Survey Data Collection

The earliest comprehensive surveys took years to complete and were performed by dropping a heavy lead weight on a marked line (leadline survey) to collect each shot at approximately 2 miles apart on markers placed on the bankline that defined a range line across the river. The first 1883 effort took 50 years to complete. The 2013 publication survey was collected on the several contracts in phases, in February 2011, December 2012, and March 2013. A small portion in the vicinity of River Mile 320 was run in December 2009. This survey exploited modern technolo-
gies, using DGPS positioning and Multibeam sound- ing equipment. This survey collected well into the millennia of soundings.

Low Water Reference Plane

Low Water Reference Plane (LWRP) is a hydraulic-based reference plane established from long-term observations of the river's stage, discharge rates, and flow duration periods, and constructed via a hydraulic flow duration line and the 97% stage exceedence of daily lows for the period of record at a specific site. Per EM 1110-2-1003, Engineering and Design - Hydrographic Surveying, the construction and improvements along the middle and lower Mississippi River are performed relative to the LWRP at a particular point.

Methodology of LWRP Depth Contouring

The Terra Scan software product running on top of Bentley MicroStation was utilized to both process the XYZ data of the X'Z' gridded points of the Mississippi River multi-beam survey. The data along the river ranges was extracted using a 10' wide path. From this dense data, points were extrapolated every 100 feet along the range to develop a new XYZ dataset. The datasets were broken into reaches of similar LWRP values and the LWRP value subtracted from the Z-values. The resultant XYZ datasets were triangulated within the Terra Scan software and contours displayed. The contours were modified to correct areas in which the software could not display the contours smoothly.

Topographic Features

The topographic features within this publication were reused from the 1985 Mississippi River multi-beam survey. The 2004 book’s feature layers found within the 2004 publication, with the exception of adding the John James Audubon bridge at River Mile 262 and updating of Mississippi River sections. The 2004 book’s stereocompilation was produced from aerial imagery collected in February 2002. Therefore, the topographic features should be considered for reference only. More current digital imagery and digital topographic data sets are readily available for other uses.

Datums & Elevations

Source of Hydrographic Survey Data:
The Mississippi River multi-beam survey was performed under Contract Number DACW912PS-09-C-0099. This survey covered River Miles 324 to 0. Survey was performed between December 2012 and to May 2013. The South and Southwest Pass surveys were performed in January 2013 and April 2013 by the Corps of Engineers New Orleans District Operations Division maintenance surveys. The Pass A Loutre surveys were performed via a Beagle合同, W1110-16-D-0505 in September 2013.

Note: Pass A Loutre is not a federally maintained waterway.
The multi-beam surveys listed above provided coverage of the river bottom from as near to each bank as possible. The overbank survey data extending from the end of the multi-beam surveys were carried over from the 2003-2004 Hydrographic Survey Book. All surveys were performed relative to NAD83, Louisiana South Zone 1702 horizontal datum and NAVD88, 2004.65 vertical datum.

Background

The Mississippi River has the third largest river basin in the world. It is the fabled river of Native Ameri-
cans, the explorers Marquette and Joliet, and the words and works of Mark Twain, and the scourge of steamboat pilots. Man’s modern relationship with the Mississippi River began with the river as the focal point for transporta-
tion, commerce, and trade. Floodplain floods along the river, such as landings and river confluences, grew into settlements. These settlements grew into towns, which grew into cities including Memphis, Vicksburg, Natchez, Baton Rouge, and New Orleans. Transportation progressed from canoes in the 1700’s, to ferries and steamboats into the 1930’s, and finally to a major transportation artery connecting the United States “Western Rivers.” Today, dredging of the Mississippi River’s Southwest Pass provides deep draft, ocean going vessels access to travel as far as 240 miles inland to the Port of Baton Rouge, LA.

The Mississippi River Commission (MRC) was established by an Act of Congress on June 28, 1879. Con-
gress charged the MRC with the mission to develop plans to improve the condition of the Mississippi River, foster and give safety to navigation, promote commerce, and prevent destructive floods. The MRC was charged with prosecuting the comprehensive river management program known as the Mississippi River and Tributaries (MR&T) project, which was authorized through the Flood Control Act of 1928. The MR&T project is the largest flood control project in the world, providing protection to the 36,000 square-mile lower Mississippi Valley. The navigation features of the MR&T project seek to facilitate navigation and promote commerce on the nation’s most vital commercial artery. The navigation project has developed a river channel with the dimensions and alignments that carry floodwater flows efficiently and are also suitable for navigation. Waterborne commerce on the Mississippi River increased from 30 million tons in 1940 to nearly 435 million tons today.

In 2011, the Ports of South Louisiana, New Orleans, Baton Rouge, and Plaquemines were ranked by tonnage, as the first, fifth, tenth, and fourteenth largest United States ports. When combined this port complex, outranks the fourth largest port in the world in tonnage, that of Rotterdam, Netherlands.

This Publication

This publication of the 2013 Mississippi River Hydrographic Survey Book represents in 6th edition in this format with prior surveys being published in 1949, 1961, 1973, 1985, and 1991. Prior comprehensive surveys were published by the Mississippi River Commission in 1883, 1913, and 1935. This publication is produced at roughly ten year intervals or after a large flood event. Its supporting collected survey data will be used for the channel improve-
mement, river engineering, and river management missions at the USACE New Orleans District.

Authorization & Funding

The 1879 Mississippi River Commission Act (46th Congress, Ses. 1. Ch. 43. 1879) empowered the MRC to make surveys and investigations necessary to prepare plans to improve the river channel, protect the banks, improve navigation, prevent destructive floods, and promote com-
merce. Funding the sources current surveys came from Mississippi River O&M projects, the Channel Improve-
m ent Program, and the USACE Inland Electronic Naviga-
tional program. Funding to produce the publication was provided by Mississippi River O&M project.

Not Suitable for Navigation

This publication is not a navigational product. It is not considered suitable for navigation nor acceptable to meet USCG Chart Carrage requirements.

About the Cover

The 2013 Hydrographic Survey Book cover is a composite of the New Orleans “crescent” area of the Mississippi River. The left-most image is from Chart 76 of the 1913 Chart of the Mississippi River from the Mouth of the Ohio River to the Gulf of Mexico. The center image is from Sheet 50 of the 1973-1975 Mississippi River Hydro-
graphic Survey Book. The right-most image is aerial photography from 2012.