~~MINNEAPOLIS-ST. PAUL INTERNATIONAL AIRPORT~~
WOLD-CHAMBERLAIN FIELD,
ARMY ~~AIR~~ TRANSPORT COMMAND HANGAR
(Wold-Chamberlain Field,
Naval Air Reserve Hangar)
6201 32nd Avenue South
Minneapolis
Hennepin County
Minnesota

HABS No. MN-158-E

HABS
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27-MINAP,
35E-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Buildings Survey
United States Department of the Interior
National Park Service
Great Lakes Systems Office
1709 Jackson Street
Omaha, Nebraska, 68102-2571

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HISTORIC AMERICAN BUILDINGS SURVEY

~~MINNEAPOLIS-ST. PAUL INTERNATIONAL AIRPORT~~
WOLD CHAMBERLAIN FIELD,
ARMY TRANSPORT COMMAND HANGAR
(Naval Air Reserve Hangar)

HABS No. MN-158-E

Location: 6201 32nd Avenue South
Minneapolis, Hennepin County, Minnesota

UTM: 15:482250:4970180
Quad: St. Paul West, Minn., 1:24,000

Construction Dates: 1943-1944

Architect: Not known

Present Owner: United States Air Force Reserve,
Minneapolis-St. Paul International Airport, Minneapolis

Present Use: Storage

Significance: The Army Transport Command Hangar reflects the World War II era at Wold-Chamberlain Field, a period in which the airport was dedicated solely to military operations. The Army Transport Command Hangar was erected to assist in the distribution of cargo to the Pacific theater via Fairbanks, Alaska. The challenging northern route was established and originally operated by Northwest Airlines under contract with the Army. This experience helped Northwest pioneer commercial service on this route after the war.

Project Information: The Original Wold-Chamberlain Terminal Historic District was identified by Hess, Roise and Company during an historic/architectural survey of the Minneapolis-St. Paul International Airport. The Federal Aviation Administration and the State Historic Preservation Office concurred that the district was eligible for the National Register of Historic Places. The survey was completed during preparation of the airport's long-term comprehensive plan. The plan found no feasible or prudent alternative to avoid the demolition of some or all of the properties in the historic district to accommodate necessary growth at the land-locked airport. To carry out its responsibilities under Section 106 of the National Historic Preservation Act of 1966, the Federal Aviation

Administration entered into a Programmatic Agreement with the Advisory Council on Historic Preservation, the Minnesota State Historic Preservation Officer, and the Metropolitan Airports Commission (MAC), with a number of concurring parties. The agreement contained two provisions related to the historic district. MAC agreed to offer the Smithsonian Institution and the Minnesota Historical Society the opportunity to select architectural elements or historical objects from any of the contributing structures in the historic district for curation and display. Both organizations declined the offer. The agreement also stipulated that the historic district be documented to the standards of the Historic American Buildings Survey. MAC retained Hess, Roise and Company to prepare this report to comply with that stipulation. Mark Ryan oversaw the project for MAC. Charlene Roise served as principal investigator for Hess Roise. Cynthia de Miranda was senior historian with primary responsibility for writing and managing the report's production. Denis Gardner was research historian for the project. Ann Gaasch provided clerical assistance.

PHYSICAL DESCRIPTION

The Army Transport Command Hangar, today known as the Naval Air Reserve Hangar, stands southwest of the Administration Building (HABS No. MN-158-D) and other buildings that once formed the center of operations for Wold-Chamberlain Field (HABS No. MN-158). The 1943 military hangar is a steel-framed structure with walls of concrete block, its main axis set perpendicular to a remnant of 34th Avenue that has survived airport expansion. Massive sliding doors occupy the hangar's nearly identical east and west facades, while one- and two-story concrete-block office additions line the north and south exterior walls below bands of industrial steel-sash windows.[1]

A pair of 35'-0"-high sliding pocket doors dominate the hangar's east facade. Each door is composed of five, 26'-6"-wide sliding panels; when closed, they meet in the center of the facility's aircraft entry. Each panel slides on one of five parallel rails on the floor, while overhead tracks guide the doors from above. The doors are manually operated and, when open, are stored in pocket towers that extend beyond the exterior walls of the hangar. When the doors are completely drawn into the pocket towers, the entryway is as wide as the interior, allowing full utilization of the space. A ribbon window of industrial steel-sash cuts across the upper portion of the door panels. The outermost panel of each door also houses a swinging personnel door for access to the structure when the aircraft doors are closed. Large hooks and eyes about 6' above the floor on the interior side of the panels enable them to be latched together when closed.

Corrugated metal sheathing above the large doorway hides the roof's support system, but the arched roof suggests bowstring trusses. A brown metal fascia finishes the sheathing; similar trim across the bottom complements the fascia and reinforces the arched profile. Large letters spell out "Naval Air Reserve" across the metal cladding.

The concrete towers that store the door panels also serve to visually anchor the hangar, providing strong, solid corners for the large structure. This function is particularly pronounced when the doors are completely open and the towers appear to support the arched roof. The poured-concrete towers are scored with a pair of horizontal lines that continue the top and bottom lines of the roof outline. A set of vertical lines run the height of towers, highlighting the intersection of the roof and walls. A metal fascia, like that along the roof sheathing, finishes the towers.

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[1] The description is based on a site survey conducted by the authors on March 1997 and on the drawing reproduced as HABS No. MN-158-E-9.

The west facade is nearly identical; only the placement of the windows in the hangar doors differentiates the facility's west and east sides. The ribbon of windows on the western doors slices across the midsection of the panels, rather than their upper third, as in the east-end doors.

One- and two-story flat-roofed offices line both the north and south facades of the hangar. On the north exterior, double- and triple-bay wings ranging from 12'-0" to 21'-10" in height obscure the lower portion of the hangar wall. Ten industrial steel-sash windows appear in the upper half of the wall. While the office block lines nearly the entire length of the wall, its uneven massing divides it visually into three sections. The north end is a 21'-10"-high, two-story block three bays deep and roughly 100' long. The original fenestration has been altered with concrete infill, but three personnel doors remain: two on the first-floor level and a third on the second-floor level. A metal staircase fixed to the exterior wall leads to the second-floor door. A wide boxed eave, painted brown and capped with metal coping, finishes the top edge of half of the block; a metal fascia like that trimming the ends of the hangar's arched roof of the east and west facades protects the remainder of the block. The heater room for the north end of the building occupies the northwest corner of this section; other interior spaces may have been offices.

The middle section, two stories high and two bays deep, appears recessed between the deeper sections that surround it. A personnel door and garage door occupy a space that apparently once held larger doors. The original door frame survives, dwarfing the modern garage door. A 1948 plan shows folding cargo doors at this location. Directly south, inside the building, is another doorway of the same width as the original exterior doorframe with sliding fire doors that open into the hangar.

The west end and final third of the north-wall offices are a continuation of the middle section—two stories high and two bays deep—with an additional single-story bay protruding to the north. Again, the same metal fascia seen in the roof and the middle office section edges both the two-story and single-story blocks. Six sets of paired, one-over-one double-hung windows are evenly spaced across the second story from the edge of the middle section to the west end of the block. Two garage doors, two personnel doors, and a single window punctuate the exterior wall of the single-story projection.

The hangar's south facade is more symmetrical than the north. A flat-roofed, two-story, single-bay office block fills the entire 224'-0" between the pocket towers that extend from the east and west facades. An 80'-0" center section adds a second bay to the block. The 32'-0" ends and the 80'-0" center section have boxed eaves trimmed with metal fascia; the two

remaining 40'-0" sections display a low parapet finished with the same metal fascia seen elsewhere on the building. Double-hung windows in the office block appear to be replacements, and concrete-block infill has obscured some apertures. Fenestration is random overall, with windows on the west end and in the center section and a personnel door in each section. Above the office block, industrial sash windows identical to those of the north facade run across the length of the hangar.

The hangar's interior is a large, open-plan space. Utility pipes and heating ducts and vents line the north and south walls, which also hold personnel and vehicle doors for access to the shops and garages in the building's wings. The floor is poured concrete. A suspended ceiling hides the roof's supporting trusses. The wings house rooms in a variety of sizes to accommodate vehicles, heating equipment, offices, and lavatories.

HISTORY

Establishing an Inland Cargo Route

The Japanese attack on Pearl Harbor on December 7, 1941, along with other assaults to U.S. territories in the Pacific, increased the significance of United States military bases in Alaska. Alaska's proximity to Japan and the area of conflict made it strategically valuable in the distribution of military personnel and cargo to the Pacific. U.S. military leadership, keenly aware of the dangers of shipping by water, believed inland routes to Alaska were of vital importance. The Army began designing a safe and efficient Alaskan air route; from there, military cargo could be flown to the Pacific region. Flights along the inland northern route would depart from Minneapolis, proceed to Edmonton, in Alberta, Canada, and continue on to Fairbanks, Alaska. In Fairbanks, cargo was unloaded and the aircraft prepared for the return flight following the same route.[2]

Wold-Chamberlain Field was selected as the launching point for the mission. In February 1942, the Air Materiel Command of the United States Army Air Force awarded a contract for the endeavor to Northwest Airlines. Northwest immediately began surveying the northern route and planning the construction of maintenance and service facilities for aircraft, as well as living quarters for personnel, along the route. Given the rugged nature of northern Canada, this was a very difficult logistical task. Sawmills and lumber camps were built to provide the materials necessary for the construction of airplane hangars, radio stations, and barracks. The sub-zero temperatures increased problems: equipment refused to operate in the extreme cold and personnel could only function for short periods of time. Despite such hurdles, however, Northwest began hauling military cargo to Alaska within a month.[3]

Although Northwest Airlines was a civilian organization, its Wold-Chamberlain operations followed security measures common to military undertakings. From March 1942 to September 1943, civilian guards patrolled the grounds and guarded cargo awaiting shipment. Employees of the airline entering any secured areas were required to show a picture identification badge with a corresponding identification number.[4]

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[2] M.J. Hardy, "Northwest Orient: Formation through WWII," *Airline History* 45 (December 1976): 491.

[3] "Synopsis - February 1942 through December 1942," 1. This manuscript is part of a compilation that chronicles the history of the Army Air Force Base Unit at Wold-Chamberlain Field in Minneapolis, part of the personal collection of Noel Allard, Chaska, Minnesota; The Cover, *Business Week*, July 19, 1947, 8; Public Information Department, Northwest Airlines, "Alaska Air Transport Operation," n.d., n.p., in untitled booklet, in Northwest Airlines Collection, Minnesota Historical Society, St. Paul.

[4] "Synopsis," 1-2.

During the first few months, the project did not adopt a definite schedule. As each aircraft arrived at Wold-Chamberlain, it was serviced, filled with any available cargo, and sent back to Fairbanks via Edmonton. In the rush to put the air route into operation, certain organizational problems rapidly developed. No priority system had been assigned to shipments leaving the airfield, so Fairbanks sometimes received cargo considerably less important than that sitting in storage in Minneapolis. Since no military leadership was on hand, M.E. Anderson, Station Manager for Northwest Airlines, took over the task of assigning priority to the cargo and handling communication problems.[5]

By late December 1942, the Army established at Wold-Chamberlain the first base of the Alaskan Wing of the Air Transport Command (ATC). The ATC had been organized just prior to the United States' entry in the Second World War for the purpose of transporting personnel and materiel to any place where such cargo was required. The Alaskan Wing was one of ten that made up the ATC, and it operated in the region north and west of the Twin Cities. Its mission was the coordination and supervision of the operations conducted by the contract carrier, Northwest Airlines. The Alaskan Wing based its headquarters in the Administration Building (HABS No. MN-158-D), located on the western edge of the airfield. Throughout the course of the war, the division performed its duties under strict secrecy.[6]

Improving Service on the Route

The leadership of the Alaskan Wing resolved to remedy the problems that plagued the service and determined that, while Northwest would continue to function as the sole operator of the Minneapolis-Edmonton route, the freight terminal, aircraft maintenance, and operations associated with the mission would fall under Army supervision. A detailed plan for handling and transporting cargo, mail, and service personnel was instituted for both ATC and contract carrier aircraft. Mail was separated from the other cargo in an effort to prioritize shipments.[7]

Another problem was space: available storage facilities at Wold-Chamberlain had already been taxed to the limit, forcing incoming cargo to be stored outside under tarpaulins. Early in 1943, the Army petitioned Northwest for more space. The airline was unable to comply, however, as its facilities were already committed to its own operations and other government contracts. The Army concluded that it would have to build the needed space and sought to acquire a tract of

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[5] Ibid.

[6] Untitled transcript of speech given at an open house at the Army Air Force Base Unit at Wold-Chamberlain Field, June 3, 1945, and "Establishment of the Base," n.d., 6, both in personal collection of Noel Allard.

[7] "Establishment of the Base," 6.

land at 34th Avenue and 66th Street, southwest of the Administration Building (HABS No. MN-158-D). Federal Judge Robert C. Bell granted the Army possession of the land, pending the outcome of the formal condemnation proceedings. Once the 33.8 acres were obtained, the Army implemented its plan to erect a new hangar for the ATC.[8]

The Army's construction plan involved building a new hangar along with several supporting structures, including a taxiway, parking facilities, and fire station. Since the new hangar would be erected some distance west of the runways, it was necessary to construct a taxiway from the hangar across 34th Avenue to the east-west runway. Captain R.C. Woodward, resident contract carrier supervisor, explained that the planes would taxi between the hangar and the runway, which would necessitate periodic closure of 34th Avenue.[9]

In August 1943, the Army requested a permit from the Minneapolis Park Board—the city agency that managed the airport—to build the taxiway. The Army received a cool reception. The park board, comparing the Army's plans for hangar and taxiway construction with its own post-war plans for Wold-Chamberlain Field, discovered a significant conflict of interest. The Army's plan would severely limit the board's future options, particularly its desire to expand the west edge of the field as far as 28th Avenue. Eventually, though, to avoid impeding the war effort, the board grudgingly sanctioned the construction work.[10]

Building the ATC Compound

The Army awarded the construction contract to Madsen Construction Company in June 1943. Work began in August on the hangar, an apron and taxiway, and parking facilities. Early in November 1943, the taxiway and apron were completed, and planning began for the erection of five guard houses at an estimated cost of $500.[11]

The Air Transport Command Hangar, with offices and shops on the north side, was completed by December 13, 1943, at a cost of $409,799. The new hangar was built of steel and concrete,

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[8] "Base Installations," n.d., 11, in personal collection of Noel Allard; "U.S. Gets Tract Near Airport," August 4, 1943, newspaper clipping in Wold-Chamberlain folder, Vertical Files, Minneapolis Collection, Minneapolis Public Library.

[9] "Base Installations," 11-13; "U.S. Gets Tract West of Airport For New Hangar."

[10] Theodore Wirth, "Aviation—The Municipal Airport," in *Minneapolis Park System, 1883-1944: Retrospective Glimpses into the History of the Board of Park Commissioners of Minneapolis, Minnesota and the City's Park, Parkway, and Playground System* (Minneapolis: Minneapolis Park Board, 1945), 314; Minneapolis Board of Park Commissioners, *Proceedings* (August 18, 1943), 91.

[11] "Base Installations," 11-12.

its roof supported by steel bowstring trusses measuring 16-feet at the deepest point. Roof trusses created an interior space free of supporting columns that would impede the movement of aircraft within the building. Office space was provided outside the main hangar area in the one- and two-story blocks extending from the north wall. This configuration provided the maximum amount of space for loading and storing cargo inside the hangar, which measured 160'-0" by 243'-0".[12]

The hangar is unusual for its two sets of doors. Doors are, by far, the most expensive part of a hangar, and most hangars offer only a single aircraft entry. The promise of greater operating efficiency apparently justified the cost on installing doors on both the east and west facades of the Air Transport Command Hanger. The second door permitted cargo to be loaded in an assembly-line system: planes would enter at one side and would proceed through the hangar to exit at the other end. Quicker loading reduced the time the aircraft spent on the ground. The sliding type of door, less convenient in winter but also less expensive than other types, may have been selected to make up for the added expense of the second door.[13]

A plan for a sprinkler system in the hangar was considered during the course of construction, but was rejected. Because no manufacturing or modification activities would take place inside the hangar, the precautionary system was seen as unnecessary.[14]

Several supporting structures were erected alongside the new Air Transport Command Hangar, which the Army also referred to as T-1. A survey conducted early in the construction process convinced the Army to build a temporary passenger terminal and air freight warehouse. The passenger terminal was completed in December 1943 and christened T-2. Later that month, approval was given for the construction of a fire station at a cost not to exceed $5,000. In January 1944, building T-3, a structure designed to serve as the guard headquarters, post engineer's office, and security office was completed. Despite the flurry of construction, space was again tight by February 1944, when the Alaska Wing appealed to Headquarters ATC for an equipment shed and a new fire station. Apparently, the recently completed fire station was too small for the ever-increasing load of cargo and personnel. Headquarters approved the plan, and the Army modified the old fire station to house a garage and offices. Construction

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[12] Charles Froesch and Walther Prokosch, *Airport Planning* (New York: John Wiley and Sons, 1946), 192; "Metropolitan Airports Financial and Statistical History," n.d., 8, 72B; and Toltz, King and Day, Inc., "Appraisal of Wold-Chamberlain Buildings for Aviation Services Company, Minneapolis, Minnesota," April 1, 1946, 26, both located at Metropolitan Airports Commission, Minneapolis; "Base Installations," 15.

[13] *Airport Planning*, 190; "Hangar Doors that Roll or Rise," *Architectural Record* 94 (July 1943): 77, 80.

[14] "Base Installations," 12.

continued throughout the summer, and July 1944 saw the completion of the air freight terminal, designated T-5. The equipment shed (T-6), and the new fire station (T-7), were completed in August 1944.[15]

In December 1944, the Army solicited bids for a southside addition to the hangar to house operations, communications, a weather station, and a pilot's briefing room. Construction began in January 1945, and the 9,000 square feet of extra office space was completed in April of that year at an estimated cost of $45,000.[16]

While the Army was busy planning and building the Air Transport Command Hangar and supporting facilities, Northwest Airlines had firmly established the air cargo route to Alaska. In December 1943, the Army released Northwest from its contract and took over operation of the entire route. Northwest's work on the route was of enormous benefit to the Army, as it was able to easily assimilate Northwest's scheme. In turn, the airline had been interested in the lucrative Alaska-Far East route since before the war, and the experience it gained flying for the Army weighed heavily when it came time to assign the route to an air carrier in the post-war years. The Army operated the route for the duration of the conflict, and the newly built hangar at Wold-Chamberlain Field served as the point of origin for the delivery of cargo to the North Pacific.[17]

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[15] Ibid., 12-15. The hangar is the only one of these buildings that has survived.

[16] Ibid., 14; "Metropolitan Airports," 8; "Appraisal of Wold-Chamberlain," 30.

[17] "Alaska Air Transport Operation," n.p.; The Cover, *Business Week,* 8; "Sketch of Northwest Airlines," 1945, 1, in Northwest Airlines Collection, Minnesota Historical Society, St. Paul.

CHANGES AT THE HANGAR

Additions to the north and south walls of the hangar began just a year after its construction. The hangar originally had offices and shops along the north wall only; two small heater rooms protruded from the south wall. Between 1944 and 1945, the Army appended single-story blocks to both the north and south walls at a total cost of $45,000. The north addition comprised a shipping room and two offices, built at the east end of the north side in 1944. In 1945, the Army built a 240'-6" addition to the south wall, adjacent to the east heater room and totally enclosing its west counterpart. Minor additions to the south side eventually stretched across its width, just as changes to the north side continued incrementally in subsequent decades.[18]

[18] "Metropolitan Airports Financial and Statistical History," n.d., 72A, 73.

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