

**AMMUNITION RECEIVING
AND SHIPPING OPERATIONS**

**Subcourse MM 4620
Edition 8**

**United States Army Combined Arms Support Command
Fort Lee, Virginia 23801-1809**

**2 Credit Hours
Edition Date: 1988**

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INTRODUCTION

The key to any successful operation is prior planning, especially when running ammunition receiving and shipping operations. These operations involve much more planning than merely estimating how many trucks and soldiers it would require to move a given number of boxes. Ammunition receipts and shipments often involve minute details that must be worked out before actual operations begin.

As an ammunition NCO in the supply operations section of a depot, you will be expected to be able to prepare plans for receiving and shipping ammunition. You will have to be familiar with reports and documentation, packaging and palletization, materials handling equipment (MHE), manpower, and tools and supplies.

Supplementary Requirements

There are no supplementary requirements in material or personnel for this subcourse. You will need only this book and will work without supervision.

Credit Hours

Two credit hours will be awarded for the successful completion of this subcourse – a score of at least 70 on the end-of-subcourse examination.

Passing score for this subcourse material is 70%.

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Lesson 1

PLAN RECEIVING OPERATIONS

OBJECTIVES	When you have completed this subcourse, you should be able to describe the steps to take upon receiving a notice of shipment. You should be able to explain how to choose a storage location, use a planograph, determine personnel and equipment needs, and make up and submit the plan.
CONDITIONS	You will have this subcourse book and work without supervision.
STANDARD	You must score at least 70 on the end-of-subcourse examination that covers this lesson and Lesson 2.

RECEIPTS

Receiving is the movement and transfer of ammunition stocks from one ammunition storage activity to another from the point of view of the receiver. The receipts discussed in this subcourse are shipments from an ammunition supply point (ASP), a corps storage area (CSA), a theater supply area (TSA), or the port of entry. Unit turn-ins are not included.

For the senior ammunition NCO to plan properly for receipts, the following steps must be taken after notice is received of what kind of ammunition is being shipped and when it is expected:

- Storage locations are selected so that compatibility requirements are met and net explosive weight (NEW) limits are not exceeded.
- Stock consolidation and requirements are met.
- The personnel and equipment necessary for unloading and storing the ammunition are determined.
- The receiving plan is submitted to the NCOIC for approval.

This lesson discusses each of these steps in greater detail.

NOTICE OF SHIPMENT

Shippers of ammunition are required by AR 55-355, Defense Traffic Management Regulation, to forward the consignee (the receiver) a notice of shipment. This notice is sent electronically, such as message or automatic data link, and must be received at least 24 hours before the arrival of the shipment. These notices are clearly marked as a report of shipment (REPSHIP)(Figure 1-1). They include the information on the chart in Figure 1-2.

If the shipper is within 24 shipping hours of the receiving unit, the shipper must telephone the REPSHIP data and confirm the data by follow-up message within the 24 hours. There is no set format other than the format required for messages.

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ROUTINE      *****
              * UNCLASSIFIED *
              *****
TOR=194 1904   TOD=194 190448   MSG NBR--086A-004DOE

RTTUZYUW RUCLAIA3318 1941813-UUUU--RUCDGA.
ZNE UUUU
R 101900Z JUL 88

FM: LONGHORN ARMY DEPOT//A45EZL//
TO: AAD ANNISTON AL//A31FVU//
INFO AMCCOM ROCK ISLAND ILL
BT
UNCLAS// 55-355
SUBJECT REPSHIP
A AR55-355
1. DOMESTIC ROUTING ORDER (DRO) NUMBER.
2. CARRIER AND ROUTING.
3. TRUCK NO. SEAL NUMBER USA-14739-088 NET EXPLOSIVE WEIGHT (NEW) 4738.2 CLASS A
4. GOVERNMENT BILL OF LADING NUMBER (GBL) HAAM #####-###
5. SHIPPED 1100880201
6. ETA 1400880204 LOCAL
7. DATA FOLLOWS.
   a. C444 1315000284841
   b. QTY 636
   c. ALN LNG79F018-124 SECURITY RISK CATEGORY (SRC) 4
   d. 20 PALLETS
   e. WT 34760 CU.752
   f. COMPLETE SHIPMENT
   g. PROJECT CODE:
   h. A31FVU80100006
   i. FLAME OR HEAT PRODUCING TOOLS WILL NOT BE USED TO REMOVE SECURITY DEVICES.
8. UNCLASS SHIPMENT
BT

ROUTINE      *****
              * UNCLASSIFIED *
              *****

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Figure 1-1. Example of a Report of Shipment (REPSHIP).

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1. Subject of message (REPSHIP)	9. Data applicable to each shipment:
2. DRO number.	a. DOD Identification Code (DODIC) for ammunition explosives.
3. Carrier and routing.	b. Ammunition lot number.
4. Vehicle and seal numbers.	c. Complete or partial shipment.
5. Net explosive weight of Class A and Class B explosives.	d. Requisition document number from DD Form 1348-1 (Release/Receipt Document) and/or other documentation.
6. Bill of lading number/Transportation Control Movement Document number.	e. Quantity (round count).
7. Date of shipment.	f. Number and type of containers.
8. Estimated date and time of arrival.	g. Weight and cube.
	h. Project code.
	i. The following annotation for ammunition: Flame- or heat-producing tools NOT to be used to remove seals and other security devices.

Figure 1-2. Data Most Commonly Found on a REPSHIP.

DETERMINATION OF STORAGE LOCATION

At the receiving unit, the REPSHIP is compared to the stock records. This is done to determine if the ammunition listed is similar to ammunition already stored.

Similar Items

If the shipment is similar (has the same NSN and lot numbers as what is in storage), it has to be determined if there is adequate space to store it. The storage locations' planographs or the actual storage locations must be checked. Planographs may be scale drawings of the magazine floor plan (Figure 1-3) or computer-generated location systems that lay the storage site out into grids. In either case, the measurement used must be identified somewhere on the planograph. The necessary pallet dimensions (length, width and height) are in the DOD Consolidated Ammunition Catalog by national stock number (NSN).

With the pallet dimensions and the dimensions of the space available, it is simple arithmetic to calculate the area and cube. A comparison of area to cube then shows if the ammunition will fit into the space available. If the shipment will not fit into the space available, rewarehousing of ammunition among the magazines may be required.

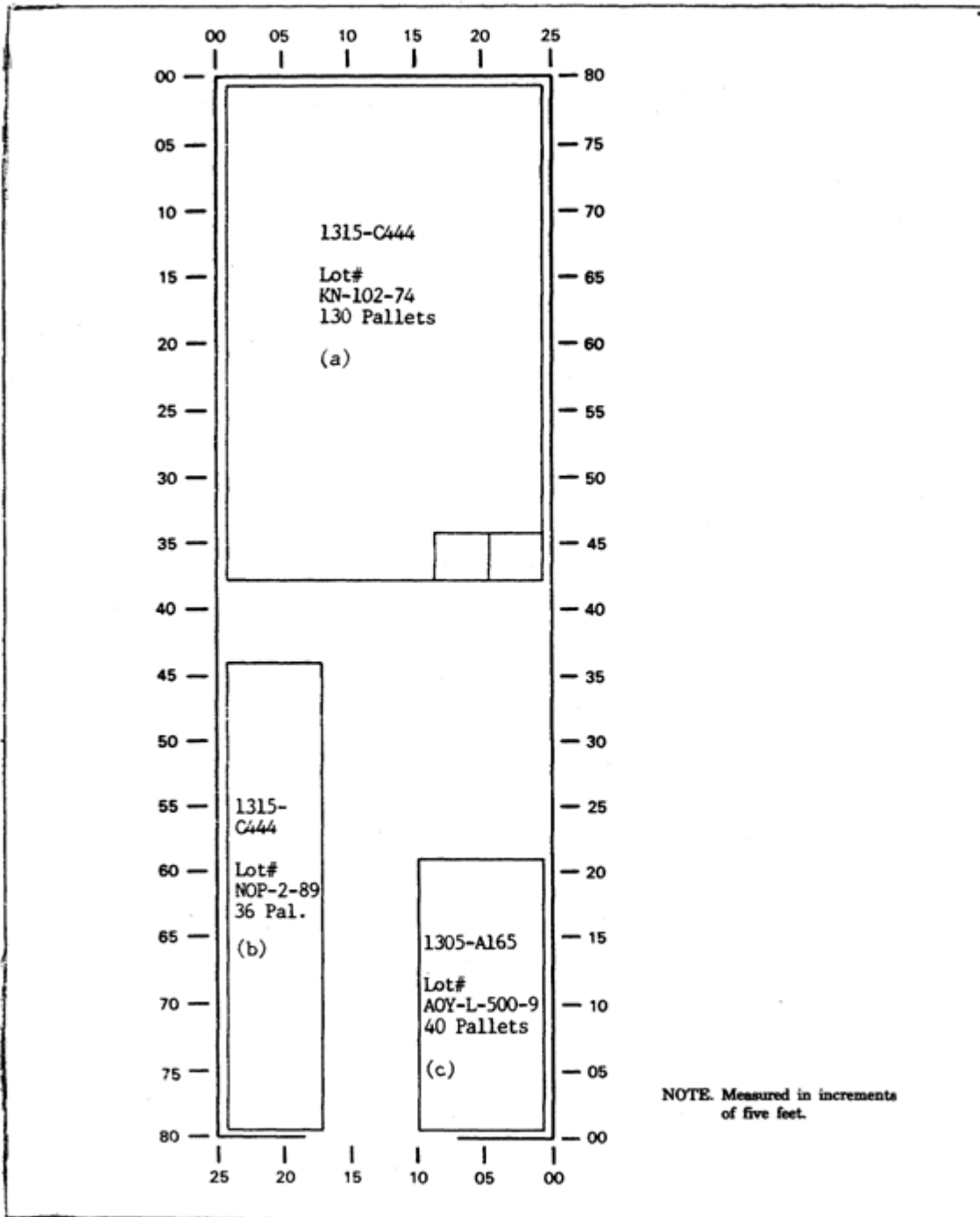


Figure 1-3. Example of a Planograph.

MM4620, Lesson 1**Different Items**

When the records show that the same type of ammunition is NOT stored at the facility, there are several steps to take to select a storage site.

First, the compatibility groups of the items must be determined. Compatibility groups are determined by referring to TM 9-1300-206, Ammunition and Explosive Standards, Table 5-21 (Figure 1-4). To use Table 5-21, convert the Department of Defense Identification Code (DODIC) to nomenclature. For example, use DODAC 1315-C444 on the REPSHIP (Figure 1-1). The DOD Consolidated Ammunition Catalog Part IV shows that DODIC C444, NSN 1315-00-028-4841 is at index number 1519 (Figure 1-5). Look up the index number in Part V to find the nomenclature (Figure 1-6). This item is Cartridge, 105mm, HE, M1, w/fuze PD, and is semifixed ammunition. Table 5-21 is listed alphabetically, so ammunition, fixed and semi-fixed, 90mm through 106mm, is about three-quarters of the way down the page. At the columns to the right, the compatibility group is shown as E and the quantity distance (QD) class is (12) 1.2. (The (12) indicates a fragment hazard and imposes a 1,200-foot minimum distance.) This process is repeated until all items have been researched.

To determine which compatibility groups may be stored together, use TM 9-1300-206, Figure 5-2 (Figure 1-7). Using the chart is a matter of locating the first compatibility group on the left edge and the other group at the top; if an X appears where the columns intersect (cross) the items are compatible and may be stored together.

Next, the limits imposed by NEW must be determined. Ammunition magazines are designed to store a specific NEW. Standard earth-covered magazines have a design capacity of 500,000 lbs NEW. Nonstandard earth-covered magazines have a capacity of 250,000 lbs NEW. Drawing numbers that dictate the weight authorized are contained in AR 385-64, Ammunition and Explosives Safety Standards. To determine if magazines can be loaded to their capacity, the facility license, if there is one, is checked along with any waivers or exemptions that are in effect at the site. The license gives the total NEW authorized for the depot.

The NEW of the example's receipt is researched in the NSN listing in the DOD Consolidated Ammunition Catalog, Part VII. First, use the index in Part IV (Figure 1-5). Find the NSN by looking up the DODIC, C444. To the right of the NSN is the index number. Go to Part VII (Figure 1-8) and find the index number, which is the left-most column. The NEW is in the fourth column under the heading, "Item NEW Trans Storage W/F-S/B." Use the "Storage" figure.

When the NEW for one item is known, multiply it times the number of items to get a total NEW. Compare the total, including NEWs of the other material stored, to the magazine capacity (from the planograph). If it is the same or less, the incoming ammunition may be stored there if it is compatible.

Next, determine the space needed to store the ammunition. Begin with information from the REPSHIP. For example, Ctg 105mm HE, M1 w/FZ, NSN 1315-00-028-4841 C444. As explained earlier, using the NSN, the pallet dimensions can be found in the consolidated catalog, Part VII, Packaging. The pallet dimensions are: length 48.50 inches, width 36.75 inches, and height 36.50 inches (Figure 1-8).

Use DA Pam 75-5, List of Storage and Outloading Drawings for Ammunition, to locate the appropriate storage drawing. Conventional ammunition is in Chapter 3; 105mm Ammunition is FSC 1315 (the first group of numbers in the NSN) and it is boxed ammunition. Go to the column labeled "Item," find the NSN grouping that 1315 fits in, here "Thru FSC 1320" (Figure 1-9). There are two choices: Index 5 and Index 6. Index 5 is boxed ammunition on pallets. Since a standard pallet is 40 inches long by 48 inches wide and dimensions for the example are 48.50 inches long by 36.25 inches wide, it is too large for a pallet and will come on skids.

Table 5-21. Summary of Quantity-Distance Classifications and Compatibility Groups-Continued

Item	Store compatibility group	Quantity-distance class
Ammonium perchlorate (particle size over 15 microns) in original shipping containers or equivalent.	L ^c	1.4
Ammonium perchlorate (particle sizes over 15 microns) not in original shipping containers or equivalent, exposed to fire hazards only or exposed to detonation hazards at more than intraline distance.	L ^c	1.3
Ammonium perchlorate (particle sizes over 15 microns) not in original shipping containers or equivalent, exposed to detonation hazards at less than intraline distance.	D	1.1
Ammonium picrate (Explosive D)	D	1.1
Ammunition, blank and saluting, cannon	C	1.3
Ammunition, small arms, less than .50 caliber, except .30 caliber API	S	1.4
Ammunition, .50 caliber, except API and incendiary rounds.	C	1.4
Ammunition, .30 and .50 caliber API and incendiary	G	1.4
Ammunition, 20mm, HE, HEI and functional packs containing HE and HEI	E	(04) 1.2
Ammunition, 20mm, practice and high pressure test	C	1.4
Ammunition, 20mm, incendiary and functional packs containing incendiary, except those containing HE or HEI	G	(04) 1.2
Ammunition, 20mm, API	G	1.4
Ammunition, 25mm, with inert projectile	C	1.4
Ammunition, 27mm, caseless	C	1.4
Ammunition, 30mm, ball and high pressure test	C	(04) 1.2
Ammunition, 30mm, practice and training	C	1.4
Ammunition, 30mm, HEDP	E	(04) 1.2
Ammunition, 37mm, HE	E	(08) 1.2
Ammunition, 37mm, and 40mm, TP and AP	C	(08) 1.2
Ammunition, 40mm, HE RDX loaded	E	(12) 1.1
Ammunition, 40mm, riot control and pyrotechnic loaded, except WP smoke	G	1.3
Ammunition, 40mm, canister and multiple projectile	S	1.4
Ammunition, 40mm, practice, M407A1, M382 and M385	C	(04) 1.2
Ammunition, 40mm, HE, M381, M386, M406, M441 and M463	E	(04) 1.2
Ammunition, 40mm, HEDP, except M430 and M433	E	1.1
Ammunition, 40mm, HEDP, M430 and M433	E	(04) 1.1
Ammunition, 57mm through 81mm, except WP smoke, 57mm HEAT, 75mm HEAT, HEP and blank	E	(08) 1.2
Ammunition, 57mm HEAT, 75mm HEAT, and 105mm HEAT M341	E	1.1
Ammunition, fixed and semifixed, 90mm through 106mm, loaded with ammonal, amatol, explosive D, composition B or TNT, except 105mm HEAT, M341	E	(12) 1.2
Ammunition, HZP	E	1.1
Ammunition, pentolite loaded	L	1.1
Bangalore torpedoes	D	1.1
Caratol	D	1.1
Batteries, thermal or squib activated	S	1.4
Benite	C	1.1
Black powder, bulk	D	1.1
Blasting caps	B	1.1
Bombs, demolition	D	1.1
Bombs, fragmentation	D	(12) 1.1
Bombs, general purpose	D	1.1
Bombs, photoflash (except M122, w/o burster)	G	1.1
See notes at end of table		

Figure 1-4. Extract from TM 9-1300-206, Table 5-21, Page 5-46, Summary of Quantity Distance Classifications and Compatibility.

DODC NALC/LARC	NSN	INDEX NO.	DODC NALC/LARC	NSN	INDEX NO.	DODC NALC/LARC	NSN	INDEX NO.	DODC NALC/LARC	NSN	INDEX NO.
C442	1315-00-322-0365	01827	C451	1315-00-028-4845	01823	C508	1315-01-084-5284	01523	C508	1315-01-084-5284	01523
C443	1315-00-028-4829	01510	C452	1315-00-028-4846	01465	C508	1315-01-233-2003	01465	C508	1315-01-233-2003	01465
C443	1315-00-028-4852	01527	C452	1315-00-028-4850	01528	C508	1315-00-766-2866	01528	C508	1315-00-766-2866	01528
C443	1315-00-028-4854	01528	C452	1315-00-143-6898	01727	C508	1315-00-066-0678	01727	C508	1315-00-066-0678	01727
C443	1315-00-825-1896	02161	C452	1315-00-182-3156	02169	C508	1315-01-023-7122	02169	C508	1315-01-023-7122	02169
C443	1315-00-825-4064	02169	C452	1315-00-028-4840	02169	C508	1315-00-825-3966	02169	C508	1315-00-825-3966	02169
C443	1315-00-825-6286	02169	C452	1315-00-028-4838	02169	C508	1315-00-889-3096	02169	C508	1315-00-889-3096	02169
C443	1315-00-892-4093	02169	C452	1315-01-031-0713	02169	C510	1315-00-989-1167	02169	C510	1315-00-989-1167	02169
C443	1315-00-825-3295	02128	C453	1315-00-306-0860	02128	C511	1315-01-182-9423	02128	C511	1315-01-182-9423	02128
C444	1315-00-028-4832	01613	C453	1315-00-028-4847	01613	C511	1315-01-107-2513	01613	C511	1315-01-107-2513	01613
C444	1315-00-028-4841	01619	C453	1315-00-028-4846	01624	C511	1315-01-114-9491	01624	C511	1315-01-114-9491	01624
C444	1315-00-895-0777	02225	C453	1315-00-028-4848	01624	C511	1315-01-161-3663	01624	C511	1315-01-161-3663	01624
C444	1315-00-028-4852	02224	C454	1315-00-028-4838	01620	C511	1315-01-080-0186	01620	C511	1315-01-080-0186	01620
C444	1315-00-865-0548	02224	C454	1315-00-315-0268	01620	C511	1315-00-966-0713	01620	C511	1315-00-966-0713	01620
C444	1315-00-146-5884	02214	C454	1315-00-028-4831	01620	C512	1315-00-901-4921	01620	C512	1315-00-901-4921	01620
C444	1315-00-028-4844	01743	C454	1315-00-145-7536	01620	C512	1315-00-143-7121	01620	C512	1315-00-143-7121	01620
C444	1315-00-028-4844	01622	C454	1315-00-028-4811	01498	C513	1315-00-143-7768	01498	C513	1315-00-143-7768	01498
C444	1315-00-028-4801	01489	C454	1315-00-143-7818	01725	C513	1315-00-835-9178	01725	C513	1315-00-835-9178	01725
C444	1315-00-028-4843	01521	C454	1315-00-438-6122	01662	C513	1315-00-935-1860	01662	C513	1315-00-935-1860	01662
C444	1315-00-865-0672	02216	C454	1315-00-170-5398	01891	C513	1315-00-935-1977	01891	C513	1315-00-935-1977	01891
C444	1315-00-865-0677	02234	C454	1315-00-113-3741	02141	C513	1315-00-078-4452	02141	C513	1315-00-078-4452	02141
C444	1315-00-965-0977	02030	C454	1315-00-892-4896	02136	C514	1315-00-938-6128	02136	C514	1315-00-938-6128	02136
C445	1315-00-314-8888	01167	C454	1315-00-438-9121	01769	C518	1315-00-728-0704	01769	C518	1315-00-728-0704	01769
C445	1315-00-314-8888	01168	C454	1315-00-892-4896	01769	C518	1315-01-083-8632	01769	C518	1315-01-083-8632	01769
C445	1315-00-215-9884	01765	C454	1315-00-113-9149	01699	C518	1315-00-143-6830	01699	C518	1315-00-143-6830	01699
C445	1315-01-021-7094	02240	C454	1315-00-301-1782	01496	C519	1315-00-825-6154	01496	C519	1315-00-825-6154	01496
C445	1315-00-321-4539	02146	C454	1315-00-028-4793	01823	C519	1315-01-041-2320	01823	C519	1315-01-041-2320	01823
C445	1315-00-321-4539	02146	C454	1315-00-324-2311	01823	C520	1315-01-032-8127	01823	C520	1315-01-032-8127	01823
C445	1315-00-028-4851	01532	C454	1315-00-881-3333	01850	C521	1315-01-030-6638	01850	C521	1315-01-030-6638	01850
C445	1315-00-028-4859	01532	C454	1315-00-028-5045	01850	C521	1315-01-228-7419	01850	C521	1315-01-228-7419	01850
C445	1315-00-145-7554	01529	C454	1315-00-048-5045	01850	C522	1315-01-082-9658	01850	C522	1315-01-082-9658	01850
C445	1315-00-028-4857	01741	C454	1315-00-787-2182	02041	C522	1315-01-227-0006	02041	C522	1315-01-227-0006	02041
C445	1315-00-028-4860	01521	C454	1315-00-481-3333	02123	C524	1315-01-138-9631	02123	C524	1315-01-138-9631	02123
C445	1315-00-028-4860	01521	C454	1315-00-881-3333	02123	C524	1315-01-248-4019	02123	C524	1315-01-248-4019	02123
C445	1315-00-148-8853	01742	C454	1315-00-875-2028	02140	C524	1315-00-825-1528	02140	C524	1315-00-825-1528	02140
C445	1315-00-028-4830	01511	C454	1315-00-925-3988	02155	C524	1315-00-141-0232	02155	C524	1315-00-141-0232	02155
C445	1315-00-508-1051	01807	C454	1315-00-143-7138	02133	C524	1315-00-343-3612	02133	C524	1315-00-343-3612	02133
C445	1315-00-188-0073	01762	C454	1315-00-825-6327	02169	C524	1315-00-965-0664	02169	C524	1315-00-965-0664	02169
C445	1315-00-028-4850	01521	C454	1315-01-189-7764	02427	C524	1315-00-825-5019	02427	C524	1315-00-825-5019	02427
C445	1315-00-028-4850	01521	C454	1315-00-328-4284	01763	C524	1315-00-925-1919	01763	C524	1315-00-925-1919	01763
C445	1315-00-344-2312	01841	C454	1315-00-188-4440	01763	C524	1315-00-173-2353	01763	C524	1315-00-173-2353	01763
C445	1315-00-188-0076	01500	C454	1315-00-328-4283	01762	C524	1315-00-328-3971	01762	C524	1315-00-328-3971	01762
C445	1315-00-282-3031	01501	C454	1315-00-328-4843	01852	C524	1315-00-328-3971	01852	C524	1315-00-328-3971	01852
C445	1315-00-028-4806	01688	C454	1315-00-378-9843	01432	C524	1315-00-585-3512	01432	C524	1315-00-585-3512	01432
C445	1315-00-028-4806	01688	C454	1315-00-001-7888	01506	C524	1315-00-484-2054	01506	C524	1315-00-484-2054	01506
C445	1315-00-113-6218	01515	C454	1315-00-028-4816	01506	C524	1315-00-925-1528	01506	C524	1315-00-925-1528	01506
C445	1315-00-028-4835	01507	C454	1315-00-028-4820	02031	C524	1315-00-825-1528	02031	C524	1315-00-825-1528	02031
C445	1315-00-028-4823	02031	C454	1315-00-165-3201	01751	C524	1315-00-925-1528	01751	C524	1315-00-925-1528	01751
C445	1315-00-782-5531	02165	C454	1315-00-028-4815	01858	C524	1315-00-925-1528	01858	C524	1315-00-925-1528	01858
C445	1315-00-825-9259	01608	C454	1315-00-782-6374	01969	C524	1315-00-925-1528	01969	C524	1315-00-925-1528	01969
C445	1315-00-028-4827	01831	C454	1315-01-030-6637	02255	C524	1315-00-925-1528	02255	C524	1315-00-925-1528	02255
C445	1315-00-324-1414	01514	C454	1315-01-023-7802	01988	C524	1315-01-311-8411	01988	C524	1315-01-311-8411	01988
C445	1315-00-306-0842	01514	C454	1315-00-782-6858	01988	C524	1315-00-028-5034	01988	C524	1315-00-028-5034	01988
C445	1315-00-028-4836	01516	C454	1315-00-143-6801	01723	C524	1315-00-007-4682	01723	C524	1315-00-007-4682	01723

Figure 1-5. Extract from the DOD Consolidated Ammunition Catalog, Part IV, Page 4-(4), Index.

INDEX NO.	NSN	DODIC MALC/LARC	CAGE	DRAWING/REFERENCE NO.	CAGE	DRAWING/REFERENCE NO.
01519	1315-00-028-4841	C444	99989 F3000	1315-C444 1315-600-0025	19203 F0632	75-1-185 459-42
	<p>CARTRIDGE, 105 MILLIMETER; BRASS CARTRIDGE CASE; HIGH EXPLOSIVE CARTRIDGE; CARTRIDGE MODEL NO. M1; PT DETONATING FUZE; FUZE MODEL NO. M51A5; 0.05 SEC NOM DELAY; COMP B FILLER; DUAL GRANULATION; SUPP CHARGE INCL; DSGN FOR HOWITZER, CANNON M2A1, DSGN FOR HOWITZER, CANNON M2A2; 1 PKG QTY, 2 PKG QTY; UNIT PKG FIBER CO, UNIT PKG WOOD BOX; PKG MODEL NO. M105A2; DOD AMMO CODE 1315-C444; RN DIFFERENCE AS DIFFERENTIATED BY CARTRIDGE CASE MATERIAL; FUZE TYPE; FUZE MODEL; FUZE DELAY; PROJECTILE FILLER; UNIT PACKAGE QUANTITY; UNIT PACKAGE TYPE; PACKAGE MODEL NUMBER; 37.2 IN. PACKAGE OVERALL LENGTH SHIPPING CONTAINER, 48.6 IN. PACKAGE OVERALL LENGTH ARMY PALLET; 12.12 IN. PACKAGE OVERALL WIDTH SHIPPING CONTAINER, 36.78 IN. PACKAGE OVERALL WIDTH ARMY PALLET; 7.35 IN. PACKAGE OVERALL HEIGHT SHIPPING CONTAINER, 36.5 IN. PACKAGE OVERALL HEIGHT ARMY PALLET; SHIPPING CONTAINER 120 LB GROSS WEIGHT AND PALLET 1781 LB GROSS WEIGHT; PACKAGE REFERENCE NUMBER 1328/100 AND 85/35 AND 1320/3 AND X7548072; 7.45 LB NET EXPLOSIVE WEIGHT TRANS AND 4.7 LB NET EXPLOSIVE WEIGHT STORAGE AND 5.3876 LB NET EXPLOSIVE WEIGHT SHIPBOARD; QUANTITY PER SHIPPING CONTAINER 2; SHIPPING CONTAINER QUANTITY PER PALLET 16; UN ORGANIZATION SERIAL NUMBER 0321; INHABITED BLDG DIST 12 HAZARDOUS MATERIAL CLASSIFICATION CODE AND DOD HAZ CL DIV 1.2 HAZARDOUS MATERIAL CLASSIFICATION CODE AND STORAGE COMPATIBILITY GP E HAZARDOUS MATERIAL CLASSIFICATION CODE AND FIREFIGHTING GP 1 HAZARDOUS MATERIAL CLASSIFICATION CODE AND DEPT OF TRANS CL I HAZARDOUS MATERIAL CLASSIFICATION CODE AND COAST GUARD CL IV HAZARDOUS MATERIAL CLASSIFICATION CODE; DOT LABEL CODE I; DOT MARKING CODE AB</p>					
01520	1315-00-028-4842	C444	99989	1315-C444	19203	75-1-185
	<p>CARTRIDGE, 105 MILLIMETER; BRASS CARTRIDGE CASE; HIGH EXPLOSIVE CARTRIDGE; CARTRIDGE MODEL NO. M1; PT DETONATING FUZE; FUZE MODEL NO. M51A5; 0.05 SEC NOM DELAY; COMP B FILLER; DUAL GRANULATION; SUPP CHARGE INCL; DSGN FOR HOWITZER, CANNON M2A1, DSGN FOR HOWITZER, CANNON M2A2; 1 PKG QTY, 1 PKG QTY; UNIT PKG FIBER CO, UNIT PKG METAL CO; PKG MODEL NO. M105A2; PKG MODEL NO. M162A2; DOD AMMO CODE 1315-C444; RN DIFFERENCE AS DIFFERENTIATED BY CARTRIDGE CASE MATERIAL; FUZE TYPE; FUZE MODEL NUMBER; FUZE DELAY TIME; PROJECTILE FILLER TYPE; UNIT PACKAGE QUANTITY; UNIT PACKAGE TYPE; PACKAGE MODEL NUMBER; 37.5 IN. PACKAGE OVERALL LENGTH SHIPPING CONTAINER, 47 IN. PACKAGE OVERALL LENGTH ARMY PALLET; 6.12 IN. PACKAGE OVERALL WIDTH SHIPPING CONTAINER, 38.82 IN. PACKAGE OVERALL WIDTH ARMY PALLET; SHIPPING CONTAINER 71 LB GROSS WEIGHT AND PALLET 2147 LB GROSS WEIGHT; PACKAGE REFERENCE NUMBER X78 1 674; 7.48 LB NET EXPLOSIVE WEIGHT TRANS AND 4.7 LB NET EXPLOSIVE WEIGHT STORAGE AND 5.3876 LB NET EXPLOSIVE WEIGHT SHIPBOARD; QUANTITY PER SHIPPING CONTAINER 1; SHIPPING CONTAINER QUANTITY PER PALLET 28; UN ORGANIZATION SERIAL NUMBER 0321; INHABITED BLDG DIST 12 HAZARDOUS MATERIAL CLASSIFICATION CODE AND DOD HAZ CL DIV 1.2 HAZARDOUS MATERIAL CLASSIFICATION CODE AND STORAGE COMPATIBILITY GP E HAZARDOUS MATERIAL CLASSIFICATION CODE AND DEPT OF TRANS CL I HAZARDOUS MATERIAL CLASSIFICATION CODE AND FIREFIGHTING GP 1 HAZARDOUS MATERIAL CLASSIFICATION CODE AND COAST GUARD CL IV HAZARDOUS MATERIAL CLASSIFICATION CODE; DOT LABEL CODE I; DOT MARKING CODE AB</p>					
01521	1315-00-028-4843	C444	81349 19203	MILS20532 75-1-185	99989	1315-C444
	<p>CARTRIDGE, 105 MILLIMETER; STEEL CARTRIDGE CASE; HIGH EXPLOSIVE CARTRIDGE; CARTRIDGE MODEL NO. M1; PT DETONATING FUZE; FUZE MODEL NO. M51A5; 0.05 SEC NOM DELAY; COMP B FILLER; DUAL GRANULATION; SUPP CHARGE INCL; DSGN FOR HOWITZER, CANNON M2A1, DSGN FOR HOWITZER, CANNON M2A2; 1 PKG QTY, 2 PKG QTY; UNIT PKG FIBER CO, UNIT PKG WOOD BOX; PKG MODEL NO. M105A2; DOD AMMO CODE 1315-C444; RN DIFFERENCE AS DIFFERENTIATED BY CARTRIDGE CASE MADE OF ONE PIECE DRAWN CONSTRUCTION; FUZE TYPE; FUZE MODEL NUMBER; FUZE DELAY; PROPELLANT CHARACTER; UNIT PACKAGE TYPE; UNIT PACKAGE QUANTITY; UNIT PACKAGE MODEL NUMBER; UN ORGANIZATION SERIAL NUMBER 0321; DOD HAZ CL DIV 1.2 HAZARDOUS MATERIAL CLASSIFICATION CODE AND DEPT OF TRANS CL I HAZARDOUS MATERIAL CLASSIFICATION CODE AND INHABITED BLDG DIST (12) HAZARDOUS MATERIAL CLASSIFICATION CODE AND STORAGE COMPATIBILITY GP E HAZARDOUS MATERIAL CLASSIFICATION CODE; DOT LABEL CODE I; DOT MARKING CODE AB</p>					

Figure 1-6. DOD Consolidated Ammunition Catalog Showing Nomenclature by Index Number.

GROUPS	A	B	C	D	E	F	G	H	J	K	L	S
A	X	Z										Z
B	Z	X										X
C			X	Z	Z		Z					X
D			Z	X	X							X
E			Z	X	X							X
F						X						X
G			Z				X					X
H								X				X
J									X			X
K										X	U	
L											U	
S	Z	X	X	X	X	X	X	X	X	X		X

NOTE:

1. THE MARKING "X" AT AN INTERSECTION OF THE ABOVE CHART INDICATES THAT THESE GROUPS MAY BE COMBINED IN STORAGE. OTHERWISE, MIXING IS EITHER PROHIBITED OR RESTRICTED PER NOTE 2 BELOW.
2. THE MARKING "Z" AT AN INTERSECTION OF THE ABOVE CHART INDICATES THAT, WHEN WARRANTED BY OPERATIONAL CONSIDERATIONS OR MAGAZINE NON-AVAILABILITY, AND WHEN SAFETY IS NOT SACRIFICED, THESE GROUPS MAY BE COMBINED IN STORAGE. COMBINATIONS THAT VIOLATE THE PRINCIPLES OF PARAGRAPH 5-18 REQUIRE JUSTIFICATION BY A WAIVER OR EXEMPTION.
3. EQUAL NUMBERS OF SEPARATELY PACKAGED COMPONENTS OF COMPLETE ROUNDS OF ANY SINGLE TYPE OF AMMUNITION MAY BE STORED TOGETHER. WHEN SO STORED, COMPATIBILITY IS THAT OF THE ASSEMBLED ROUND; I.E., WP FILLER IN GROUP H, HE FILLER IN GROUPS D, E, OR F, AS APPROPRIATE.
4. GROUP K REQUIRES NOT ONLY SEPARATE STORAGE FROM OTHER GROUPS, BUT ALSO REQUIRES THAT MUNITIONS HAVING DIFFERENT TOXIC CHEMICAL AGENT FILLERS BE STORED SEPARATELY FROM EACH OTHER. (SEE PARA 4-9).
5. THE MARKING "U" ON ABOVE CHART INDICATES THAT LEAKING TOXIC CHEMICAL MUNITIONS OF ONE AGENT TYPE, I.E., GB, WITH OR WITHOUT EXPLOSIVE COMPONENTS, MAY BE STORED TOGETHER IN ONE MAGAZINE SPECIFICALLY DESIGNATED FOR STORAGE OF LEAKERS OF THAT AGENT TYPE.
6. AMMUNITION DESIGNATED "PRACTICE" BY NSN AND NOMENCLATURE MAY BE STORED WITH THE FULLY LOADED AMMUNITION IT SIMULATES.
7. FOR STORAGE PURPOSES, FUZES ASSIGNED TO STORAGE PURPOSES, FUZES ASSIGNED TO STORAGE COMPATIBILITY GROUP "D" ARE ALSO COMPATIBLE WITH FUZES AND OTHER ITEMS IN COMPATIBILITY GROUP "B"

Figure 5-2. Storage compatibility mixing chart.

AR 101442-A

Figure 1-7. Extract from TM 9-1300-206, Figure 5-2, Page 5-40, Storage Compatibility Mixing Chart.

INDEX NO.	NSN	PACKAGE REF NO.	ITEM NEW TRANS STORAGE W/F-S/B	QTY PER SHIP CONT	SHIP CONT WT	SHIPPING CONTAINER DIMENSIONS			ITEMS PER PALLET	SC / PI	PLT WT	PALLET DIMENSIONS			
						LENGTH	WIDTH	HEIGHT				LENGTH	WIDTH	HEIGHT	CUBE
01504	1315-00-028-4816	X7611343		2	128.0	44.88	13.00	8.18	2.8	15	1973	48.00	39.00	48.18	47.9
01506	1315-00-028-4816	X7611341		2	146.0	46.26	13.00	8.25	2.9	24	1811	48.25	39.00	38.50	40.2
01506	1315-00-028-4820	X7611343		2	128.0	47.83	12.76	8.18	2.9	30	1973	47.63	38.25	48.18	48.7
01507	1315-00-028-4823	55/36	4.760000	2	120.0	36.76	12.18	7.75	2.0						
	1315-00-028-4823	X7649072	2.000000	2	120.0	36.76	12.18	7.75	2.0						
	1315-00-028-4823		1.187500	2	120.0	36.76	12.18	7.75	2.0						
01508	1315-00-028-4827	X7649072		2	120.0										
01509	1315-00-028-4828	X7649072		2	120.0	37.20	12.12	7.35	1.9	48	2881	48.50	36.25	52.00	52.9
01510	1315-00-028-4829	X7649072		2	120.0	36.76	12.12	7.75	2.0	40	2472	48.50	36.75	44.25	45.6
01511	1315-00-028-4830	X7649072	5.08	2	120.0	36.76	12.18	7.75	2.0	48	2681	48.50	36.25	52.00	52.9
	1315-00-028-4830			2	120.0	36.76	12.18	7.75	2.0						
01512	1315-00-028-4831	55/36	6.910000	2	37.8	37.81	11.44	6.88	1.7	42	2580	48.18	16.35	43.31	19.7
	1315-00-028-4831	X7649072	3.850000	2	37.8	37.81	11.44	6.88	1.7						
	1315-00-028-4831		4.847500	2	37.8	37.81	11.44	6.88	1.7						
01513	1315-00-028-4832	55/36	7.460000	2	119.0	37.20	12.12	7.35	1.8	32	1761	48.50	36.25	36.50	37.1
	1315-00-028-4832	X7649072	4.700000	2	119.0	37.20	12.12	7.35	1.8						
	1315-00-028-4832		5.387500	2	119.0	37.20	12.12	7.35	1.8						
01514	1315-00-028-4834	X7649072		2	120.0	36.76	12.18	7.75	2.0	48	2881	48.50	36.25	52.00	52.9
01515	1315-00-028-4835	X7649072	11.830000	2	120.0	36.76	12.12	7.75	2.0	48	2881	48.50	36.25	52.00	52.9
	1315-00-028-4835		7.220000	2	120.0	36.76	12.12	7.75	2.0						
	1315-00-028-4835		6.686000	2	120.0	36.76	12.12	7.75	2.0						
01516	1315-00-028-4836	X7649072		2	120.0							22			
01517	1315-00-028-4839	55/36	10.440000	2	120.0	36.76	12.18	7.75	2.0						
	1315-00-028-4839	X7649072	7.690000	2	120.0	36.76	12.18	7.75	2.0						
	1315-00-028-4839		8.377500	2	120.0	36.76	12.18	7.75	2.0						
01518	1315-00-028-4840	55/36	10.440000	2	120.0	36.76	12.18	7.75	2.0						
	1315-00-028-4840	X7649072	7.690000	2	120.0	36.76	12.18	7.75	2.0						
	1315-00-028-4840		8.377500	2	120.0	36.76	12.18	7.75	2.0						
01519	1315-00-028-4841	1325/100	7.460000	2	120.0	37.20	12.12	7.35	1.9	32	16	48.50	36.75	36.50	37.6
	1315-00-028-4841	55/36	4.700000	2	120.0	37.20	12.12	7.35	1.9						
	1315-00-028-4841	1320/3	5.387500	2	120.0	37.20	12.12	7.35	1.9						
	1315-00-028-4841	X7649072		2	120.0	37.20	12.12	7.35	1.9						
01520	1315-00-028-4342	X7616074	7.460000	1	71.0	37.50	6.12	6.12	.8	28	2147	47.00	38.62	34.50	36.2
	1315-00-028-4842		4.700000	1	71.0	37.50	6.12	6.12	.8						

Figure 1-8. Extract from the DOD Consolidated Ammunition Catalog, Part VII, Page 7-(4), Packaging.

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AMMUNITION AND RELATED COMPONENTS														
QTY UNITS	ITEM	STORAGE							SPECIAL					
		STANDARD	W/RE-MOVING	RECT-ANGULAR	CORBETTA	EUROPEAN BLANKET	SWP	COMEX	UNITZERS	CONN OUTR	BALDRN			
	AMMUNITION (THRU FSC 320)													
1	155MM COVERHEAD SWP 1/2 METAL CONTAINER	4160 1-3-4- 14-22 PE 1003	4160 1-3-4- 14-22 PE 1003			4160 1-3-4- 14-22 PE 1003	4160 1-3-4- 14-22 PE 1003	4160 1-3-4- 14-22 PE 1003				4139 30PA 1003		
2	155MM COVERHEAD WARHEADS, 3 PER METAL CNTR, 8 CNTRS/PALLET											4176 30PA 1004		
3	BOXED AMMUNITION AND COMPONENTS (NOT PALLETIZED)	4005 1-2-3- 4-14-22 A 1000	4005 1-2-3- 4-14-22 A 1000	4005 1-2-3- 4-14-22 A 1000		4005 1-2-3- 4-14-22 A 1000	4005 1-2-3- 4-14-22 A 1000							
4	SEPARATE LOADING PROJECTILES, PALLETIZED, WITH G9 OR VX FILLER	4041 C81-14- 23PE 1	4041 C81-14- 23PE 1											
5	BOXED AMMUNITION AND COMPONENTS IN PALLETIZED UNITS (STRAPPED)	4118 1-2-3- 4-14-22 PA 1002	4118 1-2-3- 4-14-22 PA 1002	4118 1-2-3- 4-14-22 PA 1002		4118 1-2-3- 4-14-22 PA 1002	4118 1-2-3- 4-14-22 PA 1002	4118 1-2-3- 4-14-22 PA 1002				4116 30PA 1002	4153 13PA 1002	4166 13PA 1003
6	BOXED AMMUNITION AND COMPONENTS IN SKIDDED UNITS (STRAPPED)	4125 1-2-3- 4-14- 22PA 1003	4125 1-2-3- 4-14- 22PA 1003	4125 1-2-3- 4-14- 22PA 1003		4125 1-2-3- 4-14- 22PA 1003	4125 1-2-3- 4-14- 22PA 1003	4125 1-2-3- 4-14- 22PA 1003				4138 30PA 1000	4153 13PA 1002	4166 13PA 1003
7	PROPELLING CHARGES PACKED IN CYLINDRICAL METAL CONTAINERS	SEE PAGE 3-9	SEE PAGE 3-9	SEE PAGE 3-9		SEE PAGE 3-9	SEE PAGE 3-9	SEE PAGE 3-9				4023A 30PA 1001 (BASIC)	4151 13PA 1002	4156 13PA 1001
8	COMPLETE ROUNDS PACKED IN CYLINDRICAL METAL CONTAINERS	4143 1-2-3- 4-14- 22PA 1003	4143 1-2-3- 4-14- 22PA 1003	4143 1-2-3- 4-14- 22PA 1003		4143 1-2-3- 4-14- 22PA 1003	4143 1-2-3- 4-14- 22PA 1003	4143 1-2-3- 4-14- 22PA 1003				4023A 30PA 1002		
9	PALLETIZED MEDIUM CALIBER PROJECTILES (75MM THRU 155MM)													
10	WP AND PWP LOADED AMMUNITION PACKED IN WOODEN BOXES (PALLETIZED)	4118 1-2-3- 4-14- 22PA 1002	4118 1-2-3- 4-14- 22PA 1002	4118 1-2-3- 4-14- 22PA 1002		4118 1-2-3- 4-14- 22PA 1002	4118 1-2-3- 4-14- 22PA 1002	4118 1-2-3- 4-14- 22PA 1002				4023A 30PA 1004	4153 13PA 1002	4166 13PA 1003

*A SEPARATE LISTING OF ITEMS BY NATIONAL STOCK NUMBER AND THEIR APPLICABLE APPENDIX NUMBER ARE CONTAINED IN THE "INDEX OF APPENDICES", DRAWING 19-48-4114/0-30PA1002 FOR PALLET UNITS OR 19-48-4138/0-30PA1000 FOR SKIDDED UNITS.
 *INCLUDES APPENDICES FOR SPECIFIC ITEMS.

Figure 1-9. Extract from DA Pamphlet 75-5, Page 3-3.

Thus Index 6 is what will apply because those pallets are skidded. Follow the indexed line across the top of the "Ammunition and Related Components" page to find the column, "Storage." The drawing number for igloos is 4125-1-2-3-4-14-22 PA 1003. Its cover has the title, index and the drawing number in the lower right corner under "Drawing and File" (Figure 1-10).

On the reverse of the cover are general notes that apply to all uses of the drawing. Make sure they are read and understood.

Drawings show how the unit (a pallet) is measured (Figure 1-11). The actual dimensions of the items in the shipment are used. Typical floor plans and elevations are also shown, along with an isometric view of the magazine (Figures 1-12 and 1-13). Note that it shows type A stacks, which are stacks that reach across the width of the magazine. Special notes on the same page as the isometric view give guidance having to do with special instructions for specific magazines. They must all be read carefully. Next in the drawing are charts (figures 1-14 and 1-15) that help in computing how many pallets will fit in the magazine. Using the example's pallet dimensions, pallet width is 36.75 inches rounded to 37 inches. The side aisle should be 11 inches or 29 inches. Using Chart 1 (Figure 1-14), which gives aisle width, go down the left column to 37. Using the example, the smaller dimension would apply because the height in Chart 2, "Up to 37" (Figure 1-14), shows a side aisle smaller (5 inches) than the 11 inch minimum in Chart 2. So, the aisle has to be 11 inches.

Chart 3 (Figure 1-14) shows that units up to 40 inches (the example is 36.50 inches high) and 34 to 38 inches (36.75 inches) wide can be stored 8 wide in the first tier (layer).

Chart 4 (Figure 1-14) shows units that can be stored in the second tier using measurements as with charts 1 through 3.

Charts 5, 6 and 7 (Figure 1-15) are used the same way for remaining tiers.

With Chart 8, using 48.5 inch length of the example, go to the column showing 46 to 49 1/2 inches. The magazine can have 17 A stacks in the magazine. See Figure 1-13 and 1-15.

Typical multiple lot storage is also shown. When multiple lots will be stored in one igloo, the final page in the drawing is used (Figure 1-16).

The total space is now allowed for and the specific pattern of storage can be drawn.

USE OF PLANOGRAPH

At this time, pallet dimensions can be used to plot the planned storage on a planograph as required by TM 743-200-1. When planning storage, the largest lot is stored in A stacks in the rear of the magazine. There must also be space for equipment to turn around. The MHE aisle is based on measurements at least 4 foot 7 inches plus the length or width of the pallet, or 40 inches for the fork lift tines, whichever is greater.

A typical planograph is in Figure 1-17. Most planographs are scale drawings of the magazines floor space scaled at 5-foot increments. As mentioned earlier, planographs may vary, but they will always be scaled so contents' space can be calculated.

To use the planograph, compute the total square feet needed for the receipt and measure to find if there is room. For example, the REPSHIP at the beginning of this lesson listed the following:

- NSN 1315-00-028-4841 C444.
- Pallet dimensions: 48.5 inches long, 36.25 inches wide, and 36.50 inches high.
- Quantity: 636 rounds, 318 boxes, 10.6 pallets (rounded to 11).

Using the REPSHIP information, the receipt is plotted on the planograph as shown in Figure 1-18.

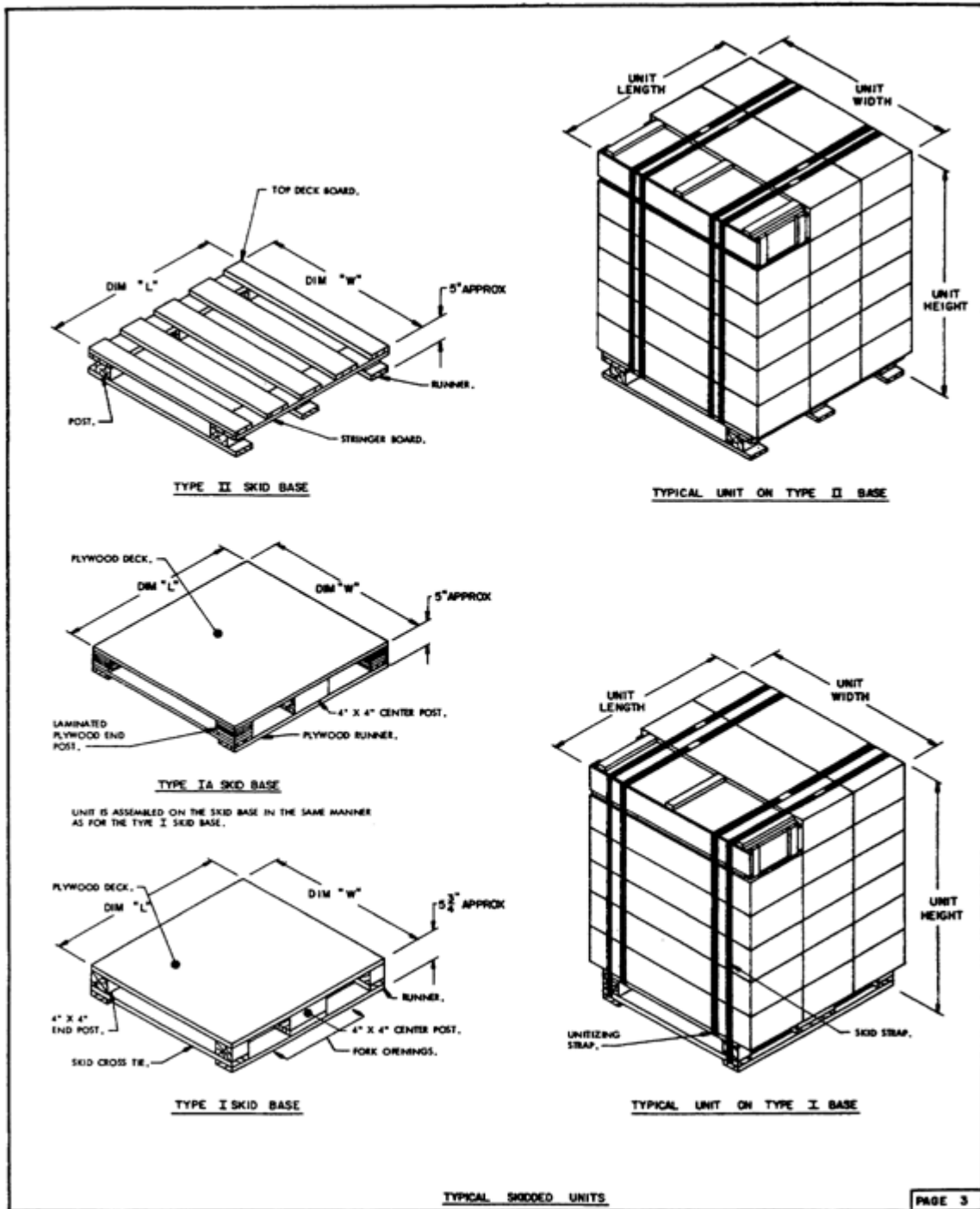


Figure 1-11. Extract from Ammunition Drawing 19-48-4125-1-2-14, Page 3.

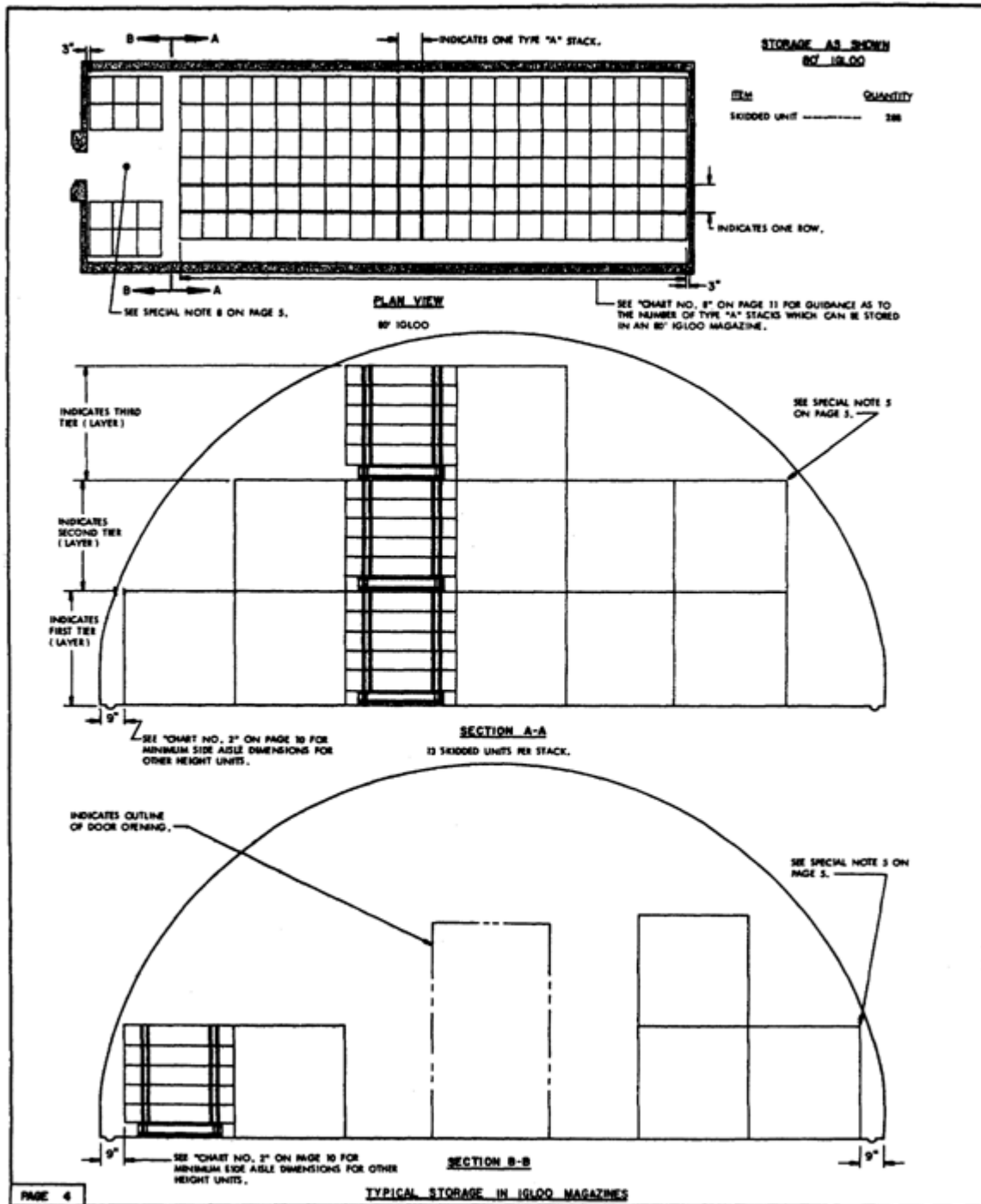


Figure 1-12. Extract from Ammunition Drawing 19-48-4125-1-2-14, Page 4.

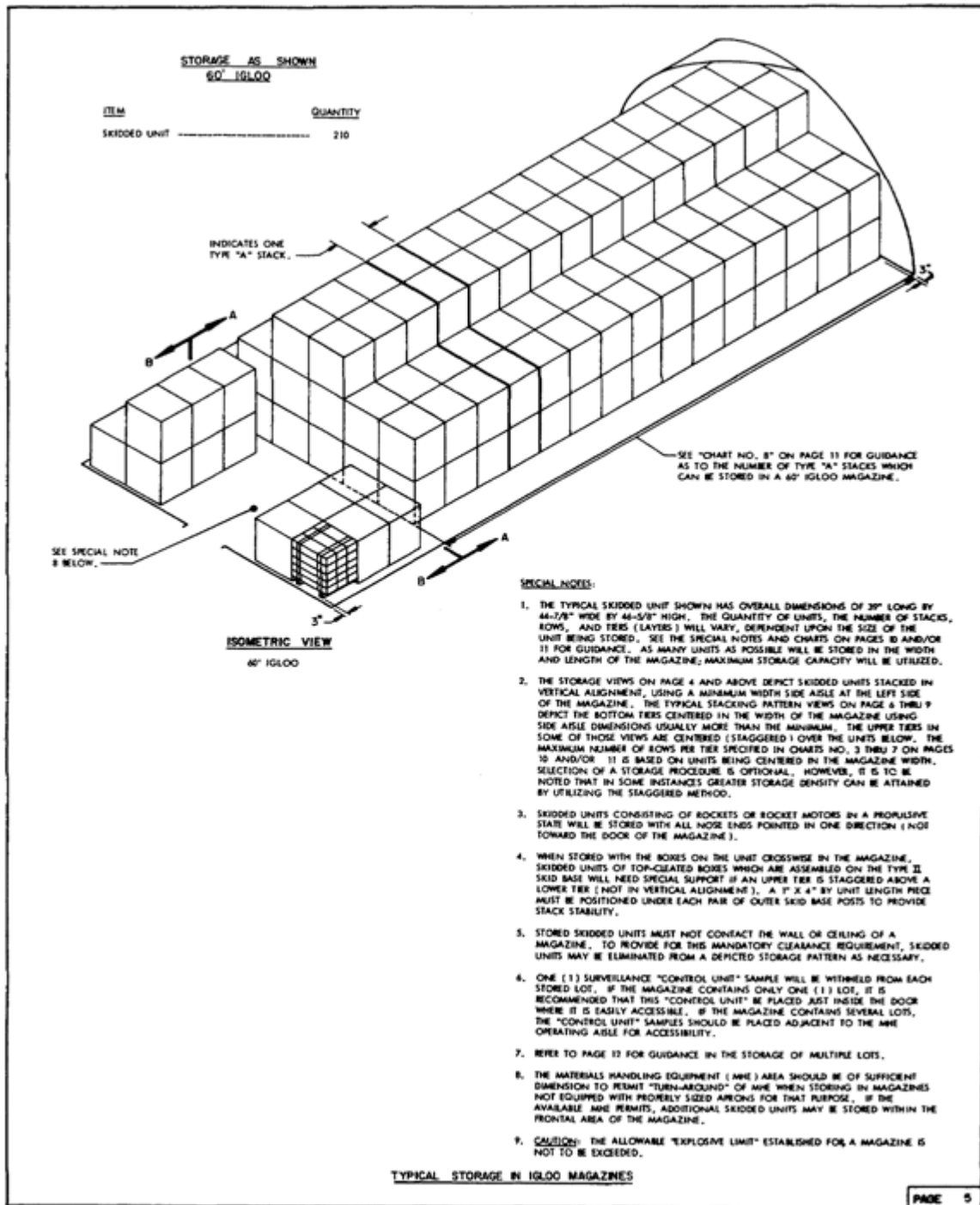


Figure 1-13. Extract from Ammunition Drawing 19-48-4125-1-2-14, Page 5, Showing an Isometric View.

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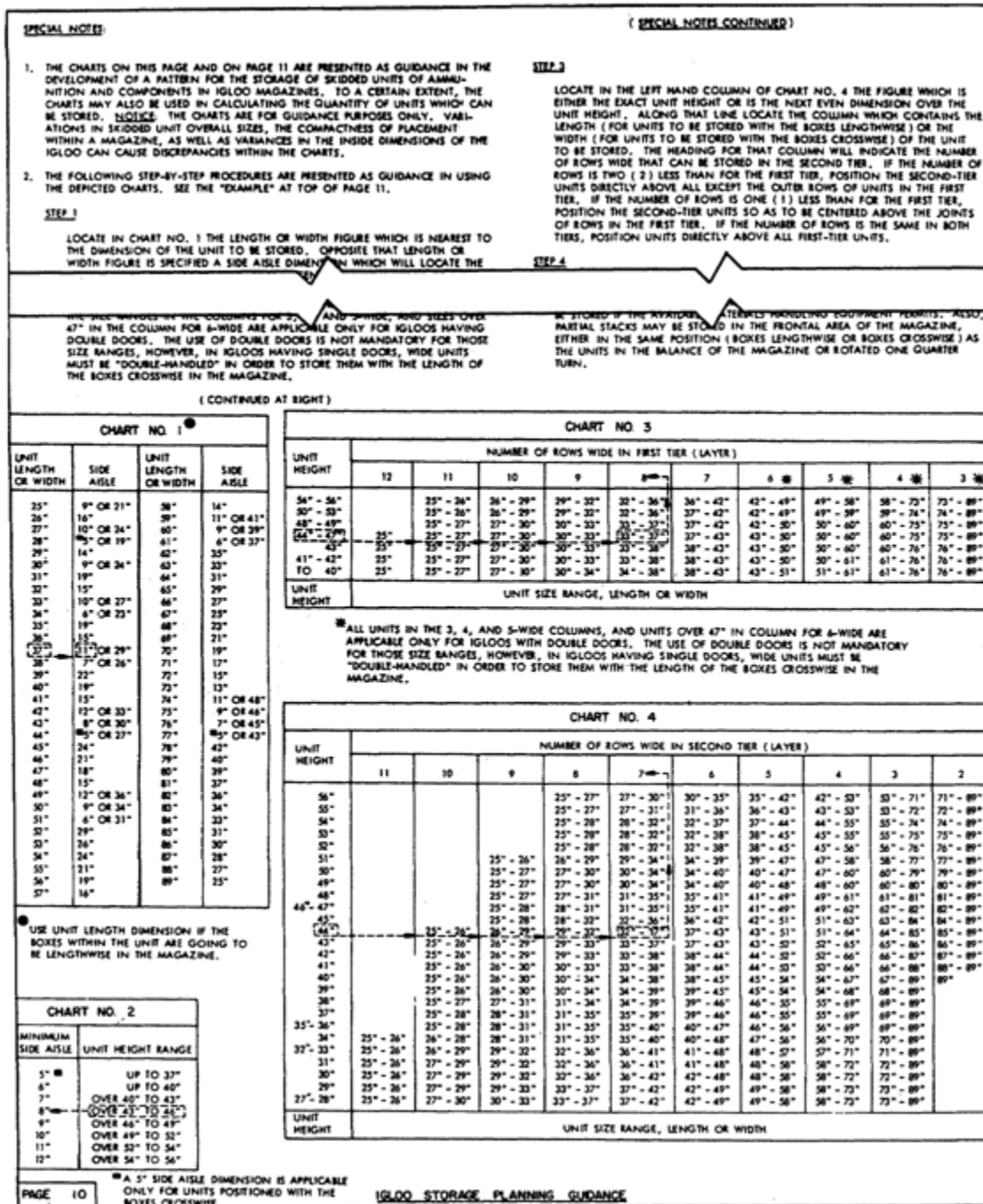


Figure 1-14. Partial Extract from Ammunition Drawing 19-48-4125-1-2-14, Page 10.

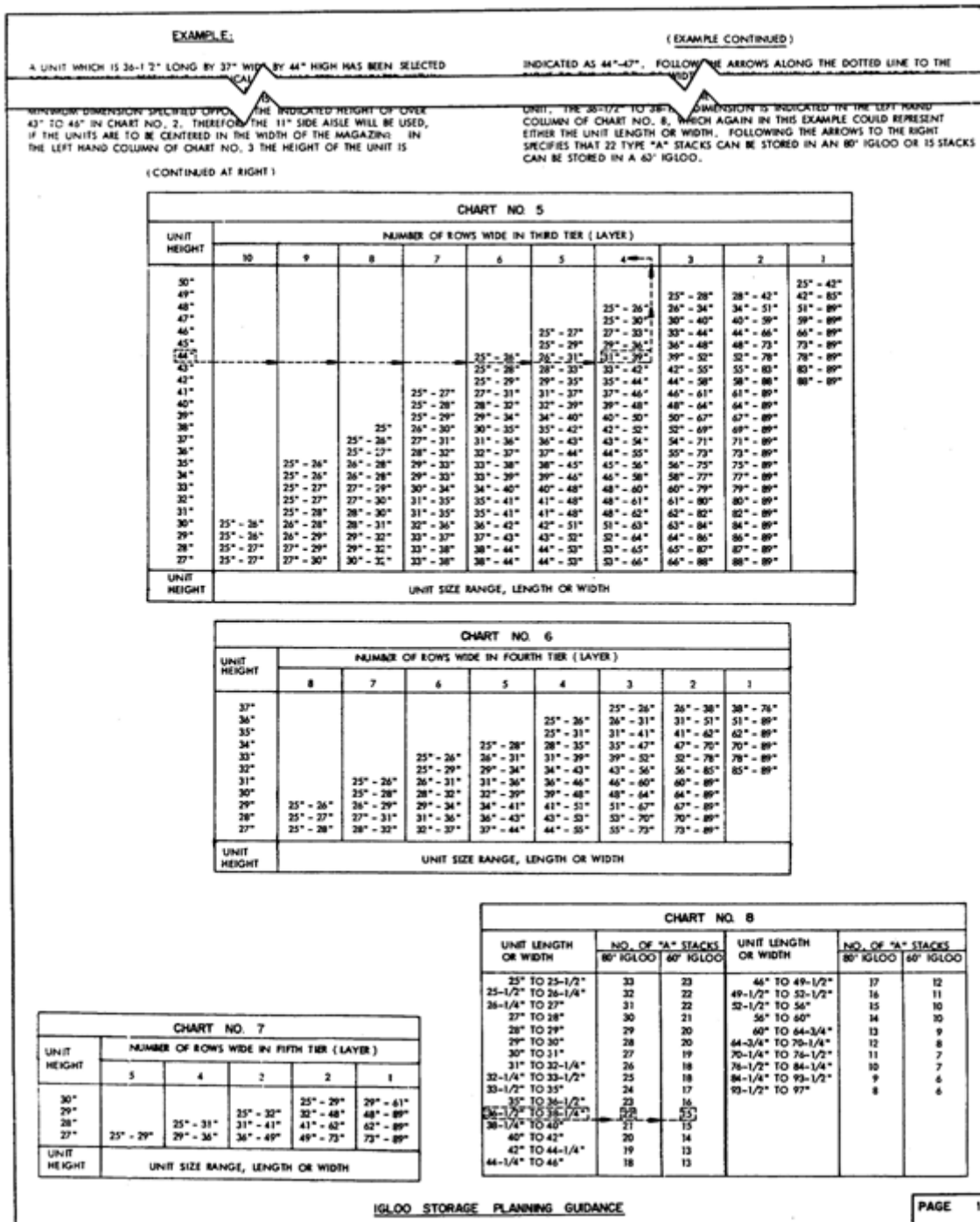


Figure 1-15. Partial Extract from Ammunition Drawing 19-48-4125-1-2-14, Page 11.

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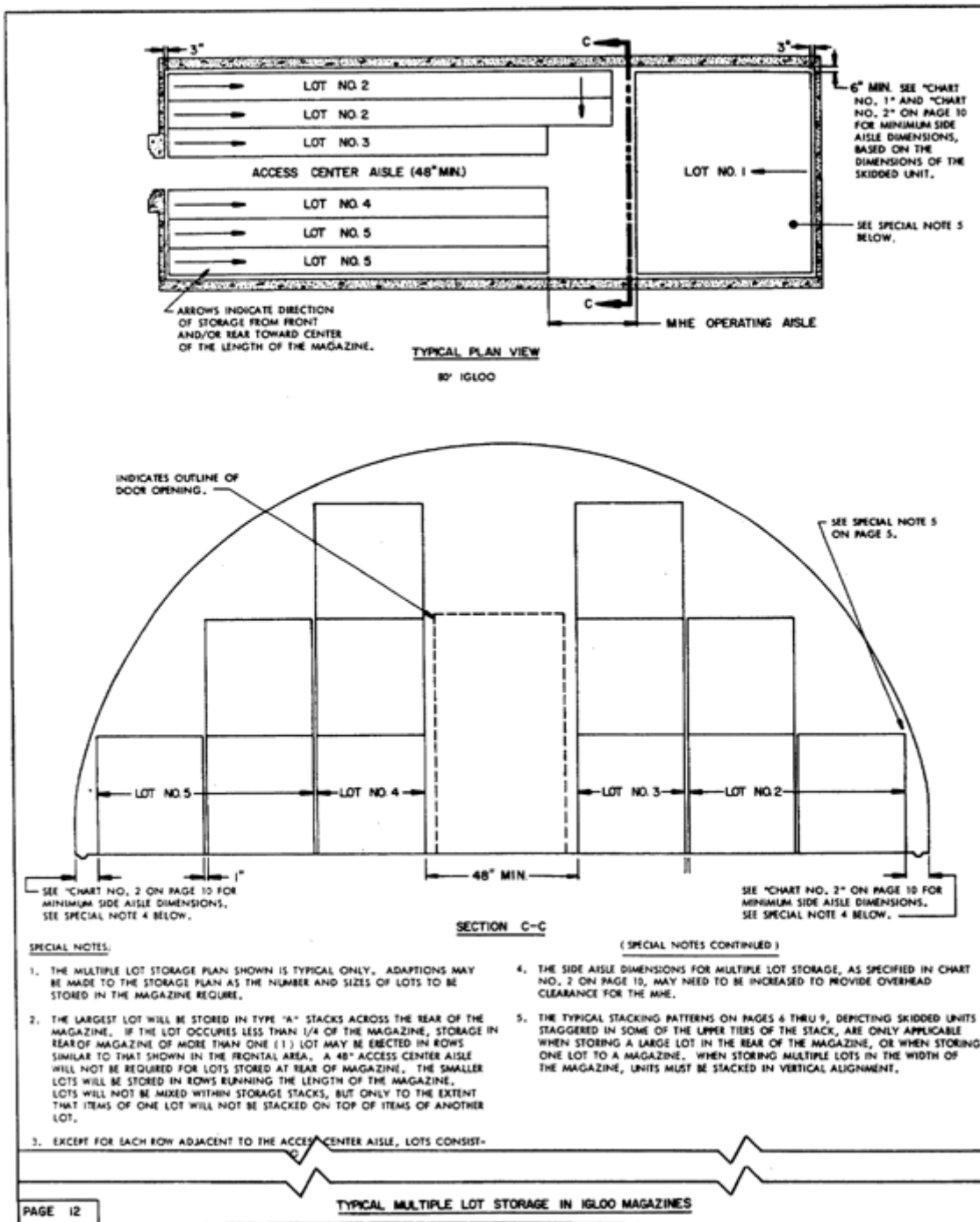


Figure 1-16. Partial Extract from Ammunition Drawing 19-48-4125-1-2-14, Page 12.

TRANSPORTATION CONTROL AND MOVEMENT DOCUMENT										PAGE NO.	
1. Doc Id			3. Consignor			5. Air Date			7. POD		
TEO			Longhorn Army Depot A45E2L								
E. Mode			10. Train Control No.			11. Consignee			14. Proj		
I BX			A31FVU-8010-0006XXX			Anniston Army Depot A31FVU			8034		
18. Carrier			19. Flight-Truck-Voy Doc No.			20. Ref			22. Pieces		
			TRK# 47-H-1332						23. Weight		
25 a. Tranship Point (1)			c. Bay Wise			d. Date Shpd			e. Mode Carrier		
			b. Date Rec						f. Flight-Truck-Voy Doc No.		
26 a. Tranship Point (2)			c. Bay Wise			d. Date Shpd			e. Mode Carrier		
			b. Date Rec						f. Flight-Truck-Voy Doc No.		
27 a. Tranship Point (3)			c. Bay Wise			d. Date Shpd			e. Mode Carrier		
			b. Date Rec						f. Flight-Truck-Voy Doc No.		
28. Consignee			29. Date Received-Offered (Sign)			30. Remarks			31. Remarks		
<i>Mc. Smith</i>			8035								
32. 33. Doc 14			34. Consignor			35. Commodity			36. 39. 40. M D E		
Trailer-Consider			Comm Abbr			Spec Hdg			Type Pack		
636			Other			VOY NO.			37. POD		
						Air Date			38. 39. 40. M D E		
TE6									39. 40. M D E		
TE7									40. M D E		
TE8									41. Consignee		
									42. 43. P R I		
TE9									44. ADDITIONAL REMARKS OR		
									Remarks		
									45. P R I		
									46. P R I		
									47. P R I		
									48. P R I		
									49. P R I		
									50. P R I		
									51. P R I		
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									58. P R I		
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									60. P R I		
									61. P R I		
									62. P R I		
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									64. P R I		
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									66. P R I		
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									68. P R I		
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									83. P R I		
									84. P R I		
									85. P R I		
									86. P R I		
									87. P R I		
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									97. P R I		
									98. P R I		
									99. P R I		
									100. P R I		

Figure 1-17. Blank Planograph for an 80-Foot Igloo Magazine.

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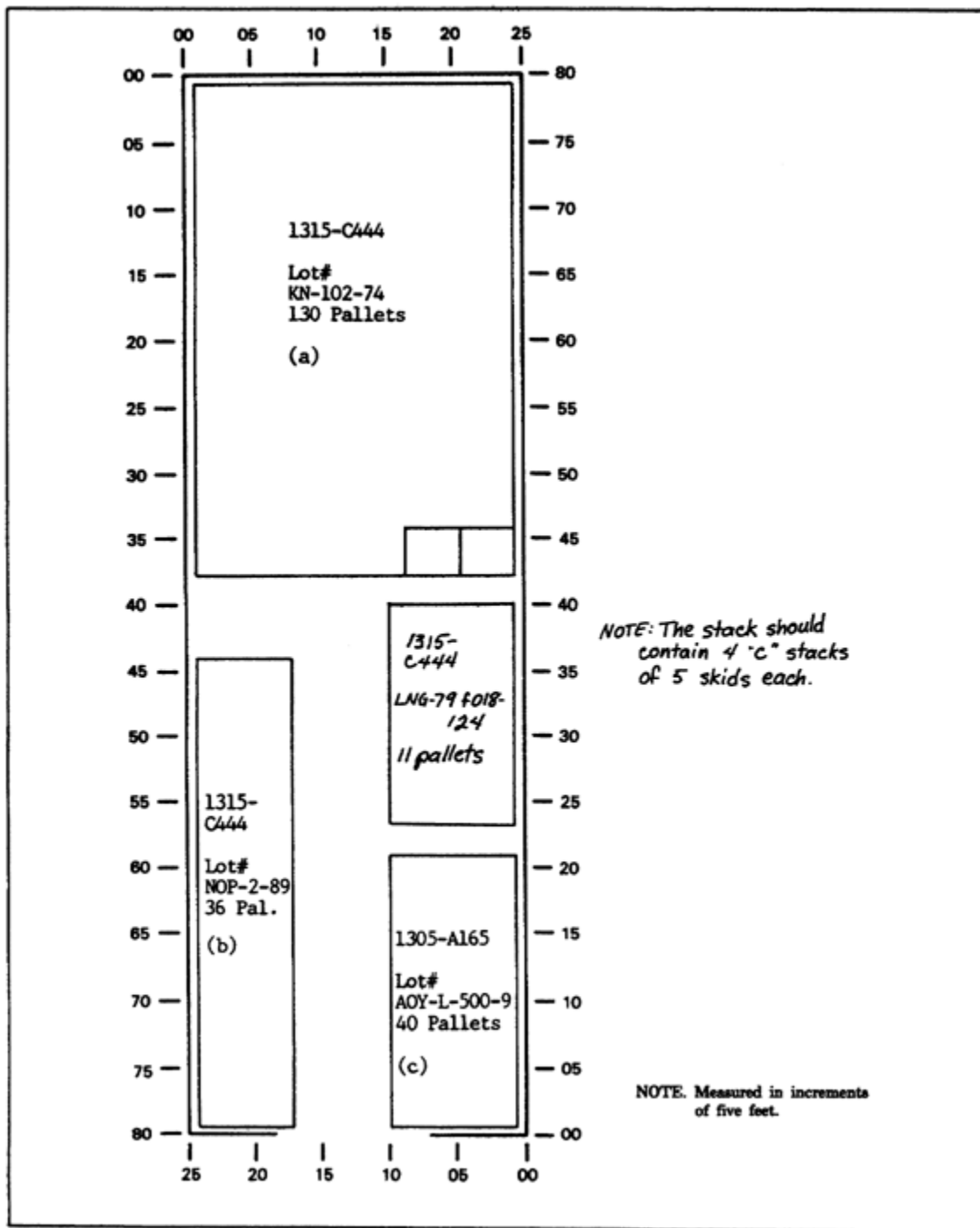


Figure 1-18. Planograph Showing Proper Placement of Ammunition.

DETERMINATION OF PERSONNEL AND EQUIPMENT

Now the munitions and the space needed for them are known. Next, equipment and personnel requirements must be determined.

How many ammunition handlers are necessary is based on factors such as type, quantity, and packing configuration of the ammunition. The ammunition senior NCO uses his or her experience to make this determination. In any event, there must be at least two persons to do the work at any location. There must also be at least one supervisor.

Because very few magazines have approved lighting, explosive operations are restricted to daylight.

If work must be done at night, lighting must be arranged. The unit CO will have to approve use of portable lighting equipment. Whatever lighting is used, it can illuminate the interior of the magazine only by reflection for safety reasons.

Equipment requirements must be coordinated with the appropriate equipment or motor pool. Equipment possibly needed includes transport vehicles, materials handling equipment, forklifts (electric for inside and rough terrain forklift outside), pallet jacks, conveyors, dunnage, blocking, banding equipment and pallets, and safety equipment for personnel. Definitive quantities are up to the judgment of the ammunition senior NCO.

SUBMISSION OF PLAN

When the plan is complete, it must be submitted to the operations and storage officers for their comment and approval. The plan must include planograph(s) and personnel and equipment lists and must conform to local SOP directions.

REVIEW EXERCISES

Circle the letter of the correct answer to each question.

1. What is sent to the receiving ASP for advance notice of shipment?

- a. Report of Shipment (REPSHIP).
- b. DD Form 1384.
- c. DD Form 3151-R.
- d. DD Form 5210-R.

Use Figure 1-6 to answer Question 2.

2. What mark shows that two compatibility groups can be stored together without restrictions?

- a. Z.
- b. U.
- c. X.
- d. No mark.

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3. What is the correct way to determine if the same type of ammunition as the shipment is on hand?
 - a. Ask the storage officer.
 - b. Inspect the magazines.
 - c. Research stock records.
 - d. There is no need to know.
4. How far in advance must the receiving unit be notified a shipment is due to arrive?
 - a. No more than 2 days.
 - b. At least 36 hours.
 - c. No more than 3 days.
 - d. At least 24 hours.
5. What document is used to see if the receipt will fit in a particular magazine-without actually going to that magazine?
 - a. The stock record card.
 - b. The DA Form 3020-R.
 - c. The DA Form 3151-R.
 - d. The planograph.

Recheck your answers to the review exercises. When you are satisfied that you have answered every question to the best of your ability, check your answers against the exercise solutions. If you missed one or more questions, you should retake the entire lesson, paying particular attention to the areas in which your answers were incorrect.

Lesson 2
PLAN SHIPPING OPERATIONS

OBJECTIVES	When you have completed this lesson you will be able to describe how to plan shipping operations. You should be able to describe how to determine ammunition availability and location, transportation requirements, and compatibility. You should also be able to explain how to determine how many personnel and how much equipment is necessary, and where to store items before loading. Finally, you should be able to describe a plan and how to submit it.
CONDITIONS	You will have this subcourse book and work without supervision.
STANDARD	You must score at least 70 on the end-of-subcourse examination that covers this lesson and Lesson 1 (answer 12 of 15 questions correctly).

SHIPMENTS

Shipment is the movement and transfer of ammunition stocks from one ammunition storage activity to another from the point of view of the sender. Transportation assets not organic to the shipping ammunition unit are used. Issues and rewarehousing activities are not considered shipments.

In routine operations, CSAs and depots schedule ammunition shipments directly to ASPs and ammunition transfer points (ATPs). These shipments are made up from operating stocks arriving in the theater or stored in the communications zone (COMMZ). As these stocks build up, the material management center (MMC) directs shipments of selected stocks forward.

Commonly, ammunition shipments are palletized and are consolidated for throughput distribution directly to forward ASPs. Shipment of ammunition between ASPs within the COMMZ is usually in smaller quantities than those from COMMZ storage facilities. These shipments are made on shorter notice, so less time is available for planning, but this subcourse is concerned with depot operations so there will be time enough to plan completely. When planning shipments the following steps must be taken after a material release order (MRO), shipping instructions, or other such document is received:

- The ammunition to ship is available and located.
- The total weight and cubic feet of the ammunition to be shipped are calculated to determine transportation requirements.
- The compatibility of the ammunition is checked.
- How many personnel and materials handling equipment (MHE) are needed to load, block, and brace the ammunition are determined.
- What equipment and tools will be needed in pre-load storage area(s) must be determined.
- The plan must then be prepared and approved.

This lesson discusses each of these steps in greater detail.

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DETERMINATION OF AMMUNITION AVAILABILITY AND LOCATION

Upon receipt of an MRO, shipping instructions, or other shipment authority, the supply activity makes sure the ammunition is available. Stock records are reviewed by the clerks to determine if the quantities on hand are the correct condition code and if there is enough to fill the requirement. A DA Form 3151-R (Ammunition Stores Slip) must be prepared (Figure 2-1). The DA Form 3151-R is sent to the Surveillance Section for verification of condition of ammunition for shipment. Surveillance verifies the condition and/or provides instructions on preparation of the ammunition (Figure 2-2).

AMMUNITION STORES SLIP FOR USE OF THIS FORM, SEE FM 9-35. THE PROPONENT IS UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND		AUTHORITY: 8035-0001		DATE: 8035			
FROM: Operations		NAME OF ACTIVITY					
TO: Surveillance		VEHICLE NO.					
RECEIPT <input type="checkbox"/>	ISSUE <input type="checkbox"/>	OTHER (SPECIFY) <input checked="" type="checkbox"/> Inspect for shipment		DRIVER			
NSN DODIC NOMENCLATURE	LOT NO.	ACC	LOCATION		PLTS BXS	TOTAL ROUNDS	INIT
			FROM	TO			
1315-00-028-4841 C444 Ctg 105 mm HEMI w/FZ PD	LN679F018 124	A			/318	636	
1. Verify Condition Code "A" and Pallet Condition for Shipment.							
REMARKS							
DATE	SIGNATURE OF ISSUING CHECKER Charlie Richardson Operations Chief		DATE	SIGNATURE OF RECEIVING CHECKER			
DA FORM 3151-R 1 APRIL 1976 REPLACES DA FORM 3151, 1 JUL 66 WHICH MAY BE USED UNTIL EXHAUSTED							

Figure 2-1. Ammunition Stores Slip Filled Out To Send to the Surveillance Section.

AMMUNITION STORES SLIP FOR USE OF THIS FORM, SEE FM 3-38, THE PROPONENT IS UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND		AUTHORITY: 8035-0001		DATE: 8035			
FROM: Operations		NAME OF ACTIVITY					
TO: Surveillance		VEHICLE NO.					
RECEIPT <input type="checkbox"/>	ISSUE <input type="checkbox"/>	OTHER (SPECIFY) <input checked="" type="checkbox"/> Inspect for shipment		DRIVER			
NSN DODIC NOMENCLATURE	LOT NO.	ACC	LOCATION		PLTS BXS	TOTAL ROUNDS	INIT
			FROM	TO			
1315-00-028-4841 C444 Ctg 105mm HEMI w/FZ PD	LN679F018 124	A			/318	636	
1. Verify Condition Code "A" and Pallet Condition for Shipment.							
REMARKS							
DATE	SIGNATURE OF ISSUING CHECKER Charlie Richardson Operations Chief		DATE	SIGNATURE OF RECEIVING CHECKER Donald Fredricks Surveillance Chief			
DA FORM 3151-R 1 APRIL 1976 REPLACES DA FORM 3151, 1 JUL 66 WHICH MAY BE USED UNTIL EXHAUSTED							

Figure 2-2. Ammunition Stores Slip Returned from Surveillance Section.

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At the same time, another copy of the DA Form 3151-R is sent to the Storage Section, where any preparation required by the surveillance inspection is made. For example, the figures show that 14 boxes need palletization into light pallets. The instructions say to ensure the pallet is squared off to normal size. The ammunition senior NCO must plan for the lumber, or empty boxes for squaring off, but in most cases will use empty boxes. If empty boxes are used, plans must include orange and contrasting paint on the list of materials. This is because boxes must be painted orange and marked EMPTY in a contrasting color on the top, both ends, and one side. The proper placards must be available, too. MILSTD 129 has more information on placards.

If the ammunition is not palletized and must be, the drawing must be available and ammunition handlers must understand its use. Lesson 1 of this subcourse discusses how to use DA Pam 75-5 to find drawings. Look at Figure 1-9. Note that the column on the far right is for special drawings. For palletization, find the unitizing column. Use the drawing given in this column for palletizing a particular item. Figure 2-3 shows samples of general information for palletization of boxed ammunition. The complete drawing has extensive notes and information in it. Figure 2-4, Appendix 0 of Drawing 4116/20PA1002, is the index of appendixes for the specific drawings. It is organized by item as well as by national item identification number (NIIN) and DODIC. The applicable appendix number is in the right column, which is labeled "*APP NO." or "APP NO." To use an example close to the C444 105mm cartridge, find the DODIC C445. It lists the appendix number as 45A. In the appendix are complete instructions and illustrations for palletizing.

BASIC PROCEDURES

UNITIZATION PROCEDURES FOR BOXED AMMUNITION AND COMPONENTS ON 4-WAY ENTRY PALLETS

<u>ITEM</u>	<u>INDEX</u>	<u>PAGE (S)</u>
GENERAL NOTES, AND MATERIAL SPECIFICATIONS	-----	2,3
TYPICAL UNITIZATION PROCEDURES	-----	4,5

DATED JUNE 1968. HOWEVER, THE PALLET UNIT WITHIN THE TABULAR DATA PORTION OF DRAWING 19-48-4000-1-2-5-11PA1002 WILL CONTINUE TO BE VALID FOR EACH ITEM LISTED WITHIN THAT DRAWING UNTIL SUPERSEDED BY AN APPENDIX TO THIS DOCUMENT FOR THAT ITEM.

REVISIONS		DATE	BY	APP'D	TITLE								
1	OCT 65												
2	JUN 65												
<p style="font-size: small;">APPROVED BY HEAD OF CONSTRUCTION SERVICE, U.S. ARMY MATERIAL DEVELOPMENT AND RESEARCH CENTER</p> <p style="text-align: right; font-weight: bold;">John F. Boyd Sr.</p> <p style="text-align: center;">U. S. ARMY DARCOM DRAWING</p> <p style="text-align: center;">MARCH 1977</p> <table style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr> <td style="width: 25%;">CLASS</td> <td style="width: 25%;">DIVISION</td> <td style="width: 25%;">DRAWING</td> <td style="width: 25%;">FILE</td> </tr> <tr> <td style="text-align: center;">19</td> <td style="text-align: center;">48</td> <td style="text-align: center;">4116</td> <td style="text-align: center;">20PA 1002</td> </tr> </table>						CLASS	DIVISION	DRAWING	FILE	19	48	4116	20PA 1002
CLASS	DIVISION	DRAWING	FILE										
19	48	4116	20PA 1002										

DO NOT SCALE

Figure 2-3. Partial Extract from Basic Procedures, Ammunition Drawing 19-48-4116-20PA 1002.

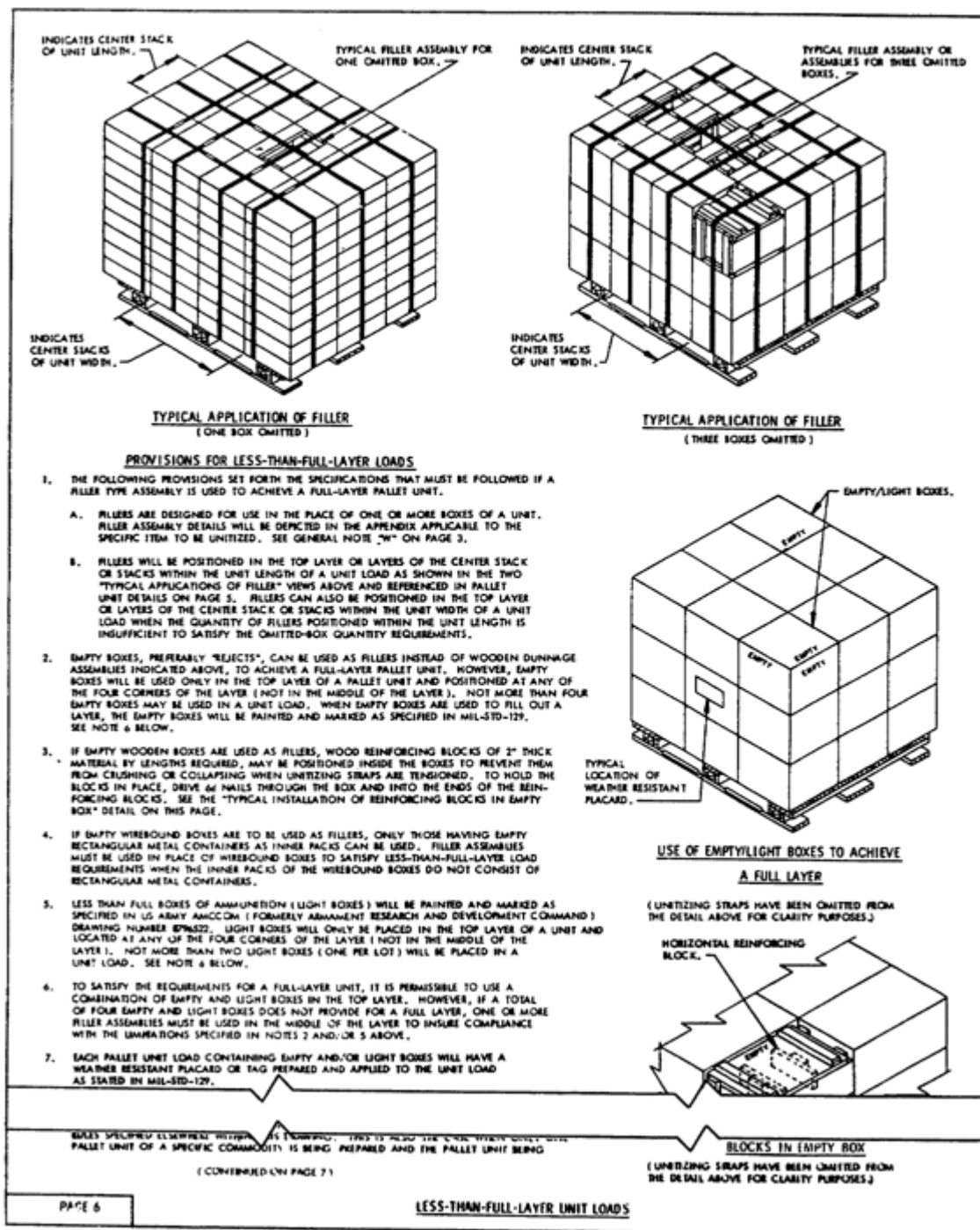


Figure 2-3. Partial Extract from Basic Procedures, Ammunition Drawing 19-48-4116-20PA 1002, Continued.

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- There must be enough MHE for the operation, and it must be the correct type (electric fork lifts for inside work and rough terrain forklifts for outside).
- On-the-spot maintenance support must be available.

Malfunctioning tools and lack of supplies can also slow down or stop an operation. Thus, selecting the proper tools and supplies is another critical area in planning operations. The following areas must be considered well in advance:

- All hand tools must be serviceable, and enough must be available.
- Banding equipment must be serviceable, and extras must be available in case of breakdown. There should be one set of cutters and crimpers available for each band tightener.
- There must be enough steel strapping, clips, staples, and dunnage to complete palletization.
- If a crane is being used for shipping palletized projectiles, slings must be serviceable and available.
- There should be personal protective equipment available, such as face shields for banding operations, work gloves, and safety shoes.

LOCATION OF PRELOAD STORAGE

The final planning to be done is to determine locations for storing the shipment until loading time. To keep the shipment from being spread all over the area and increasing its hazard, preloading storage sites should be as centrally located as compatibility permits. The shipment should be at the front of the storage sites (igloos, pads, etc.) to cut down on loading time. Stocks should be clearly marked as being prohibited from issue. There should be several copies of a master list showing the location of each portion of the shipment. Planographs are ideal for this. They are used as instructed in Lesson 1.

SUBMISSION OF PLAN

Once everything has been planned and actions taken to assure transportation and preload storage areas, the ammunition senior NCO submits the plan to his or her supervisor for approval. Besides planographs, included in the plan are a record of all actions taken, a timetable of events, and a map showing where parts of the operation will happen. The format must follow the local SOP.

REVIEW EXERCISES

Circle the letter of the correct answer to each question.

1. What should be known before proceeding to the transportation office to coordinate transport?
 - a. Weight and cube of the shipment.
 - b. The size of required railcars.
 - c. Results of surveillance inspection.
 - d. Who the dockmaster will be.

2. Who should verify the condition code and the pallet configuration of the ammunition to be shipped?
 - a. Operations officer.
 - b. Surveillance section.
 - c. Stock records clerk.
 - d. Magazine platoon sergeant.
3. What completed forms must be sent to the TMO?
 - a. DD Form 1348-1 and DD Form 1384.
 - b. DA Form 3151-R and DA Form 3020-R.
 - c. DA Form 2064 and DA Form 5210-R.
 - d. DD Form 626 and DD Form 836.
4. Why must there be plans for extra personnel to help with a shipping operation?
 - a. The two-person rule must be used.
 - b. The job usually gets complicated.
 - c. Trainees are used.
 - d. A soldier may get sick.
5. What is a good way to keep track of stock that is preload stored?
 - a. Tell the surveillance and operations sections.
 - b. Make and distribute several copies of a master list.
 - c. Write the locations down in a notebook.
 - d. Post locations on a DA Form 581.

Recheck your answers to the review exercises. When you are satisfied that you have answered every question to the best of your ability, check your answers against the exercise solutions. If you missed one or more questions, you should retake the entire lesson, paying particular attention to the areas in which your answers were incorrect.

MM4620

EXERCISE SOLUTIONS

LESSON 1

1. a (page 6)
 2. c (page 10)
 3. c (page 18)
 4. d (page 1)
 5. d (page 18)
-

LESSON 2

1. a (page 35)
2. b (page 30)
3. a (page 35)
4. d (page 35)
5. b (page 39)