

TECHNICAL MANUAL

LOADING AND STOWAGE

OF MILITARY AMMUNITION

AND EXPLOSIVES ABOARD

BREKBUK MERCHANT SHIPS

Approved for public release; distribution is unlimited.

TECHNICAL MANUAL
No. 55-607
NAVY PUBLICATION
NAVSEA OP 3221 REV 2



HEADQUARTERS
DEPARTMENTS OF THE ARMY
AND THE NAVY
WASHINGTON, DC, 27 December 1988

**LOADING AND STOWAGE OF MILITARY AMMUNITION
AND EXPLOSIVES ABOARD BREAKBULK MERCHANT SHIPS**

Approved for public release; distribution is unlimited.

		Paragraph	Page
CHAPTER 1.	INTRODUCTION		
	Purpose and Scope	1-1	1-1
	Report of Publication Improvements	1-2	1-1
	Application and Intended Use	1-3	1-1
	Compliance with Federal Regulations	1-4	1-1
	Compliance by Navy Activities	1-5	1-1
CHAPTER 2.	PERMITS, CERTIFICATIONS, INSPECTIONS, AND ACCEPTANCE		
	General	2-1	2-1
	Permit for Handling Military Explosives	2-2	2-1
	Certification of Cargo	2-3	2-1
	Inspections and Acceptance	2-4	2-1
	Standard Feedback Forms and Systems	2-5	2-3
CHAPTER 3.	PRELOAD REQUIREMENTS		
	General	3-1	3-1
	Preloading Inspection	3-2	3-1
	Planning	3-3	3-1
	Cargo Stowage Plan	3-4	3-1
	Estimation of Requirements for Materials and Personnel	3-5	3-7
CHAPTER 4.	BASIC REQUIREMENTS FOR CARGO LOADING AND SECURING		
	General Loading Procedures	4-1	4-1
	Types of Stowage	4-2	4-6
	Deck Stowage	4-3	4-6
	General Types of Explosive Loads	4-4	4-7
	General Stowage Procedures	4-5	4-10
	Use of Power-Operated Industrial Trucks	4-6	4-10
CHAPTER 5.	APPROVED MATERIALS AND SPECIFICATIONS		
	General	5-1	5-1
	Wood	5-2	5-1
	Plywood	5-3	5-2
	Nails	5-4	5-2
	Strapping, Lashing, and Tiedown Gear	5-5	5-3
	Barrier Materials	5-6	5-3
	Tools	5-7	5-3
CHAPTER 6.	SECURING PROCESS		
	Introduction	6-1	6-1
	Mechanics of Ship Motions	6-2	6-1
	Fundamental Securing	6-3	6-5
	Preload Securing	6-4	6-9
	General Sawing and Nailing Practices	6-5	6-17
CHAPTER 7.	STANDARD SECURING STRUCTURES AND REQUIREMENTS		
	General	7-1	7-1
	Decking	7-2	7-1
	Dunnage Flooring	7-3	7-11

***This manual supersedes TM 55-607, NAVSEA OP 3221 Rev 1 September 1976**

	Paragraph	Page
End Bulkheads	7-4	7-12
Partition Bulkheads	7-5	7-21
Division Bulkheads	7-6	7-23
Encasement	7-7	7-25
Class A" Magazine Stowage	7-8	7-31
Tomming	7-9	7-37
Stepping Down a Load	7-10	7-40
Open-Hold Guardrail	7-11	7-42
Deck-stow Securing	7-12	7-43
 CHAPTER 8. BLOCK-STOW AND SWEATBOARD-TO-SWEATBOARD SECURING TECHNIQUES		
General	8-1	8-1
Block-Stow Technique	8-2	8-4
Block Shoring of Cargo Voids	8-3	8-18
Sweatboard-to-Sweatboard Stowage Technique	8-4	8-22
Sweatboard-to-Sweatboard Shoring of Cargo Voids	8-5	8-28
 CHAPTER 9. SECURING OF SPECIFIC LOADS		
Introduction	9-1	9-1
Securing of Rectangular Unit Loads	9-2	9-1
Securing of Round, Single-Item Loads	9-3	9-33
Securing of Overhanging Unit Loads	9-4	9-45
Securing of Unitized Loads of Containers and Single Containers	9-5	9-90
 CHAPTER 10. BARGE LOADING		
General	10-1	10-1
Purpose	10-2	10-1
Background	10-3	10-1
Characteristics	10-4	10-3
Cargo Stowage	10-5	10-4
Standard Block and Bracing Requirements	10-6	10-12
Lighters	10-7	10-17
Preliminary Operations	10-8	10-17
Dunnage Requirements	10-9	10-19
APPENDIX A. REFERENCES		A-1
APPENDIX B. GENERAL PROPERTIES OF DUNNAGE LUMBER		B-1
APPENDIX C. TYPES AND CHARACTERISTICS OF COMMON NAILS AND WOOD SCREWS		C-1
APPENDIX D. SHIP CHARACTERISTICS		D-1
APPENDIX E. SHIP'S CARGO-HANDLING GEAR		E-1
GLOSSARY		Glossary-1
INDEX		Index-1

LIST OF ILLUSTRATIONS

Figure No.	Title	Page
1-1	Military cargo being loaded aboard merchant-type ship	1-2
2-1	Typical cargo stowage inspection record	2-2
2-2	Report of Discrepancy (ROD) (SF 364) (Sheet 1 of 2)	2-4
2-2	Report of Discrepancy (ROD) (SF 364) (Sheet 2 of 2)	2-5
2-3	Transportation Discrepancy Report (SF 361) (Sheet 1 of 2)	2-7
2-3	Transportation Discrepancy Report (SF 361) (Sheet 2 of 2)	2-8
2-4	Cargo Outturn Report (DD Form 470)	2-10
2-5	Typical ammunition stowage evaluation sheet	2-12
3-1	Typical preliminary cargo stowage plan for a single hatch	3-3
3-2	Typical preplan for an entire ship	3-4
3-3	Use of compartment diagram during preload planning	3-6
3-4	Typical materials estimate sheet	3-8
3-5	Organization of a typical contract labor loading force	3-10
3-6	Organization of a typical Civil Service loading force	3-12
4-1	Explosives spotted for loading	4-2
4-2	Unit load isolated because of defective banding	4-3
4-3	Typical lift of palletized cargo	4-5
4-4	Typical palletized unit loads	4-8

Figure No.	Title	Page
4-5	Round, single-item load (3,000-pound bombs)	4-9
4-6	Unit load with overhang (500-pound bombs)	4-9
4-7	Unitized load for containers (CBU-55/B)	4-10
6-1	The six basic ship motions	6-1
6-2	Static forces while ship is underway in calm seas	6-2
6-3	Static forces due to roll motion	6-3
6-4	Dynamic forces due to roll motion	6-4
6-5	Dynamic forces due to pitch motion	6-5
6-6	Basic blocking for wood deck	6-6
6-7	Basic blocking for metal deck	6-7
6-8	Basic bracing for wood deck	6-8
6-9	Basic bracing for metal deck	6-9
6-10	Preload inspection of existing securing structures	6-10
6-11	Compartment requiring preload cleanup	6-11
6-12	Hangar sweatboards	6-12
6-13	Nonheat end bulkhead under construction	6-13
6-14	Typical completed heat and nonheat bulkheads	6-14
6-15	Installation of spacer material prior to stowage	6-15
6-16	Boarding over of obstructions on permanent, bulkhead	6-16
6-17	Partial encasement	6-17
6-18	Dockside wood ship	6-18
6-19	Onboard assembly of prefabricated structures	6-19
6-20	Direct nailing	6-20
6-21	Total holding power of multiple nails	6-21
6-22	Nail penetration required to resist maximum allowable lateral loads	6-22
6-23	General nailing techniques	6-23
7-1	Strip decking/flooring	7-2
7-2	Construction of wood decking with 1-inch lumber	7-3
7-3	Construction of 2-inch wood decking laid athwartships	7-4
7-4	Void table method for shoring deck obstructions	7-5
7-5	Construction details for flooring over tank top	7-6
7-6	Partial elevated flooring	7-7
7-7	Comparison of flooring over hatch boards with stowage of wood pallets directly on hatch boards	7-8
7-8	Construction details for flooring over the shaft alley	7-9
7-9	Construction of tier decking for unit loads with overhang	7-10
7-10	Construction of tier decking for nose-to-butt bomb stowage	7-11
7-11	Construction details for heat bulkhead on stiffener side of ship's bulkhead	7-13
7-12	Construction details for heat bulkhead with jacks	7-14
7-13	Construction details for nonheat bulkhead with jacks	7-16
7-14	Construction details for nonheat bulkhead on stiffener side of ship's bulkhead	7-17
7-15	Construction details for nonheat bulkhead with A-frame	7-19
7-16	Construction details for nonheat securing structures of bulkheads with deck bracing	7-20
7-17	Construction details for nonheat securing structures against the shaft alley	7-21
7-18	Construction details for partition bulkhead	7-22
7-19	Construction details for division bulkhead	7-24
7-20	Complete encasement of beams and pipes	7-25
7-21	Complete encasement of kingpost within class "A" magazine	7-26
7-22	Partial encasement of ladder and stanchion	7-27
7-23	Rectangular unit loads emplaced around partially encased ladder and stanchion	7-28
7-24	Partial encasement of air vent	7-29
7-25	Block-stow shoring of typical obstructions near the hull (hull blocking technique)	7-30
7-26	Construction details for framework of class "A" magazine (nonportable)	7-32
7-27	Construction details for side of class "A" magazine (nonportable)	7-33
7-28	Class "A" magazine under construction (nonportable)	7-34
7-29	Construction details for portable class "A" magazine	7-36
7-30	Installation of barrier material	7-37
7-31	Construction details for overhead A-frame tomking	7-38
7-32	Construction details for A-frame tomking under tween-deck hatch beams	7-39
7-33	Construction details for tomking in square of hatch	7-40
7-34	Stepping down toward center of compartment	7-41
7-35	Completion of stow with smaller unit loads	7-42
7-36	Construction details for open-hold guardrail	7-43
7-37	Construction details for closed deck-stow structure	7-44
7-38	Partial closed deck-stow structure under construction	7-45
7-39	Construction details for open deck-stow structure	7-46
7-40	Special deck stowage of weatherproof containers	7-47

Figure No.	Title	Page
8-1	Block stowage	8-2
8-2	Sweatboard-to-sweatboard stowage	8-3
8-3	Stowage nomenclature	8-3
8-4	Fundamental block-stow securing structure	8-5
8-5	Typical block-stow securing (hull blocking technique)	8-6
8-6	Construction details for basic block-stow securing prepared in advance (hull blocking technique)	8-7
8-7	Pre-positioning of dunnage lumber	8-8
8-8	Emplacement of initial unit loads for block stowage	8-9
8-9	Installation of uprights and kickers for block stowage (hull blocking technique)	8-10
8-10	Addition of lacing for block stowage (hull blocking technique)	8-11
8-11	Installation of flooring support structures (hull blocking technique)	8-12
8-12	Bracing uprights to the hull (hull blocking technique)	8-13
8-13	Installation of lacing (hull blocking technique)	8-14
8-14	Construction of flooring supports (hull blocking technique)	8-15
8-15	Runners for support of flooring (hull blocking technique)	8-16
8-16	Installation of flooring over lower course stripping (hull blocking technique)	8-17
8-17	Resumption of the block-stow pattern (hull blocking technique)	8-18
8-18	Shoring small voids in the block-stow pattern	8-19
8-19	Final void shoring in progress	8-20
8-20	Construction details for narrow and full-block void shoring structures	8-21
8-21	Void shoring for unit loads that overhang the pallet	8-22
8-22	Strip sheathing with loads emplaced	8-23
8-23	Stowing of subsequent loads (sweatboard blocking technique)	8-24
8-24	One-point technique of unit-load positioning (sweatboard blocking technique)	8-26
8-25	Top tier bracing at sweatboards, small hull angles (sweatboard blocking technique)	8-27
8-26	Top tier bracing at sweatboards, severe hull angles (sweatboard blocking technique)	8-28
8-27	Sweatboard-to-sweatboard stowage of 20-mm cartridges, lower hold No. 1 (sweatboard blocking technique)	8-29
8-28	Construction details for prefabricated void table	8-30
8-29	Full-block structure for tier voids, two-face-board construction	8-31
8-30	Sequential shoring of cargo void (sweatboard blocking technique)	8-32
8-31	Shoring voids at the sweatboards (sweatboard blocking technique)	8-34
8-32	Full-block structure used with 750-pound-bomb unit loads	8-35
8-33	Top tier void in process of being blocked	8-36
8-34	Full-block structure for narrow-tier voids	8-37
9-1	Stowing and securing of 500-pound fire bomb, MK 77 MOD 4, tween-deck compartments (sweatboard blocking technique)	9-2
9-2	Sweatboard-to-sweatboard securing of 500-pound fire bomb, BLU-32/B, in lower hold No. 5, C3 hull (sweatboard blocking technique)	9-4
9-3	Stowage of palletized unit loads in tween-deck compartments	9-6
9-4	Strip sheathing and bulkhead requirements for 105-mm unit loads (sweatboard blocking technique)	9-7
9-5	Securing of 105-mm palletized unit loads at the hull (hull blocking technique)	9-8
9-6	Fore-and-aft shoring of palletized boxed ammunition (forward hold 1, afterward view, hull blocking technique)	9-9
9-7	Construction of void shoring and flooring support structure for 105-mm unit loads	9-10
9-8	Alternate method of securing voids in stowage of 105-mm cartridges	9-11
9-9	Construction of a full floor over 105-mm HE cartridges	9-12
9-10	Stowing and securing of 105-mm HE cartridges, lower hold No. 4, port side of shaft alley	9-13
9-11	Sweatboard-to-sweatboard stowage of 20-mm cartridges, lower hold No. 1 (sweatboard blocking technique)	9-14
9-12	Stowing and securing of 20-mm cartridges, lower hold No. 3 (sweatboard blocking technique)	9-16
9-13	Stowing and securing of 20-mm cartridges, deep tank No. 4 (sweatboard blocking technique)	9-18
9-14	Typical prefabricated nonheat bulkhead and securing structures for stowage of 155-mm projectiles, tween-deck compartments	9-20
9-15	Stowage of initial tier of projectiles, tween-deck compartments (sweatboard blocking technique)	9-21
9-16	Filler assembly for offset units	9-22
9-17	Construction details for flooring over projectiles	9-23
9-18	Construction of flooring (decking) over 155-mm projectiles	9-24
9-19	Mixed stowage of 155-mm projectiles with other explosives cargo (stowage in progress)	9-25
9-20	Continuation of block stowage of projectiles in upper tiers	9-26
9-21	Sweatboard-to-sweatboard stowage of 155-mm projectiles, lower hold No. 1 (sweatboard blocking technique)	9-28
9-22	Sweatboard-to-sweatboard stowage of projectiles in compartment with convex sheer (sweatboard blocking technique)	9-29
9-23	Stowing and securing 155-mm projectiles, lower hold No. 3 (hull blocking technique)	9-30
9-24	Stowing and securing of 155-mm projectiles, shaft alley, deep tank No. 4 (hull blocking technique)	9-31
9-25	Stowing and securing of M4A2 propellant charges in tween-deck compartment	9-32
9-26	Stowing and securing of 3,000-pound bomb, tween deck No. 3 (hull blocking technique)	9-34

Figure No.	Title	Page
9-27	Stowing and securing of 3,000-pound bomb, lower hold No. 1 (hull blocking technique)	9-36
9-28	BLU-82/B 15,000-pound slurry bomb, skidded unit load	9-37
9-29	Preload boarding and flooring for 15,000-pound slurry bomb	9-38
9-30	Construction details for nose boarding in nose-to-base stowage	9-39
9-31	Stowing and securing of 15,000-pound slurry bomb, nose-to-base, fore-and-aft	9-40
9-32	Stowing and securing of 15,000-pound slurry bomb, base-to-base, athwartship	9-42
9-33	Stowing and securing of 15,000-pound slurry bomb, nose-to-base, athwartship	9-44
9-34	Typical 500-pound bomb, Navy, palletized unit load (metal pallet)	9-45
9-35	Typical 500-pound bomb-palletized unit load (wood pallet)	9-46
9-36	250-pound-bomb palletized unit load	9-47
9-37	1,000-pound-bomb palletized unit load	9-47
9-38	2,000-pound-bomb palletized unit load	9-48
9-39	Correct alignment for nose-to-butt stowage of 500-pound bombs	9-49
9-40	Stowage of 500-pound-bomb unit loads in rectangular compartments	9-50
9-41	Simple block stowage of 500-pound-bomb unit loads, lower hold No. 5 (hull blocking technique)	9-51
9-42	Partially completed prefabricated securing for 500-pound-bomb unit loads (hull blocking technique) ..	9-52
9-43	Nonprefabricated securing installed after loading	9-53
9-44	Typical preconstructed shoring for block stowage of 500-pound bombs in lower holds	9-54
9-45	Stowing and securing of 500-pound bombs, lower hold No. 3, port cell (hull blocking technique)	9-55
9-46	Block stowage by levels, 500-pound-bomb unit loads, lower hold No. 3, starboard cell	9-56
9-47	Fore-and-aft restraint of end unit loads (hull blocking technique)	9-57
9-48	Construction of support structures for flooring over voids in the wings (hull blocking technique)	9-58
9-49	Completion of flooring prior to stowage of additional tiers of bombs (hull blocking technique)	9-59
9-50	Stowing and securing of 500-pound bombs in lower holds bisected by shaft alley (sweatboard blocking technique)	9-60
9-51	Sweatboard-to-sweatboard stowage of 500-pound bombs, forward lower holds (sweatboard blocking technique)	9-62
9-52	Sweatboard-to-sweatboard stowage of 500-pound bombs, aft lower holds (sweatboard blocking technique)	9-64
9-53	Stowing and securing of 500-pound bombs, lower hold No. 3, at heat bulkhead (sweatboard blocking technique)	9-66
9-54	Stowing and securing of 500-pound bombs, lower hold No. 3, forward of heat bulkhead (sweatboard blocking technique)	9-67
9-55	Height differential dunnaging for 500-pound-bomb unit loads in the square of the hatch	9-68
9-56	Tween-deck stowage of 750-pound-bomb unit loads	9-70
9-57	Block stowage of 750-pound bombs (hull blocking technique)	9-71
9-58	Butt-to-butt shoring and shoring of tier voids in block stowage of 750-pound bombs (sweatboard blocking technique)	9-73
9-59	Flooring over 750-pound-bomb unit loads	9-74
9-60	Basic sweatboard-to-sweatboard stowage of 750-pound bombs, forward lower holds (sweatboard blocking technique)	9-76
9-61	Sweatboard-to-sweatboard stowage of 750-pound bombs, aft lower holds (sweatboard blocking technique)	9-78
9-62	Stowing and dunnaging of 750-pound bomb, lower hold No. 3 (sweatboard blocking technique)	9-80
9-63	Stowing and dunnaging of 750-pound bomb, deep tank No. 4 (sweatboard blocking technique)	9-82
9-64	Typical stowage of 2,000-pound bomb, tween-deck compartments (sweatboard blocking technique) ..	9-84
9-65	Sweatboard-to-sweatboard stowage of 2,000-pound bombs, lower hold No. 5 (sweatboard blocking technique)	9-86
9-66	Six reduced-charge powder tank cans (MK 12 MOD 0 pallet)	9-87
9-67	Six full-charge powder tank cans (MK 3 MOD 0 pallet)	9-88
9-68	Single armor-piercing (AP) projectile (MK 85 MOD 0 handling bands)	9-88
9-69	Two high-capacity (HC) projectiles (MK 3 MOD 0 pallet)	9-89
9-70	Support of tier decking for 2,000-pound bombs stowed nose-to-nose	9-90
9-71	Stowing and securing of CBU-55/B, tween deck No. 3 (sweatboard blocking technique)	9-91
9-72	Block stowage of CBU-55/B in compartment with significant hull curvature (hull blocking technique) ..	9-93
9-73	Stowing and securing of CBU-25/A single containers in square of hatch	9-95
10-1	Completed stow of 500-pound-bomb unit load in a LASH lighter	10-2
10-2	Dimensions of a typical LASH lighter	10-4
10-3	Preplan for LASH lighter	10-5
10-4	Final stowage plan for LASH lighter	10-6
10-5	Basic block-stowage pattern	10-7
10-6	Basic staggered block-stow pattern	10-8
10-7	Staggered block stow of 1,000-pound-bomb unit loads, MK 83	10-9
10-8	Void shoring for staggered block stowage	10-10
10-9	The modified block-stowage pattern	10-11
10-10	Construction details for bulkhead jack	10-13
10-11	Completed encasement of stacking post	10-14

Figure No.	Title	Page
10-12	Construction details for encasement of ladder/stanchion combination with jacks	10-14
10-13	The step-down technique	10-15
10-14	Use of diagonally braced bulkhead for securing top layer of stow	10-16
10-15	Three types of lighters	10-18
10-16	Top view of a typical YFN lighter	10-19
10-17	Side view of a typical YFN (modified) lighter	10-19
10-18	Sheathing and loading areas	10-20
10-19	Interior of YFN (modified) during loading operations	10-21
B-1	General classifications of softwood lumber	B-3
D-1	VC2 (Victory) hull configuration	D-3
D-2	C2 hull configuration	D-3
D-3	C3 hull configuration	D-4
D-4	C4 hull configuration	D-4
E-1	Typical mast rigging	E-1
E-2	Typical kingpost rigging	E-2

LIST OF TABLES

Table No.	Title	Page
5-1	Comparison of Approved Construction Techniques with Alternate Methods	5-4
B-1	Properties of Structural Lumber Commonly Used in Dunnaging	B-1
B-2	Commercial Lumber Grading Associations and Publications	B-2
B-3	Grouping of Species for Determining Allowable Loads for Nails and Screws	B-4
C-1	Sizes of Common Wire Nails and Spikes	C-1
C-2	Sizes of Threaded, Hardened Steel-Type Nails	C-1
C-3	Allowable Withdrawal Loads for Nails and Spikes-Normal Duration	C-2
C-4	Allowable Lateral Loads for Nails and Spikes-Normal Duration	C-4
C-5	Allowable Withdrawal Loads for Wood Screws-Normal Duration	C-5
C-6	Allowable Lateral Loads for Wood Screws-Normal Duration	C-6
D-1	Average Characteristics of Principal Types of US Flag Break-bulk Dry Cargo Merchant Ships	D-2
D-2	Characteristics of Typical Commercial Steel LASH Lighters	D-5
E-1	Ship's Cargo-Handling Gear Inspection	E-2

CHAPTER 1 INTRODUCTION

1-1. Purpose and Scope

This manual provides an operational reference guide for loading military munitions and explosives aboard breakbulk merchant ships. Only breakbulk stowage methods are discussed. Container loading procedures are described by specific outloading drawings prepared by the Services. The text provides general guidance for military and civilian personnel engaged in loading, blocking, and bracing military explosives cargo for ocean movement by ships in conformance with the Code of Federal Regulations (CFR), Title 46, Part 146 (46 CFR146).

1-2. Report of Publication Improvements

Users of this publication are encouraged to recommend changes and submit comments for its improvement. Comments should be keyed to the specific page, paragraph, and line of the text in which the change is recommended. Reasons will be provided for each comment, to ensure understanding and complete evaluation. Comments should be prepared on DA Form 2028 (Recommended Changes to Publications and Blank Forms) or in a letter and forwarded to the Commander, Military Traffic Management Command, ATTN: MT-SA, 5611 Columbia Pike, Falls Church, VA 22041-5050, or the Commander, Naval Weapons Station Earle, ATTN: Naval Weapons Handling Laboratory, Colts Neck, New Jersey 07722. All proposed changes will be evaluated and approved by both commands.

1-3. Application and Intended Use

The information in this publication is intended for personnel, at shiploading activities, who are concerned with loading and shoring military explosives onboard merchant ships. Particular emphasis is placed on dunnaging, with text and illustrations directed to the requirements of blockers and bracers. Additional information concerning associated functions, such as cargo planning, equipment and material scheduling, inspection, and labor requirements, is sufficiently detailed to describe the complete environment of shiploading and cargo stowage. When used in conjunction with applicable Federal and military regulations, this manual will provide ammunition terminals with a synopsis of user-tested procedures for the safe securing of breakbulk ammunition and explosives. Shiploading drawings, as listed in the Department of the Army Pamphlet 310-24, are available for the stowage and shoring of US Army guided missile and large rocket components in accordance with approved methods and procedures. References are contained in appendix A.

1-4. Compliance With Federal Regulations

Procedures in this manual comply with requirements established in 46CFR146-29. These regulations prescribe the responsibilities of shippers and carriers of military explosives and hazardous materials and provide for their enforcement. Figure 1-1 shows a typical merchant ship being loaded with military ammunition and explosives.

1-5. Compliance by Navy Activities

Navy activities are required by OPNAV 8023.22A to comply with OP 3221/TM 55-607.

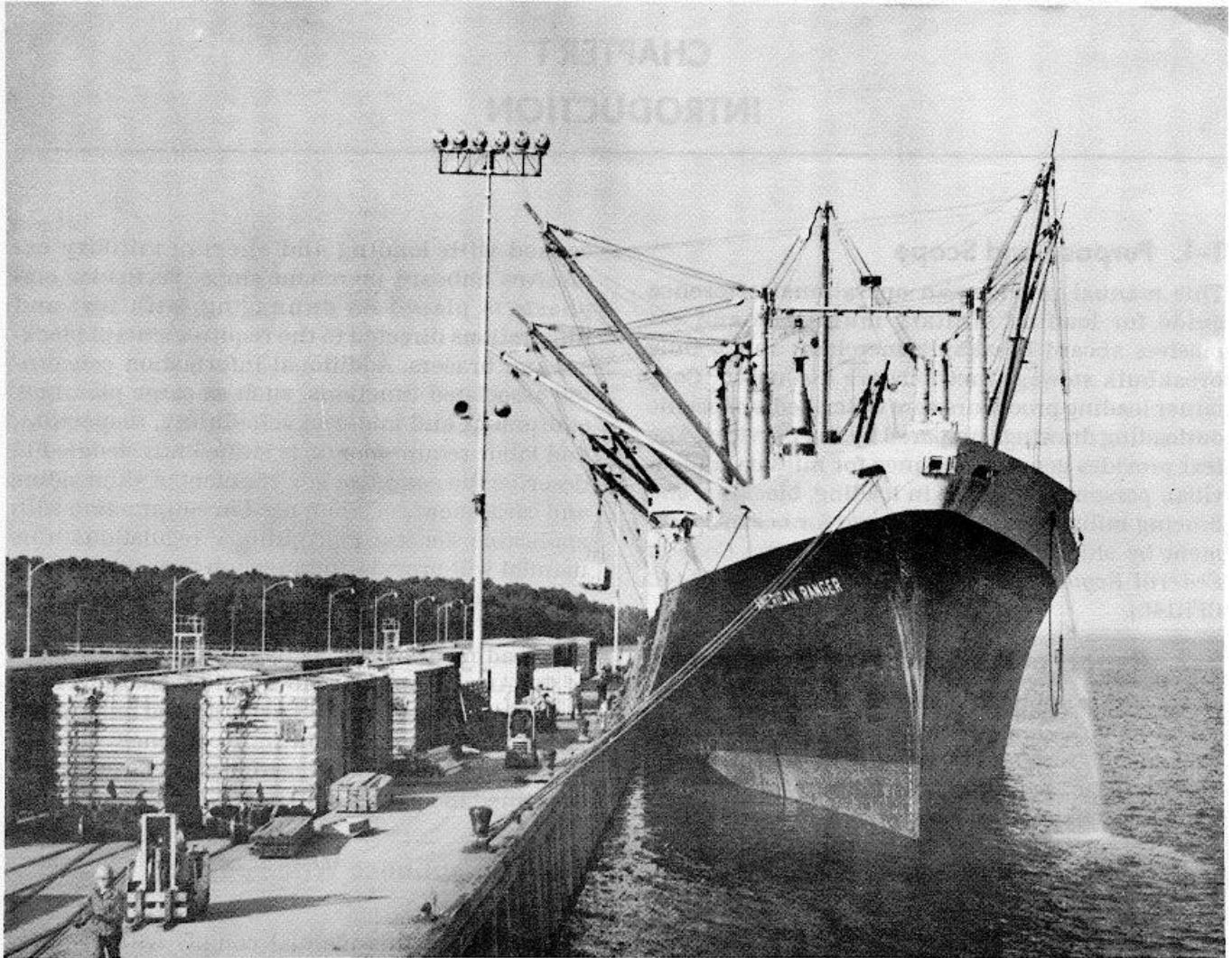


Figure 1-1 Military cargo being loaded aboard merchant-type ship.
1-2

CHAPTER 2

PERMITS, CERTIFICATES, INSPECTIONS, AND ACCEPTANCE

2-1. General

The hazardous properties of military explosives cargo require strict compliance with the accepted standards for packaging, marking, loading, and securing of dangerous cargoes. This chapter provides a summary of procedures for certification, inspections, and acceptance as required by 46CFR146 and local regulations.

2-2. Permit for Handling Military Explosives

Authorization to load, handle, or discharge military explosives and lethal chemicals, except Coast Guard Class I, on any vessel at a United States port must be obtained from the District Commander of the US Coast Guard, Captain of the Port, or other officer designated by the District Commander. Specific policies concerning permits for handling military explosives are defined by 46CFR146.29-13(a) and (b).

2-3. Certification of Cargo

Subject to the Code of Federal Regulations, the shipper is responsible for the preparation of any hazardous material offered for transportation by water. The following certification will be shown on the shipping paper and signed by the shipper: "This is to certify that the above-named articles are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation."

2-4. Inspections and Acceptance

a. Prior to commencement of the actual loading operation, all hatches and compartments in which military explosives cargo is to be carried will be thoroughly inspected by cargo operations personnel and qualified station inspectors. All defects and/or substandard conditions will be corrected prior to the loading operation in the affected hatch or compartment. A Coast Guard explosives loading detail (ELD) may be assigned to a vessel being worked at a Navy or Army depot, arsenal, ocean terminal, or other similar facility, unless the Commanding Officer of the facility declines the detail. However, staff directives or instructions issued by the individual Services can require mandatory acceptance of Coast Guard inspection details by the explosives terminal or station. When no Coast Guard ELD is assigned and in attendance, safe operations will be enforced by explosives-qualified inspectors from the port or station.

b. As the loading of each compartment is completed, the adequacy and acceptance of the stowage will be approved by authorized station personnel and inspectors and by an authorized ship's officer. Final acceptance of completed cargo stowage will be certified by the ship's master or his authorized representative. A cargo stowage inspection record may be used for this purpose, a sample of which is shown in figure 2-1.

FINAL HOLD INSPECTION, ACCEPTANCE AND CERTIFICATION OF SHIPS
LOADED WITH MILITARY EXPLOSIVES AND HAZARDOUS MUNITIONS

SHIP SS AMERICAN KNIGHT		ACTIVITY 3CD UNWPNSTALONG		PIER 1	BERTH 2
DATE AND TIME OF ARRIVAL 1030 HRS 10 AUG 74		DATE AND TIME LOADING STARTED 0800 11 AUG 74		DATE AND TIME LOADING COMPLETED 1530 14 AUG 74	
SIGNATURES					
DATE	TIME	HOLD & DECK	SHIP'S BLOCKER & BRACER SUPERVISOR	SHIP'S OFFICER	STATION/COAST GUARD INSPECTOR
11 AUG 74	1300	#1 3RD	Bill Smith	John Anderson	Paul Ward, LT, USCG
12	0900	2ND	Bill Smith	John Anderson	Paul Ward
12 AUG 74	1200	MAIN	Bill Smith	John Anderson	Paul Ward
11 AUG 74	1500	#2 IN. BOTTOM	E. White	G. Jones 2/0	Paul Ward, LT, USCG
12 AUG 74	1300	3RD	E. White	G. Jones 2/0	Paul Ward
12 AUG 74	0930	2ND	E. White	G. Jones 2/0	Paul Ward
13 AUG 74	0900	MAIN	E. White	G. Jones 2/0	Paul Ward
		#3			
		#4			
12 AUG 74	1100	#5	Bill Smith	G. Jones 2/0	James Adams LTJG
12 AUG 74	1545	3RD	Bill Smith	G. Jones 2/0	James Adams LTJG
13 AUG 74	1200	2ND	Bill Smith	G. Jones 2/0	James Adams LTJG
14 AUG 74	0945	MAIN	Bill Smith	G. Jones 2/0	James Adams LTJG
13 AUG 74	1115	#6 16' FLAT	Bill Smith	John Anderson	Paul Ward, LT, USCG
13 AUG 74	1330	26' FLAT	Bill Smith	John Anderson	Paul Ward
14 AUG 74	0830	2ND	Bill Smith	John Anderson	Paul Ward
14 AUG 74	1300	MAIN	Bill Smith	John Anderson	Paul Ward
		#7			
		SPECIAL STOW.			
		SPECIAL STOW.			
		SPECIAL STOW.			
		SPECIAL STOW.			
		SPECIAL STOW.			

HOLDS MARKED WITH ASTERISK * CONTAIN SECURITY ITEMS

CERTIFICATION OF FINAL INSPECTION

THE LOADING WAS CARRIED OUT IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND THE STOWAGE HAS BEEN INSPECTED AND ACCEPTED AS SATISFACTORY. NO DAMAGE OR PILFERAGE NOTED.

(SIGNATURE) Thomas Parker SHIP SUPERVISOR

(SIGNATURE) Paul Ward STATION/COAST GUARD INSPECTOR

(SIGNATURE) Bill Smith BLOCKER AND BRACER FOREMAN

THE STOWAGE HAS BEEN INSPECTED BY ME OR MY REPRESENTATIVE AND IS ACCEPTED AS SATISFACTORY. NO APPARENT DAMAGE OR PILFERAGE NOTED.

DATE 14 Aug 1974 (SIGNATURE) John Anderson

Figure 2-1 Typical cargo stowage inspection record.

Should a dispute arise about the adequacy of the stowage, the matter should be referred to the Military Sealift Command (MSC) representative, the MSC Office, or the MSC Area Commander as appropriate.

2-5. Standard Feedback Forms and Systems

Cargo stowage is inspected and the cargo condition reported during and upon completion of the voyage.

a. SF 364 (Report of Discrepancy) (fig 2-2) will be prepared by the military load inspector, Coast TM 55-607/NAVSEA OP 3221 Rev 2 Guard inspector, or ship's master to report unsatisfactory conditions noted in received cargo, including item damage or loss resulting from improper packaging. Any deficiency in packaging involving ammunition, explosives, and other hazardous materials must be reported, whether or not damage or other unsatisfactory condition has resulted. SF 364 must be filed in any instance of improper identification or marking of items, packages, containers, or unitized loads of ammunition, explosives, or hazardous materials. Joint Regulation AR 700-58/NAVSUPINST 4030-29/AFR 71-13/ MCO P4030.29A/DSAR 4145.8 prescribes use of SF Form 364 and provides instructions for preparing, routing, and taking corrective action.

REPORT OF DISCREPANCY (ROD)				1. DATE OF PREPARATION 6 May 88		2. REPORT NUMBER		
<input checked="" type="checkbox"/> SHIPPING <input type="checkbox"/> PACKAGING								
3. TO (Name and address, include ZIP Code) Chief, Storage Branch U. S. Army Garrison, Honshu APO Seattle 98764				4. FROM (Name and address, include ZIP Code) Water Terminal Branch U. S. Army Garrison, Honshu APO Seattle 98760				
5a. SHIPPER'S NAME Ordnance Ammo Depot Songhwan Ni, Korea APO San Francisco 96271				5b. NUMBER AND DATE OF INVOICE A33333 1 May 88		6. TRANSPORTATION DOCUMENT NUMBER (GBL, Waybill, TCN, etc.) AX38541		
7a. SHIPPER'S NUMBER (Purchase Order/shipment, Contract, etc.) N/A		7b. OFFICE ADMINISTERING CONTRACT N/A		8. REQUISITIONER'S NUMBER (Requisition, Purchase Request, etc.) 123xx125				
9. SHIPMENT, BILLING, AND RECEIPT DATA					10. DISCREPANCY DATA			11. ACTION CODE
NSN/PART NUMBER AND NOMENCLATURE (a)	UNIT OF ISSUE (b)	QUANTITY SHIPPED/ BILLED (c)	QUANTITY RECEIVED (d)	QUANTITY (a)	UNIT PRICE (b)	TOTAL COST (c)	CODE ¹ (d)	AC ² TION CODE
1315-00-0279-CJ30	1	2	50	50	\$1.00	\$50.00	Z	D

12. REMARKS (Continue on separate sheet of paper if necessary)

Five pallets of propellant charge were found in damaged condition in Hatch No. 2 Lt of SS Green Lake during discharge operations at Hiro Port, Japan, on 7 Jul 87. Vessel sailed from Pusan, Korea. Damaged 5 pallets were delivered to storage branch, Dir. of Ammo., USAGH, on 8 Jul 87 via barge No. 74.

1 DISCREPANCY CODES		2 ACTION CODES
CONDITION OF MATERIAL C1 — In condition other than that indicated on release/receipt document C2 — Expired shelf life C3 — Damaged parcel post shipment SUPPLY DOCUMENTATION D1 — Not received D2 — Illegible or mutilated D3 — Incomplete improper or without authority (Only when receipt cannot be properly processed) MISDIRECTED MATERIAL M1 — Addressed to wrong activity OVERAGE/DUPLICATE SHIPMENTS O1 — Quantity in excess of that on receipt document O2 — Quantity in excess of that requested (Other than unit of issue pack) O3 — Quantity duplicates shipment PACKING DISCREPANCY P1 — Improper preservation P2 — Improper packing P3 — Improper marking P4 — Improper unitization	PRODUCT QUALITY DEFICIENCIES Q1 — Deficient material (Applicable to Grant Aid and FMS shipments only) SHORTAGE OF MATERIAL S1 — Quantity less than that on receipt document S2 — Quantity less than that requested (Other than unit of issue pack) S3 — Non-receipt of parcel post shipments ITEM TECHNICAL DATA MARKINGS (i.e., Name Plates, Log Books, Operating Handbooks, Special Instructions, etc.) T1 — Missing T2 — Illegible or mutilated T3 — Precautionary operational markings missing T4 — Inspection data missing or incomplete T5 — Serviceability operating data missing or incomplete T6 — Warranty data missing WRONG ITEM (Identify requested item as a separate copy in Item 9 above) W1 — Incorrect item received W2 — Unacceptable substitute OTHER DISCREPANCIES Z1 — See remarks	1A — Disposition instructions requested (Reply on reverse) 1B — Material being retained (See remarks) 1C — Supporting supply documentation requested 1D — Material still required expedite shipment (Not applicable to FMS) 1E — Local purchase material to be returned at supplier's expense unless disposition instructions to the contrary are received within 15 days (Reply on reverse) (Not applicable to FMS) 1F — Replacement shipment requested (Not applicable to FMS) 1G — Reshipment not required. Item to be re-requisitioned. 1H — No action required. Information only 1Z — Other action requested (See remarks)

13. FUNDING AND ACCOUNTING DATA

N/A

14a. TYPED OR PRINTED NAME, TITLE, AND PHONE NUMBER OF PREPARING OFFICIAL Mr. James Hoover, ITO 927-4646	14b. SIGNATURE
---	----------------

15. DISTRIBUTION ADDRESSEES FOR COPIES

- 2 — Chief, Storage Br. USAGH
- 1 — ORD Ammo Depot, Songhwan Ni, Korea

Figure 2-2. Report of Discrepancy (ROD) (SF 364) (Sheet 1 of 2).

16. FROM: <div style="text-align: center; margin-top: 20px;">Same As #4</div>	17. DISTRIBUTION ADDRESSEES FOR COPIES <div style="text-align: center; margin-top: 20px;">Same As #5</div>						
18. TO: <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <div style="text-align: center; margin-top: 20px;">Same As #3</div> </div> <div style="width: 35%; font-size: 0.8em;"> Use window envelope to mail this document. Insert name and address, including ZIP Code, starting one typing space below the left dot. Each address line must NOT extend beyond right dot. Address must not exceed four single space typing lines. </div> </div>							
19. IN ACCORDANCE WITH NOTICE OF DISCREPANCY ON FACE OF THIS FORM:							
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> a. MATERIAL <input checked="" type="checkbox"/> HAS BEEN SHIPPED <input type="checkbox"/> WILL BE SHIPPED c. <input type="checkbox"/> AN ADJUSTMENT IN BILLING HAS BEEN/WILL BE PROCESSED AS A: <input type="checkbox"/> CREDIT <input type="checkbox"/> DEBIT f. <input type="checkbox"/> AN ADJUSTMENT IN BILLING FOR THE REPORTED DISCREPANCY WILL NOT BE PROCESSED FOR THE FOLLOWING REASON </div> <div style="width: 45%;"> DOCUMENT NUMBER <div style="text-align: center; border: 1px solid black; padding: 2px;">AX38541</div> b. <input type="checkbox"/> NO RECORD OF SHIPMENT. RESUBMIT REPORT TO PROPER OFFICE UNDER APPROPRIATE REGULATION. d. <input checked="" type="checkbox"/> INVOICE/BILL ATTACHED e. <input checked="" type="checkbox"/> PROOF OF DELIVERY (Parcel Post Shipments) OR EVIDENCE OF SHIPMENT ENCLOSED. </div> </div>	<div style="border: 1px solid black; padding: 5px; text-align: center; font-weight: bold; transform: rotate(-45deg); opacity: 0.5;"> SAMPLE </div>						
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;">(1) REASON FOR NOT PROCESSING</th> <th style="width: 50%;">(2) PRESCRIBING REGULATION</th> </tr> <tr> <td style="padding: 2px;">(a) DISCREPANCY WAS NOT REPORTED WITHIN THE TIME FRAMES ALLOWED AND/OR</td> <td style="padding: 2px;">(a) CHAPTER 5 OF THE GSA HANDBOOK. DISCREPANCIES OR DEFICIENCIES IN GSA OR DOD SHIPMENTS, MATERIAL, OR BILLINGS (FPMR 101-26.8)</td> </tr> <tr> <td style="padding: 2px;">(b) DOLLAR VALUE DOES NOT MEET THE CRITERIA PRESCRIBED IN THE REGULATION OR AGREEMENT INDICATED IN 19f(2)</td> <td style="padding: 2px;">(b) CHAP. 2 AND/OR 7 OF DOD 4000.25-7-M, MILITARY STANDARD BILLING SYSTEM (MILSBILLS) AND/OR DD 1513, U.S. DOD OFFER AND ACCEPTANCE, AS APPLICABLE.</td> </tr> </table>		(1) REASON FOR NOT PROCESSING	(2) PRESCRIBING REGULATION	(a) DISCREPANCY WAS NOT REPORTED WITHIN THE TIME FRAMES ALLOWED AND/OR	(a) CHAPTER 5 OF THE GSA HANDBOOK. DISCREPANCIES OR DEFICIENCIES IN GSA OR DOD SHIPMENTS, MATERIAL, OR BILLINGS (FPMR 101-26.8)	(b) DOLLAR VALUE DOES NOT MEET THE CRITERIA PRESCRIBED IN THE REGULATION OR AGREEMENT INDICATED IN 19f(2)	(b) CHAP. 2 AND/OR 7 OF DOD 4000.25-7-M, MILITARY STANDARD BILLING SYSTEM (MILSBILLS) AND/OR DD 1513, U.S. DOD OFFER AND ACCEPTANCE, AS APPLICABLE.
(1) REASON FOR NOT PROCESSING	(2) PRESCRIBING REGULATION						
(a) DISCREPANCY WAS NOT REPORTED WITHIN THE TIME FRAMES ALLOWED AND/OR	(a) CHAPTER 5 OF THE GSA HANDBOOK. DISCREPANCIES OR DEFICIENCIES IN GSA OR DOD SHIPMENTS, MATERIAL, OR BILLINGS (FPMR 101-26.8)						
(b) DOLLAR VALUE DOES NOT MEET THE CRITERIA PRESCRIBED IN THE REGULATION OR AGREEMENT INDICATED IN 19f(2)	(b) CHAP. 2 AND/OR 7 OF DOD 4000.25-7-M, MILITARY STANDARD BILLING SYSTEM (MILSBILLS) AND/OR DD 1513, U.S. DOD OFFER AND ACCEPTANCE, AS APPLICABLE.						
20. THE FOLLOWING DISPOSITION IS TO BE MADE OF THE REFERENCED MATERIAL:							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">a. <input type="checkbox"/> PROCESS FOR DISPOSAL IN ACCORDANCE WITH SERVICE/AGENCY DIRECTIVES.</td> <td style="width: 40%;">b. <input checked="" type="checkbox"/> REPRESENTATIVE WILL CALL FOR DISCUSSION CONCERNING DISPOSITION IN:</td> <td style="width: 20%; text-align: center;">DAYS 15</td> </tr> <tr> <td>c. <input type="checkbox"/> RETAIN MATERIAL AT NO CHARGE.</td> <td>d. <input type="checkbox"/> MATERIAL WILL BE PICKED UP IN:</td> <td style="text-align: center;">DAYS</td> </tr> </table>		a. <input type="checkbox"/> PROCESS FOR DISPOSAL IN ACCORDANCE WITH SERVICE/AGENCY DIRECTIVES.	b. <input checked="" type="checkbox"/> REPRESENTATIVE WILL CALL FOR DISCUSSION CONCERNING DISPOSITION IN:	DAYS 15	c. <input type="checkbox"/> RETAIN MATERIAL AT NO CHARGE.	d. <input type="checkbox"/> MATERIAL WILL BE PICKED UP IN:	DAYS
a. <input type="checkbox"/> PROCESS FOR DISPOSAL IN ACCORDANCE WITH SERVICE/AGENCY DIRECTIVES.	b. <input checked="" type="checkbox"/> REPRESENTATIVE WILL CALL FOR DISCUSSION CONCERNING DISPOSITION IN:	DAYS 15					
c. <input type="checkbox"/> RETAIN MATERIAL AT NO CHARGE.	d. <input type="checkbox"/> MATERIAL WILL BE PICKED UP IN:	DAYS					
e. <input type="checkbox"/> SHIP MATERIAL (Specify location): <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> (1) <input type="checkbox"/> GBL APPROPRIATION CHARGEABLE: (2) <input type="checkbox"/> CHARGES COLLECT-VIA: <input type="checkbox"/> FREIGHT <input type="checkbox"/> EXPRESS <input type="checkbox"/> PARCEL POST (3) <input type="checkbox"/> PARCEL POST LABEL ATTACHED (4) <input type="checkbox"/> FREIGHT PREPAID </div> <div style="width: 35%; font-size: 0.7em;"> (\$ _____ postage advanced herewith. NOTE: Please enclose postage. Material cannot be returned Parcel Post collect.) </div> </div>							
f. <input type="checkbox"/> OTHER (Specify) _____							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">21. <input type="checkbox"/> IF MATERIAL IS STILL REQUIRED, SUBMIT NEW REQUISITION</td> <td style="width: 40%;">22. <input checked="" type="checkbox"/> REPLACEMENT WITH SATISFACTORY MATERIAL WILL BE MADE ON OR BEFORE:</td> <td style="width: 20%; text-align: center;">DATE 15 May 88</td> </tr> </table>		21. <input type="checkbox"/> IF MATERIAL IS STILL REQUIRED, SUBMIT NEW REQUISITION	22. <input checked="" type="checkbox"/> REPLACEMENT WITH SATISFACTORY MATERIAL WILL BE MADE ON OR BEFORE:	DATE 15 May 88			
21. <input type="checkbox"/> IF MATERIAL IS STILL REQUIRED, SUBMIT NEW REQUISITION	22. <input checked="" type="checkbox"/> REPLACEMENT WITH SATISFACTORY MATERIAL WILL BE MADE ON OR BEFORE:	DATE 15 May 88					
23. REMARKS (Continue on separate sheet of paper if necessary) <div style="text-align: center; margin-top: 20px;">N/A</div>							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">24a. TYPED OR PRINTED NAME AND PHONE NUMBER OF PREPARING OFFICIAL Mr. James Hoover, ITO 927-4646</td> <td style="width: 40%;">24b. SIGNATURE</td> <td style="width: 20%;">24c. DATE 1 May 88</td> </tr> </table>		24a. TYPED OR PRINTED NAME AND PHONE NUMBER OF PREPARING OFFICIAL Mr. James Hoover, ITO 927-4646	24b. SIGNATURE	24c. DATE 1 May 88			
24a. TYPED OR PRINTED NAME AND PHONE NUMBER OF PREPARING OFFICIAL Mr. James Hoover, ITO 927-4646	24b. SIGNATURE	24c. DATE 1 May 88					

Figure 2-2. Report of Discrepancy (ROD) (SF 364) (Sheet 2 of 2).

b. Details of improper loading, stowing, handling, blocking and bracing, and lashing are reported by the discharging activity on Standard Form 361 (Transportation Discrepancy Report) (fig 2-3). Joint Regulation AR 55-38/NAVSUPINST 4610.33A/AFM 75-18/MCO P4610.19B/DSAR 4500.15 provides details for preparation and disposition of the Standard Form 361.