

## CHAPTER 8

**BLOOD MANAGEMENT****Section I. BLOOD PROGRAMS****8-1. The Armed Services Blood Program**

The Armed Services Blood Program (ASBP) provides transfusion products, when required, to members of the US armed forces located anywhere on earth. Through the joint efforts of the US Army, US Navy, and USAF, (tri-Service) blood or blood products can be collected, processed, and shipped to military MTFs throughout the world. Planning for effective management of blood and blood products is a continuing, dynamic process requiring a coordinated highly responsive system that extends from the battlefield to CONUS. The system will ensure that viable blood products are available for transfusion when and where required.

**8-2. Armed Services Blood Program Office**

The Armed Services Blood Program Office (ASBPO) (Figure 8-1) is chartered by DOD to coordinate the provision of blood products throughout the Services to meet medical requirements during national emergencies, or for overseas military operations. It is under the policy guidance of the Assistant Secretary of Defense (Health Affairs).

*b.* The ASBPO is organized to coordinate and monitor the blood programs of the Army, Navy, USAF, and each unified and specified command. The ASBPO coordinates standardized policies and procedures for collection of blood and operation of the Services' blood programs. It provides specifications on the essential characteristics of required blood program equipment to the DMSB. The ASBPO performs as the DOD liaison with other federal, civilian, and allied agencies concerning blood-related matters.

*c.* The individual Service components in support of the ASBPO are responsible for the following:

(1) The Army maintains OPCON of the ASBPO and provides funding, personnel, facilities, and supplies. If military blood requirements exceed capabilities, the Army provides funds for procurement of blood from civilian sources.

(2) The USAF designates the locations of Armed Services Whole Blood Processing Laboratories (ASWBPLs) at CONUS air terminals. The USAF also coordinates the tri-Service staffing and the operational funding of ASWBPLs for the shipment of blood and blood products to locations OCONUS. Additionally, the USAF operates and staffs blood transshipment centers (BTCs), the initial receiving points for blood entering the AO at most major overseas military airfields.

*d.* Upon mobilization or during periods of increased blood needs for military operations, the ASBPO directs the Services to meet required quotas for blood or blood products to be shipped to designated ASWBPLs.

**8-3. Service and Command Blood Programs**

*a.* The US Army, US Navy, USAF, and unified and specified commands maintain separate command blood programs to meet normal peacetime requirements. To meet ASBPO requirements, the Services direct expansion of their blood donor operations (collection, processing, and shipment of blood). When required to meet operational needs, donor centers and designated CONUS MTFs rapidly expand their blood collecting capabilities. As necessary, additional donor centers are opened.

*b.* Each unified command has a separate integrated system for providing blood products to the various Service component MTFs. The unified command Joint Blood Program Office (JBPO) serves as the overall blood manager within each

command. In support of unified command OPLANs, ASBPO sets quotas for shipments of liquid and frozen blood products from CONUS ASWBPLs to the respective commands. Frozen blood products

may be pre-positioned in designated unified commands in sufficient quantity to support blood requirements during the initial days of an armed conflict.

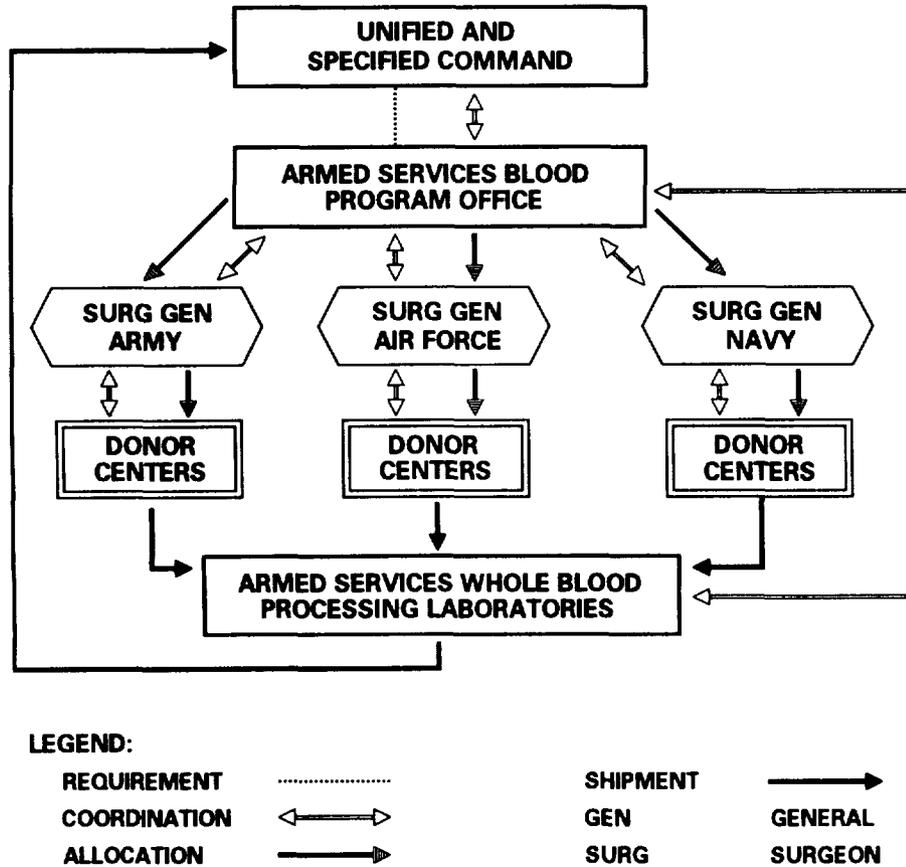


Figure 8-1. The Department of Defense Armed Services Blood Program.

**8-4. Joint Blood Program Office**

a. The JBPO of a unified command is under the staff supervision of the command surgeon. This office is responsible for the joint blood program management in the TO. The organization of the JBPO depends on the overall command mission. Personnel are assigned from all components

as necessary to meet the blood operational requirements. The functions of the JBPO include—

• Enforcing the ASBP policies.

• Coordinating component blood programs, blood product requirements, and capabilities within the TO.

Ž Advising the theater commander on all matters pertaining to theater blood management activities.

Ž Managing the theater wartime blood distribution system.

Ž Providing managerial and technical oversight of all DOD military blood activities within the AOR.

Ž Planning and executing joint blood program exercises.

Ž Developing the concept of operations for the blood program and writing supporting OPLANs using command mobilization planning factors.

Ž Evaluating blood donor centers and BTCs to ensure compliance with policies, standards, and regulations of the ASBPO, JBPO, Food and Drug Administration (FDA), and American Association of Blood Banks (AABB).

Ž Maintaining direct liaison with the ASBPO.

Ž Establishing and coordinating the AJBPOs as necessary.

*b.* The unified command surgeon may direct the establishment of AJBPOs to provide regional blood management in the TO. An AJBPO would likely be established upon activation of a JTF as outlined in the respective OPLAN/OPORD. The functions of an AJBPO are similar to a JBPO, but for a more limited AOR. The AJBPOs will—

Ž Coordinate blood requirements of all MTFs in the AOR regardless of Service component.

Ž Develop supporting plans for military operations.

Ž Provide operating instructions for donor recruitment, collection, processing, and distribution of blood and blood products within the AOR.

Ž Evaluate host-nation capabilities for blood product support of US forces requirements.

Ž Coordinate and request assistance from the JBPO when unable to meet local requirements within existing capabilities.

### **8-5. Army Blood Program (Theater Army)**

*a.* Within the TO, the TA commander is responsible for the Army Blood Program. The TA surgeon is responsible for staff supervision of the program, and the blood bank officer assigned to the TMMMC is responsible for its management.

*b.* The management and distribution of Class VIIIb (blood and blood products) is a function of the JBPO *within the theater*. The JBPO is supported by Service health service logistics personnel to accomplish this mission.

(1) In the mature theater, blood management is based on resupply of liquid red blood cells (RBCs) and fresh frozen plasma (FFP) from the CONUS donor base.

(2) In a developing theater, during the buildup period, immediate blood requirements may be provided by pre-positioned frozen blood products. These stocks are designed to meet initial blood requirements until the logistical system can deliver liquid blood to the TO.

*c.* Liquid and frozen blood products enter the theater through the USAF BTCs for further distribution to Army blood bank platoons assigned to the medical battalion, logistics (forward or rear). Army MTFs are supplied required blood products

from the blood bank platoons. However, MASH units operating in divisional areas and the Echelon II MTFs are supplied by the forward supply

platoon (FSP) of the medical battalion, logistics (forward). Liquid blood products are issued as required down to Echelon II medical units.

## Section II. BLOOD SUPPORT IN THE CONTINUUM OF CARE

### 8-6. The Army Blood Support System

Blood and blood product support to the TO is provided by echelon as follows:

*a. Echelon I.* No blood or blood product support is provided at this echelon.

*b. Echelon II.* Blood storage and transportation refrigerators are used by the FSP to provide Group O RBCs to Echelon II medical units. The FSP is supplied by the blood bank platoon assigned to the corps medical battalion, logistics (forward).

*c. Echelon III.*

(1) Each MASH stores liquid blood products. The MASH is limited to Group O RBCs ONLY. Each CSH stores liquid (ABO group-specific) RBCs, FFP, and platelets. Each Echelon III hospital has emergency blood collection capability, but does not currently have the capability to perform serological testing such as hepatitis and the human immunodeficiency virus (HIV) on donor units. Echelon III hospitals are routinely supplied with blood by a blood bank platoon assigned to the medical battalion, logistics (forward).

(2) The blood bank platoon (forward) is resupplied from a supporting USAF BTC or by a medical battalion, logistics (rear). The blood bank platoon (forward) leader serves as the corps blood program officer. He manages blood and blood products through a system of blood-specific report formats (see Section V) in conjunction with the Defense Blood Standard System (DBSS). The

blood platoon leader may also be appointed as the AJBPO and may be responsible for blood management on an area or geographical basis.

*d. Echelon IV.*

(1) Each FH and GH stores liquid (ABO group specific) RBCs, FFP, and platelets. Blood distribution and reporting is similar to that for Echelon III hospitals.

(2) The blood bank platoon assigned to the medical battalion, logistics (rear) is resupplied from a supporting USAF BTC. The platoon leader may also serve as the TA blood manager until the TMMMC is operational.

*e. Level V.* The Army blood support system is an integral part of the ASBP. Upon mobilization, donor centers and MTFs increase their blood drawing capabilities as directed by the Army Blood Program Officer. Additional donor centers are opened as required. All of these facilities draw, process, and prepare blood and blood products for shipment to ASWBPLs who send the blood to the TO.

### 8-7. Theater Army Blood Capabilities

Theater Army blood capabilities are listed by echelon of care.

*a. Echelon I.* Blood products: None.

*b. Echelon II.*

(1) Blood products: Group O RBCs. Table 8-1 illustrates blood products that are available to the theater, and Table 8-2 lists blood transfusion practices by echelons.

(2) Methods of operation: Blood storage and transportation refrigerators will be used to transport blood from the FSP to Echelon 11 medical units. The FSP will be resupplied by the blood bank platoon at the medical battalion, logistics (forward) using iced blood boxes.

(3) Organization: Medical battalion, logistics (forward) personnel handle the distribution of blood to the division.

(4) Transportation: Division and corps transportation assets, as well as ground and aeromedical evacuation assets, will be used to transport blood.

*c. Echelons III and IV.*

(1) Blood products:

(a) Red blood cells: Liquid (ABO group specific) RBCs will be available at the CSH, FH, and GH. At the MASH, *only* liquid Group O RBCs will be available.

(b) Fresh frozen plasma: Available at the CSH, FH, and GH.

(c) Platelet concentrate: Available in limited quantities at the CSH, FH, and GH. Platelets will be provided by emergency blood collection at the MTF or by the blood bank platoon.

(2) Methods of operation:

(a) MASH: Blood bank capabilities are limited to—

    Ž Storing 200 to 240 units of liquid Group O RBCs.

    Ž Collecting and processing (ABO and Rh only) a limited number of units of whole blood on an emergency basis.

(b) Combat support hospitals, FHs, and GHs: Blood bank capabilities in these units will allow for—

    Ž Storing liquid RBCs, FFP, and platelets.

    Ž Performing cross-match procedures.

    Ž Thawing FFP for transfusion.

    Ž Emergency collection of a limited number of units of whole blood.

(c) The blood bank medical laboratory procedures performed by echelon are listed in Chapter 7.

*d. Additional Requirements.* As directed by the JBPO, the TA may be required to provide blood and blood products support to other Services or allied MTFs in its geographical area.

Table 8-1. Blood Products (Class VIIIb) Available to the Theater

PRODUCT	UNIT OF ISSUE	STORAGE	SHELF LIFE FOR TRANSFUSION	ECHELON AVAILABILITY	BLOOD GROUP AVAILABILITY			
					O±	A±	B±	AB±
LIQUID RBCs	APPROX 250 mL	35 DAYS	35 DAYS	II & III (MASH) III (CSH) & IV	100% 50%	— 40%	— 10%	— —
FROZEN/DEGLYCEROLIZED RBCs	APPROX 250 mL	21 YRS	3 DAYS (POST-WASH)	III & IV	100%	—	—	—
FFP	APPROX 250 mL	3 YRS	24 HRS (POST-THAW)	III & IV	—	50%	25%	25%
PLATELET CONCENTRATE	APPROX 60 mL	5 DAYS	5 DAYS	III & IV	* —	* —	* —	* —

LEGEND:

APPROX mL      APPROXIMATELY MILLILITER

\* Will be provided by blood bank platoon and/or MTFs by in-theater blood collections.

Table 8-2. Blood Transfusion Practices by Echelon

ECHELON (E)	BLOOD PRODUCT	ABO & RH GROUP	TRANSFUSION SERVICE PROCEDURES	STORAGE CAPACITY	BLOOD RESUPPLY
I	NONE	—	—	—	—
II	RBCs	O RH +/-	ABO GROUP DONOR RBCs**	50 UNITS RBC PER FIELD MED REFRIGERATOR	IIIE BSU
III D304*	RBCs	O,A,B RH +/-	ABO & RH GROUP PATIENT AND DONOR RBCs**	480 UNITS LIQUID RBC	IIIE BSU

Table 8-2. Blood Transfusion Practices by Echelon (Continued)

ECHELON (E)	BLOOD PRODUCT	ABO & RH GROUP	TRANSFUSION SERVICE PROCEDURES	STORAGE CAPACITY	BLOOD RESUPPLY
III D304* (CONTINUED)			MAJOR SIDE IMMEDIATE SPIN CROSSMATCH		
III D404*	RBCs	O,A,B RH +/-	SAME AS D304	475 UNITS FZ 480 UNITS LQ	IIIE BSU
	FFP	A,B,AB RH +/-	NONE	20 UNITS	IIIE BSU
	PLATELET CONCEN- TRATE (PLT)	O,A RH +/-	NONE	NA	IIIE BSU OR MTF
IV	SAME AS D404	SAME AS D404	SAME AS D404	SAME AS D404	IVE BSU
* Capability to collect and perform the ABO and RH group determination on 180 units of whole blood for extreme emergencies. D304 is liquid-only DEPMEDS module. D404 is hybrid liquid (LQ)-frozen (FZ) DEPMEDS module. D405 is a frozen blood augmentation set that converts the D304 to the D404 capability.					
** Not necessary if ASWBPL has verified the ABO group.					

### 8-8. Blood Supply from Continental United States

a. The CINC of the unified command determines the blood requirements and transmits requests to ASBPO. The ASBPO allocates requirements to each of the Services based on operational requirements and the available donor base (the current allocation formula is Army—33 percent, Navy—33 percent, USAF—33 percent).

b. Each Service blood program officer assigns quotas (number of units by ABO/Rh group) to their major Army command (MACOM) or major commands (MAJCOMs). Donor centers and MTFs operating blood collection sites are given quotas by

their MACOM or MAJCOM for shipment of blood and blood products to a designated ASWBPL. Current DOD policy requires shipment of *only packed RBCs* with at least 50 percent of the units from Group O donors. Whole blood is not shipped.

c. At the ASWBPL, the ABO and Rh group of the shipped units are reconfirmed. Blood boxes are packed and iced, palletized, and shipped to requesting overseas commands via the USAF BTCs.

d. The BTCs—

    Z Receive blood products shipped to the theater from ASWBPLs or other BTCs.

Ž Receive and store up to 7,200 units of RBCs for further distribution to appropriate command facilities as directed by the JBPO or AJBPO.

Ž Perform quality control checks of blood shipments ensuring maintenance of

appropriate temperature ranges during shipment and check products for gross evidence of contamination or cellular destruction.

Ž Resupply blood products to supported blood bank platoons of the medical battalion, logistics (forward and rear) under the direction of the receiving JBPO or AJBPO.

### Section III. PLANNING FOR EFFECTIVE BLOOD MANAGEMENT

#### 8-9. Coordination

Continual planning for mobilization and other contingencies enable the Services to rapidly respond to situations requiring blood support. Planning for effective blood management is a continuous process.

a. A coordinated effort between the theater JBPO and the theater J3 (Operations and Plans) is required for successful planning. Operational plans dictate blood management strategy. Some issues include: Will blood be required immediately upon arrival of the combat units? Should blood be brought into the area with the initial medical units? Where will the air terminals be located?

b. The receipt, storage, and distribution of blood products require special consideration and procedures to ensure coordinated effort to maximize use of communications, storage facilities, and transportation.

c. Location of BTCs depends on the location of major air terminals and on the OPLANs. Blood storage capability at a BTC may be expanded to meet overall command requirements. Knowledge of the available Army blood bank platoons and the types and locations of the MTFs in the CZ is necessary for proper planning.

d. Timely communication with the next higher level of support usually ensures that

adequate supplies of blood and blood products are available as required.

#### 8-10. Blood Planning Factors

a. Blood shipped into the AO will be packed RBCs only. Fresh frozen plasma and platelet concentrate will also be available. Subject to availability, RBCs shipped from CONUS are packed with the following unit group distributions:

##### BLOOD GROUP DISTRIBUTION

O Rh Positive	40%
O Rh Negative	10%
A Rh Positive	35%
A Rh Negative	5%
B Rh Positive	8%
B Rh Negative	2%

b. The primary use of RBCs is to provide oxygen carrying capability to the traumatized patient. Volume expansion is adequately accomplished with crystalloid and colloids. In the severely traumatized patient, the need for coagulation factors may arise. In such cases, component therapy using FFP and/or platelets will be available at hospitals other than the MASH units.

c. Blood planning factors are programmed in the Medical Planning Module by the

Joint Data Systems Support Center and subsequently used by the respective unified command medical planners to generate daily blood product requirements for the theater.

d. Initial blood planning factors to determine the estimated total blood product requirements for the TO as established in unified command OPLANs are listed in Table 8-3.

Table 8-3. Blood Planning Factors

BLOOD COMPONENT	PLANNING FACTOR
RED BLOOD CELLS	*4 UNITS FOR EACH WIA AND EACH NBI CASUALTY INITIALLY ADMITTED TO A HOSPITAL
FRESH FROZEN PLASMA	0.08 UNITS FOR EACH HOSPITALIZED WIA OR NBI
PLATELET CONCENTRATE	0.04 UNITS FOR EACH HOSPITALIZED WIA OR NBI

\* For blood planning purposes, only count the WIA or NBI once in the system, not each time the patient is seen or admitted.

e. Except in extreme emergencies, blood shipped from CONUS will reduce the requirements to collect blood in the theater during an armed conflict. Capabilities to collect and process blood in the theater are limited. Emergency collection capabilities exist at all DEPMEDS-equipped MTFs and blood bank platoons. Currently, this capability is the only source for providing platelets. The planner must realize that corps facilities do not have the personnel, supplies, or equipment for extended donor operations or for serological testing, such as HIV and hepatitis.

**8-11. Computing Initial Blood Requirements**

a. The expected admission rates per day are critical in initial planning. These rates, along with the blood planning factors in Table 8-3, will provide the planner with an INITIAL estimate of daily blood requirements. A sample calculation is shown in Figure 8-1.

b. The reaction time of the ASBPO or other supporting JBPO must be considered. Optimally, receipt by the requesting command of blood or blood products for sustainment of operations should take no longer than 72 hours. Most MTFs should plan to keep a 3-day supply of blood on hand. Most blood supply units should have a 5-day inventory goal. Realistically, a planner may expect a 4- to 5-day resupply response time from outside the theater dependent on several factors such as—

- ⌘ Availability of air transportation.
- ⌘ Location of the operational needs.
- ⌘ Need for the products to be received at the BTC.

c. Currently, the planner can expect RBCs to be at least 8 to 10 days old upon receipt. Blood collected in CPDA-1 (an anticoagulant

preservative solution) and stored at 1° to 6° C expires 35 days after collection. This leaves an effective shelf life of 25 to 27 days for use within the TO.

d. Once located in the operational area, it is necessary for the JBPO to maintain current information on combat situations and on the anticipated actions of friendly and enemy forces. The best source of this information is the theater

J2 (Intelligence). As required, the planner can anticipate increasing requirements for the operational area as a whole, or he may relocate resources within the operational area to support localized operations. A good reporting and inventory control system is crucial: How much blood is in the command? Where is it concentrated? Is it where the “action” is? Should blood or blood components be relocated?

EXPECTED INITIAL ADMISSION RATE FOR WIA AND NBI = 8 PER 1,000 PER DAY

TOTAL PERSONNEL = 10,000

RBC PLANNING FACTOR = 4 UNITS

FORMULA:

$(\text{TOTAL PERSONNEL} / 1,000) \times \text{ADMISSION RATE PER DAY} \times \text{FACTOR} = \text{BLOOD OR BLOOD COMPONENT PER DAY}$

EXAMPLE:

$(10,000 / 1,000) \times 8 \times 4 = 320 \text{ UNITS OF RBCs PER DAY}$

*Figure 8-2. Sample calculations for initial blood requirements.*

### 8-12. Host-Nation Support

The Armed Forces Medical Intelligence Center, the theater’s J2, J3, and J5 (Civil Affairs), and the unit’s intelligence element will provide valuable information concerning the willingness and ability of the host country to provide blood bank support. This support could take the form of additional units of blood or RBCs, additional refrigerated storage space such as large capacity walk-in refrigerators in local hospitals or hotels, ice-making capability, or sources for dry ice to store FFP or frozen RBCs.

b. Blood bank platoons and MTFs, along with units involved primarily with storage and shipment of blood and blood components, must develop alternative sources for ice and refrigeration in case of equipment failure. Options include other military units in the area or host-country sources.

### 8-13. Logistical Considerations

a. After decisions have been made concerning the locations of the blood bank platoons and the concept of operations for blood support, plans must be coordinated to effect the timely movement of blood and blood products throughout the TO. Prior planning must be accomplished with the Joint Movement Control Office to set up procedures for emergency movement of blood. Specific information required when shipping blood by air includes: weight, number of units, and number of boxes (see Table 8-4). Planners must keep in mind that blood and blood products maybe distributed on an area basis to other Services and allied MTFs.

b. Various modes of transport/delivery systems are available to move blood within the theater.

(1) The following modes may be used to transport blood from the BTC to the blood bank platoon:

(a) Air (Air Force, corps, or medical assets).

(b) Helicopter (sling load): UH-1—1,200 units of blood; UH-60—4,800 units of blood.

(c) Ground (corps or HSS assets).

(d) Parachute.

1. Low-altitude parachute extraction system (LAPES)—4,800 units of blood.

2. Cargo delivery system (CDS)—1,440 units of blood.

3. Naval emergency air cargo delivery system (NEACDS)—1,440 units of blood.

(2) The following modes may be used to transport blood from the blood bank platoon to the MTF:

(a) Air (corps or medical assets): UH-1—900 units of blood; UH-60—1,500 units of blood.

(b) Ground (corps or medical assets).

c. After transportation requirements and priorities have been established, planning considerations must be given to maintaining adequate levels of required supplies for the planned operational scenario. Examples of required supplies include—

Ž Blood bags with the appropriate anticoagulant preservative solutions.

Ž ABO and RH grouping antisera.

Ž Test tubes.

Ž Blood shipping boxes.

Ž Plastic bags.

Ž Adequate supply office for maintenance of required blood storage temperature during transit.

Table 8-4. Maximum Capacities for Blood Product Shipments

---

1. Pallet, 463L.

a. Mission/capabilities.

(1) Provides one standard size pallet capable of transporting 120 boxes containing a maximum of 3,600 units of human packed RBCs.

(2) The 463L standard pallet measures 108 x 88 x 4 inches. The maximum loaded height is 96 inches and the maximum allowable weight is 8,000 pounds. An unloaded pallet with cargo net weighs 354 pounds.

b. Characteristics of loaded pallets.

---

Table 8-4. Maximum Capacities for Blood Product Shipments (Continued)

---

(1) A loaded pallet with 120 boxes filled with 30 units each of RBCs weighs 5,394 pounds and has a volume of 442 cubic feet. The boxes are stacked 4 boxes wide x 5 boxes long x 6 boxes high. Total capacity is 3,600 units of RBCs.

(2) A loaded pallet with 120 boxes of FFP weighs 4,680 pounds and has a volume of 442 cubic feet. Total capacity is 2,880 units of FFP.

2. Insulated Blood Shipping Containers.

a. Specifications.

- (1) National Stock Number (NSN) 8115-00-935-9761.
- (2) Empty weight is 9 pounds.
- (3) Cubic feet is 3.5.
- (4) Exterior dimensions—19 inches long x 18 inches wide x 16 inches high.
- (5) Interior dimensions—15 inches long x 14 inches wide x 11 inches high.

b. Capacity.

- (1) Liquid (nonfrozen) RBCs and 14 pounds of cubed and glistening wet ice.
    - (a) 30 Units of RBCs: weight—41 pounds.
    - (b) 20 Units of RBCs, plus 24 administration sets: weight—40 pounds.
  - (2) Frozen plasma and 20 pounds of coarsely broken dry ice (solid state CO<sub>2</sub>): 24 units of FFP weighing 39 pounds.
- 

## Section IV. BLOOD MANAGEMENT ACROSS THE SPECTRUM OF OPERATIONS

### 8-14. Operations Other Than War

a. *Peacetime.* Blood support will be provided by the blood bank platoon of the medical battalion, logistics (forward). This unit is deployed as necessary based upon requirements for blood and blood products. The blood bank

platoon requires support from the senior medical command and control headquarters. Additional blood support may be provided by hospitals in the TO.

b. *Conflict.* Blood support will come from the blood bank platoons in the medical

battalions, logistics (forward) and (rear). These platoons will be deployed with the battalions. Deployed hospitals can provide only emergency blood collections (180 units).

### 8-15. War

Blood support will be the same as in conflict, above. However, when personnel are placed in MOPP, the NBC environment will have a detrimental impact on blood banking capabilities. All procedures may be performed until MOPP 4 is reached. After MOPP 4 is reached, procedures requiring intricate manual manipulations such as deglycerolizing, thawing, and crosshatching procedures will be difficult. Chemically-protected overwraps for the standard liquid blood shipping container are available (blood box liner, NSN 6530-01-325-4360) and should be used to cover all unprotected boxes of blood in the event of a possible chemical attack.

**This paragraph implements STANAGs 2939 and 2135 and QSTAG 815.**

### 8-16. Allied Support Agreements.

The exchange of blood stocks, supplies, and equipment between US forces and those of allied forces is established under bilateral and/or multilateral blood assistance agreements.

*a.* In Europe, STANAG 2939 establishes technical standards for blood, blood donors, and associated equipment. Blood requirements which exceed normal national blood supply capability can be requested from NATO nations using procedures contained in STANAG 2135.

*b.* The aim of QSTAG 815 is to establish a policy for blood supply in the AO in which members of two or more participating nations are deployed.

### 8-17. Blood Support for Enemy Prisoners of War

*a.* The Army irresponsible for providing medical care and treatment for EPW. The Army may become responsible for providing medical care or assistance to displaced persons, refugees, civilian internees, and detained personnel. Articles 13 and 130 of the Geneva Convention Relative to the Treatment of Prisoners of War do not prohibit the maintenance of lists of the blood types of prisoners of war who have volunteered to furnish blood. There is nothing improper in accepting donated blood from EPW. To perform this function, available intelligence data should be used in computing requirements for blood support, supplies, and equipment needed. The decision to use donated blood from EPW to treat US casualties, though not a violation of the Geneva Conventions, would also be dependent upon available medical intelligence data concerning the incidence and prevalence of infectious diseases in the EPW population.

*b.* Blood stocks, supplies, and equipment captured from the enemy are considered to be neutral and protected property and are not to be intentionally destroyed. The blood materiel should be turned over to a designated blood bank platoon. Since captured medical personnel are familiar with their blood supplies and equipment, the captured items are especially valuable in the treatment of EPW. The blood bank platoon will use these blood supplies to support the MTF assigned responsibility for the care and treatment of EPW. Use of these captured items for EPW and the indigenous population helps to conserve other blood stocks, supplies, and equipment.

## Section V. BLOOD REPORTING SYSTEM

### 8-18. Purpose

The purpose of the standardized blood reporting system is to project blood requirements, request blood, report blood inventories, and provide information on the overall blood element operations of all Services in the TO. The ASBPO has developed the contingency blood reports and use of the US Joint Message or Message Text Format(USJMTF). The two standard joint message text format reports used to report blood program operations are—

Z̃ The Blood Report (BLDREP).

Z̃ The Blood Shipment Report (BLDSHIPREP).

### 8-19. Use of the Blood Report

a. The BLDREP provides a standardized message format that is used to report blood

inventories, request blood, and project requirements. The BLDREP in its full or abbreviated form is used throughout all echelons of the blood management system.

b. All MTFs, including Echelon II, will use the standard BLDREP format. The Joint Interoperability of Tactical Command and Control (JINTACC) Automated Message Preparation System (JAMPS) and the Message Text Format Editor (MTFE) are two software programs that may be available to automate the BLDREP formatting. (The DBSS will eventually provide the capability to generate these reports.)

c. Depending upon the situation, telephonic BLDREP or written BLDREP delivered by courier maybe used in the TO. To help reduce the length of the messages, a master menu of blood report codes has been standardized as listed in Figure 8-3.

**MANAGEMENT:**

- A. Joint Blood Program Office (JBPO)
- B. Area Joint Blood Program Office (AJBPO)
- C. Armed Services Whole Blood Processing Laboratory (ASWBPL)
- D. Blood Donor Center (BDC)
- E. Blood Products Depot (BPD)
- F. Blood Transshipment Center (BTC)
- G. Blood Supply Unit (BSU)
- H. Medical Treatment Element (MTE)
- I. Naval Vessel (NV)

**PRODUCTS:**

- J. Red Blood Cells (RCZ)
- K. Whole Blood (WBZ)
- L. Frozen Red Blood Cells (RCF)
- M. Fresh frozen plasma (PFF)
- N. Frozen Platelets (PCF)

**PRODUCTS (Continued):**

- O. To Be Determined
- P. To Be Determined

**BLOOD GROUPS:**

- Q. Random Group and Type O,A,B
- R. Random Group and Type O,A
- S. Random Type O
- T. Random Type A
- U. Random Type B
- V. Random Type AB

**TIME FRAME:**

- W. Required within 12 hours
- X. Required within 24 hours
- Y. Required within 48 hours

**MISCELLANEOUS:**

- Z. Not applicable or see remarks

*Figure 8-3. Blood report master menu.*

d. The Theater Army Blood Program manager may assign brevity codes and designate those lines to be utilized in daily reporting. Locations of activities will be reported *only* on the *first* report or upon relocation.

e. Requests for RBCs should normally be based on a random distribution of blood groups (that is, 40 percent O positive, 10 percent O negative, 35 percent A positive, 5 percent A negative, 8 percent B positive, 2 percent B negative). At Echelons 111 and IV, ABO and Rh group-specific RBCs should be transfused whenever possible. Certain designated MTFs will require Group O RBCs only. Upon activation, each MTF should request a base load of blood components.

f. Medical treatment facilities should submit a daily BLDREP to their blood supplier. A complete BLDREP should reflect the following:

Ž Line 1: Day-time-zone of BLDREP.

Ž Line 2: Reporting unit's name or designator code.

Ž Line 3: Reporting unit's activity brevity code letter.

Ž Line 4: Unit location in latitude/longitude (LAT/LONG), universal transverse Mercator (grid) (UTM), or place name.

Ž Line 5: Naval Vessels ONLY: Projected location in LAT/LONG or place name for delivery of blood products.

Ž Line 6: Naval Vessels ONLY: Estimated time of arrival (day, time, time zone, month, and year at the projected location).

Ž Line 7: Name or designator code of the unit or activity reporting the status of blood supplies if other than message originator.

Ž Line 8: Reporting unit's activity brevity code letter if other than message originator.

Ž Line 9: Number and code of each blood product on hand. (Include blood and blood products set up for transfusion.)

Ž Line 10: Number and code of each blood product required. (Daily request should be the number of units of blood/blood products needed to replace what was used over the 24-hour reporting period.)

Ž Line 11: Estimate of total number of blood products by group to expire in next 7 days. (This becomes extremely important when scheduled combat operations are delayed or extended and when using frozen blood.)

Ž Line 12: Estimate of total number of blood products by group required for resupply in the next 7 days. (This number is normally 7 times the amount of blood product transfused during the past 24 hours. However, this number should reflect future combat operations. Offensive operations will result in increased blood utilization versus defensive operations. Close coordination between intelligence/operations centers and blood managers is essential. )

Ž Line 13: Narrative. The number of units received, transfused, shipped, destroyed, and expired within past 24 hours. Also, include any information that would have an impact on your blood mission such as loss of refrigeration or storage capability, or shortage of typing sera.

Ž Line 14: Message hour-minute-zone when required.

Ž Line 15: Authentication in accordance with JTF procedures.

**NOTE**

Lines 4 through 8, 14, and 15 are not normally used and can be deleted at the discretion of the Theater Army Blood Program Manager. An example of a completed BLDREP is shown in Figure 8-4.

*g.* Transmission of the BLDREP.

(1) *Method.* Message is the primary method with voice as alternate (see Figure 8-5). Communications capabilities of originator and addressee, as well as urgency of the message subject/text material, will determine the method. Messages should be sent as IMMEDIATE because of very short blood expiration dates. Correct plain language addresses from a current directory must be used. The BLDREP maybe transported by courier if that is more practical and expedient. When the DBSS is implemented, it will be possible to transmit unclassified reports between organizations.

(2) *Frequency.* Required as follows unless otherwise directed:

(a) Medical treatment facility (including Echelon II) to blood supplier: daily as of 2359Z; report required not later than 0400Z.

(b) Forward blood supplier to blood bank platoon: daily as of 2359Z; report required not later than 0400Z.

(c) Blood bank platoon to an AJBPO: daily as of 2359Z; report required not later than 0400Z.

(d) Blood transshipment center to an AJBPO: daily as of 2359Z; report required not later than 0400Z.

(e) Area Joint Blood Program Office to JBPO: daily as of 0400Z; report required not later than 0800Z.

(f) Joint Blood Program Office to ASBPO: daily as of 0800Z; report required not later than 1200Z.

*h.* Blood report policies are listed below:

(1) Information copies should be kept to a minimum and be specifically required by the respective OPLAN. Increased quantities of information copies overload the message channels.

(2) If an AJBPO is not established, the blood bank platoon and BTC will report directly to the JBPO.

(3) The addressee will normally be the next higher organization level with whom the reporting unit (originator) is authorized direct communication: MTF to blood supplier; blood supplier to AJBPO; blood supplier to JBPO (if AJBPO not established); BTC to AJBPO; BTC to JBPO (if AJBPO not established); AJBPO to JBPO; JBPO to ASBPO.

(4) A blood supply unit of one Service may receive BLDREPs from an MTF of another service when the blood supply unit is in an area support role.

(5) All BLDREPs should be classified at the lowest level required to meet operational constraints.

(6) Each MTF including those at Echelon II will submit a BLDREP to the supporting blood supplier, as required.

(7) The forward blood supplier will submit a BLDREP to a blood bank platoon, as required.

(8) The blood bank platoon will submit a BLDREP to an AJBPO on the status of blood components in the blood bank platoon, as required. The report will reflect the blood bank platoon's inventory and anticipated blood requirements.

(9) The BTC blood manager will submit a BLDREP to an AJBPO on the status of blood components in the BTC.

(10) The AJBPO will submit a BLDREP to the JBPO on the status of blood components in the BTCs and blood supply bank platoons, as required.

(11) The JBPO will submit a consolidated BLDREP to the ASBPO on the status of blood components in each Unified Command Joint Blood Program area.

FM: MEDICAL TREATMENT FACILITY (ELEMENT)  
 TO: BLOOD SUPPLIER  
 INFO: AS DETERMINED BY COMMAND OPLAN  
 CLAS  
 OPER/DESERT SHIELD//  
 MSGID/BLDREP/32CSH/110100ZJAN92//  
 ASOFTDG/102359ZJAN92// (Line 1)  
 REPUNIT/32CSH/H// (Lines 2,3)  
 BLDINVT/-/100JS/80JT/20JU/50MV// (Line 9)  
 BLDREQ/-/50JSX/40JTX/10JUX/25MVY// (Line 10)  
 BLDEXP/-/25JS/5JT// (Line 11)  
 BLDEST/-/700JQ// (Line 12)  
 CLOSTEXT/RECEIVED-50JS 50JT/TRANS-  
 FUSED-60JS 40JT/EXPIRED-10JS/SHIPPED-0/  
 REFRIGERATOR NEEDS REPAIR// (Line 13)

REPORT EXPLANATION:  
 LINE 1: BLOOD REPORT AS OF 2359Z 10 JAN 92  
 LINES 2,3: REPORTING UNIT IS 32D CSH, H CODE = MEDICAL TREATMENT FACILITY  
 LINE 9: ENDING INVENTORY = 100 UNITS OF RANDOM TYPE O, 80 UNITS OF RANDOM TYPE A, AND 20 UNITS OF RANDOM TYPE B RBCs. CSH HAS 50 UNITS OF FFP  
 LINE 10: THE CSH NEEDS 50 UNITS OF RANDOM TYPE O, 40 UNITS OF RANDOM TYPE A, AND 10 UNITS OF RANDOM TYPE B RBCs WITHIN THE NEXT 24 HOURS AND 25 UNITS OF FFP WITHIN 48 HRS  
 LINE 11: CSH HAS 25 UNITS OF RANDOM TYPE O AND 5 UNITS OF RANDOM TYPE A RBCs EXPIRING IN THE NEXT 7 DAYS  
 LINE 12: CSH NEEDS 700 UNITS OF RANDOM GROUP AND TYPE O, A, AND B RBCs WITHIN THE NEXT 7 DAYS  
 LINE 13: CSH RECEIVED 50 UNITS OF RANDOM TYPE O AND 50 UNITS OF RANDOM TYPE A RBCs, TRANSFUSED 60 UNITS OF RANDOM TYPE O AND 40 UNITS OF RANDOM TYPE A RBCs, EXPIRED A TOTAL OF 10 UNITS OF RANDOM TYPE O RBCs, SHIPPED NO BLOOD PRODUCTS DURING THE PAST 24 HOURS, AND HAS A BLOOD BANK REFRIGERATOR THAT NEEDS REPAIR.

Note: Random group means 50 percent O cells, 40 percent A cells, and 10 percent B RBCs. Random type means 85 percent Rh positive and 15 percent Rh negative RBCs.

Figure 8-4. Example blood report.

BLUE THIS IS RED	BLOOD REPORT OVER	LINE 10	50JSX, 40JTX, 10JUX, 25MVY
GO AHEAD RED		LINE 11	25 JS, 5 JT
THIS IS RED	IMMEDIATE UNCLASSIFIED	LINE 12	700JQ
LINE 1 152359Z		LINE 13	RECEIVED 50JS, 50JT/TRANSFUSED 60JS, 40JT/ EXPIRED 10JS, SHIPPED 0/REFRIGERATOR NEEDS REPAIR
LINE 2 32 CSH		OVER	
LINE 3 H			
LINE 9 100 JS, 80 JT, 20JU, 50MV			

Figure 8-5. Example voice blood report.

**8-20. Use of the Blood Shipment Report**

a. The BLDSHIPREP provides a standardized message format that is used worldwide in the ASBP to report blood shipments.

b. The respective JBPO, in lieu of standard nomenclature, may assign brevity codes for individual component blood program elements. The JAMPS and the MTFE may be available to automate the BLDSHIPREP formatting. (The DBSS will eventually provide this capability.) To help reduce the length of the messages, a master menu of BLDSHIPREP codes has been standardized. These codes are the same as used for the BLDREP (see Figure 8-3).

c. A completed BLDSHIPREP should reflect the following:

    Ž Heading of Message: From and to addresses, information copy addressee, message classification, operation name, report identification, date/time of message, references to other messages.

    Ž Line 1: ASOFDTG Day-time-zone of the blood shipment.

    Ž Line 2: Name, designator code, and activity brevity code of reporting unit.

    Ž Line 3: Location of reporting unit.

    Ž Line 4: Blood product codes/number of units shipped/total number of units shipped.

    Ž Line 5: Blood shipment or air-bill control numbers/aircraft flight number/estimated time of arrival at destination/number of boxes shipped.

    Ž Line 6: Contact name from shipping location (rank, phone number, location).

    Ž Line 7: Additional closing comments (CLOSTEXT) such as when the blood will require icing.

    Ž Line 8: Message downgrading instructions.

d. An example of a completed BLDSHIPREP is shown in Figure 8-6.

```

FM: CDR USAMEDDAC FT CAMPBELL KY/HSLBB//
TO: ASWBPL MCGUIRE AFB NJ//
INFO: CDRUSAHSC FT SAM HOUSTON TX/HSCL-C//
CLAS
OPER/DULL BRASS//
MSGID/BLDSHIPREP/FT CAMPBELL BDC/100122ZJAN92//
REF/A/CDRUSAHSC/090300ZJAN92/-/NOTAL//
ASOFDTG/100001ZJAN92//
REPUNIT/CMBC FT CAMPBELL KY//
ISHIPD
/BP/OPOS/ONEG/APOS/ANEG/BPOS/BNEG/ABPOS/ABNEG//TOTCTBP//
/J / 160 / 140 / 32 / 40 / 20 / 8 / 0 / 0 // 400 //
BLDSHIP/AB12134/DELTA732/101500ZJAN92/14//
POC/ZIELMANSKI/LTC/512-756-7782/-/CAMPBELL KY//
CLOSTEXT/BLOOD ICED 130001ZJAN92/CMBC SHIPMENT NO1//
DECL/OADR
    
```

Figure 8-6. Example blood shipment report.