Operation and Maintenance of Offshore Cranes

API RECOMMENDED PRACTICE 2D
SIXTH EDITION, MAY 2007

Operation and Maintenance of Offshore Cranes

Upstream Segment

API RECOMMENDED PRACTICE 2D
SIXTH EDITION, MAY 2007

SPECIAL NOTES

API publications necessarily address problems of a general nature. With respect to particular circumstances, local, state, and federal laws and regulations should be reviewed.

Neither API nor any of API's employees, subcontractors, consultants, committees, or other assignees make any warranty or representation, either express or implied, with respect to the accuracy, completeness, or usefulness of the information contained herein, or assume any liability or responsibility for any use, or the results of such use, of any information or process disclosed in this publication. Neither API nor any of API's employees, subcontractors, consultants, or other assignees represent that use of this publication would not infringe upon privately owned rights.

API publications may be used by anyone desiring to do so. Every effort has been made by the Institute to assure the accuracy and reliability of the data contained in them; however, the Institute makes no representation, warranty, or guarantee in connection with this publication and hereby expressly disclaims any liability or responsibility for loss or damage resulting from its use or for the violation of any authorities having jurisdiction with which this publication may conflict.

API publications are published to facilitate the broad availability of proven, sound engineering and operating practices. These publications are not intended to obviate the need for applying sound engineering judgment regarding when and where these publications should be utilized. The formulation and publication of API publications is not intended in any way to inhibit anyone from using any other practices.

Any manufacturer marking equipment or materials in conformance with the marking requirements of an API standard is solely responsible for complying with all the applicable requirements of that standard. API does not represent, warrant, or guarantee that such products do in fact conform to the applicable API standard.

FOREWORD

This Recommended Practice is under the jurisdiction of the API Executive Committee on Drilling and Production Operations and was developed in cooperation with the Offshore Operators Committee. Detailed requirements for the design and construction of offshore cranes are given in API Specification 2C *Specification for Offshore Cranes* (latest edition).

Guidelines provided herein on the operation, inspection and maintenance of offshore cranes are based in part on an understanding of the cranes' design and construction. Therefore, this document should be read in conjunction with API Spec 2C.

The material in this publication represents the contribution of industry representatives of crane users, crane manufacturers, wire rope manufacturers and ancillary crane device or component manufacturers. It is based on industry experience and expertise involving world-wide operations.

This publication is organized into text sections and associated supporting appendices. In the Text Sections, practices and procedures considered to be mandatory; standards and qualifications that are deemed necessary minimum; and the overall intent, goals and objectives of crane operating, inspection and maintenance practices, programs and procedures, are defined.

In the appendices, the basis for the recommended mandatory practices, minimum standards and program goals, are substantiated; non-mandatory practices are discussed and illustrated; and examples of programs, which meet the intent of the guidelines, are given.

It should be understood that the crane operating and maintenance practices recommended herein by necessity collectively cover a wide range of crane types and configurations. Not all practices are applicable to all cranes. When applying this RP, care should be taken to review each item as stated, and use those items specifically applicable to the crane's type, usage and duty-cycle. It may be necessary to modify a procedure due to a particular crane requirement. This modification would be wholly acceptable as long as the original intent of the practice or procedure is met.

This RP shall become effective on the date printed on the cover but may be used voluntarily from the date of distribution.

This publication includes use of the verbs shall and should, whichever is deemed the most applicable for the specific situation. For the purposes of this publication, the following definitions are applicable:

Shall: Indicates that the recommended practice has universal applicability to that specific activity.

Should: Denotes a recommended practice a) where a safe comparable alternative practice is available; b) that may be impractical under certain circumstances; or c) that may be unnecessary under certain circumstances or applications.

Changes in the uses of these verbs are not to be effected without risk of changing the intent of recommendations set forth herein.

In general, the numbers in the appendices of this document coincide with the applicable sections or subsections in the body of the recommended practice.

This document was produced under API standardization procedures that ensure appropriate notification and participation in the developmental process and is designated as an API standard. Questions concerning the interpretation of the content of this publication or comments and questions concerning the procedures under which this publication was developed should be directed in writing to the Director of Standards, API, 1220 L Street, N.W., Washington, D.C. 20005. Requests for permission to reproduce or translate all or any part of the material published herein should also be addressed to the director.

Generally, API standards are reviewed and revised, reaffirmed, or withdrawn at least every five years. A one-time extension of up to two years may be added to this review cycle. Status of the publication can be ascertained from the API Standards Department, telephone (202) 682-8000. A catalog of API publications and materials is published annually and updated quarterly by API, 1220 L Street, N.W., Washington, D.C. 20005.

Suggested revisions are invited and should be submitted to the Standards and Publications Department, API, 1220 L Street, NW, Washington, D.C. 20005, standards@api.org.

CONTENTS

Page

Tables

Recommended Practice for Operation and Maintenance of Offshore Cranes

1 Scope

This Recommended Practice is intended to serve as a guide to Crane Owners and Crane Operators in developing operating and maintenance practices and procedures for use in the safe operation of pedestal-mounted revolving cranes on fixed or floating offshore platforms, jackup drilling rigs, semi-submersible drilling rigs and other types of mobile offshore drilling units (MODUs). Guidelines are also given for the pre-use inspection and testing of temporary cranes (also called self-erecting, leapfrog or bootstrap cranes) that are erected offshore. These minimum practices are presented on the premise that:

a. Inspections are intended to identify all deficiencies or items, which would affect the safe operation or reduce the lifting capability of the crane. Inspections should utilize methods and procedures appropriate for the crane type and its past and anticipated usage, as determined by the Crane Owner.
b. Action taken to correct a deficiency should be made as soon as practicable.
c. Limited (restricted) service may, in some cases, be continued after the identification and before correction of a deficiency. In such cases, it is the responsibility of the Qualified Crane Operator or Qualified Inspector to document the deficiency, reporting it to the Crane Owners. Based on this information, the Crane Owner should define the appropriate restriction and post necessary cautionary notices, after consultation with the Crane Manufacturer, Authorized Surveyor, certifying authority or other qualified source (such as an API-licensed 2C Crane Manufacturer, or an engineer experienced in the design of the crane, as determined by the Crane Owner).
d. Conformance to the intent of the programs and practices recommended herein is intended to result in cranes that operate safely and efficiently between inspection periods and in accordance with a company's Safety and Environmental Management Program (SEMP) (see API RP 75).

Each Crane Owner, Qualified Crane Operator, Qualified Inspector, and Qualified Rigger is encouraged to follow the recommendations outlined herein, and to modify or supplement them with any practices or procedures which are more appropriate for the type and duty cycle—both past and future—of the crane, provided the minimum recommendations and the intent of the programs stated herein are met.

2 Definitions

2.1 Authorized Surveyor: See the definition for **Qualified Inspector**.

2.2 bearing raceway: The surface of the bearing rings which contact the rolling element (balls or rollers) of the swing-bearing assembly.

2.3 boom: A member hinged to the revolving upper-structure and used for supporting the hoist tackle.

2.4 boom angle: The angle above or below horizontal of the longitudinal axis of the base boom section.

2.5 boom angle indicator: An accessory which measures the angle of the boom above horizontal.

2.6 boom hoist: The hoist mechanism responsible for raising and lowering the boom.

2.7 boom length: The straight-line distance from the centerline of boom foot-pin to the centerline of the boom-point load hoist sheave pin, measured along the longitudinal axis of the boom.

2.8 boom stop: A device used to limit the angle of the boom at the highest recommended position.

2.9 brake: A device used for retarding or stopping motion or holding.

2.10 bridle sling: A multi-leg wire or synthetic rope sling attached to a single point ring. The legs of the sling are spread to divide and equalize the load.

2.11 cab: An enclosure for the operator and the machine operation controls.

2.12 clutch: A means for engagement or disengagement of power.

2.13 counterweight: Weight used to supplement the weight of the machine in providing stability for lifting working loads and usually attached to the rear of the revolving upper-structure.