APPENDIX F

Historic Architectural Survey Report

The following historic architectural reports were prepared in preparation of the Environmental Impact Report (EIR), which was certified by the San Diego County Regional Airport Authority (SDCRAA) on May 1, 2008. The information contained in these reports is also applicable to the Environmental Assessment (EA).

HISTORIC ARCHITECTURAL SURVEY REPORT: SAN DIEGO INTERNATIONAL AIRPORT MASTER PLAN

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDIX

1. PROJECT DESCRIPTION

The San Diego County Regional Airport Authority, a local/regional governmental entity of the State of California, is preparing an Environmental Impact Report (EIR) for the following Proposed Action at the San Diego International Airport (SDIA). SDIA is located in the western portion of the City of San Diego, California (Figure 1). The project area comprises approximately 700 acres and is bounded generally on the south by Harbor Drive and West Laurel Street, on the west by McCain and Neville Roads at the former Naval Training Center (NTC), on the north by the Marine Corps Recruit Depot (MCRD), and on the east by Pacific Highway (Figures 2 and 3).

The project to be evaluated in the EIR consists of two key components: the Airport Land Use Plan and the implementation of specific projects contained in the Airport Master Plan, called the Airport Implementation Plan. Together these make up the Proposed Project (Preferred Alternative). The EIR also addresses the East Terminal Alternative and alternatives eliminated from further consideration. The project elements are described in detail in the Airport Master Plan EIR.

This report addresses airport history and historic architectural resources within the Airport Master Plan project area, identifying significance of the resources, potential impacts, and suggested mitigation measures.

2. RESEARCH METHODS

Prior to undertaking field studies, the National Register of Historic Place's database, the California Inventory of Historic Resources, and California Historical Landmarks were reviewed through a record search obtained from the South Coastal Information Center at San Diego State University to determine the presence of previously identified resources within the study area. In addition, a historic survey report of the former Teledyne-Ryan Aeronautical Complex was provided by the San Diego County Regional Airport Authority. Research was conducted at the archives of the San Diego Aerospace Museum and the San Diego Historical Society, to prepare a historical overview that would identify important themes and contexts against which to evaluate buildings and structures located in the study area. These included: (1) early airport development, (2) development of the airline industry, (3) development of the aircraft manufacturing industry at Lindbergh Field, and (4) contributions of Lindbergh Field aircraft manufacturers to World War II and the early Cold War.

3. HISTORICAL OVERVIEW

3.1 Introduction

In the late 1920s Lindbergh Field rose out of the muck of San Diego Bay to become the City's municipal airport. By the mid 1930s it had developed into a major center of the nation's aircraft industry, an important destination for several commercial airlines, and had been designated San Diego International Airport. During World War II aircraft manufacturers there played a significant role in defense production. In the late 1940s and early 1950s some felt that the airport's days were numbered and that it could never grow to accommodate jet age air traffic. However, Lindbergh Field has continued to develop and in 2004 experienced almost 300 daily passenger and cargo airline departures. This highly successful facility did not just occur as the result of chance and happenstance. It took decades of planning, effort, money, and labor to establish the airport and keep it functioning in the face of the ever-increasing demands of the airline and aircraft industries. The story of Lindbergh Field is one of constant innovation. Its early founders were extremely farsighted and capable in both their desire to create an airport and their ability to make it grow from the mudflats of San Diego Bay. Later airport managers have been just as successful in overcoming the dire predictions of the early 1950s that the airport could never expand sufficiently to accommodate jet age air traffic.

3.2 San Diego's Aviation History

During the first three decades of the twentieth century, aviation became firmly established in San Diego and a significant focal point of the city's activities and reputation. One of the earliest pioneering events in the industry's history – the first controlled wing flight – was accomplished by John J. Montgomery, who flew his glider from a hill at La Punta, near the mouth of the Otay River on August 9, 1883 (Macaulay 1928).

North Island became an early important location for military aviation. In 1911, only 8 years after the Wright Brothers' first successful powered airplane flight, Glenn Curtiss established an aviation school there, and began to train Navy pilots. The following year the Army founded an air base

and the first year round military aviation school on North Island at Rockwell Field (Figure 4) (Macaulay 1928; Moore 1960). In establishing Rockwell Field, a War Department study concluded, "The terrain in the vicinity of San Diego Bay California fulfills the foregoing conditions (for aviation school) better than any other section of the United States . . . as far as weather and air conditions are concerned. The rail and water connections at San Diego are ample. The country in the vicinity of San Diego shows terrain of every description from level to mountainous, and possesses characteristics that can be found in no other part of the country" (Macaulay 1928).

The creation of military air bases made aviation a permanent feature of the region during the industry's formative pioneering years. As a consequence, early aviators established many world records. Such events as the first loop-the-loop, the first use of radio in a plane, the first night flight, the first aerial bombing experiments, the first use of planes to locate schools of fish, and the first successful in-flight refuelings were performed in San Diego. A partial list of these San Diego aviation firsts is provided on Table 1. In addition, Army and Navy pilots between 1916 and 1928 established 42 world aviation records in speed, altitude, distance, and duration (Port District 1991; Lindbergh Reception Program 1927).

Table 1. Aviation Firsts in San Diego: 1911-1928

First aerial bomb experiment by Riley T. Scott
First night flight by Major T.C. Macaulay
First loop-the-loop by Lincoln Beachey 1912
First airmail express to be carried between Los Angeles and San Diego by the U.S. Navy
First refueling in flight by Smith and Richter
First aero-squadron in the United States
First trans-continental squadron flight started and ended at San Diego
First non-stop flight across the continent, made by Kelley and Macready, ended at San Diego
First around the world flight departed and ended at San Diego
First seaplane flight in the United States was at San Diego
First ship to shore flight
First use of radio in an airplane
First use of an airplane to locate schools of fish
First air photos made by Major H.A. "Jimmie" Erickson, January 10, 1911
First daily scheduled air passenger service on the West Coast between Los Angeles and San Diego by Ryan Airlines (Port District 1991; Lindbergh Reception Program 1927)

By 1928 the Army and Navy had invested 5,500,000 dollars in the air bases at North Island (Macaulay 1928). The high profile attained by aviation in the local community during these years resulted in an awareness of the potential future of the industry by the inhabitants of the region. Civic leaders quickly began to describe the citizenry of the County as “air wise” or “air minded” and “alert to the future of aviation.” San Diego became the first U.S. city to establish a Municipal Board of Air Control in 1926 and was also first to issue a complete set of air ordinances (Macaulay 1928).

Civilian aviation also flourished in the County during these decades and ultimately led to the establishment of Lindbergh Field in 1928. In 1922, T. Claude Ryan, who had learned to fly in the Army, began giving airplane rides and flying instructions in an Army surplus Curtis “Jennie” biplane, from a small airstrip at the foot of Broadway. A year later he moved to a field at Dutch Flats – on the salt flats along the east side of Barnett Avenue, across from the newly established Marine Base (Figure 5). The field soon became known as the Ryan Airport, and became the focal point for Ryan’s expanding aeronautical enterprises, which included a flying school, flying service, and airplane manufacturing company. In 1925 Ryan began the nation’s first year-round daily scheduled airline from this field when he began to offer passenger service between San Diego and Los Angeles (Campbell 1927).

Use of the airport exploded as civilian aviation came of age during the late 1920s. Other companies began to use Ryan’s field to operate air services. The B.F. Mahoney Aircraft Corporation, Midway School of Aviation, and Rombough School of Flying also offered flight training and did a thriving passenger business from the Barnett airstrip by 1928 (Macaulay 1928). Commercial airlines that used the field included TAT-Maddux, Pickwick, and Western Air Express. In 1929, 4,755 planes and over 20,000 passengers arrived or departed from the Dutch Flats airfield (Leiser 2000: 146-17). Within a few years, the majority of these activities would move to the City’s newly established municipal airport at Lindbergh Field.

3.3 Establishment of Lindbergh Field

While T. Claude Ryan developed his Dutch Flats airfield, the air minded city fathers took action to make aviation a major force in the future of San Diego through establishment of a municipal airport. One of the major motivations behind this effort was the belief that a modern airport would attract aircraft manufacturers to the city and provide industrial jobs. In the mid-1920s the Chamber of Commerce began to promote San Diego as the “Air Capitol of the West.” Development of Lindbergh Field would be the central effort in this campaign.

Recognizing the promise and opportunity of commercial aviation, the San Diego Chamber of Commerce appointed an aviation committee to study the role the industry could play in the community's future. Soon after its establishment the committee realized that in order to maintain a leadership role in aviation, which had been achieved through establishment of the military air bases on North Island, San Diego must have an adequate municipal airport. Major T.C. Macaulay, Col. Harry Graham, commanding officer of Rockwell Field, and Captain S.H.R. Doyle, commander of North Island Naval Air Station, were appointed to study possible locations. They wanted a place that would combine facilities for the operation of land and seaplanes, and be as near to the city as possible. They chose an area at the north end of San Diego Bay on City-owned tidelands, lying west of Atlantic Street (now Pacific Highway), between Laurel Street on the south and Vine Street and the Marine Base on the north. At the same time John Nolan, a renowned urban planner from Boston, had been employed by the City Council to create a comprehensive metropolitan plan and zoning system. He incorporated the location of the municipal airport recommended by the Aviation Committee into his plan, which was adopted by the City Council on March 8, 1926 (Boone 1928).

In September 1926, the Federal Government issued the first draft of the Department of Commerce Air Regulations. It was realized that the City-owned tidelands did not contain enough area to meet government requirements. Negotiations were made with the Navy to make a portion of the immediately adjacent Marine Corps property available. This was the first of several times that the Navy would be asked to offer portions of the Marine Corps-owned tidelands for the airport's expansion. George H. Prudden, aeronautical engineer for the Chamber of Commerce, then made a detailed study and drew up specific plans for a municipal airport that would comply with Department of Commerce Air Regulations to achieve a "Triple A" rating (Boone 1928).

The airport area would consist of 287 acres – 105 of which belonged to the City and 182 to the Marine Corps. This would provide a landing circle of 3,000 feet and an additional take-off space of 4,250 feet, giving a total runway distance of 7,240 feet in the direction of the prevailing winds. On the bay adjacent to the landing area there would be a hydro basin for sea planes: 12,400 feet long, 3,400 feet wide, and 6 feet deep (Boone 1928; Development Plan 1926; Macaulay 1928).

The location was only 1.4 miles from the main post office, four minutes by auto from the main business district, and one mile from the municipal piers. Its close proximity to the city has been one of the airport's major strengths since its inception. The total cost would be approximately $1,806,000. The first unit, which included all the airport land owned by the City, would be $650,000 (Boone 1928; Development Plan 1926; Macaulay 1928).

The site was also conveniently located for aircraft manufacturers. Several, including the B.F. Mahoney Aircraft Corporation, Prudden - San Diego Airplane Company, Russell Parachute Company, and Ryan Aeronautical Corporation were already located nearby. The main line of the Santa Fe Railway paralleled the airfield site on its east side with spur tracks already extending into a proposed aircraft manufacturing area. As previously stated, one of the main purposes in establishing Lindbergh Field was to support industry manufacturers already in the area and attract others to San Diego (Boone 1928; Development Plan 1926; Macaulay 1928).

San Diego airplane manufacturers at this time were receiving national recognition as the builders of Charles Lindbergh's Spirit of St. Louis – the plane in which he made the first solo flight from New York to Paris in May 1927. The Mahoney Aircraft Corporation had built the plane. Franklin Mahoney had learned to fly at Ryan's Barnett Avenue Field and had gone into business with Ryan. They manufactured the Ryan M-1 Monoplane, which as a result of design changes later became known as the Ryan M-2, Ryan Brougham, and Mahoney Monoplane (Figure 6). In November 1926, Ryan sold all his interest in the company to Mahoney and established the Ryan Aeronautical Corporation for the sale and manufacture of aircraft engines. A short time later he reentered the aircraft manufacturing market (Campbell 1927).

The Spirit of St. Louis was in actuality a modified Ryan Monoplane. Charles Lindbergh had come to know these craft while working as an airmail pilot en route between St. Louis and Chicago, and asked the Mahoney Company if they could build a plane for him capable of flying non-stop from New York to Paris. Lindbergh came to San Diego to help design and test the craft. On May 10, 1927 he left Ryan's private landing strip at Dutch Flats for New York in the Spirit of St Louis. On May 20, he took off from Roosevelt Field, near New York City, to complete his 1,000 mile, 33 1/2 hour solo flight to Paris (Campbell 1927; *San Diego Union* 6-13-1927, 3-3-1936). No single aviator, before or since, captured the public's interest and fascination like Charles Lindbergh. Overnight he became a national hero. For four weeks after his flight he was front-page news on almost every paper in the world. With the origins of his achievement having such strong ties to San Diego, to name the newly planned municipal airport in his honor seemed obvious and was never questioned (*San Diego Union* 6-13-1927).

In November 1927, San Diego residents were asked to vote on a $650,000 bond issue to construct the first unit of Lindbergh Field. The area set aside was actually a vast mud flat covered by water during high tides. The airport would have to be reclaimed by dredging material from the bay and raising the tidelands above sea level. The major portion of the expense, $525,000, would be used to remove 2,500,000 cubic yards of mud from San Diego Bay to deposit

on the airport site. This would also make a turning basin, which would allow the Navy's newest aircraft carriers – the Lexington and Saratoga to home base at San Diego, along with their $272,000 annual payroll (Boone 1928; Macaulay 1928; Development Plan 1926).

The Aviation Committee of the Chamber of Commerce, aided by the National Aeronautic Association, undertook a massive educational campaign to promote the airport bond act. The publicity emphasized that the airport would make San Diego the "Air Capitol of the West" and bring major aircraft manufacturers with large payrolls to the city. A 680-foot film entitled "San Diego Air Capitol of the West" gave a tour of the aviation industries in the city and closed with an 85-word quote from Charles Lindbergh endorsing the proposed airport. The film was shown at four different theaters each night for a week preceding the election. Each showing was followed by a four-minute speech appealing for affirmative votes. Also, during the final week before the election, advertising space was taken out in the four daily and all the weekly papers in the city. In addition, 400 window cards were placed in downtown store windows and 9,200 windshield stickers reading, "Build Lindbergh Field More Payrolls" were put on automobiles, and 3,000 celluloid lapel buttons were distributed at luncheon and service clubs. On election day, automobile drivers were assigned to specific precincts to get out the vote. The airport bonds passed by a majority of four to one – the biggest vote in the history of the City at that time. It was the only issue of nine separate propositions on the ballot to pass (Boone 1928).

Work quickly began, and by the summer of 1928 a portion of the airfield neared completion. Around 35,000 yards of bay fill had been moved to create a 25-acre airport, which was covered with decomposed granite. A runway 2,500 feet in length and 500 feet wide had also been completed (Figure 7) (Macaulay 1928; *San Diego Union* 8-11-1935).

In July 1928 control of the municipal airport was given to the Harbor Commission. This act applied the same administrative policy to the municipal airport that was already in effect for municipal piers and other tideland properties in the City (*San Diego Union* 7-7-1928). On August 16, 1928 Lindbergh Field was dedicated with a large celebration. A flight of over 200 planes:

> . . . swept across the sky of San Diego, swinging in great circles over San Diego Bay, nearly three hundred powerful planes, pride of the Army and Navy, closed in formation to pass in review at the dedication of Lindbergh Field.
>
> Packed close around the boundaries of Lindbergh Field, thousands of spectators witnessed demonstrations of airmanship. In the reviewing stands government

officials, Army and Navy officers, and many internationally famous airmen had assembled to participate in establishing this great airport.

Massed squadron formation flights, aerial bombing, smoke screen demonstrations, and intricate aerobatics followed in close succession. Climaxing this was an amazing demonstration of the Navy's Three Sea Hawks, executing loops, barrel rolls and Immelman Turns in perfect geometric formation; these superb pilots gave an enviously new conception of the development of flying skill (Figure 8) (Airtech 1929).

3.4 Airport Development 1928 – 1950

Work continued to develop the rest of the City-owned tidelands (Figure 9). Ultimately 2,389,000 cubic yards of bay material reclaimed 142 acres. This fill was covered with 175,000 cubic yards of decomposed granite and hillside material (Moore 1969; Port District 1991).

During its first year of use the municipal airport became a local flying field (Figure 10). Major commercial activity remained at Ryan's airstrip while dredging and reclamation work continued. The first building was a hangar erected by San Diego Air Service, who soon changed their name to Airtech. They had received a lease for space prior to the field dedication, and by the end of August their hangar was under construction (Figure 11) (*San Diego Sun* 8-23-1928).

Airtech operated a flying school that offered three courses that would qualify the student to obtain Department of Commerce Pilot's Licenses. These included the Private Pilot's Course, Commercial Pilot's Course, and Transport Pilot's Course. Core classes included Aerial Navigation, Aeronautical Meteorology, Aeronautical Engines, Aircraft Construction, Aerodynamics, Airport Management, Airplane Maintenance, and Parachutes (Airtech 1929, 1931). The company owned seven airplanes and also offered sightseeing flights, cross country trips and photography (Leiser 2000: 134-4).

When the strip was a year old, Lindbergh Field received about fifty daily flights. The first regularly scheduled passenger service began on August 24, 1929 by Continental Air Express. Planes left Lindbergh daily at 10 am and 4:30 pm for Los Angeles (Leiser 2000: 141-10).

Ryan's airport at Dutch Flats handled about 6,000 passengers a month, and was still the city's main civilian airport. On September 23,1929 Ryan announced that the number of landings and

take-offs at the Barnett Avenue Field during the week totaled 512. Of those, 143 Tri-motor airliners carrying passengers across the border had been inspected by government customs officers. Six Pickwick airliners stopped at Dutch Flats in route between Mexico City and Los Angeles. Also Pickwick operated 36 planes between San Diego and Los Angeles. The Maddux Air Lines ships made 106 stops, and Continental Air Express made 14 stops (Leiser 2000: 142-9).

Activities at Lindbergh Field consisted largely of private aircraft and public oriented air shows. More than 500 spectators attended an air race on September 30. The flyers started at the airport, flew around the Marine Barracks Smoke Stack, continued on to circle the second channel marker in the bay, and then swept back across the field. Each flyer ran the course five times to complete 25 miles, racing individually against the clock. W.A. Speer from the Airtech School of Aviation won, averaging 100 miles per hour (Leiser 2000: 154-2). Just two days later on the 28th, San Diegans had their choice of aviation programs: a 20-mile speed race on Ryan Field, or a demonstration of 'balloon busting" at Lindbergh (Leiser 2000: 154-12).

In 1930 a number of airlines began to establish themselves at Lindbergh. However, the field remained dedicated to private aircraft and sensational events. In April a new glider school opened (Leiser 2000: 149-3). The field also became the location for new attempts at world aviation records. On July 4, 1930, Ruth Alexander set an altitude record by exceeding 20,000 feet, breaking her previously existing record of 15,000 feet set earlier that year. She was killed a few weeks later when her plane crashed shortly after take off in the fog from Lindbergh, while attempting to set a non-refueling endurance record (Leiser 2000: 149-3).

Between 1930 and 1932, the field area continued to expand through tidelands reclamation, and gradually evolved into a commercial aviation hub (Figure 12). In February 1930, TAT-Maddux transferred their base of operation from Ryan's to Lindbergh (Leiser 2000: 147-7). They operated 12 passenger Ford Tri-motors on daily flights between San Francisco, Los Angeles, San Diego, and the Agua Caliente racetrack resort in Tia Juana, Mexico (Macaulay 1928). The following May, Pacific Air Transport began a San Diego – Los Angeles – Seattle airmail service. They used the Airtech building and installed a weather bureau for their Boeing-40 pilots (Leiser 2000: 150-4). On Saturday, June 1, Western Air Express extended their airmail contract from Salt Lake City to Los Angeles via Las Vegas to San Diego. San Diego celebrated the event with Army-Navy flyovers, Marine Band music, and a speech by Mayor Clark (Leiser 2000: 151-1). On July 1, Pacific Air Transport planes linked San Diego and Seattle by air with a daily 13-hour service (Leiser 2000: 151-7, 153-1). By August San Diego's location on an international airline was assured when the First National Airways of America announced the opening of a passenger, mail

and express line between Guymas, Mexico, San Diego, Los Angeles, and San Francisco (Leiser 2000: 153-3). In November 1930, Lindbergh was established as the terminus of the Salt Lake City – San Diego airmail route that had been located at Ryan Field (Leiser 2000: 156-1).

The following year saw even more carriers start service from Lindbergh. Gilpin Air Lines, using Bach Tri-motors, started operating from the municipal airport to Los Angeles and Agua Caliente in March 1931. The same month Rapid Express Air Lines began making two round trips daily between Lindbergh and Los Angeles. Although their primary interest was freight, the planes also had passenger accommodations. In June, Wakefield Air Lines started a passenger and express service to the Imperial Valley and Yuma from Lindbergh Field (Leiser 2000:163-6). On June 28, Century Pacific Air Lines began service between San Diego and San Francisco (Leiser 2000: 163-8). Flying Stinson Tri-motors, the service offered four daily schedules, two by way of Bakersfield and Fresno and two with one stop at Los Angeles (Leiser 2000: 163-1). During their first ten days of operation Century Pacific carried 1,025 passengers (Leiser 2000: 164-6). By August 1931 San Diego, with a population of 150,000, had enjoyed one of the country's most remarkable advances in commercial aviation. There were 11 scheduled daily round trips by air transport from Lindbergh Field. The municipal airport at Boston, that served a city with a population of 2,000,000, had only six scheduled round trips a week (Leiser 2000: 165-12).

At this time the airport did not have a passenger terminal. A small square pilot house that had been taken from a tugboat and placed on the pavement west of the Airtech building, served as a ticket booth for waiting passengers (Figure 13) (Leiser 2000: 151-8). Century Pacific Airlines added their own small rectangular frame building on the west side of the ticket booth, and the U.S. Department of Customs erected another small square building to the east (Figure 13) (San Diego Historical Society Photographs 84:14758-3, 6106).

Pacific Air Transport Company, soon to change their name to United Airlines, secured a 25-year lease and erected a $30,000.00 combination hangar, office building, and depot on the south side of the Airtech building in May 1931 (Figures 14-16) (Bub 1936: 24). In addition to serving as a hangar for the company planes, this building also contained ticket offices and a waiting room (Harbor Department 1935).

A true airport terminal for Lindbergh Field came in 1932 when San Diego's pioneer civil aviator, Claude Ryan, moved his extensive operations from the Dutch Flats airport to Lindbergh Field. Ryan secured a lease on two parcels of land on the north side of the Airtech building, and constructed a Spanish Revival style terminal and large hangar to house his aircraft manufacturing business (Figures 17-20). The City leased space in the terminal to accommodate a public waiting

room and offices for the U.S. Customs and Weather Bureau. The rest of the building contained a restaurant, ticket offices, concessions, and Ryan's flying school (Bub 1936; *San Diego Union* 12-19-1931, 12-22-1931, 8-11-1935). In 1934, the airport was rated A-1 by the U.S. Department of Commerce and was made a permanent international airport of entry by the Treasury Department (Van Nostrand 1967). Dredging in the bay, meanwhile, continued to expand the airport area onto tidelands at its western edge (Figure 21).

With Ryan's move to Lindbergh Field the airport began to fulfill the intentions of its founders as an aircraft-manufacturing center. As previously mentioned, it was the hope of the airport's promoters that it would attract aircraft manufacturers to the City as illustrated in an advertisement published in *Aviation Magazine* in July 1928, just a little more than four weeks before the airfield's dedication:

A Message to Aircraft Manufacturers

America's finest facilities for Aeronautics await you at Lindbergh Field

Picture your plant adjoining a great modern Triple – A airport . . . where Government and numerous private aircraft activities are in full operation every month of the year. . . , where highly skilled aeronautical mechanics are always available. . . , where expensive buildings and heating plants are unnecessary, where fog, rain, snow, sleet, freezing temperature and extreme heat or electrical storms never interfere with production schedules. . . , where every day is an ideal flying or testing day.. . Where city and government officials and the local citizenry and visitors from all parts of the world are "air minded."

San Diego California, Air Capitol of the West (*Aviation* 5- 7-1928:1309)

In 1934 the airport more than fulfilled its manufacturing destiny when Reuben H. Fleet moved his Consolidated Aircraft Corporation from Buffalo, New York to Lindbergh. Consolidated obtained a 50 year lease for 30 acres on the east side of the airport, north of Ryan's hangar and the administration building. The 300 by 900 foot factory opened in October 1935 (Figures 22-27). Consolidated soon expanded to cover 120 acres with multiple buildings and became San Diego's largest employer. In 1938, the plant had an average work force of 3,000 whose annual wage totaled $5,500.00 (Bub 1936; Van Nostrand 1967; Port District 1991; Prudden 1938).

The Ryan Aeronautical Corporation also continued to expand. In 1939 the company moved to a 10-acre site on the south central part of the airport along Harbor Drive (Figure 28). The complex ultimately came to cover 38 acres (see Figure 31). Another important aircraft industry manufacturer located near Lindbergh Field at this time was the Solar Aircraft Company, which took over the old B.F. Mahoney Aircraft Corporation building (where the Spirit of St. Louis had been made) at the foot of Juniper Street in 1930. Solar manufactured metal aircraft parts (Van Nostrand 1967; Bub 9-1936:24). By the mid 1930s San Diego's municipal airport had fulfilled the hopes of its founders and made San Diego a major aircraft manufacturing center.

On May 9, 1937 the Coast Guard dedicated its $400,000 air station on reclaimed tidelands to the east of Lindbergh Field (Van Nostrand 1967). Adjoining the Coast Guard site on the north was San Diego's municipal seaplane landing covering 5 acres of reclaimed bay area. The landing aprons, paved with asphalt concrete, joined a reinforced concrete seaplane ramp 100 feet in width, which extended easterly into the seaplane basin a length of 240 feet. The landing was used to launch the huge seaplanes manufactured by Consolidated Aircraft Corporation (Prudden 1938).

In the meantime work continued to expand the airport's area. By March 1931 dredging was under way to develop an additional 122 acres at the north end of the airport. Land exchanges and reclamation work to increase Lindbergh Field's size continued for many years. On August 21, 1933, the City granted the Navy 242 acres in exchange for 67 acres of tidelands at the north end of the airport owned by the Marine Corps. On November 4, 1937, the City received another 60 acres from the Navy in exchange for 544 acres upon which the Marines established Camp Matthews. Another exchange took place on September 4, 1940. The City got 62 additional acres for airport expansion in return for land around the Marine Base, Naval Supply Depot, and Naval Station (Moore 1960).

As with the original tract on which the airport was developed, later acquisitions consisted of tidal mudflats that had to be raised above sea level through reclamation efforts before they could be used. Except for the initial effort funded through City bond money, the subsequent development work was heavily subsidized. In early 1931, the federal government funded a bay dredging project that deposited 800,000 cubic yards of spoil on airport lands. Ironically, the economic depression of the 1930s brought more government aid. From 1934 to 1941 work was funded as CWA, FERA, or WPA unemployment relief projects. Some $1,200,000 was spent on airport development. The City contributed around 1 million dollars in matching funds. Specific projects by the WPA included dredging operations in 1935 that increased the airport area to 287 acres. Other WPA projects built the seaplane ramp and an Air Corps Reserve hangar in 1936. In 1939

a WPA grant funded field improvement by rearranging take off and landing runways, new boundary and flood lights, and resurfacing. The various projects had enlarged Lindbergh Field to 455 acres by December 1941 (Moore 1960; Bub 1936: 24).

With entrance of the United States into World War II, in December 1941, Lindbergh Field came under military control. The U.S. Air Force began to operate the airport in 1942 (Figure 29). At this time there were two landing strips. The main runway ran east-west and was 5,000 feet long, and a second southeast-northwest runway was 4,450 feet in length (See Figure 28). In 1944 the federal government granted a contract to tear out the two existing runways and construct modern facilities in order to provide suitable runways for heavy bombers. The project was as a joint war emergency undertaking financed by Consolidated Aircraft Corporation and the Navy Department Bureau of Aeronautics. The southeast-northwest runway was expanded to 4,719 feet in length with the main east-west landing strip increased to 8,750 feet (Figure 30) (Moore 1960; Rule and Bate 1944).

The *San Diego Union* described the new airstrips as "A . . . concrete dagger aimed at the heart of Japan, and a peacetime guarantee of San Diego's leadership in the air. . . ," and proof of "San Diego's paramount position in world aviation," showing that ". . . the city's claim as "Air Capitol of the West" was justified (Figure 31) (*San Diego Union* 5-5-1945).

The production of aircraft manufacturers at Lindbergh during these years was crucial to the war effort. By the time the United States entered the war, San Diego had already become one of the nation's major aircraft manufacturing centers. Consolidated was the world's largest integrated aircraft plant. During the peak war production years of 1942 - 43, the San Diego plant had 45,000 employees. The company produced the Army B-24 Liberator and Naval Catalina Flying Boats, as well as the larger B-32 bombers and PB2Y Coronado Flying Boats. Consolidated produced over 11,000 multiple engine planes in San Diego during the war (Harbor Commission 1950: 8; *San Diego Union* 9-28-1988).

Ryan Aeronautical Corporation manufactured Navy and Army trainers and various military aircraft exhaust systems. The company introduced the world's first jet propelled plane for the U.S. Navy - the Ryan FR-1 Fireball. This carrier fighter used both the propeller driven piston engine and the new gas turbine jet engine for combat performance. Solar Aircraft Company also produced aviation exhaust equipment (Harbor Commission 1950: 8).

Following the war, use of the airport continued to increase. In 1947, landings and departures averaged 13,000 a month. The chief center of activity was around the administration building on

Pacific Highway where were located the CAA offices, along with the Federal Weather Bureau, American Western Airlines, the newly formed Swift Flying Service (that carried passengers to Catalina Island), and the well established Friedkin School of Aeronautics.

There was concern that, on the eve of its 19th birthday, the Municipal Airport had no more room to expand. One small hangar - the former Airtech building - leased by Nelson Kelly Co. was the only inside repair facility available. A standard air cargo office and shop on the Harbor Drive side of the strip offered outside repair facilities. At the other end of the 8,750-foot runway Sky Freight maintained a small office building and open-air repair facility. Private planes were dispersed for parking in this area, as well as along side the Consolidated plant and at the southern end of the field (*San Diego Union* 8-15-1947).

3.5 Adapting to Changing Needs and Circumstances 1950 – 2005

In the decades following World War II commercial aviation entered the jet age and continued to expand at a phenomenal rate. At the same time San Diego County experienced an incredible period of growth that has continued to the present day. These factors brought immense pressure on Lindbergh Field to accommodate a constantly increasing number of passengers and aircraft. Although alternative regional airport locations have been discussed for over 50 years, Lindbergh has remained the City's only municipal airport capable of serving the commercial jet airliners. It has only been due to the farsighted planning and investment of the Port Authority, and more recently the Regional Airport Authority, that Lindbergh Field has continued to function successfully.

In 1950, San Diego's Lindbergh Field served 193,000 airline passengers, an increase of 60,000 over the prior year (Port District 1966). A Harbor Commission report stated:

> Thirty four times each day a major air line passenger transport leaves or lands at Lindbergh Field . . . . American, United, and Western Air Lines serve San Diego . . . . Each air line offers complete passenger, U.S. Mail and air cargo facilities.
>
> American Airlines, with frequent daily service features direct flights to Oklahoma City, St. Louis, Chicago, Detroit, Washington, D.C., Boston and New York, and

> non-stop trips to Tucson and Phoenix, Arizona. American Flagship routes include Monterey and Mexico City.
>
> Via United Airlines travelers may arrive at Lindbergh Field on any of six or more daily flights. United serves the entire Pacific Coast from San Diego north – Los Angeles, San Francisco, Portland, Seattle, Vancouver – and connects in Los Angeles with routes to Denver, Omaha, Cleveland, Detroit, Chicago and all major eastern cities including New York (10 1/2 hours distance). Connections are made at San Francisco for Boise, Reno, Salt Lake City, Milwaukee, Toledo, Cheyenne, and Des Moines, and for Honolulu.
>
> Western Air Lines. . . serves San Diego with an average of four or more flights daily. Emphasizing its regional carrier service for West Coast residents, Western offers, in addition to its San Diego to Seattle coastwise route, connections in Los Angeles and San Francisco for eastern points. The morning flights to San Francisco for example, connects with Western Air Lines ships to Salt Lake City, Minneapolis, Denver, and Lethbridge, Canada. Western also provides a flight to Yuma, Arizona three days a week.
>
> Also important among the facilities available at Lindbergh Field are the services offered by the Nelson-Kelly plant, which includes repairs and major overhauls, hangar storage, and parachute packing (Harbor Commission 1950: 15-17, 21).

To accommodate increased airline passenger traffic the terminal building was enlarged and remodeled in 1952 at a cost of approximately 438 thousand dollars (Figures 32-34). Two adjacent structures, the former Airtech building on the terminal's south side, and another "aircraft school classroom" to the north, were incorporated into the original 1932 administration building to form a new terminal. That year approximately 28,000 passengers used the facilities each month, and air traffic at Lindbergh for the year exceeded 300,000 passengers. In addition, over 163,000 pounds of freight and express passed through the airlines' offices each month (Port District 1966).

By 1960 over 390,000 individuals flew in or out of the airport annually in both commercial carriers and private planes. More than 200 landings and take offs occurred at Lindbergh every day. These included 65 regularly scheduled airline flights. Commercial carriers serving San Diego included American, Bonanza, California Central, Pacific Southwest, Flying Tiger, Slick, and

United Airlines (Port of San Diego 1960). That year an "annex" was added to the northwest corner of the building to further increase space (Port District 1966).

With a hopelessly inadequate terminal building and an apparent lack of room for expansion, by the mid-1950s concerns were being raised about the future of the airport (*San Diego Union* 10-25-1954 A23). In 1957, a City airport committee recommended retention of Lindbergh Field as San Diego's main municipal airport and expanding it to meet jet age requirements. Lindbergh would remain the main airport in a three-field system, which would include emergency joint City-Navy use of Miramar Naval Air Station, and City acquisition of the Navy's Brown Field near the international border. The cost of expanding Lindbergh was estimated at 11,750,000 dollars. Specific details called for a new terminal building on the Harbor Drive side of the field to meet the city's needs through 1987. The existing air terminal building would be used for general aviation needs and private aircraft. The east-west runway would be lengthened from 8,750 to 10,000 feet through still another portion of the Marine Corps Recruit Depot property. Finally, Brown Field would be developed as a second jet age airport (*San Diego Evening Tribune* 9-19-1957).

The controversy over the adequacy of Lindbergh Field to meet San Diego's air traffic needs has continued for over fifty years. For a variety of reasons, alternative fields have not been developed, and Lindbergh has remained San Diego's only airport capable of servicing jet airliners. The field has undergone constant change over the last five decades in order to be able to adapt and accommodate the ever-increasing demands the aircraft industry has placed upon it. The 1957 plan was the first to consider construction of a modern terminal on the Harbor Drive side of the field and set the parameters for how the airport would evolve over the succeeding decades. The story of Lindbergh Field since the mid-1950s has been one of constantly increasing use, and constant change to accommodate that increase.

As the 1960s progressed, the remodeled 1952 terminal at Lindbergh became increasingly inadequate. The building, which was originally designed to accommodate 500,000 passengers a year, was expanded for a final time in 1962. That year annual usage passed the one million mark. By this time the building was absolutely incapable of meeting the needs of so many users. The main lobby consisted of just slightly more than 10,000 square feet and had only 70 seats in the waiting room. There were 210 parking spaces to meet the demand of more than 2,200 autos per day (Figures 35-36) (*San Diego Union* 2-7-1967).

In 1964, voters approved a 5.4 million dollar bond issue for a new terminal at the municipal airport along with other port facilities. Engineering plans were completed, and in November 1965 construction began on the new terminal. In addition to construction of the building, more than 25

contracts and subcontracts were approved for various phases of the project including taxiways, parking ramps, landscaping, plumbing, parking lot paving, lighting, and a variety of other jobs (Port District 1966, 1991). The new terminal opened on March 5, 1967. Several thousand citizens attended the event, and Governor Ronald Reagan was the first passenger to arrive at the new building (*San Diego Union* 2-7-1967; Port District 1991).

The new terminal was about four times larger than the old facility (Figure 37). It had 1,500 parking spaces in two separate lots located directly in front of the long, low building. The main lobby area had 36,000 square feet with 300 seats in the waiting rooms. The baggage claim area, a main point of congestion in the past, had been expanded to 8,000 square feet. In spite of its greater size, the layout of the new building reduced the distances between many features from what they had been in the old terminal. The physical design of the building and its adjacent parking areas reduced the walking distance from the parking lots to ticket counters, from 750 to about 400 feet. From unloading curbs to ticket counters, distance was reduced from a 100 foot average in the old terminal to only 45 feet in the new facility. Cross traffic between arriving and departing passengers was eliminated by placement of ticket counters and baggage claim areas. Enplaning passengers left ticket counters on the outer wings of the building to go to planes, while incoming passengers, to get their luggage, moved toward the center of the building. Finally the restaurant area was three times greater than in the former air terminal (*San Diego Union* 2-7-1967).

Passenger traffic closed out the fiscal year ending in June 1967 at 2,177,110 people. Planning was already underway to expand the new terminal building to accommodate the anticipated rapid growth in air travel and the advent of a new generation of aircraft such as the “stretched” versions of the CC-8 and Boeing- 757 (Port District 1977).

Not long after completion of the passenger terminal, a new control tower also went into service. San Diego based and founded Pacific Southwest Airlines (PSA) also constructed a new administrative building on the Harbor Drive side of the airfield in 1967 (Figure 38). Also, at this time, the general aviation area for small private aircraft was moved to the vicinity of the old terminal building to permit construction of the new PSA headquarters and development of an airfreight facility adjacent to the new terminal. The south wing of the old terminal, which had been the original Airtech building constructed in 1928, was demolished to make room for the new facilities of Jimsair, a private firm servicing general aviation and a long-term tenant at Lindbergh Field. A new fire and rescue station adjacent to the control tower opened in 1970 (Figures 39 and 40) (Port District 1968, 1971, 1991).

In 1968, the year following the opening of the new terminal on Harbor Drive, voters of the San Diego Unified Port District authorized the expenditure of approximately $10.5 million to develop an additional terminal complex designed especially for servicing the new generation of jumbo jets – the Boeing 747, the Douglas DC-10, and Lockheed 10/11 Tri Star (Port District 1991). It would take almost 10 years to see this new complex completed. In 1970, Port District voters authorized the sale of an additional $25 million in general obligation bonds for various improvements in the tidelands surrounding San Diego Bay. Part of the funds generated was also earmarked for the construction of a second passenger terminal at Lindbergh Field. The new complex was to be designed especially for servicing the new generation of wide-bodied commercial jet aircraft (Port District 1991).

In the meantime, use of Lindbergh Field continued to grow. By 1970 over 3.3 million passengers used the airport annually (Port District 1971). That same year the field had over 200,000 aircraft landings and take offs, and the airlines transported 100 tons of airfreight, 72 tons of air express, and 900 tons of air mail. The terminal had a capacity of approximately 5,500,000 passengers a year. Aircraft gate positions had been increased to sixteen.

In February of 1971 a 1,000-foot extension to the main service runway was completed, on still another piece of property acquired from the Marines. The runway length now totaled 9,750 feet and was adequate to handle all commercial jets in service. The federal government and the San Diego Unified Port District completed the project at a cost of $1,300,000, which was jointly shared.

Although the air terminal was only 4 years old in 1971, San Diego's steady growth required a second story addition to the east wing. New construction released areas for use by passengers and provided space for airline offices and crew lounges (Port District 1991; *San Diego Union* 4-15-1970, 5-26-1970). In January 1976, a $1,215,000 project was completed to strengthen various taxiways and runway exits in order to enable these areas to accommodate larger, wide-bodied jet aircraft, to improve drainage, and to allow easier access from the main service runway onto particular taxiways (Port District 1991). Almost 4 million (3,900,000) passengers used Lindbergh Field in 1972 (*San Diego Union* 1-1-1973). That year construction started on a 25-acre parking apron for wide-bodied jetliners (*Evening Tribune* 9-3-1972). In 1975, 4.4 million airline passengers used the municipal airport and in 1976, 4.9 million. In 1978, the number exceeded 6 million (*Lindbergh Field Flyer* 1-1977; *Port Talk* 5-1979).

Finally in 1977, work had begun on the additional air terminal approved by the voters in 1968. Various groups opposed to further expansion of Lindbergh Field and demanding another jet

airport location had held up the project for several years. In 1979 the new terminal opened. It was designated as the West Terminal, and the 1967 building consequently became the East Terminal (*San Diego Union* 5-5-1976; Port District 1991).

The addition of the $1.5 million West Terminal greatly eased parking congestion as construction included two additional parking lots. This brought the combined capacity of the four public lots at the airport to over 3,000 spaces. New roadways and an electronic collection system at parking exits further facilitated traffic movement at the airport.

For maximum efficiency, a new baggage handling system was installed in a separate building at the West Terminal. Passenger boarding and unloading was accomplished through the first jet bridges ever used in San Diego, providing greater passenger convenience and protection from weather, wind, and noise. A covered pedestrian bridge allowed passengers to walk from the second level boarding concourse to the baggage claim building without having to cross street traffic.

The West Terminal had 217,000 square feet of floor space and contained 12 passenger boarding gates, facilities for several airlines, rental car counters, gift shops, a cocktail lounge, a cafeteria, a skycap office, Travelers Aid, military information counters, airport administration and Harbor Police offices. When these operations began in the West Terminal, airlines in the East Terminal were able to modify their quarters and gain needed space. The commuter airlines, which began service to San Diego as a result of airline deregulation by the federal government, were able to operate out of space that became available in the East and West Terminals (Port District 1991). In 1979, the year the West Terminal opened, more than six million airline passengers passed through Lindbergh Field. Clearly the efforts of the Port Authority were successful in keeping up with the accelerated growth of the airline industry in spite of the dire predictions in the late 1940s and early 1950s that the airport could never be expanded to accommodate jet age aircraft.

In 1987, passenger capacity in the West Terminal was expanded with the addition of two new passenger-loading lounges (Figure 43). The following year, a USO Lounge was opened at the West Terminal for the convenience of military service members and their dependents.

The architectural style of the East and West Terminals was similar, although the buildings had vastly different layouts. Both featured tulip-shaped concrete columns supporting the roof and colored glass panels in front of sand colored pre-cast concrete exterior walls (Port District 1991)

With completion of the West Terminal, improvements began again, on the East Terminal and on the airfield. To ease congestion and provide more flexibility to maneuver aircraft around the East Terminal ramp area, a 46,710 square yard "L" shaped holding apron was paved adjacent to the runway (Figure 41). Installed in 1980, the $2.25 million apron served as a holding area while other flights were clearing the gates. It was also used as a route for aircraft to and from the terminal gates, to air freight, and the aircraft washing facility, and as an area for two way traffic when weather conditions forced an opposite direction landing and departure situation.

Remodeling completed in 1982 at the East Terminal complex added a second story to the east rotunda, allowing passengers to board wide bodied aircraft through convenient jet ways. The addition provided comfortable seating in a 30 percent larger waiting area, along with many other improvements (Figure 42). Also included in the $6 million project was expansion of the baggage service area, construction of a second story office space, and the enclosure of the west rotunda to provide larger holding rooms. In 1990 a second floor addition was added to the East Terminal's west rotunda. The $10.5 million, 25,000 square foot expansion included eight passenger-loading bridges and improvements to Gates 11-18. The facility also housed US Air Club, a 4,100 square foot lounge area for US Air passengers (Port District 1991).

As San Diego's growth and popularity increased, Lindbergh Field's traffic operations continued to grow at a steady pace. Annual passenger use jumped from 5,123,356 in 1980 to 11,206,355 in 1990. Non-passenger traffic such as cargo and mail operations has also increased substantially with a combined total of more than 68,000 tons handled in 1990 (Port District 1991).

While San Diego politicians wrestled over whether to build a new airport at an alternate location, managers of San Diego's bustling and congested downtown airport did not remain complacent but continued to plan for an expanding future. In 1992 Port Commissioners initiated plans to spend more than $88.5 million on a dozen different construction projects to make Lindbergh Field more endurable. These projects were not intended to permanently extend the life of the airport but make it adequate for the next 10 to 12 years. The developments included: a $24 million plan to replace the East Terminal apron, an $18.5 million plan to add an eight gate concourse to the west passenger terminal, a $17.6 million project to renovate the East and West Terminal buildings, a $10.4 million project to relocate and expand the airport's 317,000 gallon underground fuel farm, and an $8.9 million computerized security system (*San Diego Union* 6-16-1992).

During the last decade of the 20th and the throughout the first decade of the 21st centuries, the far-sighted managers of Lindbergh Field have continued to expand the airport's facilities to accommodate the constantly increasing needs of the commercial aircraft industry. In October

2001, California State Assembly Bill 93 established and placed control of Lindbergh Field under the San Diego County Regional Airport Authority. In 2005, over 17.4 million passengers used the facility and passenger and cargo airlines operated close to 300 departures daily from the airport (San Diego County Regional Airport Authority 2005). Clearly, the agencies in charge have succeeded in overcoming the dire predictions of the early 1950s that the airport could never expand sufficiently to accommodate jet age air traffic.

4. FIELD METHODS

The field survey was carried out on various days between September 1, 2005 and February 8, 2006 by Stephen R. Van Wormer, architectural historian with Walter Enterprises, and Mary Robbins-Wade, archaeologist with Affinis. Mr. Van Wormer is a qualified architectural historian who meets the Secretary of the Interior's professional qualification standards. He has 26 years experience in Section 106, NEPA, and CEQA compliance studies. A reconnaissance of the SDIA property was performed to identify areas of potential sensitivity for historical resources.

The San Diego County Regional Airport Authority provided dates of construction for buildings and structures in the study area. This information was augmented by research conducted for the historic background study, including historic maps and photographs. ~~Properties 50 years old or older, as well as those that will become~~ older than 45 years old or that would be 50 years old by 2015 were recorded and assessed for significance as historic resources based on their potential eligibility for listing on the National Register of Historic Places, California Register of Historical Resources, or local City of San Diego Historic Sites List (Table 2). The year 2015 was chosen as the year of future analysis to coincide with the reasonable timetable for developing a new airport in a new location identified with the airport site selection program. The future of the existing airport site beyond the year 2015 is unknown.

Mr. Van Wormer inspected each potentially significant historic resource within the study area and took field notes and photographs. Ms. Robbins-Wade aided by taking additional notes and photographs of some of the structures and buildings. State of California Department of Parks and Recreation Primary Record and District, or Building, Structure, and Object Record forms were completed for each of the buildings.

Table 2. Evaluated Buildings and Structures

Facility No.	Current Function	Original Function	Date of Construction	Significance
Main Airport Area				
2412	Southwest Airlines Cargo / US Airways Building	PSA Headquarters	1960	Not significant
2415 & 2417	Vacant	Sky Chefs Buildings	1956-1966	Not significant
2340 A-D	ASIG Building	United Airlines 1931 hangar & terminal	1931, moved 1957	Eligible for National Register, California Register, and local Historical Resources Board listing
NA	Allied Aerospace Building	Consolidated Aircraft wind tunnel	1945	Eligible for National Register, California Register, and local Historical Resources Board listing
Teledyne-Ryan Complex				
100	Vacant	Ryan Aeronautical administration building	1940	Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district
102	Vacant	Ryan Aeronautical contracts and pricing office	1944	Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district
104	Vacant	Ryan Aeronautical engineering building	1943	Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district
105	Vacant	Ryan Aeronautical materials & processing laboratory & engineering building	1957	Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district

Facility No.	Current Function	Original Function	Date of Construction	Significance
111	Vacant	Ryan Aeronautical welding shop	After 1956	Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district
110/112 (122)	Vacant	Ryan Aeronautical planishing shed	c. 1940s	Not significant
115	Vacant	Ryan Aeronautical ancillary building	After 1956	Not significant
120	Vacant	Ryan Aeronautical main factory building	1939	Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district
121	Vacant	Ryan Aeronautical receiving warehouse	1939-1940	Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district
123	Vacant	Ryan Aeronautical pump headquarters associated with standby water tank	1943	Not significant
125	Vacant	Ryan Aeronautical paint & oil storage building	1941	Not significant
126	Vacant	Ryan Aeronautical paint shop building	1941	Not significant
127	Vacant	Ryan Aeronautical office & photo lab	c. 1940s	Not significant
129	Vacant	Ryan Aeronautical sandblasting shed	c. 1950s	Not significant
130	Vacant	Ryan Aeronautical ancillary building	After 1956	Not significant
131	Vacant	Ryan Aeronautical factory building	1956-1966	Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district

Facility No.	Current Function	Original Function	Date of Construction	Significance
140	Vacant	Ryan Aeronautical final assembly building	1943	Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district
142	Vacant	Ryan Aeronautical repair building	c. 1940s	Not significant
146	Vacant	Ryan Aeronautical engineering & manufacturing building	1945	Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district
147	Vacant	Ryan Aeronautical ancillary building		Not significant
148/149	Vacant	Ryan Aeronautical ancillary building		Not significant
150	Vacant	Ryan Aeronautical ancillary building		Not significant
152	Vacant	Ryan Aeronautical jet engine drone assembly building	1952	Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district
153	Vacant	Ryan Aeronautical burner shed	c. 1950s	Not significant
154	Vacant	Ryan Aeronautical ancillary building	c. 1950s	Not significant
156	Vacant	Ryan Aeronautical warehouse. Identified as Building # 154 on 1956 Sanborn Fire Insurance Map (Sanborn 1956)		Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district
157	Vacant	Ryan Aeronautical - use undetermined	c. 1950s	Not significant
158	Vacant	Ryan Aeronautical test building associated with final assembly building	c. 1950s	Not significant

Facility No.	Current Function	Original Function	Date of Construction	Significance
159	Vacant	Ryan Aeronautical storage building	c. 1950s	Not significant
160	Vacant	Ryan Aeronautical foundry and plaster shop	1940	Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district
161	Vacant	Ryan Aeronautical carpenter shop	1941	Not significant
166	Vacant	Ryan Aeronautical salvage headquarters	1940-1941	Not significant
167	Vacant	Ryan Aeronautical acid storage building	c. 1940s	Not significant
168	Vacant	Ryan Aeronautical warehouse addition building	c. 1950s	Not significant
169	Vacant	Ryan Aeronautical plaster pattern staging building	c. 1940s	Not significant
170	Vacant	Ryan Aeronautical parts/drop hammer structures	c. 1950s	Not significant
180	Vacant	Ryan Aeronautical experimental/receiving & assembly building	1932, moved 1944	Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district
181	Vacant	Ryan Aeronautical airplane storage building	1937-1938, moved 1944	Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district
182	Gone	Ryan Aeronautical old record storage building	c. 1940s	Not significant
183	Vacant	Ryan Aeronautical tool storage building	1951	Eligible for National Register, California Register, and local Historical Resources Board listing as an element of a district

Facility No.	Current Function	Original Function	Date of Construction	Significance
221	Vacant	Ryan Aeronautical covered walkway	c. 1950s	Not significant
230	Vacant	Ryan Aeronautical - use undetermined	c. 1950s	Not significant
236	Vacant	Ryan Aeronautical ancillary building		Not significant
240	Vacant	Ryan Aeronautical ancillary building		Not significant
242	Vacant	Ryan Aeronautical storage shed	c. 1950s	Not significant
513	Vacant	Ryan Aeronautical associated with jet engine/drone assembly building	c. 1950s	Not significant
NA	Abandoned	Ryan Aeronautical company standby water tank	1943	Not significant

5. RESULTS OF FIELD SURVEY AND MANAGEMENT CONSIDERATIONS

5.1 Methods to Determine Site Significance

Potential historical and architectural significance of buildings and structures was determined by applying criteria of the National Register of Historic Places and California Register of Historical Resources, as well as those of the City of San Diego Historical Resources Board. In order to be eligible for nomination to the National or California Register, a building, structure, or site must be significant within a historic context and meet certain other criteria. According to the National Park Service:

> . . . the significance of a historic property can be judged and explained only when it is evaluated within its historic context. Historic contexts are those patterns, themes, or trends in history by which a specific occurrence, property, or site is understood and its meaning made clear (National Park Service 1991: 7).

The National Park Service has defined three main categories of historic contexts: local, state, and national. A local historic context "represents an aspect of the history of a town, city, county, cultural area, or region, or any portion thereof" (National Park Service 1991: 9). A state historic context represents "an aspect of history of the state as a whole" (National Park Service 1991: 9). Properties important within a national context represent "an aspect of the history of the United States as a whole" (National Park Service 1991: 10).

In order to be eligible for the National Register when evaluated within its historic context a property must be demonstrated to be significant under one or more of the following criteria (National Park Service 1991: 12-21):

A. Is associated with an event, or series of events that have made a significant contribution to the broad pattern of history.

B. Has an unequivocal association with the lives of people significant in the past.

C. 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 may lack individual distinction.

D. Has yielded or may be likely to yield information important in prehistory or history.

An additional requirement for the National Register is the retention of integrity or "the ability of a property to convey its significance." Assessment of integrity includes seven criteria, which are: location, design, setting, materials, workmanship, feeling, and association (National Park Service 1991: 45). Requirements for listing on the California Register of Historic Places are essentially the same as those for the National Register.

The City of San Diego Historical Resources Board recognizes the following criteria for including the property on the City's list of important historical properties:

A. Cultural landscape or archaeological site: Contains special elements representing cultural, economic, engineering, or architectural development.

B. Is associated with a significant person or event.

C. Embodies distinctive characteristics of architecture.

D. Is associated with a master builder.

E. Is eligible for the National or State Historic Registers.

F. Is part of a historic district.

5.2 Main Airport Area

5.2.1 Field Survey Results

There are five buildings on the Airport area that will be at least 50 years old by 2015: Southwest Airlines Cargo/US Airways Building, the two former Sky Chefs Buildings, the Aircraft Service International Group (ASIG) Building, and the Allied Aerospace Building. A complex of buildings at the Teledyne Ryan property (this area is designated for Airport Support and Ground

Transportation in the Proposed Airport Land Use Plan) is over 50 years old. All these buildings are discussed in this section.

The two former Sky Chefs Buildings were constructed between 1956 and 1966. They are not shown in a 1956 Sanborn Fire Insurance map, but they are present on the USGS topographic map, prepared in 1966. These two buildings are on a parcel owned by the Port Authority that is surrounded by Airport property and the Teledyne Ryan property. The Southwest Airlines Cargo/ US Airways Building was built in 1960. These three buildings all lack any significant historical associations or architectural distinction, and so are not eligible for listing on the National or California Registers or the City of San Diego's Historical Resources Board list. Although started in 1965, Terminal 1 was not completed until 1967. It, therefore, will not be 50 years old until 2017 and for this reason was not included in the building assessments.

The ASIG building is the original United Airlines terminal. Pacific Air Transport - who changed their name to United shortly thereafter - originally constructed this building along Pacific Highway, at the southeast corner of the airfield in May 1931. It was the second building constructed at Lindbergh Field. (The Building, Structure, Object Record for the United Building is included in Appendix 1.) The building is significant under National Register Criterion C. Its design reflects early aircraft hangar and terminal construction typical of the late 1920s and early 1930s. The building shows very little modification from its original design and retains excellent integrity of design, workmanship, and materials, which still convey a strong feeling and association for the early airport development at Lindbergh Field and the early pioneering development of airline industry. The building is also significant under National Register Criterion A, due to the fact that it was the second building constructed at the airport and was used by United Airlines as its hangar and terminal when San Diego was United's hub during the early years of passenger aviation. As such, it has strong associations with the development of the airline industry at Lindbergh Field and along the west coast. United Airlines was instrumental in the growth of passenger aviation on the west coast.

Although it has been moved from its original location, the building meets National Register Criteria Consideration B. This allows moved properties that are significant primarily for their architectural value, or as a surviving property most importantly associated with historic persons or events, to be considered eligible for the National Register, even though they are no longer located where they stood during their period of significance (National Park Service 1990: 29, 1993:16). The original United Terminal meets this consideration in that the building retains its original architectural design and integrity and is the only surviving building from the earliest period of development at Lindbergh Field between 1928 and 1933. In addition, the building would

qualify for listing as an important resource by the City of San Diego's Historical Resources Board and is eligible for listing on the California Register of Historical Resources.

The Allied Aerospace building was built in 1945 and was part of the Consolidated (later Convair, and finally General Dynamics) complex. This building is significant for its association with the Consolidated Aircraft Plant and the aircraft manufacturing industry at Lindbergh Field's contribution to World War Two. This building was identified as part of the Consolidated Historic District Complex in 1996, when General Dynamics vacated the former Consolidated site. It was not included in the HABS/HAER level documentation conducted as mitigation for the demolition of the buildings at that time, as it was outside of the project footprint. The Allied Aerospace building retains integrity of design, materials, workmanship, feeling, and association. It is therefore significant and National Register and California Register eligible, as well as eligible for local listing by the City of San Diego Historical Resources Board.

5.2.2 Impacts

5.2.2.1 ASIG Building (original United Airlines hangar/terminal)

Under the Proposed Airport Land Use Plan, the ASIG Building is designated as airport support, consistent with the building's current use for airline maintenance activities. There would be no direct impacts from approval of the Airport Land Use Plan and future actions under that Airport Land Use Plan would not affect the ASIG Building as the area is designated for airport support uses, consistent with its current use.

Under the Proposed Airport Implementation Plan, no specific project component is proposed to be implemented that would affect the ASIG Building. Therefore, the Proposed Project will have no direct impacts to this significant resource, and no mitigation measures are required for the Proposed Implementation Plan.

Under the East Terminal Alternative, the ASIG Building would be designated for terminal uses and would be affected by the implementation of a unit terminal. If the ASIG Building were removed under the East Terminal Alternative, this would result in a significant impact to this historic resource. Project-specific evaluation of impacts must be conducted when a project is proposed for this area, and mitigation measures would be developed and implemented at that time.

5.2.2.2 Allied Aerospace Building

Under the Proposed Airport Land Use Plan, the Allied Aerospace Building is designated as ground transportation. There would be no direct impacts from approval of the Airport Land Use Plan as no ground transportation projects are anticipated to be implemented at this time.

Under the Proposed Airport Implementation Plan and under the East Terminal Alternative, no specific project component is proposed to be implemented that would affect the Allied Aerospace Building. The Proposed Project and the East Terminal Alternative will not result in a significant impact to this historic resource and no mitigation measures are required.

5.2.3 Management Considerations

No specific project element is proposed for the ASIG Building (original United Airlines Hangar/ Terminal) under the Proposed Airport Implementation Plan. Therefore, the Proposed Project will have no direct impacts to this significant resource, and no mitigation measures are required at this time. The Proposed Airport Land Use Plan designates the area of the ASIG Building as Airport Support. Project-specific review would be required if a specific use is proposed for this building in the future. If impacts are identified from future projects, appropriate mitigation measures would be developed and implemented.

The Allied Aerospace building is significant and eligible for listing on the National Register and California Register, as well as the City of San Diego's Historic Resources Board list. The project would have no impacts to this resource, so no mitigation measures are required. As one of the very few remaining buildings of the Consolidated Aircraft Plant, its preservation should be seriously considered, if future actions are proposed that would affect this building. If it cannot be preserved it should be recorded by Historic American Building Survey (HABS) level documentation.

5.3 Teledyne-Ryan Complex

5.3.1 Field Survey Results

A 2001 study of the former Teledyne–Ryan Aeronautical Complex at 2701 North Harbor Drive, San Diego, determined that buildings 100, 120, 140, and 180 were individually historically and architecturally significant. These buildings meet criteria and integrity requirements for listing on

the National Register of Historic Places and California Register of Historical Resources (Moomjian and Tinsley 2001).

Additional examinations, as a result of the current study, have determined that the 17 buildings at the former Teledyne-Ryan Aeronautical Complex listed on Table 3, which include the four previously identified in 2001, are eligible for listing on the National Register of Historic Places, California Register of Historical Resources, and the City of San Diego's Historical Resources Board list, as contributing elements to a Ryan Aeronautical Company Historic District. The buildings that constitute contributing elements to the district are described in detail on the accompanying California Department of Parks and Recreation District Form included in Appendix 1. The layout of the historic district is shown in Figure 45.

These buildings constitute a district that is eligible at a regional level for a period of significance between 1939 and 1969. It was during this 30 year span that the site was directly associated with aviation pioneer T. Claude Ryan and his management of the company, as well as Ryan Aeronautical's significant contributions to national defense production during the Second World War and important developments in aerospace research and development during the 1950s and 1960s. The buildings and structures have been chosen because, of all the resources on the 43-acre complex, they architecturally embody the distinctive design characteristics of aircraft manufacturing plants in southern California during the period of significance. They are important as representations of the Ryan Aeronautical Company manufacturing plant during the time when numerous advances in aviation technology were made, and are directly associated with T. Claude Ryan's important contributions in aviation during that time, and his role in the establishment of the aircraft industry in San Diego. The buildings also represent the remarkable accomplishments of the aircraft industry at Lindbergh Field and the important contribution to defense production these aircraft manufacturing plants made during the Second World War.

Table 3. Contributing Elements to the Ryan Aeronautical Company Historic District

Building No.	Function
100	Ryan Aeronautical Administration Building
102	Ryan Aeronautical Contracts and Pricing Office
104	Ryan Aeronautical Engineering Building
105	Ryan Aeronautical Materials & Processing Laboratory & Engineering Building
110/112	Ryan Aeronautical Planishing Shed

111	Ryan Aeronautical Welding Shop
120	Ryan Aeronautical Main Factory Building
121	Ryan Aeronautical Receiving Warehouse
131	Ryan Aeronautical Factory Building
140	Ryan Aeronautical Final Assembly Building
146	Ryan Aeronautical Engineering & Manufacturing Building
152	Ryan Aeronautical Jet Engine Drone Assembly Building
156	Ryan Aeronautical Warehouse
160	Ryan Aeronautical Foundry and Plaster Shop
180	Ryan Aeronautical Experimental/Receiving & Assembly Building
181	Ryan Aeronautical Airplane Storage Building
183	Ryan Aeronautical Tool Storage Building

5.3.2 Ryan Aeronautical Company Historic District Significance Assessment

The Ryan Aeronautical Company Historic District is eligible for nomination to the National Register of Historic Places and the California Register of Historical Resources at both the local and national levels, as well as local listing by the City of San Diego Historical Resources Board. The period of significance is from 1939, when the plant opened, until it was sold to Teledyne, Inc. in 1969. It was during this 30 year span that the site was directly associated with T. Claude Ryan and his management of the company, as well as Ryan Aeronautical's significant contributions to national defense production during the Second World War and important developments in aerospace research and development during the 1950s and 1960s.

The district is eligible under Criterion A for its association with the development of the aircraft industry in San Diego at Lindbergh Field, for its association with the contribution of aircraft manufacturers at Lindbergh Field to World War II defense production, and for its association with the company's significant contributions to Cold War research and development projects, as well as defense manufacturing. The Ryan Aeronautical Company Historic District is eligible under Criterion B for its association with aviation pioneer T. Claude Ryan. The district is also eligible under Criterion C for its representation of a distinctive type of industrial architecture associated with the 1930s and World War II. Taken together the buildings and structures that make up the contributing elements of the district illustrate the design fabrication concepts common to Southern

California aircraft manufacturing from the 1930s through World War II and into the 1950s; a period when the industry played a dominant role in the economy of the region. The district retains good to excellent integrity of setting, place, design, materials, workmanship, feeling, and association.

5.3.2.1 Applicable Criteria

5.3.2.1.1 Criterion A

The district is eligible under Criterion A at both a local and national level of significance. On a local level, the Ryan plant played an important role in the development of the aircraft industry at Lindbergh Field. It was the second largest aircraft manufacturer at Lindbergh: only Consolidated Aircraft's facilities were larger. On both a local and a national level the district is significant for the role of the Ryan Aeronautical Company in the contribution of the aircraft industry at Lindbergh Field to World War II defense production. Ryan's company was internationally known for their PT trainers, which were used to teach beginning pilots to fly during the war. In addition, the factory played an important role in manufacturing a large percentage of vital exhaust equipment for heavy bombers, giant transport planes, and super bombers. The company also produced wing panels for the B-24 bomber, gun turrets for PBY Flying Boats, and control surfaces for various aircraft. One of the Ryan Aeronautical Company's most significant contributions was the development and manufacture of one of the first jet fighters used by the United States armed forces, the Ryan Fireball.

In the decades following World War II the Ryan Company also made significant contributions to the Cold War through research and development projects, as well as manufacturing. Some of the company's most important R and D work was in the field of aerospace electronics and included air-to-air missile research, aircraft navigation and positioning equipment, altimeters, remote sensors, and jet-powered target drones. Ryan electronics built the radar system that guided the Surveyor unmanned spacecraft to its soft landing on the lunar surface. This is the event that publicly put the United States ahead of the Soviet Union in the Cold War Space Race to the moon. Other projects included vertical takeoff and landing aircraft, flexible wing vehicles, and solar panels for spacecraft. Manufacturing during this period consisted of the production of fuselage sections, jet power packs, and high temperature jet engine parts.

5.3.2.1.2 Criterion B

The Ryan Aeronautical Company Historic District is eligible under Criterion B for its association with T. Claude Ryan from 1939, when the plant opened, until it was sold to Teledyne Inc. in 1969. Ryan was an important pioneer in the history of local, state, and national aviation, whose career spanned from the barnstorming days of the 1920s through the early space age. As the location that served Ryan Aeronautical Company from 1939 until 1969, the site is directly associated with Ryan and his management of the company during the time when it made significant contributions to national defense production during the Second World War and important developments in aerospace research and development during the 1950s and 1960s.

5.3.2.1.3 Criterion C

The Ryan Aeronautical Company Historic District is eligible under Criterion C for its representation of a distinctive type of industrial architecture associated with the 1930s and World War II. The district embodies the distinctive characteristics of factory buildings found at Southern California aircraft manufacturing plants during the 1930s and 1940s. These include large industrial buildings with massive open bays framed by steel beams, wood and steel truss saw tooth and elliptical roofing, metal exteriors, continuous rows of steel sash industrial multi-paned windows, and sliding hangar doors. In addition, the Administration Buildings exhibit an Art Deco design adapted to industrial administrative uses.

The plant's large scale manufacturing design reflects the massive industrial construction program that the nation's civilian manufacturers used to help win the war. In conjunction with the Federal Government, the nation's industrial manufacturers, architects, and structural engineers worked together to provide modern industrial plants to supply the necessary equipment to the Allied war effort. The state of the art architectural designs of industrial plants, such as the one developed under the management of T. Claude Ryan for the Ryan Aeronautical Company, yielded improved efficiency and increased production. These innovative new plants moved airplane manufacturing from the realm of a craft industry into the world of mass-production (Van Wormer 1996). Taken together, the buildings and structures that make up the contributing elements of the district illustrate the design fabrication concepts common to Southern California aircraft manufacturing from the 1930s through the 1950s; a period when the industry played a dominant role in the economy of the region.

5.3.2.2 Integrity

Integrity is the ability of a property to convey its historic significance. The Ryan Aeronautical Company Historic District was evaluated for the seven aspects of integrity identified for the National Register: "location, setting, materials, design, workmanship, feeling, and association" (National Park Service 1991:44). Each of the categories of integrity will be discussed individually:

5.3.2.2.1 Location

Location is defined as "the place where the historic property was constructed or the place where the event occurred" (National Park Service 1994:44). The Ryan Aeronautical Company Historic District retains a high degree of integrity of location. All of the buildings and structures are on the same locations where they were constructed or moved to during the period of significance from 1939 to 1969. The Experimental/Receiving and Assembly Building (#180) and the Airplane Storage Building (#181) were originally part of Ryan's original manufacturing facility on Pacific Highway between 1932 and 1939. They were moved to their present locations in 1944 and are considered significant as contributing elements to the Ryan Aeronautical Company Historic District site for its associations with the events that occurred at this location during the period of significance. These two buildings also have additional significance for their association with the Ryan Aeronautical facility on Pacific Highway from 1932 to 1939.

5.3.2.2.2 Design

Design is defined as the "combination of elements that create the form, plan, space, structure, and style of a property." It results from conscious decisions made during the original conception and planning of the property (National Park Service 1994:44-45). In spite of minor alterations or modifications that have occurred, all buildings have maintained their overall original forms, plans, spaces, styles, and design elements. The most serious impact has been the removal of windows from Buildings 131 and 156. However, in spite of this loss, these buildings still retain all other important design elements and qualify as contributing elements to the district. Except for these buildings, the remaining contributing elements retain a high degree of integrity of design.

5.3.2.2.3 Setting

Setting is defined as the: “physical environment of a historic property” (National Park Service 1991:44-45). Sanborn Fire Insurance Maps from 1940 and 1956, as well as historic photographs, indicate that the area that surrounded the Ryan Aeronautical Company complex from approximately 1939 to 1969 has changed substantially over the years. However, due to the fact that the complex is located along the southern perimeter of Lindbergh Field and has remained as an isolated industrial site along North Harbor Drive during this period, the property still retains a good degree of original setting for integrity purposes (Moomjian and Tinsley 2001).

5.3.2.2.4 Materials

Materials are “the physical elements that were combined during a particular period of time in a particular pattern of construction to form a historic property” (National Park Service 1991: 44-45). The Ryan Aeronautical Company Historic District retains original materials in the form of wood, steel, and masonry in the buildings, and asphalt and concrete paving within the complex. Because of this, the district retains excellent integrity of materials.

5.3.2.2.5 Workmanship

Workmanship is the “physical evidence of crafts of a particular culture or people” (National Park Service 1991:44-45). Good to excellent integrity of design and materials, as discussed above, combine to give an excellent integrity of workmanship for the Ryan Aeronautical Company Historic District.

5.3.2.2.6 Feeling and Association

Feeling is defined as “a property’s expression of the aesthetic or historic sense of a particular period of time.” It results from the presence of historic features that together convey the property’s historic character. Association is the “direct link between an important historic event and a historic property” (National Park Service 1991:44-45). The retention of integrity of location, design, setting, materials, and workmanship discussed above combine to give the Ryan Aeronautical Company Historic District a strong sense of feeling and association for T. Claude Ryan and the company’s contributions to local and national aeronautics between 1939 and 1969.

Within this context, the contributing elements of the district combine to convey the historic character of the Ryan Aeronautical Company plant and its representation of the design fabrication concepts common to Southern California aircraft manufacturing from the 1930s through World War II and into the 1950s, a period when the industry played a dominant role in the economy of the region.

5.3.2.3 Ryan Aeronautical Company's Original Pacific Highway Buildings

Buildings 180 and 181 represent the original three buildings constructed by the Ryan Aeronautical Company at the Pacific Highway location, prior to the establishment of the North Harbor Drive facility in 1939. These buildings are not only significant as contributing elements to the Ryan Aeronautical Company Historic District but also qualify for the National Register and the California Register on their own for a period of significance from 1932, when Ryan established his first manufacturing plant at Lindbergh Field, to 1939 when he moved to the Harbor Drive location. The buildings qualify under Criteria A and B, for their association with T. Claude Ryan and his participation in the early development of Lindbergh Field. Ryan established the first aircraft manufacturing plant at Lindbergh in 1932. It was in these buildings that his famous P.T. trainers were first designed and manufactured. These hangars also qualify for significance under Criterion C for their representation of shops typically used during the earlier phases of aircraft manufacturing, when it was still a craft industry and had not yet developed into the large-scale mass production required by the Second World War, which necessitated buildings on a much larger scale. Overall, the buildings are in good condition. Although they no longer retain integrity of setting or location for the period when they were located on Pacific Highway, they do still have a good degree of integrity of design, materials, workmanship, feeling and association. In spite of being combined with Building 180, the original structure and design of the small hangar now comprising the east wing of that building can still be easily identified.

5.3.2.4 Significance Summary Statement

In summary, the Ryan Aeronautical Company Historic District is eligible for nomination to the National and California Registers at both the local and national levels, as well as local listing by the City of San Diego Historical Resources Board. The period of significance is from 1939, when the plant opened, until it was sold to Teledyne, Inc. in 1969. It was during this 30 year span that

the site was directly associated with T. Claude Ryan and his management of the company, as well as Ryan Aeronautical's significant contributions to national defense production during the Second World War and important developments in aerospace research and development during the 1950s and 1960s.

The district is eligible under Criterion A for its association with the development of the aircraft industry in San Diego at Lindbergh Field, for its association with the contribution of aircraft manufacturers at Lindbergh Field to World War II defense production, and for its association with the company's significant contributions to Cold War research and development projects, as well as defense manufacturing. The Ryan Aeronautical Company Historic District is eligible under Criterion B for its association with aviation pioneer T. Claude Ryan. The district is also eligible under Criterion C for its representation of a distinctive type of industrial architecture associated with the 1930s and World War II.

The district still retains a high degree of integrity of location, design, setting, materials, and workmanship, which combine to give a strong sense of feeling and association with the plant's function during the period of significance. Taken together the buildings and structures that make up the contributing elements of the district illustrate the design fabrication concepts common to Southern California aircraft manufacturing from the 1930s through World War II and into the 1950s; a period when the industry played a dominant role in the economy of the region.

In addition, two contributing elements within the district, Buildings 180 and 181, have an additional layer of significance. In addition to being important contributing elements to the Ryan Aeronautical Company Historic District, these hangars represent the first three buildings constructed by Ryan Aeronautical when the company was located adjacent to the original terminal on Pacific Highway from 1932 to 1939. These buildings qualify under Criteria A and B for their association with T. Claude Ryan and his participation in the early development of Lindbergh Field. They also qualify for significance under Criterion C for their representation of shops typically used during the earlier phases of aircraft manufacturing, when it was still a craft industry and had not yet developed into the large-scale mass production required by the Second World War, which necessitated buildings on a much large scale. Overall, the buildings are in good condition. Although they no longer retain integrity of setting or location for the period when they were located on Pacific Highway, they do still have a good degree of integrity of design, materials, workmanship, feeling and association. Combined with the other buildings that make up the National Register District, these buildings represent the first aircraft manufacturing plant at Lindbergh Field and its transition from a small craft industry to a large scale wartime and post war aerospace production manufacturing plant.

5.3.3 Impacts

Under the Proposed Airport Land Use Plan, the former Teledyne-Ryan complex is designated for ground transportation and airport support uses. The adoption of the Airport Land Use Plan will have no direct impacts to these resources, however future development may affect the historic structures.

Under the Proposed Airport Implementation Plan and the East Terminal Alternative, no project components are proposed to be implemented on the Teledyne-Ryan property and there are no specific projects that would impact the historic district. If future actions are proposed, appropriate project-specific mitigation measures must be developed and implemented.

5.3.4 Management Considerations

A significant historic district has been identified for the former Teledyne-Ryan complex. As addressed above, the Ryan Aeronautical Company Historic District is eligible for nomination to the National and California Registers, as well as local listing. The former Teledyne-Ryan complex is designated under the Airport Land Use Plan as airport support and ground transportation, so there will be no direct impacts to these resources, but future actions may affect the historic properties. If future actions are proposed within the historic district, appropriate mitigation measures must be developed and implemented.

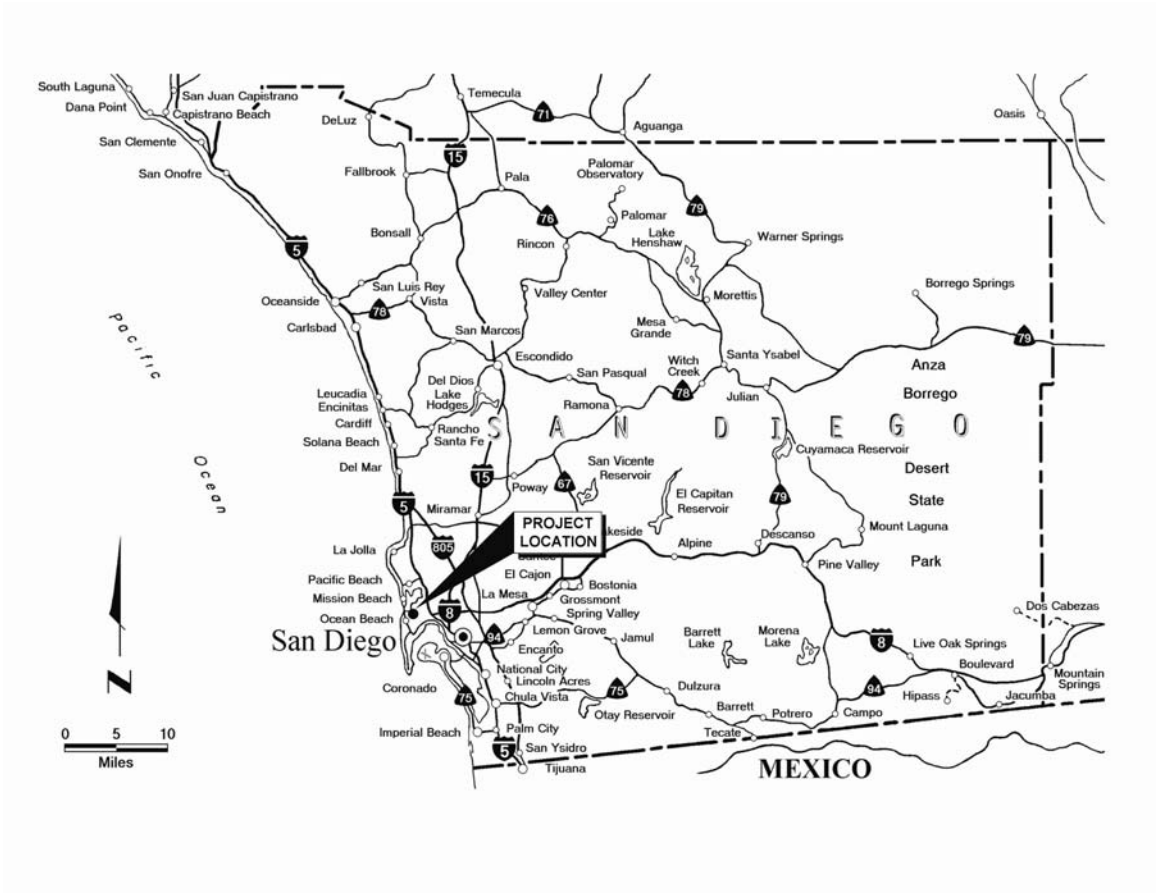

Figure 1: Regional Location in San Diego County

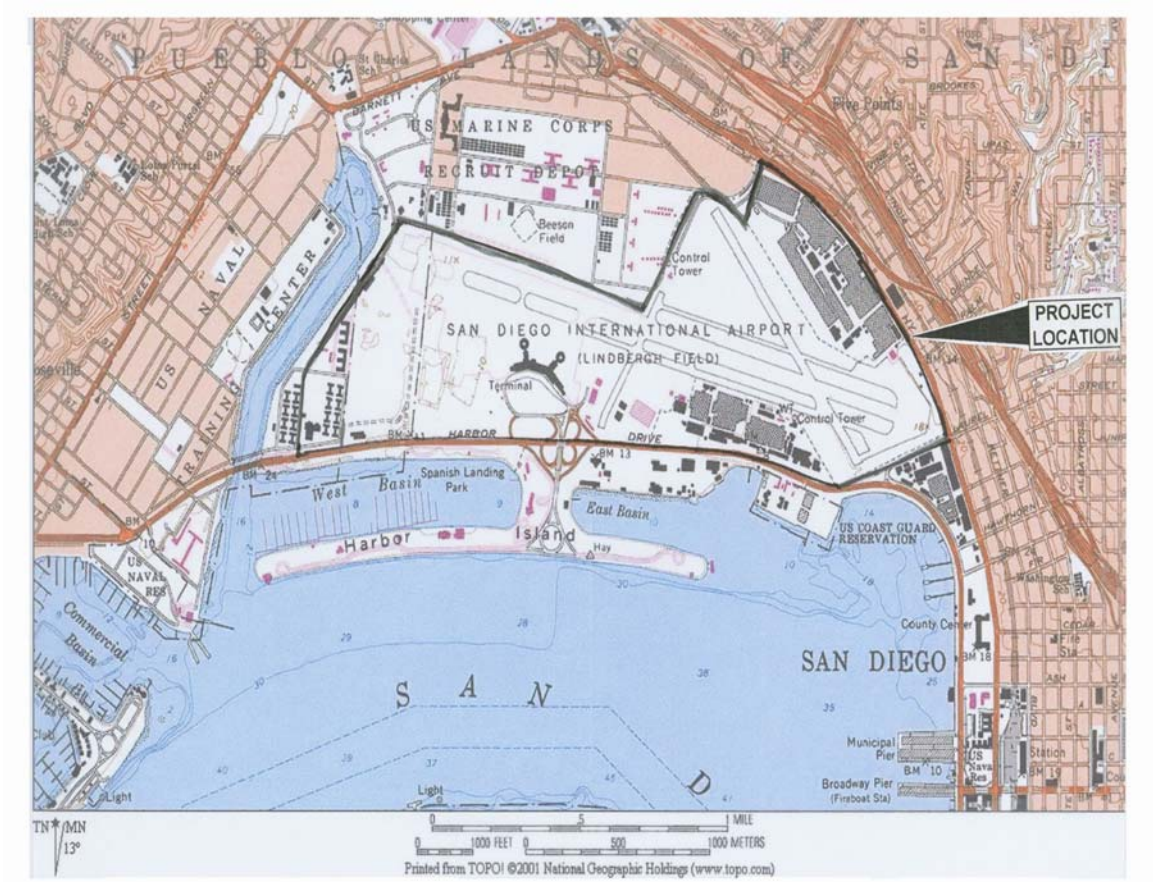

Figure 2: Project Location on USGS Point Loma Quadrangle

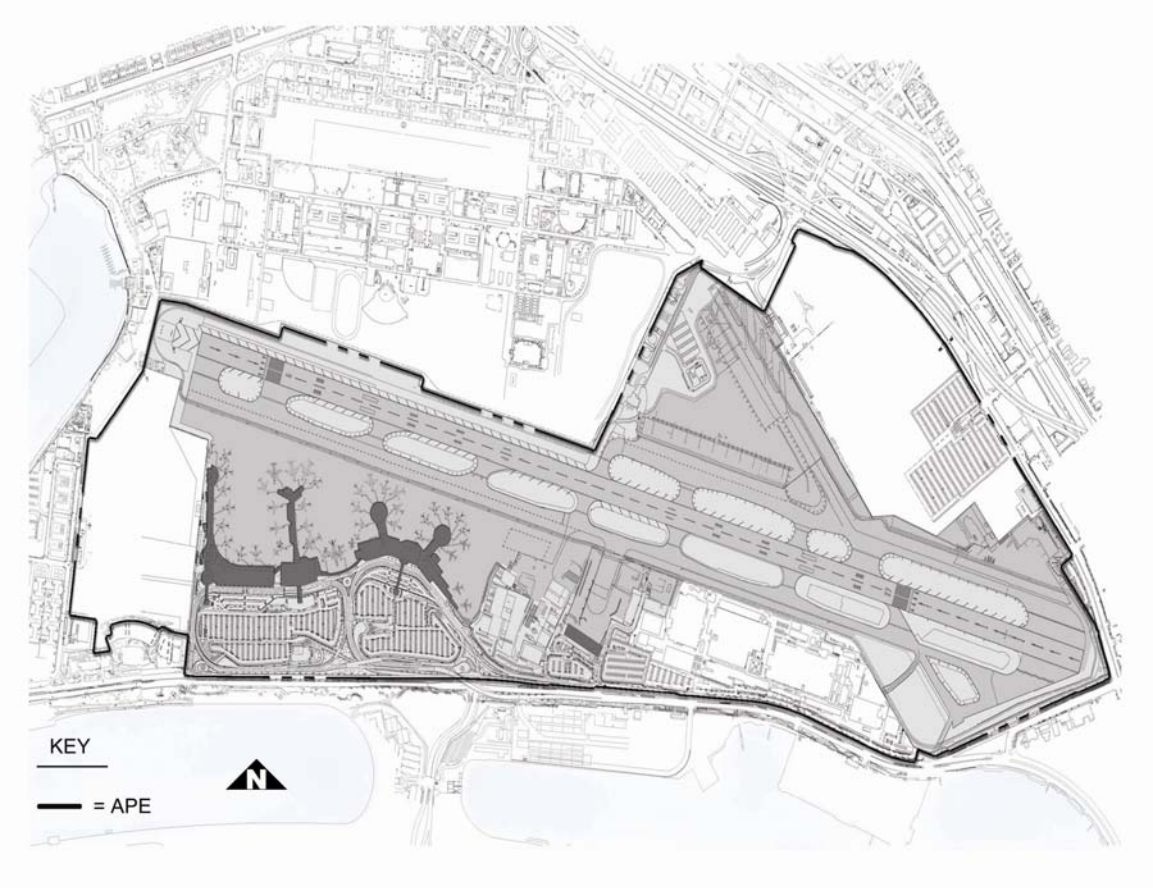

Figure 3: Airport Layout and Area of Potential Effect

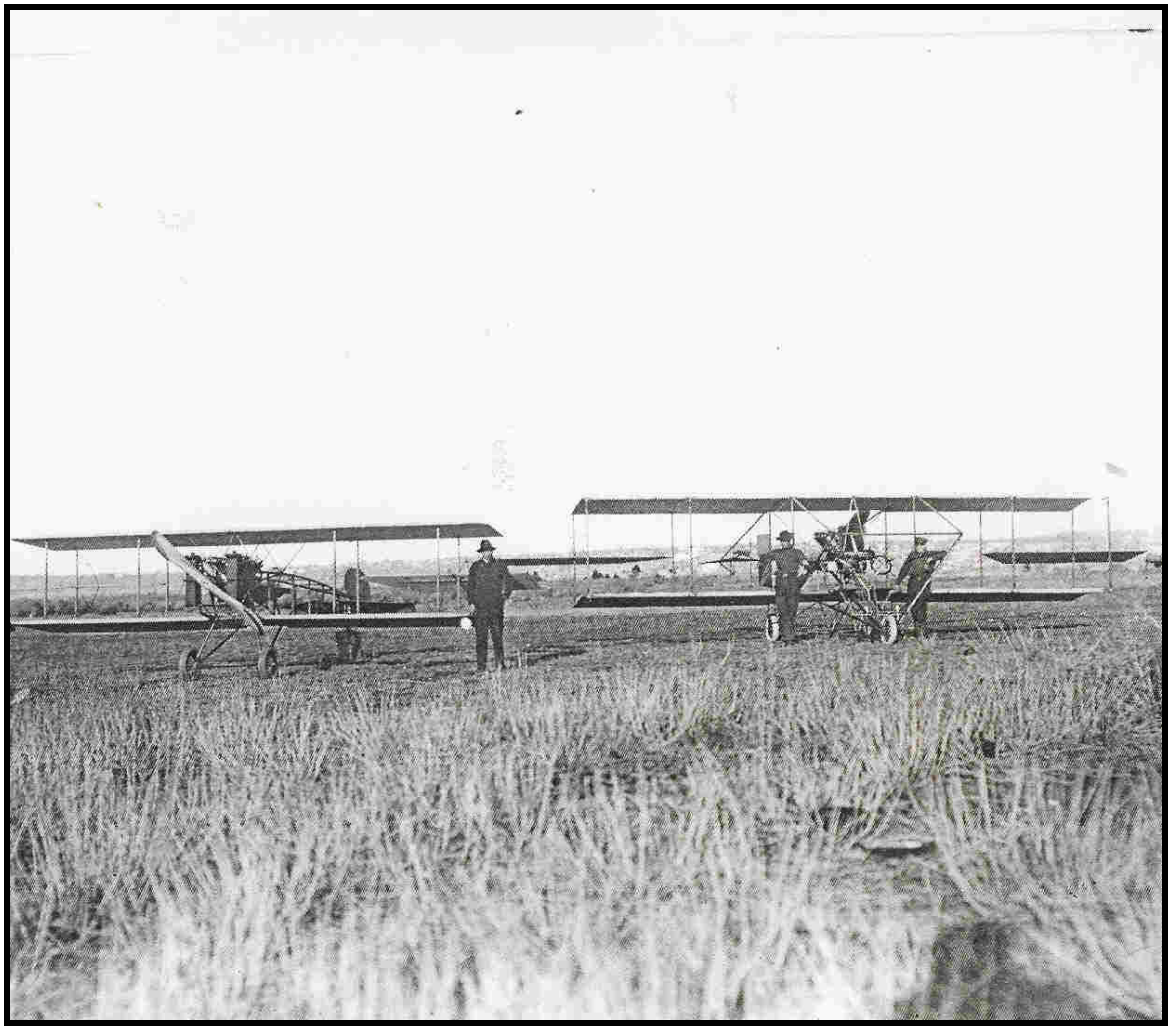

Figure 4: Army Airplanes at Rockwell Field 1912 (San Diego Aerospace Museum).

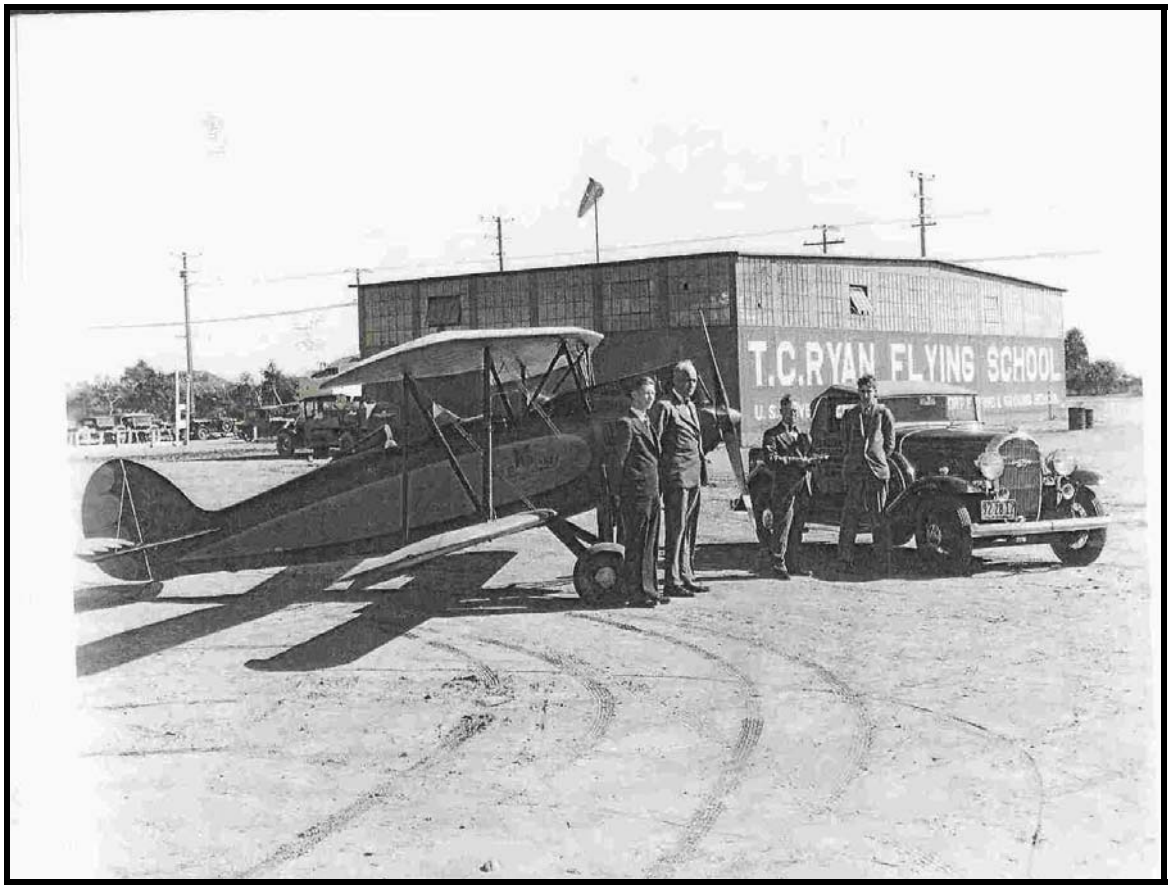

Figure 5: The Ryan Flying School at Dutch Flats (San Diego Historical Society).

Figure 6: A Ryan Monoplane (San Diego Historical Society).

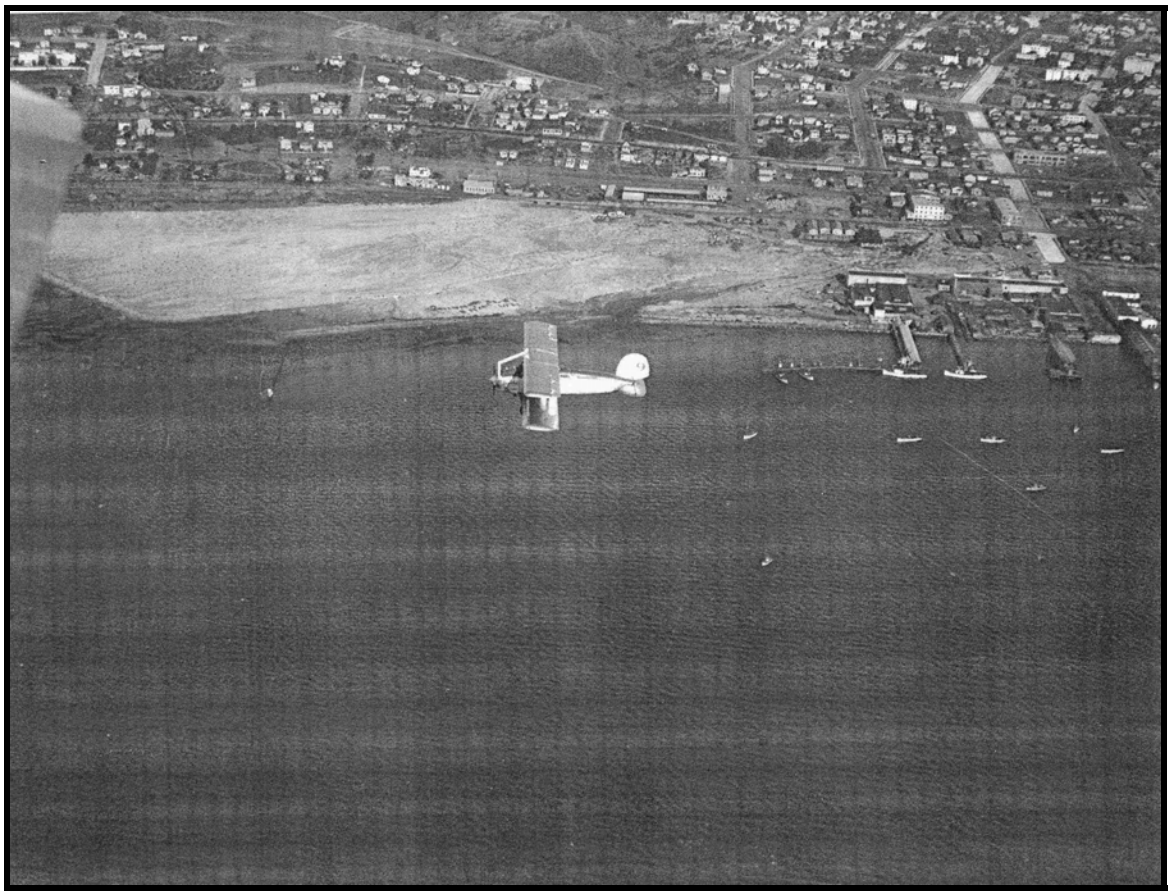

Figure 7: This barren flat on the edge of the bay is the original 25 acres of reclaimed tidelands that became Lindbergh Field in 1928 (San Diego Historical Society).

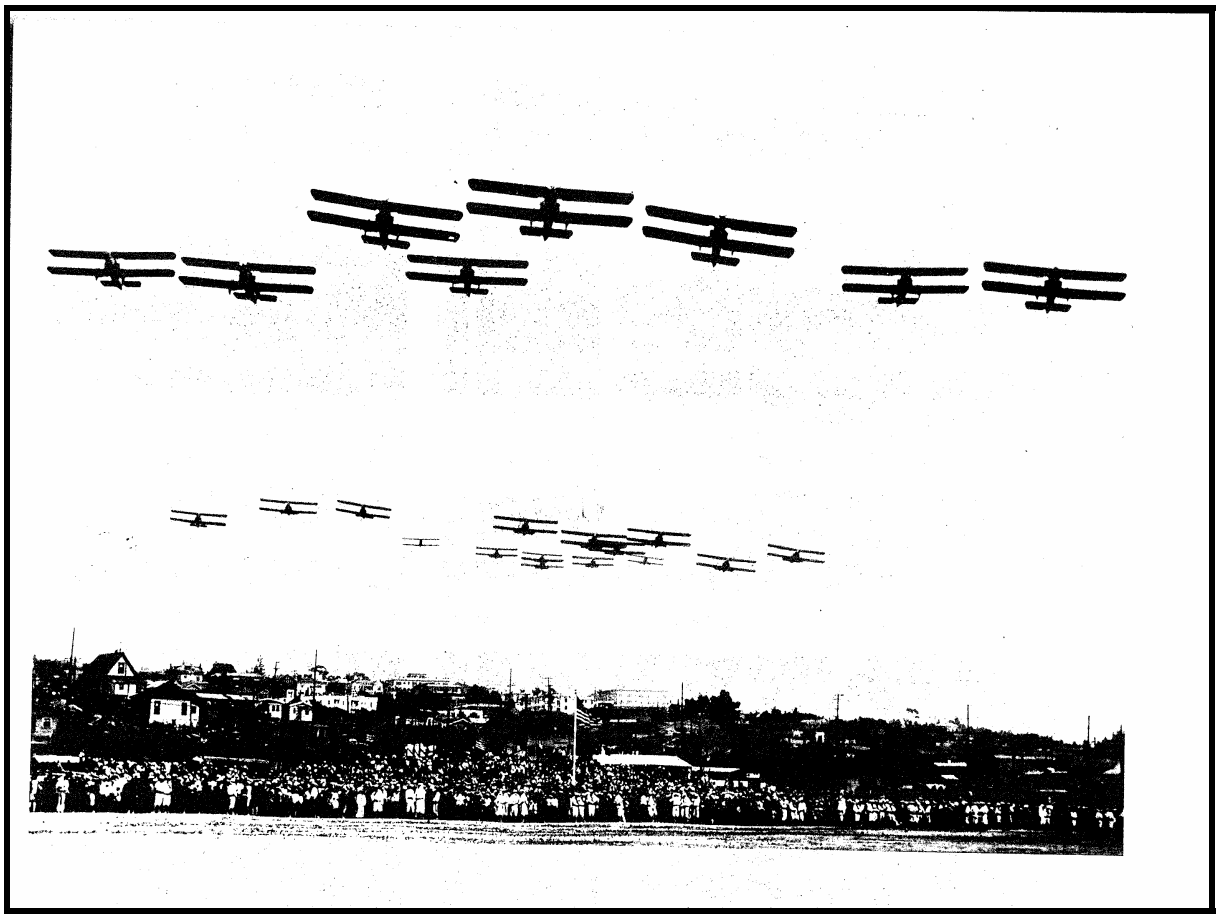

Figure 8: A portion of the 200-plane flyover at the dedication of Lindbergh Field on August 16, 1928 (San Diego Aerospace Museum).

Figure 9: This March 1929 photograph shows dredging operations continuing to reclaim tidelands on the west side of the airport (San Diego Aerospace Museum).

Figure 10: Planes on Lindbergh Field circa 1928 – 1930 (San Diego Historical Society).

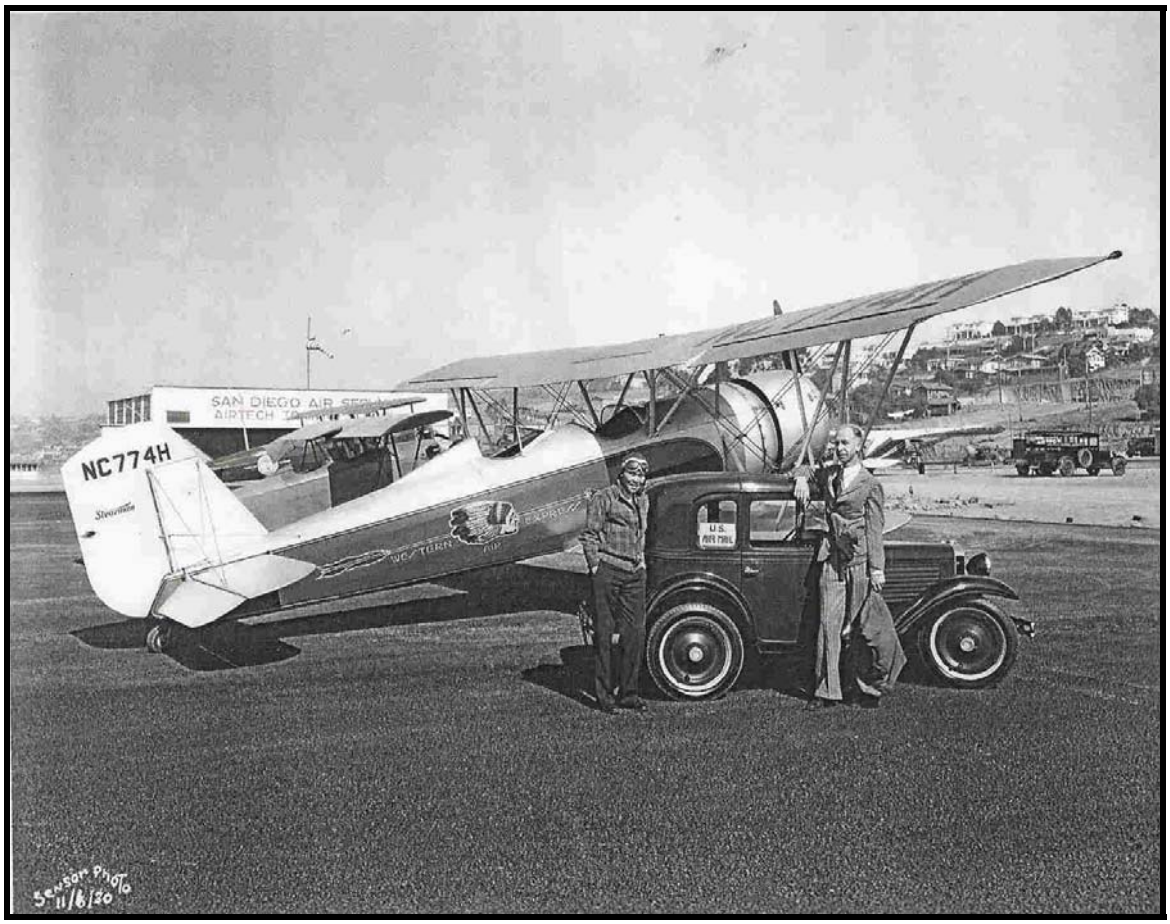

Figure 11: Western Air Express biplane in front of the Airtech Hangar in November 1930 (San Diego Historical Society).

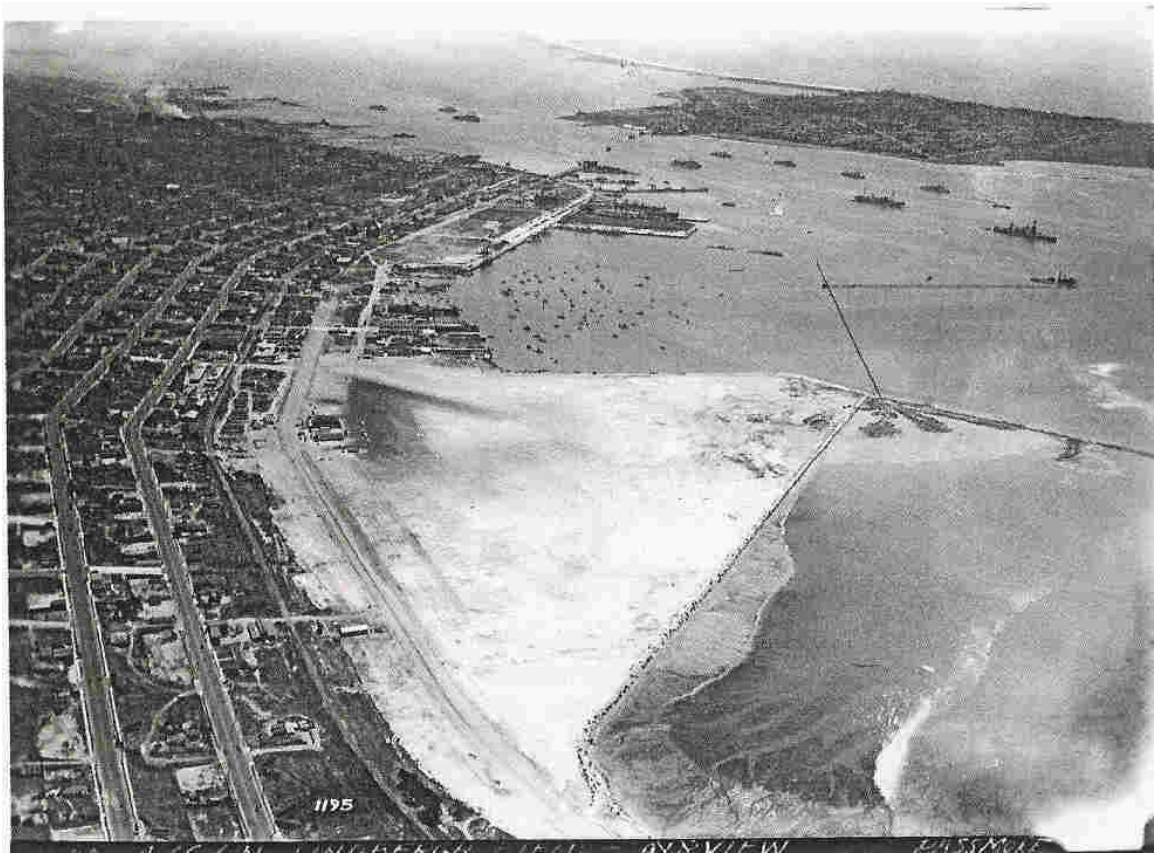

Figure 12: The airport has more than doubled in size as reclamation work continues to add land to the west in this December 1931 photograph (San Diego Historical Society).

Figure 13: A tri-motor pulls up to load passengers at the original tugboat pilot house terminal at Lindbergh Field (San Diego Aerospace Museum).

Figure 14: The Airtech and Pacific Air Transport - United Airlines hangars circa 1931-1932 (San Diego Aerospace Museum).

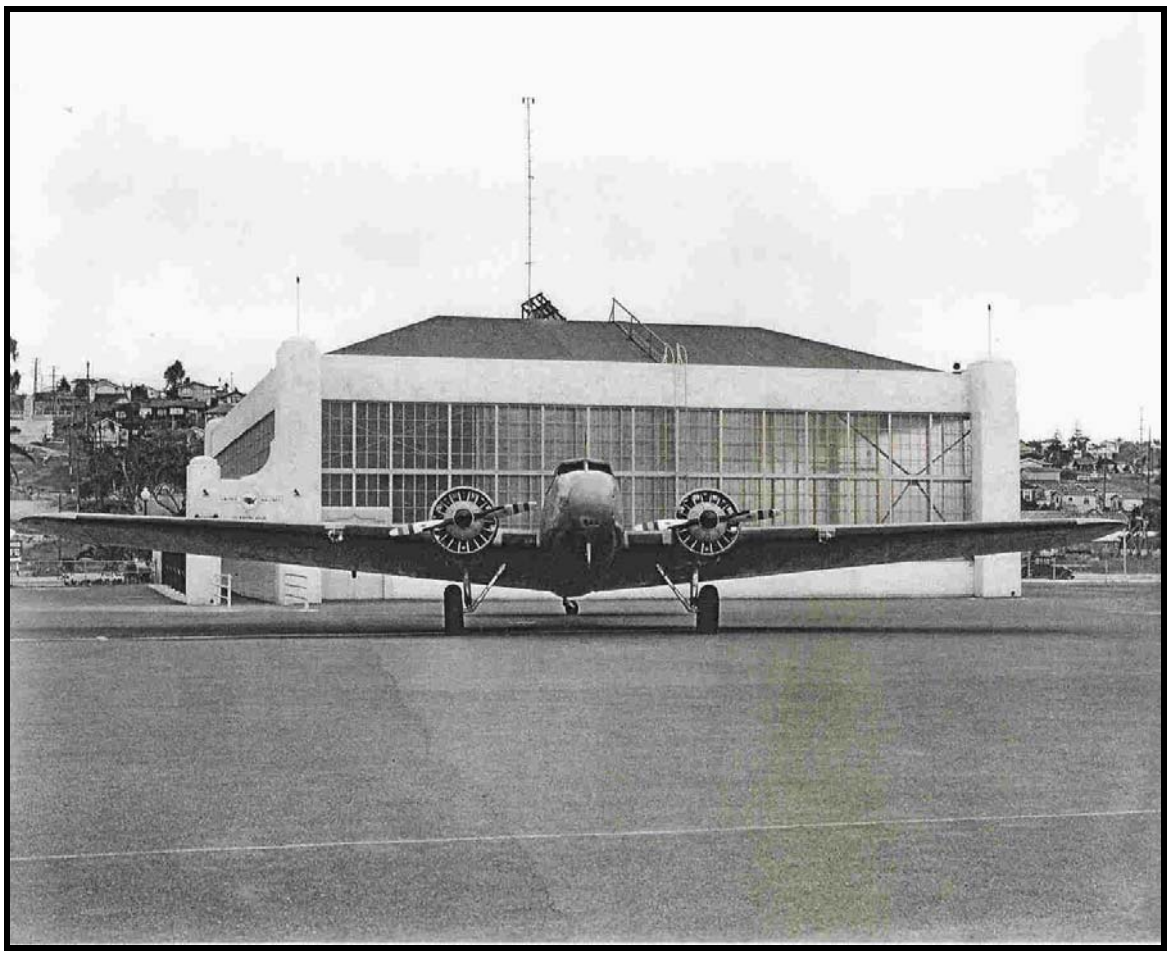

Figure 15: A Boeing twin-engine passenger plane in front of the United Airlines Hangar circa 1931 – 1932 (San Diego Historical Society).

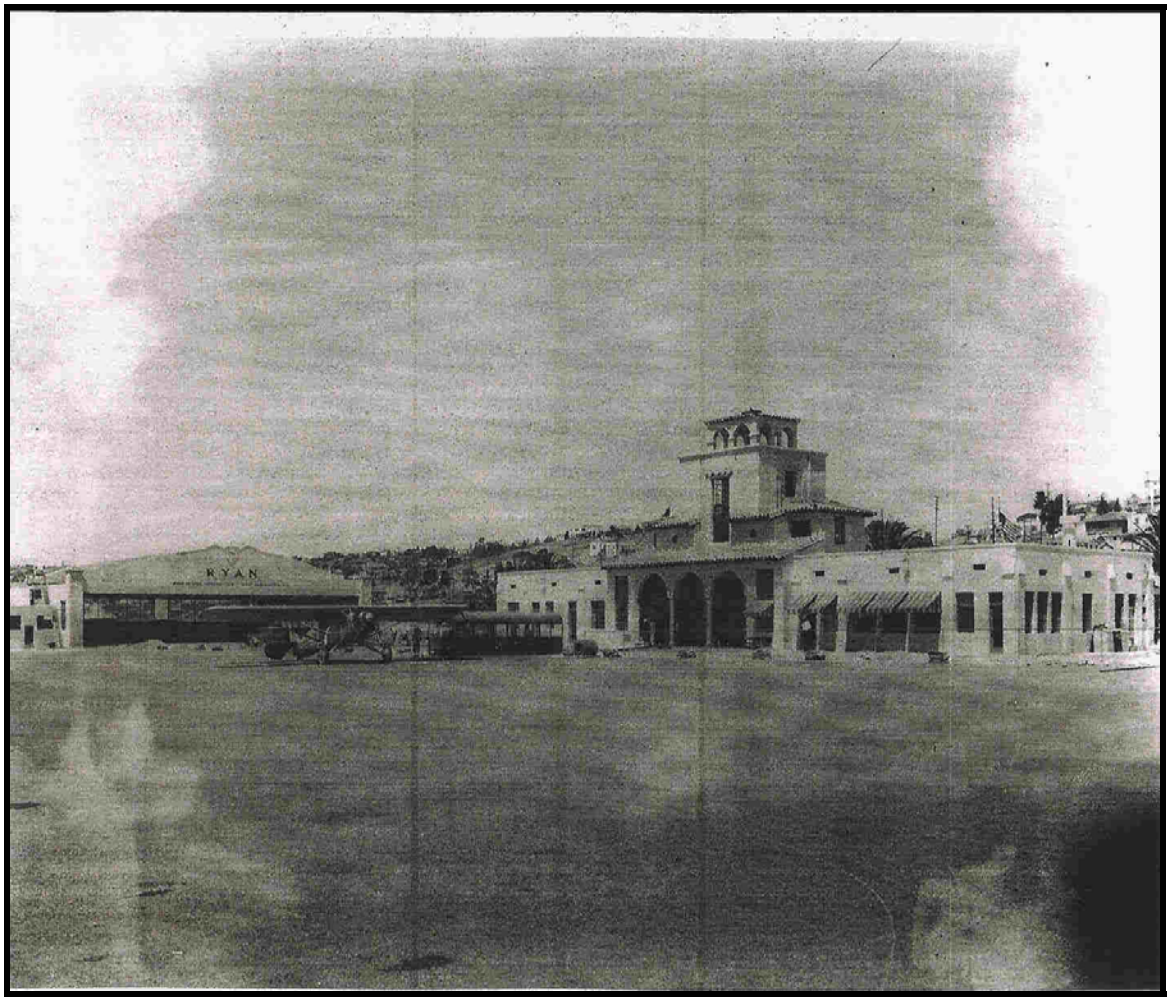

Figure 16: A Ryan monoplane sits in front of the new administration and terminal building that is still under construction in this 1932 photograph. Ryan's new hangar can be seen in the background (San Diego Aerospace Museum).

Figure 17: The finished terminal as seen from Pacific Highway 1932 – 1933 (San Diego Historical Society).

Figure 18: The New Airport Terminal in 1933 as viewed from the east side, with the Ryan Aeronautical Hangar in the background (San Diego Aerospace Museum).

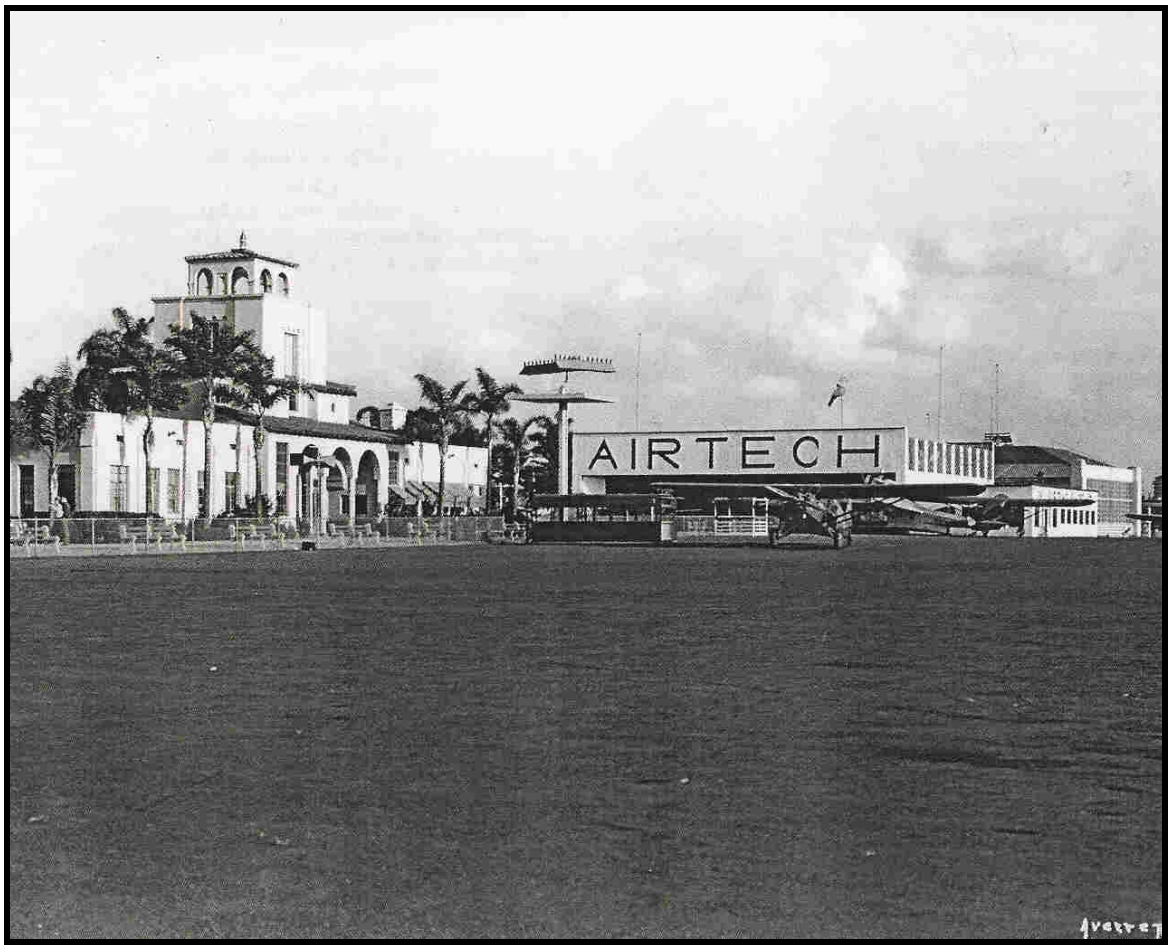

Figure 19: The Airport Terminal in 1936 as seen from the west side with the Airtech and United Airlines hangars in the background (San Diego Historical Society).

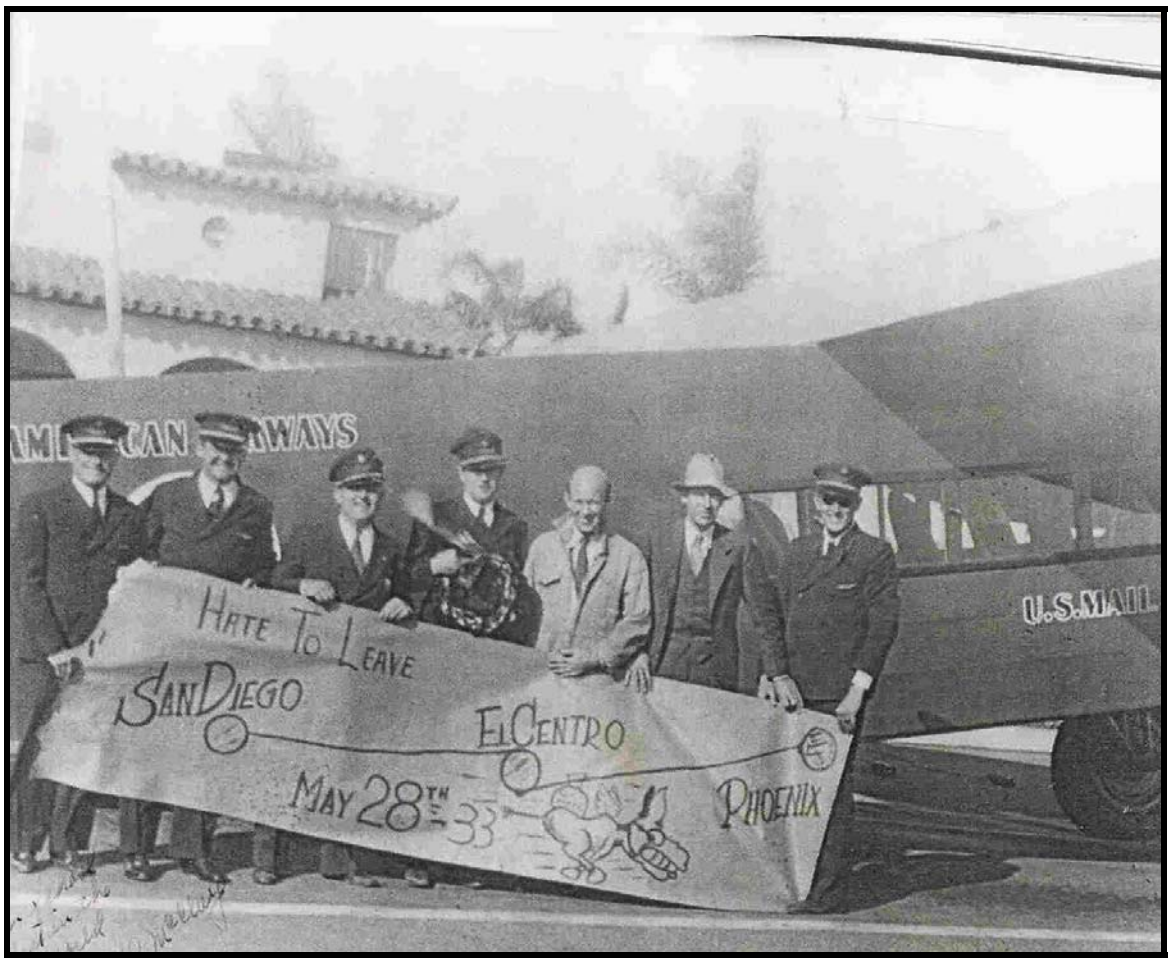

Figure 20: America Airways plane and crew in front of the new Terminal Building, with a banner celebrating their San Diego to Phoenix schedule in May 1933 (San Diego Historical Society).

Figure 21: Newly paved surfaces can be seen in this circa 1933- 1934 aerial photograph of Lindbergh Field. Pacific Highway on the left of the airport is graded but not paved (San Diego Aerospace Museum).

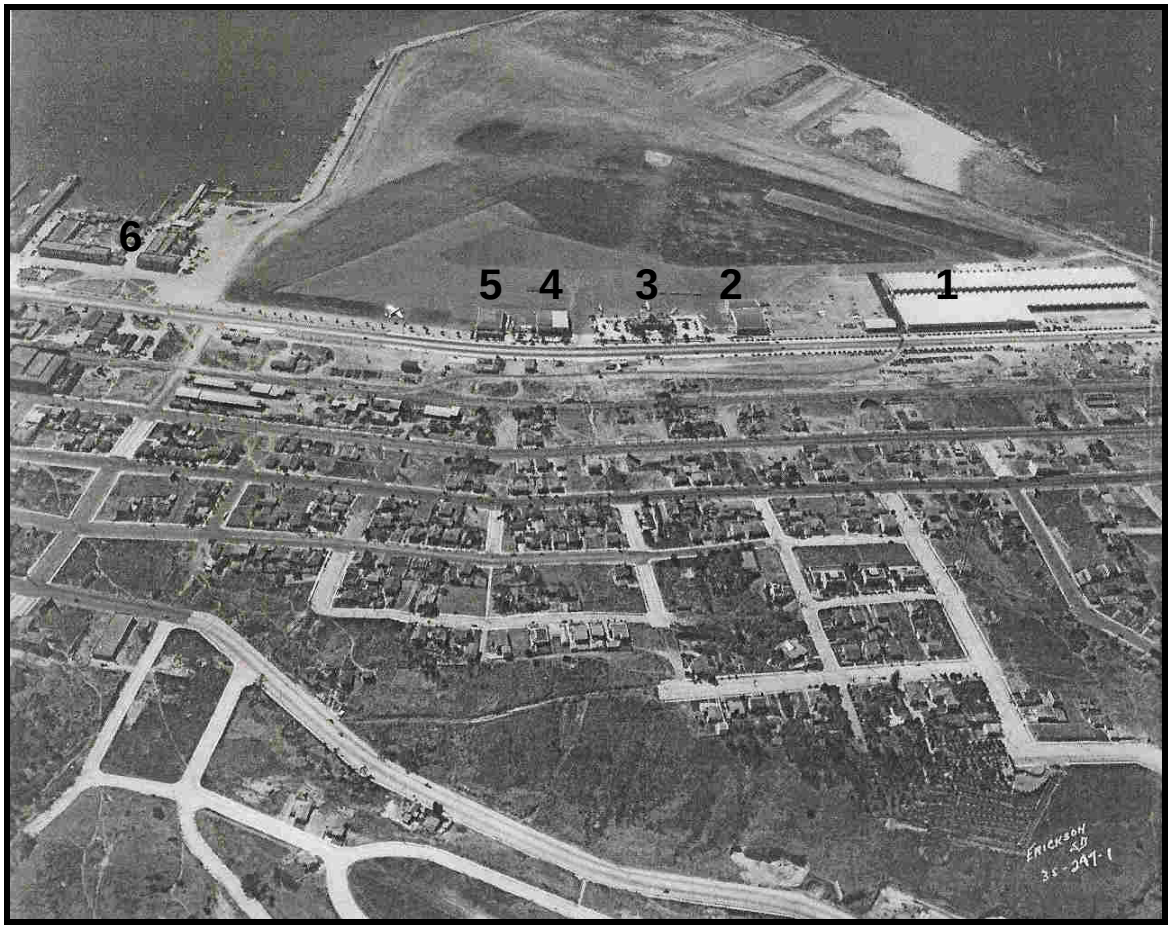

Figure 22: Lindbergh Field in October 1935. More reclaimed land has been added to the east and west sides. Pacific Highway has been paved along the north side of the airport and the newly constructed Consolidated Aircraft Plant can be seen at the west end of the airport (1). Ryan's Hangars (2), the Terminal building (3) and the Airtech (4) and United Airlines Hangars (5) can be seen along Pacific Highway to the east of the Consolidated Plant. Solar Aircraft (6) is located just to the east of the airport (San Diego Aerospace Museum).

Figure 23: A circa 1934 - 1935 photograph of Lindbergh Field. The buildings along Pacific Highway at the right side of the field are from bottom to top: United Airlines Hangar, Airtech Hangar, Terminal, Ryan Aeronautical Hangars, and Consolidated Aircraft Plant (San Diego Aerospace Museum)

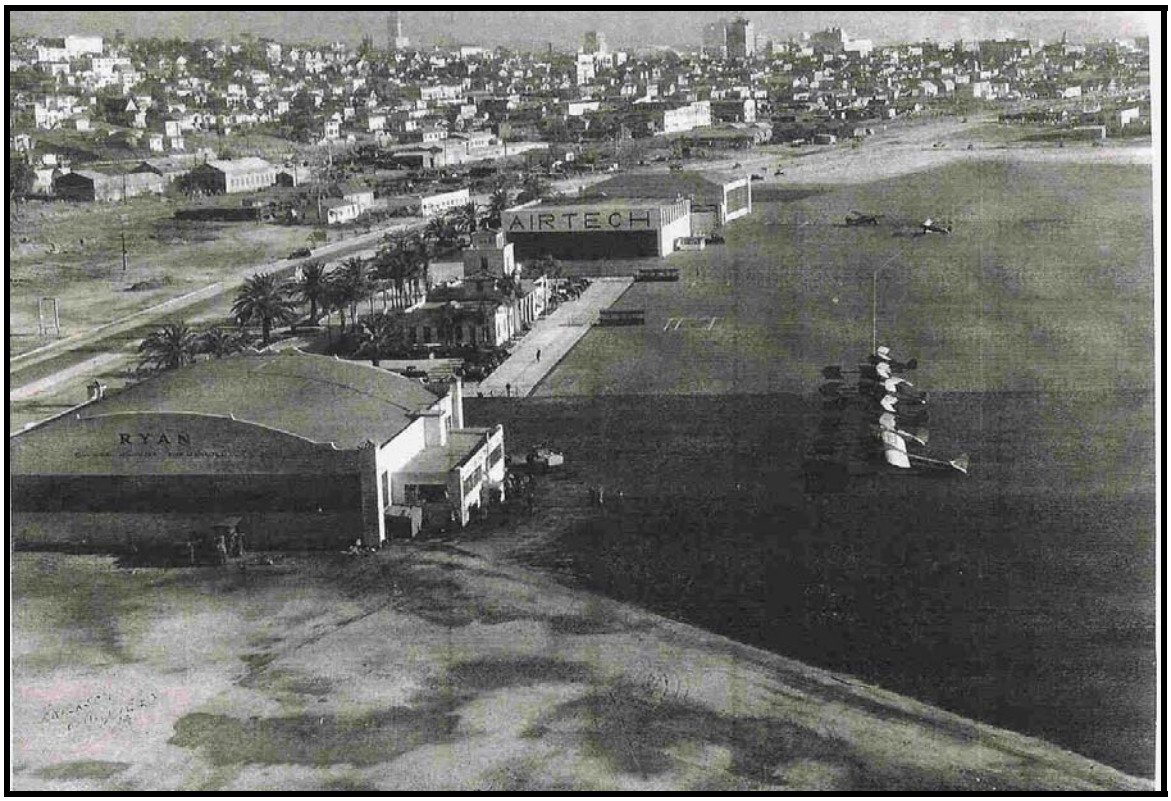

Figure 24: A closer aerial view of the four main airport buildings in circa 1934 - 1935. Ryan's Hangar is in the foreground, next is the Airport Terminal, followed by the Airtech Hangar and then the United Airlines Hangar (San Diego Aerospace Museum).

Figure 25: By 1937 dredging had once again added substantial acreage to the west side of the airport. The Coast Guard Station and Seaplane Ramp are under construction on reclaimed land in the foreground and Harbor Drive has been graded but remains unpaved. The Consolidated Plant (1) has expanded to dominate the northwest corner of the field (San Diego Historical Society).

Figure 26: Dredges continue to deposit bay fill and expand the airport ever westward in this 1939 aerial photograph. A portion of the expanded Consolidated plant can be seen in the photograph's upper left corner (San Diego Historical Society).

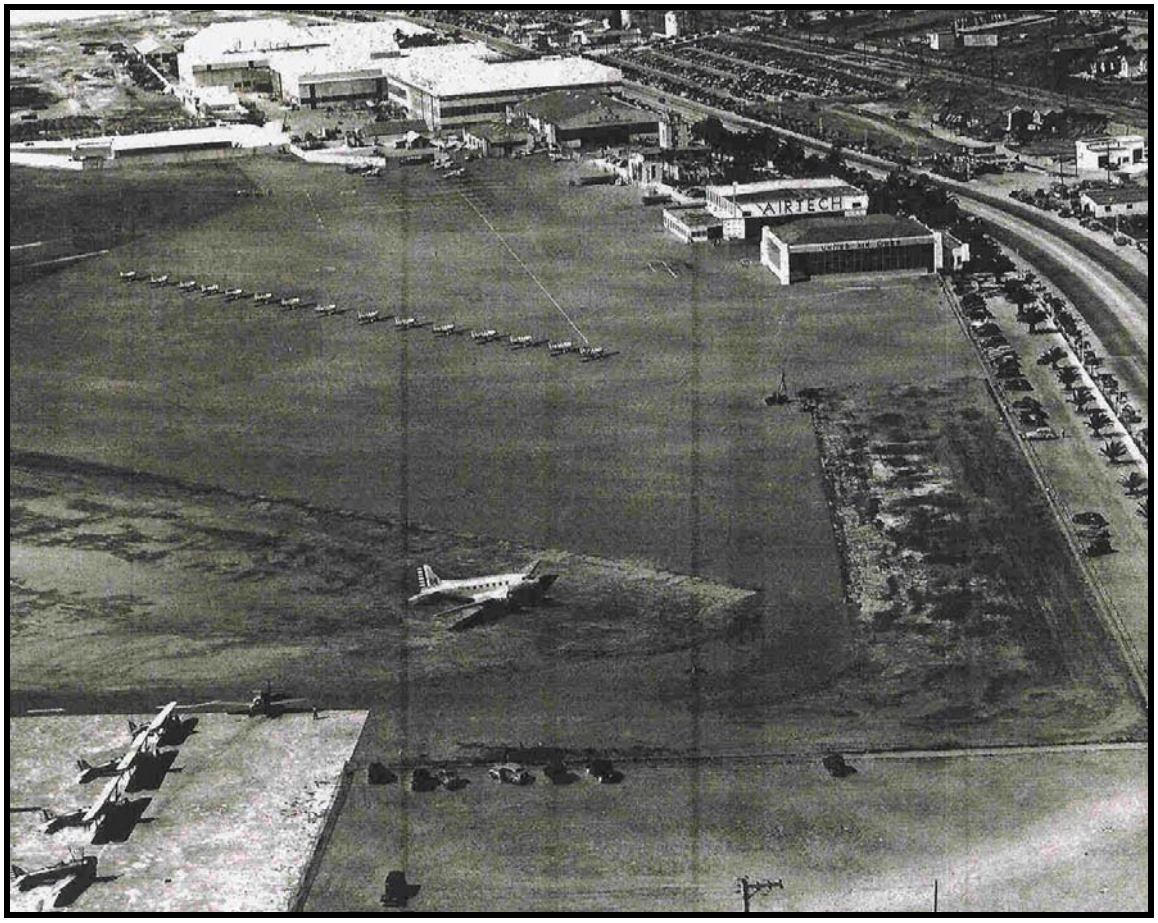

Figure 27: Aerial overview of the main airport area along Pacific highway in 1939. Note the line of Ryan trainers on the tarmac. Consolidated's large buildings dominated Pacific Highway to the rear of Ryan's Hangars (San Diego Aerospace Museum).

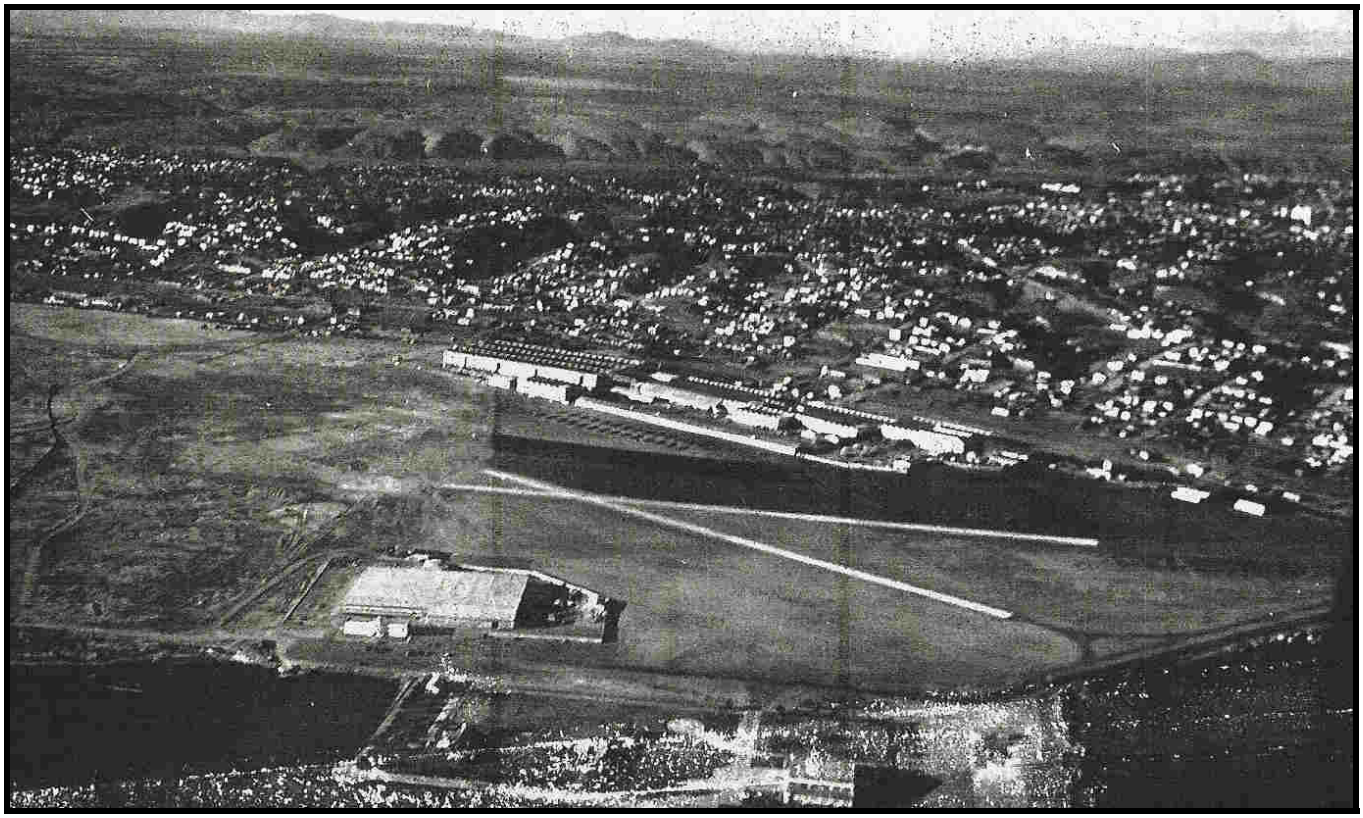

Figure 28: This 1940 photograph shows the newly completed runways. Ryan Aeronautical Company's new plant along Harbor Drive is in the foreground and the Consolidated Aircraft Plant dominates the north side of the airport (San Aerospace Museum).

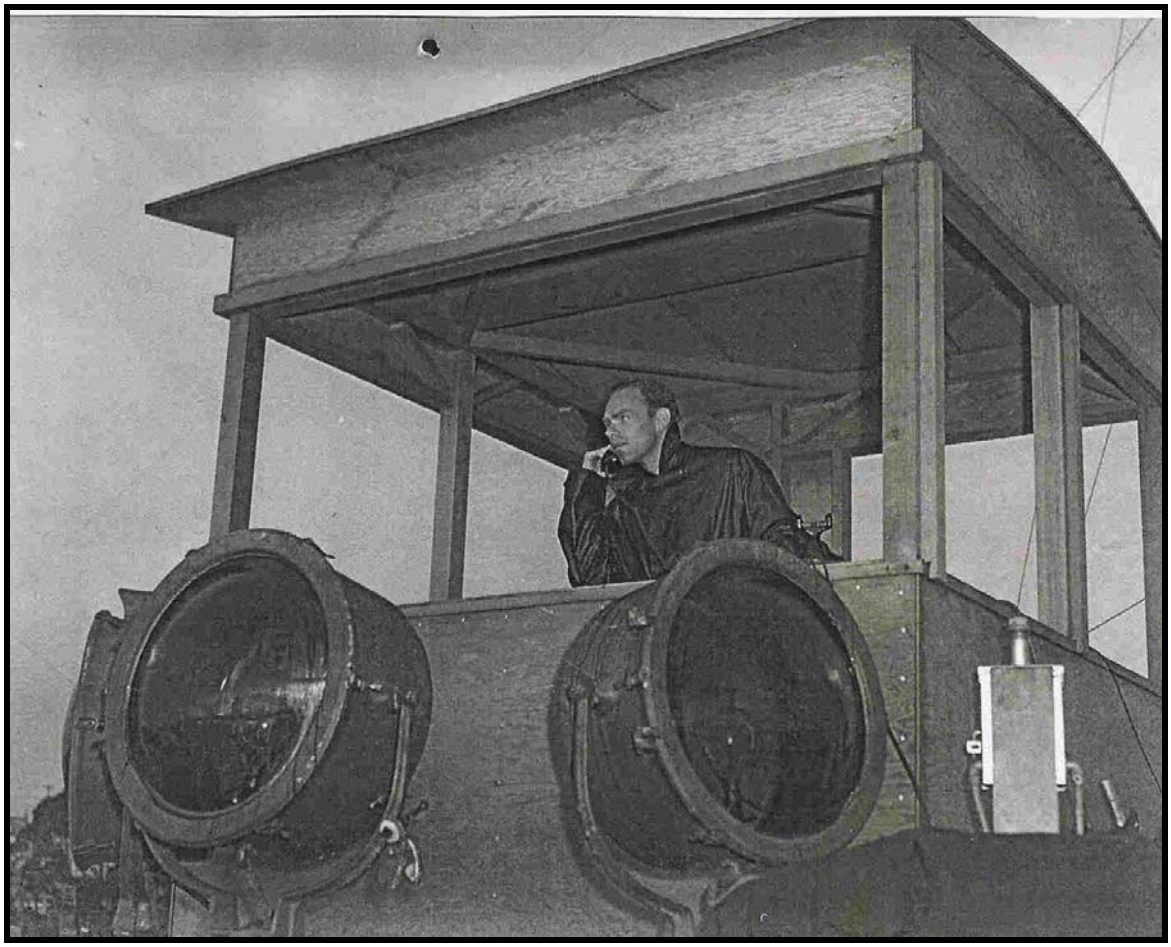

Figure 29: Lindbergh Field Tower in the 1940s (San Diego Historical Society).

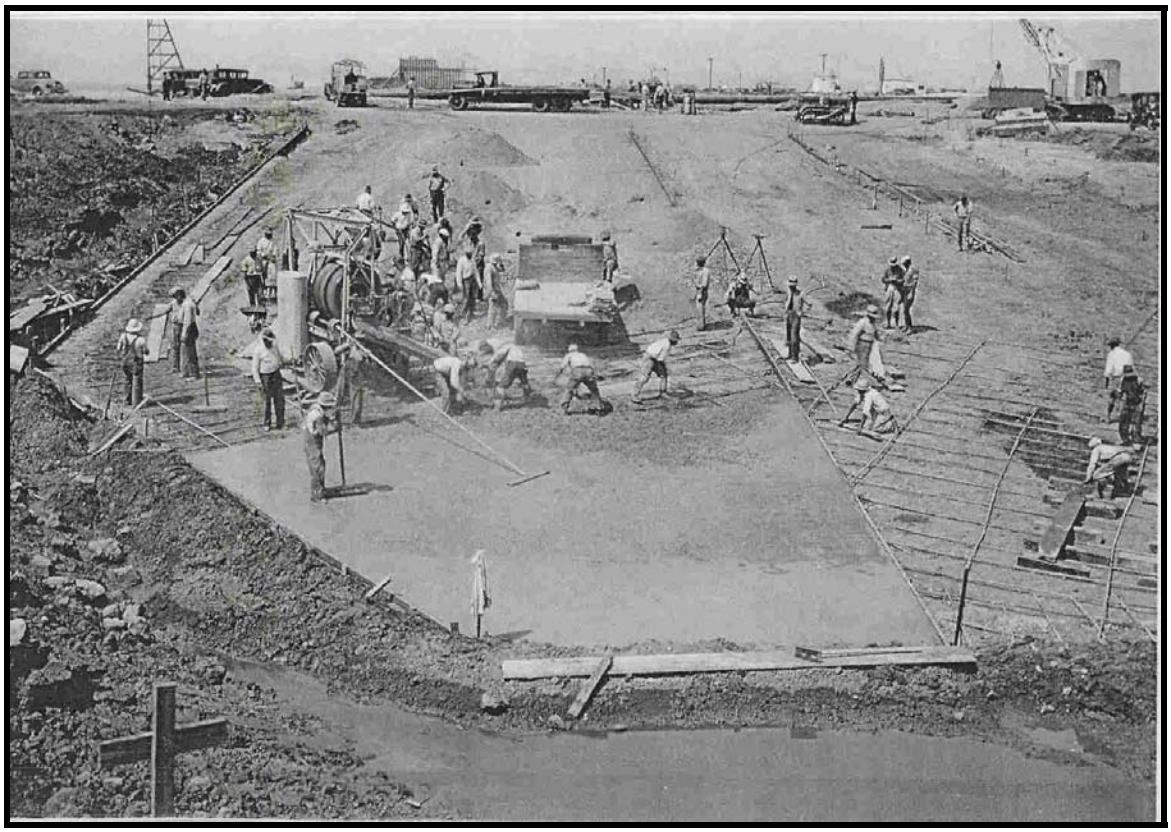

Figure 30: World War II runway expansion at Lindbergh Field (San Diego Historical Society).

Figure 31: The newly completed runways in August 1946. Note the enlarged Ryan Aeronautical Plant on the south side of the field (1), the greatly expanded Consolidated plant on the north side (2), and the original four buildings still located along Pacific Highway (3), and the Solar Aircraft Plant (4) (San Diego Historical Society).

Figure 32: The Pacific Highway side of the remodeled Terminal, circa 1952 (San Diego Historical Society).

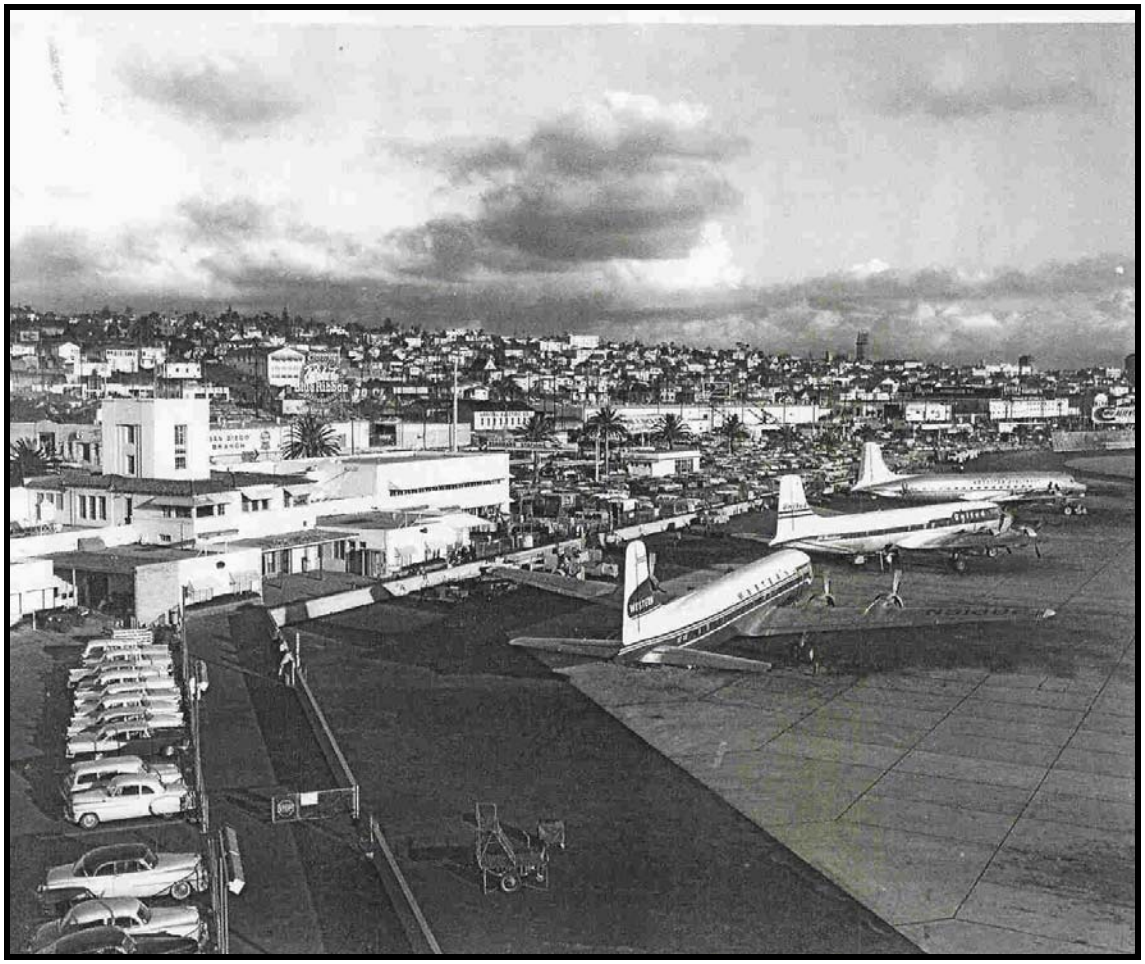

Figure 33: Airliners ready to take on passengers in 1957 (San Diego Historical Society). The Ryan and United Airlines hangars have been removed, and the old Airtech building has been incorporated into the east end of the Terminal (San Diego Historical Society).

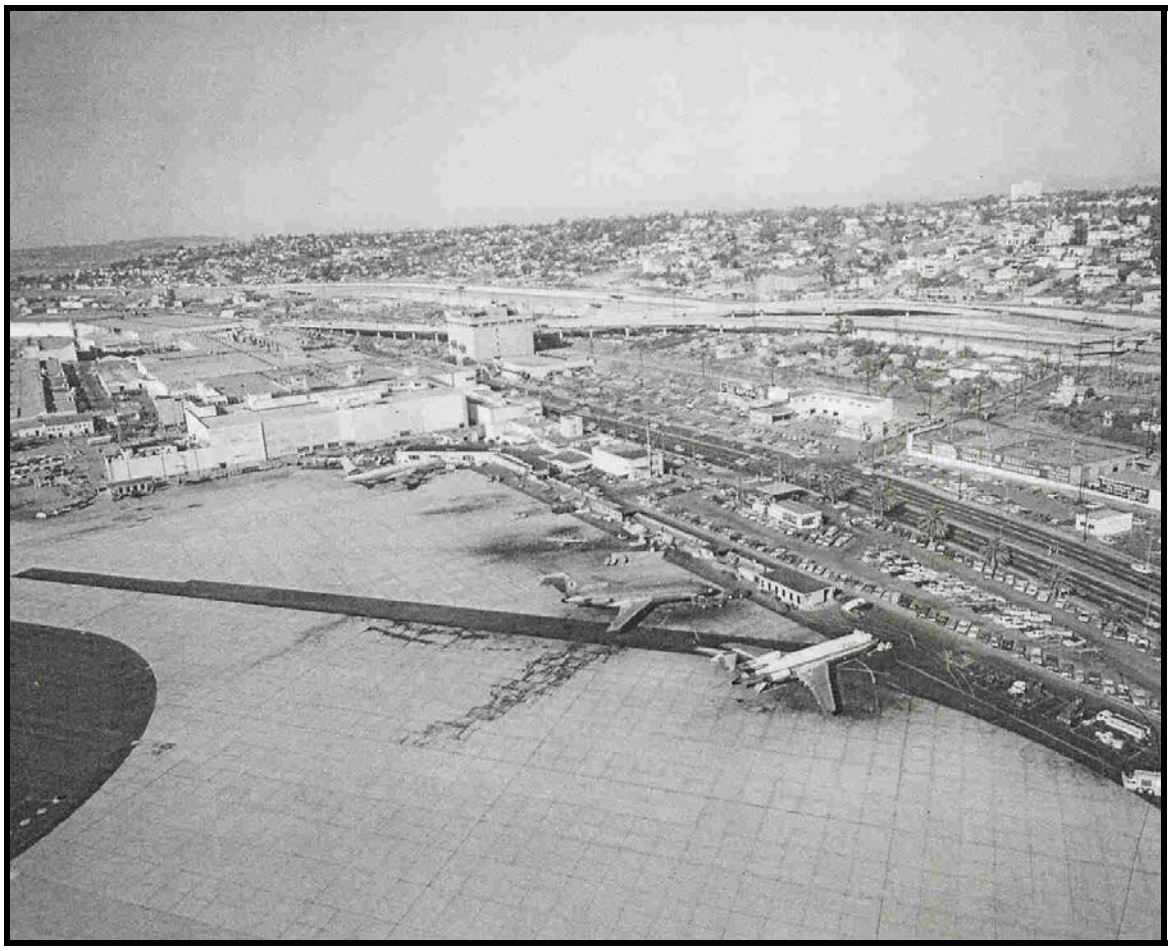

Figure 34: By 1966, when this photograph was taken, jet airliners had replaced large propeller driven passenger aircraft (San Diego Historical Society).

Figure 35: Autos loading and unloading passengers in front of the crowded Lindbergh Field Air Terminal in 1965 (San Diego Historical Society).

Figure 36: The holiday rush fills the Air Terminal at Lindbergh in December 1966 (San Diego Historical Society).

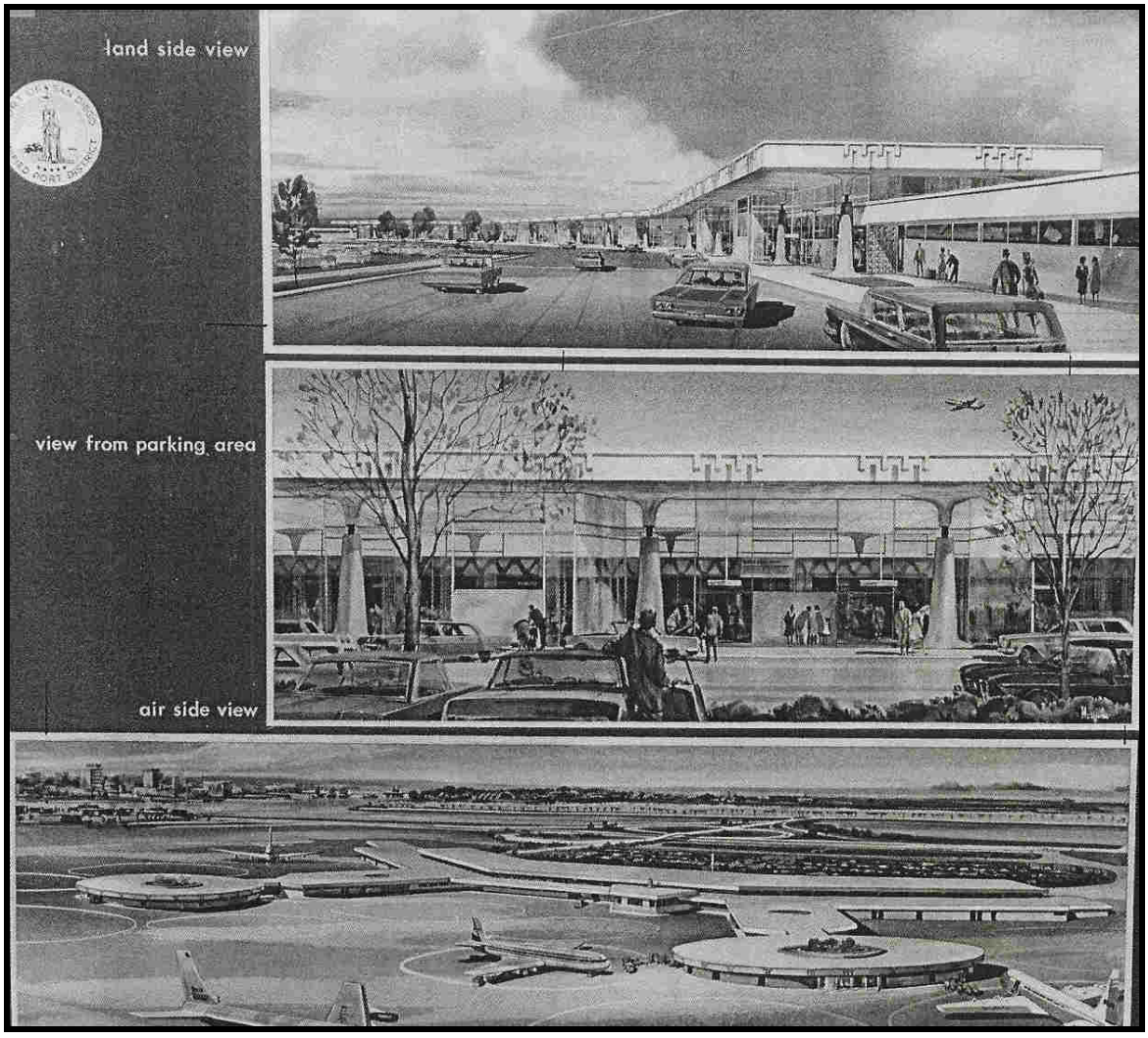

Figure 37: Architects drawings of the new Air Terminal Building completed along Harbor Drive in 1967.

Figure 38: The PSA Headquarters Building completed along Harbor Drive in 1967. It is now (2005) used as the Commuter Terminal (San Diego Historical Society).

Figure 39: Demolition of portions of the Old Air Terminal in 1967, revealed the original buildings roofline and the old Airtech hangar on the right side of the photograph (San Diego Historical Society).

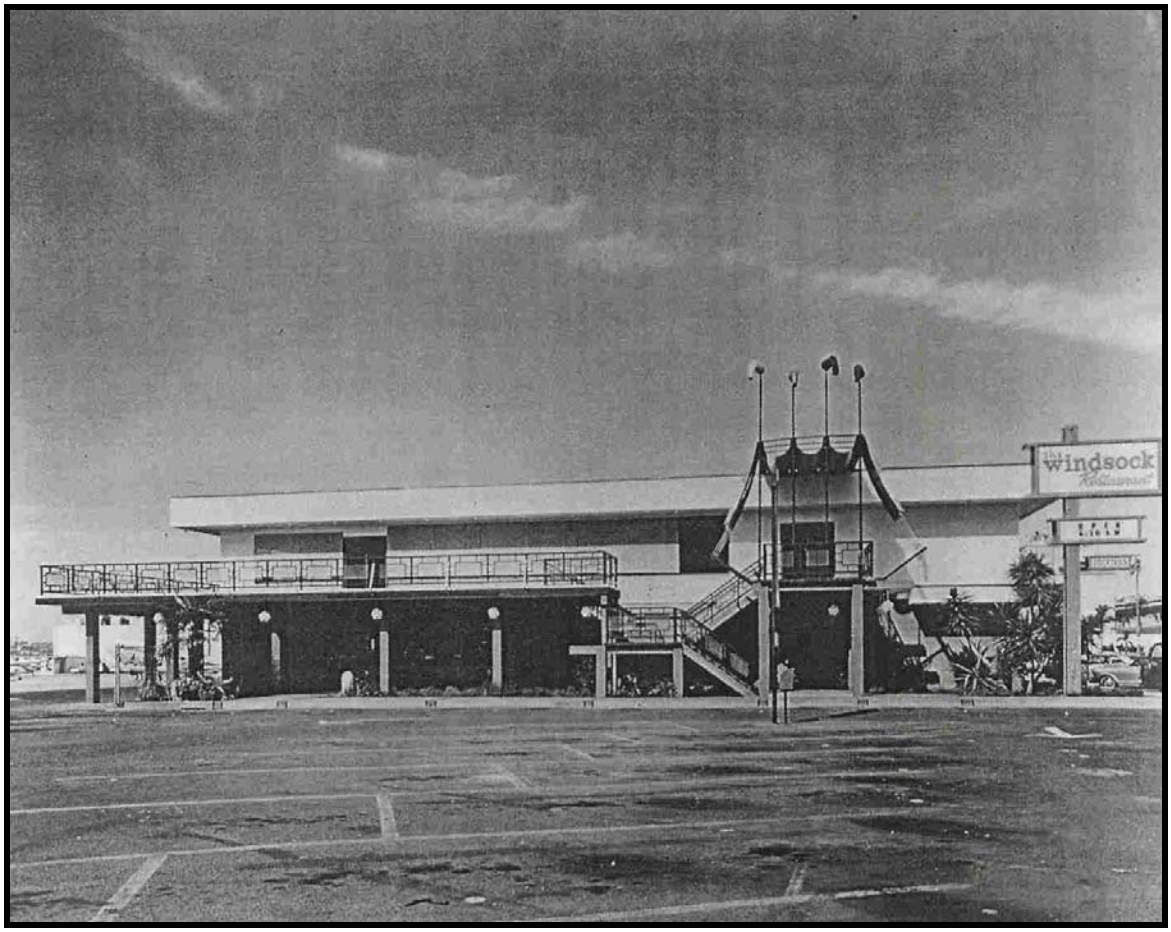

Figure 40: The old Terminal Building remodeled as the Jimsair Windsock Restaurant circa 1968 (San Diego Historical Society).

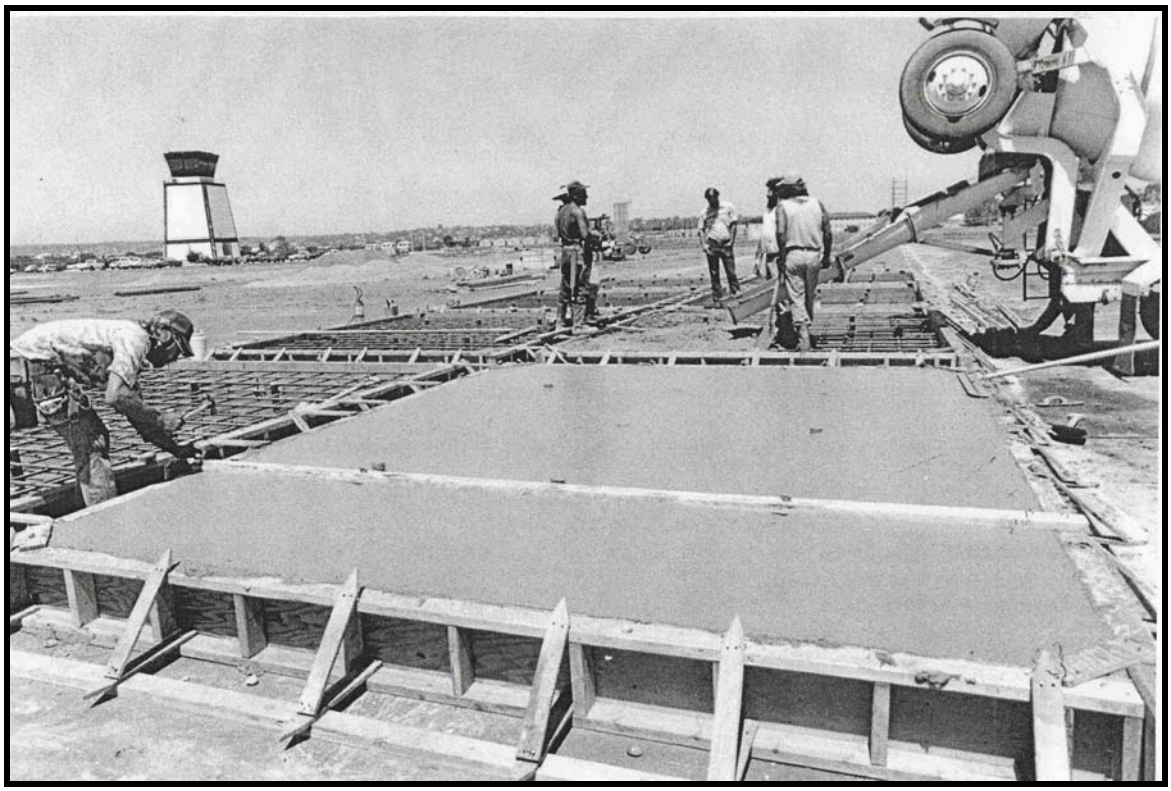

Figure 41: Pouring concrete for the new holding apron in 1980 (San Diego Historical Society).

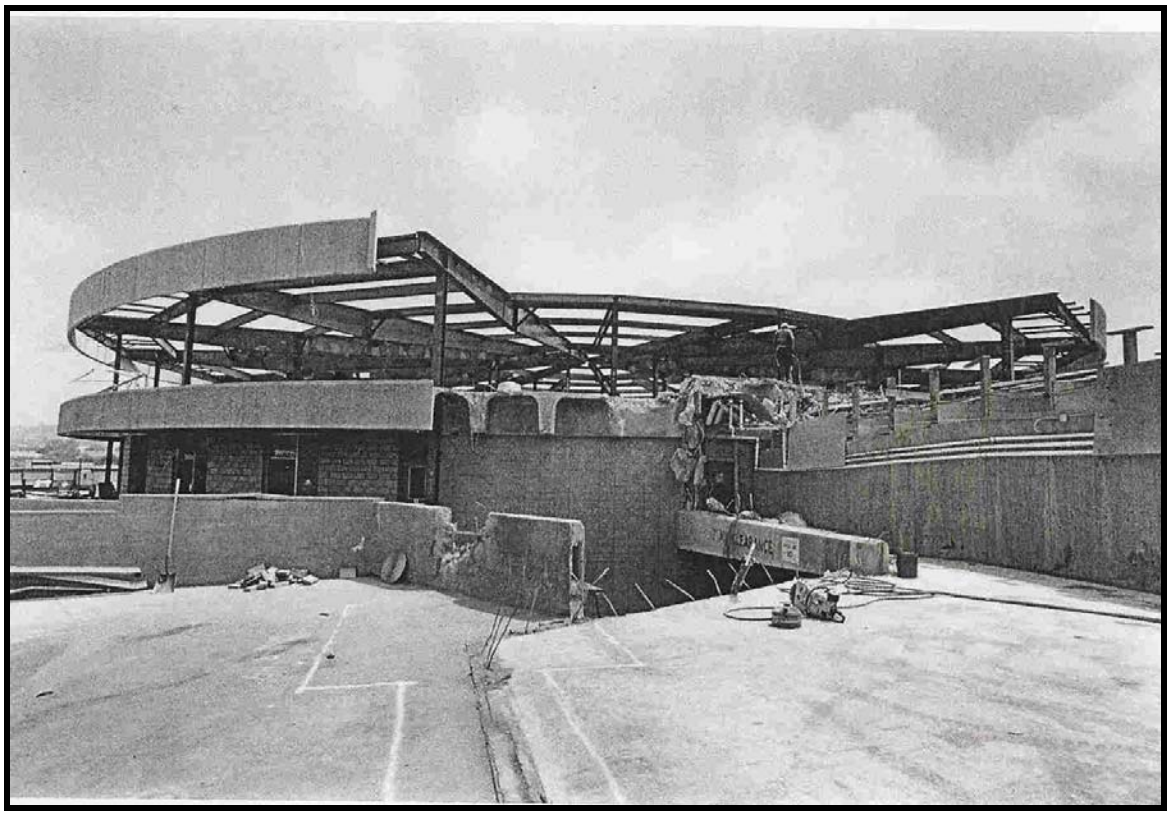

Figure 42: Adding a second story to the 1967 Terminal building in 1982 (San Diego Historical Society).

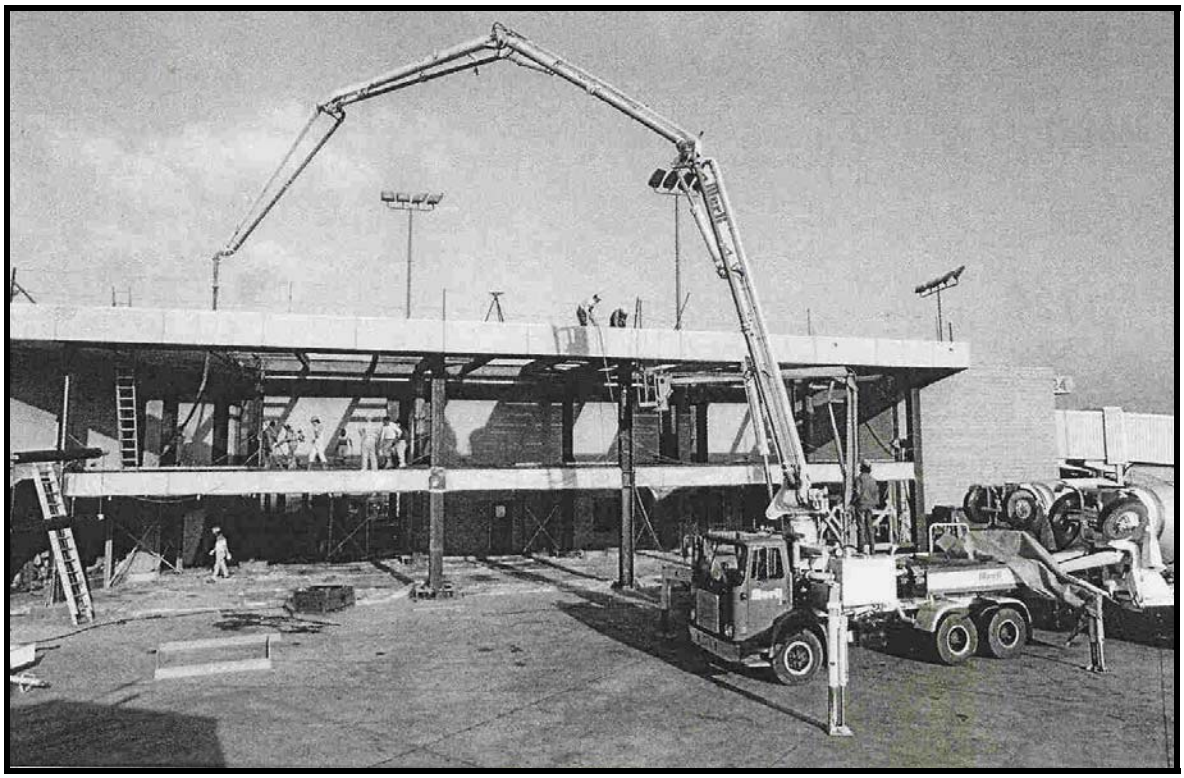

Figure 43: The West Terminal additions under construction in 1987 (San Diego Historical Society).

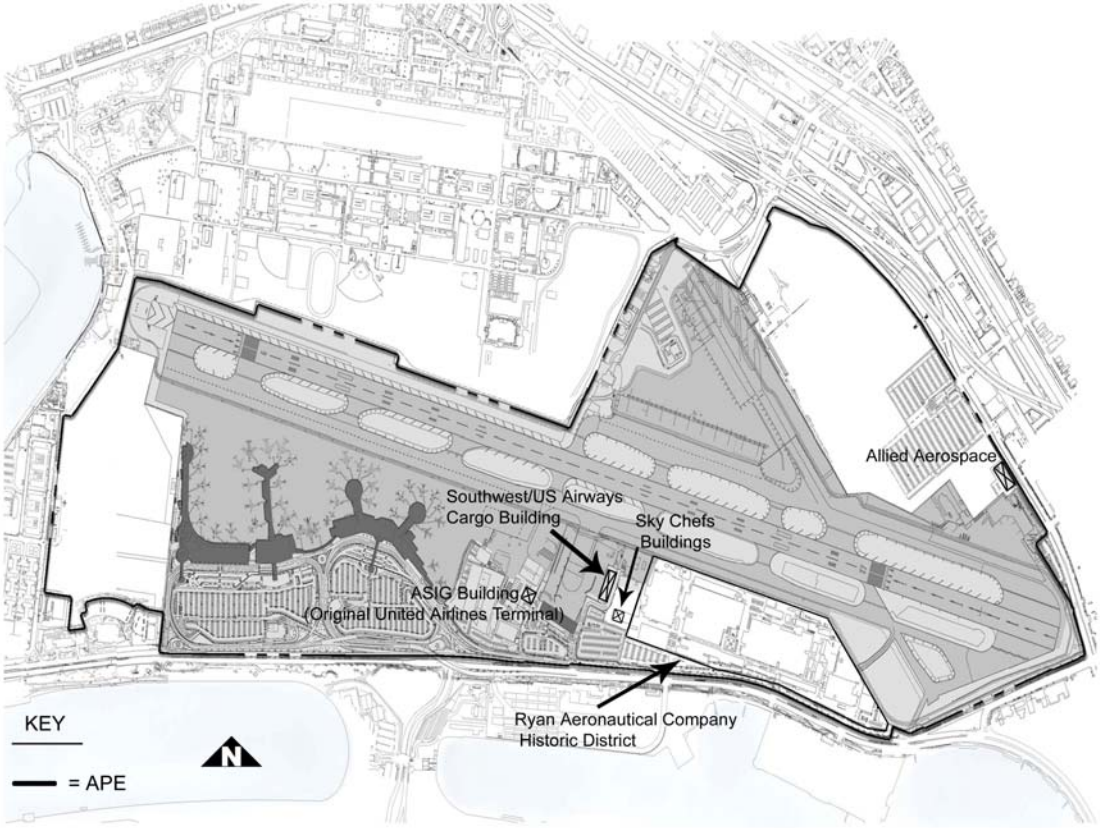

Figure 44: Locations of Buildings Evaluated

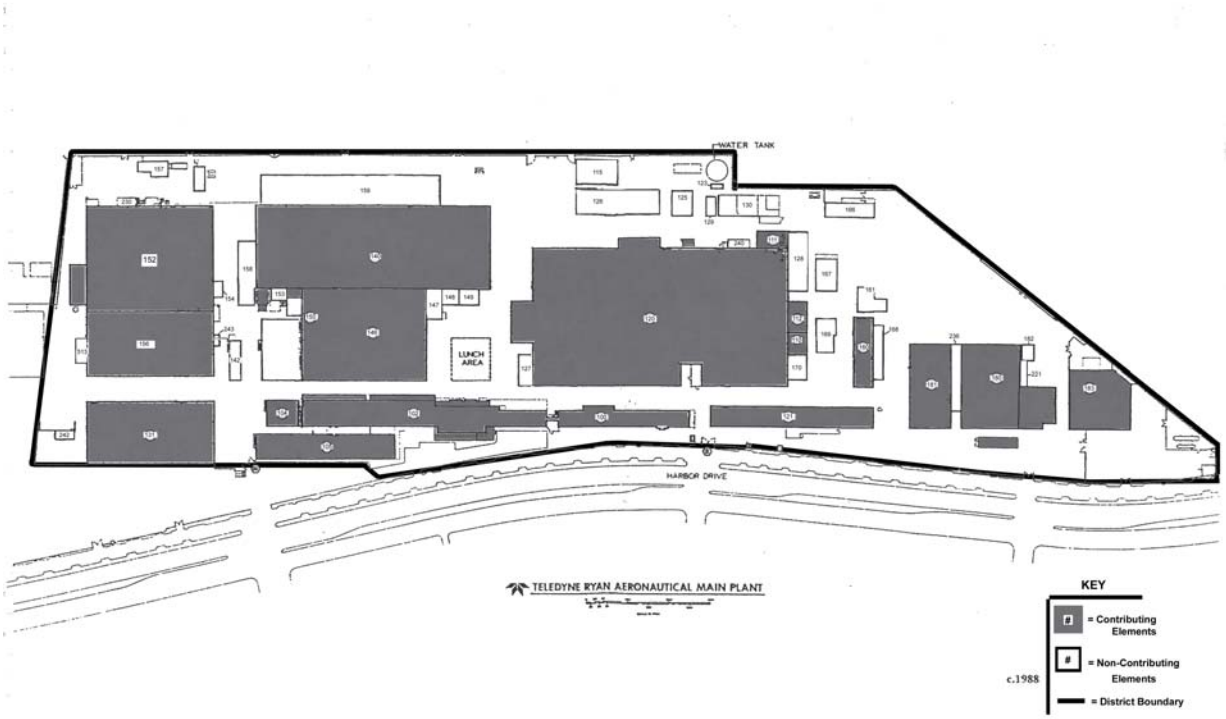

Figure 45: Ryan Aeronautical Company Historic District

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90

APPENDIX 1

FORMS

UNITED HANGAR/TERMINAL
BUILDING, STRUCTURE, OBJECT RECORD

RYAN AERONAUTICAL COMPANY HISTORIC DISTRICT
RECORD

State of California — The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION **HRI #**

PRIMARY RECORD

Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

 *__Resource Name or #:__ United Airlines 1931 Hangar and Terminal

P1. Other Identifier: ASIG Building
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Point Loma. **Date:** 1996 **T** 16 South; **R** 3 West; on unsectioned Pueblo Lands of the City of San Diego.

c. Address: 2340 A-D Sillwater Road. City: San Diego. Zip: 92133
d. UTM: Zone: 11s 482588 mE/ 362143 mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: 10 ft. AMSL.
d. UTM: Zone: 11s; 481962 mE/ 3621467 mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: 13 ft ASML
Along the western edge of Lindbergh Field south of the Air Freight Building and north of the Commuter Terminal.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This two story in height aircraft hangar measures approximately 75 feet square. Its steel frame is supported by a poured concrete slab foundation. The low, broad, pyramidal shaped roof is supported by steel trusses and covered with asphalt roofing material. Squared, stucco covered, modest Art-Deco style pillars frame the building at each corner. The east side consists of a glass curtain wall made of multiple rectangular panes of glass in a large steel frame. The north wall consists of sliding hangar doors constructed in the same manner. A row of identically framed windows runs across the upper portion of the south wall. The west wall is stuccoed. Multiple single entry doors and rectangular steel framed windows are located at ground level along this side.

***P3b. Resource Attributes:** (List attributes and codes) HP 8: Industrial Building
***P4. Resources Present:** ☒Building ☐Structure☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

SEE CONTINUATION SHEETS

P5b. Description of Photo: (View, date, accession #)

See continuation sheets

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both

1931

***P7. Owner and Address:**
San Diego Regional Airport Authority, P.O. Box 82776, San Diego, CA 92138

***P8. Recorded by:** (Name, affiliation, and address)

Stephen Van Wormer
Walter Enterprises
238 Second Avenue, Chula Vista, CA, 91910

***P9. Date Recorded:** December 2005

***P10. Survey Type:** (Describe)

Intensive Survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")

Van Wormer, Stephen R. and Mary Robbins–Wade, 2006. Historic Architectural Survey: San Diego Airport Master Plan Update. Affinis, El Cajon, CA

***Attachments:** ☐NONE ☒Location Map ☐Sketch Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

DPR 523A (1/95) ***Required information**

BUILDING, STRUCTURE, AND OBJECT RECORD

B1. Historic Name: United Airlines 1931 Hangar and Terminal

B2. Common Name: ASIG Building

B3. Original Use: Airline terminal and hangar B4. Present Use: Aircraft maintenance hangar

***B5. Architectural Style:** Industrial – commercial aircraft hangar – modest Art Deco pillars at corners.

***B6. Construction History:** (Construction date, alterations, and date of alterations)

Originally constructed along Pacific Highway at the southeast corner of the airfield in May 1931, this hangar was the second building built at Lindbergh Field. According to San Diego Regional Airport Authority records, it was moved to its present location around 1957.

***B7. Moved?** ☐No ☒Yes ☐Unknown **Date:** 1957 **Original Location:** Along Pacific Highway at the southeast corner of Lindbergh Field.

***B8. Related Features:** None

B9a. Architect: Undetermined b. Builder: Undetermined

***B10. Significance: Theme:** Development of the commercial airline industry. **Area:** Lindbergh Field and along the West Coast.

Period of Significance: 1931 – 1940 **Property Type:** Applicable **Criteria:** Eligible for listing by the San Diego Historic Sites Board

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The ASIG building is the original United Airlines terminal. Pacific Air Transport - who changed their name to United shortly thereafter - originally constructed this building along Pacific Highway at the southeast corner of the airfield in May 1931. It was the second building constructed at Lindbergh Field. The building is significant under National Register Criterion C. Its design reflects early aircraft hangar and terminal construction typical of the late 1920s and early 1930s. The building shows very little modification from its original design and retains excellent integrity of design, workmanship, and materials, which still convey a strong feeling and association for the early airport development at Lindbergh Field and the early pioneering development of airline industry. The building is also significant under National Register Criterion A, due to the fact that it was the second building constructed at the airport and was used by United Airlines as its terminal when San Diego was United's hub during the early years of passenger aviation. As such it has strong associations with the development of the airline industry at Lindbergh Field and along the west coast. United Airlines was instrumental in the growth of passenger aviation on the west coast.

Although it has been moved from its original location, the building meets National Register Criteria Consideration B. This allows moved properties that are significant primarily for their architectural value, or as a surviving property most importantly associated with historic persons or events, to be considered eligible for the National Register, even though they are no longer located where they stood during their period of significance (National Park Service 1990: 29; 1993:16). The original United Terminal meets this consideration in that the building retains its original architectural design and integrity and is the only surviving building from the earliest period of development at Lindbergh Field between 1928 and 1933. In addition, the building would qualify for listing as an important resource by the City of San Diego's Historic Resources Board and is eligible for listing on the California Register of Historical Resources.

B11. Additional Resource Attributes: (List attributes and codes) HP 8: Industrial Building

***B12. References:**

Harbor Department
1935 Lindbergh Field Municipal Airport, San Diego California, "Air Capitol of the West." Informational pamphlet prepared and distributed by Harbor Department, City of San Diego. Lindbergh Field Vertical Files, San Diego Aerospace Museum, and San Diego Historical Society, San Diego, CA.

Leiser, Edward
2000 San Diego Flying Days. Copies of manuscripts on file at the San Diego Historical Society and San Diego Aerospace Museum, San Diego, CA.

B13. Remarks:

This building is worthy of preservation as part of an aerospace museum.

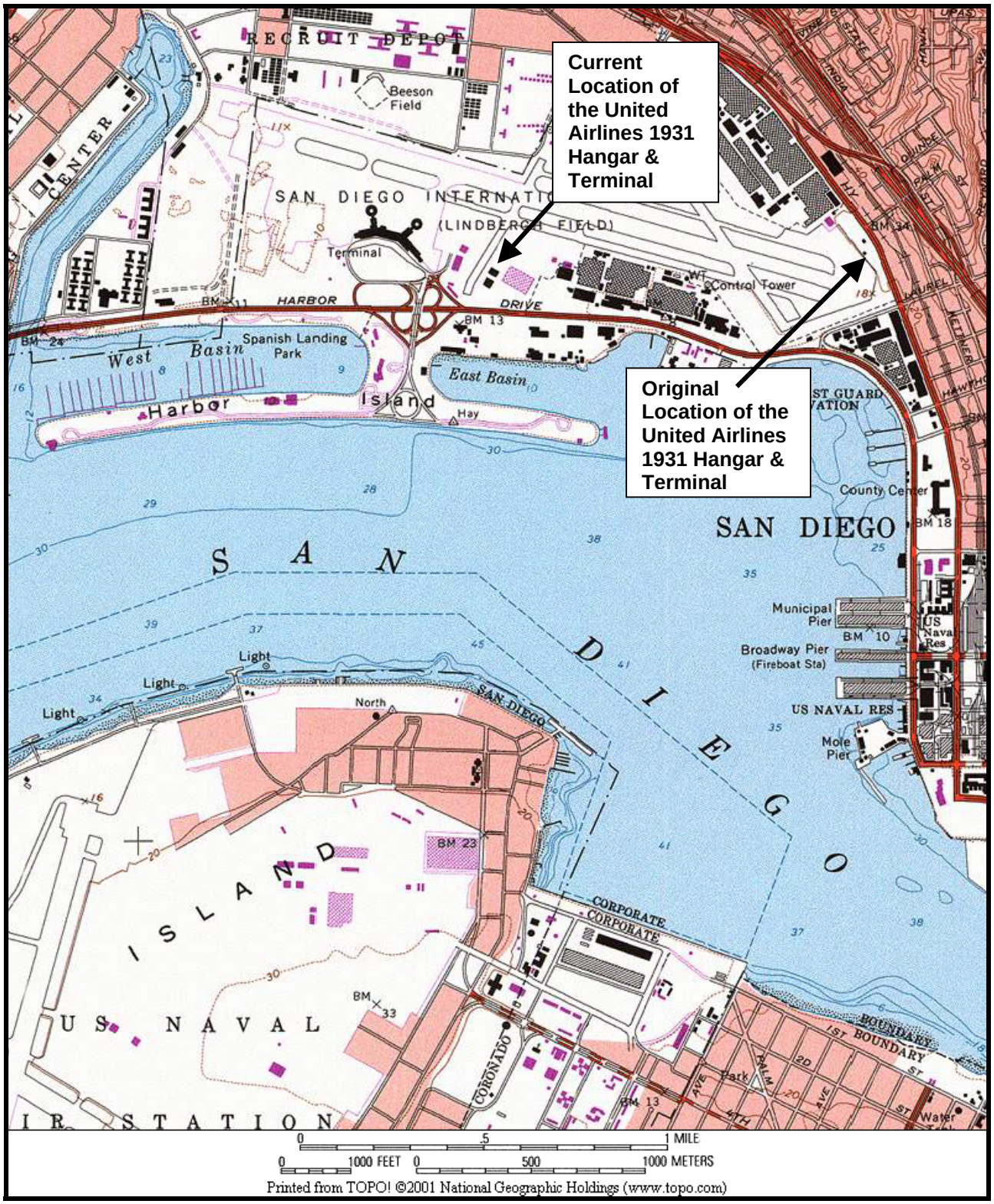
***B14. Evaluator:** Stephen Van Wormer, Walter Enterprises Affinis, 238 Second Avenue, Chula Vista, CA 91910. For Affinis, 847 Jamacha Road, El Cajon, Ca. 92019

***Date of Evaluation:** Date: December 2005

This space reserved for official comments.)

(Sketch Map with north arrow required.)

See Location Map


Current Location of the United Airlines 1931 Hangar & Terminal
Original Location of the United Airlines 1931 Hangar & Terminal
RECRUIT DEPOT
Beeson Field
SAN DIEGO INTERNATIONAL
(LINDBERGH FIELD)
Terminal
Control Tower
HARBOR DRIVE
Spanish Landing Park
West Basin
East Basin
Harbor Island
Hay
SAN DIEGO
BAY
Municipal Pier
Broadway Pier (Fireboat Sta)
US NAVAL RES
Mole Pier
County Center
North
SAN DIEGO
Light
Light
Light
BM 23
CORPORATE
CORPORATE
ISLAND
U S N A V A L
I R S T A T I O N
CORONADO
BOUNDARY
1ST BOUNDARY
Park
Water
0 .5 1 MILE
0 1000 FEET 0 500 1000 METERS
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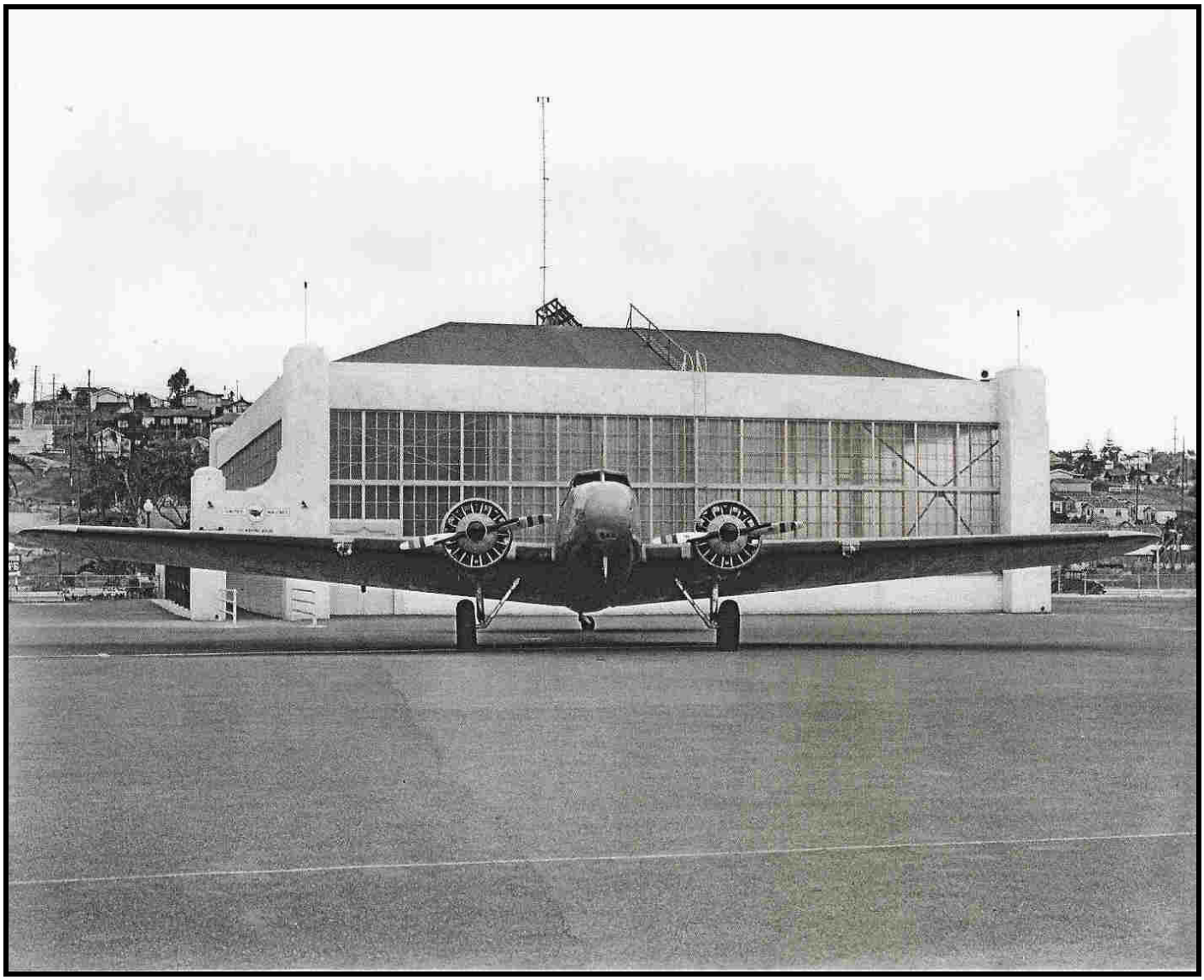

A Boeing twin-engine passenger plane in front of the United Airlines Hangar circa 1931 – 1932 (San Diego Historical Society). This photograph shows the building at its original location.

The Airtech and Pacific Air Transport - United Airlines hangars circa 1931-1932 (San Diego Aerospace Museum). Airtech was the first building constructed at Lindbergh Field and the United Airlines hangar was the second.

Current (2005) view of the front (north) side of the 1931 United Airlines Hangar, showing the sliding glass curtain wall hangar doors.

View of the east and north (front) sides of the 1931 United Airlines Hangar, looking southwest. Note how little the stuccoed exterior, glass curtain walls, corner pillars, and roofline have changed from their appearance in the 1931 photographs of the building that precede these photos.

Current (2005) view of the west façade of the 1931 United Airlines Hangar and Terminal, looking southeast.

State of California — The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION **HRI #**
PRIMARY RECORD **Trinomial**
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

 *__Resource Name or #:__ Ryan Aeronautical Company Historic District

P1. Other Identifier: Teledyne - Ryan Complex
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Point Loma. **Date:** 1996 **T** 16 South; **R** 3 West; unsectioned Pueblo Lands
c. Address: 2701 North Harbor Drive. City: San Diego. Zip: 92133
d. UTM: Zone: 11s 482588 mE/ 362143 mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: 10 ft. AMSL.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Ryan Aeronautical Company Historic District is eligible for nomination to the National and California Registers of Historic Places at both the local and national levels. The district consists of those buildings and structures associated with aviation pioneer T. Claude Ryan and his aircraft and aerospace manufacturing businesses. The period of significance is from 1939, when the plant opened, until it was sold to Teledyne Inc. in 1969. It was during this 30 year span that the site was directly associated with aviation pioneer T. Claude Ryan and his management of the company, as well as Ryan Aeronautical's significant contributions to national defense production during the Second World War and important developments in aerospace research and development during the 1950s and 1960s.

The district is eligible under Criterion A for its association with the development of the aircraft industry in San Diego at Lindbergh Field, for its association with the contribution of aircraft manufacturers at Lindbergh Field to World War II defense production, and for its association with the company's significant contributions to Cold War research and development projects as well as defense manufacturing. The Ryan Aeronautical Company Historic District is eligible under Criterion B for its association with aviation pioneer T. Claude Ryan. The district is also eligible under Criterion C for its representation of a distinctive type of industrial architecture associated with the 1930s and World War II. Taken together, the buildings and structures that make up the contributing elements of the district illustrate the design fabrication concepts common to Southern California aircraft manufacturing from the 1930s through World War II and into the 1950s; a period when the industry played a dominant role in the economy of the region. The district retains good to excellent integrity of setting, place, design, materials, workmanship, feeling and association.

This largely World War II era aircraft manufacturing plant historic district consists of 18 contributing elements that are listed below. They are described in detail on the accompanying District Form.

CONTRIBUTING ELEMENTS

Building No.	Function
100	Ryan Aeronautical Administration Building
102	Ryan Aeronautical Contracts and Pricing Office
104	Ryan Aeronautical Engineering Building
105	Ryan Aeronautical Materials & Processing Laboratory & Engineering Building
110/112(122)	Ryan Aeronautical Drop Hammer Structure / Planishing Shed
111	Ryan Aeronautical Welding Shop
120	Ryan Aeronautical Main Factory Building
121	Ryan Aeronautical Receiving Warehouse
131	Ryan Aeronautical Factory Building
140	Ryan Aeronautical Final Assembly Building
146	Ryan Aeronautical Engineering & Manufacturing Building
152	Ryan Aeronautical Jet Engine Drone Assembly Building
156	Ryan Aeronautical Warehouse
160	Ryan Aeronautical Foundry and Plaster Shop
180	Ryan Aeronautical Experimental/Receiving & Assembly Building
181	Ryan Aeronautical Airplane Storage Building
183	Ryan Aeronautical Tool Storage Building

In addition, two contributing elements within the district, Buildings 180 and 181, have an additional layer of significance. In addition to being important contributing elements to the Ryan Aeronautical Company Historic District, these hangars represent the first three buildings constructed by Ryan Aeronautical when the company was located adjacent to the original terminal on Pacific Highway from 1932 to 1939. They were moved to there present location in the early 1940s. Although no longer at their original location, these buildings represent the first aircraft manufacturing plant at Lindbergh Field. These buildings qualify under Criteria A and B for their association with T. Claude Ryan and his participation in the early development of Lindbergh Field. They also qualify for significance under Criterion C for their representation of shops typically used during the earlier phases of aircraft manufacturing, when it was still a craft industry and had not yet developed into the large-scale mass production required by the Second World War, which necessitated much larger buildings.

***P3b. Resource Attributes:** (List attributes and codes)
***P4. Resources Present:** ☒Building ☒Structure☐Object ☐Site ☒District ☒Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

SEE CONTINUATION SHEETS

P5b. Description of Photo: (View, date, accession #)

See continuation sheets

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both

1939 - 1966

***P7. Owner and Address:**
San Diego Regional Airport Authority, P.O. Box 82776, San Diego, CA 92138

***P8. Recorded by:** (Name, affiliation, and address)

Stephen Van Wormer
Walter Enterprises
238 Second Avenue, Chula Vista, CA, 91910

***P9. Date Recorded:**
January 2006

***P10. Survey Type:** (Describe)

Intensive Survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")

Van Wormer, Stephen R. and Mary Robbins–Wade. Historic Architectural Survey: San Diego Airport Master Plan Update. Affinis, El Cajon, CA. 2006

***Attachments:** ☐NONE ☒Location Map ☐Sketch Map ☒Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☒ Other (List): Historic District Map

DPR 523A (1/95) ***Required information**

State of California — The Resources Agency	Primary #
DEPARTMENT OF PARKS AND RECREATION	HRI #
DISTRICT RECORD	Trinomial

Page 3 of 99 *NRHP Status Code_____

*Resource Name or # **(Assigned by recorder)** Ryan Aeronautical Company Historic District

D1. Historic Name: Ryan Aeronautical Company

D2. Common Name: Former Teledyne-Ryan Aeronautical Complex

*D3. Detailed Description **(Discuss overall coherence of the district, its setting, visual characteristics, and minor features. List all elements of district.):**

The buildings and structures of the Ryan Aircraft Plant Historic District are described below. These descriptions were based on field observations and additional information taken from a 2001 study of the complex by Moomjian and Tinsley.

SETTING AND LAYOUT

The Ryan Aeronautical Historic District is located on the southeastern portion of Lindbergh Field at 2701 North Harbor Drive in the City of San Diego. It is sandwiched between North Harbor Drive and the airport's main runway. The area includes approximately 45 acres (Figures 1 & 2). The vast majority of the complex is located in what is currently called the Furture Planning Area of Lindbergh Field. This is also known as the Teledyne-Ryan Complex. One contributing element, Building 132, is located at the extreme western edge of the district, is situated within the portion of Lindbergh Field currently designated the Main Airport Area. The area surrounding the complex consists of modern airport facilities. With the exception of Building 132, this development has not directly impacted the Ryan Aircraft Plant Complex. The majority of the district remains within fenced boundaries as an isolated self contained unit cut off from the surrounding area and as a a result, has retained a good degree of integrity of setting, in spite of changes that have occurred outside the complex since the end of the period of significance in 1969.

The District consists of large aircraft manufacturing facilities and administration buildings. The administration buildings are clustered along the southern edge of the complex and face Harbor Drive. They are long, narrow buildings oriented lengthwise in an east – west direction and form the main visible facade of the aircraft plant as seen from North Harbor Drive. The large manufacturing buildings are located to the north, east and west of the adminstration buildings. They tend to be set on a lengthwise east –west orientation. Four buildings located in the extreme eastern protion of the complex are exceptions and are set with the long axis running north to south.

CONTRIBUTING ELEMENTS

The following buildings and structures have been chosen as contributing elements to the Ryan Aeronautical Company Historic District because, of all the resources on the 43-acre complex, they architecturally embody the distinctive design characteristics of aircraft manufacturing plants in southern California during the period of significance. They are important as representations of

the Ryan Aeronautical Company manufacturing plant during the time when numerous advances in aviation technology were made, and are directly associated with T. Claude Ryan's important contributions in aviation during that time, and his role in the establishment of the aircraft industry in San Diego. The buildings also represent the remarkable accomplishments of the aircraft industry at Lindbergh Field and the important contribution to defense production these aircraft manufacturing plants made during the Second World War. In addition to being contributing elements to the historic district, Buildings 180 and 181 are significant as the original Ryan Aeronautical Company hangars, built when the company was located on Pacific Highway between 1932 and 1939.

Administration Building (#100)

The Administration Building (#100) was the second structure constructed at the Ryan Aeronautical Company. It was completed in 1940 and appears on a 1940 Sanborn Fire Insurance Map. Historic photographs show the building under construction and newly completed. When originally built it was about half of its present size. An addition to the west side was finished in 1942. During the Second World War, the building was camouflaged to guard against enemy attack (Moomjian and Tinsley 2001). Building 100 combines with Buildings 102 and 105, located directly to the west, to form the main façade of the Ryan Aeronautical Complex seen from North Pacific Highway. All three share the same style of Art Deco horizontal banding trim along the roofline and rows of windows.

The two-story Art Deco style Administration Building is rectangular in shape. It measures approximately 30 by 315 feet and is built of wood frame construction covered with stucco. The building has a flat roof. Fenestration consists of two rows (one on the upper and one on the lower level) of 1/1 double hung sash windows set in pairs along the front and east and west ends. The same style of windows is arranged in various groupings on the back (north) side.

Many of the original wood framed windows have been replaced with steel-framed windows of the same style set in original openings. Distinctive Arte Deco decoration in the form of multiple horizontal bands along the roofline with complimentary bands above and below each row of windows accents the front (south) façade. Art Deco decorations consisting of successive rectangular moldings projecting from the main façade also frame the main entrance at the east end of the south façade side. Overall, the building is in good condition and retains integrity of setting, place, design, materials, workmanship, feeling and association (Figures 3 and 4).

Contracts and Pricing Office (#102)

The Contracts and Pricing Office Building (#102) was originally constructed in 1944. An historic photograph shows the building under construction and a 1956 Sanborn Fire Insurance Map indicates it was used as offices at that time. The east section was constructed first and the west section was erected shortly thereafter. The entire building had been completed prior to 1945 (Moomjian and Tinsley 2001).

This two story, irregular rectangular shaped building is set on a concrete slab floor and foundation. It measures approximately 75 by 570 feet. The framed construction has a stucco-covered exterior. Fenestration consists of two rows (one on the upper and one on the lower level) of 1/1 double hung sash windows set in pairs along the front and east and west ends. The same style of windows is arranged in various groupings on the back (north) side. Many of the original wood framed windows have been replaced with steel-framed windows of the same style

set in original openings. Distinctive Art Deco decoration in the form of multiple horizontal bands along the roofline with complimentary bands above and below each row of windows accent the front (south) façade and create a visually continuing association with Building 100 located directly to the east. A decorative concrete block screen encloses a covered cafeteria dining area centered on this side of the building. Double steel-framed entry doors are located at the west end of the south façade on the ground floor. Various sets of single, double, and multiple entry doors placed at various other locations along all sides also provide access. The building is in good condition and retains integrity of setting, place, design, materials, workmanship, feeling and association (Figures 5 and 6).

Engineering Building (#104)

The Engineering Building (#104) was constructed in 1943. According to the *San Diego Union* the facility contained a cafeteria where hot meals for employees were served (Moomjian and Tinsley 2001).

The two story rectangular building is built of stud wall construction with a stucco exterior. It measures approximately 75 by 80 feet. It has a flat roof. Fenestration consists of rows of rectangular steel-framed multi-paned windows along the top story. They are irregularly placed along the bottom floor. Access is via double entry doors on the west façade and a single entry door on the upper level of the west façade reached by a steel stairway. The building is in good condition and retains integrity of setting, place, design, materials, workmanship, feeling and association (Figure 7).

Materials & Processing Laboratory & Engineering (#105)

The Materials and Processing Laboratory and Engineering Building (#105) was constructed in 1957. According to the *San Diego Union* of January 10, 1957, construction had begun on a new $500,000 engineering and laboratories building to house expanded research and development facilities and engineering offices. The two story, 340-foot long structure would contain complex laboratory equipment and instruments for use in chemical, metallurgical, instrumentation, environmental, physical, hydraulic, and autopilot testing. An engineering machine shop was to be included. A unique feature of the building was automatically-controlled sun louvers on the southern exposure facing Harbor Drive (Moomjian and Tinsley 2001).

This two story, flat roofed, rectangular building is supported by a concrete slab foundation and built with wood framed stud wall construction. It measures approximately 75 by 330 feet. The exterior is covered with stucco. Two parallel rows of steel-framed sliding windows on the front of the building have replaced original awning windows.
The replacement windows have been installed in original openings. Rows of original steel-framed awning windows are located on the back of the building. Parallel bands of Art Deco style trim along the roofline and window rows accent the front (south) façade establishing a visual connection with Buildings 102 and 100 located directly to the east. Double entry doors centered on the upper and lower levels of the east and west facades provide access. Overall, the building is in good condition and retains integrity of setting, place, design, materials, workmanship, feeling and association (Figure 8).

Drop Hammer Structure / Planishing Shed (#110/122)

This rectangular aircraft factory building is two stories in height with an open interior. It measures approximately 30 by 110 feet and is built against the east side of Building 120. The west wall of Building #110/122 is the former eastern exterior wall of Building 120. This building is constructed on a concrete slab. Five by 7 inch "I" beam posts are placed approximately 20 feet apart around the perimeter of the building are bolted directly to the slab. These support a steel wall frame covered with corrugated sheet metal. The roof is supported by steel arched trusses placed on the "I" beam posts running along the east and west sides. They hold 4 by 24 inch roof joists covered with corrugated sheet metal. Rows of multi-pane rectangular windows are located along the south and east facades. Hanging doors and a set of large double doors on the east façade provide access. The building can also be entered through a large rectangular opening on the west wall, which provides access to Building 120 (Figure 9).

Ryan Aeronautical Welding Shop (#111)

This small, single story, rectangular, shop is built on the design of much larger aircraft factory buildings such as # 120, and features a peaked "saw tooth" profile roof. The building measures approximately 30 by 60 feet and is supported by a poured concrete slab and perimeter foundation. Five-inch square steel "I" beam posts are placed 12 feet apart around the perimeter of the building and down the center along the long axis. These support the steel roof trusses that feature single rows of steel-framed continuous "monitor" windows along the north side of each saw tooth peak. The building is covered with corrugated sheet metal siding. A single row of multi-pane steel-framed windows runs along the east, west, and north sides. The building was constructed against the north wall of Building 120 (Figure 10).

Main Factory Building (#120)

The first building constructed at the Ryan Aeronautical Company site was the Main Factory Building (Building # 120). The building was built in 1939 and is shown in a 1940 Sanborn Fire Insurance Map. Historic photographs show the building under construction and recently completed. When originally constructed, the building measured approximately 200 by 300 feet and served as the plant's production center. During the 1940s and 50s it was used as a machine shop for sheet metal construction and processing, as well as plating and welding for the production of aircraft exhaust manifolds and metal caskets. The building was also used to store airplane parts and provided accommodations for factory superintendents, supervisors, inspectors, plant engineers and various technical departments. Additions were made to the building in January 1941 along the north and west elevations. This increased its overall size to 325 by 600 feet (Moomjian and Tinsley 2001).

The two-story, open interior, rectangular shaped, Main Factory Building sits on a concrete slab foundation and floor. It measures approximately 330 by 660 feet. Walls are supported by 7 by 11 inch steel "I" beam posts 12 feet apart mounted directly onto the concrete slab floor. These hold a 2 by 4 inch steel beam frame covered with corrugated sheet metal. Fenestration consists of two rows of multi pained steel-framed windows around the perimeter of the building. The building features a steel-framed a multi peaked "saw tooth" style roof set on steel columns. Single rows of steel-framed continuous "monitor" windows are placed on the north side of each saw tooth peak to admit light. A variety of large and small hanging doors and double and single entry doors around all sides of the building provide access. Overall, the building is in good condition and

retains integrity of setting, place, design, materials, workmanship, feeling and association (Figures 11-15).

Receiving Warehouse (#121)

The exact date of construction of the Receiving Warehouse could not be determined. The building is identified as the Receiving Warehouse on the 1940 Sanborn Fire Insurance Map. This indicates that it was built sometime between April 1939, when the Ryan Aeronautical Company first leased the site, and publication of the fire insurance map in 1940. It is also shown as a receiving warehouse on the 1956 Sanborn Map (Moomjian and Tinsley 2001).

This two story, open interior, rectangular building sits on a concrete slab floor and perimeter foundation. It measures approximately 65 by 380 feet (Figures 16-17). The footing supports a 2 by 8 inch wood stud framed wall with 6 by 12 inch wood beam posts adding additional reinforcement. These posts are alternately placed at 12 and 8-foot intervals. The exterior of the building is covered with 1 by 6 inch sheathing covered with stucco.

The wooden beam posts support 50-foot wide arched wooden roof trusses that hold 2 by 12 inch roof joists covered with 1 by 6 inch wooden sheathing. The roof exterior is of rolled asphalt material. An overhead crane mounted on the walls below the roof trusses runs the full length of the building. The east 80 feet of the building has been added too after initial construction. This section is supported by steel "I" beam posts and the exterior is covered with plywood and stucco. The building has no windows. Large rectangular doorways are centered on the east façade and at the west end of the north side of the building. They support steel roll-up doors. Overall, the building is in good condition and retains integrity of setting, place, design, materials, workmanship, feeling and association.

Ryan Aircraft Factory Building (#131)

This building was constructed some time between 1956 and 1966. The date is based on the fact that it does not appear on a 1956 Sanborn Map of the Ryan Aeronautical complex but is shown on the 1967 USGS Point Loma Quadrangle topographic map that it is based on 1966 aerial photographs. This rectangular, two story in height, open interior, aircraft factory building is built on a concrete slab with a raised concrete perimeter foundation. It measures approximately 150 by 300 feet (Figure 18). The perimeter footing supports wood 2 by 4 inch stud wood framed walls covered with stucco on the exterior. The wall framing is not covered on the inside. Five by 8 inch wooden beam posts placed approximately 12 feet apart along the interior of the wall add additional reinforcement. These beam posts also support arched steel roof trusses. Each truss is approximately 50 feet wide and they are placed in sets of three to span the 150 foot width of the building. The interior trusses are supported by two rows of 5 by 5 inch steel "I" beam posts mounted directly onto the concrete slab floor. The steel trusses hold 4 by 12-inch wooden roof joists covered with a plywood roof. The top of the roof is covered with rolled asphalt roofing material. Access to the building is through large hanging doors on the east, west, and north sides. Rows of large steel-framed multi-paned rectangular windows were placed around the perimeter of the building just below the roofline. Most of these have been removed. Except for the removal of the windows, the building is in an overall good condition and retains integrity of setting, place, design, materials, workmanship, feeling and association.

Final Assembly Building (# 140)

The Final Assembly Building (#140) was built in 1943 by R.E. Hazard and Sons. Historic photographs show the building under construction. A 1956 Sanborn Fire Insurance Map indicates that at that time the United States Government occupied the building (Moomjian and Tinsley 2001).

This rectangular, three stories in height with an open interior, aircraft factory building is built on a poured concrete slab with a raised perimeter concrete foundation. It measures approximately 200 by 560 feet (Figures 19-20). The exterior walls are constructed of wooden 2 by 12 inch stud framing. Exterior 1 by 6 inch board sheathing is nailed to the framing at 45 degrees to the axis of the upright studs and covered on the outside with stucco.

Large 12 by 24 inch concrete posts and 12 by 16 inch wooden beam posts along the north and south walls add additional reinforcement. The concrete and wooden posts are alternated on 12-foot intervals. These posts support massive heavy wooden roof trusses that span the width of the building. A row of 11-inch square steel "I" beam posts down the middle of the building support the center of the roof trusses. The trusses hold 2 by 12 inch roof joist covered with 1 by 6 inch board sheathing placed at a 45-degree angle to the axis of the roof joists. A framework of steel "I" beams mounted below the trusses supports overhead cranes. Wooden catwalks accessed by a wooden ladder at the southwest corner of the building run at the base of the roof trusses along the south side of the building and at the base and top of each truss.

Two sets of rail guided large wooden hanging doors are centered on the east end of the building. Smaller hanging doors located at the east and west ends also provide access, as well as various single entry doors along the north and south sides. There are no windows in the building. Overall, the Final Assembly Building (#140) is in good condition and retains integrity of setting, place, design, materials, workmanship, feeling and association.

Engineering and Manufacturing Building (#146, 146a)

The Engineering and Manufacturing Building (#146) was erected in 1945 along the south side of Building 140 (the Final Assembly Building). The 1956 Sanborn Map identified this unit as Building 140A and 140B the "Sub-Assembly building." The building underwent modifications in 1956, when the Engineering Annex (#146A) was constructed along the southwest side of Building 146 by the Trepte Construction Company (Moomjian and Tinsley 2001).

The two-story, rectangular shaped building sits on a concrete slab floor and foundation. It measures approximately 230 by 300 feet (Figures 21-23). The interior of the north half is open while the south half has been divided into shops and offices. The former exterior southern façade of Building 140 forms the north wall of this building. The east west and south walls are constructed of steel "I" beam posts placed approximately 12 feet apart. They support a steel frame covered with corrugated sheet metal. A steel grid supported by the perimeter rows of "I" beam posts and a row of large concrete buttresses on the south wall of Building 140 hold rectangular roof trusses placed 12 feet apart across the east to west length of the building. Three interior rows of steel "I" beams in the north half of the building add additional roof support. Wooden ladders and catwalks access the roof trusses and grids. The roof is constructed of 2 by 6 board sheathing with asphalt roofing material on the exterior.

Large hanging doors provide access to the open interior in the north half of the building. Smaller double and single entry doors provide access to individual offices and shops in the building's south half. On the east and south facades of the building double steel-framed entry doors surrounded with decorative tile provide formal office style entrances.
Fenestration consists of two rows of multi-paned steel-framed windows, one on the first and one on the second floor levels, along the east, west, and south facades. Overall, the building is in good condition and retains integrity of setting, place, design, materials, workmanship, feeling and association.

Jet Engine / Drone Assembly Building (#152)

The Jet Engine / Drone Assembly Building (#152) was constructed in 1952, and is depicted on the 1956 Sanborn Fire Insurance Map as an assembly building for jet engines. This rectangular, two story in height, open interior, aircraft factory building is built on a concrete slab with a raised concrete perimeter foundation. It measures approximately 257 by 300 feet (Figures 24-25). The perimeter footing supports wooden 2 by 4 inch stud framed walls covered with stucco on the exterior. The wall framing on the inside of the building is covered with plywood. Five by 8 inch wooden beam posts placed approximately 12 feet apart along the interior of the wall add additional reinforcement. These beam posts also support arched steel roof trusses. Each truss is approximately 50 feet wide and they are placed in sets of five to span the 250-foot width of the building. The interior trusses are supported by two rows of 5 by 5 inch steel "I" beam posts mounted directly onto the concrete slab floor. The steel trusses hold 4 by 12-inch wooden roof joists covered with a 2 by 8 inch sheathing boards placed at a 45 degree angel to the roof joists axis. The top of the roof is covered with rolled asphalt roofing material.
Access to the building is through large hanging doors on the east and west ends and several single and double entry doors located along all sides of the building. Rows of large steel-framed multi-paned rectangular windows were placed around the perimeter of the building just below the roofline. Most of these have been removed. Overall, the building is in good condition and retains integrity of setting, place, design, materials, workmanship, feeling and association.

Warehouse (#156), identified as Building #154 on 1956 Sanborn Map)

This warehouse was built against the south side of Building 152. The rectangular, two story in height, open interior, aircraft factory building is built on a concrete slab with a raised concrete perimeter foundation. It measures approximately 150 by 300 feet (Figures 26-27). Along the east, west and south sides, the perimeter footing supports wooden 2 by 4 inch stud framed walls covered with stucco on the exterior. The north wall is formed by the stucco covered former southern exterior façade of Building 152. The interior of the east, west and south walls are covered in plywood. Five by 8 inch wooden beam posts placed approximately 12 feet apart along the inside of these walls add additional reinforcement. These beam posts also support arched steel roof trusses. A row of 5 by 5 inch steel "I " beam posts placed 12 feet apart along the north wall (original exterior south façade of Building 152) support the roof trusses along the north side of the building. Each truss is approximately 50 feet wide and they are placed in sets of three to span the 150-foot width of the building. The interior trusses are supported by two rows of 5 by 5 inch steel "I" beam posts mounted directly onto the concrete slab floor. The steel trusses hold 4 by 12-inch wooden roof joists covered with 2 by 8 inch sheathing boards placed at a 45 degree angle to the roof joists axis. The top of the roof is covered with rolled asphalt roofing material.

Access to the building is through large hanging doors on the east and west ends. Rows of large steel-framed multi-paned rectangular windows were placed around the perimeter of the building

just below the roofline. Most of these have been removed. Overall, the building is in good condition and retains integrity of setting, place, design, materials, workmanship, feeling and association.

Foundry and Plaster Shop (#160)

Building #160 is shown on the 1940 Sanborn Fire Insurance Map and identified as a foundry and plaster shop (Moomjian and Tinsley 2001). This one story, rectangular building is set on a concrete floor and footing. It measures approximately 40 by 165 feet (Figure 28). Walls are constructed of 2 by 6 inch stud framing. Five by 7 inch steel "I" beam post placed approximately 12 feet apart along the east and west sides hold arched steel roof trusses that support 2 by 12 inch roof joists covered with 1 by 6 inch sheathing. The top of the roof is covered in rolled asphalt roofing material. Rows of multi-paned steel-framed windows are located along the east and west walls. Large sliding doors are located on the west façade. Overall the building is in good condition and retains integrity of setting, place, design, materials, workmanship, feeling and association.

Tool Storage Building (#183)

The Tool Storage Building was constructed in 1951. The building is depicted on the 1956 Sanborn Fire Insurance Map and identified as a storage facility (Moomjian and Tinsley 2001).

This square, one and a half story, rectangular building sits on a concrete slab floor and footing (Figure 39). It measures approximately 150 feet along each side. Walls are constructed of 2 by 4 inch stud framing covered on the exterior with 1 by 8 sheathing and stucco. Steel "I" beam posts approximately 20 feet apart along the inside of the walls add additional reinforcement and also hold arched steel roof trusses that span the full width of the building. These hold 2 by 12 inch roof joists covered with 1 by 8 inch sheathing with composite roofing material on the exterior. Two large rectangular entrances on the north façade support steel roll-up doors. Single entry doors are at various locations on the sides of the building. There are no windows. Overall, the building is in good condition and retains integrity of setting, place, design, materials, workmanship, feeling and association.

Ryan Aeronautical's Original Lindbergh Field Hangars – Buildings #180 and 181

Buildings 180 and 181 represent the three original factory buildings that constituted Ryan Aeronautical's first plant on Pacific Highway. They can clearly be seen in photographs taken at that location circa 1938 – 1939 (Figures 29-33). The three buildings stood in a row to the west of the terminal building and can be identified in these photographs by the distinctive shield cast in stucco at the crest of the roofline on each building. These unique motifs can still be seen on the buildings today. Building 180 consists of the original Ryan hangar and a smaller hangar that stood directly to the south of it at the Pacific Highway location. Building 181 remains unaltered. The buildings were moved to their present location around 1944 (Moomjian and Tinsley 2001). They all appear at their present location in a 1956 Sanborn Fire Insurance map of the Ryan Aircraft Plant. These buildings are not only significant as contributing elements to the Ryan Aeronautical Company Historic District but also qualify for the California and National Registers on their own for a period of significance from 1932, when Ryan established his first manufacturing plant at Lindbergh Field to 1939, when he moved to the Harbor Drive location.

Experimental/Receiving & Assembly Building – Ryan's Original and Second Pacific Highway Hangars (#180)

The Experimental/Receiving & Assembly Building (#180) is a combination of two of Claude Ryan's original hangars built on Pacific Highway on the west side of the original Lindbergh Field Administration Building. The main west wing of the building is the original hangar built by Ryan on Pacific Highway. The National Iron Works erected it in 1932. It was later enlarged to twice its original size. The smaller east wing of Building 180 is a small hangar that originally stood to the south of the 1932 hangar at the Pacific Highway location. It first appears in photographs dating circa 1935 (see Figures 31-33). Around 1944 these structures were moved to their present location and combined to form Building 180 (Moomjian and Tinsley 2001).

As noted above, this one and a half story, open interior, rectangular shaped aircraft hangar building, consists of two wings. The west wing is the main hangar building. The second smaller wing is built against the east side of the main hangar. The main west wing is built on a concrete slab. It measures approximately 140 by 200 feet (Figures 34-36). The east and south walls are constructed of poured concrete to a height of about 6 feet. These provide base supports for multi-paned steel famed "curtain wall" windows that extend to just below the roofline. The area along the east wall common with the smaller east wing addition is of wooden 2 by 4 inch stud frame construction covered with stucco. The west wall of the main hangar is also constructed with wood framing and covered with stucco. A row of steel-framed multi-paned windows is located on the north half of this wall just below the roof line. The building's north wall consists of steel-framed rolling hangar doors forming a multi-paned glass curtain wall along the entire north side.

The roof is supported by steel "I" beam posts approximately 20 inches square, placed 20 feet apart along the east and west walls. They hold arched steel roof trusses that span the full 140 feet of the building's width. These support 4 by 12 inch roof joists covered with 2 by 6 inch boards. The roof exterior is covered with rolled asphalt roofing material. Mission Revival style parapets form the visual roofline on the north and south ends. A shield motif is cast in stucco on the crest of the southern parapet. This same design is also found at the crest of parapets on the north facades of the east wing of this building as well as on Building 181, located directly to the west.

In addition to the large glass hangar doors on the north façade, the building can be accessed by a number of other doorways and passages. A large rectangular opening at the west end of the south wall is equipped with a steel roll-up door. A variety of single entry doors that lead to offices and bathrooms located in an addition to the west side of the building are located along the west wall. A large rectangular opening on the east wall leads into the smaller east wing addition.

The east wing is also built on a poured concrete slab. It measures approximately 65 by 100 feet (Figure 37). Five by 7 inch "I" beam posts placed approximately 12 feet apart around the perimeter of the building support a wooden frame of 2 by 4 inch studs covered with wooden siding. The exterior is covered with stucco. The steel posts along the east and west sides support arched steel roof trusses with 2 by 12 inch roof joists covered with wooden sheathing and asphalt roofing material on the exterior side. As on the main hangar, Mission Revival style parapets form the visual roofline on the north and south ends and a shield motif cast in stucco is located on the crest of the northern parapet. Sliding hangar doors on the north façade feature an upper row of rectangular steel-framed windows. A more modern steel roll-up door has been inserted into the alignment of original hangar doors. A solid single entry door is located on the

south end of the east side. Two rows of steel-framed, multi-paned, rectangular windows were located along the south façade. The lower row is now missing. A modern steel-framed shed has been attached to the east side of this wing of the hangar. It is not part of the original building moved to this location in 1939. Overall, the building is in good condition and retains integrity of setting, place, design, materials, workmanship, feeling and association. Except for the removal of some of the original siding along the east end, the modern shed attached to the east side has not impacted the original structure of the building.

Airplane Storage Building (#181); Ryan's Third Hangar on Pacific Highway.

The Airplane Storage Building (#181) was the third hangar constructed at the Ryan Aeronautical Plant on Pacific Highway. It appears in photographs taken circa 1937 – 1938. It was moved to its present location in the early 1940s. The 1956 Sanborn Map shows a shipping and storage addition along its northwestern elevation, which has since been removed (Moomjian and Tinsley 2001).

A concrete slab supports this one and a half story, open interior, rectangular shaped building is supported by a concrete slab. It measures approximately 100 by 200 feet (Figure 38). Five by 7 inch steel "I" beam posts mounted approximately 12 feet apart directly onto to the slab floor support a 2 by 4 inch steel channel beam framing covered with corrugated sheet metal. Rows of multi-paned steel-framed windows are located below the roofline line on the south side and south two-thirds of the east and west walls.

The "I" beam posts also support arched steel roof trusses that span the full 100 feet width of the building. These trusses hold 3 by 12 inch steel "I" beam roof joists covered with 1 by 6 inch wooden board sheathing. The exterior of the roof is covered with rolled asphalt roofing material. As with Building 180, Mission Revival style parapets form the visual roofline on the north and south ends and a shield motif cast in stucco is located on the crest of the northern parapet. Two large rectangular openings on the north façade are equipped with hanging steel roll-up doors. Smaller hanging doors and single entry doors are located at various locations around the building's exterior. Double entry doors are centered on the south façade. Overall the building is in good condition and retains integrity of setting, place, design, materials, workmanship, feeling and association.

Character Defining Landscape Elements

In addition to the individual buildings and structures the Ryan Aeronautical Factory Complex contains a number of character defining landscape elements that give the historic district a strong sense of place. These include:

1. Except for the south facades of Buildings 100, 102, and 105, a tall chain link fence encloses the entire factory complex

2. The narrow area outside the fenced compound between Harbor Drive and the administration buildings has a manicured lawn with shrubbery and trees bordering a paved parking lot.

3. Asphalt and concrete paving cover the entire area within the fenced compound.

4. The paved areas tend to be narrower passages between the large factory buildings along the southern edge and in the western portion of the complex. The only vegetation is a series of trees planted at the lunch area in the center of the complex, at the main entrance at the east end of Building 100, and along the south side of Building 120 (Figures 40-43).

5. In the eastern potion of the complex, east of Buildings 120 and 121, the majority of the buildings are less than 2 stories in height and the paved areas are more open with sets of buildings located around the edges (Figures 44-45).

NON-CONTRIBUTING ELEMENTS

The district includes 30 non-contributing elements. These consist of small ancillary buildings and structures that do not exhibit the arched or saw toothed steel and wood truss roofs, large open interior spaces, continuous rows of steel-framed multi-paned windows, or large hanging doors that constitute the major character defining design elements of the main factory buildings, nor do they have the multiple rows of windows, flat roofs, and Art Deco accents of the important office buildings. These are largely smaller nondescript buildings that could have been found in any small shop or manufacturing establishment during the 1930s through the 1950s. The non-contributing elements are listed below. Photographs include Figures 46 through 75. Most are concentrated in the area north and east of Building # 120. Others are small structures attached to larger buildings.

NON-CONTRIBUTING ELEMENTS

Building No.		Function
115		Ryan Aeronautical Ancillary Building
123		Ryan Aeronautical Pump Headquarters associated with Standby Water Tank
125		Ryan Aeronautical Paint & Oil Storage Building
126		Ryan Aeronautical Paint Shop Building
127		Ryan Aeronautical Office & Photo Lab
128		Ryan Aeronautical Ancillary Building
129		Ryan Aeronautical Sandblasting Shed
130		Ryan Aeronautical Ancillary Building
142		Ryan Aeronautical Repair Building
147		Ryan Aeronautical Ancillary Building
148-149		Ryan Aeronautical Ancillary Building
150		Ryan Aeronautical Ancillary Building
153		Ryan Aeronautical Burner Shed
154		Ryan Aeronautical Ancillary Building
157		Ryan Aeronautical - use undetermined
158		Ryan Aeronautical Test Building associated with Final Assembly Building
159		Ryan Aeronautical Storage building
161		Ryan Aeronautical Carpenter Shop

166		Ryan Aeronautical Salvage Headquarters
167		Ryan Aeronautical Acid Storage Building
168		Ryan Aeronautical Warehouse Addition Building
169		Ryan Aeronautical Plaster Pattern Staging Building
170		Ryan Aeronautical Parts/Drop Hammer Structures
182		Ryan Aeronautical Old Record Storage Building
221		Ryan Aeronautical Covered Walkway
230		Ryan Aeronautical - use undetermined
236		Ryan Aeronautical Ancillary Building
240		Ryan Aeronautical Ancillary Building
242		Ryan Aeronautical Storage Shed
513		Ryan Aeronautical associated with Jet Engine/Drone Assembly Building

*D4. Boundary Description **(Describe limits of district and attach map showing boundary and district elements.):**

The district's boundaries are shown as a bold black line on the accompanying location map at the end of this form (Figure 1).

*D5. Boundary Justification:

Within these boundaries are the 17 contributing elements that through their physical design and association illustrate the design fabrication concepts common to Southern California aircraft manufacturing from the 1930s through World War II and into the 1950s, when the industry played a dominant role in the economy of the region.

*D6. Significance:

Themes:

1. The development of the Aircraft Manufacturing Industry in San Diego at Lindbergh Field
2. The contributions of the San Diego Aircraft Industry at Lindbergh Field to World War II defense production.
3. The contribution of Ryan Aircraft Company to Cold War aerospace research and development and defense production.

Area: San Diego

Period of Significance: 1939 – 1969**;** from the plant's establishment in April 1939 to the purchase of the Ryan Aeronautical Company by Teledyne Inc. in 1969.

Applicable Criteria: A, B, and C

(Discuss district's importance in terms of its historical context as defined by theme, period of significance, and geographic scope. Also address the integrity of the district as a whole.)

The Ryan Aeronautical Company Historic District is eligible for nomination to the National and California Registers of historic places at both the local and national levels. The period of significance is from 1939, when the plant opened, until it was sold to Teledyne, Inc. in 1969. It was during this 30 year span that the site was directly associated with T. Claude Ryan and his management of the company, as well as Ryan Aeronautical's significant contributions to national defense production during the Second World War and important developments in aerospace research and development during the 1950s and 1960s. In addition, two contributing elements within the district, Buildings 180 and 181, have an added layer of significance. Not only are they important as contributing elements to the Ryan Aeronautical Company Historic District, these hangars also represent the first three buildings constructed by Ryan Aeronautical when the company was located adjacent to the original terminal on Pacific Highway from 1932 to 1939.

Historic Background

In the late 1920s Lindbergh Field rose out of the muck of San Diego Bay to become the city's municipal airport. By the mid 1930s it had developed into a major center of the nation's aircraft industry, an important destination for several commercial airlines, and had been designated San Diego International Airport. During World War II aircraft manufacturers at the airport played a significant role in defense production. T. Claude Ryan and the Ryan Aeronautical Company plant were key factors in the development of Lindbergh Field as an important aircraft manufacturing location. Ryan was a pioneer in San Diego aviation, and one of the earliest commercial airplane builders in the city. As the first aircraft manufacturer to locate there, and builder of the airport's first terminal building, he was instrumental in the early development of Lindbergh Field. With the establishment of the Ryan Aeronautical Plant on Harbor Drive in 1939, Ryan, along with Rueben H. Fleet of Consolidated Aircraft, made Lindbergh Field a significant hub of aircraft production during the Second World War, and an important location for aerospace research, development, and production during the Cold War.

The following site history was largely taken from a previous historic survey report of the Ryan Aeronautical Company plant completed by Moomjian and Tinsley in 2001. The Ryan aircraft plant was established on this site in 1939 by San Diego aviation pioneer T. Claude Ryan. It was the third time Ryan had moved his business location since its inception in the mid 1920s.

T. (Tubal) Claude Ryan was born in Parsons, Kansas in January 1898. In 1912, the family moved to Orange, California and entered the citrus business. At the age of 19, Claude Ryan became obsessed with the idea of becoming an airplane pilot, and drove from Orange to San Diego, in an attempt to enter flight training courses at Rockwell Field. Due to his young age, he was not accepted. Undaunted, and with financial aid from his father, Ryan enrolled at the American School of Aviation in Los Angeles, where he was an honors student. In September 1919 he began to study mechanical engineering at Oregon State College. During the summer of 1920 he started Army flight training at March Field near Riverside, California. Ryan left the Army in January 1922. By September of that year he had moved to San Diego and established the Ryan Flying Company. Using a World War I surplus Curtis Jenny biplane, he offered sightseeing trips and flight training from a field at the foot of Broadway in San Diego. His fleet soon expanded to include another Jenny and six government surplus Standard biplanes. In the spring of 1923,

the Ryan Flying Company moved to Dutch Flats between present-day Barnett Street and Midway Drive, south of Rosecrans Street.

At Dutch Flats, Ryan continued to offer flight training. Reorganized as Ryan Airlines Inc., in 1924 he began to operate the first year-round scheduled airline service in the United States, flying twice a day between San Diego and Los Angeles. At this time Ryan also entered the aircraft manufacturing business with the aid of partner Franklin Mahoney. Ryan had seen the need for a medium-weight plane for carrying airmail that would have greater speed and carrying capacity than the De Haviland biplanes currently in use for airmail service. He and Mahoney manufactured the Ryan M-1 Monoplane, capable of carrying an 800-pound load and cruising at 115 miles an hour. As a result of design changes, the aircraft later became known as the Ryan M-2, Ryan Brougham, and Mahoney Monoplane. In 1926 the Ryan Monoplane became one of the best-known air mail carriers in the country. It was a modified Ryan Monoplane, *The Spirit of St. Louis,* that Charles Lindbergh used to complete his famous transatlantic flight in 1927. In November 1926, Ryan sold all his interest in the company to Mahoney and established the Ryan Aeronautical Corporation for the sale and manufacture of aircraft engines. A short time later he reentered the aircraft manufacturing market (Campbell 1927).

In 1932, Ryan moved his operations to Lindbergh Field. He built an air terminal and hangar at the northeast corner of the field along Pacific Highway. The terminal building was leased to the City and also used for Ryan Aeronautical Corporation offices and flight training classes. In 1934 the company name was changed from Ryan Aeronautical Corporation to the Ryan Aeronautical Company.

During the 1930s Ryan's company became known for the production of low wing, all metal fuselage aircraft trainers. The Ryan S-T was introduced in the autumn of 1933. This was the first in the series of low wing "primary trainers" for which the company became famous in the 1930s and '40s. In spite of the economic depression, Ryan's company produced hundreds of S-Ts through early 1935. By 1939 the planes were used in Australia, South Africa, Venezuela, Brazil, Bolivia, and Ecuador for civilian and military flying. In 1937 the Ryan S-C was introduced, which was designed to meet the need of private owners for an enclosed cabin plane. Subsequent production of improved low wing primary trainer models included the PT-16, PT-20, PT-20A, PT-21, and PT-22, which were shipped to the United States Army Air Force and United States Navy training bases, as well as the governments of Mexico, Honduras, Guatemala, the Netherlands East Indies and China for military use.

In 1939, business volume at the Ryan Aeronautical Company exceeded $1 million for the first time. Expanded volume required a larger plant, and in April 1939 the company signed a 50-year lease on 10 acres of land at the southeastern edge of Lindbergh Field along Harbor Drive. Ryan Aeronautical began construction of a new $150,000 aircraft factory, offices, and engineering buildings at the new location. By June the first buildings had been completed, and Ryan was moving equipment into the new factory. In 1940, full production was underway at the new plant for military PT trainers.

The Second World War proved to be a boon for the Ryan Aeronautical Company. By late 1942, contracts for PT trainers were completed and the factory turned to other aircraft war production work. Ryan Aeronautical subcontracted to make a large percentage of vital exhaust equipment for heavy bombers, giant transport planes, and super bombers. The company also produced wing panels for the B-24 bomber, gun turrets for PBY Flying Boats, and control surfaces for various aircraft.

A significant accomplishment of Ryan Aeronautical during the Second World War was the development of the Navy's first jet fighter – the Ryan "Fireball," a unique plane that could fly on either a jet engine or with a conventional piston motor. This combination gave the Navy a fighter capable of engaging enemy aircraft at any altitude from sea level to the sub stratosphere. High-speed maneuverability gave the Fireball the shortest turning radius at comparable speeds of any combat aircraft of that time. Although the United States Navy had Ryan-manufactured Fireballs on hand in the Pacific during 1945, none were used in combat due to the Japanese surrender in August of that year.

The Ryan plant was one of several aircraft manufacturers located at Lindbergh Field that made important contributions to the nation's war effort. The production of aircraft manufacturers at Lindbergh during these years was crucial. By the time the United States entered the war, San Diego had already become one of the nation's major aircraft manufacturing centers. Consolidated Aircraft, at the west end of the field along Pacific Highway, was the world's largest integrated aircraft plant. During the peak war production years of 1942 - 43, the Consolidated Plant had 45,000 employees. The company produced the Army B-24 Liberator and Naval Catalina Flying Boats, as well as the larger B-32 bombers and PB2Y Coronado Flying Boats. Consolidated produced over 11,000 multiple engine planes in San Diego during the war (Harbor Commission 1950: 8; *San Diego Union* 9-28-1988). As previously mentioned, Ryan Aeronautical subcontracted to manufacture wing panels for Consolidated's B-24 bomber and gun turrets for their PBY Flying Boats.

The end of the Second World War brought problems for Ryan Aeronautical that the company had never before faced. At peak wartime production the company had 8,500 employees and annual production had exceeded $55 million dollars. Following the war the work force was reduced to 1,200 and annual volume to $8 million. In an attempt to diversify, Ryan entered into a short-term venture to make metal burial caskets.

In 1947, Ryan acquired the design and manufacturing rights for the production of the North American four place, low wing, all metal Navion, a private plane used for business. The first Ryan-built Navion was delivered in October 1947. By May 1951, more than 1,200 had been produced.

With the outbreak of the Korean War, Ryan Aeronautical began to manufacture fuselage sections for the Boeing K-97 aerial tanker used for midair refueling. Also during the Korean conflict the company developed the experimental "Firebee" jet powered target drone, to be used for air-to-air and ground-to-air training. The drone was designed to simulate the performance of jet fighters and provide realistic training. Production of the Firebee commenced in 1952, and Ryan Aeronautical became the leader in the field of pilotless aircraft. The company also produced major airframe and engine components (fuselage sections, gun turrets, external fuel tanks, and control surfaces) for other aircraft manufacturers.

The Korean conflict also allowed Ryan Aeronautical to branch out in the area of electronics for aerospace applications. The first such project was the Ryan "Firebird," the first Air Force air-to-air research missile. Missiles that could be launched from fighter aircraft were under development when Ryan Aeronautical entered the field, but there was a great need for a new electronic seeker, which would make it possible for the missile to find and track its target. Using radar studies, the company developed a guidance system using continuous-wave radar propagation and the Doppler shift. An understanding and application of this concept permitted Ryan to

embark upon a lengthy role in aerospace electronics, which led to the development of a wide variety of aircraft navigation and positioning equipment, including helicopter hovering devices, altimeters, and remote sensors.

At the same time, Ryan Aeronautical was working on target drones and electronics, it was also involved in a wide range of projects involving vertical takeoff and landing (VTOL) aircraft. Beginning in 1947, the United States Navy awarded Ryan a contract to explore the feasibility of reaction controls for jet aircraft. Three years later, a Ryan vertical test rig lifted itself off the ground for the first time, its jet engine and reaction controls handled by remote control. In 1953, the Air Force awarded Ryan a contract to design and build two manned vertical takeoff jet research planes. In 1955, the Ryan X-13 Vertijet was constructed for the Air Force and two years later, completed its first full-cycle flight. At the time this was considered to be a historical flight of great significance. The company also pursued production aeronautical work in the 1950s and served as a subcontractor for other companies to build fuselage sections, jet power packs, and high temperature jet engine parts.

During the 1960s Ryan continued its now well-established target drone and electronic systems production and VTOL research. The company also made strides in such fields as flexible wing vehicles, and solar panels for spacecraft. By this period, Ryan Aeronautical had solidified its position as one of the nation's leading corporations in the field of aviation and spacecraft development. The culminating achievement in this area came with the first soft landing on the moon in 1966: Ryan Electronics built the radar landing system that guided the Surveyor I unmanned spacecraft to the lunar surface. In the public's perception, this was the event that put the United States ahead of the Soviet Union in the Space Race. By 1968, business volume had grown to $430 million.

In 1969 the company was sold for $128 million to Teledyne Inc. of Los Angeles and became known as Teledyne-Ryan Aeronautical Company. T. Claude Ryan, who remained with the company as chairman, was inducted into the Aviation Hall of Fame in December 1974. At the time of his death, in September 1982, he was the last living airplane pioneer who had a company that bore his name.

In 1996, Teledyne Industries merged with Allegheny Ludlum Corporation. At that time, Allegheny was the nation's leading producer of specialty metal, flat rolled products. In 2000 Northrop Grumman Corporation acquired Teledyne - Ryan Aeronautical from Allegheny and relocated the plant to a site in Rancho Bernardo. The former Ryan Aeronautical Company site is currently vacant and leased from the San Diego County Regional Airport Authority by Allegheny Technologies.

Significance Assessment

RYAN AERONAUTICAL COMPANY HISTORIC DISTRICT

Potential historical and architectural significance of buildings and structures was determined by applying criteria of the National Register of Historic Places and California Register of Historical Resources. In order to be eligible for nomination to the National or California Register, a building, structure, or site must be significant within a historic context and meet certain other criteria. According to the National Park Service:

> . . . the significance of a historic property can be judged and explained only when it is evaluated within its historic context. Historic contexts are those patterns, themes, or trends in history by which a specific occurrence, property, or site is understood and it's meaning made clear (National Park Service 1991:7).

The National Park Service has defined three main categories of historic contexts: local, state, and national. A local historic context "represents an aspect of the history of a town, city, county, cultural area, or region, or any portion thereof" (National Park Service 1991:9). A state historic context represents "an aspect of history of the state as a whole" (National Park Service 1991:9). Properties important within a national context represent "an aspect of the history of the United States as a whole" (National Park Service 1991:10).

In order to be eligible for the National Register when evaluated within its historic context, a property must be demonstrated to be significant under one or more of the following criteria (National Park Service 1991:12-21):

A: Is associated with an event, or series of events that have made a significant contribution to the broad pattern of history.

B: Has an unequivocal association with the lives of people significant in the past.

C: 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 may lack individual distinction.

D. Has yielded or may be likely to yield information important in prehistory or history.

An additional requirement for the National Register is the retention of integrity or "the ability of a property to convey its significance." Assessment of integrity includes seven criteria, which are: location, design, setting, materials, workmanship, feeling, and association (National Park Service 1991:45). Requirements for listing on the California Register of Historical Resources are essentially the same as those for the National Register.

The Ryan Aeronautical Company Historic District is eligible for nomination to the National and California Registers at both the local and national levels. The period of significance is from 1939, when the plant opened, until it was sold to Teledyne, Inc. in 1969. It was during this 30 year span that the site was directly associated with T. Claude Ryan and his management of the company, as well as Ryan Aeronautical's significant contributions to national defense production during the Second World War and important developments in aerospace research and development during the 1950s and 1960s.

The district is eligible under Criterion A for its association with the development of the aircraft industry in San Diego at Lindbergh Field, for its association with the contribution of aircraft manufacturers at Lindbergh Field to World War II defense production, and for its association with the company's significant contributions to Cold War research and development projects, as well as defense manufacturing. The Ryan Aeronautical Company Historic District is eligible under Criterion B for its association with aviation pioneer T. Claude Ryan. The district is also eligible under Criterion C for its representation of a distinctive type of industrial architecture associated with the 1930s and World War II. Taken together the buildings and structures that make up the contributing elements of the district illustrate the design fabrication concepts common to Southern

California aircraft manufacturing from the 1930s through World War II and into the 1950s; a period when the industry played a dominant role in the economy of the region. The district retains good to excellent integrity of setting, place, design, materials, workmanship, feeling and association.

Applicable Criterion

Criterion A

The district is eligible under Criterion A at both a local and national level of significance. On a local level, the Ryan plant played an important role in the development of the aircraft industry at Lindbergh Field. It was the second largest aircraft manufacturer at Lindbergh: only Consolidated Aircraft's facilities were larger. On both a local and a national level the district is significant for the role of the Ryan Aeronautical Company in the contribution of the aircraft industry at Lindbergh Field to World War II defense production. Ryan's company was internationally known for their PT trainers, which were used to teach beginning pilots to fly during the war. In addition, the factory played an important role in manufacturing a large percentage of vital exhaust equipment for heavy bombers, giant transport planes, and super bombers. The company also produced wing panels for the B-24 bomber, gun turrets for PBY Flying Boats, and control surfaces for various aircraft. One of the Ryan Aeronautical Company's most significant contributions was the development and manufacture of one of the first jet fighters used by the United States armed forces, the Ryan Fireball.

In the decades following World War II, the Ryan Company also made significant contributions to the Cold War through research and development projects as well as manufacturing. Some of the company's most important R and D work was in the field of aerospace electronics and included air-to-air missile research, aircraft navigation and positioning equipment, altimeters, remote sensors, and jet powered target drones. Ryan electronics built the radar system that guided the Surveyor unmanned spacecraft to its soft landing on the lunar surface. This is the event that publicly put the United States ahead of the Soviet Union in the Cold War Space Race to the moon. Other projects included vertical takeoff and landing aircraft, flexible wing vehicles, and solar panels for spacecraft. Manufacturing during this period consisted of the production of fuselage sections, jet power packs, and high temperature jet engine parts.

Criterion B

The Ryan Aeronautical Company Historic District is eligible under Criterion B for its association with T. Claude Ryan from 1939 when the plant opened until it was sold to Teledyne Inc. in 1969. Ryan was an important pioneer in the history of local, state, and national aviation, whose career spanned from the barnstorming days of the 1920s through the early space age. As the location that served Ryan Aeronautical Company from 1939 until 1969, the site is directly associated with Ryan and his management of the company during the time when it made significant contributions to national defense production during the Second World War and important developments in aerospace research and development during the 1950s and 1960s.

Criterion C

The Ryan Aeronautical Company Historic District is eligible under Criterion C for its representation of a distinctive type of industrial architecture associated with the 1930s and World

War II. The district embodies the distinctive characteristics of factory buildings found at Southern California aircraft manufacturing plants during the 1930s and 1940s. These include large industrial buildings with massive open bays framed by steel beams, wood and steel truss saw tooth and elliptical roofing, metal exteriors, continuous rows of steel sash industrial multi-paned windows, and sliding hangar doors. In addition, the Administration Buildings exhibit an Art Deco design adapted to industrial administrative uses.

The plant's large scale manufacturing design reflects the massive industrial construction program that the nation's civilian manufacturers used to help win the war. In conjunction with the Federal Government, the nation's industrial manufacturers, architects, and structural engineers worked together to provide modern industrial plants to supply the necessary equipment to the Allied war effort. The state of the art architectural designs of industrial plants, such as the one developed under the management of T. Claude Ryan for the Ryan Aeronautical Company, yielded improved efficiency and increased production. These innovative new plants moved airplane manufacturing from the realm of a craft industry into the world of mass-production (Van Wormer 1996). Taken together, the buildings and structures that make up the contributing elements of the district illustrate the design fabrication concepts common to Southern California aircraft manufacturing from the 1930s through the 1950s; a period when the industry played a dominant role in the economy of the region.

Integrity

Integrity is the ability of a property to convey its historic significance. The Ryan Aeronautical Company Historic District was evaluated for the seven aspects of integrity identified for the National Register "location, setting, materials, design, workmanship, feeling, and association" (National Park Service 1991:44). Each of the categories for integrity will be discussed individually:

Location

Location is defined as "the place where the historic property was constructed or the place where the event occurred" (National Park Service 1994:44). The Ryan Aeronautical Company Historic District retains a high degree of integrity of location. All of the buildings and structures are on the same locations where they were constructed or moved to during the period of significance from 1939 to 1969. The Experimental/Receiving and Assembly Building (#180), and the Airplane Storage Building (#181) were originally part of Ryan's original manufacturing facility on Pacific Highway between 1932 and 1939. They were moved to their present locations in 1944 and are considered significant as contributing elements to the Ryan Aeronautical Company Historic District site for their associations with the events that occurred at this location during the period of significance. These two buildings also have additional significance for their association with the Ryan Aeronautical facility on Pacific Highway from 1932 to 1939.

Design

Design is defined as the "combination of elements that create the form, plan, space, structure, and style of a property." It results from conscious decisions made during the original conception and planning of the property (National Park Service 1994:44-45). In spite of minor alterations or modifications that have occurred, all buildings have maintained their overall original forms, plans, spaces, styles and design elements. The most serious impact has been the removal of windows from Buildings 131 and 156. However, in spite of this loss, these buildings still retain all other

important design elements and qualify as contributing elements to the district. Except for these buildings the remaining contributing elements retain a high degree of integrity of design.

Setting

Setting is defined as the: "physical environment of a historic property" (National Park Service 1991:44-45). Sanborn Fire Insurance Maps from 1940 and 1956, as well as historic photographs, indicate that the area, which surrounded the Ryan Aeronautical Company complex from approximately 1939 to 1969, has changed substantially over the years. However, due to the fact that the complex is located along the southern perimeter of Lindbergh Field and has remained as an isolated industrial site along North Harbor Drive during this period, the property still retains a good degree of original setting for integrity purposes (Moomjian and Tinsley 2001).

Materials

Materials are "the physical elements that were combined during a particular period of time in a particular pattern of construction to form a historic property" (National Park Service 1991: 44-45). The Ryan Aeronautical Company Historic district retains original materials in the form of wood, steel, and masonry in the buildings, and asphalt and concrete paving within the complex. Because of this, the district retains excellent integrity of materials.

Workmanship

Workmanship is the "physical evidence of crafts of a particular culture or people" (National Park Service 1991:44-45). Good to excellent integrity of design and materials as discussed above combine to give an excellent integrity of workmanship for the Ryan Aeronautical Company Historic District.

Feeling and Association

Feeling is defined as "a property's expression of the aesthetic or historic sense of a particular period of time." It results from the presence of historic features that together convey the property's historic character. Association is the "direct link between an important historic event and a historic property" (National Park Service 1991:44-45). The retention of integrity of location, design, setting, materials, and workmanship discussed above combine to give the Ryan Aeronautical Company Historic District a strong sense of feeling and association for T. Claude Ryan and the company's contributions to local and national aeronautics between 1939 and 1969. Within this context, the contributing elements of the district combine to convey the historic character of the Ryan Aeronautical Company plant and its representation of the design fabrication concepts common to Southern California aircraft manufacturing from the 1930s through World War II and into the 1950s; a period when the industry played a dominant role in the economy of the region.

RYAN AERONAUTICAL COMPANY'S ORIGINAL PACIFIC HIGHWAY BUILDINGS

Buildings 180 and 181 represent the original three buildings constructed by the Ryan Aeronautical Company at the Pacific Highway location, prior to the establishment of the North Harbor Drive facility in 1939. These buildings are not only significant as contributing elements to the Ryan Aeronautical Company Historic District but also qualify for the California and National Registers of Historic Places on their own for a period of significance from 1932, when Ryan

established his first manufacturing plant at Lindbergh Field, to 1939 when he moved to the Harbor Drive location. The buildings qualify under Criteria A and B for their association with T. Claude Ryan and his participation in the early development of Lindbergh Field. Ryan established the first aircraft manufacturing plant at Lindbergh in 1932. It was in these buildings that his famous P.T. trainers were first designed and manufactured. These hangars also qualify for significance under Criterion C for their representation of shops typically used during the earlier phases of aircraft manufacturing, when it was still a craft industry and had not yet developed into the large-scale mass production required by the Second World War, which necessitated buildings on a much larger scale. Overall, the buildings are in good condition. Although they no longer retain integrity of setting or location for the period when they were located on Pacific Highway, they do still have a good degree of integrity of design, materials, workmanship, feeling and association. In spite of being combined with Building 180, the original structure and design of the small hangar now comprising the east wing of that building can still be easily identified.

Significance Summary Statement

In summary, the Ryan Aeronautical Company Historic District is eligible for nomination to the National Register of Historic Places and California Register of Historical Resources at both the local and national levels. The period of significance is from 1939, when the plant opened, until it was sold to Teledyne, Inc. in 1969. It was during this 30 year span that the site was directly associated with T. Claude Ryan and his management of the company, as well as Ryan Aeronautical's significant contributions to national defense production during the Second World War and important developments in aerospace research and development during the 1950s and 1960s.

The district is eligible under Criterion A for its association with the development of the aircraft industry in San Diego at Lindbergh Field, for its association with the contribution of aircraft manufacturers at Lindbergh Field to World War II defense production, and for its association with the company's significant contributions to Cold War research and development projects as well as defense manufacturing. The Ryan Aeronautical Company Historic District is eligible under Criterion B for its association with aviation pioneer T. Claude Ryan. The district is also eligible under Criterion C for its representation of a distinctive type of industrial architecture associated with the 1930s and World War II.

The district still retains a high degree of integrity of location, design, setting, materials, and workmanship, which combine to give a strong sense of feeling and association with the plant's function during the period of significance. Taken together the buildings and structures that make up the contributing elements of the district illustrate the design fabrication concepts common to Southern California aircraft manufacturing from the 1930s through World War II and into the 1950s; a period when the industry played a dominant role in the economy of the region.

In addition, two contributing elements within the district, Buildings 180 and 181, have an additional layer of significance. In addition to being important contributing elements to the Ryan Aeronautical Company Historic District, these hangars represent the first three buildings constructed by Ryan Aeronautical when the company was located adjacent to the original terminal on Pacific Highway from 1932 to 1939. These buildings qualify under Criteria A and B for their association with T. Claude Ryan and his participation in the early development of Lindbergh Field. They also qualify for significance under Criterion C for their representation of shops typically used during the earlier phases of aircraft manufacturing, when it was still a craft industry and had not yet developed into the large-scale mass production required by the Second

World War, which necessitated buildings on a much larger scale. Overall, the buildings are in good condition. Although they no longer retain integrity of setting or location for the period when they were located on Pacific Highway they do still have a good degree of integrity of design, materials, workmanship, feeling and association. Combined with the other buildings that make up the National Register District, these buildings represent the first aircraft manufacturing plant at Lindbergh Field and its transition from a small craft industry to a large scale wartime and post war aerospace production manufacturing plant.

*D7. References **(Give full citations including the names and addresses of any informants, where possible.):**

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2001 *Historic Survey Report of the Former Teledyne-Ryan Aeronautical Complex, 2701 North Harbor Drive, San Diego, California, 92101*. Prepared by Office of Maria Burke Lia, Attorney at Law, 427 C Street, Suite 416, San Diego, CA 92101. Prepared for Jones Lang La Salle, 2701 North Harbor Drive, Building 100, San Diego, California 92101. Copy on file with the San Diego County Regional Airport Authority.

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1996 HAER Level Documentation of General Dynamics, Convair, Lindbergh Field Plant. In *General Dynamics Facilities Demolition Project Final Environmental Impact Report*. KEA Environmental, San Diego, Prepared for San Diego Unified Port District.

*D8. Evaluator: Stephen Van Wormer Date: January 2006

Affiliation and Address: Walter Enterprises, 238 Second Avenue, Chula Vista, CA 91910

Affinis, 847 Jamacha Road, El Cajon, CA 92019

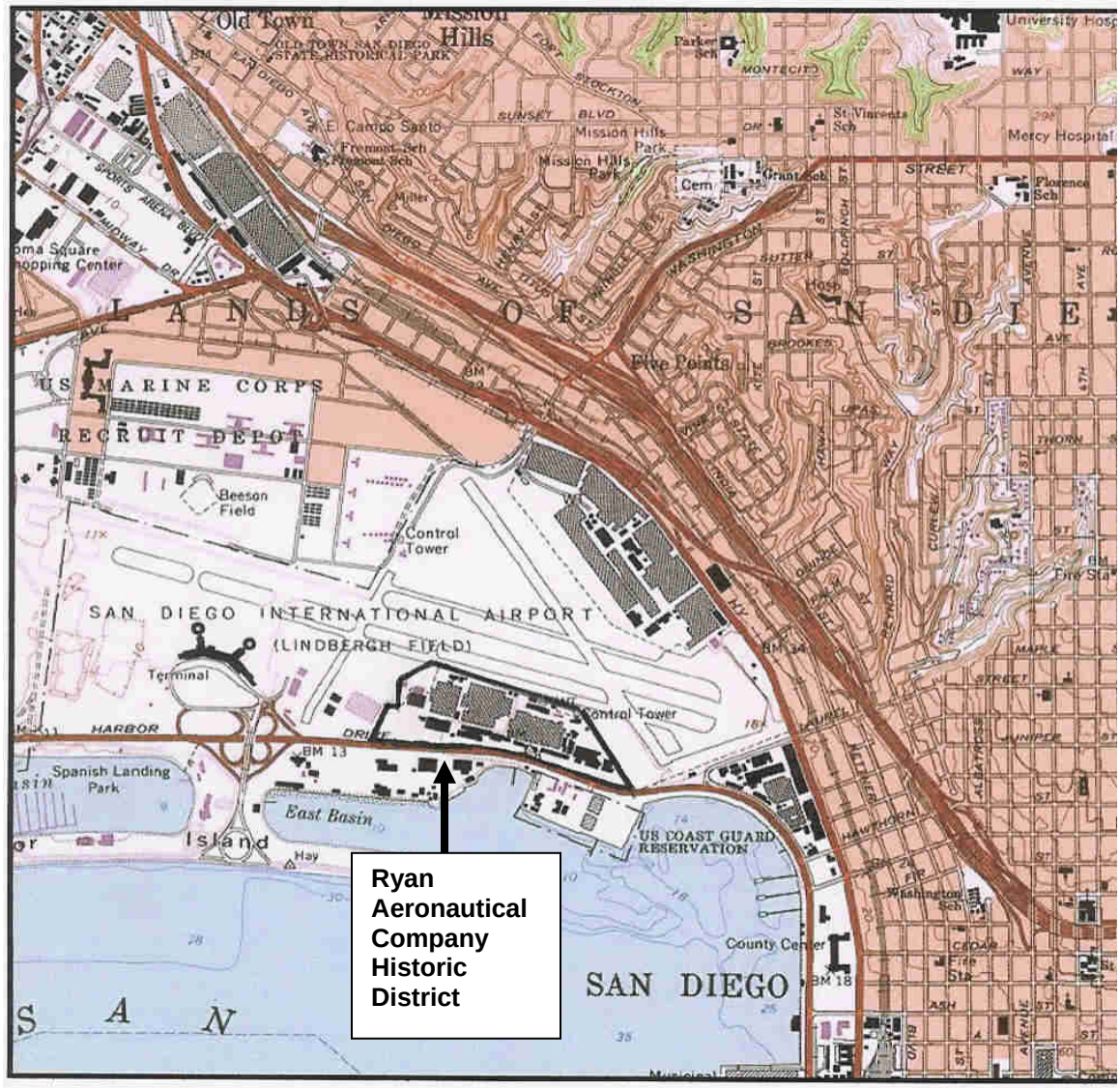

Figure 1: Ryan Aeronautical Company Historic District Location and Boundary on the USGS 7.5' Point Loma Quadrangle.

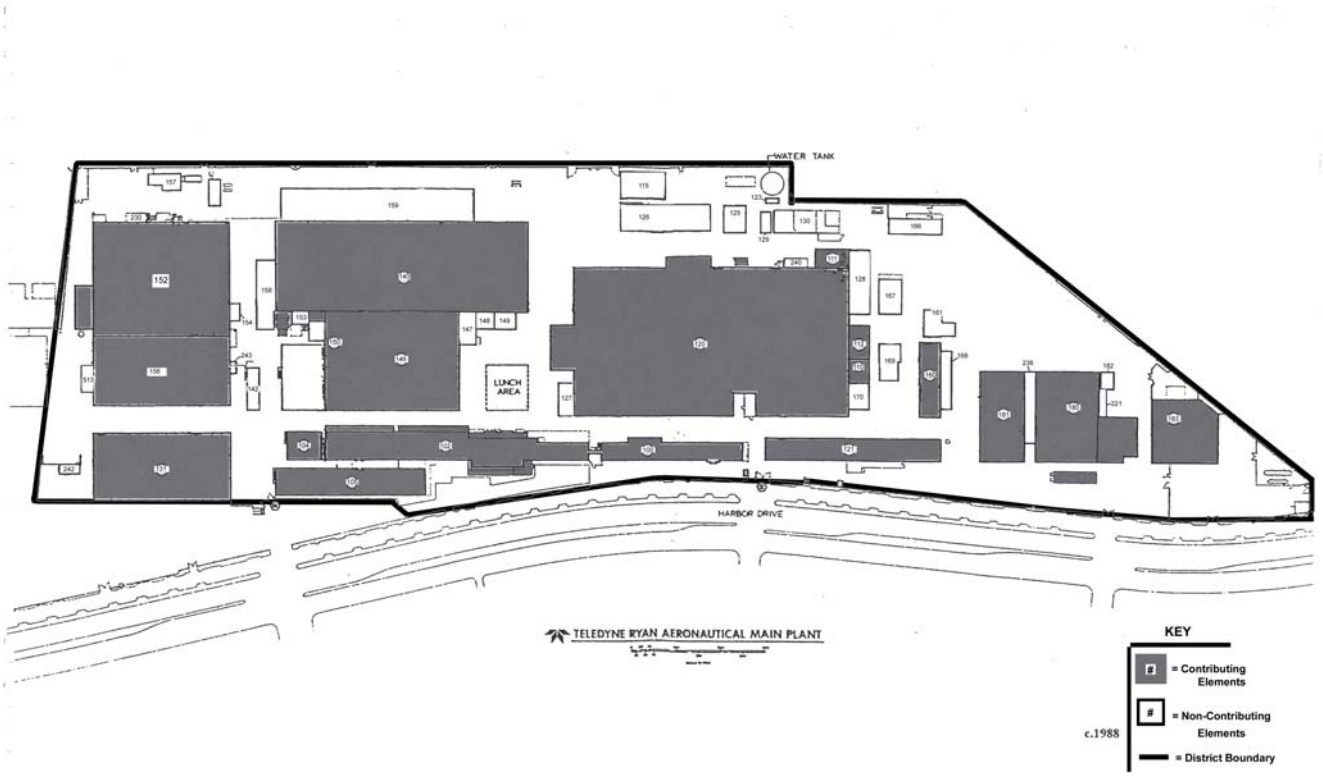

Figure 2: District Map.

Figure 3: The Art Deco style front entrance of Building 100.

Figure 4: The southeast corner of Building 100, showing the Art Deco style horizontal banding along the roofline and windows.

Figure 5: The southeast corner of Building 102, showing Art Deco banding along the roof and windows.

Figure 6: The back (north) side of Building 102, showing the variety of window and doorway placements.

Figure 7: The north east corner of Building 104, showing the north and east facades.

Figure 8: The window and roof line trim on the front (south) side of Building 105, mimics the Art Deco banding on the street side of Buildings 100 and 102.

Figure 9: The southeast corner of Buildings 110/112 (122), showing the continuous rows of windows and arched roofline that is typical of aircraft factory buildings from the World War II era. The flat roofed Building 170 in the foreground and Building 169 to the left are not contributing elements to the district.

Figure 10: The northeast corner of Building 111, showing the character defining saw tooth roof profile and continuous rows of multi-paned windows.

Figure 11: Newly manufactured Ryan P.T. Trainers adjacent to recently completed Building 120 circa 1939 - 40 (Port District 1940).

Figure 12: The northwest corner of the Main Factory Building (#120), showing the rows of continuous steel frame windows and saw tooth roof profile characteristic of many aircraft manufacturing plants during World War II.

Figure 13: The southwest corner of Building 120, giving another view of the saw tooth profile roof and continuous rows of steel framed windows.

Figure 14: The large open interior of Building 120 illustrating the amount of light provided by the combination of monitor windows in the saw tooth profile roof and rows of continuous rows of windows along the building's sides.

Figure 15: A close up view of the steel framing and monitor windows of the saw tooth profile roof in Building 120.

Figure 16: The northeast corner of Building 121. This large warehouse has no windows.

Figure 17: The interior of Building 121 showing the wooden roof trusses and stud wall construction. This view is from the west end, looking east.

Figure 18: The northeast corner of building 131. Note the large hanging door on the east façade. The rows of steel framed windows have been removed.

Figure 19: East façade of Building 140, showing the immense hanging wooden doors.

Figure 20: The large open interior of Building 140 from the east end looking west.

Figure 21: The southeast corner of Building 146.

Figure 22: The formal office entrance on the east side of Building 146.

Figure 23: Large open manufacturing plant interior in the north half of Building 146.

Figure 24: The northeast corner of Building 152, showing the east façade. The rows of steel framed windows have been removed.

Figure 25: The large open interior of Building 152. Note the steel arched roof trusses supported by "I" beam posts.

Figure 26: The southwest corner of Building 156. The rows of steel framed windows have been removed.

Figure 27: The large open interior of Building 156 showing the arched steel roof trusses supported by steel "I" beam posts. The opening near the far center of the photo leads to Building 152.

Figure 28: The northwest corner of Building 160, showing the west façade. Note the pairs of hanging doors.

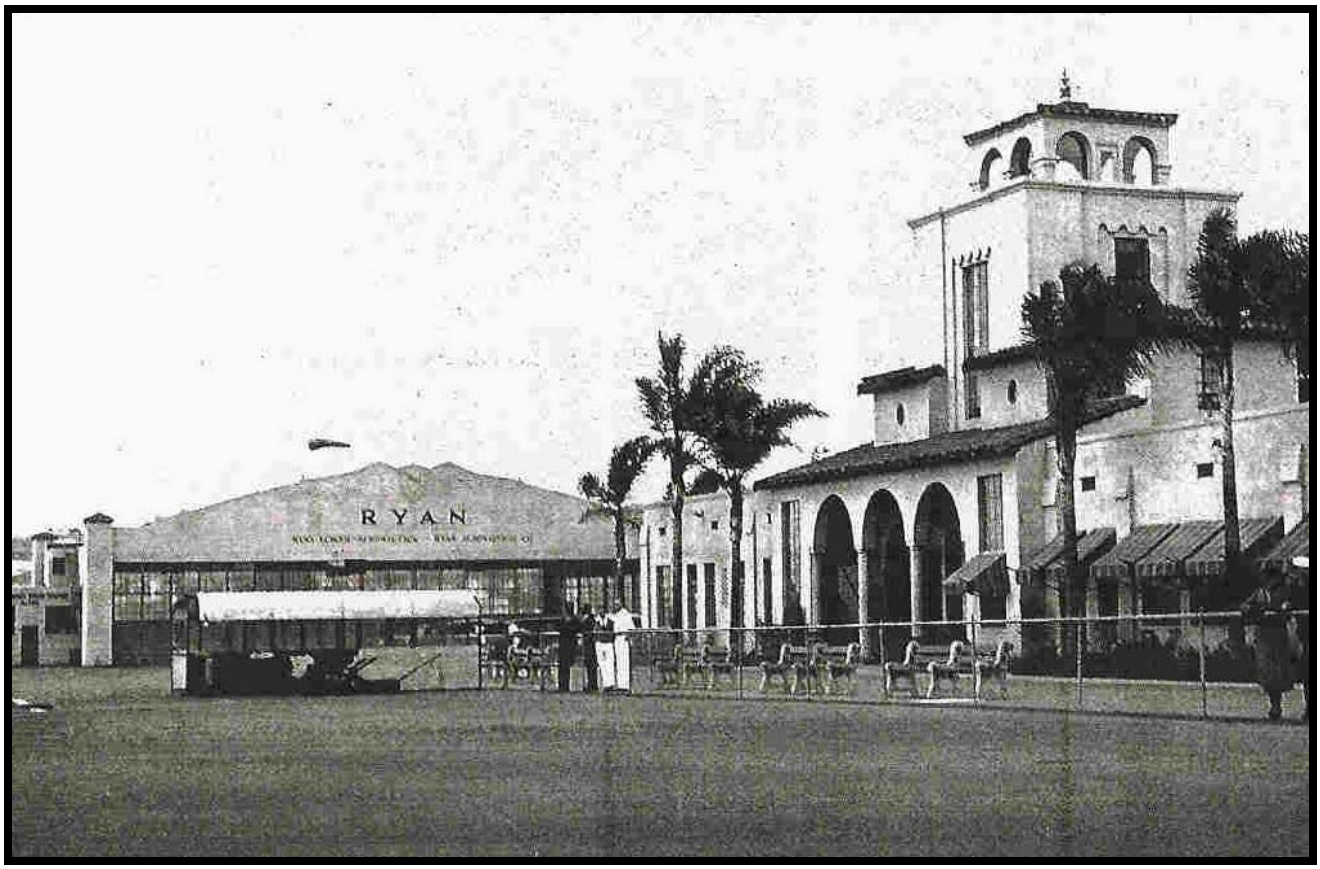

Figure 29: The newly completed Administration Building and Ryan Aeronautical hangar in early 1932. The hangar is now the main wing of Building 180. Note the shield at the crest of the hangar's roofline is the same shield currently located at the crest of the south façade of Building 180 (see Figure 36)(San Diego Historical Society).

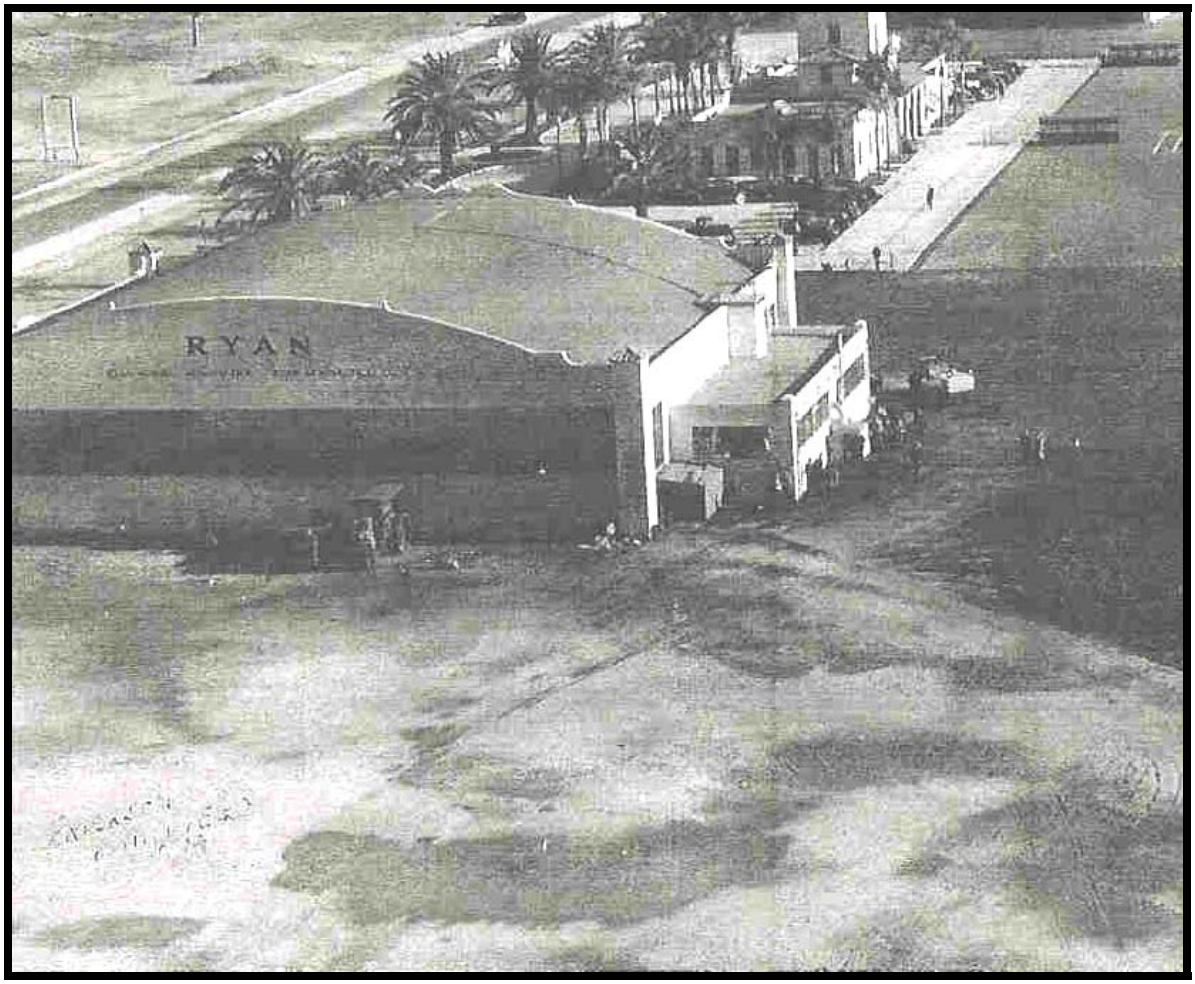

Figure 30: Aerial photograph overview of the Lindbergh Field Administration Area circa 1933 – 1934, showing the east side of the original Ryan hangar that is now the west wing of Building 180. This view shows the original east façade, which is now the north side of the building (San Diego Historical Society).

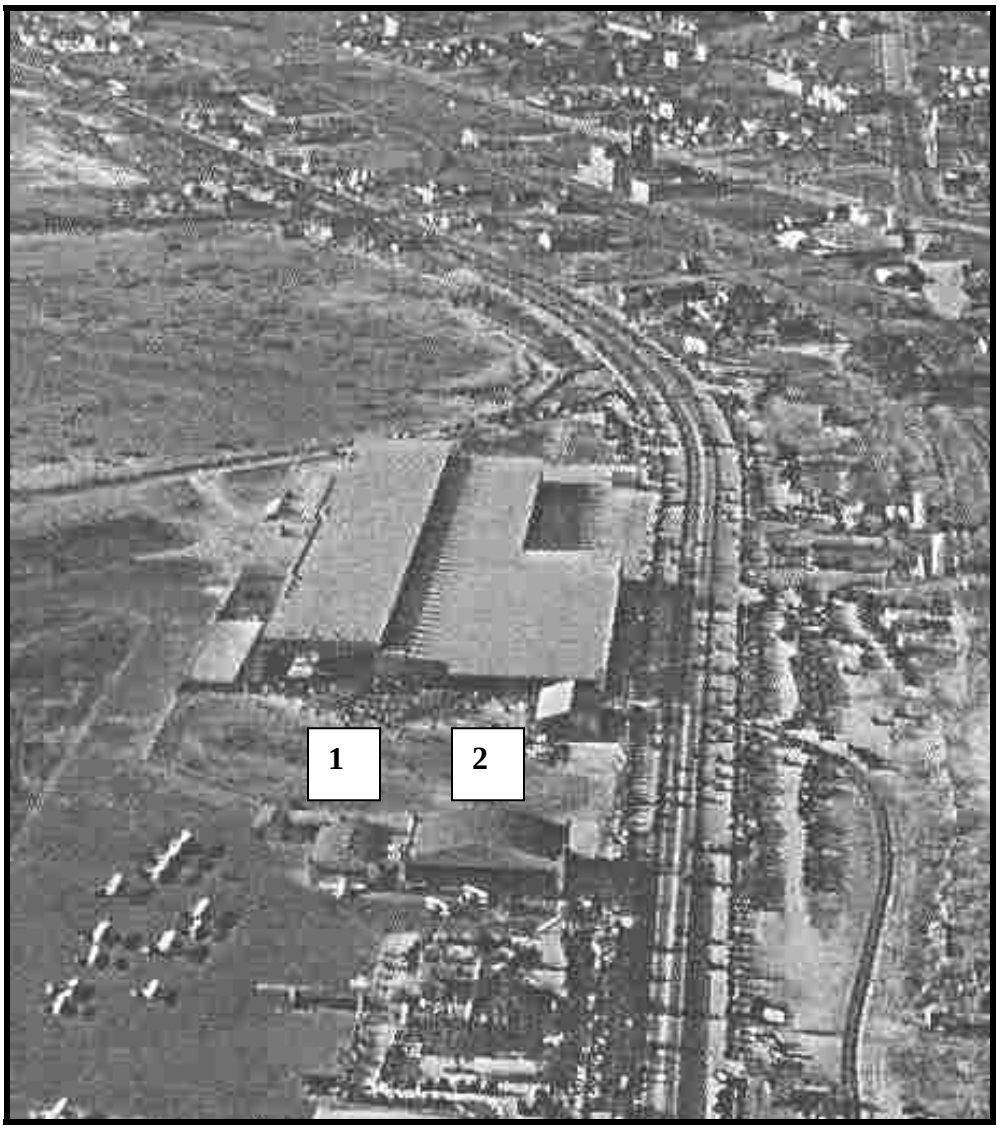

Figure 31: Aerial photograph of the administration area on Pacific Highway circa 1935. The small hangar that is currently the east wing of Building 180 (1), has been built to the left of the original Ryan hangar (2), which is now the west wing of Building 180 (San Diego Historical Society).

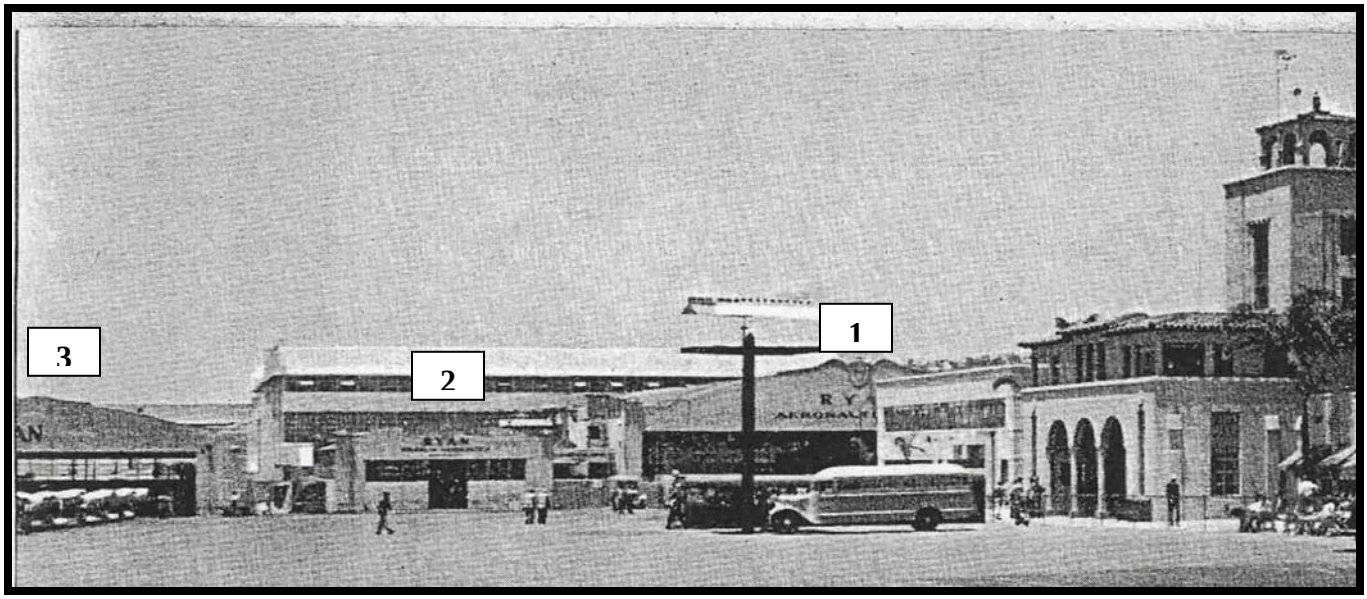

Figure 32: Ryan Aeronautical hangars at Pacific Highway 1938 – 1939. From right to left:

1. **The original hangar – now the west wing of Building 180.**
2. **The small hangar, built around 1935 – now the east wing of Building 180.**
3. **The third hangar, built circa 1936 – 1938 – now Building 181(Port District 1939).**

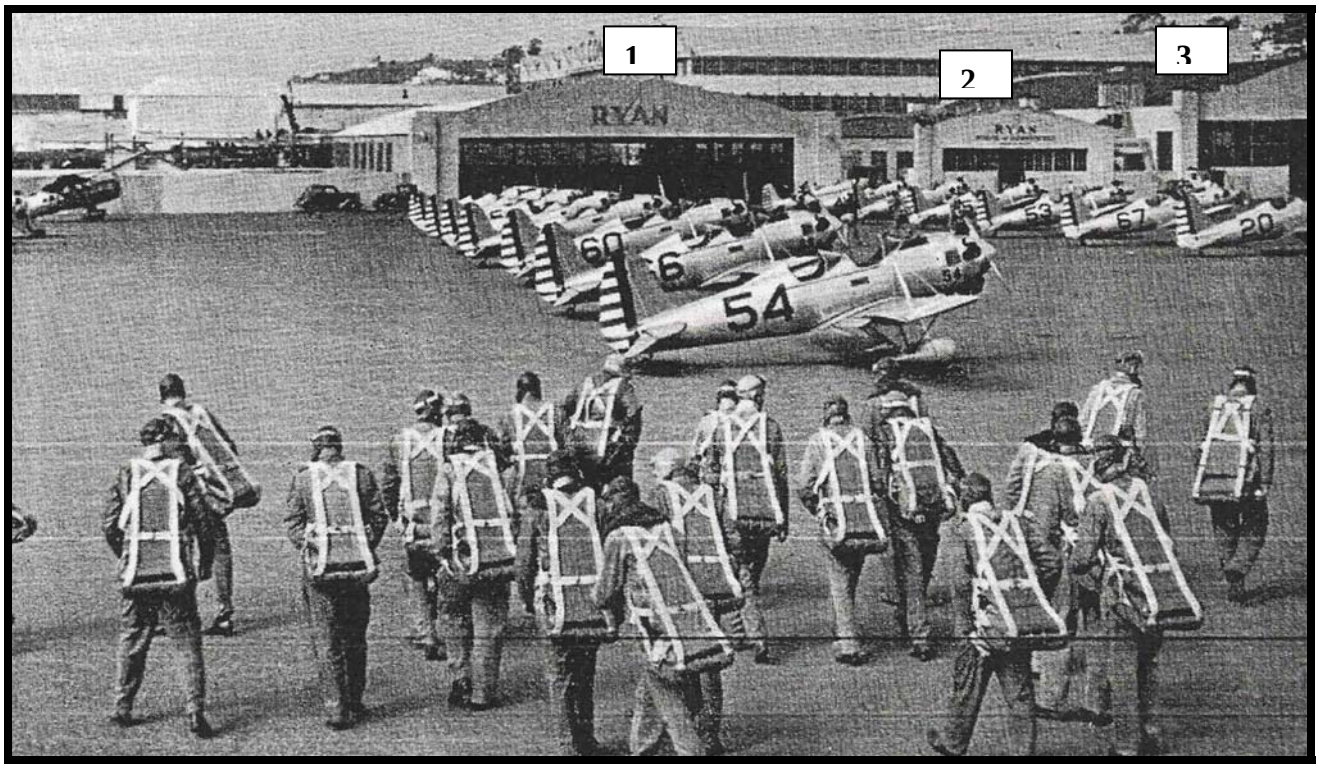

Figure 33: Student pilots walk to their aircraft in this second view of the Ryan Aeronautical Hangars circa 1938 – 39. From left to right:

1. **The third hangar, constructed circa 1936 – 1939 - now Building 181.**
2. **The small hangar, built circa 1935 - now the east wing of Building 180**
3. **The original 1932 hangar – now the west wing of Building 181 (Port District 1939).**

Figure 34: The front (north) façade of Building 180 showing the steel and glass hangar doors. This was the first hangar built at Ryan's Pacific Highway Plant in 1932. These doors were originally on the south side of the building, where the shield crest is located (see Figures 29, 30, 32, 33, and 35). They were changed to this side when the building was moved to its present location on the early 1940s.

Figure 35: The south (back) side of Building 180. Note the continuous row of windows and the shield molded into the façade at the top of the roofline. This same motif also occurs on east wing addition to Building 180 and on Building 181 and can be seen in the historic photographs in Figures 29, 30, 32, and 33.

Figure 36: Open interior of Building 180, showing the interior side of the hangar doors and steel arched roof trusses.

Figure 37: The front (north) side of the east wing addition of Building 180. This was the small hangar built at the Pacific Highway facility around 1935. Note the shield at the crest of the roofline.

Figure 38: The front (north) side of Building 181. This was the third hangar built at Ryan's Pacific Highway facility sometime between 1936 and 1939. Note the shield at the crest of the roofline.

Figure 39: The front (north) side of Building 183.

Figure 40: This narrow paved passage between Buildings 102 and 146 characterizes the setting in the eastern portion of the Ryan Aeronautical company complex.

Figure 41: Although planted with trees, the lunch area is a small section of the complex covered with pavement, and completely enclosed by tall factory and administration buildings.

Figure 42: This narrow paved passage on the north side of the lunch area leads between Buildings 140 (on the left) and 120.

Figure 43: Trees along the south side of Building 120 and at the main entrance (far right). Building 127 in the left foreground is a small non-contributing element attached to the southeast corner of Building 120.

Figure 44: The reduced height of the smaller buildings on the east side of Building 120 creates a more open feeling for this part of the Ryan Aircraft Complex.

Figure 45: Buildings 180 and 181, at the eastern end of the complex are clustered along the edge of a large open paved area.

Figure 46: Building 115, a non-contributing element.

Figure 47: Building 123 (pump station and water tank), a non-contributing element.

Figure 48: Building 125, a non-contributing element.

Figure 49: Building 126, a non-contributing element.

Figure 50: Building 127, a non-contributing element. The mural was painted after the period of significance

Figure 51: Building 128, a non-contributing element.

Figure 52: Building 129, a non-contributing element.

Figure 53: Building 130, a non-contributing element.

Figure 54: Building 142, a non-contributing element.

Figure 1: Building 147, a non-contributing element.

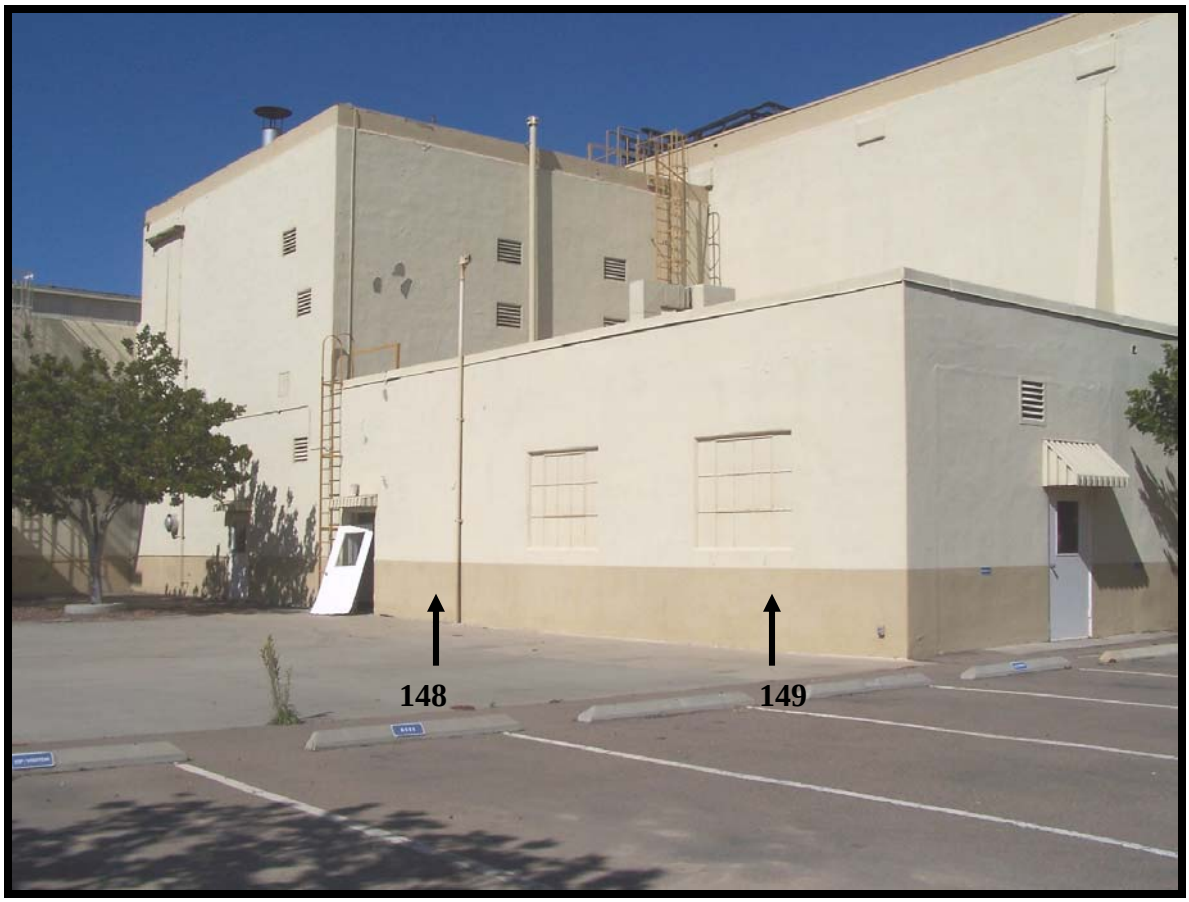

Figure 56: Buildings 148 & 149, non-contributing elements. These buildings appear to be a single unit.

Figure 57: Building 150, a non-contributing element.

Figure 58: Building 153, a non-contributing element.

Figure 59: Building 154, a non-contributing element.

Figure 60: Building 157, a non-contributing element.

Figure 61: Building 158, a non-contributing element.

Figure 62: Building 159, a non-contributing element.

Figure 63: Building 161, a non-contributing element.

Figure 64: Building 166, a non-contributing element.

Figure 65: Building 167, a non-contributing element.

Figure 66: Building 168, a non-contributing element.

Figure 67: Building 169, a non-contributing element.

Figure 68: Building 170, a non-contributing element.

Figure 69: Building 182, a non-contributing element.

Figure 70: Facility 221, a covered walkway, is not a contributing element.

Figure 71: Both of these units constitute Building 230, a non-contributing element.

Figure 72: Building 236, located between buildings 180 and 181, is a non-contributing element.

Figure 73: Facility 240, a non-contributing element.

Figure 74: Building 242, a non-contributing element.

Figure 75: Building 513, a non-contributing element.

DRAFT

ARCHAEOLOGICAL SURVEY REPORT
SAN DIEGO INTERNATIONAL AIRPORT
AIRPORT MASTER PLAN
SAN DIEGO, CALIFORNIA

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Table of Contents

Appendices

Confidential Appendix

(Bound separately)

I. INTRODUCTION

Project Description

The San Diego County Regional Airport Authority (Authority), a local/regional governmental entity of the State of California, is preparing an Environmental Impact Report (EIR) for the following Proposed Action at the San Diego International Airport (SDIA). SDIA is located in the western portion of the City of San Diego, California (Figure 1). The project area comprises approximately 700 acres and is bounded generally on the south by Harbor Drive and West Laurel Street, on the west by McCain and Neville Roads at the former Naval Training Center (NTC), on the north by the Marine Corps Recruit Depot (MCRD), and on the east by Pacific Highway (Figures 2 and 3).

The project to be evaluated in the EIR consists of two key components: the Airport Land Use Plan and the implementation of specific projects contained in the Airport Master Plan, called the Airport Implementation Plan. Together these make up the Proposed Project (Preferred Alternative). The EIR also addresses the Airport Plan Alternative and alternatives eliminated from further consideration. The project elements are described in detail in the Airport Master Plan EIR.

Methodology

Records searches were conducted at the South Coastal Information Center at San Diego State University for the Area of Potential Effects (APE) and its immediate vicinity. (The APE is described below.) The senior archaeologist contracted the State Native American Heritage Commission (NAHC) to request a check of their sacred lands files. Letters were also sent to Native American Bands and individuals identified by NAHC as interested parties, in order to solicit potential concerns regarding the project.

The senior archaeologist reviewed archaeological reports for other projects in the vicinity, including the former Naval Training Center (NTC) (Carrico and Pigniolo 1995). The location of SDIA was originally mudflats and bay. Decades of dredging and placement of fill soils have built up the airport area to its current topography. Due to this history of reclamation of the area from bay and mudflats, as well as the developed nature of the project area, a full pedestrian survey was not possible or warranted. The senior archaeologist did a driving tour of the airport grounds with airport personnel. A historic architectural study was conducted for the project; this study is included in a separate report.

Area of Potential Effect (APE)

The Direct Area of Potential Effects (APE), as illustrated in Figure 3, is defined as the SDIA property in its entirety and the adjacent areas under Authority planning control. This includes a portion of the former Naval Training Center (NTC), located at the west end of the SDIA property, and the former Teledyne Ryan parcel, located in the southeastern portion of the SDIA property.

Figure 1

Regional location in San Diego County

Source:
Prepared by: Affinis

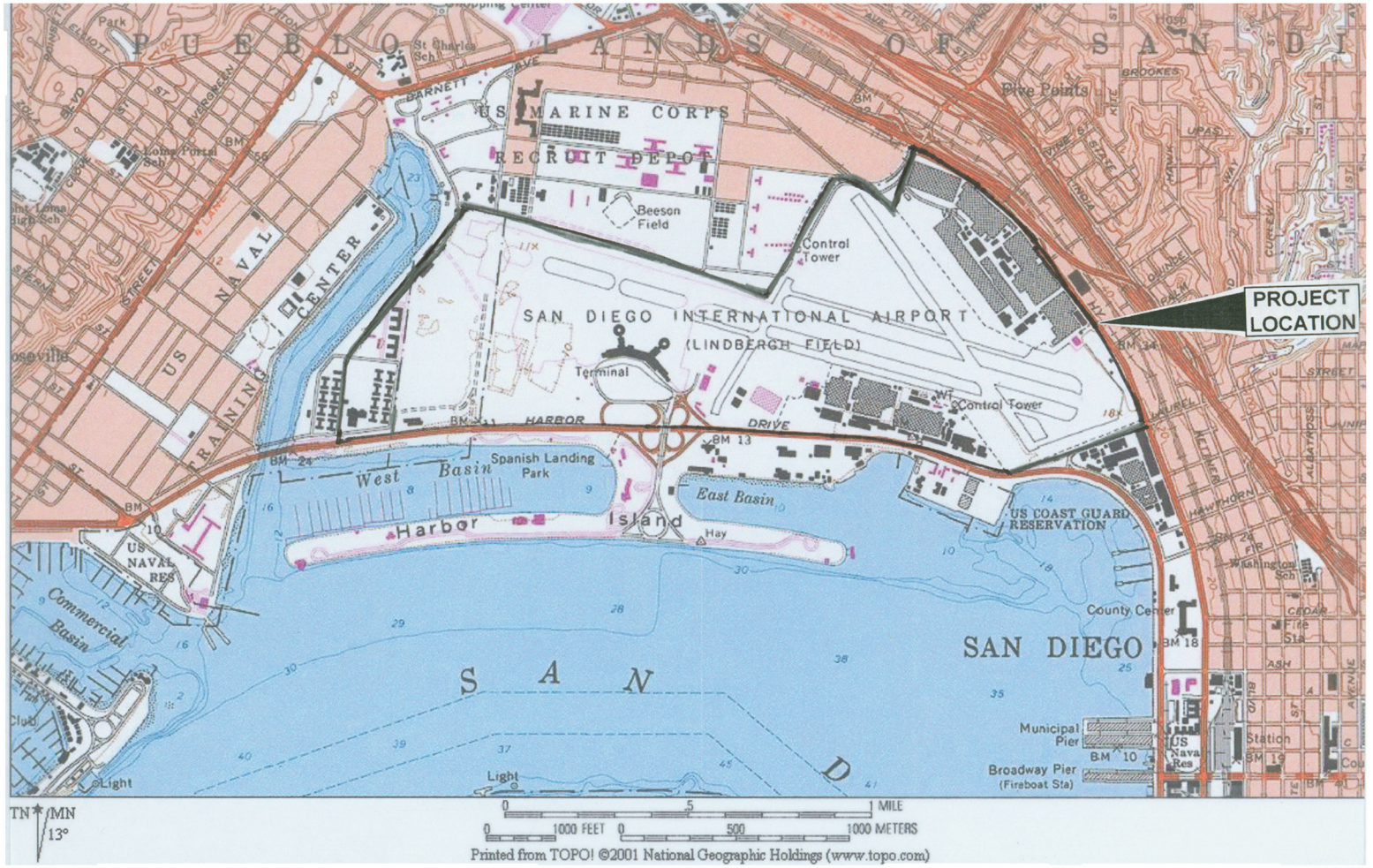

Figure 2

Project location on USGS 7.5' Point Loma quadrangle

Source: Printed from TOPO! c 2001 National Geographic Holdings (www.topo.com)
Prepared by: Affinis

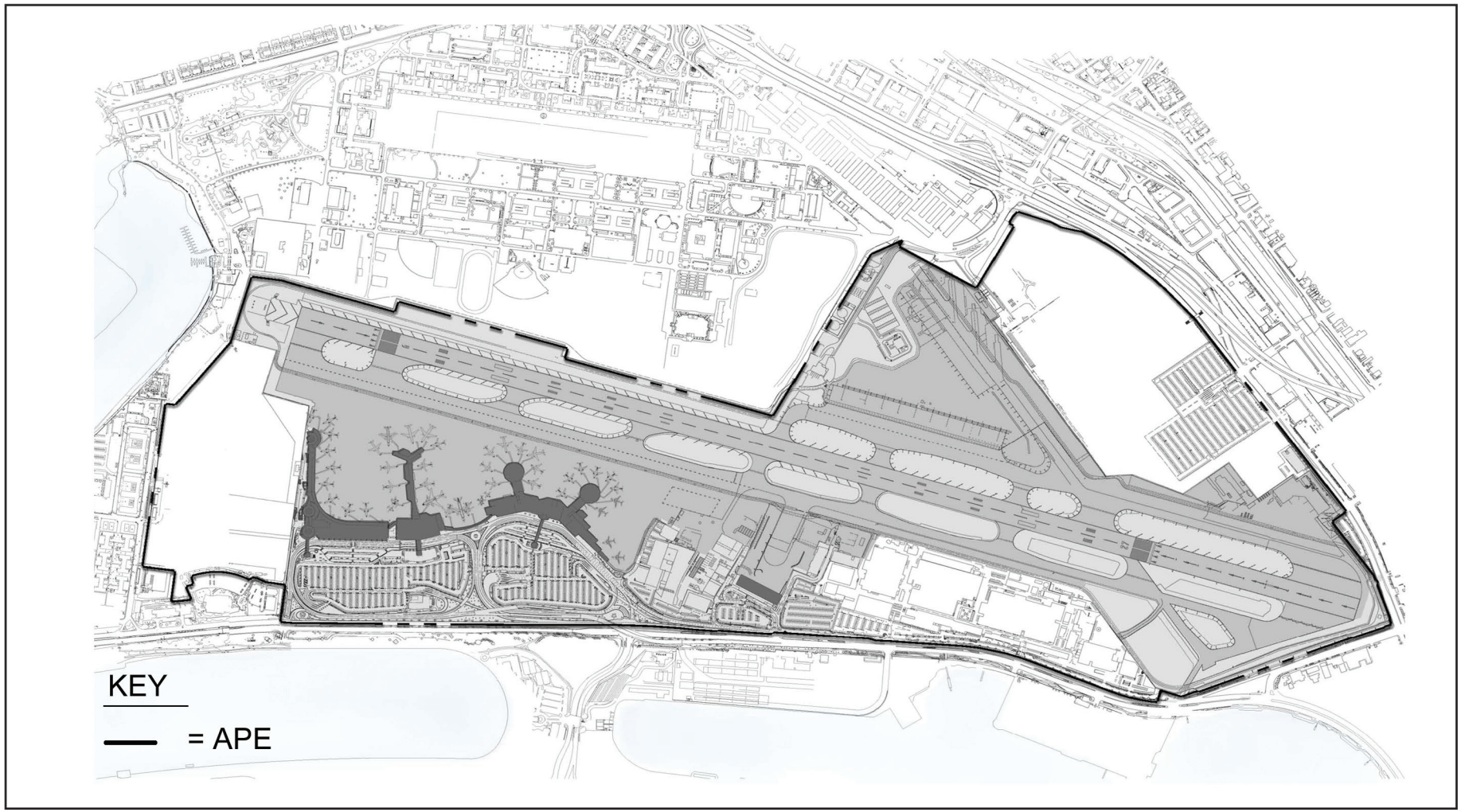

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Figure 3

Existing Layout Plan

Source:
Prepared by: Affinis

II. ARCHAEOLOGICAL AND CULTURAL CONTEXT

Background

Several summaries discuss the prehistory of San Diego County and provide a background for understanding the archaeology of the general area surrounding the project. Moratto's (1984) review of the archaeology of California contains important discussions of Southern California, including the San Diego area. Papers by Bull (1983, 1987), Carrico (1987), Gallegos (1987), and Warren (1985, 1987) provide summaries of recent work and interpretations. The following is a brief discussion of the culture history of the San Diego region.

Carter (1957, 1978, 1980), Minshall (1976) and others (e.g., Childers 1974; Davis 1968, 1973) have long argued for the presence of Pleistocene humans in California, including the San Diego area. The sites identified as "early man" are all controversial. Carter and Minshall are best known for their discoveries at Texas Street and Buchanan Canyon. The material from these sites is generally considered nonartifactual, and the investigative methodology is often questioned (Moratto 1984).

The earliest accepted archaeological manifestation of Native Americans in the San Diego area is the Paleoindian San Dieguito complex, dating to approximately 10,000 years ago (Warren 1967). The San Dieguito complex was originally defined by Rogers (1939), and Warren published a clear synthesis of the complex in 1967. The material culture of the San Dieguito complex consists primarily of scrapers, scraper planes, choppers, large blades, and large projectile points. Rogers considered crescentic stones to be characteristic of the San Dieguito complex as well. Tools and debitage made of fine-grained green metavolcanic material, locally known as felsite, were found at many sites that Rogers identified as San Dieguito. Often these artifacts were heavily patinated. Felsite tools, especially patinated felsite, came to be seen as an indicator of the San Dieguito complex. Until relatively recently, many archaeologists felt that the San Dieguito culture lacked milling technology and saw this as an important difference between the San Dieguito and La Jolla complexes. Sleeping circles, trail shrines, and rock alignments have also been associated with early San Dieguito sites. The San Dieguito complex is chronologically equivalent to other Paleoindian complexes across North America, and sites are sometimes called "Paleoindian" rather than "San Dieguito". San Dieguito material underlies La Jolla complex strata at the C. W. Harris site in San Dieguito Valley (Warren, ed. 1966).

The traditional view of San Diego prehistory has the San Dieguito complex followed by the Archaic stage La Jolla complex at least 7,000 years ago, possibly as long as 9,000 years ago (Rogers 1966). The La Jolla complex is part of the Encinitas tradition and equates with Wallace's (1955) Millingstone Horizon, also known as Early Archaic or Milling Archaic. The Encinitas tradition is generally "recognized by millingstone assemblages in shell middens, often near sloughs and lagoons" (Moratto 1984:147). "Crude" cobble tools, especially choppers and scrapers, characterize the La Jolla complex (Moriarty 1966). Basin metates, manos, discoidals, a small number of Pinto series and Elko series points, and flexed burials are also characteristic.

Warren et al. (1961) proposed that the La Jolla complex developed with the arrival of a desert people on the coast who quickly adapted to their new environment. Moriarty (1966) and Kaldenberg (1976) have suggested an *in situ* development of the La Jolla people from the San Dieguito. Moriarty has since proposed a Pleistocene migration of an ancestral stage of the La Jolla people to the San Diego coast. He suggested this Pre-La Jolla complex is represented at Texas Street, Buchanan Canyon, and the Brown site (Moriarty 1987).

In recent years, archaeologists in the region have begun to question the traditional definition of San Dieguito people simply as makers of finely crafted felsite projectile points, domed scrapers, and discoidal cores, who lacked milling technology. The traditional defining criteria for La Jolla sites (manos, metates, "crude" cobble tools, and reliance on lagoonal resources) have also been questioned (Bull 1987; Cárdenas and Robbins-Wade 1985; Robbins-Wade 1986). There is

speculation that differences between artifact assemblages of "San Dieguito" and "La Jolla" sites reflect functional differences rather than temporal or cultural variability (Bull 1987; Gallegos 1987). Gallegos (1987) has proposed that the San Dieguito, La Jolla, and Pauma complexes are manifestations of the same culture, with differing site types "explained by site location, resources exploited, influence, innovation and adaptation to a rich coastal region over a long period of time" (Gallegos 1987:30). The classic "La Jolla" assemblage is one adapted to life on the coast and appears to continue through time (Robbins-Wade 1986; Winterrowd and Cárdenas 1987). Inland sites adapted to hunting contain a different tool kit, regardless of temporal period (Cárdenas and Van Wormer 1984).

Several archaeologists in San Diego, however, do not subscribe to the Early Prehistoric/Late Prehistoric chronology (see Cook 1985; Gross and Hildebrand 1998; Gross and Robbins-Wade 1989; Shackley 1988; Warren 1998). They feel that an apparent overlap among assemblages identified as "La Jolla," "Pauma," or "San Dieguito" does not preclude the existence of an Archaic culture in the San Diego region, whatever name is used to identify it, separate from an earlier Paleoindian culture. One problem these archaeologists perceive is that many site reports in the San Diego region present conclusions based on interpretations of stratigraphic profiles from sites at which stratigraphy cannot validly be used to address chronology or changes through time. Archaeology emphasizes stratigraphy as a tool, but many of the sites known in the San Diego region are not in depositional situations. In contexts where natural sources of sediment or anthropogenic sources of debris to bury archaeological materials are lacking, other factors must be responsible for the subsurface occurrence of cultural materials. The subsurface deposits at numerous sites are the result of such agencies as rodent burrowing and insect activity. Recent work has emphasized the importance of bioturbative factors in producing the stratigraphic profiles observed at archaeological sites (see Gross 1992). Different classes of artifacts move through the soil in different ways (Bocek 1986; Erlandson 1984; Johnson 1989), creating vertical patterning (Johnson 1989) that is not culturally relevant. Many sites that have been used to help define the culture sequence of the San Diego region are the result of just such nondepositional stratigraphy.

The Late Prehistoric period is represented by the San Luis Rey complex (SLR) in northern San Diego County and the Cuyamaca complex in the southern portion of the county. The San Luis Rey complex is the archaeological manifestation of the Shoshonean predecessors of the ethnohistoric Luiseño (named for the San Luis Rey Mission). The Cuyamaca complex represents the Yuman forebears of the Kumeyaay (Diegueño, named for the San Diego Mission). Agua Hedionda is traditionally considered to be the point of separation between Luiseño and Northern Diegueño territories.

Elements of the San Luis Rey complex include small, pressure-flaked projectile points (Cottonwood and Desert Side-notched series); milling implements, including mortars and pestles; *Olivella* shell beads; ceramic vessels; and pictographs (True et al. 1974). Of these elements, mortars and pestles, ceramics, and pictographs are not associated with earlier sites. True noted a greater number of quartz projectile points at San Luis Rey sites than at Cuyamaca complex sites, which he interpreted as a cultural preference for quartz (True 1966). He considered ceramics to be a late development among the Luiseño, probably learned from the Diegueño. The general mortuary pattern at San Luis Rey sites is ungathered cremations.

The Cuyamaca complex, reported by True (1970), is similar to the San Luis Rey complex, differing in the following points:

1. Defined cemeteries away from living areas;
2. Use of grave markers;
3. Cremations placed in urns;
4. Use of specially made mortuary offerings;
5. Cultural preference for side-notched points;
6. Substantial numbers of scrapers, scraper planes, etc., in contrast to small numbers of these implements in San Luis Rey sites;

7. Emphasis placed on use of ceramics; wide range of forms and several specialized items;
8. Steatite industry;
9. Substantially higher frequency of milling stone elements compared with San Luis Rey;
10. Clay-lined hearths (True 1970:53-54).

The project area is within lands that have traditionally been inhabited by the Kumeyaay Indians, also known as Diegueño or Ipai/Tipai (Luomala 1978). Two ethnohistoric village sites associated with Mission San Diego de Alcala existed in Mission Valley: *Cosoy* (or *Kosoi*) and *Nipaquay* (Carrico 1993). Mission Valley lies about 1.5 miles north of the project area. In her introduction to the autobiography of Delfina Cuero, Shipek wrote that around 1900 many Diegueño Indians lived in Mission Valley and in various other places around San Diego, including "at the foot of Rose Canyon, along Ocean Beach, around the edge of Mission Bay (False Bay), and all up and down Mission Valley. Each of these locations has been corroborated independently by non-Indian 'old timers' in San Diego" (Shipek 1970:9).

History of San Diego International Airport

In the late 1920s Lindbergh Field rose out of the muck of San Diego Bay to become the City's municipal airport. By the mid 1930s it had developed into a major center of the nation's aircraft industry, an important destination for several commercial airlines, and had been designated San Diego International Airport. During World War II aircraft manufacturers there played a significant role in defense production. In the late 1940s and early 1950s some felt that the airport's days were numbered and that it could never grow to accommodate jet age air traffic. However, Lindbergh Field has continued to develop and in 2004 experienced almost 300 daily passenger and cargo airline departures. This highly successful facility did not just occur as the result of chance and happenstance. It took decades of planning, effort, money, and labor to establish the airport and keep it functioning in the face of the ever-increasing demands of the airline and aircraft industries. The story of Lindbergh Field is one of constant innovation. Its early founders were extremely farsighted and capable in both their desire to create an airport and their ability to make it grow from the mudflats of San Diego Bay. Later airport managers have been just as successful in overcoming the dire predictions of the early 1950s that the airport could never expand sufficiently to accommodate jet age air traffic. A Historic Architectural Survey Report has been prepared for the proposed Master Plan and is included as an appendix to the EIR.

Records Searches

Thirteen archaeological sites have been recorded within a one-mile radius of the SDIA Master Plan project area, none within the project area itself. Four of these sites were recorded in the early part of the 20th century and were already quite disturbed at that time. Three of the sites (CA-SDI-36, CA-SDI-37, and CA-SDI-53) were described as traces of probable camp sites. The fourth site (CA-SDI-54) was described as traces of a refuse heap on a bluff, which washed away as the bluff receded. The site's documentation was based on observations of a gully. The only other prehistoric or Native American site in the vicinity is a light shell scatter that may have been redeposited from site SDM-W-291, which Malcolm Rogers considered to be associated with the ethnohistoric village of Kosoy.

Eight historic archaeological sites have been documented within one mile of the project area. These include a sparse deposit of historic debris, redeposited from another area; the Barth Foundry Dump site; two historic period graves at the former NTC; World War II foundations at the former NTC; a 1930s dump at the former NTC; a historic artifact scatter from the early part of the 20th century; a historic dump used circa 1900-1930; and a small historic refuse deposit

encountered during monitoring at the former NTC. A number of historic structures have been recorded within one mile of the SDIA Master Plan project area, including buildings at NTC and MCRD, as well as buildings and structures associated with the Consolidated Aircraft Plant No. 1, almost all of which have been removed.

III. APPLICATION OF NATIONAL REGISTER AND CALIFORNIA REGISTER ELIGIBILITY CRITERIA

Potential historical and architectural significance of buildings, structures and historic archaeological sites, as well as potential significance of prehistoric archaeological resources, was determined by applying criteria of the National Register of Historic Places and the California Register of Historical Resources.

National Register Criteria

In order to be eligible for nomination to the National Register of Historic Places, a building, structure, or site must be significant within a historic context and meet certain other criteria. According to the National Park Service:

> . . . the significance of a historic property can be judged and explained only when it is evaluated within its historic context. Historic contexts are those patterns, themes, or trends in history by which a specific occurrence, property, or site is understood and its meaning made clear [National Park Service 1991:7].

The National Park Service has defined three main categories of historic contexts: local, state and national. A local historic context "represents an aspect of the history of a town, city, county, cultural area, or region, or any portion thereof" (National Park Service 1991:9). A state historic context represents "an aspect of history of the state as a whole" (National Park Service 1991:9). Properties important within a national context represent "an aspect of the history of the United States as a whole" (National Park Service 1991:10).

In order to be eligible for the National Register when evaluated within its historic context a property must be demonstrated to be significant under one or more of the following criteria (National Park Service 1991:12-21):

A: Is associated with an event, or series of events that have made a significant contribution to the broad pattern of history.

B: Has an unequivocal association with the lives of people significant in the past.

C: 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 may lack individual distinction.

D: Has yielded or may be likely to yield information important in prehistory or history.

An additional requirement for the National Register is the retention of integrity or "the ability of a property to convey its significance". Assessment of integrity includes seven criteria, which are: location, design, setting, materials, workmanship, feeling, and association (National Park Service 1991:45).

Generally the National Register criteria exclude properties that are less than 50 years of age unless it can be demonstrated that they are of "exceptional importance", which is defined as "the

extraordinary importance of an event or . . . an entire category of resources so fragile that survivors of any age are unusual" (National Park Service 1991:42).

California Register Criteria

Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code §5024.1, Title 14 CCR Section 4852) including the following:

I. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

II. Is associated with the lives of persons important in our past;

III. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values, or:

IV. Has yielded or may be likely to yield information important in prehistory or history.

Application of Criteria

No archaeological sites have been identified within the SDIA Master Plan project area. The current topography of the project area has been achieved through decades of dredging and placement of fill soils in an area of bay and mudflats. In addition, the project area supports the existing SDIA, and there is no undisturbed ground surface. Based on this, archaeological resources would not be anticipated in the project area.

IV. FINDINGS OF SIGNIFICANCE

No archaeological sites have been identified within the SDIA Master Plan project area. Therefore, none of the Master Plan elements (Proposed Airport Land Use Plan, Proposed Airport Implementation Plan, or Implementation Plan Alternative) will have an effect on archaeological resources.

V. CONCLUSIONS

No archaeological resources have been identified within the SDIA Master Plan area. Based on this, implementation of any of the Master Plan elements would have no effect on archaeological resources. Therefore, no mitigation measures are required for archaeology.

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APPENDIX B: KEY PERSONNEL

Mary Robbins-Wade, M.A., RPA	Director of Cultural Resources
Stephen R. Van Wormer, M.A.	Historian/Historic Archaeologist
Matthew Sivba	Archaeologist