Aerial Delivery Container Type A-7

is an adjustable webbing sling designed to carry a standard ammunition box. It c

an be adapted to carry other equipment or supplies such as three standard five-g

allon Quartermaster water cans.

Le container Type A-8

Aerial Delivery Container Type A-8

is a rigid, octagonal-shaped box 50² long and 18² in diameter. It is constructed of

fiber board and may be collapsed for stowing. Shock pads, for both the inside an

d outside of the container, have been designed to absorb landing shocks. This co

ntainer was an on-the-job development designed to fill the need for a rigid cont

ainer for dropping rifles to parachute troops and to supplement the A-5 containe

r, which must be dropped from a greater height.

Tube rigide octogonal en contreplaqué et métal de 1m25 de hauteur et de 0m25 de diamèt

re fermé aux deux extrémités par des couvercles articulés sur charnières. Ces couvercles p

ortent deux bras métalliques qui se rabattent sur un úilleton central, l'ensemble étan

t maintenu fermé par une goupille.

Les couvercles terminaux sont rembourrés à l'intérieur pour protéger la charge. Le couve

rcle inférieur est, de plus, muni d'un bourrelet extérieurs destiné à absorber le choc à l

'arrivée au sol.

Le corps de la caisse est renforcé de haut en bas par deux armatures d'acier forma

nt ainsi l'ossature du container et portant à leur extrémité supérieure les dés de fixatio

n du parachute. L'une des armatures est munie dans sa portion centrale de deux a

nneaux d'accrochage au lance-bombes.

Ce container est destiné au parachutage de fusils ou d'équipement nécessitant l'emploi

d'une gaine rigide

Aerial Delivery Container Type A-10

is nothing more than a cargo net measuring approximately 9'x 9¢, with a 3½º diamond mesh

. It is used for dropping miscellaneous supplies, either Class I, III, IV, or V.

This net was developed early in 1942 for Infantry paratroops for use in the res

upply of general classes of supplies common to the various services. The contain

ers described above are those frequently encountered in dropping Quartermaster s

upplies and are used with the parachute, Type G-1. Many other special containers

have been devised or are being developed. Ordnance matériel is being dropped in c

ontainers known as the paracrate & the parachest. The British have several types

of aerial containers and the Australian Army has recently developed a container

known as the storpedo.

There are two methods by which supplies can be delivered by air. The first, whic

h is the most obvious and logical, is delivery by airplane. Supplies are loaded

into cargo airplanes in the rear areas and flown to airfields in forward areas,

where the planes land and distribute their cargo to the units. This method, of c

ourse, requires a high degree of air supremacy and adequate landing fields in fo

rward areas. We are more concerned with the second method, whereby supplies are

transported by airplanes and delivered by means of parachutes and aerial contain

ers or free-fall containers. Free-fall containers are still the subject of inten

sive study and research and little can be told of their effective and efficient

use at the present time. Equipment used in dropping supplies consists of two maj

or items ± the parachute and the supply containers. Aerial delivery and cargo para

chutes were gradually evolved from personnel parachutes to perform the specific

job for which they have been designed. At the present time, five sizes and weigh

ts of parachutes are in current use. The aerial delivery parachute, known as typ

e G-1, is a 24¢ canopy for use with loads up to 300 pounds. It was developed sever

al years ago and was standardized in December of 1942.

The parachutes, cargo, dropping, are known as types G-2, G-3, G-4, and G-5. Thei

r canopies measure 24¢, 28¢, 36¢, and 48¢, respectively, and are capable of carrying loa

ds up to 3,000 pounds. Parachute assemblies consist of the canopy and pack. Earl

y models of the canopies were of cotton fabric, later changed to rayon. Some of

the larger canopies are now being made of nylon because of its lightness and str

ength. For identification purposes, canopies are made in various colors-red, gre

en, blue, yellow, or natural. By establishing a color code, the type of supplies

being delivered is easily determined by the color of the canopy. For instance,

blue canopies might designate water, red canopies, ammunition, green canopies, r

ations, etc.

G-1 : 24¢ (Canopy)

G-2 : 24¢ (Canopy)

G-3 : 28¢ (Canopy)

G-4 : 36¢ (Canopy)

G-5 : 48¢ (Canopy)

White Canopies : Medical & Veterinary Supply

Yellow Canopies : Food Supply

Blue Canopies : Water Supply

Red Canopies : Ammunitions & Demolitions Supply

Green Canopies : Equipments & Signal Supply

Cargo parachutes, being larger and constructed of heavier material than the aeri

al-delivery parachutes, are dropped from higher altitudes, for, as the size or w

eight of the canopy increases, the greater is the opening time required. The Arm

y Air Force Board considers 200 feet to be the best altitude for dropping suppli

es and equipment from aircraft by parachute, with variations depending upon the

type of load. Dropping at such low altitudes eliminates drift and assures greate

r accuracy in landing supplies in the desired drop zone. It also eliminates osci

llation of the load to a great extent.

Loads of less than 125 pounds should be dropped from approximately the 200-foot

level in order to permit the suspension lines to untwist. It has been found that

, with light loads, the suspension lines have a tendency to twist as they come i

n contact with the propeller blast, thereby prohibiting full inflation of the pa

rachute before impact. Loads greater than 125 pounds exert enough pressure to un

twist suspension lines at a faster rate and may, in many cases, be dropped from

a minimum of 100 feet. For dropping heavy loads and to aid in the reduction of l

oad oscillation. triple and quadruple clusters of cargo parachutes have been des

igned. Gross loads up to 4,200 pounds have been successfully dropped by the four

-cluster arrangement. A somewhat similar method for dropping supplies is known a

s the ªcontrolled ground pattern.º While the cluster usually consists of three or fo

ur cargo parachutes attached to one heavy load, the controlled ground pattern co

nsists of three or four separate loads and parachutes tied together with web bel

ting so as to bring the load within one drop area and to prevent it from being s

cattered over a large area of the drop zone.

Containers for use in the aerial delivery of supplies are constantly being revis

ed and developed to meet changing conditions and requirements. New developments

and requirements arising in the training of Airborne units or under actual comba

t conditions in the field are forwarded to the Army Air Forces Division, Matériel

and Services, Matériel Command, who arrange and contract for pilot models. Actual

tests are then conducted by the Proving Ground Command and, if the model is cons

idered successful and fulfills the military requirements, it is approved by the

Army Air Forces Board. Final approval and standardization rests with Headquarter

s, Army Air Forces. Eight containers for use in the aerial delivery of supplies

have been developed and standardized. These are known as types :

Aerial Delivery Container type A-3 (\*)

Aerial Delivery Container type A-4 (\*)

Aerial Delivery Container type A-5

Aerial Delivery Container type A-6 (\*\*)

Aerial Delivery Container type A-7 (\*\*)

Aerial Delivery Container type A-8

Aerial Delivery Container type A-9 (\*\*)

Aerial Delivery Container type A-10

Recently, however, Type A-3 has been merged with Types A-4 and A-6 (liquid dropp

ing containers) and Type A-9 has been merged with Type A-7 (slings). These are A

rmy Air Force Supplies, Class 20, and are standard equipment.

Aerial Delivery Container Type A-4

is an adjustable reinforced canvas container, 12²x 24²x 30². One end is opened for loa

ding and is closed with laced flaps. It can be used for the delivery of supplies

such as rations, medical supplies, and clothing. (Clothing, however, is one ite

m which is often dropped in bundles, free fall, as there is no danger of damage.

) Two corrugated fiber boxes 12²x 12²x 30² are available to be used with this containe

r for additional protection of fragile articles. The type A-4 container was the

first to be developed and was standardized in November 1940. It was primarily in

tended for dropping supplies to Infantry, Cavalry, and Armored Car units.

Aerial Delivery Container Type A-5

is a sheet of heavy canvas 15¢ long and 56² wide with a pad of felt. It was develope

d primarily for the purpose of dropping rifles to parachute troops. Rifles are p

laced on the felt pad and rolled up in the canvas to form a roll approximately 1

8² in diameter. The ends are protected with removable end caps.

Aerial Delivery Container Type A-6

is a canvas cover fitted over a 12²x 12²x 30² corrugated fiber carton. A shock-absorbi

ng pad is attached to the bottom. The unit is used for dropping rations or three

plastic water containers of five-gallon capacity, which fit into the fiber cart

on. The water containers may, of course, be used for dropping other liquids such

as milk or medicine.

Aerial Delivery Container Type A-7

is an adjustable webbing sling designed to carry a standard ammunition box. It c

an be adapted to carry other equipment or supplies such as three standard five-g

allon Quartermaster water cans.

Aerial Delivery Container Type A-8

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upply of general classes of supplies common to the various services. The contain

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upplies and are used with the parachute, Type G-1. Many other special containers

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of aerial containers and the Australian Army has recently developed a container

known as the storpedo.

To aid the pilot of cargo planes, dropping zones should be clearly marked. The d

ropping zone should preferably be near a prominent landmark, which can be readil

y spotted from the air. Prearranged ground panels or other signals and markers s

hould be established for both day and night operations in the event of emergenci

es. Another method would be the use of a two-way receiver-transmitter radio, ope

rated on an Army frequency band, between the aircraft and the ground troops. Wea

ther conditions often play a large part in determining the manner and direction

in which the plane flies over the drop zone, and the pilot must be the one to de

cide upon the direction of his approach. However, ground signals should be displ

ayed to indicate the general direction for planes to fly over the target to prev

ent two or more planes from approaching the dropping zone simultaneously from di

fferent directions. Dropping zone sites are usually chosen by the ground troops

and approved by the air liaison officer. They vary in size depending on the terr

ain, some averaging only 150 yards long by 50 yards wide. One observer of air re

supply operations in overseas theaters advocates the use of two dropping areas.

In other words, free-drop and parachute packages should be dropped in different

areas to avoid damage to containers already dropped. Ground troops should observ

e a danger area of at least 100 yards on each side of the dropping zone as a saf

ety precaution against descending containers.

Two methods are in use for ejecting parachute containers from the cargo airplane

s. One method utilizes a para-rack, in which the containers and parachutes are p

laced in a rack under the plane and released mechanically. The other method is t

he manual ejection of the containers from the door of the plane. In either case,

the signal for dropping the supplies is given by the pilot by means of a system

of colored lights when the plane is over the drop zone. Personnel should be tra

ined to clear the drop zone quickly of supplies by definite assignment of the ne

cessary tasks. One section of the ground crew should gather up the parachutes. I

f wet or damp, they should be suspended from the apex and dried before stacking.

Another section of the ground crew should pick up the rations and medical suppl

ies; another section the ammunition, and so on. Free-drop bundles should be remo

ved last. As the stature and importance of the airplane as a transportation medi

um for large divisions of the Army is developed, so will the need for sufficient

supply of those troops by cargo airplanes become increasingly important. Air Qu

artermaster personnel should acquaint themselves with the problems incident to t

he resupply of units by air in preparation for the time when supplies transporte

d by cargo planes will be measured in tons instead of pounds.

Aerial Delivery of Supplies

MAJ RAYMOND C. ALTERMATT, QMC

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