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DEPARTMENT OF THE AIR FORCE PAMPHLET
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HEADQUARTERS
DEPARTMENTS OF THE ARMY,
AIR FORCE, NAVY,
AND COMMANDANT, USMC
WASHINGTON, DC

CERTIFICATION OF MILITARY EQUIPMENT

FOR TRANSPORT IN AMC/CRAF AIRCRAFT

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CHAPTER 1

INTRODUCTION

1-1. PURPOSE AND SCOPE

a. This publication will assist Army, Air Force, Navy, and Marine Corps personnel in quickly developing and executing aircraft load plans. It provides the official source of certifications (approved by Air Transportability Test Loading Agency (ATTLA), Headquarters Aeronautical Systems Center (HQASC), Air Force Systems Command (AFSC)) for transporting Army, Navy, and Marine Corps equipment in Air Mobility Command (AMC) and Civil Reserve Air Fleet (CRAF) aircraft.

b. This publication includes the following information:

(1) Appendix C lists Army equipment characteristics data for end-items authorized in current tables of organization and equipment (TOE) and modification tables of organization and equipment (MTOE) and other end-items when required for special projects. The data are stored on magnetic tapes located in the tape library at Headquarters, Military Traffic Management Command (HQMTMC). EXCEPTION: This publication excludes nonvehicular equipment items whose dimensions and weight are less than 104 inches long, 84 inches wide, 50 inches high, and 5,000 pounds gross weight when the items are prepared for air movement. HQASC/ENECA (Engineering) has approved these criteria as the minimum standard for official airlift certification. This publication does not show data on such items to minimize volume. Users may obtain data for such items from TB 55-46-2.

(2) Appendix C also lists Navy equipment characteristics data for Naval Construction Force (NCF) and civil engineer support equipment (CESE) as authorized by Navy tables of allowance (TOA). In this file, Navy equipment is identified by a line item number (LIN) consisting of the letters CB followed by the first four digits of the equipment code (EC). The last two digits of the EC appear as the first two characters of the model description field.

(3) Appendix D lists Marine Corps equipment characteristics data for end-items, except personal clothing and equipment, as authorized by US Marine Corps tables of authorized materiel (USMC, TAM). The appendix also includes data for selected aviation support equipment (ASE) used by Marine Corps aviation units (identified by TAM number prefixed with Z).

(4) Appendixes C and D also include the certification status for AMC and CRAF aircraft for each item of equipment and shipping configuration, specific certification references and other loading procedure references, and 463L pallet requirements for loading nonvehicular equipment in CRAF aircraft.

(5) Appendix E contains a copy of DD Form 2083 and all current HQASC certification references in date-order sequence.

c. All equipment characteristics (apps C and D) are extracted from either the DA or the Marine Corps Standard Equipment Characteristics data files. The Military Traffic Management Command Transportation Engineering Agency (MTMCTEA) maintains both files. These files are also the source of data for TBs 55-46-1 and 55-46-2 and MCO 4610.35D.

d. This publication applies to training exercises and to contingency and wartime operations.

1-2. UNIT MOVEMENTS. Users of this publication should also refer to and apply provisions of FM 55-12/AFR 76-6/FMFM 4-6/ OPNAVINST 4630.27.

1-3. REPORTING OF PUBLICATION IMPROVEMENTS

a. MTMCTEA updates this publication annually to reflect new equipment and/or changes in data; however, highlighting of such changes are not practical.

b. MTMCTEA encourages users of this publication to report errors and omissions and to recommend improvements. Personnel should key comments to the specific page, paragraph, and line of the publication in which the change is recommended.

(1) Army personnel should send comments on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to Director, Military Traffic Management Command Transportation Engineering Agency, ATTN: MTTE-OAR, 720 Thimble Shoals Boulevard, Suite 130, Newport News, VA 23606-2574.

(2) Air Force personnel should send comments through their respective commands, to HQ USAF/LETT, Washington, DC 20330-5000.

(3) Navy personnel should send comments through command channels, to Commanding Officer, Naval Facilities Engineering Command, ATTN: Code 064T/0634, 200 Stovall Street, Alexandria, VA 22332-2300.

(4) Marine Corps personnel should send comments, through command channels, to Commandant of the Marine Corps, HQ US Marine Corps (Code LPO-3), Washington, DC 20380-5000.

(5) All users are encouraged to call MTMCTEA (AUTOVON 927-5268) concerning content and accuracy of Army/Navy/Marine Corps/Air Force equipment data and certifications. Also, users should notify MTMCTEA, ATTN: MTTE-OAR, in case of missing or defective microfiche.

1-4. REFERENCES AND DEFINITIONS

a. References are in appendix A and should be used with this publication.

b. The terms used in this publication conform to definitions in DOD Directory of Military and Associated Terms (Joint Pub 1-02), Dictionary of United States Army Terms (AR 310-25), and US Air Force Glossary of Standardized Terms (AFM 11-1) (Vol 1). Definitions of technical terms are in the glossary (app B).

1-5. DISTRIBUTION

a. Send Army requirements on DA Form 12-34C, block 334 (Quantity Required). Copies also may be obtained by sending DA Form 17 to US Army Adjutant General, Publication Distribution Center, 1655 Woodson Road, St. Louis, MO 63114-6181.

b. Send Air Force requirements through local Air Force publishing distribution office channels.

c. Send Navy requirements to the Naval Facilities Engineering Command, Hoffman Bldg #2, ATTN: Code 064T/0634, 200 Stovall Street, Alexandria, VA 22332-2300.

d. Send Marine Corps requirements to Commanding General, Marine Corps Logistics Base, Code 876, Albany, GA 31704-5000.

CHAPTER 2

USERS INSTRUCTIONS

Section I. GENERAL

2-1. APPLICATION OF CERTIFICATIONS

a. Caution

Users must strictly observe the guidance set forth below when applying certifications contained in this publication.

(1) A certification, identified by a C under a specific aircraft heading in appendixes C and D, applies only to equipment properly prepared for air movement. The certification is based on the shipping configuration and associated dimensions and weight contained in appendixes C and D. Any modification resulting in a deviation from the listed dimensions and weight may cause rejection for air movement.

(2) To ensure use of proper aircraft loading procedures, users should refer to all references listed for a specific item of equipment (apps C and D). Certification documents, referenced in appendixes C and D, are in appendix E.

(3) Shippers should contact personnel of the AMC-Affiliated Wing-Level Combat Support Branch (DOXL) (AUTOVON 440-3144/2777) or, in their absence, HQ 2lAF, 22AF/DOX, or HQ AMC/XOCO (AUTOVON 576-3570/2087) for advice and assistance.

b. AMC Aircraft. An HQASC certification for AMC aircraft is based on section IV or VI of the Air Force Technical Order (AFTO) -9 series, a set of loading instructions for a specific aircraft, or on an HQASC letter containing specific loading procedures. The priority in applying the loading procedures is as follows:

(1) Apply section VI procedures when published for a specific item of equipment.

(2) In the absence of section VI procedures, apply section IV procedures together with any modifications contained in the HQASC certification letter (app E). The applicable HQASC letter is permanent certification for an item of equipment that has been determined to be loadable under section IV procedures.

(3) When air transportability analysis dictates the need for special loading procedures or a formal test loading, the HQASC letter is an interim certification. The HQASC letter certifies the procedure for the period following successful test loading using AMC draft loading procedures until publication in

section VI of the applicable AFTO -9. Approved procedures may also be published in DA or Marine Corps technical publications. All current references are cited in appendixes C and D.

c. CRAF Aircraft. An HQASC certification for CRAF aircraft is based on either a review of applicable data or a test loading. Users must note all special-instruction references in appendixes C and D. CRAF loads are subject to final approval by each individual carrier. Therefore, CRAF certifications in this publication are subject to that limitation. However, adherence to shipping configuration data, in this publication, will further reduce the possibility of rejection.

d. Ripped Equipment. In this publication, certification for equipment rigged for any mode of airdrop indicates certification for airland operation only. Refer to applicable FM 10-500/To 13C-series publications for airdrop certifications. Equipment rigged for low-altitude parachute extraction system (LAPES) is certified for both airdrop and airland operations.

e. Low Velocity Airdrop (LVAD). Low velocity airdrop delivers platform loads from an aircraft flying at a minimum altitude of 750 feet for loads rigged with one to six G-11A cargo parachutes. The cargo parachutes are used to slow the descent of the load to ensure minimum landing shock.

2-2. REQUESTS FOR AIR MOVEMENT CERTIFICATION

a. Developmental and/or Prototype Equipment. Prepare and process requests for air transportability design analysis and

concurrent airlift certification for all new items of Army equipment, Navy CESE, and Marine Corps equipment as shown below. A copy of DD Form 2083, used in the preparation of such requests, is in appendix E.

(1) DA agencies and activities: Comply with the provisions of appendix F, AR 70-47.

(2) Other DOD components: Prepare and forward DD Form 2083 according to the latest edition of AR 70-44/ AFR 80-18/OPNAVINST 4600.22/DLAR 4500.25.

b. Fielded Equipment. This category includes production models or approved modification. Single end-items of nonvehicular equipment prepared for air movement qualify for automatic certification in AMC and CRAF wide-body aircraft if their dimensions and weight are less than 104 inches long, 84 inches wide, 50 inches high, or 5,000 pounds gross weight. If the end-items exceed these dimensions and weight, requests for air transportability certification shall be submitted as follows:

(1) DA agencies and activities must send requests by letter to Director, Military Traffic Management Command Transportation Engineering Agency, ATTN: MTTE-OAR, 720 Thimble Shoals Boulevard, Suite 130, Newport News, VA 23606-2574. The letter must contain the following information:

(a) Item identification (according to SB 700-20) including TOE line item number (LIN), nomenclature, national stock number (NSN), and model description.

(b) If modified, detailed description of modification.

(c) Photographs, including front, rear, and side views of both operational and reduced configurations (if reducible); also, photograph of each disassembled component (if reducible and if disassembled components are shipped separately).

(d) Overall dimensions (length, width, and height), in inches to nearest inch, for each configuration and each disassembled component, to all projections, such as lifting and tiedown attachments and sideview mirrors.

(e) Weight, in pounds, including on equipment materiel (OEM) as issued but excluding payload or organizational and personal equipment, which is not integral to the end-item. A weight ticket or certificate is required. Weight from data plates is not acceptable.

(f) For each wheeled/tracked vehicle or wheeled/tracked-mounted equipment item: tire size and pressure or track width and length on surface; track shoe or pad design detail, wheelbase; distance from ground to lowest point of vehicle; axle loads; and front and rear overhang data, with dimensional sketch.

(2) Navy units requiring air certification for Civil Engineer Support Equipment (CESE) should send requests to Commanding Officer, Naval Construction Battalion Center, Code 153, Port Hueneme, CA 93043-5000.

(3) Marine Corps units must comply with provisions of paragraph 1-6, current MCO 4610.35D.

(4) For advice or assistance in obtaining airlift certification, contact MTMCTEA (AUTOVON 927-5268).

2-3. AVAILABILITY OF AIRLIFT CERTIFICATION DATA

a. Current characteristics data and AMC/CRAF certification status for Army, Navy CESE, and Marine Corps equipment are available on separate magnetic tapes. These tapes include all available data for both certified and noncertified equipment as defined in chapter 1, paragraph 1-1b, this publication. Magnetic tape specifications and request procedures are as follows:

(1) Magnetic tape specifications for Army and Navy CESE data base file (228-character record) are 9-track, 6250 BPI, BCD, unblocked, and no label; and for Marine Corps data base file (224-character record (read first 220 characters only)), 9-track, 6250 BPI, EBCDIC, 1 record blocked, and no label. MTMCTEA will furnish layout of the tape record upon request.

(2) Address separate requests for Army, Navy CESE, or Marine Corps equipment data, each accompanied by an unclassified tape, as follows: Director, Military Traffic Management Command Transportation Engineering Agency, ATTN: MTTE-OAR, 720 Thimble Shoals Boulevard, Suite 130, Newport News, VA 23606-2574.

b. Two hard copy publications are also available:

(1) TB 55-46-1, Standard Characteristics (Dimensions, Weight, and Cube) for Transportability of Military Vehicles and

Other Outsize/Overweight Equipment (In TOE Line Item Number Sequence), contains Army equipment and Navy CESE characteristics and certification status for AMC and CRAF aircraft. It does not include certification references.

(2) MCO 4610.35D (TAM sequence) contains Marine Corps equipment characteristics data, AMC/CRAF certification status, and CRAF 463L pallet requirements for nonvehicular equipment. It also includes limited certification references.

2-4. EXPLANATION OF CERTIFICATION REFERENCES (APP E)

Appendix E contains DD Form 2083 (2 pp) (chap 2, sec I, para 2-2a), followed by certification letters, referenced by date, for equipment listed in appendixes C and D. These letters, arranged in date-order sequence from left to right, include the certification authority and, in many instances, special loading instructions. Users must comply with such instructions, if applicable, to ensure expeditious loading.

Section II. LOADING PROCEDURES APPLICABLE TO AMC/CRAF AIRCRAFT

2-5. AMC AIRCRAFT

An Air Force Technical Order (AFTO), prepared for a specific type and model of aircraft, includes general loading procedures (sec IV) and special loading procedures for equipment

that is critical either in size or in weight (sec VI). An AFTO is identified by aircraft type followed by a -9, such as TO 1C-130-9, TO 1C-141-9, or TO 1C-5-9. See chapter 2, section I, paragraph 2-1b, this publication, for the priority in applying loading procedure references.

a. Section IV contains the following:

(1) General loading procedures and information for air-transportable cargo that does not require special-handling procedures. It also provides size and weight limitations for cargo that may be loaded under general procedures. These limitations include axle weights, as well as spacing, shoring, ramp angle, and aircraft clearance (side, overhead, and underside) requirements. These procedures, at times, can be quite complex; shippers should contact the Airlift Control Element (ALCE) Office for advice and assistance, if needed. For additional assistance, they should contact the HQAMC/XOCO (AUTOVON 576-3570/2087) for the AMC-Affiliated wing-Level Command Support Branch (DOXL), who will provide assistance. Should any item exceed the section IV limitations, special procedures are in either section VI or an HQASC letter.

(2) Practices, techniques, and materials used in loading air transportable cargo onboard aircraft.

(3) ways to determine the equipment center of balance required of the shipper prior to aircraft loading.

(4) Application and quantity of tiedowns required to secure the load to meet restraint requirements.

b. Section VI contains the following:

(1) Loading procedures for loads that are classified as special-handling or outsize because of physical characteristics; equipment disassembly, load distribution, or special-handling requirements; or capability to damage the aircraft as a result of excessive floor-loading pressures created by axle, track, or pallet loads in excess of those limits identified in section IV. These procedures have precedence over all others.

(2) Subsections contain instructions for specific equipment, as applicable, for load preparation, disassembly, and configuration; loading techniques; special loading equipment; and required tiedown pattern.

2-6. CRAF AIRCRAFT

a. General. The CRAF represents about one-half of AMC's wartime airlift capacity. Commanders concerned with the strategic mobility of military equipment should become familiar with the necessary planning actions and loading procedures involving the use of this critical resource. Historically, movement of cargo on commercial aircraft has been through established AMC ports moving prepalletized bulk cargo on a scheduled basis. But the use of CRAF, in support of a contingency deployment, is an entirely different operation involving offline locations. Because of the vital wartime role

of CRAF and widespread unfamiliarity with the use of CRAF aircraft, users need to obtain MAC Pamphlet 55-41, CRAF Load Planning Guide, and in conjunction with appendixes C and D of this publication, begin planning now.

b. Criteria for Automated qualification Process. A computer model, developed by MTMCTEA from criteria furnished by HQASC, performs a preliminary equipment-qualification analysis. Tables 2-1 and 2-2 show some of the criteria used in this model.

c. Cargo Preparation Guidance.

(1) When the use of CRAF aircraft is planned, MAC Pamphlet 55-41 is essential. It contains specific load-planning procedures and other information concerning CRAF aircraft. Also, refer to chapter 2, section I, paragraph 2-1c, this publication. Users may obtain copies of MAC Pamphlet 55-41 from the following sources:

(a) Commander, US Forces Command, ATTN: Publications Stock Room, Fort McPherson, GA 30330-6000.

(b) Commander, US Army Training and Doctrine Command, ATTN: ATPL-TT, Fort Monroe, VA 23651-5000.

(c) National Guard Bureau, ATTN: NGB-DAP, Washington, DC 20310-2500.

(d) Commanding General, Marine Corps Logistics Base, Code 876, Albany, GA 31704-5000.

(e) AMC (obtain through local Publication Distribution Office).

(f) All others, obtain from HQAMC/DAPM, Scott AFB, IL 62225-5001.

(2) Additional load-planning guidance follows:

(a) During the load-planning process, users should arrange for support equipment, such as special loading devices, shoring/dunnage, 463L pallets, and for disassembly/ palletization of equipment, all of which are the responsibility of the onload station commander.

(b) Equipment in a rigged-for-airdrop configuration will not be transported in CRAF aircraft.

(c) Positioning of equipment on 463L pallets is critical, as is the orientation of the pallets on a specific CRAF aircraft. The CRAF 463L pallet requirements (CRAF 463L PLT RQR) for nonvehicular equipment, in appendixes C and D, indicate both the number of pallets and the loading orientation; that is, 88 or 108 inches wide refers to the lateral positioning of the pallet on the aircraft.

(d) Vehicles normally are loaded on CRAF aircraft by use of a preinstalled pallet floor. Also, as a rule, only empty vehicles are accepted.

Section III. EXPLANATION OF DATA LISTINGS

2-7. APPENDIX C, ARMY/AIR FORCE EQUIPMENT AND NAVY CIVIL ENGINEER SUPPORT EQUIPMENT (CESE) CERTIFIED FOR TRANSPORT IN AMC/CRAF AIRCRAFT

a. General.

(1) As noted in chapter 1, paragraph 1-1b(1), this publication, data are excluded for nonvehicular equipment with dimensions and weight less than 104 inches long, 84 inches wide, 50 inches high, or 5,000 pounds gross weight. TB 55-46-2 contains data for such items.

(2) For Army elements, data for each listed item of equipment are keyed to TOE line item number (LIN) and national stock number (NSN) as they appear in the latest edition of SB 700-20. To resolve differences in LIN and NSN, as shown in data listings and unit property book, refer to SB 700-20. For example, if a Z-prefix LIN (developmental item) has been changed to a regular LIN, then data for both LINs will include a REMARK referencing the changed LIN.

(3) In the Air Force file, Air Force equipment is identified by a LIN consisting of the letters, "AF" followed by the last four digits of the items NSN.

(4) In the Navy file, Navy equipment is identified by a LIN consisting of the letters "CB" followed by the first four digits of the equipment code (EC). The EC is a six-digit number assigned to the generic item of Navy CESE. The last two digits of

the EC are displayed as the first two characters of the model description field.

b. Data Headings.

(1) TOE LIN - NOMENCLATURE. This heading is the general identification of a family of equipment as contained in SB 700-20.

(2) PREFERRED MODEL - VALIDATED DATA (PV).

(a) A preferred (P) model indicator is applied to both the largest and most current model, or it is the model designated by the US Army Materiel Command as preferred for oversea deployment. The P indicator enables selection of proper data in automated applications and indicates the data to be applied by units for equipment authorized but for which no substitute is issued.

(b) A V under this heading means that the data are actual validated measurements and weights acquired according to technical standards established by MTMCTEA. Absence of a V for any listing indicates that the information shown is the best available and is derived from research of available technical publications. Validated data are supported by a master record, which includes a photograph of the actual item and a weight ticket. However, variations exist among the same models produced by different manufacturers.

(3) INDEX NUMBER (INDEX). A two-digit number is applied to each LIN data entry record to identify the NSN and shipping configuration. To ensure proper identification of data,

reference to any data listing should include a TOE LIN and an index number.

(4) NATIONAL STOCK NUMBER (NATL STOCK NO.) (NSN). An NSN is assigned to each item model according to the most current information contained in SB 700-20 and the Army Master Data File (AMDF). It identifies a specific item/model of equipment within an LIN.

(5) MODEL NUMBER AND COMPONENT DESCRIPTION (MODEL NO./ COMP DESC).

(a) MODEL NUMBER (MODEL NO.).

1. For Army equipment, model is the description applied to the indicated NSN.

2. For Navy equipment, the last two digits of the EC appear as the first two characters. The model description then follows these two characters.

(b) COMPONENT DESCRIPTION (COMP DESC). Disassembled component description describes a component removed from an end-item when reducing the end-item shipping configuration (app B).

(6) SHIPPING CONFIGURATION. See appendix B.

(7) TYPE OF EQUIPMENT (TE). See appendix B.

(8) NUMBER OF PIECES (NO. PCS). The data, under this heading, indicate the number of identical items applying to a disassembled component description and the related dimensions and weight. To get the total quantity of a disassembled component, multiply the number of pieces by the authorized or onhand quantity of the major end-item.

(9) FOR ONE ITEM. This heading denotes that the indicated dimensions, in inches (length, width, and height); weight, in pounds; cube, in cubic feet; and square, in square feet, are for one item as described by model or component description and shipping configuration.

(10) AIRLIFT INDICATORS (AIRLIFT INDIC). An X, C, or a blank is listed for each AMC aircraft (C-130, C-141, C-17, C-5), KC-10, and CRAF aircraft (DC-8, B-707, DC-10, B-747S (side loading), and B-747N (front loading)):

X - Item is qualified for loading in indicated aircraft. Qualification is based on dimension and weight criteria only.

C - Item is certified for loading in indicated aircraft by HQASC/ENECA. The certification is based on the dimensions and weight, as listed. Any variation in these data, when presented for loading, may result in a rejection.

Blank - Item is not transportable in indicated aircraft. Nontransportability is based on the listed dimensions and weight. If reconsideration based on a different shipping configuration is desired, refer to chapter 2, section I, paragraph 2-2b, this publication.

(11) AMC NOTES. These are specific instructions or information applying to loading an item in AMC aircraft.

(12) CERTIFICATION REFERENCES (CERT REFS). These include identification and date of all applicable certification references. Appendix E contains a copy of each reference.

(13) CRAF 463L PALLET REQUIREMENTS (PLT RORS). The 463L PLT RQRS are included for nonvehicular equipment only (chap 2, sec II, para 2-6c(2)). If an item is qualified/ certified for any CRAF aircraft, two types of entry are used:

(a) When PLT RQRS differ for the 108- and 88-inch-wide orientations, the entry will include both, such as three 108-inch wide (B-747); two 88-inch wide (B-747).

(b) When PLT RQRS are the same for both orientations, the entry will be one (ALL ELIGIBLE AIRCRAFT).

2-8. APPENDIX D, MARINE CORPS EQUIPMENT CERTIFIED FOR TRANSPORT IN AMC/CRAF AIRCRAFT

a. General. Data for each listed item of equipment are keyed to TAM control number (TAMCN) and NSN as contained in current Marine Corps Item Identification File (IDF) (chap 1, para 1-1b(3)). EXCEPTION: Data for aviation support equipment (ASE) are identified by a Z-prefix TAMCN and an NSN. The ASE is not included in the IDF.

b. Data Headings.

(1) TAMCN - NOMENCLATURE. These data are derived directly from the Marine Corps IDF.

(2) PREFERRED MODEL - VALIDATED DATA (PV). The preferred/validated data code describes preferred (P) data for automated application, and validated (V) indicates that the data listed to the right reflect actual measurements and weights obtained on site. The absence of a V indicates that the data are the best available other than actual measurements and weight.

(3) INDEX NUMBER (INDEX). A two-digit number is applied to each TAMCN data entry record to identify the NSN and shipping configuration. To ensure proper identification of data, reference to any data listing should include a TAMCN and an INDEX number.

(4) NATIONAL STOCK NUMBER (NATL STOCK NO.) (NSN). The NSN identifies a specific item (model) within a TAMCN.

(5) AIRCRAFT TYPE MODEL SERIES (MODEL/ACFT TMS).

(a) MODEL is the description applied to the indicated NSN.

(b) ACFT TMS is the applicable aircraft type/model series, which is shown for ASE only. Additional aircraft are listed following the item description.

(6) SHIPPING CONFIGURATION. See appendix B.

(7) TYPE OF EQUIPMENT (TE). See appendix B.

(8) NUMBER OF PIECES (NO. PCS). This heading applies to disassembled components only. It is a multiplier to indicate the number of items with the same dimensions and weight.

(9) FOR ONE ITEM. This heading denotes that the indicated dimensions, in inches (length, width, and height); weight, in pounds; cube, in cubic feet; and square, in square feet, are for a single item only.

(10) AIRCRAFT INDICATORS (AIRCRAFT INDIC). An X, C, or a blank is listed for each AMC aircraft (C-l30, C-l41, C-17, C-5), KC-10, and CRAF aircraft (DC-8, B-707, DC-10, B-747S (side loading), and B-747N (front loading)):

X - Item is qualified for loading in indicated aircraft. Qualification is based on dimension and weight criteria only.

C - Item is certified for loading in indicated aircraft by HQASC/ENECA. The certification is based on the dimensions and weight, as listed. Any variation in these data, when presented for loading, may result in a rejection.

Blank - Item is not transportable in indicated aircraft. Nontransportability is based on the listed dimensions and weight. If reconsideration based on a different shipping configuration is desired, refer to chapter 2, section I, paragraph 2-2b this publication.

APPENDIX A

REFERENCES

Department of Defense Publications

DOD Reg 4500.32R	Military Standard Transportation Movement Procedures.
DOD Reg 45l5.l3R	Air Transportation Eligibility.
Joint Pub 1-02	DOD Directory of Military and Associated Terms.
MIL-STD-l791	Military Standard Designing for Internal Aerial Delivery in Fixed Wing Aircraft.

Joint Service Publications

AFR 71-4/TM 38-250/ NAVSUP PUB 505/MCO P4030.19_/DLAM 4145-3	Packaging and Materials Handling: Preparing Hazardous Materials for Military Air Shipments.
AR 59-8/AFR 76-38/ OPNAVINST 4630.18E/ MCO 4630.6D/ DLAR 4500.9	Military Airlift Command - Requirement Submissions, Space Assignments and Allocations, and Priorities.
AR 59-18/AFR 76-13/ OPNAVINST 4600.21/ MCO 4631.8/ DLAR 4151.51	Management of System 463L Pallets, Nets and Tie-Down Equipment.

AR 59-106/AFR 76-7/ OPNAVINST 4630. 13D/ MCO 4660.2	Air Terminals and Aerial Ports.
AR 70-44/AFR 80-18/ OPNAVINST 4600. 22B/ MCO 4610.14/ DLAR 4500.25	DOD Engineering For Transportability.
FM 10-500/TO 13C7- series	Airdrop of Supplies and Equipment.
FM 55-12/AFR 76-6/ FMFM 4-6/ OPNAVINST 4630.27	Movement of Units in Air Force Aircraft.

Army Publications

AR 70-47	Engineering For Transportability.
AR 220-10	Preparation For Oversea Movement of Units (POM).
AR 310-25	Dictionary of United States Army Terms.
AR 310-50	Authorized Abbreviations and Brevity Codes.
FM 55-9	Unit Air Movement Planning.
FM 55-15	Transportation Reference Data.
SB 700-20 (Microfiche)	Army Adopted/Other Items Selected For Authorization/ List of Reportable Items.

TB 55-46-1 (Annual)	Standard Characteristics (Dimensions, Weight, and Cube) For Transportability of Military Vehicles and Other Outsize/Overweight Equipment (In TOE Line Item Number Sequence).
TB 55-46-2 (Microfiche)	Standard Transportability Characteristics (Dimensions, Weight, and Cube) For Military Vehicles and Equipment (In NSN Sequence).

Air Force Publications

AFM 11-1 (Vol 1)	US Air Force Glossary of Standardized Terms.
AFP 76-2	Airlift Planning Factors.
MACP 55-41	Civil Reserve Air Fleet (CRAF) Load Planning Guide.
TO lC-5A-9	Loading Instructions, USAF Series C-5 Aircraft.
TO lC-130A-9	Loading Instructions, USAF Series C-130 Aircraft.
TO lC-141B-9	Loading Instructions, USAF Series C-141 Aircraft.

Marine Corps Publications

MCO 4610.35D	Standard Characteristics and Airlift Certification For Marine corps Equipment.
TAM, USMC NAVMC 1017	Table of Authorized Material.

Navy Publication

COMCBLANT/COMCBPAC/ COMRNCFINST 3120.1	Embarkation Manual.

APPENDIX B

GLOSSARY

CERTIFICATION

As used in this publication, a certification is an official determination by HQASC/ENECA that an item of equipment is transportable in the indicated ANC/CRAF aircraft, or is non-air-transportable in either AMC or CRAF aircraft, or both. It is emphasized that a certification applies to the item of equipment when prepared for air movement as described by the shipping configuration, dimensions, and weight in appendixes C and D.

Nonvehicular equipment items prepared for air movement are exempt from official certification if their dimensions and weight are less than 104 inches long, 84 inches wide, 50 inches high (in any combination), and 5,000 pounds gross weight. Reference letter, HQASC/ENECA, 12 June 1980, subject: New Items of Army TOE Equipment Added to Air Certification Files Requiring Certification Status for Both Air Force and CRAF Aircraft (app E).

CIVIL ENGINEER SUPPORT EQUIPMENT (CESE) (NAVY)

A generic term applied to a subsection of the table of allowance consisting of automotive, construction, weight handling, and specialized mobile equipment.

DISASSEMBLED COMPONENT

A component removed from an end-item to reduce the end-item shipping configuration. Some components, such as tarpaulins, frames, bows, and cab shields, are stowed in the vehicle for shipment and are not listed separately. If not stowed in the vehicle, disassembled components are listed separately.

EQUIPMENT CODE (EC) (NAVY)

A six-digit number assigned to the generic item of Navy Civil Engineer Support Equipment (CESE).

NAVAL CONSTRUCTION FORCE (NCF) (NAVY AND MARINE CORPS)

The generic term applied to that group of deployable naval organizational components with common characteristics of possessing the capability to construct, maintain and/or operate shore, inshore, and/or deep ocean facilities in support of the US Navy and US Marine Corps.

SHIPPING CONFIGURATIONS

The shipping configurations reflect the rules governing the preparation of Army unit equipment for movement. The various shipping configurations codes, their name, their COMPASS file title, and their meanings are listed as follows:

"O" - Vehicle Mounted (VEHICLE MOUNTED). A piece of equipment loaded onto a specific type of vehicle for an operational move and authorized to be moved in that configuration.

"1" - Cargo Bag (CARGO BAG). An adjustable container consisting of a sling assembly, a quick-release assembly, two ring straps, and a canvas cover.

"2" - Palletized (PALLETIZED). A quantity of item(s), packed or unpacked, that are arranged on a pallet in a specified manner and secured, strapped, or fastened to the pallet so the whole is handled as a unit.

AIRDROP/LAPES. The shipping configuration for such items is described in terms of the type of platform (PLATF) on which the item is rigged. These data include dimensions, weight and cube for the rigged item, to include the platform as described in the appropriate FM 10-500 series manual, Airdrop of Supplies and Equipment.

(a) "3" - 8 Foot Modified Platform (8-FT PLATF)

(b) "4" - 12 Foot Modified Platform (12-FT PLATF)

(c) "5" - 16 Foot Modified Platform (16-FT PLATF)

(d) "6" - 20 Foot Modified Platform (20-FT PLATF)

(e) "7" - 24 Foot Modified Platform (24-FT PLATF)

(f) "8A" - 28 Foot Modified Platform (28-FT PLATF)

(g) "9A" - 32 Foot Modified Platform (32-FT PLATF)

"8" - Flyaway (FLYAWAY). This designation applies to aircraft in ready-to-fly condition.

"9" - Reduced for Sealift (RED F/SEALIFT). Vehicles/ helicopters reduced only to the minimum required to facilitate rapid deployment by sealift.

"A" - Basic Unit (BASIC UNIT). This designation applies to crawler- and truck-mounted cranes without attachments and with the counterweight in the trailing positio‘n. In the RED-AR 220-10 configuration as shown in "C" below, the counterweights are removed or are in the trailing position except where equipment transportation data plates prescribe that the counterweights will be in the forward position.

"AA"- Union (UNION). A combination of a prime mover and a towed system such as a truck and trailer. A union LIN is denoted with the prefix "YU."

"B" - Operational (OPERATIONAL). This designation applies only to vehicles in mission configuration with all component assemblies in place. Component assemblies include only the equipment that is issued with the vehicle.

"BA"- Reduced for C-17 Transport (RED FOR C-17). Equipment/vehicles reduced for shipment in Air Force C-17 aircraft. This aircraft provides strategic, intertheater airlift for heavy or outsized cargo vehicles and equipment.

"C" - Reduced According to Army Regulation 220-10 (RED-AR 220-10). Vehicles reduced to minimum shipping dimensions within the unit’s organic maintenance capability according to AR 220-10. See Chapter 2 for other shipping dimensions. The data reflect removing the canvas tops, frames, and bows; securing the antennas; folding the windshields; and removing the dump truck cab shields. Permanent mountings, supports, and/or brackets are removed when such operation is within organic

maintenance capability. The components removed during disassembly are stowed for shipment within the vehicle unless shown separately as disassembled components.

"CA"- CDS-Bundle (CDS-BUNDLE). This shipping configuration describes small items and/or pieces of equipment secured on either an A2l (60"x32"x32"; payload capacity of 500 lbs) or A22 (48"x48"x60"; payload capacity of 2,200 lbs) airdrop container.

"D" - Not Reducible (NOT REDUCIBLE). This indicates that the item dimensions and/or weight cannot be reduced.

"DA"- RESERVED FOR FUTURE USE

"E" - Assembled (ASSEMBLED). This shipping configuration describes the total cumulative weight and cube of an item that normally is not assembled for shipment. These data should not be used for unit movement data reporting purposes. Data are listed separately for all components that make up the item.

"F" - Reduced for C-130 Transport (RED FOR C-130). Equipment/vehicles reduced for shipment in Air Force C-130 aircraft. This aircraft is used mainly as a tactical, intratheater aircraft.

"G" - With Shelter Kit (WITH/SHELTER KIT). This designation applies only to vehicles with fabricated built-up collapsible shelter over cargo compartment.

"H" - Crated (CRATED). Any selected reportable item as listed in SB 700-20 or disassembled component, other than a vehicle, that is normally shipped in a specially designed crate (other than a CONEX or an item container).

"I" - Bare Item (BARE ITEM). This designation denotes that the item is not packaged.

"J" - Boxed (BOXED). Any selected reportable item as listed in SB 700-20 or disassembled component, other than a vehicle, that is normally shipped in a specially designed box (other than a CONEX or an item container).

"K" - Piggybacked (PIGGYBACKED). This designation applies to stacked vehicles. One trailer, wheels removed, is inverted and placed on top of another trailer. They are securely lashed together. The wheels of the flatbed/lowbed trailer are stowed on top of the inverted trailer, and the wheels of the cargo trailer are stowed within the cargo compartment. Other vehicles in this configuration are mounted on top of one another by support structure. Data reflect dimensions and weight of two vehicles. Helicopters in this configuration will have their tail booms mounted on top of the fuselage with the applicable kit. Data reflect dimensions and weight of one helicopter.

"L" - Folded (FOLDED). An item, such as a blanket, that is bent or pressed so that one part is over another, doubled up on itself.

"M" - Item Container Packaged (ITEM CNTN PKG). Equipment that is normally shipped in its specially designed container.

"N" - Skid Mounted (SKID MOUNTED). Item(s) mounted on a platform composed of two or more longitudinal members and two or more crossmembers to which lading is attached to ease handling

and to evenly distribute load weight in transporting, or composed of two or more members secured to lading to ease handling.

"P" - Rolled (ROLLED). A measure of something rolled into a cylinder.

"Q" - Reduced for C-141 Transport (RED FOR C-l41). Equipment/vehicles reduced for shipment in Air Force C-141 aircraft. This aircraft is used mainly as a strategic, intertheater aircraft.

"R" - Modified for Set (MOD FOR SET). This designation means general-purpose equipment modified for use in sets. The dimensions and weight of the vehicle for this shipping configuration, as listed, include other equipment loaded or mounted on the vehicle specifically for modification.

"S" - Reduced for C-5 Transport (RED FOR C-5). Equipment/vehicles reduced for shipment in Air Force C-5 aircraft. This aircraft provides strategic, intertheater airlift for heavy or outsized cargo vehicles and equipment.

"T" - Coiled (COILED). Anything wound or gathered into a series of rings or spirals.

"U" - Set Total (SET TOTAL). Specific nomenclature identified by a national stock number (NSN) consisting of more than one vehicular and/or a nonvehicular item.

"V" - Short-Pallet (SHORT-PALLET). Standard 463L pallet in the lateral direction measuring 88 inches in length and 108 inches in width.

"W" - Bundled (BUNDLED). Two or more articles bound or rolled together, usually without compression, to form a pack.

"X" - Long-Pallet (LONG-PALLET). Standard 463L pallet in the longitudinal direction measuring 108 inches in length and 88 inches in width.

"Y" - Depot Pack (DEPOT PACK). Items as they are packaged for supply system shipments.

"Z" - Dolly Wheel Mounted (DOLLY WHL MTD). This shipping configuration applies to items mounted on dollies. The height is adjustable for highway transport or for aircraft loading.

TABLE OF ALLOWANCE (TOA) (NAVY)

The organization listing of personnel, material, and equipment developed to enable Naval components to meet their general mission requirements.

TYPE OF EQUIPMENT (TE)

The following codes are used in the data file to identify categories of equipment for automated applications; however, they also assist users of this publication in identifying categories of vehicles for shipment documentation purposes.

CODE		MEANING
		Vehicles, wheeled (self-propelled)
1	-	1/2-ton or less
2	-	Sedan
3	-	2-1/2-ton or less
4	-	Greater than 2-1/2-ton
5	-	Materials handling equipment (MHE)
8	-	Construction equipment
		Vehicles, wheeled (not self-propelled)
6	-	2-1/2-ton or less
7	-	Greater than 2-1/2-ton
9	-	Construction equipment
0	-	Materials handling equipment (MHE)
		Other vehicles
C	-	Vehicles, tracked or half-tracked except D and E
D	-	Tanks, combat
E	-	Artillery, self-propelled
F	-	Artillery, towed
G	-	Floating craft, except amphibious vehicles included under the appropriate numeric code
H	-	Aircraft, rotary wing (operational)
J	-	Aircraft, fixed wing (operational)
K	-	All aircraft in a reduced configuration

Equipment other than vehicles (special-handling)

L	-	LAPES	(NOTE: Equipment or supplies rigged
V	-	Airdrop	or packaged for airdrop; must
P	-	Hazardous Items	be reported as "Special-
Q	-	Ammunition over .60 caliber	Handling Cargo").
R	-	Small-arms ammo .60 caliber and less	
S	-	Yellow TAT orq equip and supplies	
T	-	Red TAT org equip & supplies (YA0075)	
U	-	Equip other than vehicles (YA0078) (YAOO8l, YA0083, YA0084, YA0085, YA0094)	
X	-	Red TAT baggage (YA0077, YA0082)	
Y	-	Yellow personal baggage (YA0076)	

VEHICLE

As used in this publication and other transportation-related functions, the term includes trucks, trailers, semi-trailers, amphibious and tracked vehicles, tanks, artillery (self-propelled and towed), floating craft (self-propelled and towed), railcars, locomotives, aircraft (fixed- and rotary-wing), and wheel- or track-mounted equipment.

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APPENDIX A

REFERENCES

APPENDIX B

GLOSSARY

APPENDIX C

ARMY EQUIPMENT AND NAVY CIVIL ENGINEER SUPPORT EQUIPMENT (CESE) CERTIFIED FOR TRANSPORT IN AMC/CRAF AIRCRAFT

(DATABASE FILE - NOT INCLUDED IN TEXT)

APPENDIX D

MARINE CORPS EQUIPMENT

CERTIFIED FOR TRANSPORT IN

AMC/CRAF AIRCRAFT

(DATABASE FILE - NOT INCLUDED IN TEXT)

APPENDIX E

DD FORM 2083 AND

ARMY/NAVY/MARINE CORPS

EQUIPMENT CERTIFICATION

REFERENCES

(NOT INCLUDED IN TEXT)