

### CHAPTER 2.7 – INSPECTION FORMS AND REPORTS

#### 2.7.1 GENERAL

Bridge records for movable bridges are similar to those kept for fixed bridges. In both instances, the bridge file, bridge chronological history records maintained by the bridge owner, should ideally be comprised of the following items:

- Bridge plans (construction plans, shop drawings, as-built plans).
- Technical specifications.
- Record file of noteworthy correspondence.
- General photographs (elevation, bridge deck top and underside, defects, repairs).
- Material and testing data.
- Record of maintenance.
- Record of repairs.
- Accident records.
- Posting and permit loads.
- Flood data.
- Traffic data.
- Structure inventory and appraisal forms.
- Engineering reports (Inspection, evaluation, Structural Bridge Load rating, design).
- A record of flood elevations.
- A file of inspection reports.

Inspection reports for movable bridges may be more complex than for fixed bridges due to presence of structural, mechanical, and electrical components.

Due to the variety of features present in movable bridges, a standard, complete set of inspection forms applicable to all movable bridges is impractical. However, consistency in general report format and procedures for reporting and documenting inspection findings can be achieved. General purpose inspection forms for movable bridge functional systems and their components are presented herein. Alterations and supplements to the forms will be necessary for use on a specific movable bridge.

There are many sources of information on inspection records and reporting. FHWA has published manuals such as *Bridge Inspector's Training Manual* (Reference 69), and *Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges* (Reference 80). Additionally, most state DOT's and toll bridge authorities have developed inspection guides and standard forms. Many of the forms included in this chapter are adapted from FHWA sources and the Florida Department of Transportation's *Movable Bridge Inspection Training Course Student Workbook* (Reference 85). These forms are not intended to replace forms already in existence in

### CHAPTER 2.7 – INSPECTION FORMS AND REPORTS

other manuals, but are intended as supplements in areas specifically needed for movable bridge inspections.

#### 2.7.2 INSPECTION FORMS

Included in Appendix A is a sample form intended to provide the basis for a comprehensive movable bridge inspection based on the movable bridge elements as per Part 3 of this manual. Modified forms and notes should be developed by the inspector and/or bridge owner appropriate for the specific bridge based upon the pre-inspection visit, previous inspection reports, available plans, or other bridge records.

The following items should be considered in planning and completing inspection forms:

- For consistency in the bridge file, numbering and terminology should be consistent with the bridge plans and previous inspection reports.
- The notation system, nomenclature, coding, and abbreviations should be consistent throughout the inspection forms and a summary sheet documenting these should be a part of the inspection report.
- Deficiencies noted should be supplemented with a photo and/or sketch.

##### 2.7.2.1 Condition Rating Summary

This form is a rating summary of the bridge functional systems and their major components. This form should be used to summarize more detailed notes and comments; it should be filled out at the end of inspection by the inspectors. It is recommended that it be reviewed in the office by a senior quality control engineer.

##### 2.7.2.2 Component Inspection Forms

The structural, mechanical, and electrical inspection forms consist of component or assembly sketches with space allocated on the form for comments, photo reference, and additional field sketches; tabular forms for identifying original versus field measured dimensions of machinery components (e.g., gears, bearings, bushings); piece by piece checklists for assemblies (e.g., reducer, lockbar operating assembly). Forms should be supplemented with field sketches and photographs as needed. In addition, the forms may require revisions in order to suit a particular bridge. Much of the information on the type and proper operation of the bridge can be obtained prior to the inspection from plans and previous inspection reports.

#### C2.7.2

*Among the movable bridges in existence, each has a unique combination of structural, mechanical, hydraulic, and electrical components. The general purpose inspection forms provided in this manual are intended to be modified prior to inspection to suit the needs of the individual bridge and the owner. Making alterations to the forms in the field during inspection could be awkward and inefficient.*

### CHAPTER 2.7 – INSPECTION FORMS AND REPORTS

However, all data obtained prior to the inspection should be verified during the inspection.

#### 2.7.3 REPORT

The purpose of an inspection report is to record and present in a consistent and logical fashion the findings resulting from field work necessary to:

- Evaluate the physical condition of the structure and its components.
- Evaluate the performance of the bridge functional systems.
- Prioritize maintenance and repair needs for distributing budgeted funds and personnel.
- Monitor the condition and performance of components over time.

#### 2.7.4 REPORT FORMAT

Owners should develop a simple straightforward method of recording recommendations and tracking the timelines of follow-up actions. Such a system could include log sheets with appropriate dates and a "look ahead" schedule to program the actions and monitor performance.

As discussed in Chapter 1.4, a movable bridge should be addressed at three levels: the entire bridge, the functional systems, and the individual components. A well-organized report will be arranged in the same manner.

An example of a movable bridge inspection report contents follows:

- Cover sheet
- Index
- Summary of recommendations
- Deficiency reports
- Discussion of the status of follow-up actions on previous reports
- Notation, nomenclature, abbreviations, description of condition ratings
- Bridge and functional systems description
- Structural, mechanical and electrical description and inspection findings
- Sketches and photographs
- Typical structural, mechanical and electrical inspection forms and notes

#### C2.7.3

*A bridge inspection report is a legal document that may be used in any litigation involving the bridge. The data produced from an inspection is the primary tool used by the bridge owner to program maintenance and rehabilitation.*

## **PART 2 – INSPECTION**

## **COMMENTARY**

### **CHAPTER 2.7 – INSPECTION FORMS AND REPORTS**

#### **2.7.5 SAMPLE FORMS**

Suggested inspection forms are in Appendix A.