post.
3. On order of the President, MRC, the preparation of the Inflow Crevasse will begin. One tow boat will push the equipment barge into the levee and deploy a work crew and two backhoes on top of the levee. The work crew will locate and prepare the access wells to the pre-emplaced horizontal pipes by removing the material over and inside the well and installing quick couple fittings on the 4 inch pipes.
4. The Strong and Goodwin will each push a mat barge (described in paragraph 1) into the levee. The barge will be stationed parallel to the levee and adjacent to 2 access wells which are spaced 60 feet apart (See Plate A-1). Two gang planks will be extended from the barge to the top of the levee. Hoses will extend from the discharges on the MPU's, across the gang planks, and into the access wells. At this point, the MPU's will be loaded with aluminum powder with the solution being fed directly from the 2500 gallon tanks. Two forklifts will be used to load the aluminum powder into the hopper on the MPU's. The MPU's will properly mix the components and pump the blasting agent into the pipes in the levee. From one location approximately 2000 feet of levee can be prepared for operation. This procedure will be repeated at approximately 2000 foot intervals.
5. Following the completion of the mixing and pumping of the blasting agent, WES explosive technicians will prime both ends of the 4 inch pipe with a booster charge and make all other necessary preparations for firing of charges in the Inflow Crevasse. Detonation of the Inflow Crevasse will be in 1000 foot sections as required by hydrologic conditions and on order of the President, MRC.
6. Following preparation of the Inflow Crevasse the Inflow/Outflow Crevasses will be prepared for operation. One

boat and barge will be designated to prepare each crevasse. Both Inflow/Outflow No. 1 and No. 2 will be artificially crevassed in 1000 foot increments, as required by hydrologic conditions.





SCALE 1"=20'

MISSISSIPPI RIVER AND TRIBUTARIES  
 PLAN OF OPERATION FOR THE  
 BIRDS POINT-NEW MADRID FLOODWAY  
  
 BARGE CONFIGURATION  
  
 DEPARTMENT OF THE ARMY  
 MEMPHIS DISTRICT, CORPS OF ENGINEERS  
 MEMPHIS, TENNESSEE

ANNEX B (TIMETABLE) to the Birds Point-New Madrid Floodway Operations Plan

Cairo Gage

1. At approximately 56 feet.

a. Tow loaded with equipment (including mix-pump units), materials, (including components of blasting agent), and personnel departs Ensley Engineer Yard for the Floodway. (Travel time approximately 36 hours)

b. Advise Director of Public Safety of the State of Missouri and presiding commissioners, Mississippi and New Madrid Counties, State of Missouri of action.

2. At approximately 59 feet.

a. Tow arrives at the Floodway.

b. Upon order of the President, MRC, deploy work crew on Inflow Crevasse to prepare access wells.

c. Mix and pump blasting agent into pipes in levee.

d. Evacuate all equipment and personnel from levee.

e. Prime pipes with booster charges and place detonating cord (as needed).

f. Advise Director of Public Safety of the State of Missouri, and presiding commissioners, Mississippi and New Madrid Counties, State of Missouri of action.

3. At approximately 60 feet.

a. Inflow Crevasse completely prepared for artificial crevassing. (Preparation of the Inflow Crevasse requires approximately 15 hours.)

b. Advise Director of Public Safety of the State of Missouri, and presiding commissioners, Mississippi and New Madrid Counties, State of Missouri of action.

4. Upon order of the President, MRC, crevasses will be accomplished as required by hydrologic conditions.

5. Preparation of the Inflow/Outflow Crevasses will follow the preparation of the Inflow Crevasse. Approximately 15 hours will be required for preparation of both of the Inflow/Outflow Crevasses.

6. The Inflow/Outflow Crevasses will be artificially crevassed, after the Inflow Crevasse is crevassed, as required to maintain the project flowline.

ANNEX C (LOGISTICS) to the Birds Point-New Madrid Floodway Operations Plan

1. Situation. Same as basic plan.

2. Mission. Memphis District will furnish all logistical support for operational personnel.

3. Execution.

a. Concept of Operation. Upon receipt of notification from the Breaching Commander to begin, Logistics Commander shall:

(1) Request River Operations Branch make ready the towboats for the trip to the Birds Point-New Madrid Floodway.

(2) Supervise the loading of the equipment and material onto barges.

(3) Request Real Estate to provide approximately 2500 square feet of suitable office space which can be used for a Press Center.

(4) Contact utility districts for necessary power hookups for the Press Center.

(5) Provide transportation for operational personnel if required.

b. Coordinating Instructions. The Logistics Support Command shall fall under the direct supervision of the Logistics Commander. He shall have sufficient personnel in the field for task accomplishment and also be in contact with the Floodway Coordinator for any anticipated supplies that cannot be located locally. The Floodway Coordinator, located in the Memphis District EOC, shall assist the Logistics Commander.

4. Service Support.

a. State support shall be coordinated by the Security Officer.

b. Power hookups and purchase of electricity to service the Press Center shall be from a local utility company.

c. Lodging:

(1) The Command and Control organization shall be provided room and board on the M/V Mississippi.

(2) The barge teams shall be placed on TDY and obtain lodging at a motel in the vicinity of the Floodway.

d. Personal clothing is the responsibility of the individual. Inclement weather clothing (rain suits) and safety

clothing (hard hats, gloves) shall be supplied by the Logistics Commander.

e. Gasoline, diesel and aviation fuel shall be obtained from commercial sources in the area, if required.

5. COMMAND AND CONTROL. Logistics Support Command shall be located on the M/V Mississippi.

Appendix 1 - List of Required Major Equipment and Material

APPENDIX I (LIST OF REQUIRED MAJOR EQUIPMENT AND MATERIAL) to  
ANNEX C (LOGISTICS) to the Birds Point-New Madrid Floodway  
Operations Plan

1. Equipment.

- 1-M/V Mississippi
- 1-M/V Strong
- 1-Tender Goodwin
- 2-Mat Barges
- 1-Equipment Barge
- 4-Mix-Pump Units (MPU)
- 4-Forklifts and accessories
- 2-Dozers
- 4-Pickup Trucks
- 2-Carryalls
- 2-Vans
- 2-Backhoes

2. Material.

- 275-Tons of DBA-105P blasting agent
- 36-4" X 2 1/2" reducers with high pressure clamps
- 150-High Explosive Boosters
- 28,000-Feet of Detonating Cord
- 25-Blasting Caps

ANNEX D (STATE SUPPORT) to the Birds Point-New Madrid Floodway Operations Plan

1. Mission. To assure adequate support of Missouri state agencies in those areas of state responsibility and to provide coordination of Federal and state activities.

2. Execution.

a. Concept of Operations.

(1) Liaison. The State of Missouri will be requested to furnish a liaison officer representing the State for all matters relating to operation of the Floodway. The liaison officer will be provided working space in the Press Center and/or Command Post, if required.

(2) Warning and Evacuation. The State of Missouri has the responsibility for warning residents of the possible use of the Floodway and for evacuation of all personnel from the Floodway, other than Federal personnel involved in preparation of the crevasses and other flood fight activities.

(3) Rescue and Relief. The State of Missouri will be responsible for all rescue operations within the Floodway and for all relief activities for evacuees.

(4) Traffic and Visitor Control. The State of Missouri is responsible for controlling civilian access to the work area and Floodway.

(5) Law Enforcement. The State of Missouri is responsible for providing any necessary law enforcement required in connection with the operation of the Floodway.

b. Coordinating Instructions. All state support will be coordinated with the Memphis District Security Officer.

ANNEX E (SAFETY) to the Birds Point-New Madrid Floodway Operations Plan

1. Mission. The Memphis District will assure that all operations during implementation of this plan are conducted in a safe manner.

2. Execution.

a. Materials.

(1) Blasting Agent DBA-105P. The DBA-105P is stored in a two component, unmixed form. The two components, aluminum powder and a solution, are nondetonable. During mixing operations, the aluminum powder can become suspended in the air and could be ignited. Although the aluminum powder is coated to help prevent combustion, the barges used for the mix-pump operation will be designated as no smoking areas. Further, only diesel-powered forklifts will be used for this operation.

(2) Class A Explosives. The WES Explosive Technicians will be responsible for:

(a) Handling the Class A Explosives (caps, boosters, primacord).

(b) Loading, arming and firing of the explosive charges will be in accordance with EM 385-1-1.

b. Barge Operations. The barges used for the mixing and pumping operations will be equipped with a guard rail on the perimeter as specified in EM 385-1-1. All personnel working on the barge will be required to wear personal floatation devices.

c. Safe Distances. Execution of the approved operational plan should take into account the following explosive hazard maximums:

(1) The distance away from the crevasse sites beyond which no damage from airblast would be expected is 2000 feet.

(2) The distance away from the crevasse sites beyond which no damage from ground motion would be expected is 2300 feet.

(3) The safe distance from flying debris would be less than the limits of possible damage from airblast or ground motion.

(4) For design purposes, a maximum hazard distance of 2500 feet was used for each crevasse site.



ANNEX F (PUBLIC AFFAIRS) to the Birds Point-New Madrid Floodway Operations Plan

1. Situation. Same as basic plan.
2. Mission. To insure that accurate and timely information is disseminated to media and interested publics.

3. Execution.

(1) The Memphis District Public Affairs Office will be responsible for preparation and dissemination of news releases and announcements on the operation of the Floodway, following coordination with and approval of the Public Affairs Officer, MRC. News releases and announcements on the operation of the Floodway will also be coordinated with local and state authorities prior to release. The Memphis District Public Affairs Officer (PAO) will also be responsible for photo documentation of the Floodway operation, and all audio-visual and photographic support will be coordinated with the Public Affairs Office.

(2) A 24-hour Press Center will be established in the vicinity of the Floodway to serve as a field operating agent of the Memphis District Public Affairs Office. The District PAO will serve as a communications and coordination point for all public affairs activities.

(3) The PAO or his representative will be responsible for providing assistance to news media representatives as required, assisting and coordinating with representatives as required, assisting and coordinating with responsible Corps elements on public affairs matters, and for providing other support as needed.

(4) Media briefings will be scheduled as required. The Memphis District PAO will serve as the official Corps of Engineers spokesman for all matters concerning the operation of the floodway.

(5) A press kit will be prepared and made available. The kit will include a fact sheet and map of the floodway.

(6) The PAO will coordinate shuttle service for VIPs and news media personnel to work areas as required and as conditions and accessibility permit. Knowledgeable escorts will be provided as directed.

ANNEX G (COMMUNICATIONS) to the Birds Point-New Madrid Floodway  
Operations Plan

1. Situation.

a. The M/V Mississippi will serve as the Command Post for operation of the floodway.

b. The M/V Mississippi and Strong, and Tender Goodwin are equipped with all necessary communications equipment.

2. Mission. Memphis District Communications-Electronics (C-E) Unit will install and maintain all communications systems in support of the floodway operations.

3. Execution.

a. Following the establishment of the Press Center, the Memphis District C-E Unit will install radio communications equipment. Telephone communications at the Press Center will be provided by commercial source.

b. C-E Unit will provide continuing maintenance on all communications systems during preparation and operation of the floodway.

c. All radio communications will be in accordance with MDR 500-1-2.