

**OREGON INVENTORY OF HISTORIC PROPERTIES  
SECTION 106 DOCUMENTATION FORM**

Agency/Project: Port of Portland/Hangar 701 Building Ensemble	
Street Address: Portland International Airport	City, County: Portland, Multnomah
USGS Quad Name: <i>Mt. Tabor, OR-WA.</i>	District, Grouping or Ensemble? Yes
Township: 1 North Range: 2 East Section: 7 Tax Lot #:	Name: Hangar 701 Building Ensemble
Current Use: Vacant	Date of Construction: 1941, ca. 1942
Architectural Classification/Resource Type: Utilitarian World War II Military Aircraft Hangar	Alterations & Dates: Facade attachment ca. 1962
Window Type & Material: Multi-light steel	Exterior Surface Materials: Primary: corrugated sheet metal Secondary: none Decorative: none
Roof Type & Material: Gable, unknown	
Condition: <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	Integrity: <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor
 <p>Hangar 701 north facade and west elevation.</p>	
<b>Preliminary National Register Findings:</b> <input type="checkbox"/> National Register listed      Potentially Eligible: <input checked="" type="checkbox"/> Individually <input type="checkbox"/> As part of District <input type="checkbox"/> Not Eligible: <input type="checkbox"/> In current state <input type="checkbox"/> Irretrievable integrity loss <input type="checkbox"/> Lacks Distinction <input type="checkbox"/> Not 50 Years	
<b>State Historic Preservation Office Comments:</b> <input type="checkbox"/> Concur <input type="checkbox"/> Do Not Concur: <input type="checkbox"/> Potentially Eligible Individually <input type="checkbox"/> Potentially Eligible As part of District <input type="checkbox"/> Not Eligible	
Signed _____ Date _____ <b>Comments:</b>	

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Street Address: Portland International Airport	City, County: Portland, Multnomah
Architect, Builder or Designer (if known): U.S. Army Corps of Engineers	Property Category: <input checked="" type="checkbox"/> Building <input type="checkbox"/> Structure <input type="checkbox"/> District <input type="checkbox"/> Site <input type="checkbox"/> Object
Owner: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Local Government <input type="checkbox"/> State <input type="checkbox"/> Federal <input type="checkbox"/> Other	
Name: Port of Portland Address: 121 NW Everett St. City, State, Zip: Portland, OR 97201 Phone:	
<b>Description of Property (including exterior alterations &amp; approximate dates), Significance Statement, and Sources. (Use continuation sheets if necessary):</b>	
<p><b>Physical Description and Setting</b></p> <p>Hangar 701 (Building 5715) is located at the Portland International Airport (PDX) in Portland, Oregon, at the south end of the original airport runways, south of Perimeter Road. The location is in the SE ¼ of the SE ¼ of the NE ¼ of Section 7 of Township 1 North, Range 2 East, of the Willamette Meridian, Oregon. The hangar was built in 1941 as a U.S. Army Air Force (USAAF) aircraft maintenance hangar on the Portland Army Air Base at the start of the United States involvement in World War II (1941-1945).</p> <p>The general character of the historic setting of the hangar is impacted by modern buildings to the north and to the southeast. Two one-story buildings, one dating from circa 1942, and the other dating from circa 1962, are sited in front (north) of the hangar facing the PDX runway system. Directly southeast of Hangar 701, the Port of Portland constructed a massive Ground Run-up Enclosure (GRE) in 2001 to reduce noise associated with post-repair jet engine run-ups. The Portland Air National Guard Base is also located southeast of the hangar. To the west of the hangar are modern transport facilities operated by the United Parcel Service (UPS). The area near the hangar is open and clear of vegetation. Most of the buildings that were associated with World War II within the immediate area have been demolished. A circa 1942 Boiler Building 720 (Building 5700) room that is associated with the hangar and is located approximately 50 feet south of the hangar, and a circa 1942 "night lighting"/Electrical Control Building 723 (Building 5711) is located approximately 50 feet north. They are the only other historic-period buildings nearby.</p> <p>Hangar 701 (Building 5715) resembles a 1941 Army Air Corps Technical School type Two-Unit Hangar and generally conforms to design plan number 695-400.1. The hangar was the only one of its type constructed at the Portland Army Air Base (although several hangars of differing types were built). The hangar is a steel structure with a central aircraft bay and two levels of office/work space on either side. The structure is oriented with the main hangar doors to the east and west with the office/work spaces aligned along the north and south sides, outside the main structural columns of the building. The roof is supported by a low-pitched, combination Howe and Pratt truss system. The central king post of each truss is flanked by two inward-leaning diagonal web members as in a Howe truss. The third vertical web member on each side marks the point outside of which the diagonal members are outward-leaning, as in a Pratt truss, an orientation that extends to the ends of the trusses. The trusses are connected to each other from above by steel purlins and from below by steel beams running between the trusses at right- and 45-degree angles. The roof is decked with wood planking.</p> <p>The original structure measures 162 feet (ft)-10 inches (in) wide from north to south and 202 ft long, east to west. The interior hangar floor is 120 ft wide, north to south, and runs the length of the building. The structure is 45 ft high at the peak of the roof.</p> <p>Multiple-pane clerestory windows run along the uppermost portion of the north and south walls among the trusses, allowing light into the hangar bays. The concrete floor of the hangar bay is poured in large sections with a long, narrow section running down the center of the bay, east to west. Along the interior of the central hangar bay on the north and south sides are wooden walkways supported by steel brackets. Steps at either end of both walkways allow access to the second floor offices, workspaces, and classrooms. The interior walls dividing the main hangar bay from the flanking workspaces are composed of 2x4-inch (in) stud framing between the steel framing columns. They are sheathed on the hangar side with</p>	

Surveyor/Agency: Elizabeth J. O'Brien, B. of Architecture, and Jason Allen, M.A.  
Archaeological Investigations Northwest, Inc., Portland, Oregon

Date Recorded: January 2005

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horizontally- oriented, corrugated steel siding. The sides facing the workspaces are generally clad in horizontally-oriented 1x6- in tongue-and-groove planking.

The exterior walls are clad in vertically-oriented corrugated sheet steel, which has been painted a dull, light gray. Similar banks of windows run the length of the second floor. These windows illuminate the classrooms and offices that flank the central hangar bay on the north and south sides. All of the windows above the ground floor on the south side have been painted. The first floor has similar multiple-pane windows, most of which, but not all, have been painted over. On the north side, the clerestory windows are unpainted. The second story windows are also largely intact. Located centrally, running nearly the length of the north façade, is a circa 1962 single story addition. The addition is shed-roofed and wood framed. Behind the addition, the original fabric of the hangar is largely intact. In the center of the north façade is a circa 1962 flight tower. The tower is a half-hexagon shape with outward leaning, tinted windows. The roof of the tower is a shed roof. It reaches only to the second floor, and the control room is accessed from the interior of the second floor.

The 28-ft-tall hangar bay doors are located at the east and west ends of the structure. They consist of ten overlapping segments, each with bubble-frosted windows embedded with chicken-wire running the full height of the doors. These doors are mounted on tracks and roll on large wheels to the sides. The doors are manually operated, requiring people to push them open. The main doors have three small access doors, allowing passage into the hangar bay without opening the larger doors.

The flanking workspaces on the first floor of the north side include restroom and cafeteria facilities at the east end and a machine shop at the west end. These areas are generally heated with large, wall mounted space heaters. A centrally located stairway rises from east to west within this portion of the building. The second floor of the northern side workspaces are mostly offices. These areas have been subdivided extensively with interior walls. Many surfaces have been covered with wood veneer paneling. The 2x4 in suspended ceiling panels bring the ceiling height down to eight ft. The original ten-ft high ceiling remains largely intact above the suspended ceiling tiles, and consists of 1x1 in square, asbestos-containing fiber tiles. Most of these spaces are heated with steam baseboard or steam radiators.

The south-side flanking workspaces on the first floor are mostly open spaces that were probably used for storing parts or machinery. Located near the center of this side is an electric dumbwaiter operating between the first and second floors. Doors on both the hangar side and the office side allow access to the dumbwaiter from the hangar floor, first floor machine shop, second floor walkway, and second floor avionics classroom.

Most of the rooms on both sides of the structure, on both the first and second floors, have holes cut in the walls facing the central hangar where air conditioners once passed through the walls.

To the south of the hangar is a small circa 1942 boiler building (Building 720 or Building 5700). The steel-framed building is roughly square with a gently-sloped shed roof. The building is clad in vertically-oriented, corrugated steel siding. The building is located approximately 50 ft south of Hangar 701. There are nine-light, awning windows on all four sides, and doors on the north façade. The roof is supported by steel beams with wood plank decking. Most of the boiler system remains in the building, but is very heavily decayed, and includes significant amounts of airborne asbestos, requiring the building to be closed and inaccessible. The roof has sustained extensive weather-related damage and has collapsed in several places, leading to extensive interior damage. The boiler building is connected to the hangar via underground pipes. To the north of the hangar are two small sheds, one dating to circa 1962. The westernmost of the two sheds is a small circa 1942 shed that was used for night lighting and housed electrical controls. The rectangular building has a low-pitched gable roof covered with steel roofing material. The exterior walls are covered by steel panels. There are steel six-light windows, louvered vents, and doors.

Modifications were made to Hangar 701 from the early 1960s through the 1990s, as it continued its use as a maintenance hangar. The first modifications were made to Hangar 701 in 1960, when a flight-line control room was added to the building's north end, overlooking the airport runways (Department of the Air Force 1960:POR-200-017; PIA-60-0002-D). Interior Room 108 was altered with sheet rock, the ceiling was lowered, and aluminum sliding windows were added to this room in 1962 (Oregon Air National Guard 1962:1). In 1974, the exterior and interior of the hangar building were painted and the roof was repaired. The boiler house was also painted and its furnaces were overhauled in 1974. Maintenance work including paint and gutter improvements were made to the hangar in 1978 (U.S. Air Force 1978:POR-15-701-001A).

The hangar was used as the U.S. Air Force Reserve Hangar until it was transferred from the Air National Guard to the Port of Portland in 1985-1986 (Collins 2005). The hangar continued its maintenance function even after it was leased to Horizon Air

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in the late 1980s and 1990s. Modifications were made to some of the office spaces for use first by the military, and then later for use by Horizon Air. Since the late 1990s, the building has stood vacant due to asbestos issues, and has been used informally for storage. The neighboring boiler house is completely closed due to high-risk asbestos problems.

**Statement of Significance**

Hangar 701 (Building 5715) was built as part of the U.S. Army Air Corps (USAAC) Portland Air Base installation that was established at the Portland-Columbia Airport (now Portland International Airport) in 1940. The building was completed by the U.S. Army Corps of Engineers (USACE) in the summer of 1941, six months before the Japanese attacked Pearl Harbor and the United States entered World War II. Hangar 701 resembles a 1941 Army Air Corps Technical School Type Two-Unit hangar and appears to conform to design plan number 695-400.1.

Hangar 701 is recommended to be eligible for listing in the National Register of Historic Places under Criterion A, for its statewide significance within the themes of World War II, military aviation, and industry; and under Criterion C, for its rarity in Oregon as a type of aircraft hangar that was built on the first Oregon airbase developed specifically for World War II aviation. Although Hangar 701 generally conforms to the 1941 Army Air Corps Technical School Type Two-Unit hangar design, which was widely built nationwide during the war buildup, it appears to be the only one of its type constructed and remaining in Oregon.

The period of significance is 1941 to 1945, when Hangar 701 functioned as an aircraft maintenance hangar during World War II. The hangar was associated with the USAAC during its most significant period of development, during the period leading up to the war when the USAAC evolved from a second-tier air service into a superior air power with a sophisticated network of air facilities (Pedrotty et al 1999:4-1). The USAAC was re-designated by the War Department as the U.S. Army Air Force (USAAF) in June 1941. The hangar achieved its primary significance during the period it was associated with the USAAF.

Hangar 701 was constructed in the summer of 1941 by the USACE during the peak period of the USAAF expansion program during World War II (*Oregon Journal* 1941:6; Willingham 1992:119). The hangar functioned as a maintenance hangar for the Portland Air Base and housed office and shop activities along its north and south ends. Although the original drawings of the hangar were not found, the structure was most likely constructed from standardized plans developed by the Army Air Corps Construction Division and then implemented with possible modifications by the USACE. Hangar 701 is a two-unit hangar, which means it could house two aircraft. Hangar 701 could accommodate larger World War II aircraft such as the C-47, a cargo plane, which had a wing span of 95 ft 6 in and was 63 ft 9 inches in length (Cavanaugh Flight Museum 2003:2). Aircraft could be serviced from both the west and east ends through massive sliding doors that completely opened up the main interior space.

Hangar 701 has two associated buildings, a circa 1942 Boiler Building 720 (Building 5700) and "night lighting"/Electrical Control Building 723 (Building 5711), which are considered to be historic-contributing resources to the significance of the maintenance hangar. The boiler house provided steam heat for the aircraft hangar. The "night lighting" building served the Portland Air Base during World War II operations. Hangar 701, the boiler house, and the "night lighting" building remain in their original locations and are three of the few extant buildings in the immediate area remaining from the World War II era. Only two other World War II aircraft hangars are located at the air base today, a pair of smaller hangars built in 1942 that differ in type. A few historic-period aircraft hangars that post-date 1945 are still standing. No aircraft hangars of the same type as Hangar 701 exist at either of the two other WWII air bases in Oregon, Kingsley Field or the air base at Pendleton.

**Historic Context**

Introduction

Due to the outbreak of World War II in Europe, municipal airport facilities in the United States were selected by the U.S. Army to establish Army Air Corps units. The Portland-Columbia Airport was selected to house three units for the U.S. Army, the Wing Headquarters, an Air Base, and a Pursuit Group (The Port of Portland Commission 1939-1940:8). Areas south of the municipal airport were developed into what became known as the Portland Army Air Base. One of the first areas developed as part of the air base was the operations area at the municipal airport runways' south end. As a part of this development, a large maintenance aircraft hangar (Hangar 701) was constructed in 1941.



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Portland-Columbia Airport/Portland International Airport

The Portland-Columbia Airport was established on the eve of U.S. involvement in World War II and it directly benefited from the federal funds expended as a part of the pre-war build-up. Prior to the Portland-Columbia Airport, Portland's municipal airport terminal was located at Swan Island near the city's center. Established in 1928, the Swan Island facility rapidly became obsolete due to quick-paced advances in aircraft technology. A larger facility was needed and construction began on bottomland south of the Columbia River that was owned by the Multnomah County Drainage District No. 1. The land for the airport was purchased through a \$300,000 bond issued by the Port of Portland, and construction began on the new facility as a Works Progress Administration (WPA) project in 1936 (Donovan and Associates 1997:23; The Port of Portland Commission 1937-1938:11). Over \$2,000,000 was spent by the WPA on the airport's construction.

The new airport facility extended one mile east from N.E. 47<sup>th</sup> Avenue, south of the Columbia River levee. Approximately 700 acres were leveled and graded, a pipe-drainage system was installed, and a drainage ditch system was dug around the airport's perimeter (The Port of Portland Commission 1937-1938:14). Additional land was purchased by the Port of Portland from the Multnomah County Drainage District for use by the U.S. Army. After another 355 acres was acquired by the U.S. Army in late 1942, approximately 1,250 acres had been absorbed for use by the Portland Army Air Base at the Portland-Columbia Airport (The Port of Portland Commission 1941-1942:12). Of these lands allotted to the U.S. Army for use at the airport, 38 acres were designated for military aviation.

U.S. Army Air Force Military Airfield Expansion

The events leading up to the expansion of the Portland-Columbia Airport and the development of the air base were related to the escalating military conflict in Europe. Congress approved funding for a program called the Development of Landing Areas for National Defense (DLAND) in 1940, which allowed for the improvement of the infrastructure of selected municipal airports to accommodate military aircraft and operations. Once the air power of the opposing forces during the war was witnessed, Congress reacted quickly by allotting over \$2.5 billion to the USAAC (Pedrotty et al 1999: 4-2). The USAAC began expending the monies from this congressional act in 1941 (U.S. Centennial of Flight Commission 2004:1).

The USACE took over the construction of USAAC facilities in February 1941, due to the immense effort and organization needed in expanding the USAAC military air program. Because of the development pressures, the USAAC was re-designated by the War Department as the U.S. Army Air Force (USAAF) in June, 1941. The USAAF operated as a separate service branch, although it was a sub-service of the U.S. Army (Pedrotty et al 1999:4-9). Within two years, between 1941 and 1942, the USAAF, with the assistance of the USACE, had constructed the bulk of its airfields. By the end of 1943, the USAAF had almost 800 military air facilities. Most of the aircraft war operations by this time were outside the U.S. and further developments were not required within the U.S. (Pedrotty et al 1999:4-13).

Portland Army Air Base World War II Development

Construction of the Portland Army Air Base began after Portland-Columbia Airport was selected by the U.S. Army to house Army Air Corps units in August, 1940. Construction of the military facilities began in 1940 and the facilities were operational by 1941 (The Port of Portland Commission 1939-1940:9). The area was officially designated the Portland Army Air Base in 1941 (The Port of Portland Commission 1941-1942:12).

Most of the construction at the Portland Air Base during the World War II era occurred between 1941 and 1943 in two phases, and resulted in the construction of more than 100 separate facilities. The first construction phase focused primarily on the operations area at the air base's west end, south of the Portland-Columbia Airport runway. Construction included airmen's barracks, officer's quarters, office, hangars, base hospital, warehousing, and storage facilities (*Oregon Journal* 1941:6; Peer Consultants 2004:3-7). Locally, the USACE employed a number of private contracting companies to make the improvements to the airport and air base facilities, including widening two existing runways and constructing fueling facilities, warehouses, and other buildings at the east end in the cantonment area (Gilbertson 1941:8).

As the operations area took form, Hangar 701 was placed in the central axis of the runway system. The control tower and night lighting building were in front of the hangar, to the north. A 1943 aerial of the immediate area shows two rows of elongated rectangular buildings lining the southern edge of the original airport runway. The boiler building was in use at the

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hangar's southwest end. A number of military aircraft facilities are placed around the airfield's perimeter, to the south, west, and east. Two hangars are shown on the west end, another at the east end, and the operation facilities at the south end.

Fueling activities occurred southwest of the airfield. The types of aircraft parked on the field's perimeter that day in 1943 when the aerial photograph was taken included B-25s, C-47s, PT-6s, single engine aircraft, and fighter aircraft stationed in revetment structures at the airfield's west end (Montalbano 2004).

There were specific aircraft groups associated with the Portland Army Air Base unit functions in 1941, including the 55<sup>th</sup> Pursuit Group, the 16<sup>th</sup> Transport Squadron, which flew the C-47 Skytrain aircraft, and the 37<sup>th</sup>, 38<sup>th</sup>, and 54<sup>th</sup> Pursuit squadrons, which flew the P-43 Lancer, P-36 Hawk, and P-40 Warhawk aircraft (Yarnall 2003:9). The presence of PT-6 pursuit trainers and P-43 Lancers, both of which were used exclusively for training activities in World War II, suggest that pilot training occurred at the Portland Air Base during World War II (Montalbano 2004). The air base functioned as a military transport/ferry facility that serviced and provided supplies for long-range aircraft, including the B-17 Flying Fortress, B-24 Liberator, and C-47 planes (Peer Consultants 2004:3-7). The air base handled as many as 47 transport landings a day (Pike 2004:2).

#### Military Aircraft Hangars

The UAAAC Construction Division, prior to handing over its construction responsibilities to the USACE in February, 1941, had developed standardized plans for many of its buildings, including aircraft hangars. The standardized plans developed by the USAAC Construction Division were employed or improved upon by the USACE. Generally, aircraft hangar buildings were built as temporary structures due to a USAAC policy limiting permanent construction, except at technical or operation facilities (Pedrotty et al 1999:4-6, 4-7). Since the Portland Air Base was an operation facility, most likely Hangar 701 was intended as a permanent structure.

#### Modern Developments

After World War II and later, after the Korean War (1950-1953) conflicts subsided, the Portland-Columbia airport evolved with the commercial and civilian aviation activities located at the facility's north end and the south end was devoted to the U.S. Air Force Reserve and the Oregon Air National Guard. The Port of Portland opened a new passenger terminal at what is now called the Portland International Airport in 1958 (The Port of Portland Commission 1957-1958). The International Runway was extended to 8,800 ft in length as aircraft became larger. In 1960, NE 47<sup>th</sup> Avenue was closed at the airport's west end and a runway was added to the north along Marine Drive (The Port of Portland Commission 1959-1960:9-10). Expansion has continued with commercial and industrial properties developed in front of the terminal. The Port of Portland has expanded the airport to the east and west.

The U.S. Air Force Reserve acquired Hangar 701 when it occupied the west end of the Portland Air Base. In the early 1960s, a number of air base buildings were demolished, and the aircraft Hangar 701 was modified along its north façade to accommodate a flight-line control room. A proposal to move Hangar 701 was made in 1969 by the Oregon Air National Guard (U.S. Air Force 1969), but was never implemented. The building's ownership was transferred from the Air National Guard to the Port of Portland in 1985-1986 (Collins 2005). Horizon Air leased the building from the Port of Portland in the late 1980s and used the building and several other buildings nearby as their maintenance facilities. Once a modern facility was constructed in 1998, Horizon Air moved most of its operations out of Hangar 701 (Hill 1998). Horizon Air used the hangar as late as 2000, and now it stands empty.

#### **Sources**

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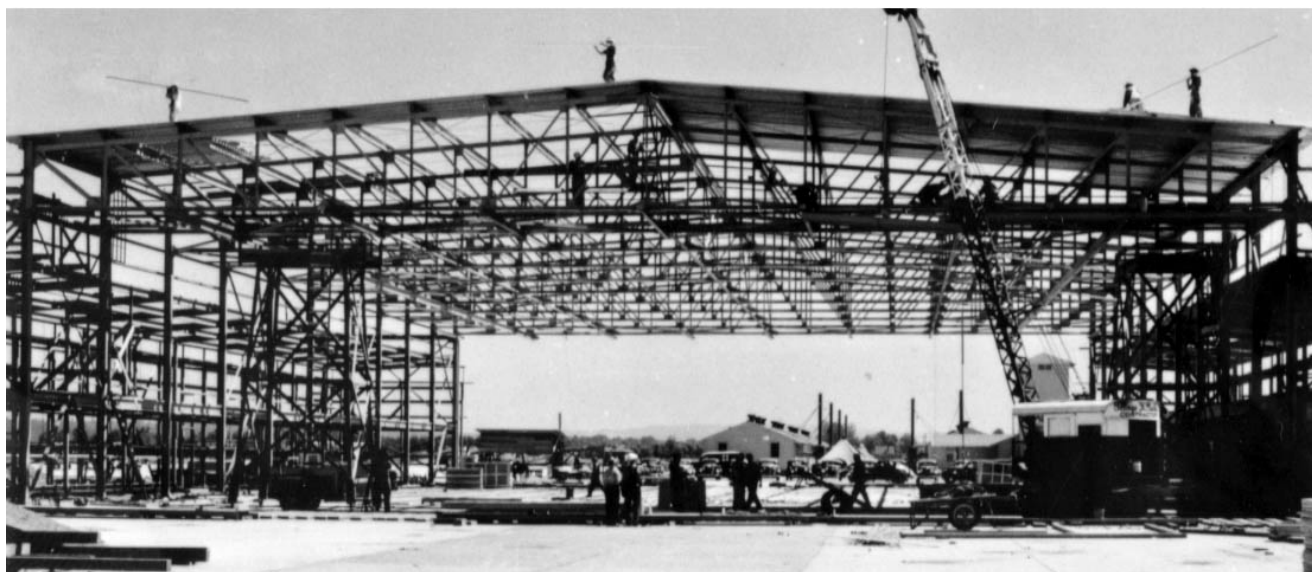
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View: Hangar 701 under construction in 1941. Photography courtesy of U.S. Army Corps of Engineers.



View: Enlarged view of Hangar 701 circa 1950, taken from a panoramic view of the airport. Photograph courtesy of U.S. Army Corps of Engineers. Note control tower in front (previously removed).

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View: Hangar 701 north facade, view to the southeast. Note one-story 1962 modification.



View: Hangar 701 north facade, view to southwest.

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View: View of east elevation from the building's southeast corner.



View: Hangar 701 west elevation, view to the southeast.



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View: Hangar 701 south elevation, view to the northwest.



View: Hangar 701 and neighboring Ground Run-up Enclosure, view to the east.



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View: View of the north interior wall.



View: View of southeast corner of the hangar interior. Intact stairs to mezzanine level in rear.



View: Interior view of Hangar 701 looking east.

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View: Boiler Building 720 (Building 5700) west and south elevations with Hangar 701 in the background. View to northeast.



View: Boiler Building 720 (Building 5700) east elevation and north facade, view to the southwest.

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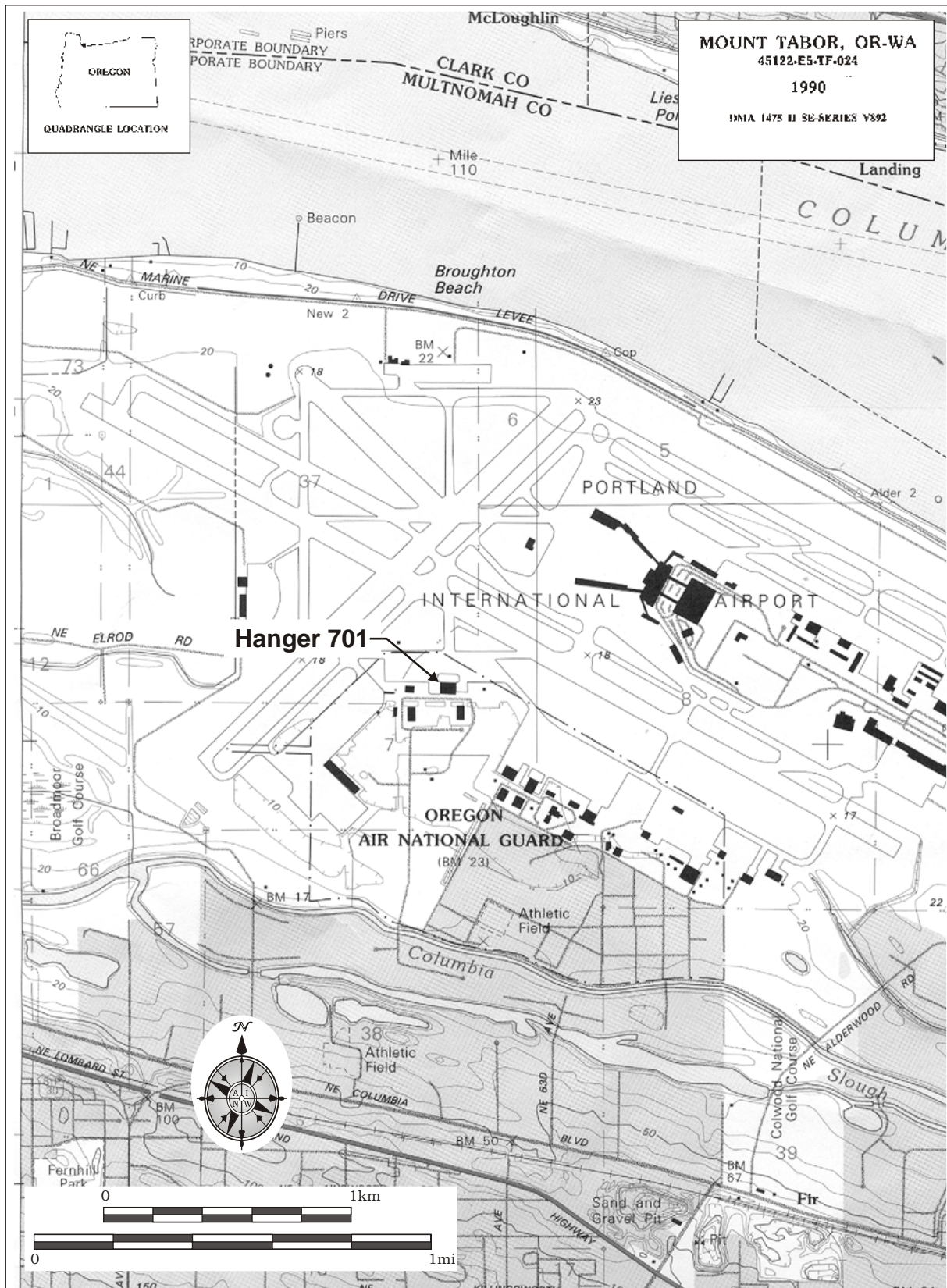
Street Address: Portland International Airport

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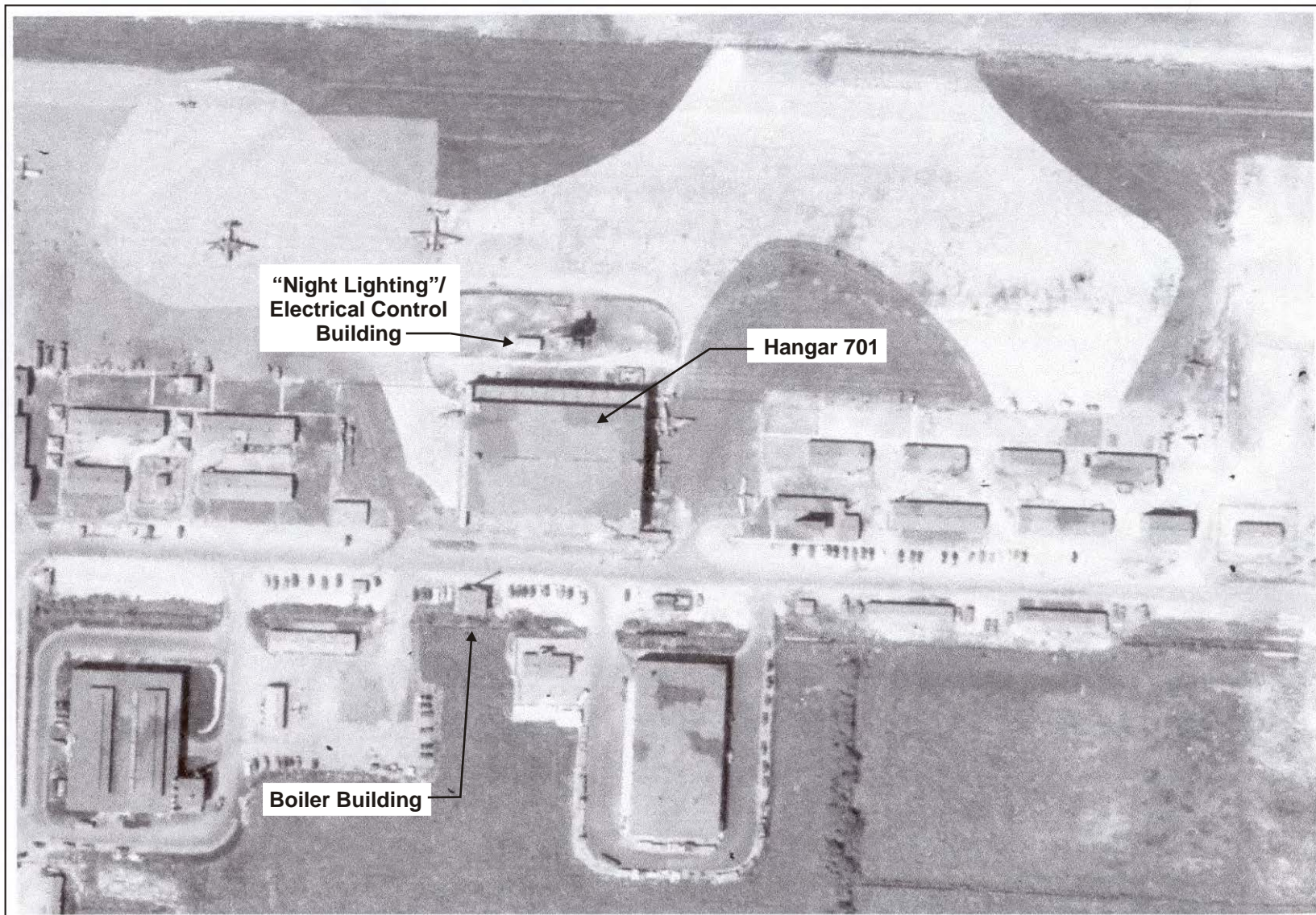


View: South elevation of the "night lighting"/Electrical Control Building 723 (Building 5711).

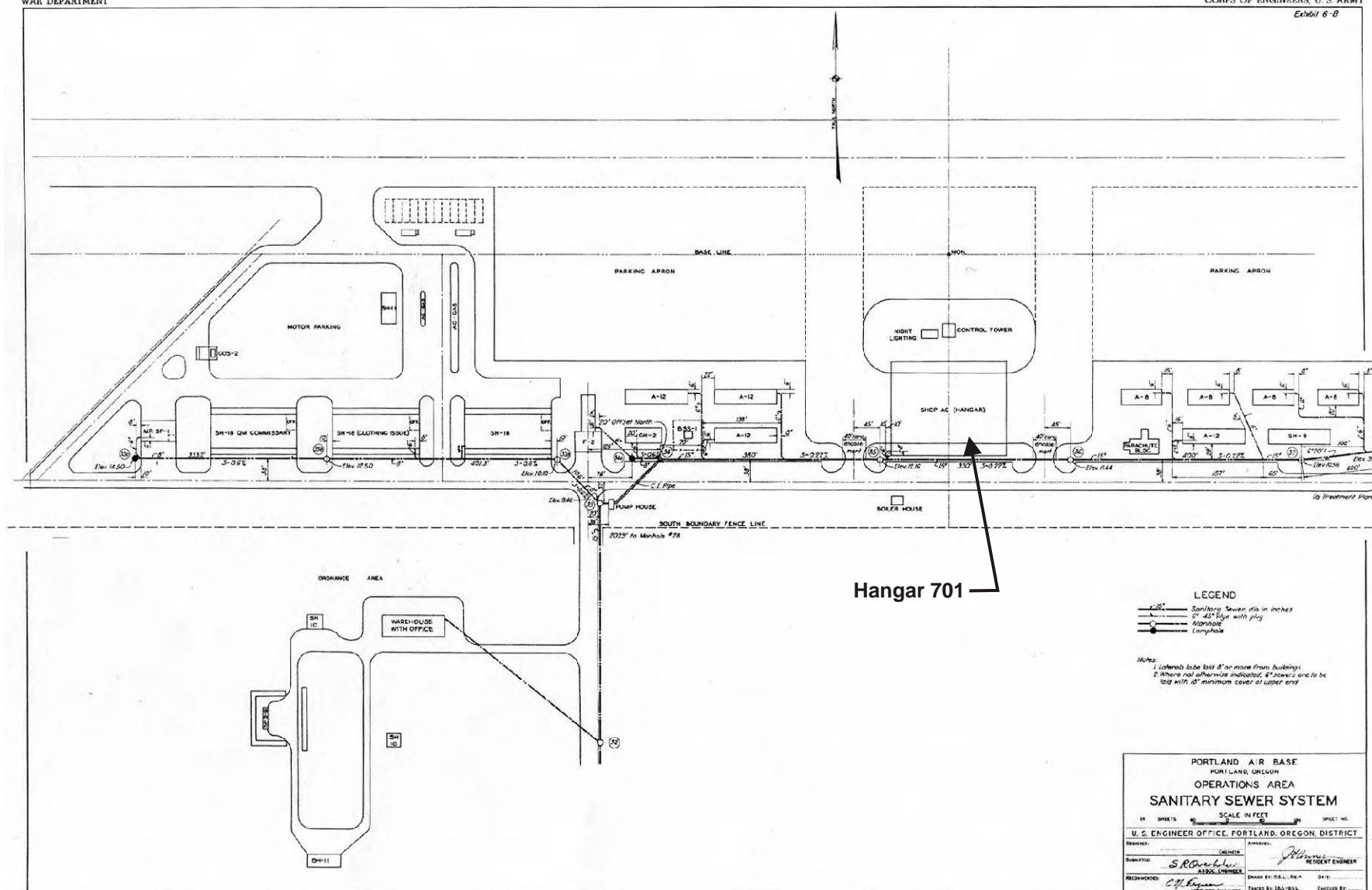








Detail of 1943 aerial photo, showing Hangar 701, the boiler building, and "night lighting"/electrical control building. (Photo courtesy of U.S. Army Corps of Engineers.)



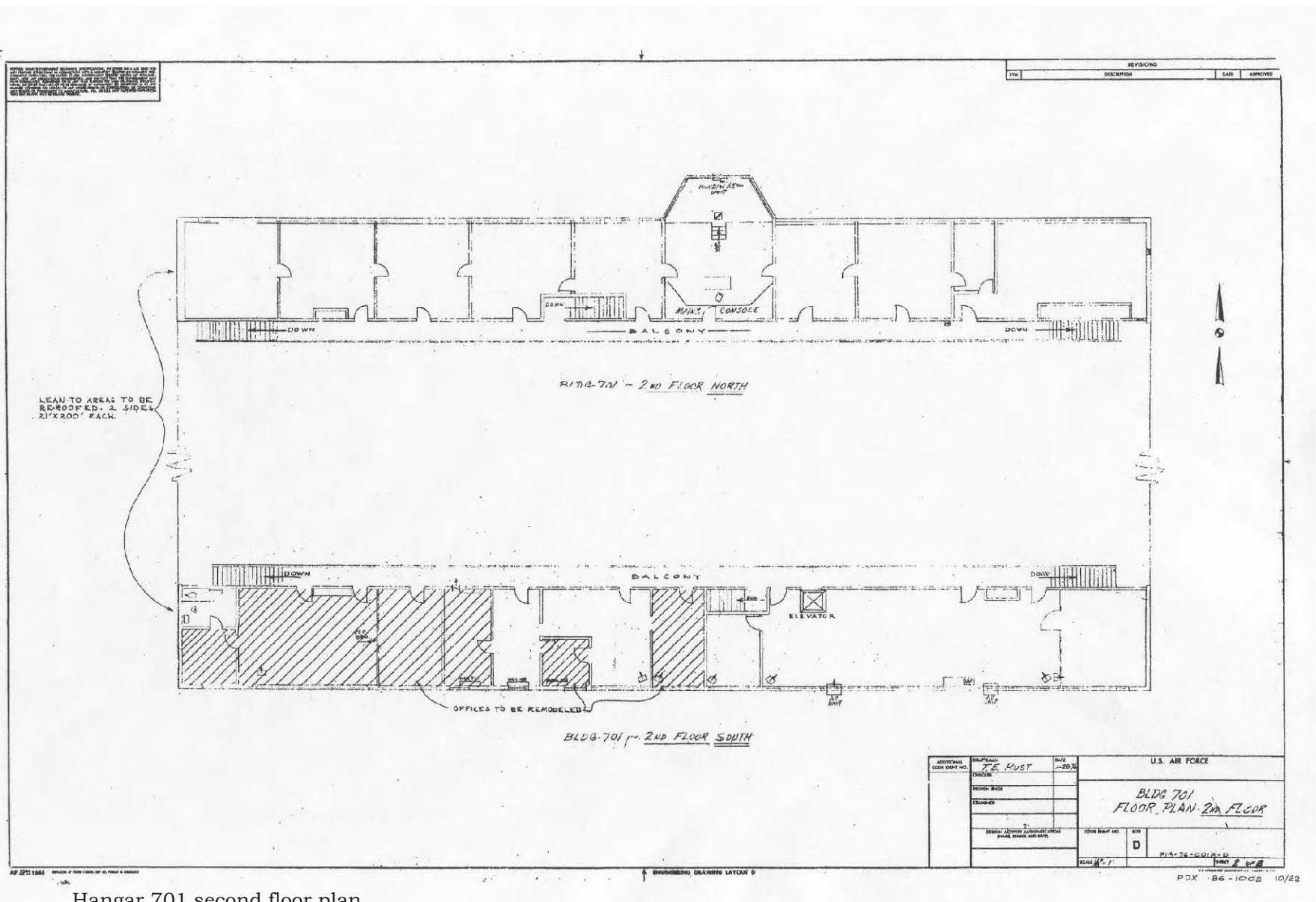
The Portland Air Base layout near Hangar 701 as it appeared during World War II.











**OREGON INVENTORY OF HISTORIC PROPERTIES  
SECTION 106: LEVEL OF EFFECT**

<b>Agency/Project:</b> Port of Portland/Hangar 701 (Building 5715)		
<b>Name:</b> Hangar 701 (Building 5715)	<b>City:</b> Portland <b>County:</b> Multnomah	
<b>Street Address:</b> Portland International Airport		
<b>Preliminary Finding of Effect:</b> <input type="checkbox"/> No Historic Properties Affected <input type="checkbox"/> No Historic Properties Adversely Affected <input checked="" type="checkbox"/> Historic Properties Adversely Affected		
<b>State Historic Preservation Office Comments:</b> <input type="checkbox"/> Concur <input type="checkbox"/> Do Not Concur: <input type="checkbox"/> No Historic Properties Affected <input type="checkbox"/> No Historic Properties Adversely Affected <input type="checkbox"/> Historic Properties Adversely Affected		
Signed _____ Date _____		
<b>Comments:</b>          		

**INTRODUCTION**

This statement of finding discusses the effect of the proposed demolition of Hangar 701, a 1941 World War II military aircraft hangar and the associated circa 1942 Boiler Building 720, which are located at the Portland International Airport (PDX) at the south end of the original Portland-Columbia Airport runways in Portland, Oregon. Hangar 701 is under preliminary consideration for listing in the National Register of Historic Places for statewide significance as the only military aircraft hangar of its type remaining in Oregon.

It is the finding of AINW that the demolition of Hangar 701 and its historic contributing building will have an Adverse Effect on a recommended eligible National Register building ensemble. There is a third building ("Night Lighting"/Electrical Control Building 723) that is recommended historic contributing, but will not be demolished at this time.

This preparation of a level of effect for the proposed demolition of Hangar 701 is based on the anticipation that there may be some requirement, although none has been identified at this time, to be in compliance with Section 106 of the National Historic Preservation Act, which would constitute a federal undertaking. This level of effect documentation will also address state law protecting significant resources that are publicly owned (ORS 358.653).

**DESCRIPTION OF ACTION**

The immediate purpose of the project is to demolish Hangar 701 due to the hangar's state of physical disrepair, the presence of friable asbestos and lead paint contamination. The building has been closed since 1998, due to the human health and safety hazards it poses. The Port of Portland is concerned that although the building is closed, Port employees and Port tenants have informally made use of the building for storage causing continued health hazard risks. The Port of Portland must take action due to the building's health and liability risks.

Having the hangar vacant is viewed as non-productive and static (non)use for some of the highest demand real estate at PDX, due to its direct taxiway access. The Hangar 701 property is located in the area identified as the Air-Trans Center. As a part of the Air-Trans Center property, Hangar 701 is identified in the PDX Conditional Use Master Plan (CUMP) as a part of 151,500 gross square feet (gsf) of new construction of air cargo, air maintenance and aviation related infrastructure to replace approximately 49,500 gsf of old hangars and vacant buildings scheduled for demolition.

**OREGON INVENTORY OF HISTORIC PROPERTIES**  
**SECTION 106: LEVEL OF EFFECT**  
**Continuation Sheet**

<b>Agency/Project:</b> Port of Portland/Hangar 701 (Building 5715)	
<b>Name:</b> Hangar 701 (Building 5715)	<b>City, County:</b> Portland, Multnomah
<b>Street Address:</b> Portland International Airport	

The 2000 PDX Master Plan, a 20-to 30-year plan, identifies the area currently occupied by Hangar 701 to be a part of a de-centralized terminal with associated taxiways and ramps. Once this plan is implemented, the current Air-Trans Center will be demolished to allow for the construction of the new terminal and concourses.

Hangar 701 is also within a secure area of PDX subject to the security and access requirements of the federal Transportation Security Administration (TSA). Under current and foreseeable future security constraints, the facility is not available for public access, and therefore not available for public interpretation. Due to these reasons, the hangar is scheduled for demolition in the summer of 2005. Since these buildings will be demolished, it is anticipated that mitigative measures will be necessary.

**IDENTIFICATION AND DESCRIPTION OF THE HISTORIC PROPERTY**

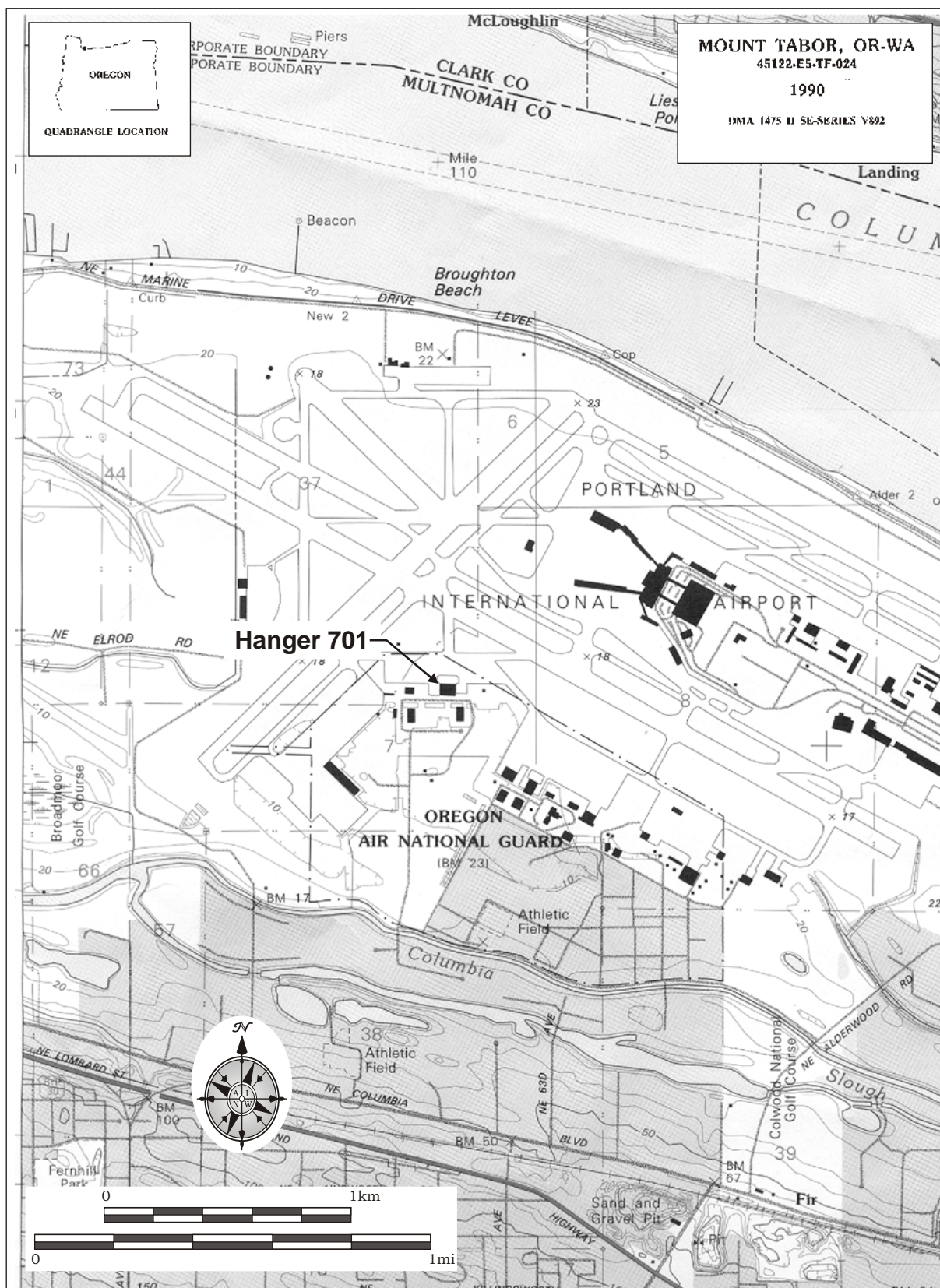
Hangar 701 (Building 5715) was built as part of the U.S. Army Air Corps (USAAC) Portland Air Base installation that was established at the Portland-Columbia Airport (now Portland International Airport) in 1940. The building was completed by the U.S. Army Corps of Engineers (USACE) in the summer of 1941, six months before the Japanese attacked Pearl Harbor and the United States entered World War II. Hangar 701 resembles a 1941 Army Air Corps Technical School Type Two-Unit hangar and appears to conform to design plan number 695-400.1. The hangar was the only one of its type constructed at the Portland Army Air Base (although several hangars of other types were built).

Most of the buildings that were associated with World War II within the immediate area have been demolished, except for the circa 1942 Boiler Room Building 720 (Building 5700) that is associated with the hangar and is located approximately 50 feet south of the hangar, and the circa 1942 "Night Lighting"/Electrical Control Building 723 (Building 5711) that is located approximately 50 feet north and was used in conjunction with World War II military airfield operations.

Hangar 701, completed in 1941, has statewide significance as the only building of its type known to exist in Oregon. It is recommended to be eligible for listing in the National Register of Historic Places under Criterion C for its distinctive characteristics as a particular military hangar type constructed in 1941 during World War II.

**CONCLUSION**

The proposed demolition of Hangar 701 will have an adverse effect on the property recommended to be eligible for listing in the National Register of Historic Places and results in a finding of "Historic Properties Adversely Affected."



The location of Hangar 701 at the Portland International Airport.

**ADDENDUM**  
**OREGON INVENTORY OF HISTORIC PROPERTIES**  
**SECTION 106 DOCUMENTATION FORM**

Street Address: Portland International Airport	City, County: Portland, Multnomah
Architect, Builder or Designer (if known): U.S. Army Corps of Engineers	Property Category: <input checked="" type="checkbox"/> Building <input type="checkbox"/> Structure <input type="checkbox"/> District <input type="checkbox"/> Site <input type="checkbox"/> Object
Owner: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Local Government <input type="checkbox"/> State <input type="checkbox"/> Federal <input type="checkbox"/> Other Name: Port of Portland Address: 121 NW Everett St. City, State, Zip: Portland, OR 97201 Phone:	
<b>Description of Property (including exterior alterations &amp; approximate dates), Significance Statement, and Sources.</b> <b>(Use continuation sheets if necessary):</b>  <b>Introduction</b>  <p>The Port of Portland has recently decided to remove Hangar 701 (Building 5715), a World War II-era U.S. Army Air Force (USAAF) aircraft maintenance hangar from the Portland International Airport property. Given the possible historical interest of this building and the requirements of ORS 359.563, the Port contracted with Archaeological Investigations Northwest, Inc. (AINW), to conduct an evaluation of the hangar. AINW prepared a Section 106 Documentation Form in anticipation of a possible need to comply with Section 106 of the National Historic Preservation Act and also meet state regulations. Hangar 701 was recommended eligible for listing in the National Register of Historic Places and the State Historic Preservation Office (SHPO) has concurred with this recommendation. AINW also prepared a Section 106 Level of Effect form and it was determined that the proposed demolition of Hangar 701 would have an adverse effect on the property recommended to be eligible for listing in the National Register of Historic Places.</p> <p>The Port has had a supplemental documentation record prepared as a part of the mitigation process as requested from the SHPO and with comments from the Portland Historic Landmarks Commission. Archival quality black and white photographs were taken to document the physical character of the exterior and interior of the building. Research was conducted at the U.S. National Archives and Records Administration (NARA), Seattle, and at the Oregon Military Museum in an effort to obtain additional historic photos, maps, drawings, and information. Additional information and maps were obtained from NARA, and the Oregon Military Museum had news clippings and historic photographs.</p> <p>This documentation record, which is to serve as an addendum to the existing Section 106 Documentation form, was prepared by AINW under contract with the Port of Portland. The research was conducted by AINW Historic Architect Elizabeth O'Brien and Architectural Historian Jason Allen. Mr. Allen and Ms. O'Brien have written this documentation. The black-and-white documentation was prepared by Port photographer Lloyd Lemmerman under the direction of Mr. Allen. AINW Senior Archaeologist David V. Ellis served as AINW project manager.</p> <b>Corrections</b> <ul style="list-style-type: none"> <li>• In the original Section 106 Documentation Form, for which this document is an addendum, the plans identified as possibly those used for the construction of Hangar 701 were identified as 695-400.1. The plan actually used for Hangar 701 was 695.417.</li> <li>• The original Section 106 Documentation Form identified the presence of two small buildings to the north of Hangar 701. There are three buildings, Building 5711 (1943 Night Lighting Building), Building 5713 (formerly 760) (ca. 1950), and Building 5717 (ca. 1965).</li> <li>• Suspended ceiling panels in the offices in Hangar 701 were identified as 2x4 inches. This should read 2x4 feet. Original ceiling tiles were identified as 1x1 inches. This should read 1x1 feet.</li> </ul>	

**ADDENDUM**  
**OREGON INVENTORY OF HISTORIC PROPERTIES**  
**SECTION 106 DOCUMENTATION FORM**  
**Continuation Sheet**

Street Address: Portland International Airport	City, County: Portland, Multnomah
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**Additional Information**

Physical Description:

The 1943 Night Lighting building (Building 5711, formerly 723), is located approximately 30 feet to the north of Hangar 701 and is the westernmost of three buildings located along the north side of the hangar. The building is roofed with overlapping-seam steel sheeting and is sided with sheet steel. The building sits on a concrete pad. The west elevation has two steel doors, one near each end. The north and east elevations have no doors or windows. The south elevation, that facing the hangar, has two six-light steel windows mounted high on the wall, just below the roofline. Running from the east side of the building, and covered with wood decking, is a subterranean channel which housed the conduit connecting the power generators located in the Night Lighting Building to the runway lights.

The central of the three northern outbuildings is Building 5713 (formerly Building 760), built ca. 1950. Building 5713 is a single-story, saltbox-gabled steel structure with steel roofing and siding. The structure is built on a concrete pad. The north elevation carries a steel door flanked on either side by six-over-six, double-hung windows with wood sash, both of which are missing their lower sashes, and both of which are boarded over from the inside with plywood. The east elevation carries a six-over-six, double-hung window with wood sash, boarded over from the inside with plywood. Attached to the east elevation is a sheltered area. The roof covering this area runs from the east end of the roof on Building 5713 to the edge of Building 5717 located to the east. The eastern end of the roof is supported by wood posts. The south elevation, that facing the hangar, carries a steel door on the east end, and two six-over-six, double-hung windows with wood sash. The upper two-thirds of these windows are caged with steel mesh. The lower one-third is boarded over from the outside with plywood. The west elevation carries a steel door flanked on either side by what were six-over-six, double-hung windows with wood sash. Both sashes are missing from the northern window, and the upper sash of the southern window was at some time replaced with an exhaust fan. Both windows are boarded over from the inside with plywood. The underground conduit channel that runs south from the Night Lighting Building runs beneath Building 5713 and is no longer visible on the other side.

The eastern of the three buildings is Building 5717, a steel-framed building sided with steel panels. The building has a gabled, steel roof, and sits on a concrete pad. The south elevation carries a centered steel door. There are no windows on the structure. This building dates to ca. 1965.

Historic Context

The land on which Hangar 701 stands was leased in 1940 by the U.S. Army Air Corps from the Port of Portland (Doyle 1940). War Department funds were used to improve the airport during the war years. These funds were used, for example, to widen the runways and add airport lighting (War Assets Administration 1947). At the end of World War II, 92 buildings at the Portland Air Base were declared surplus property by the War Assets Administration. The four Squadron OBH-1 aircraft hangars, the control tower, and Night Lighting Building were turned over to the Port of Portland for use by the Portland Columbia Airport (War Assets Administration 1947). Hangar 701 (Building 5715) and the boiler building (Building 5700) remained under the control of the Portland Airbase.

In 1943, the U.S. Army installed Building 723 (Building 5711) which was considered a "standard Night Lighting House, or transformer and control unit" next to the control tower. It contained "distribution transformers, power cubicle for normal and standby power, one G.E. Novalux Constant Current Regulator, 115/230 Volt, 23 Amp. Primary, 6.6 Amp. Secondary, a distribution panel and related equipment" (Short 1947). The original runway control installation of lighting was controlled at the north end of the runway, but was moved to the Night Lighting building by the U.S. Army. At end of the war, the system was considered "unorthodox," as only one runway could be lit at a time.

The original control tower (Building 712) stood east of the Night Lighting Building. The control tower was a 50-foot tall steel structure with a wood-sided house at the top, surrounded by a steel walkway. At the time it stood at this location, the area north of the hangar and surrounding the tower was in grass. Building 760, noted as the "Tower Auxiliary House" measured 16x14 feet and stood to the control tower's east. It appears that by 1952, the "Tower Auxiliary House" had been replaced with an "Equipment Room" that had retained the Building 760 designation (now



**ADDENDUM**  
**OREGON INVENTORY OF HISTORIC PROPERTIES**  
**SECTION 106 DOCUMENTATION FORM**  
**Continuation Sheet**

Street Address: Portland International Airport	City, County: Portland, Multnomah
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Building 5713) (Port of Portland 1952). Most likely these changes were the result of a devastating flood in 1948 that caused considerable damage at the Portland Air Base and lifted a number of the buildings off their foundations.

In ca. 1965, the original control tower was removed and replaced with the Flight-Line control room. The half-hexagonal structure was attached to the center of the north elevation of Hangar 701. The grass was removed, the area covered with concrete, and Building 5717 constructed. Building 5717 appears to have been used for storage. No evidence of the original tower is visible.

Sources

Doyle, J. P.

1940 *Extract from Minutes of Meeting of The Port Of Portland Held Nov. 18, 1940.* On file, United States National Archives and Records Administration, Seattle Washington.

Port of Portland

1952 *Portland International Airport Vicinity Map, Control Tower Area.* On file, Port of Portland, Oregon.

Short, Howard A.

1947 *Condition Report of Lighting Facilities.* On file, United States National Archives and Records Administration, Seattle Washington.

War Assets Administration

1947 *Declaration of Surplus Real Property.* On file, United States National Archives and Records Administration, Seattle Washington.

**ADDENDUM**  
**OREGON INVENTORY OF HISTORIC PROPERTIES**  
**SECTION 106: SUPPLEMENTAL PHOTOGRAPHS**

Street Address: Portland International Airport

City, County: Portland, Multnomah



View: Hangar 701 as it looked during World War II.



View: The operations area of the Portland Air Base submerged in the 1948 flood waters. Hangar 701 and Control Tower are left center. (Photograph courtesy of Oregon Military Museum.)



**ADDENDUM**  
**OREGON INVENTORY OF HISTORIC PROPERTIES**  
**SECTION 106: SUPPLEMENTAL PHOTOGRAPHS**

Street Address: Portland International Airport

City, County: Portland, Multnomah



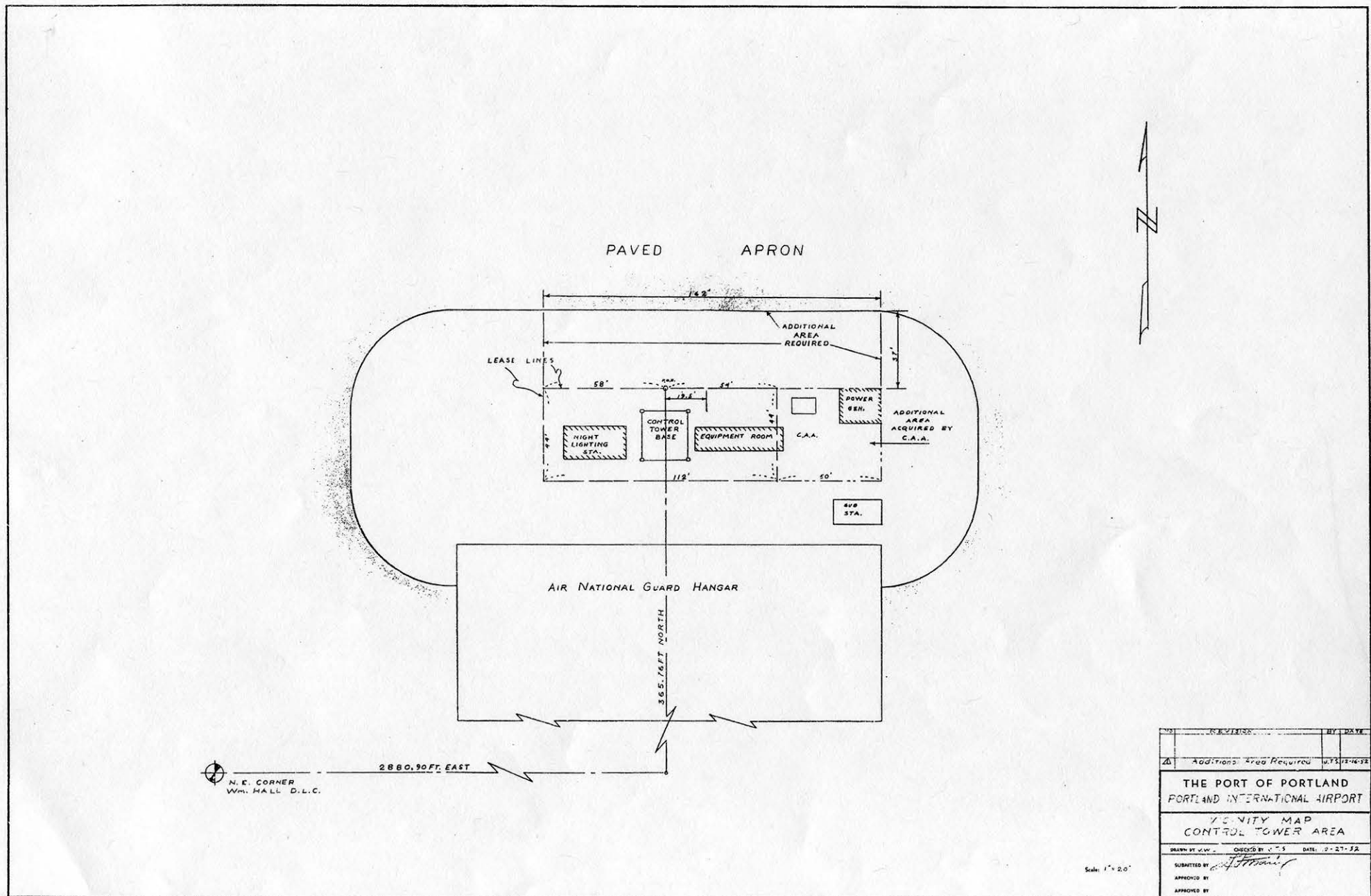
View: Hangar 701 during the 1948 flood, looking east. (Photography courtesy of Oregon Military Museum.)



View: Hangar 701 in 1948, during the clean up after the flood. (Photograph courtesy of Oregon Military Museum.)







The layout of buildings near Hangar 701 in 1952.

## PHOTOGRAPH LOG

**Project:** Hangar 701

**Date:** February 22, 2005

**Photographer:** Lloyd Lemmerman

**Location of Negatives:** Port of Portland  
121 NW Everett Street  
Portland, Oregon 97209

- Photo 1 North (left) and west (right) elevations of Hangar 701 (Building 5715), and the Night Lighting Building (Building 723 or building 5711). The view is to the southeast.
- Photo 2 East (left) and north (right) elevations of Hangar 701 (Building 5715) and three north outbuildings. The view is to the southwest. The Night Lighting Building (Building 723 or Building 5711) is at right.
- Photo 3 South elevation of Hangar 701 (Building 5715). The view is to the north.
- Photo 4 West (left) and south (right) elevations of Hangar 701 (Building 5715). The view is to the northeast.
- Photo 5 North elevations of Hangar 701 (Building 5715), and three north outbuildings. The view is to the south. The Night Lighting Building (Building 723 or Building 5711) is at right. Note 1960s control tower attached to north elevation of Hangar 701 (Building 5715).
- Photo 6 West elevation of Hangar 701 (Building 5715). The view is to the east.
- Photo 7 East (left) and north (right) elevations of Hangar 701 (Building 5715). The view is to the southwest.
- Photo 8 North (left) and west (right) elevations of Hangar 701 (Building 5715). The view is to the southeast. Note the 1960s control tower attached to the north elevation, at the left side of the frame.
- Photo 9 Interior, Hangar 701 (Building 5715). The view is of the west side of the hangar from the center of the hangar bay floor. The view is to the west.
- Photo 10 Interior, Hangar 701 (Building 5715). Wide-angle view, taken from northwest corner of hangar bay floor. At left is the north walkway, at right are the west bay doors. The view is to the southeast.
- Photo 11 Interior, Hangar 701 (Building 5715). North walkway and interior bay wall. The view is to the northeast.
- Photo 12 Interior, Hangar 701 (Building 5715). South walkway and interior bay wall. The view is to the southeast.
- Photo 13 Interior, Hangar 701 (Building 5715). Detail of hangar bay door wheel assembly. The view is to the northwest.
- Photo 14 Interior, Hangar 701 (Building 5715). The view is of the north side second floor walkway (left) and hangar bay. The view is to the southeast.

### **PHOTOGRAPH LOG, Continued**

- Photo 15      Interior, Hangar 701 (Building 5715). The view is of the north side second floor walkway (right) and hangar bay. The view is to the southwest.
- Photo 16      Interior, Hangar 701 (Building 5715). The view is of the inside of the control tower, second floor, north side, center of building. The view is to the north.
- Photo 17      Interior, Hangar 701 (Building 5715). Film room, located on the second floor, north side, east end. Projector room is at far end. The view is to the southeast.
- Photo 18      Interior, Hangar 701 (Building 5715). The view is of the office at the west end of the second floor, north side. The windows at left overlook the interior hangar bay. The view is to the southwest.
- Photo 19      Interior, Hangar 701 (Building 5715). The view is of the classroom space on the second floor, south side, east end. Note the dumbwaiter at left. The view is to the northeast.
- Photo 20      Interior, Hangar 701 (Building 5715). The view is of the stairwell on the south side of the hangar bay, from the second floor. The view is to the west.
- Photo 21      Interior, Hangar 701 (Building 5715). The view is of the machine shop located on the first floor, in the southeast corner of the building. The view is to the east.
- Photo 22      Interior, Hangar 701 (Building 5715). The view is of the north side, first floor hall at center of building. Double doors lead from north side of Hangar 701 (Building 5715) into hangar bay. The view is to the north.
- Photo 23      South (left) and east (right) elevations of Boiler Building (Building 720 or Building 5700). The view is to the northwest.
- Photo 24      North elevation of Boiler Building (Building 720 or Building 5700). The view is to the south.
- Photo 25      South elevation of Night Lighting Building (Building 723 or Building 5711). The view is to the north.
- Photo 26      East elevation of Night Lighting Building (Building 723 or Building 5711). The view is to the west. Note the wood decking covering the subterranean conduit service channel.



PHOTO 1



PHOTO 2





PHOTO 3



PHOTO 4





PHOTO 5.



PHOTO 6



PHOTO 7



PHOTO 8



PHOTO 9



PHOTO 10





PHOTO 11



PHOTO 12

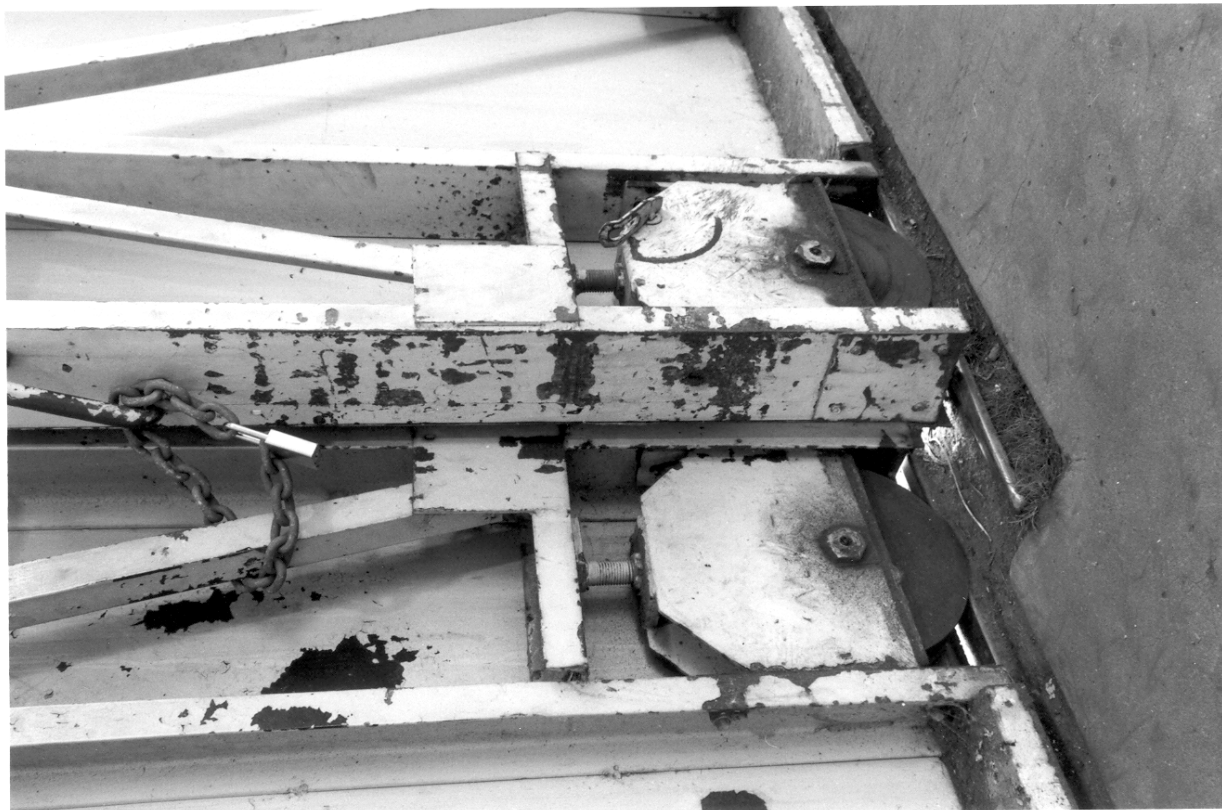


PHOTO 13



PHOTO 14



PHOTO 15



PHOTO 16





PHOTO 17



PHOTO 18



PHOTO 19

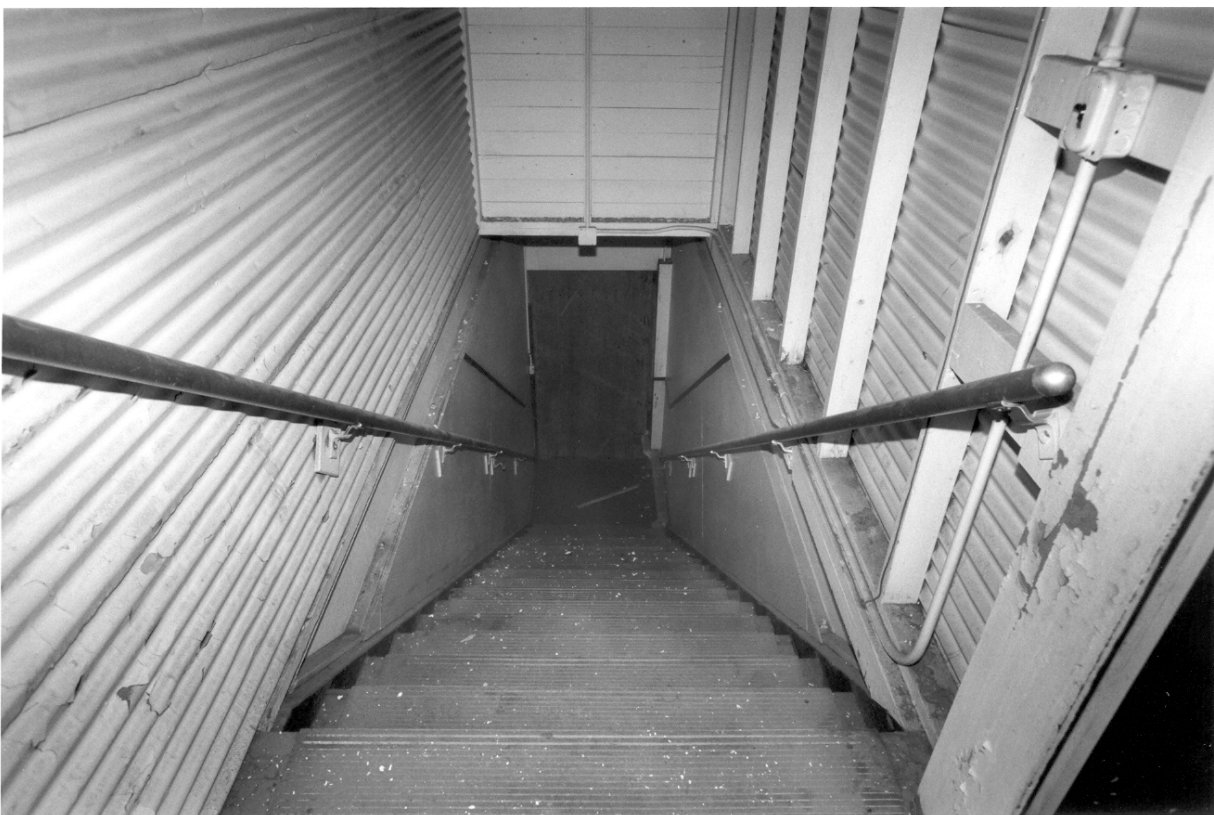


PHOTO 20



PHOTO 21



PHOTO 22





PHOTO 23



PHOTO 24





PHOTO 25



PHOTO 26

<b>Agency/Project:</b> Port of Portland/Hangar 701 (Building 5715)	
<b>Name:</b> Hangar 701 (Building 5715)	<b>City:</b> Portland <b>County:</b> Multnomah
<b>Street Address:</b> Portland International Airport	
<b>Preliminary Finding of Effect:</b> <input type="checkbox"/> No Historic Properties Affected <input type="checkbox"/> No Historic Properties Adversely Affected <input checked="" type="checkbox"/> Historic Properties Adversely Affected	
<b>State Historic Preservation Office Comments:</b> <input type="checkbox"/> Concur <input type="checkbox"/> Do Not Concur: <input type="checkbox"/> No Historic Properties Affected <input type="checkbox"/> No Historic Properties Adversely Affected <input type="checkbox"/> Historic Properties Adversely Affected	
Signed _____ Date _____	
<b>Comments:</b>	

This statement of finding discusses the effect of the proposed demolition of Hangar 701, a 1941 World War II military aircraft hangar and the associated circa 1942 Boiler Building 720, which are located at the Portland International Airport (PDX) at the south end of the original Portland-Columbia Airport runways in Portland, Oregon. Hangar 701 is under preliminary consideration for listing in the National Register of Historic Places for statewide significance as the only military aircraft hangar of its type remaining in Oregon.

It is the finding of AINW that the demolition of Hangar 701 and its historic contributing building will have an Adverse Effect on a recommended eligible National Register building ensemble. There is a third building ("Night Lighting"/Electrical Control Building 723) that is recommended historic contributing, but will not be demolished at this time.

This preparation of a level of effect for the proposed demolition of Hangar 701 is based on the anticipation that there may be some requirement, although none has been identified at this time, to be in compliance with Section 106 of the National Historic Preservation Act, which would constitute a federal undertaking. This level of effect documentation will also address state law protecting significant resources that are publicly owned (ORS 358.653).

The immediate purpose of the project is to demolish Hangar 701 due to the hangar's state of physical disrepair, the presence of friable asbestos and lead paint contamination. The building has been closed since 1998, due to the human health and safety hazards it poses. The Port of Portland is concerned that although the building is closed, Port employees and Port tenants have informally made use of the building for storage causing continued health hazard risks. The Port of Portland must take action due to the building's health and liability risks.

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**OREGON INVENTORY OF HISTORIC PROPERTIES**  
**SECTION 106: LEVEL OF EFFECT**  
**Continuation Sheet**

<b>Agency/Project:</b> Port of Portland/Hangar 701 (Building 5715)	
<b>Name:</b> Hangar 701 (Building 5715)	<b>City, County:</b> Portland, Multnomah
<b>Street Address:</b> Portland International Airport	

The 2000 PDX Master Plan, a 20-to 30-year plan, identifies the area currently occupied by Hangar 701 to be a part of a de-centralized terminal with associated taxiways and ramps. Once this plan is implemented, the current Air-Trans Center will be demolished to allow for the construction of the new terminal and concourses.

Hangar 701 is also within a secure area of PDX subject to the security and access requirements of the federal Transportation Security Administration (TSA). Under current and foreseeable future security constraints, the facility is not available for public access, and therefore not available for public interpretation. Due to these reasons, the hangar is scheduled for demolition in the summer of 2005. Since these buildings will be demolished, it is anticipated that mitigative measures will be necessary.

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Hangar 701 (Building 5715) was built as part of the U.S. Army Air Corps (USAAC) Portland Air Base installation that was established at the Portland-Columbia Airport (now Portland International Airport) in 1940. The building was completed by the U.S. Army Corps of Engineers (USACE) in the summer of 1941, six months before the Japanese attacked Pearl Harbor and the United States entered World War II. Hangar 701 resembles a 1941 Army Air Corps Technical School Type Two-Unit hangar and appears to conform to design plan number 695-400.1. The hangar was the only one of its type constructed at the Portland Army Air Base (although several hangars of other types were built).

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Hangar 701, completed in 1941, has statewide significance as the only building of its type known to exist in Oregon. It is recommended to be eligible for listing in the National Register of Historic Places under Criterion C for its distinctive characteristics as a particular military hangar type constructed in 1941 during World War II.

**CONCLUSION**

The proposed demolition of Hangar 701 will have an adverse effect on the property recommended to be eligible for listing in the National Register of Historic Places and results in a finding of "Historic Properties Adversely Affected."