NPS Form 10-900
(Oct. 1990)

OMB No. 10024-0018

United States Department of the Interior
National Park Service

...TO D.C.
7-2-96

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name U. S. Army Aircraft C-53-DO-41-20124

other names/site number U. S. Navy Aircraft R4D-3 BuNo 05078

2. Location

street & number Bloomington-Normal Airport 1.25 mi. E of jct. of Rt. 9 and Bus. 55 ☐ not for publication

city or town Bloomington ☐ vicinity

state Illinois code IL county McLean code 113 zip code 61704

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this ☒ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☒ meets ☐ does not meet the National Register criteria. I recommend that this property be considered significant ☐ nationally ☒ statewide ☐ locally. (☐ See continuation sheet for additional comments.)

William L. Latshaw /SHPO 6-25-96
Signature of certifying official/Title Date

Illinois Historic Preservation Agency
State of Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. (☐ See continuation sheet for additional comments.)

Signature of certifying official/Title Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is: Signature of the Keeper Date of Action

☐ entered in the National Register.
☐ See continuation sheet.

☐ determined eligible for the National Register
☐ See continuation sheet.

☐ determined not eligible for the National Register.

☐ removed from the National Register.

☐ other, (explain:) _____

U. S. Army Aircraft
C-53-DO-41-20124
Name of Property

McLean, Illinois
County and State

5. Classification

Ownership of Property
(Check as many boxes as apply)

- ☒ private
- ☐ public-local
- ☐ public-State
- ☐ public-Federal

Category of Property
(Check only one box)

- ☐ building(s)
- ☐ district
- ☐ site
- ☒ structure
- ☐ object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
0	0	buildings
0	0	sites
1	0	structures
0	0	objects
1	0	Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously listed in the National Register

N/A

6. Function or Use

Historic Functions
(Enter categories from instructions)

DEFENSE: air facility
TRANSPORTATION: air related

Current Functions
(Enter categories from instructions)

RECREATION AND CULTURE: museum

7. Description

Architectural Classification
(Enter categories from instructions)

OTHER: Passenger/Light Cargo Aircraft

Materials
(Enter categories from instructions)

foundation N/A
walls N/A
N/A
roof N/A
other METAL-aluminum, steel
SYNTHETICS-fiberglass, rubber

Narrative Description
(Describe the historic and current condition of the property on one or more continuation sheets.)

U. S. Army Aircraft
C-53-DO-41-20124
Name of Property

McLean, Illinois
County and State

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- [x] **A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- [ ] **B** Property is associated with the lives of persons significant in our past.
- [x] **C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- [ ] **D** Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark "x" in all the boxes that apply.)

Property is:

- [ ] **A** owned by a religious institution or used for religious purposes.
- [ ] **B** removed from its original location.
- [ ] **C** a birthplace or grave.
- [ ] **D** a cemetery.
- [ ] **E** a reconstructed building, object, or structure.
- [ ] **F** a commemorative property.
- [ ] **G** less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance
(Enter categories from instructions)

ENGINEERING
MILITARY
TRANSPORTATION

Period of Significance

1942, ENGINEERING
1942-1946, MILITARY AND TRANSPORTATION

Significant Dates

1942

Significant Person
(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

N/A

Architect/Builder

Douglas Aircraft Company, Inc.

Narrative Statement of Significance
(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography
(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- [ ] preliminary determination of individual listing (36 CFR 67) has been requested
- [ ] previously listed in the National Register
- [ ] previously determined eligible by the National Register
- [ ] designated a National Historic Landmark
- [ ] recorded by Historic American Buildings Survey # _____
- [ ] recorded by Historic American Engineering Record # _____

Primary location of additional data:

- [ ] State Historic Preservation Office
- [ ] Other State agency
- [ ] Federal agency
- [ ] Local government
- [ ] University
- [ ] Other

Name of repository:

_____

U. S. Army Aircraft
C-53-DO-41-20124
Name of Property

McLean, Illinois
County and State

10. Geographical Data

Acreage of Property Less than one Acre

UTM References
(Place additional UTM references on a continuation sheet.)

	Zone	Easting	Northing
1	16	336320	4483210
2			
3			
4			

☐ See continuation sheet

Verbal Boundary Description
(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification
(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Stephen A. Thompson, Cultural Resource Manager

organization Illinois Historic Preservation Agency date 29 February, 1996

street & number 1 Old State Capitol Plaza telephone 217-782-8168

city or town Springfield state IL zip code 62701

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional items
(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of SHPO or FPO.)

name Prairie Aviation Museum

street & number P. O. Box 856 telephone 309-663-7632

city or town Bloomington state IL zip code 61702-0856

U.S. ARMY AIRCRAFT C-53-DO-41-20124 DESCRIPTION

U.S. Army Aircraft C-53-DO-41-20124, civilian registration number N763A, is a representative example of one of the 399 C-53 "Skytrooper" United States Army Air Force passenger/light cargo aircraft manufactured exclusively by Douglas Aircraft Company, Inc. in Santa Monica, California prior to and during World War II. Date of manufacture for this aircraft is March 11, 1942.[1] C-53-DO-41-20124 is currently located at the Bloomington-Normal, Illinois Airport.

General characteristics of C-53-DO-41-20124 are consistent with original Douglas Commercial-3 (DC-3) specifications which include a low-wing monoplane design, aluminum structural members, aluminum clad exterior, two radial engines and compartmentalized fuselage.

A brief explanation of the U.S. Army Air Force (AAF) aircraft designation system is prudent before further examination of this aircraft is undertaken. The C designation indicates a cargo/transport aircraft, while the 53 indicates the 53rd model of cargo/transport aircraft purchased by the AAF. The DO alpha set identifies the Douglas plant of manufacture. The number 41 indicates the Fiscal Year the craft was contracted for and the five digit concluding number is the Army serial number. C-53-DO-41-20124 will be referred to the abbreviated designator 41-20124 in various sections of the nomination form.

Directional references when describing elements of 41-20124 will be port for left of the pilot's position, starboard for right of the pilot's position, forward (fore) for front and aft for rear. This reference system is the result of terminology applied to aircraft when, early in their production, they were considered vessels like ships and boats.

HISTORICAL INFLUENCES

The design evolution of the DC-3 followed aircraft engineering trends developed during the 1920s and 1930s aimed at providing an efficient passenger carrier for commercial use. Competing designers/manufacturers such as Fokker, Lockheed, Boeing and Douglas realized the blossoming potential of commercial aviation in

the post World War I era and continued to refine the design of the "new" all metal aircraft to fulfill market need during this period. In 1936, the Douglas DC-3 emerged as the primary twin-engined passenger/cargo design in the world. It would dominate as such through the 1940s.

CREW

Military C-53 - Pilot and Co-Pilot

Civil DC-3 - Pilot, Co-Pilot and Passenger Attendant.

WEIGHT AND PAYLOAD

Empty weight for 41-20124 is 17,245 pounds. Gross weight allowable to achieve maximum performance levels is 25,200 pounds. Payloads generally consist of fuel, passengers, cargo and crew.[2]

PERFORMANCE

Maximum speed for Douglas C-53s/DC-3s equipped with Pratt and Whitney R-1830-92 radial engines is 230 mph @ 8,000 feet. Cruising speed is 160 mph @ 10,000 ft. Rate of climb is approximately 1,050 feet per minute. The service ceiling, maximum operational altitude, is 24,100 feet. Normal range is approximately 2,000 miles with a full payload.[3]

POWER PLANT

The standard factory engine specification for all C-53s is two 1,200 horsepower Pratt & Whitney R-1830-92 Twin Wasp, air-cooled, 14 cylinder, radial models with Hamilton Standard hydromatic, full-feathering, 3-bladed propellers.[4] The Pratt and Whitney R-1830-92 engine was typical for all DC-3 variants produced for the U.S. military in the late 1930s and early 1940s. 41-20124 currently employs two Pratt and Whitney R-1830-90D 1500 horsepower engines with Hamilton Standard hydromatic, full-feathering, 3-bladed propellers. The Pratt and Whitney R-1830-90D 1500 horsepower

engines were standard upgrades for DC-3 variants achieving maximum engine operational hours in the post-war era. The engine nacelles (enclosures) and cowlings are intact, and twenty-five gallons of engine oil are contained in the nacelle tanks below each engine.

WING

The wingspan of 41-20124 is 95 feet and has a total area of 987 square feet. C-53s are of a low wing cantilever design. The inner wing is attached to the fuselage with aluminum structural wing spar members covered by aluminum skin panels that are part of the trailing wing fillet. The inner wing contains one engine and landing gear assembly to each side of the fuselage. The engines are covered with fore and aft cowlings separated by cowl flaps. An air intake scoop is on top and a oil cooler breather exists below on the aft cowling of both engines. Exhaust scoops are present on each side of the lower aft cowling assembly. Two flush fuel filler caps are present between the fuselage and the engines on each side of the inner wing. The forward caps are connected to the port and starboard main fuel tank on their respective sides, while the aft filler caps are linked to the auxiliary port and starboard fuel tanks. Each main fuel tank has a capacity of approximately 211 gallons and the auxiliary tanks have a capacity of approximately 202 gallons each. The fuel tanks are mounted between the structural members of the inner wing. Two sections of the four-section split trailing edge flaps, used to assist aerodynamically with take-offs and landings, are connected to the aft section of the inner wing. These two sections extend from the midpoint of the fuselage to the terminus of the inner wing.

A port and starboard outer wing section is attached to each side of the inner wing. Both outer wings contain a section of the trailing edge flaps adjacent to the inner wing and a ceconite (fiberglass fabric) covered aileron (pitch control device) extending to a double-elliptical aluminum tip section. The starboard aileron contains a controllable trim tab. The wing tips contain navigational lights, red to port, green to starboard. The leading edge of the outer wings contain a landing light with vision shield approximately six feet from the inner wing connection. Evidence of rubber de-icing boot exists on the leading edge of both outer wings. The de-icing boots, which were also present on the leading

edges of the vertical stabilizer and port and starboard horizontal stabilizers, were removed at some time prior to the acquisition by the current owner.[5] The outer aluminum panels in these areas were resecured with Phillips-head screws.

FUSELAGE

The fuselage section of C-53s are typically 64 feet 5.5 inches in length from the nose to a point near the trailing edge of the horizontal stabilizers within the tail assembly. It is constructed of aluminum structural members. The largest cylindrical interior dimensions of this model are 108 inches in height and 97 inches wide. The interior dimensions tapers to a smaller volume fore and aft. The cabin height is 79 inches. General exterior characteristics include plexiglass cockpit windows/windscreen, plexiglass passenger windows on each side of the main cabin, crew/passenger/cargo access doors, and the vertical stabilizer. Various radio communication and navigational antennae are often present on the exterior. Common interior characteristics include the forward compartment, the main cabin, lavatory and rear cargo area.

Exterior Fuselage

The exterior fuselage of 41-20124 is covered with standard aircraft aluminum panels with the top section painted in a 1950s era Ozark Airlines pattern. At the tip of the nose is a small forced air vent and a U-shaped navigational sensor. Aft of the nose are four fixed forward and two sliding side plexiglass windows opening to the flight deck/cockpit. Above the cockpit is an emergency exit hatch. Directly below the cockpit are two L-shaped pitot static tubes (air speed indicator sensors), two oblong radio navigational antennae housings, and two radio communications rod antennas. On top of the fuselage aft of the flight deck is a V-shaped radio navigational antenna, an antenna wire support bracket and an interior heater intake scoop with an integral heater exhaust port below. Two radio communications antennae are also present on top of the fuselage above the main cabin. On the port side of the fuselage, there exists a forward crew access hatch and a wing inspection light aft of the flight deck. The port side contains seven fixed, plexiglass passenger windows with an emergency exit at

the fifth window to the rear, a five step passenger entrance/exit door and the external rear compartment cargo area door. The starboard side of the fuselage contains six fixed, plexiglass passenger windows with emergency exits located at the fifth and sixth windows, an access door for lavatory waste along the belly and a small, fixed, plexiglass lavatory skylight on the upper starboard side. The vertical stabilizer with a red rotating beacon light rests on top of the aft portion of the fuselage. The fuselage tail fairing extension attaches to the aft internal fuselage structural members and contains red and white tail lights at its terminating point.

Interior Fuselage

The interior fuselage floor plan of 41-20124 is consistent with that of post-war commercial DC-3As, military surplus DC-3 variants converted to civil use, and exhibits only one of a variety of main cabin passenger seating and service options available to Douglas Aircraft customers. The main cabin of 41-20124 was converted to a civil use layout in 1947. The original main cabin was unfinished with fuselage structural members exposed and contained 14, center facing, aluminum, bench seats on each side of the interior fuselage wall.

The forward compartment consists of the flight deck/cockpit containing the pilot and co-pilot positions, communications and navigational equipment rack aft of the pilot's position, hydraulic system equipment aft of the co-pilot's position and forward cargo areas aft of the communications/navigation and hydraulic equipment.

The cockpit contains two aluminum seats, with removable, fabric covered cushions, separated by the control pedestal, which contains engine carburetor, carburetor de-icer, propeller, fuel tank, throttle, elevators and aileron trim tab controls. An emergency escape hatch in centered in the fuselage above the seats. Flexible tubing from the hot air heating system is present parallel to the inner fuselage above the side windows on each side of the cockpit.

The flight instrumentation panel is located below the windscreen directly in front of the pilot and co-pilot positions, and contains a variety of operational indicators including the altimeter, artificial horizon, radio compass, air speed indicator, wing flap

position indicator, oil pressure and temperature gauges, fuel pressure and quality gauges, manifold temperature gauge and tachometer. Electrical panels exist above the windscreen directly in front of the pilot/co-pilot positions and contain numerous operational toggle mechanisms including passing, landing, running, formation, and tail light switches, engine ignition and starter switches, cockpit, main cabin and instrumentation light switches and VHF radio command set switches. The port side inner fuselage wall contains the pilot's communications controls and oxygen outlet. The starboard side of the inner fuselage wall contains the co-pilot's communications controls and oxygen outlet, landing gear hydraulic pressure gauge, hydraulic system pressure gauge and engine cowl flap control. There is a flight control column and floor level rudder/brake control pedals in front of each seat. Aft of the co-pilot's seat adjacent to the main aisle is the hydraulic system control panel which includes the wing flap control, landing gear control, and hand pump shut-off valves, hydraulic hand pump and hydraulic fluid sight gauge. Constructor data plates are present on the center facing edge of the bulkhead directly aft of the co-pilot's position.

The cockpit floor rises approximately three inches above the main forward compartment floor and is of medium gauge, smooth aluminum. Aft of the cockpit bulkhead on the port side is a passage to the crew access door. Directly aft of this passage is the radio communication/navigational equipment rack containing seventeen component units. On the starboard side of the main aisle aft of the co-pilot's position is the hydraulic system equipment. Aft of the communications/navigational equipment rack and the hydraulic system equipment are the forward cargo areas with a nylon strapping system mounted on aluminum tubing secured to the forward compartment flooring. The forward compartment aisle and crew access door passage flooring is heavy gauge textured aluminum plating. Separating the forward compartment from the main cabin is the main cabin bulkhead with a hinged aluminum door providing access at the main aisle.

The primary main cabin features of 41-20124 consist of seating for twenty-six (26) passengers, a food service buffet and a lavatory.

The main cabin forward bulkhead is covered with a padded, brown vinyl material. Mounted on the main cabin forward bulkhead wall are two magazine receptacles and a flashlight bracket. An illuminating "No Smoking/Fasten Seat Belts" sign exists above a padded, aluminum, hinged door which opens into the main cabin and provides access to the forward compartment. Six sets of dual, high-backed, blue fabric, cushioned seats with vinyl headrest covers and rear fabric storage pockets are positioned on each side of the main aisle. A solitary unit of these dual seats is positioned forward of the passenger access door and directly across from the food service buffet at the rear of this compartment. The seats are supported on medium gauge aluminum box-beam elements which are bolted to the cabin floor. Each dual seating unit contains three brown, vinyl-padded verticle-to-horizontal swivel arms containing an ashtray.

The buffet is located at the starboard rear of the compartment across the main aisle from the passenger access door. The buffet is divided into two functional spaces. The forward section consists of two shelves, the top serving as a preparation area and the lower being a tray/food storage area. Both upper and lower shelves contain vinyl covered, elastic cargo retainers. The aft galley section contains an overhead storage area with sliding doors, a preparation shelf with a coffee maker and lower storage areas which angle to a junction point at the lavatory bulkhead.

The arched ceiling of the main cabin is painted blue and contains four light fixtures and four ventilation screens in the main compartment air/heater duct centered above the main aisle. Attached above the passenger seating are open-faced, divided, on-board baggage storage units with a passenger handrail. Below the on-board baggage storage units is the arched passenger convenience assembly containing an individual reading lamp, cabin attendant call switch and adjustable cool-air duct for each seat. Adjacent to each outside seat is a passenger window treated with a pink fabric curtain mounted on upper and lower sliding rods. A white vinyl material surrounds the passenger windows the length of the fuselage. Emergency exits exist at the fifth window aft on the port side and the fifth and sixth windows aft on the starboard side of the fuselage.

The lavatory is located in the starboard side rear of the main cabin. It is separated from the passenger seating area by a hinged, aluminum door opening into the passenger seating area. The lavatory contains a commode, wash basin and a small vanity mirror on the access door.

The main cabin floor is reinforced plywood covered with blue, low pile carpeting. A vinyl curtain is present to cover the passenger access door when in the upright position. Aft of the passenger access door is a fabric covered, cushioned, folding, passenger attendant seat. The main cabin is separated from the rear cargo compartment by a bulkhead that extends from a point aft of the passenger attendant seat and around the perimeter of the lavatory to the opposite side of the fuselage. A rear compartment aluminum freight door exists on the port side aft of the main cabin.

The rear compartment extends from the aft main compartment bulkhead to a point approximately five feet to the rear of the tailplane attachment joint. The aft cargo area is accessed by an internal freight door from the main cabin compartment and an external freight door aft of the port side main compartment passenger access door.

The steel tailwheel strut projects diagonally to the upper fuselage tailwheel mounting plate in the area to the aft of the rear compartment. The tailwheel strut is connected to the shock absorber leg strut on which the tailweel is mounted outside of the fuselage below the vertical stabilizer. The tailwheel is encased with a rubber tire with dimensions of 9" x 6".

TAIL ASSEMBLY

The tail of 41-20124 is composed of component parts joined at the aft section of the fuselage. Port and starboard horizontal stabilizers are connected to the fuselage tail fairing at the tailplane attachment joints and have ceconite covered elevators with trim tabs attached aft. The span of the horizontal stabilizer and elevator units is 26 feet 8 inches. The ceconite covered rudder with trim tab is connected to the vertical stabilizer which is the highest point of the aircraft measuring 17 feet.

LANDING GEAR

The landing gear of 41-20124 consists of two identical tubular steel units, one each located under each engine nacelle. The mainwheel is mounted on a rubber tire with dimensions of 17" x 16" and is connected to the shock absorber leg strut and main under carriage aft strut. The gear system retracts hydraulically forward and up into the engine nacelle and in the upright position remains partially exposed for the purpose of minimizing damage if emergency belly landings are necessary. The landing gear are supplemented by the tailwheel in landings and ground maneuvers. Wheelbase is 37 feet 6 inches and wheel track is 18 feet 6 inches allowing for a slow speed turn radius of 57 feet.[6]

PAINT SCHEME AND MARKINGS

According to Douglas Aircraft factory specifications, 41-20124's original exterior paint scheme was U.S. Navy camouflage consisting of a flat olive drab hue on the upper and side fuselage, vertical stabilizer, upper wing, movable control surfaces and horizontal stabilizers, and a flat neutral grey hue on the under portions of the referenced surfaces. A white star on a circular blue background existed on both sides of the exterior fuselage in the area aft of the main compartment access door and on the upper on lower surfaces of the outer wings at a point approximately 10 feet from the wing tip.[7]

Although never owned or contracted by Ozark Airlines, 41-20124 currently displays the paint color scheme of an Ozark DC-3 passenger airliner circa 1950.[8] The upper portion of the fuselage from the cockpit aft and the horizontal stabilizers are white. Dark green paint exists from the mid-point of the nose, over the cockpit and tapers to a stripe the approximate width of the passenger windows and terminates below the tail section elevators. Two green horizontal stripes exist on the vertical stabilizer. Three horizontal white stripes are present aft of the cockpit windows on the port and starboard side of the fuselage. Below these stripes "US MAIL AM 107" is stenciled in yellow. The Federal Aviation Administration registration number N763A is displayed in white on the lower green stripe of the vertical stabilizer. "OZARK AIRLINES" with three horizontal stripes is represented in green on

the upper fuselage above the passenger windows. The lower fuselage, wing, flaps and engine cowlings are highly polished aircraft aluminum. The fabric covered ailerons, elevators and rudder are painted grey.

MODIFICATIONS

C-53-DO-41-20124 was built by Douglas Aircraft Company, Inc. under a U.S. Army contract as a 28 passenger/light cargo aircraft. Passenger seating consisted of 14 center aisle facing, aluminum, bench seats on each side of the inner fuselage. The major component variation between this plane and a civil DC-3 was the substitution of a Pratt & Whitney R-1830-92 1200 horsepower engines in place of the Pratt & Whitney SIC3-G 1050 horsepower engines specified for all pre-war DC-3s.

In June of 1947, Continental Airlines purchased the aircraft from the War Assets Administration and converted the main cabin of this C-53 for civil use. The conversion consisted of the removal of the 28 inner fuselage troop seats, finishing and soundproofing the inner fuselage, adding the 26 forward-facing commercial passenger and one folding passenger attendant seat, adding the food service buffet and replacing the exterior fuselage forward opening door with a downward opening air stair door. The replacement of the Pratt & Whitney R-1830-92 engines with the Pratt & Whitney R-1830-90D 1500 horsepower engines completed the conversion of this aircraft to a DC-3A, the designator assigned by the Civil Aeronautics Administration to all post war military surplus DC-3 variants undergoing civil use modifications. All portions of the conversion were done in accordance with Douglas Aircraft specifications for the transformation of military DC-3s to civil use.[9]

Other modifications to this aircraft, besides scheduled maintenance replacement and upgrades of engines and instrumentation, include only the removal of the wing and stabilizer de-icing boots and the addition of a contemporary rotating beacon light at the highest point of the verticle stabilizer. No structural or engineering modifications have been made to this aircraft.

INTEGRITY

C-53-DO-41-20124 is in superb condition and is fully operational. The aircraft should be considered an excellent candidate for listing on the National Register of Historic Places in that it possesses substantial physical integrity in the following areas:

Materials

41-20124 retains its integrity in the area of original materials due to the fact that any materials or components replaced, such as engines, propellers, landing gear, aileron/elevator/rudder fabric and external aluminum covering, has been done in accordance with required periodic maintenance schedules and due to excessive wear. As can be ascertained through available maintenance records, this aircraft retains all of its original structural members. A high percentage of the exterior aluminum panels, interior finishes and aperture opening materials are historic.

Design

41-20124 retains its integrity of design in that it continues to exhibit a high percentage of the exterior and interior characteristics of the original DC-3 design as adopted for military use.

The external and internal aerodynamic/engineering features and controls which are essential in the conveyance of the aircraft's design significance are entirely intact. While the interior main cabin plan displays alterations for a post-war civil function, this does not diminish the integrity of the original DC-3 design. From its inception, the DC-3 was intended to serve a variety of passenger functions, both civil and military. The main cabins of the 20 original American Airlines DC-3s were designed for two functions, either a 14 passenger sleeper or a 21 passenger day use. Other civil customers requested main cabin layouts such as luxury and executive plans, which Douglas had produced as marketing options.[10] The military was also supplied with alternate personnel carrying arrangements for the main cabin to satisfy its multi-task mission. Military DC-3 variant's main cabin layouts included not only the inward-facing metal bucket seats, but also a medical

evacuation plan with stacked, fabric litters and inward-facing, folding, fabric bench seating for use by airborne troops.

The conversion of the main cabin plan of 41-20124 from a military to civil function by Continental in 1947 demonstrates the confidence and satisfaction the domestic carriers had in the DC-3 design. The willingness of the commercial airline industry to convert military surplus C-53s to civil specifications should be considered an attribute of design and not detract from the integrity of 41-20124.

Workmanship

41-20124 being of massed produced parts and labor does not exhibit any noticeable features of individual workmanship.

The modifications to the main cabin displays the quality of workmanship by the Continental technicians conducting this operation in 1947, as opposed to those techniques employed by the Douglas Santa Monica workers in 1942 which are evident in all other areas of the aircraft. The application of Phillips-head screws in the skin panel areas where the de-icing boots were removed exhibits post construction craftsmanship in an attempt to duplicate factory production line techniques. The 1950's Ozark paint scheme displays the craftsmanship of Ozark maintenance employees and members of the Missouri Air National Guard who undertook this exterior appearance rehabilitation in 1985.

Location/Setting

41-20124 is a resource designed to be mobile. Its significance is inherent in its ability to operationally, if possible, move from one location to another. Location, as an integrity factor in the case of this aircraft, should be deferred to the integrity factor of setting. Its location is of little consequence as long as the setting is appropriate and leads it to convey its significance as an aircraft. 41-20124's is home-based adjacent to a maintenance hangar at Bloomington/Normal Illinois Airport which is an appropriate setting for the aircraft to convey its significance and integrity of location and setting.

Feeling/Association

41-20124 retains complete presence of physical features enabling it to project a sense of twin-engined civil and military airliners of the 1930s/40s. It is directly associated with U.S. aviation development and design.

ENDNOTES

Section 7

1. War Assets Administration Bill of Sale, Form WAA-2b, Document No. 5134861, 12 March 1947. Prairie Aviation Museum Archives.

2. Peter M. Bowers, The DC-3: Fifty Years of Legendary Flight (Blue Ridge Summit, Pennsylvania: TAB Books Inc., 1986), 221.

3. Ibid, 221.

4. Pilot Training Manual for the Skytrain C-47, AAF Manual 51-129-2 (Washington, D.C.: HQ Army Air Forces [1945]), 11.

5. Norm Wingler, Interview by Stephen A. Thompson. Bloomington, Illinois: 6 February 1996.

6. Bowers, The DC-3, 32.

7. Construction Documents, #5161665, Army Troop Transport C-53. Douglas Aircraft Company, Inc., Los Angeles, California, 1942.

8. Dan Usican, "Ozark Still Blooms in Bloomington," Airliners Magazine Vol. 3 No. 2 (Summer 1990): 39.

9. Department of Commerce, Civil Aeronautics Administration, Repair and Alteration Form ACA 337, Aircraft Identification Mark No. NC73726. Denver, Colorado, 14 June 1947. Prairie Aviation Museum Archives.

10. Bowers, The DC-3, 41.

U.S. ARMY AIRCRAFT C-53-DO-41-20124 SIGNIFICANCE

U.S. Army Aircraft C-53-DO-41-20124 is significant statewide under Criterion A in the areas of transportation and military history. 41-20124 was constructed by Douglas Aircraft Company, Inc. for the U.S. Army in 1942, and served primarily with the U.S. Navy as a passenger/light cargo transport and pilot/navigational trainer during its period of significance, 1942-1946.

41-20124 is a fully operational example of a Douglas Commercial-3 (DC-3) twin-engined, mono-wing airframe which Douglas Aircraft Company, Inc. designed and manufactured in the late 1930's to support the burgeoning U.S. and world-wide commercial airline transportation industry. Domestic carriers such as United Airlines, American Airlines, Transcontinental and Western Air (TWA) and Northwest Airlines adopted the DC-3 as the mainstay of their airliner fleets in the pre-World War II era. The world-wide pre-war popularity of the DC-3 as a commercial aircraft is evidenced by the licenses of sales and manufacture issued to public and private concerns overseas in Holland, Japan and the Soviet Union.

41-20124 conveys its significance in the area of military history through its association and use by the U.S. Navy and U.S. Marine Corps during and after World War II. The military DC-3 variants were used by allied and axis forces for a variety of missions. The military functions of this airframe design included passenger and cargo transportation, delivery of combat paratroops, cargo delivery by parachute, medical evacuation, aerial reconnaissance and a tow aircraft for glider operations.

Additionally, 41-20124 demonstrates significance under Criterion C in the area of engineering. This aircraft exhibits aerodynamic design, internal fuselage layout versatility and mechanical systems features that enabled the DC-3 and its variants to become the most popular and efficient commercial and military transport from the mid-1930s through the 1940s. The significant date for Criterion C is 1942, 41-20124's year of construction.

41-20124 is to be considered of statewide significance as it is the only fully operational example of the two DC-3 variants known to exist in the state. 41-20124's current location at the Bloomington-Normal, Illinois Airport in a setting of a terminal,

control tower, maintenance hangers, runways, taxiways and parking aprons is consistent with similar settings this aircraft would have operated from during its period of significance.

COMMERCIAL AVIATION/AIRLINER DEVELOPMENT

Shortly after the end of World War I, European nations involved in military aviation operations during the conflict began to develop a network of civil airlines to service the air passenger market on the continent. Early aircraft integrated into this system were surplus military models modified to accommodate passengers within the fuselage through a design that resembled railroad coaches with rows of seats separated by a central aisle. The war surplus planes were soon replaced by civil designs that were faster, more comfortable and more economical.[1]

After World War I, the United States' commercial airlines industry suffered through a sluggish developmental phase. The government and civilian populace alike were eager to return to peaceful pursuits. Aircraft were viewed as weapons of war with minimal civil functions besides that of mail carriers and pleasure craft.

The U.S. government took a passive approach to the development of new military models as it held a large surplus of European designed aircraft that were manufactured in the U.S. during the final year of World War I. Federal authorities were only purchasing small quantities of experimental and test aircraft. Of the models it did buy, the government had a policy of owning the design rights, which resulted in the procurement technique of competitive bidding for mass construction contracts. This policy led to the closure of many small manufacturers outbid by firms with larger production facilities. The government also stymied commercial carrier development by allowing the transfer of airmail only by the U.S. Post Office Department, which carried the mail on its own fleet of war surplus craft, primarily the DeHavilland 4 observation plane.[2]

These restrictive governmental policies hampered the growth of the commercial aircraft manufacturing industry and the development of commercial carrier operations in the U.S. Some manufacturers tried to establish their own airlines, but found they could not operate profitably on the limited passenger revenue alone. At the same

time, European airlines were demonstrating they could prosper from a combination of mail and passenger revenues in conjunction with forms of governmental incentives related to manufacturing, transportation and commerce development.

In 1925, the U.S. government began to realize its policies concerning aircraft production and mail services were a significant deterrent to the development of a multi-disciplined industry. Legislation known as the Kelly Air Mail Act was passed, which provided the mechanism for getting the government out of the airmail business by turning existing routes over to private contractors. Other air commerce legislation was subsequently enacted in 1926, that allowed design firms to retain the manufacturing rights for their new military models.[3]

Boeing Aircraft developed the first true mail/passenger plane, the 40-A, in 1927. The Boeing development of a reduced mass, air-cooled engine allowed for the addition of a two seat cabin which permitted paying customers to accompany the mandatory mail load of 400 pounds as required under the U.S. Post Office carrier contracts.

Shortly after the governmental policy change in 1925, Henry Ford was convinced of the need for a healthy U.S. aircraft industry by business associates and his son, Edsel.[4] Ford reasoned the general public had to be assured that flying was a safe proposition and undertook a series of annual "Ford Reliability Tours" demonstrating the trustworthy nature of modern commercial aircraft. The Dutch built Fokker F-VIIA single engine, eight passenger design modified by Ford's personnel to mount three, 200 horsepower American Wright Whirlwind air-cooled, radial engines proved to be a highly successful craft for these trials. Ford eventually produced his own tri-motor models in 1927.

By 1930, other aircraft companies such as Boeing and Curtiss had designed single, twin- and tri-motored aircraft, which were the catalyst for the development of a healthy network of airlines throughout the U.S. Competitive government contracts for modern and efficient military models fueled the regenerated aircraft industry and allowed for the profitable modification of the military designs to support the pubescent commercial airline industry.

EARLY DOUGLAS AIRCRAFT COMPANY DEVELOPMENT

Douglas Aircraft Company, Inc. was established in Los Angeles, California in 1920 by former chief engineer of the Glenn L. Martin Company of Cleveland, Ohio, Donald Wills Douglas. One of Douglas's first designs for his new company was a large single-engined biplane named the Cloudster which was later refined for naval use as the DT-2 torpedo plane. The contracts received for the DT-2 in 1921 required Douglas to establish more sophisticated production facilities. The site acquired was an abandoned movie studio in Santa Monica just north of Los Angeles.[5]

Until 1930, Douglas Aircraft concentrated exclusively on the development of military designs for the U.S. government. The O-2 observation plane produced by Douglas for the U.S. Army was later modified and sold to civilian organizations for use as a mail plane. Douglas got into twin-engined aircraft production indirectly by winning a competitive bid for the production of U.S. Navy designed flying boats in the mid-1920s. By 1928, Douglas Aircraft had become a major manufacturer and had relocated its production facilities to a new plant at Santa Monica's Clover Field.[6]

In 1930, Douglas premiered a eight to ten passenger, twin-engined flying boat of its own design named the Dolphin. Unfortunately, no commercial interest was generated due to the effects of the recent economic upheaval which brought about the Great Depression. The development of the formal Douglas Commercial (DC) aircraft was initiated in 1931 when engineer John Northrop formed a new design company which was financed by Douglas. Northrop shortly thereafter introduced a structural design of an all metal, low-wing, cantilevered monoplane. These engineering principles were applied to a twin-engined design which evolved into the DC-1 in 1933.

The domestic airlines had been clamoring for an aircraft that could transport enough passengers to make this function profitable since the late 1920s. In 1932, Boeing Aircraft was refining a twin-engined design, designated the 247, which would be able to carry ten passengers and had a range of almost 500 miles. The first sixty planes were obligated to United Air Lines, which meant its competitors would not be able to acquire the Boeing 247 until at least two years after production started. This dilemma caused Jack

Frye, Vice President/Operations of TWA to approach Douglas in August of 1932 with specifications that called for a new tri-motored airliner that could carry a minimum of 12 passengers at least 1,000 miles and contain engines with superior high and low altitude performance. The Douglas design staff went to work, and within 10 days had developed a 12 passenger, twin-engined DC-1 design for TWA's evaluation.

The DC-1 had distinct advantages over the Boeing 247. The first and most important to TWA was the increased passenger capacity. The design included a higher cabin compartment that allowed the passengers to stand erect. The use of wing flaps to assist in take-offs and landings, something new to the industry and not included on the 247, were also introduced. The DC-1 was all metal, except for the fabric covering movable control surfaces, and used the innovative increased strength and lightweight 29ST aluminum alloy for structural members instead of the previously standard 17ST.[7] On September 20, 1932, TWA gave Douglas a contract for one DC-1 prototype which included an option for the purchase of 60 production aircraft.

The DC-1 prototype conducted its first test flight from Clover Field on July 1, 1933. After initial testing, it was certified by the Civil Aeronautics Administration (CAA) for revenue passenger operations. Douglas incorporated sufficient refinements and structural modifications to justify a new model number, DC-2, for the production version. An increase in the fuselage length allowed a maximum of 14 passengers, making the DC-2 even more appealing to the commercial carriers.

Douglas built 193 DC-2s between 1934 and 1936. Most were purchased by domestic airlines, but a few served as corporate executive versions. Portions of the latter production of these craft went to the U.S. Army and Navy as personnel transports and freighters. European rights were bought by Dutch designer A.H.G. Fokker who sold 39 to European carriers. Five additional DC-2s were bought by Nakajima of Japan in 1937.[8]

THE DC-3

The development of the DC-3 was not the result of initiative displayed by Douglas Aircraft to provide a new commercial transport for the airline industry. Once again, the design originated from a request for specific requirements put forward by a carrier, this time American Airlines.

In 1934, American was the only airline to offer sleeper service on its trans-continental routes through the use of the Curtiss Condor II bi-planes. The Condor's flight engineering technology had become outdated with the introduction of the DC-2, but the DC-2s fuselage was too narrow to integrate double berths on each side of the main aisle. American was impressed by the performance and maintenance advantages of the DC-2 and soon submitted a request to Douglas for a modified DC-2 with a wider fuselage that would accommodate 14 sleeping berths.

Douglas was initially hesitant to provide American with what was essentially a new model of aircraft. A cursory examination by Douglas indicated that a stretching and widening of the fuselage would involve a ninety percent upgrade of the DC-2 in aerodynamics design and operating systems. Douglas was barely keeping up with production orders for the DC-2 and its engineering department was deeply engrossed with new military projects. Nevertheless, American Airlines President C.R. Smith and Donald Douglas were able to come to terms, involving creative financing and a stipulation that the Douglas Sleeper Transport (DST)/DC-3 would not be limited to American's sleeper market only. The Douglas design team, headed by chief engineer Arthur Raymond and including Ed Burton - basic layout, Lee Atwood - stress management and Dr. Baily Oswald - aerodynamics, was soon at work on the plans for the DC-3.[9]

The Douglas DC-3 was, in some ways, an example of an "overdesigned" airplane. Aeronautical engineering was still emerging as a discipline, and Douglas used materials and methods in its development which were better suited and implemented in larger and more advanced aircraft then under design and testing. The Douglas 21 passenger "day coach" optional proposal was also instrumental in the universal acceptance of this aircraft. The aerodynamic efficiency combined with the 21 passenger seating capacity afforded

the DC-3 to promote a seat-mile cost of as much as one-third to one-half that of its contemporaries.[10]

The DC-3 made its first test flight from Santa Monica's Clover Field on December 17, 1935, 32 years to the day after the Wright Brothers' first powered flight at Kitty Hawk, North Carolina. The DC-3 received certification from the CAA in May of 1936. In the spring of 1936, American took delivery of the first 20 production DC-3s, eight sleepers and twelve, 21 passenger day models. American initiated operations, using the first three DST's delivered by Douglas, on the New York to Chicago run, with the inaugural flight originating from Chicago's Midway Airport on June 25, 1936. Within weeks, American became the first domestic airline to make a profit just by hauling passengers.

The DC-3 soon became Douglas Aircraft's primary production model. By 1938, an estimated 80 percent of U.S. airline passengers were riding in the DC-3.[11] Twelve foreign airlines had also purchased the plane. While the most common versions were the 21 passenger day and DST configurations, 14 passenger luxury versions and models integrating up to 32 passenger seats were optional. Prices of pre-Pearl Harbor DC-3s varied between $90,000 and $115,000 depending on the equipment provided by the customer and training given to the customer's flight and maintenance personnel by Douglas.[12]

Douglas could not keep up with orders for the DC-3 throughout the pre-war era. To satisfy the demand, Douglas licensed production of the aircraft to the Japanese firm of Showa Hikoki Kogyo KK and the Russian Government in 1938. The Japanese version was designated the L2D2, and 487 passenger and cargo models were produced between 1938 and 1945. The Soviet rendering of the Douglas design, the PS-84, was produced initially at State Aircraft Plant No. 84 near Moscow. The Soviet designation was changed on September 17, 1942 to the Li-2, in honor of Russian engineer Boris Lisunov who had been sent to the U.S. in 1938 to study Douglas production methods. The German invasion of the Soviet Union caused production to be transferred to a new factory in Tashkent in South Central Russia, not far from the Afghanistan border. The Soviets produced approximately 3,000 Li-2 variants by the end of World War II.[13]

From 1935 to 1942, Douglas produced more examples of a single airliner, the DC-3, than any other U.S. aircraft manufacturer in

history. When civil aircraft production was suspended in the U.S. shortly after Pearl Harbor, Douglas had delivered 430 DC-3s. Most were in use with domestic carriers and 63 were serving European airlines. An additional 149 ordered by civil customers were requisitioned by the federal government while still in the factory and were delivered under military designations; C-48, C-49, C-50, C-51, C-52, C-53, C-68, C-84 for the U.S. Army and R4D-2 and R4D-4 for the U.S. Navy.[14]

DC-3 MILITARY VARIANTS

It did not take the U.S. Navy and the U.S. Army Air Corps long to follow the domestic airlines in the effort to update their transport aircraft fleets. Both services acquired DC-2s in the mid-1930s for evaluation and subsequently added these craft to their inventories. The Navy had ordered and received their first DC-2 cargo versions, the R2D-1, in 1934. The Army took delivery of its first DC-2 cargo planes, the C-33, in 1936.

The DC-3's advantages over the DC-2 were not lost on the military planners of the pre-war era. The Army acquired its first DC-3 cargo variant, the C-41, in 1941. The C-47, the most numerous example of the DC-3 series, followed a short time later. The Army became the primary purchaser of the DC-3 variants, buying 10,123 of the total Douglas production of 10,747 between 1936 and 1946.[15]

Military Inventory Numbering Systems

The Army assigned all of its aircraft designations based on a alpha/numeric Type-Model-Series (TMS) system, point of manufacture letters, a Fiscal Year (FY) contract number and a serial number indicating the purchase sequence of a particular aircraft in relation to all aircraft the Army had acquired since 1922.

The Type refers to the aircraft's primary mission, A - for Attack, B - for Bomber, C - for Cargo/Transport, etc. The Model designator indicates the sequence of type procurement. The C-53 was the 53rd model of a cargo plane bought by the Army since the TMS system was implemented in 1924. The Model number is followed by a Series identifier designating variations of the original Type/Model along with a code identifying the location of the Douglas manufacturing

facility. These are indicated by letters following the model number such as C-53D-DO. The final portions of the complete identifier were the U.S. government Fiscal Year (FY) and Army serial numbers. C-53-DO-41-20124 indicates the 53rd model of a cargo/transport type built by Douglas in Santa Monica, California under a FY 1941 U.S. government contract and was the 20,124th individual craft purchased for the U.S. Army.

The U.S. Navy employed an aircraft designation system that initially differed from that of the Army. The Navy system also covered aircraft in the service of the U.S. Marine Corps and the U.S. Coast Guard.

The Navy had originally used the Type letter T to designate transports, but since this duplicated T for torpedo bombers, naval managers switched the transport designator to R in 1927. A number following the type designator established the model of craft purchased. Another letter indicating the manufacturer followed the model number. The dash number completing the sequence was an acquisition indicator. A Navy R4D-3 was a Douglas DC-3 naval transport variant transferred from an Army contract. This U.S. Navy system was abandoned in 1962 when the Department of Defense unified the Air Force and Navy aircraft designation systems.

U.S. Navy, Marine and Coast Guard aircraft were also assigned serial numbers based on sequential purchase and were often referred to as Bureau Numbers (BuNo) because they were assigned to the Navy's Bureau of Aeronautics. This number developed from a four digit system to the present day six digit registration. The complete U.S. Navy designation for the subject C-53 was R4D-3 BuNo 05078.

When U.S. military aircraft are assigned to an operational unit, they are assigned alpha/numeric designators indicating their ship, squadron, wing etc. These are used for visual identification purposes and are usually painted in large yellow, red, black or white letters and numbers on each side of the fuselage depending on the camouflage paint scheme implemented.

Military Functions

Military use of the DC-3 design during World War II was primarily for the transport of materials and also served a secondary function as a prime mover of military personnel. Other military functions included observation/reconnaissance and in some instances an impromptu bomber. The DC-3s variants were used not only by the U.S. military organizations, but also by the allied air forces of England, Australia and the Soviet Union. The German Luftwaffe used captured European airlines DC-3s as personnel transports and the Japanese continued to manufacture their own variants of the design as cargo and passenger transports through the end of the war.

The U.S. Army Air Force was the primary purchaser of the DC-3 airframe. Of the 10,123 acquired by the Army, 8,485 were delivered as the C-47 "Skytrain" cargo planes. C-53 and C-117 passenger variants accounted for the majority of the remaining Army inventory. The U.S. Navy wartime inventory of DC-3 variants numbered 527, with 78 being built under Navy contracts and the remainder being transfers from the Army.[16] The British Royal Air Force (RAF) was the principal benefactor of the Lend-Lease Act passed in March 1941 concerning the military DC-3s. Throughout the war, the RAF received 1,920 C-53s and C-47s, which they called "Dakotas", that were built under U.S. Army contracts.[17]

The numerous C-47s were the work horse of the Allied air transport system. It was unarmed and unarmored, but it was the most dependable, most rugged, best designed airplane ever built.[18]

The C-47 was different from the standard DC-3 in that it substituted an unfinished, open cargo bay in place of the finished passenger seating main cabin area of the airliner. To fulfill cargo handling functions, modifications to the C-47 included reinforced floor structural members, steel floor plating, a large two section cargo door on the port side of the fuselage and the aft section of the main compartment floor was tilted up towards the tail section to accommodate loading and unloading of bulk cargo. The C-47 also employed two more air crew members, a radio operator and a flight engineer.

The C-47 became legendary in World War II through its superior performance in every theater of operations. It was the primary

transport used for ferrying supplies to Chinese forces in the China-Burma-India Theater between 1942 and 1945. Known as the "Hump", the air route between the Allied Indian and Chinese bases passed over the Himalayan Mountains. The C-47 was subjected to extreme environmental pressures, altitude and wind, and continual Japanese interdiction during this operation, and proved itself a reliable craft in these difficult circumstances.

In the European Theater of Operations, the C-47's powerful Pratt & Whitney engines and strong structural components made it a valuable asset in the final stages of General George S. Patton's 3rd U.S. Army's campaign in Germany. Flying from bases in England and France, C-47s carried hundreds of thousands of five gallon fuel cans to the 3rd Army's front line armor units. Superior low speed performance and durable structural construction allowed the C-47 the ability to land in almost any farm field or pasture available according to pilot Frank Widbin of the 302nd Squadron, 441st Troop Carrier Group. The high output 1,200 horsepower Pratt & Whitney engines and superior structural construction allowed the C-47 to take off from the short natural airstrips through the technique of standing on the brake and winding the engines to a high RPM before lurching across the terrain. Widbin relates the experience to "...sort of like driving a hot rod dragster over potholes." As a secondary mission on these fuel runs, the C-47s of 441st Group would evacuate wounded from the front to hospitals in England.[19]

The C-47 is also widely recognized for its World War II function as a transport for the newly created Allied airborne combat units. C-47s delivered Allied parachute infantry and support units to drop zones on the battlefields of Sicily, Normandy, Holland, Germany and Corregidor. The C-47 was capable of carrying 18 combat loaded paratroopers or could act as a tug for U.S. Waco CG4A gliders carrying fifteen infantry and a crew of two.

The superior responsiveness of the C-47s of the 441st Troop Carrier Group in the airborne delivery function was demonstrated during Operation Market Garden in September of 1944. First Lieutenant Frank Widbin was piloting the lead C-47 in the nine plane V-formation of A Flight 302nd Squadron carrying 82nd Airborne Division paratroopers to drop zones south of Nijmegen, Holland. As the C-47s of A Flight slowed to 100 miles per hour and descended to 600 feet in preparation for the drop, Lt. Widbin observed the enemy

air defense (flak) downing or crippling six of the nine aircraft in the flight a half a mile ahead. As the fire shifted to a point directly in front of A Flight, Lt. Widbin quickly throttled back, reducing the speed of the formation, which resulted in premature and inaccurate fire by the enemy flak crews. Lt. Widbin credits the excellent response of the C-47's controls and engines as the reason A Flight was able to avoid this concentrated enemy fire, deliver the paratroopers on target, and return to England unscathed.[20]

Although the C-47 assumed the role as the premiere military DC-3 during the Second World War, the contributions of the other variants such as the Army's C-53s and C-117s along with the Navy's R4D series can not be ignored. Serving the primary function of transport, these variants also performed as mobile staff offices and pilot/navigator trainers. Some C-53s were also used for delivery of airborne troops and as glider tugs.

One of the highest compliments given the DC-3 design concerning its wartime service is attributed to General Dwight D. Eisenhower who regarded the C-47 as one of the pieces of equipment most vital to the Allied success in the European Theater of Operations.[21]

DC-3 POST-WORLD WAR II USE

Many DC-3 variants continued their service with the U.S. military long after World War II, with the Air Force retiring its last active C-47 in 1975. The most notable service by large fleets of the military DC-3s in the post-war years was during the Berlin Airlift. The importance of these planes in the political and humanitarian scenario resulting from the land blockade of Berlin by the Soviet Union between June 1948 and May 1949 was monumental. Flying round-the-clock supply missions from bases in West Germany, C-47s and C-53s kept the residents of Berlin from starving and contributed greatly in negating the Soviet tactic of using the people of Berlin as hostages in its effort to politically dominate a geographically divided Germany.

Modified C-47s continued their valorous U.S. military careers during the Vietnam War acting as gunships employing side-mounted General Electric .30 Caliber miniguns and as psychological warfare

weapons equipped with loudspeaker systems for propaganda broadcasts.

Other U.S. government agencies such as the Forest Service, the Federal Aviation Administration and the National Aeronautics and Space Administration acquired fleets of military surplus DC-3 variants for internal use, which included smoke jumpers (fire fighting) and crop dusting. As recent as 1984 and 1987, the U.S. government was supplying the governments of El Salvador and Columbia with updated surplus C-47s gunships for use in the war on illegal drug production.[22]

The conclusion of World War II allowed the commercial airlines of the world to capitalize on two significant wartime developments. First was the construction of hundreds of airfields throughout the world, enabling air service to areas where none had previously existed. The second factor was a generous supply of cheap surplus military transports, mainly DC-3 variants, that could be put into civil service with little modifications.[23]

Hundreds of C-47s and C-53s were sold to established and newly formed passenger airlines and air freight carriers world-wide. As part of the CAA civilian use certification procedure, the surplus military planes were redesignated DC-3As. The most common modification to the post-war DC-3 variants was a Pratt & Whitney 1500 horsepower engine upgrade.

Major domestic and foreign airlines made the DC-3As their primary continental carrier well into the 1950s, until technological advances like the development of efficient commercial jet propulsion aircraft and the expansion of the commercial passenger and cargo market to include transoceanic routes reduced the commercial popularity of the DC-3As. Many civil versions of the DC-3, for the lack of replacement parts in remote areas of the world, have been abandoned and left to deteriorate. Some DC-3s have been preserved as static or flying museum artifacts. Hundreds continue to fly as short-hop airliners and cargo planes, primarily in Central and South America.

Donald Douglas paid possibly the finest compliment to the DC-3 when he stated, "I do not believe that any of us who worked on the design and development quite realized we were really building an

airplane that would outlast the careers of us all. Perhaps she will fly on forever. I hope she does."[24]

THE C-53 "SKYTROOPER"

The C-53 was the second most numerous military production variant of the DC-3, with 399 being produced by Douglas exclusively at its Santa Monica, California facility immediately prior to and during World War II. C-53s were essentially DC-3s with an unfinished main compartment containing 14, center-facing aluminum bucket seats along each side of the interior fuselage. Later variations of the C-53 had plexiglass astrodomes in the forward compartment for observation purposes and rifle grommets in the passenger windows as an air defense modification.

Many of the early produced C-53s were turned over to the domestic airlines for contractual operations in support of the Army and Navy. Later versions got over enemy territory as paratroop carriers and glider tugs. Nine of the Army C-53s went as part of the Lend-Lease Agreement to the RAF and 20 were transferred to the Navy as R4D-3 troop carriers. Prices varied between $136,000 to $147,000 per plane.[25]

U.S. ARMY AIRCRAFT C-53-DO-41-20124

U.S. Army Aircraft C-53-DO-41-20124 was produced as a personnel and light cargo carrier for the U.S. Army under U.S. Government contract number W535 AC 18393 in Fiscal Year 1941 and was assigned Army serial number 20124. 41-20124 was constructed by Douglas Aircraft Company, Inc. at its Santa Monica, California facility and was assigned the Douglas constructor number of 4894. Completion date of the aircraft was March 11, 1942.

41-20124 was accepted by the Army at Santa Monica's Clover Field on March 18, 1942 and was subsequently transferred to the U.S. Navy at Norfolk Naval Air Station (NAS), Virginia on March 20, 1942. Once under naval management, the aircraft was given the designation of R4D-3 and a naval serial number of BuNo 05078. R4D-3 BuNo 05078 was then transferred to the Naval AAL (American Air Lines Pilot Training) School at Ft. Worth Naval Aviation Auxiliary Field

(Meacham Field), Texas, where it served until September 12, 1945. From September 1945 to January 1946, this plane was stationed at Jacksonville, Florida NAS and was transferred to New York NAS in the latter part of January. In February of 1946, this aircraft was assigned to Fleet Air Wing Headquarters 5 and in April of 1946 it was re-assigned to Headquarters U.S. Marine Air Wing-2, Marine Air Group-21 at Hedron Field, Cherry Point, North Carolina. R4D-3 BuNo 05078 was stricken from the U.S. Navy inventory on August 31, 1946.[26]

This aircraft was then relocated to Bush Field at Augusta, Georgia, where it was sold by the War Assets Administration to Continental Airlines on March 12, 1947 for the price of $25,000. At this juncture, 41-20124 was assigned the CAA registration number of NC73726. Continental flew their new acquisition to Stapleton Field, Denver, Colorado, where it underwent main compartment conversion from its original C-53 layout to that of a commercial airliner. The modifications were completed on June 14, 1947 and the craft was licensed under a CAA DC-3A Type 669 (civil use) certificate.

The plane, in its configuration of DC-3A CAA Registration Number N73726 was sold by Continental to Southern Airways in Birmingham, Alabama on August 31, 1949 for "$10.00 and other valuable consideration."[27] Southern upgraded the engines to Pratt & Whitney R-1830-90Ds, which changed the civil designation to DC-3A-S4C4G. In 1957, the CAA changed the federal registration number of this craft to N70SA. Southern sold the plane to National Aircraft Sales, Inc. of Dallas, Texas on July 15, 1966. Shortly after, the Federal Aviation Administration changed the civil registration number to the current N763A. National sold the plane to Jack Richards Aircraft Company, Inc. of Oklahoma City, Oklahoma for $1.00 in August of 1967. Richards sold the aircraft to the H.H. Coffield's Rockdale Flying Service, Inc. of Rockdale, Texas on January 23, 1968.

H.H. Coffield was a businessman in the Texas oil industry who used aircraft for the transportation of personnel and equipment to various oil field sites and other business locations. Coffield also collected distinctive aircraft. H.H. Coffield's intended use of 41-20124 when purchased is not known, but it did perform a variety of functions while in his possession including hauling a

load of baby chicks to Nicaragua, acting as the campaign aircraft for former Governor of Texas Preston Smith and carrying actress Grace Kelly to a social event at Coffield's south Texas ranch.[28]

After the death of Mr. Coffield in 1983, the plane was transferred to Tradewinds Aircraft of San Antonio, Texas, who sold the craft to the current owners, the Prairie Aviation Museum (PAA) of Bloomington, Illinois, in February of 1984. PAA contracted the services of Texan William Toliver Wilson who, along with his sons Wade and Stan, restored the aircraft to flying order. Wilson nicknamed the plane "Miss Moss-Back" due to the moss growing on the upper portions of the fuselage.[29] When operational, the plane was flown to Bloomington-Normal Airport by PAM members George Carpenter, Bill Leff and Dave Maisak in November of 1984.

During 1985, PAM members undertook the preservation project of removing overall corrosion and the cleaning of all exterior and interior surfaces. The aircraft was loaned to Ozark Airlines of St. Louis, Missouri in August of 1985 for display during Ozark's 35th Anniversary and Open House. Although 41-20124 was never owned or contracted for use by Ozark Airlines, Ozark maintenance personnel and members of the Missouri Air National Guard applied the 1950s era Ozark Airlines paint scheme prior to the referenced exhibition. The aircraft was returned to PAM in Bloomington during December of 1985 and is currently the primary exhibit and roving ambassador for the PAM organization.

The function of 41-20124 throughout its operational life as a passenger and light cargo transport is consistent with its original design. The primary U.S. Navy use was personnel transport and pilot training while at Ft. Worth's Meacham Field. After World War II, its conversion by Continental Airlines to a DC-3A configuration led to its use by Continental and Southern Airways as a commercial airliner. The aircraft currently functions as static and flying museum artifact.

SURVIVING DC-3 AND C-53 AIRCRAFT

It is hard to determine with any accuracy the number of DC-3 aircraft left in the world. Every source consulted presented different figures and each qualified their data with a statement

that figures given were subject to change daily due to the remote locations of existing craft, dubious ownership and registration documents, and the fact that some disabled DC-3s, considered wrecks or used only for spare parts (hangar queens), are quickly and economically restored to operating order and are returned to passenger and cargo service. Considering the durability and multi-use design of the DC-3, and that over 10,000 variants were produced by Douglas in the U.S. and another 3,500 in Japan and Russia, it is possible many DC-3s still exist throughout the world.

In 1985, the 50th anniversary of the design, McDonnell Douglas Aircraft attempted to verify how many DC-3 airframes were still operational. The first response to this survey indicated that close to 2,000 DC-3s were still operational. McDonnell Douglas questioned what was thought to be a high number and undertook a verification of this figure. Although reduced, the verified number of operational DC-3s came in at 1,200. Others in the original count had been non-operational museum artifacts and other types of non-operational display craft.[30]

The number of 1,200 operational DC-3s is consistent with the data gathered by Arthur Pearcy in 1987. Three hundred and twenty seven of these craft were still in use by passenger airlines, most in North and South America. At that time, the DC-3s were exceeded in operational numbers by only eight types of more modern passenger aircraft such as the Boeing 747 and the McDonnell Douglas DC-9. The remaining DC-3s served variety of functions including cargo transports, tactical military/law enforcement transports, crop dusters, historical interpretative devices and flying restaurants.[31]

In 1995, there were at least thirteen DC-3 variants existing as airliners/cargo transports, museum displays, or in the possession of private collectors in the Central United States. Most of the aircraft are C-47s with original DC-3 airliners the next most frequent. Only one other DC-3 variant besides 41-20124, a non-operational C-47 on static display at the Octave Chanute Aerospace Museum in Rantoul, is known to exist in Illinois.

Of the 399 C-53s built by Douglas, 48 remain worldwide as of 1987. C-53-DO-41-20124 is one of three remaining from the twenty U.S. Navy R4D-3s built. One of the other R4D-3s is registered to an

owner in Dallas, Texas. The other is owned by the U.S. Air Force Museum System, with a last known location at Travis Air Force Base, California.[32]

SUMMARY

C-53-DO-41-20124 is an excellent example of the DC-3 aircraft design which revolutionized the commercial airlines industry of the 1930s and played a critical role in the Allied victory during World War II. The engineering characteristics of this design allowed it to be adopted for a multitude of uses and perform more efficiently than any other twin-engine competitor of its era. C-53-DO-41-20124 itself has been a part of both the military and civil saga of the DC-3 and is a worthy property for recognition and inclusion in the National Register of Historic Places.

ENDNOTES

Section 8

1. Peter M. Bowers, The DC-3: 50 Years of Legendary Flight (Blue Ridge Summit, Pennsylvania: TAB Books, 1986), 1.

2. Ibid.

3. Robert E. Johnson, "Who Really Gave Us the DC-3," The American Aviation Historical Society Journal 3 (Fall 1984): 203.

4. Bowers, The DC-3, 4.

5. Ibid., 13.

6. Ibid., 16.

7. Ibid., 18.

8. Ibid., 24.

9. Arthur Pearcy, Fifty Glorious Years: A Pictorial Tribute to the Douglas DC-3 1935-1985 (Vista, California: Aeolus Publishing, Ltd., 1985), 9.

10. Roger E. Bilstein, Flight in America 1900-1983: From the Wrights to the Astronauts (Baltimore, Maryland: The John Hopkins University Press, 1984), 91.

11. Ibid.

12. Bowers, The DC-3, 47.

13. R.E.G. Davies, Interview by Stephen A. Thompson. Washington, D.C.: 19 September 1995.

14. M.J. Hooks, Douglas DC-3 Dakota (London, England: Winchmore Publishing Services Limited, 1985), 55.

15. Ibid.

16. Ibid.

17. Bowers, The DC-3, 121.

18. Stephen E. Ambrose, D-Day June 6, 1944: The Climatic Battle of World War II (New York, New York: Simon & Schuster, 1994), 47.

19. Frank Widbin, Interview by Stephen A. Thompson. Morton, Illinois: 20 February 1996.

20. Ibid.

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22. Larry Davis, C-47 Skytrain in Action (Carrollton, Texas: Squadron/Signal Publications, Inc., 1995) 55.

23. Bowers, The DC-3, 147.

24. Pearcy, Fifty Glorious Years, 20.

25. Bowers, The DC-3, 76.

26. United States Navy, USN Aircraft History Card, NAVAER-1925 (9-44), R4D-3, BuNo 05078, 31 August 1946. Prairie Aviation Museum Archives.

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28. Mike Brown, "And Then There Was None," Rockdale Reporter and Reporter, (Rockdale, Texas) 20 December 1984.

29. Mike Brown, "DC-3 Getting Overhaul," Rockdale Reporter and Messenger, (Rockdale, Texas) 13 October 1983.

30. Larry Merritt, Interview by Stephen A. Thompson. St. Louis, Missouri: 20 February 1996.

31. Arthur Pearcy, Douglas DC-3 Survivors (Bourne End, England: Ashton Publications Limited, 1987), 7.

32. Ibid, 87-88.

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VERBAL BOUNDARY DESCRIPTION

U.S. Army Aircraft C-53-DO-41-20124 has a wingspan of 95 feet, a fuselage length of 65 feet, 5.5 inches and a height of 17 feet at the vertical stabilizer. When not attending air shows or on display at other locales, C-53-DO-41-20124 is located in close proximity to the Loravco Services Maintenance Hangar at Bloomington-Normal, Illinois Airport.

BOUNDARY JUSTIFICATION

The boundary for U.S. Army Aircraft C-53-DO-41-20124 is the space this aircraft occupies, terminating at the furthest extent of its dimensional limits. This resource is inherently mobile and subject to periodic movement. The ability of this aircraft to convey its significance for engineering and air transportation is enhanced by its operational (mobile) capabilities.

CONTRIBUTING PERSONNEL

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Form Preparation

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Illinois Historic Preservation Agency
Springfield, IL

C-53-DO-41-20124

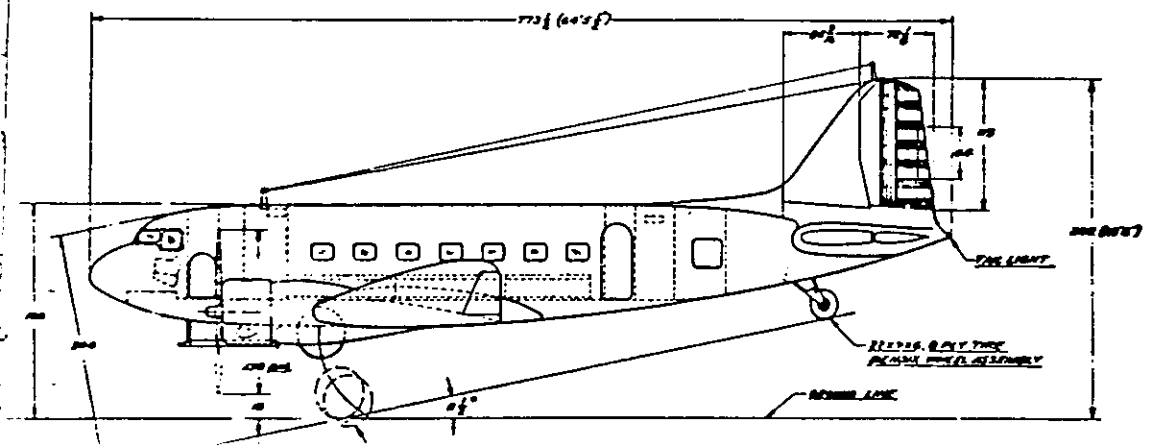
CONSTRUCTION DOCUMENT

513700

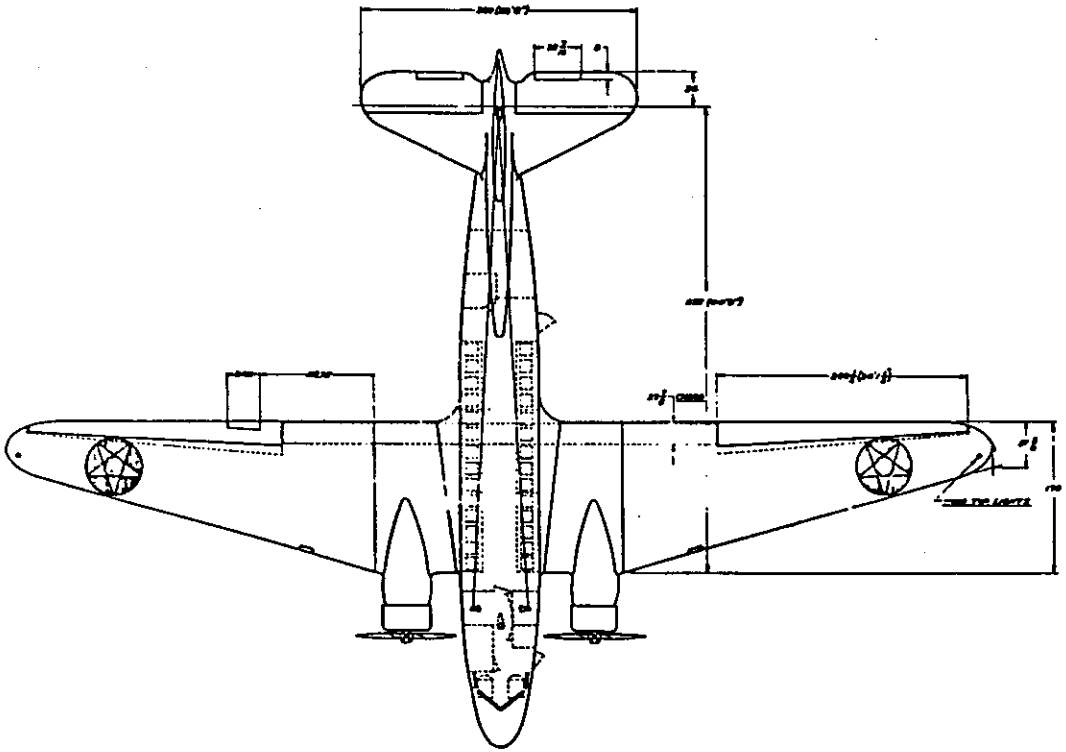
DOUGLAS AIRCRAFT CO., INC.

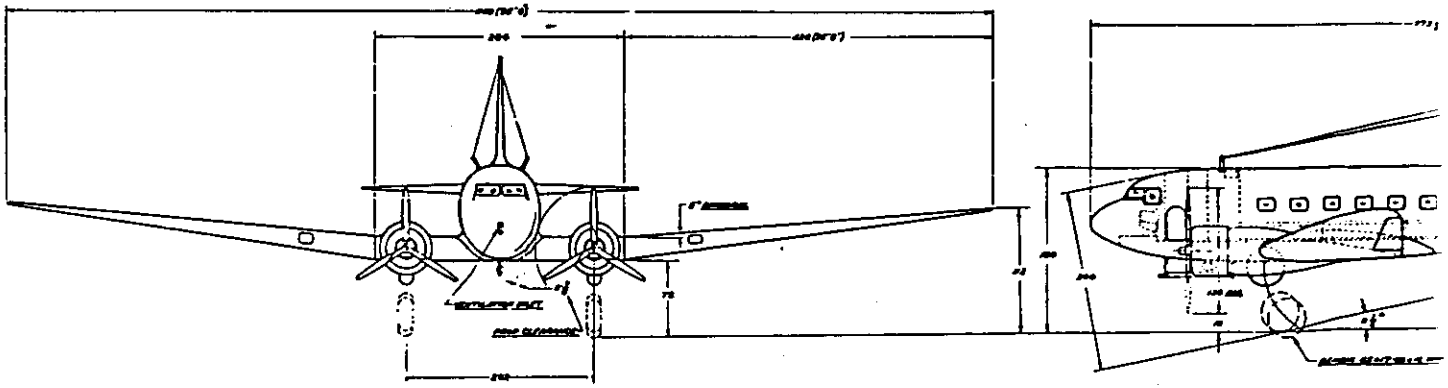
ARMY TROOP TRANSPORT
C-53

AREAS	
WINGS - INCLUDING AILERONS	987.0 SQ FT
AILERONS (BOTH)	103.8 SQ FT
HORIZONTAL STABILIZER	338.4 SQ FT
TAB HINGES (BOTH)	83.43 SQ FT
TOTAL HORIZONTAL TAIL SURFACES	179.26 SQ FT
VERTICAL STABILIZER	77.87 SQ FT
RUDDER	44.65 SQ FT
TOTAL VERTICAL TAIL SURFACES	84.88 SQ FT
AIRFOIL SECTION - CENTER PANEL	NACA 23015
AIRFOIL SECTION - CENTER PANEL	NACA 2315 AT ROOT TO 2306 AT TIP
DIHEDRAL - MEASURED AT TOP SURFACE	5°
SWEEPBACK AT 25% CHORD	12°
INCIDENCE	2°
POWER PLANT	
2 PRATT & WHITNEY (R-1830-92) RATED AT	1050 B.H.P. AT 2700 R.P.M. (SEA LEVEL TO 7500 FT)
	1200 B.H.P. AT 2700 R.P.M. FOR TAKE OFF
PROPELLERS - HAMILTON FULL FEATHERING, HUB NO. 2505	BLADE NO. 6156A-16
WEIGHTS AND CAPACITIES	
USEFUL EMPTY	16,650 LBS.
USEFUL LOAD	9,350 LBS.
GROSS WEIGHT	26,000 LBS.
FUEL CAPACITY (MAIN TANKS)	422 GAL.
OIL CAPACITY (TWO TANKS)	70 GAL.
WING LOADING	26.3 LBS/SQ FT.
POWER LOADING	10.8 LBS/H.P.
PERFORMANCE (ALL TWO ENGINES)	
SPEED AT 8500 FT.	230 M.P.H.
STALLING SPEED AT SEA LEVEL	87 M.P.H.
RATE OF CLIMB AT SEA LEVEL (TAKE OFF POWER)	890 FT./MIN.
SERVICE CEILING	24,000 FT.
ABSOLUTE CEILING	26,000 FT.
CONSTRUCTION	
FUSELAGE	ALUMINUM ALLOY SEMI-MONOCOQUE
WINGS	ALUMINUM ALLOY FRAME - FABRIC COVER
HORIZONTAL AND VERTICAL STABILIZERS	ALUMINUM ALLOY
RUDDER AND ELEVATORS	ALUMINUM ALLOY FRAME FABRIC COVER
RETRACTABLE GEAR	OLEO AIR-WHEEL TYPE



C-53-DO-41-20124
CONSTRUCTION DOCUMENT
UNKNOWN





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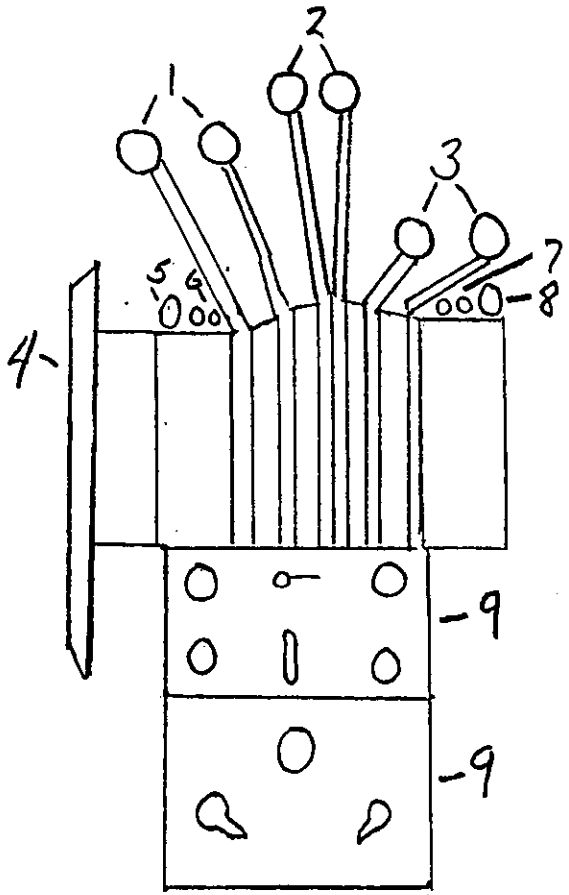
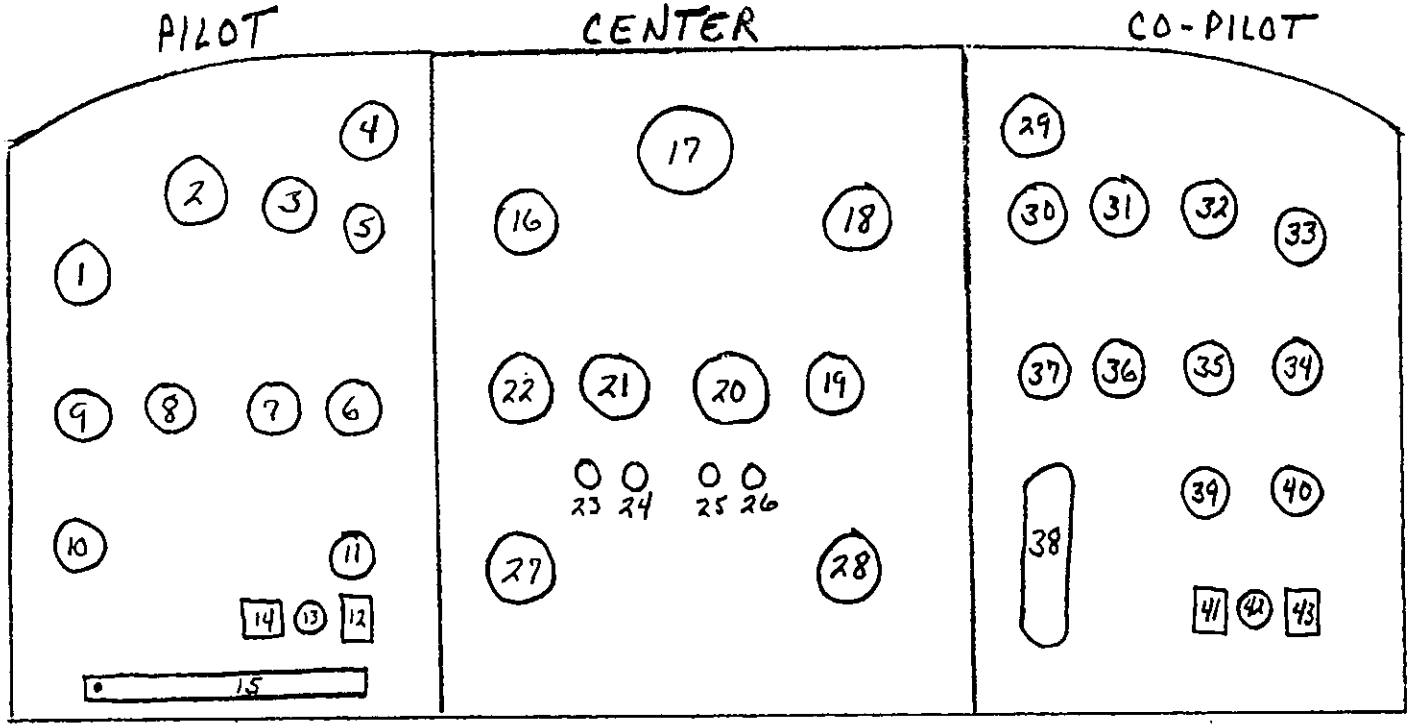
CONTROL PEDESTAL



1. PROPELLER CONTROLS
2. THROTTLE CONTROLS
3. CARBURETOR MIX CONTROLS
4. ELEVATOR TRIM CONTROL
5. PORT ENGINE FUEL TANK SELECTOR
6. EMERGENCY FUEL AND OIL SHUT OFF VALVES
7. CARBURETOR RAM AIR SHUT OFF VALVES
8. STARBOARD ENGINE FUEL TANK SELECTOR
9. NAVIGATIONAL RADIO CONTROLS

C-53-DO-41-20124

INSTRUMENT PANEL



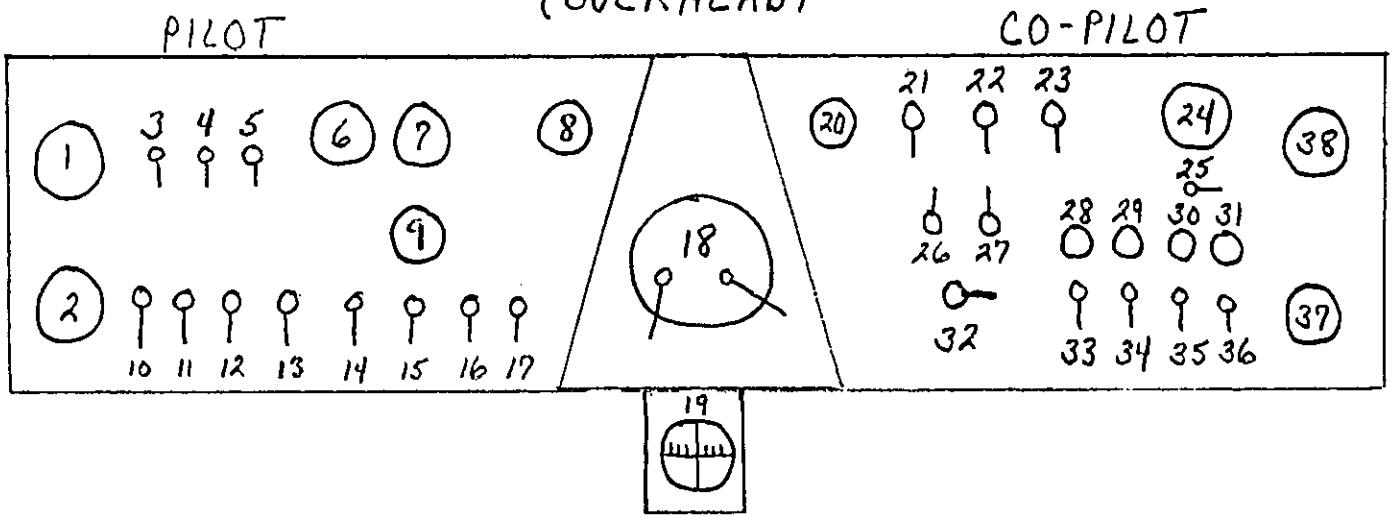
1. ALTIMETER
2. ARTIFICIAL HORIZON
3. AIR SPEED
4. NAV RADIO HEADING
5. CLOCK
6. RATE OF CLIMB
7. ILS INDICATOR
8. DIRECTIONAL GYRO
9. TURN/BANK INDICATOR
10. DE-ICING PRESSURE
11. SUCTION GAUGE
12. DRAIN SELECTION
13. DRAIN VALVE
14. STATIC PRESSURE
15. FLAP POSITION
16. MANIFOLD PRESSURE
17. RADIO COMPASS
18. OIL TEMPERATURE
19. CARBURETOR AIR TEMP
20. FUEL PRESSURE
21. OIL PRESSURE
22. RPM GAUGE
23. OIL PRESSURE FAILURE - PORT
24. OIL PRESSURE FAILURE - STARBOARD
25. FUEL PRESSURE FAILURE - PORT
26. FUEL PRESSURE FAILURE - STAR.
27. VACANT
28. CYLINDER HEAD TEMPERATURE
29. NAV RADIO HEADING
30. CLOCK
31. AIR SPEED
32. ARTIFICIAL HORIZON
33. ALTIMETER
34. TURN/BANK INDICATOR
35. DIRECTIONAL GYRO
36. ILS INDICATOR
37. RATE OF CLIMB
38. FUEL TANKS QUANITY
39. ANTI-ICE FLOW INDICATOR
40. SUCTION GRUGE
41. STATIC PRESSURE
42. DRAIN VALVE
43. DRAIN SELECTION

C-53-DO-41-20124

COCKPIT

ELECTRICAL PANELS

(OVERHEAD)



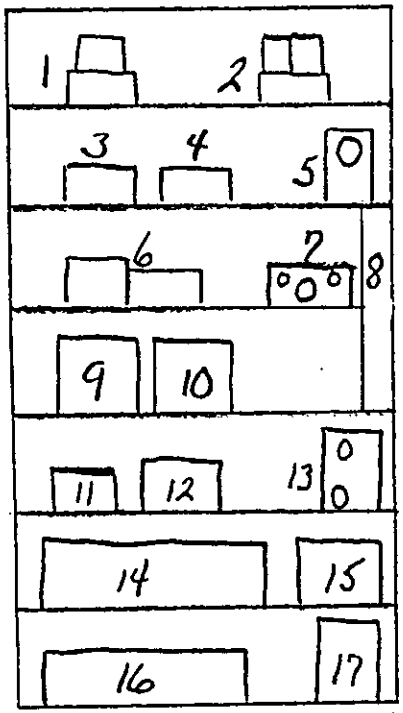
1. NAVIGATION RADIO
2. COMMUNICATIONS RADIO
3. SEAT BELT SIGN
4. LANDING LIGHT, PORT
5. LANDING LIGHT, STARBOARD
6. INSTRUMENT LIGHTS RHEOSTAT - SIDE
7. INSTRUMENT LIGHTS RHEOSTAT - CENTER
8. PROP FEATHERING BUTTON - PORT
9. COMPASS RHEOSTAT LIGHT CONTROL
10. ROTATING BEACON LIGHT
11. WING ILLUMINATION LIGHT
12. WARNING LIGHT
13. POSITION LIGHTS
14. DE-ICER PUMP
15. AISLE LIGHT
16. SIDE LIGHT
17. COFFEE MAKER
18. MAGNETO SWITCHES
19. COMPASS
20. PROP FEATHERING BUTTON - STARBOARD
21. PORT GENERATOR
22. STARBOARD GENERATOR
23. INSTRUMENTS - ON/OFF
24. GENERATOR OUTPUT METER
25. GENERATOR SELECTOR
26. PRIMER
27. STARTER
28. FUEL PUMP LIGHT - PORT
29. FUEL PUMP LIGHT - STARBOARD
30. PITOT HEATER LIGHT - PORT
31. PITOT HEATER LIGHT - STARBOARD
32. ENGINE STARTING SELECTION
33. FUEL PUMP - PORT
34. FUEL PUMP - STARBOARD
35. PITOT HEATER - PORT
36. PITOT HEATER - STARBOARD
37. COMMUNICATIONS RADIO
38. NAVIGATION RADIO

C-53-DO-41-20124

RADIO COMPONENTS

N = NAVIGATIONAL C = COMMUNICATIONS

1. N - OMNI POWER SUPPLY #1
2. N - OMNI POWER SUPPLY #2
3. N - #1 ILS R89B GP RECEIVER
4. N - #2 ILS R89B GP RECEIVER
5. N - NO DATA PLATE
6. C - VHF 51X-2 RECEIVER
7. C - VHF COM 17L 7XMT
8. RADIO COMPONENTS CIRCUIT BREAKERS
9. C - VHF RECEIVER

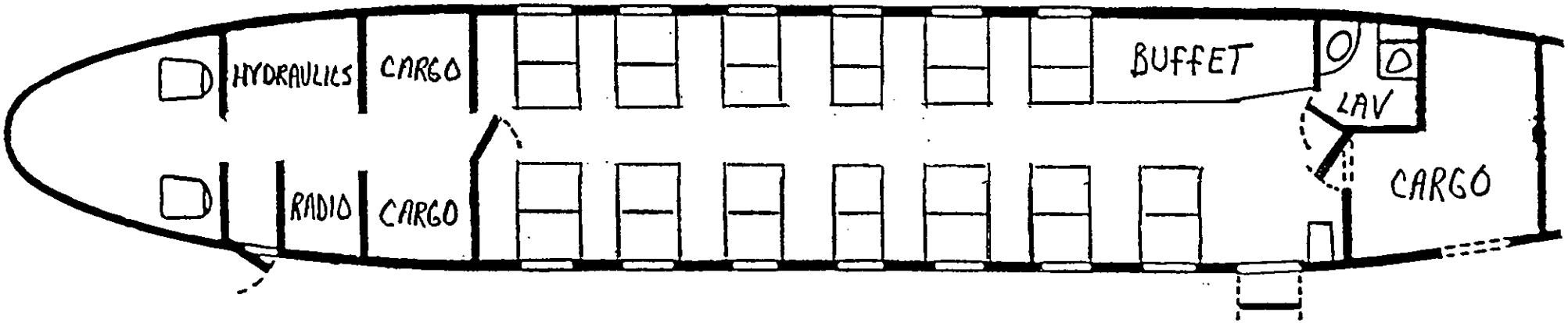


10. C - OMNI POWER SUPPLY
11. C - #1 VHF 618F1E
12. C - NO DATA PLATE
13. N - 27B MARKER RECEIVER
14. N - GREEN ADF
15. N - GREEN ADF
16. N - RED ADF
17. N - RED ADF

ALL RADIO EQUIPMENT = 24 VOLT

C-53-DO-41-20124

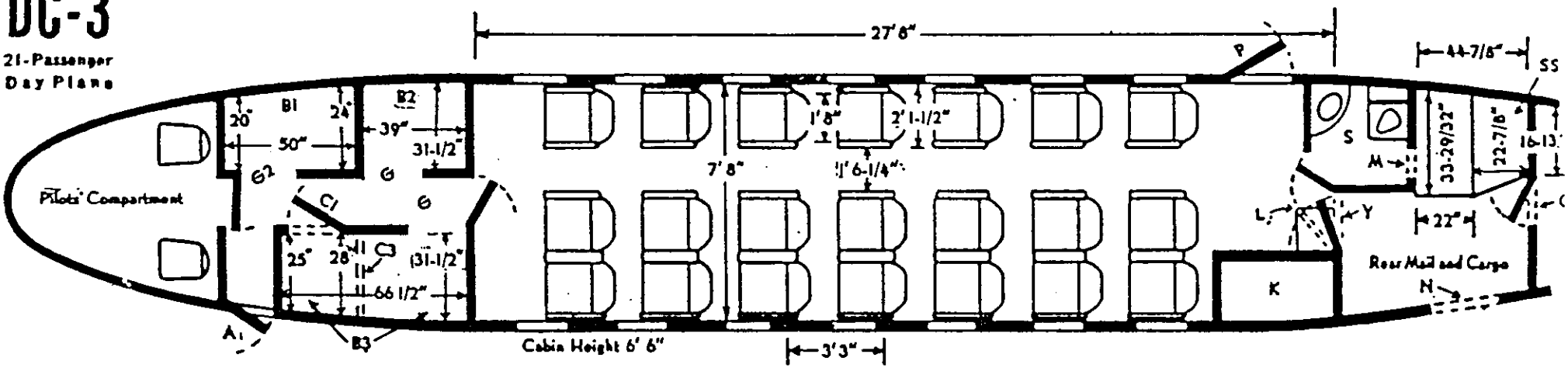
CURRENT 26 PASSENGER FUSELAGE LAYOUT



ORIGINAL DC-3 FUSELAGE LAYOUT
SOURCE: PETER M. BOWERS, THE DC-3

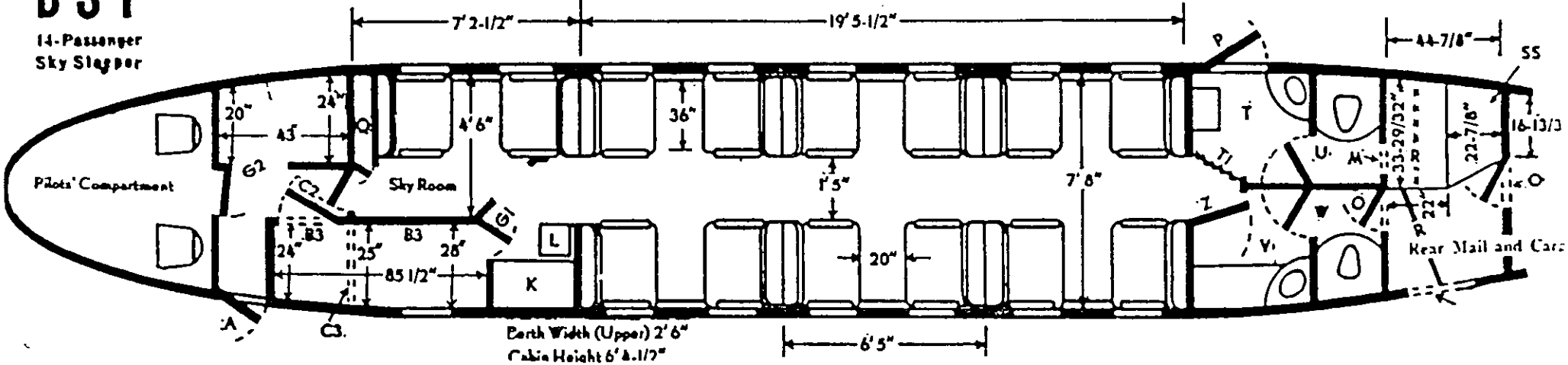
DC-3

21-Passenger
Day Plane



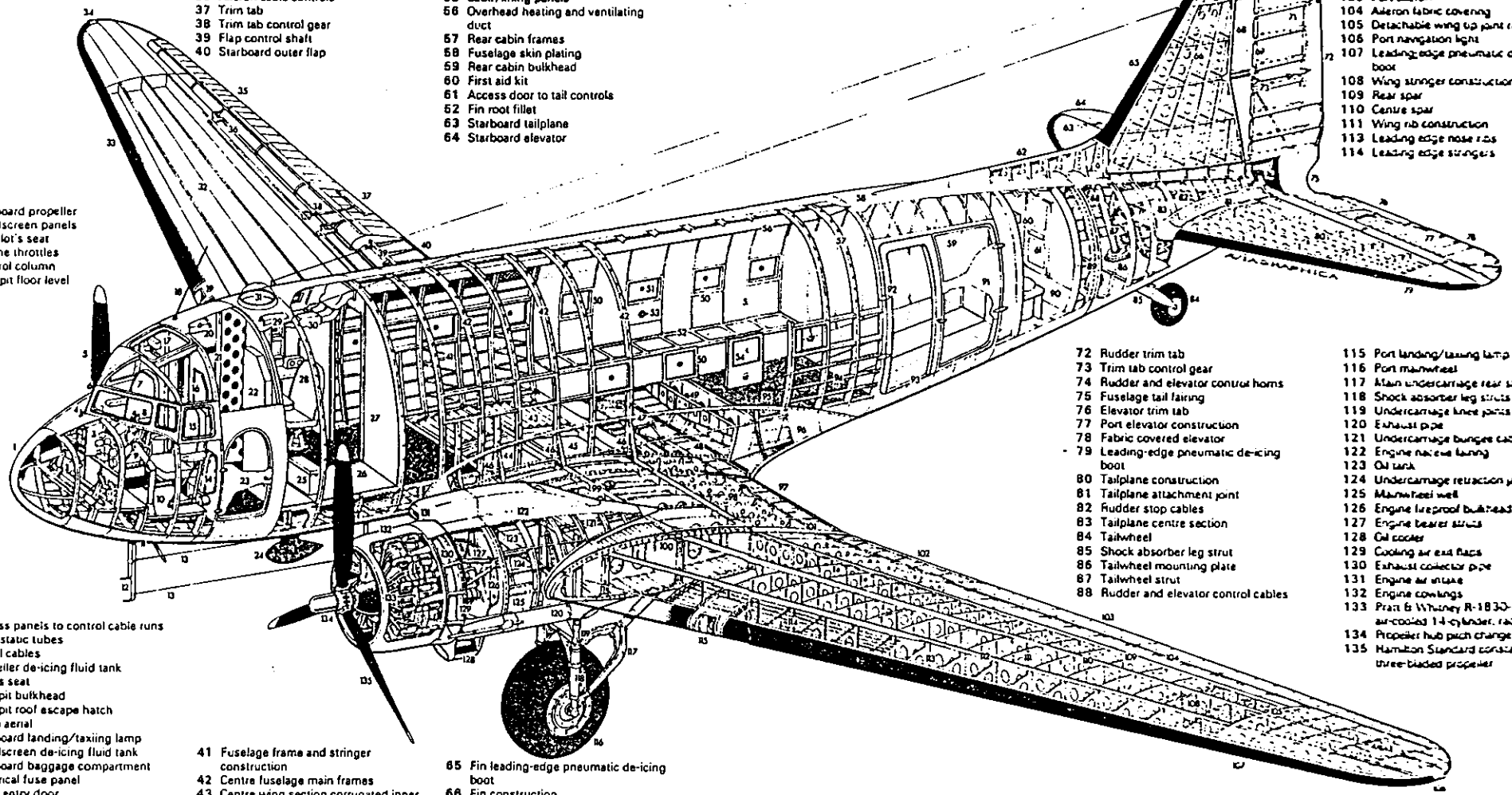
DST

14-Passenger
Sky Sleeper



C-47 "SKYTRAIN"

SOURCE: M. J. HOOKS. DOUGLAS DC-3 DAKOTA



Douglas Dakota IV Cutaway Drawing Key

1 Hinged nose cone, access to instruments and controls
2 Rudder pedals
3 Instrument panel
4 Windscreen de-icing fluid spray nozzle
5 Starboard propeller
6 Windscreen panels
7 Co-pilot's seat
8 Engine throttles
9 Control column
10 Cockpit floor level
11 Access panels to control cable runs
12 Pitot static tubes
13 Aerial cables
14 Propeller de-icing fluid tank
15 Pilot's seat
16 Cockpit bulkhead
17 Cockpit roof escape hatch
18 Whip aerial
19 Starboard landing/taxiing lamp
20 Windscreen de-icing fluid tank
21 Starboard baggage compartment
22 Electrical fuse panel
23 Crew entry door
24 Loop aerial housing
25 Life raft stowage
26 Port baggage compartment
27 Main cabin bulkhead
28 Radio operator's seat
29 Air scoop
30 Heating and ventilating system heat exchangers
31 Astrodome observation hatch
32 Starboard outer wing panel
33 Pneumatic leading-edge de-icing boot
34 Starboard navigation light
35 Starboard aileron
36 Aileron cable controls
37 Trim tab
38 Trim tab control gear
39 Flap control shaft
40 Starboard outer flap
41 Fuselage frame and stringer construction
42 Centre fuselage main frames
43 Centre wing section corrugated inner skin
44 Port main fuel tank
45 Port auxiliary fuel tank
46 Wing spar attachments
47 Flap hydraulic jack
48 Centre section flap
49 Floor beam construction
50 Cabin window panels
51 Window panel grommets for small arms attachments
52 Paratroop seating, 28-paratroops
53 Port emergency exit window
54 Starboard emergency exit window
55 Cabin lining panels
56 Overhead heating and ventilating duct
57 Rear cabin frames
58 Fuselage skin plating
59 Rear cabin bulkhead
60 First aid kit
61 Access door to tail controls
62 Fin root fillet
63 Starboard tailplane
64 Starboard elevator
65 Fin leading-edge pneumatic de-icing boot
66 Fin construction
67 Aerial cables
68 Rudder aerodynamic balance
69 Hinge post
70 Rudder construction
71 Fabric covering
72 Rudder trim tab
73 Trim tab control gear
74 Rudder and elevator control horns
75 Fuselage tail fairing
76 Elevator trim tab
77 Port elevator construction
78 Fabric covered elevator
79 Leading-edge pneumatic de-icing boot
80 Tailplane construction
81 Tailplane attachment joint
82 Rudder stop cables
83 Tailplane centre section
84 Tailwheel
85 Shock absorber leg strut
86 Tailwheel mounting plate
87 Tailwheel strut
88 Rudder and elevator control cables
89 Tail fuselage joint frame
90 Toilet
91 Rear freight door
92 Forward freight door
93 Paratroop/passenger door
94 Fuselage stringer construction
95 Freight floor
96 Wing root trailing edge fillet
97 Inboard split trailing edge flap
98 Flap shroud construction
99 Fuel filler caps
100 Outer wing panel bolted joint
101 Wing panel joint capping strip
102 Outer split trailing edge flap
103 Port aileron
104 Aileron fabric covering
105 Detachable wing tip joint rib
106 Port navigation light
107 Leading-edge pneumatic de-icing boot
108 Wing stringer construction
109 Rear spar
110 Centre spar
111 Wing rib construction
113 Leading edge nose rib
114 Leading edge stringers
115 Port landing/taxiing lamp
116 Port mainwheel
117 Main undercarriage rear strut
118 Shock absorber leg struts
119 Undercarriage knee joints
120 Exhaust pipe
121 Undercarriage bungee cables
122 Engine nacelle fairing
123 Oil tank
124 Undercarriage retraction jack
125 Mainwheel well
126 Engine fireproof bulkhead
127 Engine bearer struts
128 Oil cooler
129 Cooling air exit flaps
130 Exhaust collector pipe
131 Engine air intake
132 Engine cowlings
133 Pratt & Whitney R-1830-90C air-cooled 14-cylinder, radial engine
134 Propeller hub pitch change mechanism
135 Hamilton Standard constant speed three-bladed propeller

United States Department of the Interior

NATIONAL PARK SERVICE
P.O. Box 37127
Washington, D.C. 20013-7127

IN REPLY REFER TO:

The Director of the National Park Service is pleased to announce actions on the following properties for the National Register of Historic Places. For further information contact Edson Beall via voice (202) 343-1572, fax (202) 343-1836 or E-mail: edson_beall@nps.gov

Visit our web site at http://www.cr.nps.gov/nr/nrhome.html

AUG 9 1996

WEEKLY LIST OF ACTIONS TAKEN ON PROPERTIES: 7/29/96 THROUGH 8/02/96

KEY: State, County, Property Name, Address/Boundary, City, Vicinity, Reference Number, NHL, Action, Date, Multiple Name

ARIZONA, PIMA COUNTY, Pie Allen Historic District, Roughly bounded by N. Euclid Ave., E. 6th St., N. Park Ave., and E. 10th St., Tucson, 96000648, LISTED, 6/20/96
CONNECTICUT, LITCHFIELD COUNTY, Lakeville Historic District, Bounded by Millerton Rd., Sharon Rd., Allen St., and Holley St., Salisbury, 96000845, LISTED, 8/02/96
CONNECTICUT, NEW LONDON COUNTY, Lighthouse Inn, 6 Guthrie Pl., New London, 96000822, LISTED, 8/02/96
FLORIDA, ORANGE COUNTY, Winter Garden Downtown Historic District, Roughly bounded by Woodland, Tremaine, Henderson, and Lake View Sts., Winter Garden, 96000850, LISTED, 8/01/96
FLORIDA, ORANGE COUNTY, Winter Garden Historic Residential District, Roughly bounded by Plant, Boyd, Tilden, and Central Sts., Winter Garden, 96000849, LISTED, 8/01/96
FLORIDA, SARASOTA COUNTY, Sanderling Beach Club, 105 Beach Rd., Sarasota, 94000618, PROPOSED MOVE APPROVED, 7/26/96
FLORIDA, VOLUSIA COUNTY, Daytona Beach Surfside Historic District, Roughly bounded by Auditorium Blvd., the Atlantic Ocean, US 92, and the Halifax River, Daytona Beach, 96000851, LISTED, 8/01/96 (Daytona Beach MPS)
ILLINOIS, CHAMPAIGN COUNTY, Lincoln Building, 44 E. Main St., Champaign, 96000854, LISTED, 8/01/96
ILLINOIS, JOHNSON COUNTY, Ater--Jaques House, 207 W. Elm St., Urbana, 96000855, LISTED, 8/01/96
ILLINOIS, KANE COUNTY, LaSalle Street Auto Row Historic District, 56--84 LaSalle St. and 57--83 S. LaSalle St., Aurora, 96000856, LISTED, 8/01/96
ILLINOIS, LOGAN COUNTY, Mattfeldt, Theodore H. O., House, 202 S. Marion St., Mt. Pulaski, 96000853, LISTED, 8/01/96
ILLINOIS, MACON COUNTY, Trobaugh--Good House, 1495 Brozio Ln., Decatur, 96000858, LISTED, 8/01/96
ILLINOIS, MCLEAN COUNTY, US Army Aircraft C-53-DO-41-20124, 1.25 mi. E of jct. of IL 9 and IL 5, Bloomington, 96000857, LISTED, 8/01/96
INDIANA, JENNINGS COUNTY, Benville Bridge, US Army Proving Ground, approximately 1 mi. E off Perimeter Rd., San Jacinto vicinity, 96000789, LISTED, 7/30/96
INDIANA, JENNINGS COUNTY, Edward's Ford Bridge, US Army Jefferson Proving Ground, off Northwest Rd., Nebraska vicinity, 96000788, LISTED, 7/30/96
INDIANA, RIPLEY COUNTY, Collin's Ford Bridge, US Army Proving Ground, approximately .75 mi. W of New Marion, New Marion vicinity, 96000787, LISTED, 7/30/96
INDIANA, RIPLEY COUNTY, Marble Creek Bridge, US Army Jefferson Proving Ground, approximately .75 mi. W of jct. of G and W. Recovery Rds., San Jacinto vicinity, 96000785, LISTED, 7/30/96
KANSAS, NEOSHO COUNTY, Austin Bridge, SE of Chanute at Neosho River, Chanute vicinity, 77000592, REMOVED, 8/02/96
KENTUCKY, FAYETTE COUNTY, Wolf Wile Department Store Building, 248--250 E. Main St., Lexington, 96000795, LISTED, 7/31/96
KENTUCKY, MORGAN COUNTY, Cooper, Judge John E., House, 709 N. Main St., West Liberty, 96000824, LISTED, 8/01/96
MASSACHUSETTS, BERKSHIRE COUNTY, Congregational Church of West Stockbridge, 45 Main St., West Stockbridge, 96000899, LISTED, 7/30/96
MASSACHUSETTS, BRISTOL COUNTY, Attleborough Falls Gasholder Building, 380 Elm St., North Attleborough, 96000848, LISTED, 8/02/96
MISSISSIPPI, BOLIVAR COUNTY, Taborian Hospital, US 61, jct. of McGinnis St., Mound Bayou, 96000827, LISTED, 8/02/96
NEW YORK, ST. LAWRENCE COUNTY, Fine Town Hall, 91 NY 58, Fine, 96000829, LISTED, 8/02/96
NORTH CAROLINA, DURHAM COUNTY, Golden Belt Historic District (Boundary Increase), 1000--1004 E. Main St., Durham, 96000816, LISTED, 7/30/96
NORTH CAROLINA, GASTON COUNTY, Mount Holly Cotton Mill, 250 N. Main St., Mount Holly, 96000830, LISTED, 8/01/96
OREGON, BENTON COUNTY, Hull--Oakes Lumber Company, 23837 Dawson Rd., Monroe vicinity, 96000869, LISTED, 8/02/96
SOUTH CAROLINA, ORANGEBURG COUNTY, Stroman, William P., House, 1017 N. Boulevard, Orangeburg, 96000836, LISTED, 8/01/96 (Orangeburg MRA)
SOUTH CAROLINA, UNION COUNTY, Union Community Hospital, 213 W. Main St., Union, 96000835, LISTED, 8/01/96 (Union MPS)
SOUTH DAKOTA, BUTTE COUNTY, Belle Fourche River Bridge, NE of Belle Fourche off US 212, Belle Fourche vicinity, 86000923, REMOVED, 8/01/96 (Rural Butte and Meade Counties MRA)
SOUTH DAKOTA, BUTTE COUNTY, Fruitdale Bridge, 1/2 mi. S of Fruitdale, Fruitdale vicinity, 86000925, REMOVED, 8/01/96 (Rural Butte and Meade Counties MRA)
WASHINGTON, GRAYS HARBOR COUNTY, McCleary Hotel, Old, 42 Summit Rd., McCleary, 96000842, LISTED, 8/02/96
WASHINGTON, LEWIS COUNTY, Hillside Historic District, Roughly bounded by Jefferson Ave., Hill St., Washington Ave., and 9th St., Chehalis, 96000841, LISTED, 8/01/96
WASHINGTON, YAKIMA COUNTY, Edgar Rock Lodge, 380 Old Naches Rd., Naches, 96000843, LISTED, 8/01/96