

# **Chapter V**

## **Reference Information**

# Reference Information

This chapter contains reference information on DART communications systems, aircraft use and capabilities, OFDA stockpile commodities including detailed information on the use of plastic sheeting, dealing with personal health issues while deployed, and miscellaneous conversion tables.

## DART Communications

### Requirements

The DART has the responsibility to communicate:

- within the DART organization and potentially at dispersed sites in the affected country.
- with the Embassy/Mission as required.
- with country officials as required.
- with OFDA Washington.
- with other relief organizations.

### Systems

There are three main types of communications systems: satellite radio systems, high frequency radio systems, and VHF and UHF radio systems.

#### 1. Satellite Radio Systems

**Services:** Common telephone and TELEX services are available from land- and sea-based terminals using the International Maritime Satellite Consortium (INMARSAT) satellite network. These services include voice, facsimile (FAX), and data (computer-to-computer) communications. For practical purposes, any device that works with a common telephone jack works with this system.

**Operating Range:** Between 75 degrees north and south latitude anywhere in the world.

**Terrain Effects:** Local terrain has no effect as long as the radio antenna has a clear view of the sky in the direction of an available satellite.

**Weather Effects:** Heavy rain could impair the signal and high winds could affect dish antenna position.

**Frequency Selection:** The operation frequency is automatically assigned by the selected coast earth station and is not under the user's control. Foreign government frequency authorization is not required, regardless of the operating area.

**Setup Time:** 10 to 15 minutes, depending upon the operator's level of expertise.

**Voltage Requirements:** 110 VAC 220 VAC or 12 VDC on newer models.

**Shipping and Handling:** Depends on INMARSAT system.

**Sources:** OFDA, Metro Dade Fire and Rescue, National Interagency Fire Center (NIFC), Pan-American Health Organization (PAHO), U.S. Coast Guard (USCG), DOD, OSIA, commercial vendors.

## **2. High Frequency Radio Systems (HF)**

**Services:** Voice communications and manually placed voice telephone calls can be made with this equipment.

**Operating Range:** HF radio can be operated anywhere in the world. It is useful for international and local communications (particularly up to about 500 km)

**Terrain Effects:** Local soil conditions affect antenna operation.

**Weather Effects:** None. However, solar weather and the earth's magnetic activity affect wave propagation and must be taken into account. Quality of communications is dependent upon severity of solar activity in combination with the quality of the allocated frequency band.

**Frequency Selection:** Specific operating frequencies are determined by the communications officer in accordance with international agreements and host government law. Organizations such as MARS, USCG, AT&T, the U.N., or local NGO's/ PVO's may have prior arrangements of which OFDA can take advantage. However, frequency allocation from foreign governments takes time and is not automatic.

**Setup Time:** 30 minutes to several hours depending upon antenna requirements and constraints, operator/installer training, and network complexity. HF is more complicated to coordinate, engineer, set up, and maintain than other systems.

**Shipping and Handling:** Each radio has its own case that fits under a commercial airliner seat and weighs about 40 pounds. A pouch with documentation and some spare parts is included in the case. Power from any 110 or 220 VAC or 12 VDC can be used.

**Sources:** OFDA, OFDA-Costa Rica, U.S. Public Health Service, DOD, commercial vendors.

### **3. VHF and UHF Radio Systems**

**Services:** UHF/FM-type radios have voice capability. These radios can be adapted for data communications (including packet radio) by procuring additional equipment. VHF/AM type radios: voice communications with world-standard aircraft radios.

#### **Operating Range:**

- Land communications are 1 to 3 km line-of-sight with no obstructions.
- Air communications are dependent on the altitude of the aircraft.
- In general, communications ranges can be extended by using different techniques including repeaters, appropriate types of antennas, and higher transmitter output power.

**Terrain Effects:** Range affected by local terrain and manmade objects. Rough terrain limits UHF more than VHF. However, radio wave propagation into small spaces (e.g., collapsed buildings) is significantly better at UHF than at VHF. Dense, wet foliage degrades UHF communications.

**Weather Effects:** None at VHF. Very heavy rain in the radio path degrades UHF communications.

**Frequency Selection:** Frequency selection is normally done in cooperation with the host government. Frequently allocation from foreign governments takes time and is not automatic.

**Setup Time:** About 2 minutes for the first radio. About 20 seconds for radios having identical programming.

**Shipping and Handling:** Depends upon the source.

**Sources:** OFDA, NIFC, Metro Dade, Fairfax County, commercial vendors.

## **Applications**

The type of system used will vary depending on the communications need.

Communications between the DART and OFDA Washington will most likely use INMARSAT radios. HF is the backup system via stations provided by Air Force MARS, USCG, AT&T, other maritime coast stations, or amateur radio.

Communications within the DART at one or more locations within the affected country will primarily use UHF/FM radio systems. For multiple sites within a country over large distances INMARSAT is preferred. For shorter distances, repeaters may be used. HF may be used for areas where repeaters are not possible.

Communications between DART members working at a local site will use UHF. Tactical communications will be through UHF. Command and logistical communications may be VHF or UHF depending upon local terrain and other conditions including availability of equipment. Nearly all ground-to-air communications will be VHF. However, HF may be used for long-range communications with aircraft.

Communications between the DART and PVO's/NGO's that are operationally involved will primarily use VHF/FM and UHF/FM radio systems. However, HF may be used for paths where repeaters are not practical and for coordination with agencies who normally use this medium.

Communications with the Embassy/Mission and the affected country will use any systems mentioned above depending on the proximity of the Embassy/Mission and host country officials to the disaster site.

## **Policy on the Use of Frequencies**

In all cases, the host government has both the authority and the responsibility to control the use of communications equipment within its borders. A reasonable attempt must be made by the DART to obtain authorization from the host government for the use of radio communications equipment. Authorizations may be requested through the Embassy or in person. Written authorizations are preferred, but may not be possible to obtain in time of disasters.

When attempts to secure frequency use authorizations are unsuccessful, special care must be exercised in frequency selection to prevent harmful interference with surviving radio operations.

Frequency selection by the DART is the responsibility of the communications officer, who will inform DART members through written or verbal instructions.

### **Radio Identification and Communications Procedures**

For systems incapable of international communications, radio identification generally will be by an individual's name or position title. The radio identification system will be set by the communications officer.

For systems capable of international communications, radio identification shall be assigned by the communications officer in accordance with international agreements and host government law.

The following communications procedures should be used. When using radios, start by saying the name or call sign of the station you are calling, then "This is...". Speak clearly, using plain language-NO CODES!- and end your transmission with "over" if a reply is expected, or "out" if NO reply is expected. Use standard phonetics as illustrated below for call signs, station identifications, and spelling words and names that are not easily understood.

#### **Phonetic Alphabet**

A - alpha	I - india	R - romeo
B - bravo	J - juliet	S - sierra
C - charlie	K - kilo	T - tango
D - delta	L - lima	U - uniform
E - echo	M - mike	V - victor
F - foxtrot	N - november	W - whiskey
G - gulf	O - oscar	X - x-ray
H - hotel	P - papa	Y - yankee
	Q - quebec	Z - zulu

## Aircraft Information

### General:

OFDA frequently uses aircraft to support disaster response activities. It may use either commercial aircraft or DOD aircraft.

OFDA must first check the availability of commercial air carriers to meet disaster response needs. If commercial aircraft are available, they are chartered by OFDA logistics, through AID's Office of Transportation. Often though, commercial air carriers do not have aircraft available to meet the short time frames required by OFDA. Only if commercial aircraft are not available may OFDA may request assistance from DOD. OFDA's initial point of contact is the Office of the Assistant Secretary of Defense for Humanitarian and Refugee Affairs. If this office approves the request, OFDA will work directly with the Joint Chiefs of Staff's (J-4), Logistics Readiness Center, to work out the details on needs, availability, time frames, and accountability.

Be advised that anytime DOD aircraft are used, OFDA must follow all DOD regulations on weights, cubes, manifesting, hazardous cargo, and take off and landings. If more information is needed on DOD regulations or restrictions, contact OFDA's logistics officer.

When loading and off-loading any type of aircraft, the pilot or the crew chief are in charge. They will make the final determination on a "go-no-go" for the flight, based on the load, the weather conditions, the runway conditions, and any conditions specific to the flight.

**Always think about SAFETY around aircraft!!** Follow the instructions of the pilot and/or crew chief.

### Points to Consider When Dealing with Aircraft:

1. Whenever possible, all materials to be airlifted should be stored in containers (e.g., suitcases, backpacks, metal and cardboard boxes) for rapid handling and for stacking onto pallets.
2. All individual containers must be small enough to fit through passenger doors of commercial aircraft in case cargo space is not available.

3. Personal gear should be well-packaged (e.g., pack or suitcase) with the owner's name clearly marked to allow for rapid customs processing.
4. Packages containing hazardous materials/chemicals must be well-marked and kept separate from all other cargo so they can be left behind if refused by the carrier.
5. Individual pieces of cargo should not weigh more than 200 pounds to allow for movement by two people. DART member personal luggage is the responsibility of each member.
6. The length of the flight will determine fuel requirements and thus, cargo capacities of the aircraft. The more fuel required, the less weight for cargo.
7. Crew duty day times are very important and must be followed. Aircraft at your disposal do not represent an unlimited resource. Find out the flight crew's duty times for your planning purposes.
  - Crew duty day refers to the maximum time that a flight crew can be engaged in standing by for a flight or actually flying in an aircraft (normally 15 hours combined).
  - Crew flight time refers to the maximum time a flight crew can spend physically flying/maintaining an aircraft. Sometimes certain pre-flight and post-flight aircraft activities are included in crew flight time duty. This should be verified with the flight crew in advance.

#### **Aircraft Loading and Off-Loading Methods:**

Aircraft may be loaded in four ways:

1. **Bulk Loaded**—Cargo is loaded on the floor and held in place by nets, straps, or ropes.
2. **Palletized**—Cargo is pre-loaded onto pallets, held in place by nets, straps, or ropes and then loaded onto the aircraft.
3. **Containerized**—Cargo is pre-loaded into closed containers and then loaded onto the aircraft.
4. **External (helicopters only)**—Cargo is placed in a net or suspended from a line and picked up and moved by the helicopter.



**Bulk loading** may increase the usable cargo space on an aircraft; however, securing cargo in place may be more difficult. Bulk loading also slows loading and off-loading, sorting, distribution, and customs processing.

**Palletizing cargo** is the method most often used to move OFDA commodities. OFDA usually uses DOD (U.S. Air Force) aircraft for short time frame disaster support and the preferred method by DOD of cargo packaging is using pallets and netting. Commercial aircraft can also use pallets.

Military pallets, officially called Dual Rail **463L Pallets** (nicknamed "cookie sheets") measures: **88 by 108 inches**, are made of aluminum and weigh 356 pounds. The loaded pallets can range in weight from 2000 to 6000 pounds. These pallets are reusable and must be returned. Do not leave them! They are used on the C-5, C-141, C-130, and some commercial aircraft. For logistical planning purposes, when building pallets, limit the height of a stack to **96 inches** for these aircraft unless authorized to stack higher by the crew chief.

The size of commercial pallets varies, but is most often **88 by 108 inches and 88 by 125 inches**. They are used on the DC-8, B-727, DC-10, and B-747 and weigh over 300 pounds. These pallets are also reusable. Commercial Hercules also use a pallet that is 88 by 118 inches.

It is possible to build up pallets on the aircraft, but it is more difficult and very time-consuming. Remember, flight crew duty time is ticking!

**Containerizing cargo** is a method used to load large commercial aircraft such as 747's and DC-10's. Cargo containers come in a great variety of shapes and sizes and their maximum loaded weights can range from less than 1000 pounds to 25,000 pounds. Each type is designed to be loaded and off-loaded with cargo in place using a mechanized loading system or a forklift. It is very difficult, time-consuming, and sometimes impossible to hand-load or unload containers once they are on the aircraft.

If a forklift will be used to load or off-load containers or pallets, make sure that the forklift can carry the largest pallet; has tines long enough to counterbalance the weight; and that the highest point of the forklift is lower than that portion of the aircraft (wing, tail, or door in open position) where it must move to retrieve the container or pallet.

### **Points to consider when planning to receive aircraft cargo:**

1. Ramp space for parking aircraft. If there is no ramp space and you will have to unload on the active runway, consider off-loading time and schedules of other aircraft arrivals.
2. Weight of loaded aircraft and ability of ramp to support parked aircraft.
3. Availability of trucks and laborers if aircraft will be manually off-loaded. Remember planes may arrive at all hours.
4. Availability and right size of forklift if aircraft will be off-loaded using a forklift. Think again about arrival times. If none is available, OFDA logistics may be able to get approval from DOD for the Air Force to bring one along on the arriving aircraft. This may reduce the amount of relief commodities.
5. Storage space near the ramp if the commodities will be stored close to the off-loading point. Consider whether the location of the storage area will cause security problems.

**External loading** of cargo is done with helicopters. Helicopters normally can lift and move more cargo externally (slinging) than internally. The external cargo is loaded into specially made nets that are connected to a cargo hook on the belly of the helicopter. Cargo may also be suspended on cables (leadlines). Make sure leadlines and nets are approved for slinging cargo.

Remember, pallets, containers, nets, and leadlines are reusable. They may also need to be returned quickly to their point of origin, to be used for loading more cargo. Always think in turns of "backhauling" cargo equipment when it is no longer needed.

The charts that follow list some types of fixed winged and rotary winged aircraft that have been or might be used by OFDA during disaster operations. It includes specifications for the different categories of aircraft. The purpose of this chart is to assist in planning for the movement of people and commodities. Note however that these figures represent **approximate aircraft specifications**. Figures for each aircraft will vary based on individual aircraft configurations and ratings, operating range, runway conditions, temperature, altitude, and wind speed and direction. Always check with local aviation authorities as to what type of aircraft can operate in and out of local airports. This chart does not include specifications for aircraft capable of spraying insecticides. These specifications are available from the OFDA logistics officer.

AIRCRAFT TYPE	FUEL TYPE	CRUISE KNOTS	RUNWAY LENGTH	CARGO WEIGHT	CARGO CU. FT.	DOOR H x W (In.)	PALLET SIZE	PALLET QTY.	CONTAINER TYPES
C-5	Jet	436	7,700	130,000	13,000	150x228	88x108	36	Open Pallet
C-141B	Jet	440	6,300	40,000	4,500	106x123	88x108	13	Open Pallet
C-130	Jet	280	2,700	25,000	2,000	109x23	88x108	5	Open Pallet
Antonov - 124	Jet	450	10,000	300,000	30,000	173x238	ALL		ALL
Beach 18	AvGas	135	1,800	2,500	285		N/A	N/A	N/A
Beach 99	Jet	225	1,750	5,000			N/A	N/A	N/A
B 377/C97	AvGas	220	5000	32,000		173x162			
B-707-320C	Jet	450	8000	80,000	6,000	89x134	88x108/125	13	ALL
B-727-100	Jet	495	7,000	35,000	8,100	89x134	88x125	9	A,A-2
B-727-200	Jet	495	8,300	55,000	8,100	120x134	88x125	30	A,A-2
B-747-100	Jet	490	9,400	223,000	20,750		88x125	29	A,A-2
B-747-200	Jet	490	10,700	229,000	22,175		88x125	37	ALL
Casa C-212	Jet	195	2,500	4,000					
Cessna 340A (Propjet)	Jet	195	2,500						
Cessna 414	Jet	200	2,400						
Cessna 421-C (Propjet)	Jet	185	2,400						
C-46	AvGas	150	3,000	12,000	3,300				

AIRCRAFT TYPE	FUEL TYPE	CRUISE KNOTS	RUNWAY LENGTH	CARGO WEIGHT	CARGO CU. FT.	DOOR H x W (In.)	PALLET SIZE	PALLET QTY.	CONTAINER TYPES
DHC-6 Otter (Propjet)	Jet	160	1,900	3,500	506	50x56	N/A	N/A	N/A
F-28 (Propjet)	Jet	380	5,200	15,000	3,400				
Falcon 50	Jet	490							
F-27 (Propjet)	Jet	240	6,000	7,500	1,980				
L-188 Electra (Propjet)	Jet	310	6,000	32,000	3,700	78x140	88x108	8	ALL
L-55 Learjet	Jet	460	4,500						
L-100-10 Commercial Herc	Jet	275	4,300	25,000	4,500	108x120	88x108/118	6	Open Pallet
L-100-20 Commercial Herc	Jet	275	4,500	37,000	5,300	108x120	88x108/118	7	Open Pallet
L-100-30 Commercial Herc	Jet	280	4,300	40,000	6,057	108x120	88x108/118	8	Open Pallet
Skyvan	Jet	130	1,500	3,500	780	72x72	N/A	N/A	N/A
Westwind 1124	Jet	450	4,900	1,190					
Cessna 185	AvGas	130	1,400	900					
Cessna 206	AvGas	130	1,500	1,100					
Cessna 207	AvGas	130	1,900	1,200					
Caravan	Jet	170	1,900	2,500	340				
Turbo Porter	Jet	142	620	1,400	100				
Helio Courier	AvGas	130	610	1,200	140				

AIRCRAFT TYPE	FUEL TYPE	CRUISE KNOTS	RUNWAY LENGTH	CARGO WEIGHT	CARGO CU. FT.	DOOR H x W (In.)	PALLET SIZE	PALLET QTY.	CONTAINER TYPES
Dash 7	Jet	225	2,200	11,300	2,100				
Dash 8	Jet	250	2,700	8,500	1,400				
Ilyushan 76	Jet	430	2,800	75,000	8,300				
DC-8 51F	Jet	480	8,000	61,000					
DC-8 54F	Jet	480	8,000	95,800					
DC-8 55F	Jet	480	8,000	97,000					
DC-8 73F	Jet	480	8,000	102,000					
DC-8 61F	Jet	480	8,000	83,000					
DC-8 63F	Jet	480	8,000	94,000					
DC-8-70	Jet	480	8,000	85,000					
DC-9	Jet	450	7,000	35,000	4,500				

HELICOPTER TYPE	FUEL TYPE	CRUISE KNOTS	CARGO WGT. INT.	CARGO WGT. EXT.	PAX
B-204	Jet	100	2,600	3,100	10
B-205	Jet	100	2,600	3,100	14
B-206B	Jet	110	760	910	4
B-206L	Jet	110	970	970	6
B-212	Jet	100	2,600	3,100	14
B-214	Jet	100	3,000	7,000	12
A-Star	Jet	125	1,100	1,400	5
Allouette II SA 318C	Jet	95	900	1,300	4
Hughes 500C	Jet	125	700	900	4
Hughes 500	Jet	125	700	900	4
Allouette III	Jet	110	1,400	1,600	6
Lama SA 315B	Jet	100	1,400	1,400	High alt
BV-107	Jet	125	7,000	9,000	Cargo
BV-234	Jet	130	22,500	22,500	44
Hiller FH 1100	Jet	105	700	900	4
Bell G-47	AvGas	75	800	1,000	2

## Overland Transport Capacities

<b>Surface Carrier</b>		<b>Payload</b>
Standard railway truck		30 MT (52 m <sup>3</sup> )
Standard container	20 ft/6.1 m	18 MT (30 m <sup>3</sup> )
	40 ft/12.2 m	26 MT (65 m <sup>3</sup> )
Large lorry and trailer		22 MT
Large articulated lorry		30 MT
Medium lorry		6-8 MT
Long wheel base landrover/ cruiser-type pickup		1 MT
Hand-drawn cart		300 kg
Camel		250 kg (more for short distances)
Donkey		100 kg
Bicycle		100 kg

## **OFDA Stockpile Commodities**

OFDA maintains stockpiles of standard relief commodities at five locations around the world. The purpose of these stockpiles is to position relief commodities closer to potential disaster sites to allow for more immediate availability of relief commodities for disaster victims. The prepositioning of these commodities also reduces the delivery costs.

Stockpiles are located in Maryland, Panama, Italy, Guam, and Thailand. The Panama, Guam, and Italy stockpiles are located on U.S. military installations, and the military by agreement assists with the handling and storage of these commodities. In Maryland and Thailand, the stockpiles are maintained through contracts with private organizations.

To access commodities in the stockpiles, the OFDA logistics officer notifies the stockpile managers of the type and amount of items needed for a disaster, and coordinates the pickup and delivery of the commodities to the disaster affected country. The types and amounts of commodities withdrawn from the stockpiles are based on the acceptance of needs assessments conveyed to OFDA from the affected country.

There is a chance that the initial stockpile commodities released to a disaster may precede the arrival of a DART. Upon arrival at a disaster site, DART members should be prepared to assist or take on the responsibility of receiving, inventorying, issuing, tracking, and accounting for these commodities. If at any time during a disaster the DART needs further stockpile commodities, a request with a description of the need must be processed through OFDA. A DART cannot access the stockpiles directly.

Stockpile commodities may be released to PVO's/NGO's who are qualified to distribute and instruct in the use of the commodities.

Information critical to the planning of all aspects of the ordering, movement, tracking, and accounting for OFDA stockpile commodities is provided below.

### **Stockpile Items and Specifications**

#### **OFDA Individual Support Kit:**

The purpose of this kit is to provide the necessary items to allow a relief worker to be able to support him/herself for 48–72 hours,



under adverse field conditions, if necessary. Many items are useful to an individual during a relief operation. It is a support kit, not a survival kit. It is not intended to compliment personal items that DART members bring on a deployment. **Each kit measures 18 by 18 by 12 inches. It displaces 3 cubic feet and weighs 23 pounds. The cost is \$150/kit.** All the items listed below are packed into the backpack.

**Contents:**

<b>Description</b>	<b>Quantity</b>	<b>Unit</b>
Backpack, nylon w/OFDA imprint	1	each
Bags, zip lock	6	each
Booklet, <i>Protect Your Hearing</i>	1	each
Candles	10	each
Cap, baseball adjustable orange	1	each
Collapsible cup, 3-ounces	2	each
Cooking stove, pocket size with fuel pellets	1	each
Cord, braided 1/4 inch by 50 feet	1	each
Dust mask 3M 8500	10	each
Ear plugs, molded silicone with cord and carry case	2	pair
Emergency blanket (mylar) 53 by 92 inches	2	each
Eye wash, with rinse cup	1	each
First aid kit	1	each
*Flashlight heavy duty with alkaline batteries	1	each
Food, MRE pack, 8 ounces each CK/BF/MB/Tuna	4	each
Food, survival bar, 3600 cal.	1	each
Gloves, work heavy leather/cotton	1	pair
Gloves, work lightweight cotton	1	pair
Hard hat, ANSI Z89.1-1986 ABC with logo and chin strap	1	each
Insect repellent, 3-ounces liquid	1	each
Knife, multi-blade camp	1	each
Matches, waterproof, boxed	4	each
Mirror, lightweight plexiglass	1	each
Mosquito head net with neck tie	1	each
Mug, tin, 10-ounce	1	each
Plastic tarp, reinforced poly 6 by 8 feet	1	pack
Poncho, orange 52 by 80 inches	1	each
Portable water jug (2-1/2 gal.)	1	each
Respirator mask with two spare filters	1	each
Safety goggles CLRZ87 STD	1	each
Sealing tape, nylon reinforced	1	each
Shoe protect. PVC with elastic top	3	pair
Shovel, collapsible	1	each
Sierra cook cup, small, stainless steel	1	each
Tissues, box, travel size	1	each

Tools, slip joint pliers, 6-inch	1	each
Tools, screwdriver flathead	1	each
Tools, screwdriver Phillips #2	1	each
Trash bags, 30-gallon	4	each
Utensils three piece camp	1	each
Vest I.D. w/OFDA logo and reflective stripes	1	each
Water, drinking, 4-ounce foil package	6	each
Water, purification tablets small bottle (12 gal.)	1	each
Whistle, plastic with cord	1	each

\*NOTE: Batteries in flashlight are installed backwards. This is to eliminate the chance of battery drain. Batteries must be taken out and reinstalled putting positive (+) poles forward.

#### **Intermediate Support Kit:**

These kits are designed for distribution by SAR members of the DART to local national volunteers and others who will work for/ with SAR members during rescue operations. Each kit contains enough material to equip 100 local laborers with limited safety items. Experience has shown that local volunteers are more reliable and effective when given simple tools and a form of team identification, such as the baseball cap.

**These kits are packaged into wood crates of 4 by 4 feet by 40 inches. They displace 60 cubic feet and weigh 455 pounds each. Eight kits will fit on an Air Force 463L pallet. The cost is \$2200/kit.**

#### **Contents:**

<b>Description</b>	<b>Quantity</b>	<b>Unit</b>
Caps, baseball, orange	100	each
Cooler, drink insulated, 5 gal. w/logo	2	each
Dust mask, 3M 8500	500	each
Ear plugs, with case and cord	200	each
First aid kit 25-person	2	each
Flashlight w/heavy duty batteries	100	each
Gloves, heavy duty leather/cotton	100	pair
Hard hat, ANSI Z89.1-1986 ABC	100	each
Plastic tarp, reinforced polyethylene	2	packs
Rope, manila 1/2 by 50 feet	2	each
Safety goggles CLRZ87 STD.	100	each

NOTES: 1. Batteries in flashlights are installed backwards to eliminate the chance of battery drain. 2. Thirty-six pairs of gloves are packed inside the drink coolers.

**Tents:**

OFDA stockpile tents are lightweight summer tents, designed for a family of six to eight people. Each tent is 10 by 14 feet with an external supporting tubular frame, a floor. Tent flies will be as a separate item upon request. The tent material is flame retardant. **Each tent is boxed and weighs 85 pounds. Approximate numbers per USAF aircraft are: 350 per C-130, 500 per C-141, and 1500 per C-5.**

**Blankets, Wool:**

Wool blankets are used by disaster victims in cool climates. **Blankets are packaged in bundles of 25 each. The bundle weighs 85 pounds, measures 32 by 32 by 30 inches, and displaces 9 cubic feet.** The cost per blanket is \$5.99.

**Blankets, Polyester:**

Polyester blankets are used by disaster victims in warm climates. **Blankets are packaged in bundles of 30 each. The bundle weighs 64 pounds and displaces 8 cubic feet.** The cost per blanket is \$2.00.

**Chainsaw Kits:**

Chainsaws are used to cut up blown-down tree and brush debris usually resulting from a hurricane. The kits include safety chaps, goggles, gloves, an extra chain, a chain sharpener, oil, rags, and a saw tool. **Chainsaws can be deadly tools and should only be issued to individuals who can prove that they have previous experience operating and maintaining chainsaws.** Chainsaws should not be used to cut up debris that has been submerged during a flood, because dirt and silt embedded in the debris will quickly dull the chain and make the saw useless. **The kits weigh 54 pounds, measure 36 by 18 by 18 inches, and displaces 5.2 cubic feet.** Each kit costs \$600.

**Hard Hats:**

Orange safety hard hats are provided for victims and relief workers when they are assisting in the removal of rubble from collapsed structures after an earthquake. **There are 20 per box, with dimensions of 18 by 18 by 24 inches. The boxes displace 4.2 cubic feet and weigh 17 pounds.** The cost is \$3.47/hat, or \$69.40/box.

**Face Mask:**

Respiratory dust face masks are provided for victims and relief workers assisting in the removal of rubble from collapsed structures after an earthquake. These face masks are not fine enough to filter volcanic dust or toxic fumes. **There are 600 per box with dimensions of 15 by 11 by 16 inches. The boxes displace 1.4 cubic feet and weigh 9 pounds.** The cost is \$.16/mask or \$160/box. (Some newer boxes contain 600.)

**Gloves:**

Leather palm work gloves are used by disaster survivors and relief workers assisting with relief efforts. **There are 100 pairs per box, with dimensions of 12 by 17 by 26 inches. The boxes displace 3.9 cubic feet and weigh 50 pounds.** The cost is \$2.44/pair or \$244/box.

**Water Container, 5-Gallon Collapsible:**

Water containers are for use by disaster victims and relief workers for moving and storing potable water. **There are 50 per box, with dimensions of 47-1/4 by 21-1/2 by 9-3/4 inches. The boxes displace 5.73 cubic feet and weigh 38 pounds.** The cost is \$1.50/container or \$75/box.

Note: Some boxes in stockpiles may be from earlier contracts and contain fewer containers.

**Water Tank, 3000-Gallon Collapsible:**

Water tanks are used by disaster victims to store large amounts of potable water. They have an open top with a cover. Once the tank is assembled, water tank access must be managed to prevent the polluting of the water in the tank. **Each 3000 gallon tank has a collapsed size of 30 by 25 by 44-1/2 inches. The tank displaces 18 cubic feet and weighs 125 pounds.** The cost per tank is \$2400.