ASME B30.5-2021
(Revision of ASME B30.5-2018)

# Mobile and Locomotive Cranes

## Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

ASME B30.5-2021
(Revision of ASME B30.5-2018)

# Mobile and Locomotive Cranes

## Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

Two Park Avenue • New York, NY • 10016 USA

Date of Issuance: December 17, 2021

The next edition of this Standard is scheduled for publication in 2024. This Standard will become effective 1 year after the Date of Issuance.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. Interpretations are published on the ASME website under the Committee Pages at http://cstools.asme.org/ as they are issued.

Errata to codes and standards may be posted on the ASME website under the Committee Pages to provide corrections to incorrectly published items, or to correct typographical or grammatical errors in codes and standards. Such errata shall be used on the date posted.

The Committee Pages can be found at http://cstools.asme.org/. There is an option available to automatically receive an e-mail notification when errata are posted to a particular code or standard. This option can be found on the appropriate Committee Page after selecting “Errata” in the “Publication Information” section.



The American Society of Mechanical Engineers
Two Park Avenue, New York, NY 10016-5990

# CONTENTS

**Tables**

# FOREWORD

This American National Standard, Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings, has been developed under the procedures accredited by the American National Standards Institute (ANSI). This Standard had its beginning in December 1916, when an eight-page "Code of Safety Standards for Cranes," prepared by the American Society of Mechanical Engineers (ASME) Committee on the Protection of Industrial Workers, was presented at the annual meeting of the ASME.

Meetings and discussions regarding safety on cranes, derricks, and hoists were held from 1920 to 1925 involving the ASME Safety Code Correlating Committee, the Association of Iron and Steel Electrical Engineers, the American Museum of Safety, the American Engineering Standards Committee (AESC) [later changed to American Standards Association (ASA), then to the United States of America Standards Institute (USASI), and finally to ANSI], Department of Labor — State of New Jersey, Department of Labor and Industry — State of Pennsylvania, and the Locomotive Crane Manufacturers Association. On June 11, 1925, the AESC approved the ASME Safety Code Correlating Committee's recommendation and authorized the project with the U.S. Department of the Navy, Bureau of Yards and Docks, and ASME as sponsors.

In March 1926, invitations were issued to 50 organizations to appoint representatives to a Sectional Committee. The call for organization of this Sectional Committee was sent out October 2, 1926, and the Committee was organized on November 4, 1926, with 57 members representing 29 national organizations.

Commencing June 1, 1927, and using the eight-page Code published by ASME in 1916 as a basis, the Sectional Committee developed the "Safety Code for Cranes, Derricks, and Hoists." The early drafts of this safety code included requirements for jacks, but due to inputs and comments on those drafts, the Sectional Committee decided in 1938 to make the requirements for jacks a separate code. In January 1943, ASA B30.2-1943 was published addressing a multitude of equipment types, and in August 1943, ASA B30.1-1943 was published addressing only jacks. Both documents were reaffirmed in 1952 and widely accepted as safety standards.

Due to changes in design, advancement in techniques, and general interest of labor and industry in safety, the Sectional Committee, under the joint sponsorship of ASME and the Bureau of Yards and Docks (now the Naval Facilities Engineering Command), was reorganized on January 31, 1962, with 39 members representing 27 national organizations. The new Committee changed the format of ASA B30.2-1943 so that the multitude of equipment types it addressed could be published in separate volumes that could completely cover the construction, installation, inspection, testing, maintenance, and operation of each type of equipment that was included in the scope of ASA B30.2. This format change resulted in B30.3, B30.5, B30.6, B30.11, and B30.16 being initially published as "Revisions" of B30.2, with the remainder of the B30 volumes being published as totally new volumes. ASA changed its name to USASI in 1966 and to ANSI in 1969, which resulted in B30 volumes from 1943 to 1968 being designated as ASA B30, USAS B30, or ANSI B30, depending on their date of publication. In 1982, the Committee was reorganized as an Accredited Organization Committee operating under procedures developed by ASME and accredited by ANSI.

This Standard presents a coordinated set of rules that may serve as a guide to government and other regulatory bodies and municipal authorities responsible for the guarding and inspection of the equipment falling within its scope. The suggestions leading to accident prevention are given both as mandatory and advisory provisions; compliance with both types may be required by employers of their employees. In case of practical difficulties, new developments, or unnecessary hardship, the administrative or regulatory authority may grant variances from the literal requirements or permit the use of other devices or methods, but only when it is clearly evident that an equivalent degree of protection is thereby secured. To secure uniform application and interpretation of this Standard, administrative or regulatory authorities are urged to consult the B30 Committee, in accordance with the format described in Section IX of the B30 Standard Introduction, before rendering decisions on disputed points.

Safety codes and standards are intended to enhance public safety. Revisions result from committee consideration of factors such as technological advances, new data, and changing environmental and industry needs. Revisions do not imply that previous editions were inadequate.

The ASME B30.5-2007 edition added responsibilities to be assigned in the worksite organization. The 2011 edition included minor revisions and the addition of Nonmandatory Appendix A on critical lifts. The 2014 edition incorporated many global B30 changes including the addition of personnel competence and translation requirements as well as other revisions made throughout the document. The 2018 edition revised the Crane Operation in the Vicinity of Electric Power Lines section entirely, added a new section on Rigger Responsibilities, and incorporated other miscellaneous revisions.

The 2021 edition updates figures, revises qualifications, adds a new paragraph on Responsibilities of the Signalperson, and incorporates other miscellaneous revisions.

This Volume of the Standard, which was approved by the B30 Committee and by ASME, was approved by ANSI and designated as an American National Standard on September 27, 2021.

# ASME B30 COMMITTEE
# Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings

(The following is the roster of the Committee at the time of approval of this Standard.)

## STANDARDS COMMITTEE OFFICERS

**T. L. Blanton,** *Chair*
**E. D. Fidler,** *Vice Chair*
**S. D. Wood,** *Vice Chair*
**K. Peterson,** *Secretary*

## STANDARDS COMMITTEE PERSONNEL

**N. E. Andrew,** Neil E. Andrew and Associates, LLC
**B. B. Bacon,** Tennessee Valley Authority
**T. L. Blanton,** OGR Consulting Services, LLC
**P. A. Boeckman,** The Crosby Group
**P. W. Boyd,** The Boeing Co.
**J. R. Burkey,** Columbus McKinnon Corp.
**B. D. Closson,** Craft Forensic Services
**J. A. Danielson,** The Boeing Co.
**D. R. Decker,** Becket, LLC
**L. D. DeMark, Sr.,** Equipment Training Solutions, LLC
**D. W. Eckstine,** Eckstine and Associates
**E. D. Fidler,** Grove U.S., LLC
**M. Gardiner,** ICC Forensics, LLC
**J. A. Gilbert,** Associated Wire Rope Fabricators
**D. A. Henninger,** Bridon Bekaert, The Ropes Group
**G. B. Hetherston,** Hetherston Consulting, LLC
**M. M. Jaxtheimer,** Navy Crane Center
**P. R. Juhren,** Morrow Equipment Co., LLC
**R. M. Kohner,** Landmark Engineering Services
**A. J. Lusi, Jr.**, Lumark Consulting, LLP
**L. D. Means,** Means Engineering and Consulting, P.C.
**M. W. Mills,** Liberty Mutual Insurance
**R. M. Parnell,** ITI-Field Service
**J. T. Perkins,** All Material Handling (AMH)
**K. Peterson,** The American Society of Mechanical Engineers
**B. A. Pickett,** Systems Engineering and Forensic Services
**J. A. Pilgrim**, Manitowoc Cranes
**S. K. Rammelsberg,** McDermott
**K. Reynolds,** Shell Exploration and Production
**J. E. Richardson,** U.S. Department of the Navy
**J. W. Rowland III,** Consultant
**A. R. Ruud,** Atkinson Construction
**L. K. Shapiro,** Howard I. Shapiro and Associates
**D. W. Smith,** J.E. Spear Consulting, LP
**W. J. Smith, Jr.,** NationsBuilder Insurance Services, Inc.
**R. S. Stemp,** Lampson International, LLC
**R. G. Strain,** Advanced Crane Technologies, LLC
**J. Sturm,** Sturm Corp.
**D. Sullivan,** IUOE Local 542 JATC
**P. D. Sweeney,** Riverside Engineering
**E. P. Vliet,** Consultant
**J. D. Wiethorn,** International Crane and Construction Safety Solutions
**R. C. Wild**, CJ Drilling, Inc.
**S. D. Wood**, Terex Corp.
**R. J. Bolen,** *Alternate*, Consultant
**D. Boyle,** *Alternate*, The Crosby Group
**B. M. Casey,** *Alternate*, Electric Boat
**M. Chaudanson,** *Alternate*, Howard I. Shapiro and Associates
**W. C. Dickinson, Jr.,** *Alternate*, Crane Industry Services, LLC
**D. Duerr,** *Alternate*, 2DM Associates, Inc.
**M. Eckstine,** *Alternate*, Safelift, LLC
**S. R. Fletcher,** *Alternate*, Cowles, Murphy, Glover and Associates
**T. Gordon,** *Alternate*, IUOE Local 14 Training Fund
**J. B. Greenwood,** *Alternate*, Navy Crane Center
**C. K. Hale,** *Alternate*, Columbus McKinnon Corp.
**D. Jordan,** *Alternate*, American International Crane Bureau
**K. Kennedy,** *Alternate*, Navy Crane Center
**D. Lavoie,** *Alternate*, Liberty Mutual
**J. Lindsay,** *Alternate*, Link-Belt Construction Equipment
**J. P. Mihlbauer,** *Alternate*, All Ship and Cargo Surveys, Ltd.
**G. D. Miller,** *Alternate*, Manitowoc Cranes
**D. A. Moore,** *Alternate*, Unified Engineering
**L. S. Olver,** *Alternate*, Kolo Holdings, Inc.
**J. M. Randall,** *Alternate*, McDermott
**G. Mark Ray,** *Alternate*, Tennessee Valley Authority
**C. L. Richardson,** *Alternate*, Lone Star Rigging, LP
**M. Riggs,** *Alternate*, Riggsafe Solutions, Inc.
**J. R. Schober,** *Alternate*, American Bridge Co.
**J. Schoppert,** *Alternate*, NBIS Claims and Risk Management
**T. Sicklesteel,** *Alternate*, National Commission for the Certification of Crane Operators
**C. H. Smith,** *Alternate*, Morrow Equipment Co., LLC
**J. E. Spear,** *Alternate*, J.E. Spear Consulting, LP
**J. A. Stewart,** *Alternate*, Stewart Safety Consulting
**J. J. Van Egeren,** *Alternate*, Manitowoc Cranes
**M. Zerba,** *Alternate*, Lampson International, LLC
**J. W. Downs, Jr.,** *Honorary Member*, Consultant
**J. L. Franks,** *Honorary Member*, Consultant
**C. W. Ireland,** *Honorary Member*, National Oilwell Varco
**J. M. Klibert,** *Honorary Member*, Lift-All Co., Inc.
**R. W. Parry,** *Honorary Member*, Parry Parry and Glen
**J. C. Ryan,** *Honorary Member*, Boh Bros. Construction Co.
**D. N. Wolff,** *Honorary Member*, Consultant

## B30.5 SUBCOMMITTEE PERSONNEL

**S. D. Wood,** *Chair,* Terex Corp.
**K. Adolf,** Local 825 Apprenticeship Training and Retraining
**A. L. Calta,** Elliott Equipment Co.
**D. W. Eckstine,** Eckstine and Associates
**M. Gardiner,** ICC Forensics, LLC
**D. A. Henninger,** Bridon-Bekaert, The Ropes Group
**D. F. Jordan,** American International Crane Bureau
**R. M. Kohner,** Landmark Engineering Services
**J. Lindsay,** Link-Belt Construction Equipment
**J. A. Pilgrim,** Manitowoc Cranes
**A. R. Ruud,** Atkinson Construction
**J. Schoppert,** NBIS Claims and Management
**T. Sicklesteel,** National Commission For the Certification of Crane Operators
**J. Sturm,** Sturm Corp.
**D. Sullivan,** IUOE Local 542 JATC
**J. J. Van Egeren,** Manitowoc Cranes
**U. M. Afana.,** *Alternate,* Broderson Manufacturing Corp.
**L. D. DeMark, Sr.,** *Alternate,* Equipment Training Solutions, LLC
**E. L. Diamond,** *Alternate,* Manitowoc Cranes
**E. D. Fidler,** *Alternate,* Grove U.S., LLC
**G. B. Hetherston,** *Alternate,* Consultant
**L. D. Means,** *Alternate,* Means Engineering and Consulting
**P. Quick,** *Alternate,* Affiliated Engineering Laboratories
**T. C. Radenslaben,** *Alternate,* Elliott Equipment Company
**J. C. Ryan,** *Alternate,* Boh Bros. Construction Co.
**J. R. Schober,** *Alternate,* American Bridge Co.
**W. J. Smith, Jr.,** *Alternate,* NationsBuilders Insurance Services, Inc.
**E. P. Vliet,** *Alternate,* Consultant
**R. C. Wild,** *Alternate,* CJ Drilling, Inc.
**M. Zerba,** *Alternate,* Lampson International, LLC
**T. Gordon,** *Contributing Member,* IUOE Local 14 Training Fund
**B. Schmoyer,** *Contributing Member,* U.S. Training Consultants, LLC
**R. Stemp,** *Contributing Member,* Lampson International, LLC
**P. A. Vallegos,** *Contributing Member,* Hanford Mission Integration Solutions

## B30 INTEREST REVIEW GROUP

**O. Akinboboye,** Ropetech Engineering Services
**J. D. Cannon,** Consultant
**B. Dobbs,** LEEA
**M. J. Eggenberger,** Berry Contracting, Inc.
**A. Gomes Rocha,** Industrial Training International
**J. B. Greenwood,** Navy Crane Center
**N. C. Hargreaves,** Hargreaves Consulting, LLC
**H. A. Hashem,** Saudi Aramco
**J. Hui,** School of Civil Engineering, Nanjing
**A. C. Mattoli,** Prowinch, LLC
**J. Mellott-Green,** All Canadian Training Institute, Inc.
**J. P. Mihlbauer,** All Ship and Cargo Surveys, Ltd.
**L. S. Olver,** Kolo Holdings, Inc.
**G. L. Owens,** Consultant
**A. Payne,** Bureau of Safety and Environmental Enforcement
**C.-C. Tsaur,** Institute of Occupational Safety and Health

## B30 REGULATORY AUTHORITY COUNCIL

**C. Stribling, Jr.,** *Chair,* Kentucky Labor Cabinet
**K. Peterson,** *Secretary,* The American Society of Mechanical Engineers
**R. D. Jackson,** U.S. Department of Labor
**D. E. Latham,** State of Maryland Department of Labor, Licensing and Regulation
**M. J. Nelmida,** State of California, Occupational Safety and Health Standards Board
**C. Shelhamer,** New York City Department of Buildings
**T. Taylor,** Minnesota Department of Labor and Industry
**G. M. Thomas,** South Carolina Department of Labor Licensing, and Regulation
**A. O. Omran,** *Alternate,* New York City Department of Buildings
**N. Reynolds,** *Alternate,* Maryland Occupational Safety and Health (MOSH)

# B30 STANDARD INTRODUCTION

## SECTION I: SCOPE

The ASME B30 Standard contains provisions that apply to the construction, installation, operation, inspection, testing, maintenance, and use of cranes and other lifting and material-movement-related equipment. For the convenience of the reader, the Standard has been divided into separate volumes. Each volume has been written under the direction of the ASME B30 Standards Committee and has successfully completed a consensus approval process under the general auspices of the American National Standards Institute (ANSI).

As of the date of issuance of this Volume, the B30 Standard comprises the following volumes:

B30.1 Jacks, Industrial Rollers, Air Casters, and Hydraulic Gantries

B30.2 Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)

B30.3 Tower Cranes

B30.4 Portal and Pedestal Cranes

B30.5 Mobile and Locomotive Cranes

B30.6 Derricks

B30.7 Winches

B30.8 Floating Cranes and Floating Derricks

B30.9 Slings

B30.10 Hooks

B30.11 Monorails and Underhung Cranes (withdrawn 2018 — requirements found in latest revision of B30.17)

B30.12 Handling Loads Suspended From Rotorcraft

B30.13 Storage/Retrieval (S/R) Machines and Associated Equipment

B30.14 Side Boom Tractors

B30.15 Mobile Hydraulic Cranes (withdrawn 1982 — requirements found in latest revision of B30.5)

B30.16 Overhead Underhung and Stationary Hoists

B30.17 Cranes and Monorails (With Underhung Trolley or Bridge)

B30.18 Stacker Cranes (Top or Under Running Bridge, Multiple Girder With Top or Under Running Trolley Hoist)

B30.19 Cableways

B30.20 Below-the-Hook Lifting Devices

B30.21 Lever Hoists

B30.22 Articulating Boom Cranes

B30.23 Personnel Lifting Systems

B30.24 Container Cranes

B30.25 Scrap and Material Handlers

B30.26 Rigging Hardware

B30.27 Material Placement Systems

B30.28 Balance Lifting Units

B30.29 Self-Erecting Tower Cranes

B30.30 Ropes

B30.31 Self-Propelled, Towed, or Remote-Controlled Hydraulic Platform Transporters[1]

B30.32 Unmanned Aircraft Systems (UAS) Used in Inspection, Testing, Maintenance, and Lifting Operations[1]

## SECTION II: SCOPE EXCLUSIONS

Any exclusion of, or limitations applicable to, the equipment, requirements, recommendations, or operations contained in this Standard are established in the affected volume's scope.

## SECTION III: PURPOSE

The B30 Standard is intended to

*(a)* prevent or minimize injury to workers, and otherwise provide for the protection of life, limb, and property by prescribing safety requirements

*(b)* provide direction to manufacturers, owners, employers, users, and others concerned with, or responsible for, its application

*(c)* guide governments and other regulatory bodies in the development, promulgation, and enforcement of appropriate safety directives

## SECTION IV: USE BY REGULATORY AGENCIES

These volumes may be adopted in whole or in part for governmental or regulatory use. If adopted for governmental use, the references to other national codes and standards in the specific volumes may be changed to refer to the corresponding regulations of the governmental authorities.

[1] This volume is currently in the development process.

## SECTION V: EFFECTIVE DATE

*(a) Effective Date.* The effective date of this Volume of the B30 Standard shall be 1 yr after its date of issuance. Construction, installation, inspection, testing, maintenance, and operation of equipment manufactured and facilities constructed after the effective date of this Volume shall conform to the mandatory requirements of this Volume.

*(b) Existing Installations.* Equipment manufactured and facilities constructed prior to the effective date of this Volume of the B30 Standard shall be subject to the inspection, testing, maintenance, and operation requirements of this Standard after the effective date.

It is not the intent of this Volume of the B30 Standard to require retrofitting of existing equipment. However, when an item is being modified, its performance requirements shall be reviewed relative to the requirements within the current volume. The need to meet the current requirements shall be evaluated by a qualified person selected by the owner (user). Recommended changes shall be made by the owner (user) within 1 yr.

## SECTION VI: REQUIREMENTS AND RECOMMENDATIONS

Requirements of this Standard are characterized by use of the word *shall*. Recommendations of this Standard are characterized by the word *should*.

## SECTION VII: USE OF MEASUREMENT UNITS

This Standard contains SI (metric) units as well as U.S. Customary units. The values stated in U.S. Customary units are to be regarded as the standard. The SI units are a direct (soft) conversion from the U.S. Customary units.

## SECTION VIII: REQUESTS FOR REVISION

The B30 Standards Committee will consider requests for revision of any of the volumes within the B30 Standard. Such requests should be directed to

Secretary, B30 Standards Committee
ASME Standards and Certification
Two Park Avenue
New York, NY 10016-5990

Requests should be in the following format:

| | |
|---|---|
| Volume: | Cite the designation and title of the volume. |
| Edition: | Cite the applicable edition of the volume. |
| Subject: | Cite the applicable paragraph number(s) and the relevant heading(s). |
| Request: | Indicate the suggested revision. |
| Rationale: | State the rationale for the suggested revision. |

Upon receipt by the Secretary, the request will be forwarded to the relevant B30 Subcommittee for consideration and action. Correspondence will be provided to the requester defining the actions undertaken by the B30 Standards Committee.

## SECTION IX: REQUESTS FOR INTERPRETATION

The B30 Standards Committee will render an interpretation of the provisions of the B30 Standard. An Interpretation Submittal Form is available on ASME's website at http://cstools.asme.org/Interpretation/InterpretationForm.cfm.

Phrase the question as a request for an interpretation of a specific provision suitable for general understanding and use, not as a request for approval of a proprietary design or situation. Plans or drawings that explain the question may be submitted to clarify the question. However, they should not contain any proprietary names or information. Read carefully the note addressing the types of requests that the B30 Standards Committee can and cannot consider.

Upon submittal, the request will be forwarded to the relevant B30 Subcommittee for a draft response, which will then be subject to approval by the B30 Standards Committee prior to its formal issuance. The B30 Standards Committee may rewrite the question for the sake of clarity.

Interpretations to the B30 Standard will be available online at https://cstools.asme.org/Interpretation/SearchInterpretation.cfm.

## SECTION X: ADDITIONAL GUIDANCE

The equipment covered by the B30 Standard is subject to hazards that cannot be abated by mechanical means, but only by the exercise of intelligence, care, and common sense. It is therefore essential to have personnel involved in the use and operation of equipment who are competent, careful, physically and mentally qualified, and trained in the proper operation of the equipment and the handling of loads. Serious hazards include, but are not limited to, improper or inadequate maintenance, overloading, dropping or slipping of the load, obstructing the free passage of the load, and using equipment for a purpose for which it was not intended or designed.

The B30 Standards Committee fully realizes the importance of proper design factors, minimum or maximum dimensions, and other limiting criteria of wire rope or chain and their fastenings, sheaves, sprockets, drums, and similar equipment covered by the Standard, all of which are closely connected with safety. Sizes, strengths, and similar criteria are dependent on many different factors, often varying with the installation and uses. These factors depend on

*(a)* the condition of the equipment or material
*(b)* the loads

*(c)* the acceleration or speed of the ropes, chains, sheaves, sprockets, or drums

*(d)* the type of attachments

*(e)* the number, size, and arrangement of sheaves or other parts

*(f)* environmental conditions causing corrosion or wear

*(g)* many variables that must be considered in each individual case

The requirements and recommendations provided in the volumes must be interpreted accordingly, and judgment used in determining their application.

# ASME B30.5-2021
# SUMMARY OF CHANGES

Following approval by the ASME B30 Committee and ASME, and after public review, ASME B30.5-2021 was approved by the American National Standards Institute on September 27, 2021.

ASME B30.5-2021 includes the following changes identified by a margin note, **(21)**.

| *Page* | *Location* | *Change* |
|---|---|---|
| 1 | Chapter 5-0 | (1) Figures 5-0.2.1-1 through 5-0.2.1-10 revised |
| | | (2) Figures 5-0.2.1-11 through 5-0.2.1-14 added |
| 1 | 5-0.2.1 | Figure cross-references updated |
| 1 | 5-0.2.2 | (1) Definition of *dedicated spotter* revised |
| | | (2) Definitions of *jib point* and *original language(s)* added |
| 16 | Section 5-0.4 | (1) Publisher of ANSI/SAE Z26.1 updated |
| | | (2) ISO 7000, ISO 7296, SAE J159, SAE J375, SAE J376, SAE J999, SAE J1180, SAE J1305, SAE J1332, and Code of Federal Regulations Title 49, Part 231 added |
| 17 | Section 5-1.1 | Subparagraph (e) added |
| 18 | 5-1.1.3 | Footnote reference deleted from subpara. (b)(2) and footnote information moved to Figure 5-1.1.3-1 as a General Note |
| 19 | Figure 5-1.1.3-1 | General Note added |
| 28 | 5-1.7.2 | Subparagraphs (d)(1) revised |
| 30 | 5-1.8.3 | Subparagraph (a) revised |
| 31 | 5-1.9.10 | Paragraphs 5-1.9.10.1 through 5-1.9.10.7 revised |
| 32 | Section 5-1.10 | In subpara. (a), first sentence revised |
| 32 | Section 5-1.12 | Deleted |
| 33 | 5-2.1.1 | Subparagraphs (b) and (b)(2) revised |
| 33 | 5-2.1.2 | First paragraph revised |
| 33 | 5-2.1.3 | First paragraph revised |
| 39 | 5-3.1.2 | (1) Title revised |
| | | (2) Former para. 5-3.1.2 redesignated as 5-3.1.2.1 and revised |
| | | (3) Paragraph 5-3.1.2.2 added |
| 40 | 5-3.1.3 | Subparagraph (d) revised, and subpara. (g) added |
| 41 | 5-3.1.3.1.1 | Subparagraph (j) added |
| 42 | 5-3.1.3.2.2 | Subparagraph (g) revised |
| 43 | 5-3.1.3.3.1 | Subparagraph (v) revised |
| 43 | 5-3.1.3.4 | Subparagraphs (d), (f), and (h) revised |
| 44 | 5-3.1.3.5 | Added |
| 47 | 5-3.2.3 | Subparagraphs (c)(2) and (c)(4) revised |
| 53 | Figure 5-3.4.5.1-1 | Editorially revised |
| 54 | Figure 5-3.4.5.1-2 | Editorially revised |
| 55 | Figure 5-3.4.5.1-3 | Editorially revised |

# Chapter 5-0
# Scope, Definitions, Personnel Competence, and References (21)

## SECTION 5-0.1: SCOPE OF B30.5

Within the general scope defined in Section I of the B30 Standard Introduction, American National Standard B30.5 applies to crawler cranes, locomotive cranes, wheel-mounted cranes, and any variations thereof that retain the same fundamental characteristics. The scope includes only cranes of the above types that are basically powered by internal combustion engines or electric motors. Side boom tractors and cranes designed for railway and automobile wreck clearance, digger derricks, cranes manufactured specifically for, or when used for, energized electrical line service, knuckle boom, trolley boom cranes, and cranes having a maximum rated capacity of 1 ton or less are excluded.

Special adaptions to the general types of machines covered by this Volume, where applicable, fall under this scope.

Some basic machine types within this scope are used alternatively for lifting service and for applications not considered to be lifting service. All of the requirements of this Volume are applicable to such machines when used for lifting service. However, at a minimum, Section 5-1.11, Chapter 5-2, and Section 5-3.1 apply to machines when used in other than lifting service.

## SECTION 5-0.2: DEFINITIONS

### (21) 5-0.2.1 Types of Mobile and Locomotive Cranes

*commercial truck-mounted crane:* a crane consisting of a rotating superstructure (center post or turntable), boom, operating machinery, and one or more operator's stations mounted on a frame attached to a commercial truck chassis, usually retaining a payload hauling capability whose power source usually powers the crane. Its function is to lift, lower, and swing loads at various radii (see Figures 5-0.2.1-1 through 5-0.2.1-3).

*crawler crane:* a crane consisting of a rotating superstructure with a power plant, operating machinery, and boom, mounted on a base and equipped with crawler treads for travel. Its function is to lift, lower, and swing loads at various radii (see Figures 5-0.2.1-4 through 5-0.2.1-8).

*locomotive crane:* a crane consisting of a rotating superstructure with a power plant, operating machinery, and boom, mounted on a base or car equipped for travel on a railroad track. It may be self-propelled or propelled by an outside source. Its function is to lift, lower, and swing loads at various radii (see Figure 5-0.2.1-9).

*wheel-mounted crane (multiple control stations):* a crane consisting of a rotating superstructure, operating machinery, and operator's station and boom, mounted on a crane carrier equipped with axles and rubber-tired wheels for travel, a power source(s), and having separate stations for driving and operating. Its function is to lift, lower, and swing loads at various radii (see Figures 5-0.2.1-10 through 5-0.2.1-12).

*wheel-mounted crane (single control station):* a crane consisting of a rotating superstructure, operating machinery, and boom, mounted on a crane carrier equipped with axles and rubber-tired wheels for travel, a power source, and having a single control station for driving and operating. Its function is to lift, lower, and swing loads at various radii (see Figures 5-0.2.1-13 and 5-0.2.1-14).

### 5-0.2.2 General (21)

*accessory:* a secondary part or assembly of parts that contributes to the overall function and usefulness of the equipment.

*anti–two-block device:* a device that, when activated, disengages all equipment functions whose movement can cause two-blocking.

*auxiliary hoist:* a secondary mechanism used either in conjunction with, or independently of, the main hoist.

*axis of rotation:* the vertical axis around which the crane superstructure rotates.

*axle:* the shaft or spindle with which or about which a wheel rotates. It refers to a type of axle assembly including housings, gearing, differential, bearings, and mounting appurtenances.

*backward stability:* the ability of a crane to resist overturning in the direction opposite the boom while in a loaded or unloaded condition.

*ballast:* weight used to supplement the weight of the machine in providing stability for lifting loads (the term *ballast* is normally associated with locomotive cranes).

*boom (crane):* a member hinged to the rotating superstructure and used for supporting the hoisting tackle.