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INVENTORY OF PORTABLE BUILDINGS

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ABSTRACT

Commercially available portable buildings are listed in tables which allows selection according to various types of charter aircraft that may be used as well as building size, etc. (U)

RESUMÉ

Les caracteristiques des huts portables sont disposées en tableaux de ou on peut choisèr selon les caractéristiques de l'aéroplace portant, le plus adapté. (U)

INVENTORY OF PORTABLE BUILDINGS

INTRODUCTION

A Plans Study (1) of the logistics requirements to support DRB research in the Arctic concluded that the best course was to rely on operation from temporary bases established in the North. These bases were to be built from the wide variety of portable buildings on the market moved to required sites by chartered air support. The PRG meeting of October 6, 1972 accepted this conclusion and in addition requested that an inventory of air transportable shelters be set up.

This technical note summarizes the characteristics of commercially available buildings; a detailed file on building characteristics is available at DREO.

ANALYSIS

A wide variety of air-transportable buildings is now available ranging from sophisticated laboratory buildings to simple tents. Unit suppliers will modify their products to produce custom-made housing so the variety becomes almost endless. However, to bring some order to what is available, buildings have been classified according to the aircraft that can carry them. This sorting is tabulated in Table I which also includes information on the volume of the buildings and their method of construction. The table is constructed so that structures are shown opposite the smallest aircraft that can carry them and are, of course, portable by all large aircraft subsequently listed. Panelized and fabric structures are available from several manufacturers that can be carried by the smaller aircraft. These latter can normally land on ice and very rough strips usually within walking distance from desired work sites.

Large aircraft can carry prefabricated units which are built as standard modules and a large variety are transportable by Hercules aircraft. The DREO modules were designed to be transportable by Buffalo aircraft and this aircraft can also carry panelized buildings.

The Hercules aircraft has become the freighting work-horse of the north and the wide variety of buildings that can be carried by it is summarized in Table II.

As seen in the table some of the available modules, both knock-down or pre-built, can be carried by a large helicopter from the landing strip to the work site.

The load-carrying characteristics of the various aircraft that would be used as possible charters is shown in Table III. A match between this table and Table I should allow suitable choice of the logistics required for setting up a temporary land-based operating laboratory facility in the Arctic.

Detailed information on available portable buildings is held at DREO and is available upon request.

REFERENCES

1. J.H. Meek. Plans Report 72 "DRB Platform Requirements for Arctic Research".

2. PRG Meeting 11/72 October 6, 1972.

TABLE I

ANALYSIS OF BUILDING PORTABILITY

Portability (Type of Aircraft)	Cube	Knockdown	Panelised	Fabric
DHC-2 (Beaver)			Insulated panels 3"x16"x8' "Protective Plastics FRP, Foam insulated"	Insulated Tent, 8'x16'x any length, "Parcoll" Tent 8'x11'x24' "Up-right scaffold" Tent 9'x14'x16' "Scotland" Tent, double wall 3 man "T. Black & Sons"
DHC-3 (Otter)			Insulated Panels 4"x32"x10'	Tent, Hemisphere 20' diameter "Atco Pes-2010"
DHC-6 (Twin Otter)	Box 4'x4'x4'	DREO 3Kw Generator Hut 7'x6'x6'	Insulated Panels 4"x32"x18.5'	
SC.7 (Skyvan)	Box 6.5'x6.5'x18'		Insulated Panels 4"x6.5'x18'	
DC-3 (Dakota)	Box 5'x5.3'x9'		Insulated Panels 4"x4'x12'	
DHC-5 (Buffalo)	DREO Module 5.8'x7'x8' "Protective Plastics"		Insulated Panels 4'x7'x31'	
C-130 (Hercules)	Module 8.5'x9.15'x39' "Atco" "Portabuilt" "Morrison"	8'x8'x20' "Atco Sems Shelter"	Panels 22"x10'x22' "Atco Folding Warehouse 40' Clear Span"	

TABLE II

C - 130 PORTABLE

MANUFACTURER	ITEM
Atco	Folding Warehouse, 40' clear span any length panels 10' wide 22' long and 26" high
Atco	"Sems" Knockdown Module 8' wide 8' high 20' long C-130 will carry 8 units.
Atco	Helicopter Transportable Unit 9' wide 8' high 18' long. Available as: 8 man sleeper, 4 man office-sleeper, 4 man sleeper-storage, diner, washcar, kitchen, recreation, workshop, advance storage-sleeper, 9' x 8' x 16' generator-water storage, 8' x 8' x 10' snow melter, 6' x 7' x 9' generator shell.
Atco Portabuilt	Hercules Transportable Camp Unit 9'2" wide 8'6" high 39' long, available as: sleeper, (12 man), sleeper-storage, recreation-office, kitchen-diner, washcar-sleeper, tool push quarters, advance unit.
Morrison	Wheeled unit, for highway trailing, 7'10" wide, 22' long ? high. Available as: 2-5 man camp car, 8 man dormitory, kitchen unit, kitchen-dining unit, 2 man office unit.

TABLE III

FIXED WING AIRCRAFT

MANUFACTURER	MODEL	NAME	CAPACITY	CANADIAN FORCES
DeHaviland	DHC-2	Beaver	1,000 lb* (1,200) 1,200'† x 40" x 14" x 10'**	
DeHaviland	DHC-3	Otter	2,000 lb* (2,300) 1,500'† 46 1/2"x45"	32
Short	SC.7	Skyvan	4,600 lb. 78"x78"x 18.5' 1,000' †	
DeHaviland	DHC-5	Buffalo	13,843 lb 1,100'† 105"x82"x31'	15
DeHaviland	DHC-6	Twin Otter	4,000 lb* (18' long) 1,000' † 56"x50"x88" + 38"	7
Douglas	DC-3	"DC-3"	6,5001b* (7,300) 4,000'†84 "x55"	47
Lockheed	C-130	Hercules	45,000 5,000'† 120" x 108" x 39' long	23
Boeing	707-320C	"707"		5
Convair	Cosmopolitan	"Cosmopilitan"		7
DeHaviland	DHC-4	Caribou	8,740 lb. 1,200'†, 87" x 75" x 1,150" Door 6'3" c 6'1"	

* Actual practice, average load, fuel extra
** Width X Height X volume or length
† Runway required

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