GENERAL HISTORY OF

THE JAMAICA BAY, BREEZY POINT, AND STATEN ISLAND UNITS,

GATEWAY NATIONAL RECREATION AREA, NEW YORK NY

Tony P. Wrenn

31 October 1975

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SUBJECT: General History, Gateway National Recreation Area,
New York, NY
Jamaica Bay, Breezy Point, and Staten Island Units
(Order Number: PX 1600-5-0353)

DESCRIPTION: Furnish a study and report on historical buildings within the Gateway National Recreation Area, excluding those located within the Sandy Hook Unit. The report should emphasis those buildings which the study indicates are of importance, explaining why these conclusions have been reached. A general over-all history and its association with the buildings should also be included as well as sources of future research and the types of material to be found in these sources.

Hereby submitted in completion of the study is the report, which includes a listing of sources used. Attachments include photographs, drawings, surveys, maps, and copies from both secondary and primary sources.

/s/Tony P. Wrenn

Tony P. Wrenn
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SUMMARY

Areas within the Jamaica Bay, Breezy Point, and Staten Island Units are presented in that unit order, with each area covered separately. For each area there is first a location, then a general history, notes on existing structures (if any), comments, and suggestions for additional research.

a sizable amount of manuscript material, graphics, and limited-circulation printed material uncovered during the research effort is transmitted with the report; these materials are described briefly by their listing in Appendix B of the report. Appendix A contains notes on additional research sources and general comments on the type of materials that each source might provide. Appendix C presents additional material on Floyd Bennett Field and on Fort Tilden that was inadvertently omitted from the body of the report but that the writer felt should be included.

In assessing existing structures the report makes the following suggestions:

- Floyd Bennett Field — possesses sufficient importance in aviation history and the evolution of municipal-airport construction to warrant consideration for both nomination to the National Register of Historic Places and designation as a Registered National Historic Landmark.

- Canarsie Pier — The existing pier -- remnant of early-twenty-century development of Jamaica Bay as a port and of change (ca. 1940) from commercial to recreational use -- is historically important enough to warrant consideration for retention and preservation.

- Jacob Riis Park — possesses sufficient importance as an aviation testing and record site (Rockaway Naval Air Station) and architectural, landscape architecture, and regional planning/recreational importance to warrant consideration for nomination to the National Register of Historic Places.

- Fort Tilden — possesses sufficient importance historically and architecturally as a typical World War I and 1930's coastal military defense installation to warrant consideration for nomination to the National Register of Historic Places.

- Miller Field — possesses sufficient importance as an early aviation field, as a site for aviation testing and use by early aviators, and for the survival of early seaplane and land-plane hangars to warrant consideration for nomination to the National Register of Historic Places.

- South Beach — The surviving Franklin D. Roosevelt Boardwalk is historically important enough (as a survivor of its type of

wooden-boardwalk development) to warrant consideration for retention and preservation.

′ Fort Wadsworth

′′ EDITOR'S NOTE: Refer to the Fort Wadsworth Site Management Plan and Environmental Assessment, December 1995 for current information.

The report suggests that, since Fort Wadsworth remains an active base and since names applied to the section of it scheduled for acquisition are many and confusing, the designation "Fort Richmond" be used. Fort Richmond was the name of earlier installations and the original name for the major masonry there (later named Fort Wadsworth and then, after that name was applied to the entire post, Battery Weed).

Architecturally -- in materials, workmanship, and design -- Fort Richmond is probably the finest structure within the units covered by the report. (In survival, however, structures such as those at Floyd Bennett Field, Jacob Riis Park, and Miller Field may be rarer, since such buildings have suffered a greater rate of demolition than have nineteenth-century fortifications.)

Fort Richmond (Battery Weed) is already listed in the National Register of Historic Places. The information in the Register contains some inaccuracies, which should be corrected. The batteries adjacent to Fort Richmond warrant consideration for enlarging the listing in the National Register to a Fort Richmond Historic District. (Fort Tompkins, also listed in the Register, could be included in the expanded listing, perhaps by the creation of a Fort Richmond/Fort Tompkins Historic District. If this course is taken, errors in the Fort Tompkins nomination -- which are more basic than those in the Fort Richmond (Battery Weed) nomination --should be corrected.

Throughout the area there survives evidence of changing development, park, recreational, environmental, and military concepts. A strong interpretive program that would stress these concepts, which are discussed generally in the report, could be developed.

The potential for passive recreation in each of the areas within the three units is great -- as can be realized through bird-watching, boardwalk sitting, visiting historic sites, or walking nature trails or beaches. This passive recreational potential can also be realized in another way -- by interpreting and using vista and views that are a part of all park areas.

Some of the more exciting of these sights are views of Coney Island from Breezy Point; the Empire State Building and downtown New York from the mall promenade at Jacob Riis Park; and shipping to and from the Port of New York and the New York skyline from all Staten Island areas, especially from Fort Wadsworth.

Included in these vistas are two beautiful and exciting architectural/engineering structures that dominate the units: the Marine Parkway Bridge (which connects the Jamaica Bay and Breezy Point Units) and the Verrazano Narrows Bridge (which crosses between Brooklyn and Staten Island over Fort Richmond). Both are engineering landmarks and world-record structures in their categories (highway lift bridge and suspension bridge, respectively). Historical information on the bridges has been included in the report -- the Marine Parkway Bridge (which connects the Jamaica Bay and Breezy Point Units) and the Verrazano Narrows Bridge (which crosses between Brooklyn and Staten Island over Fort Richmond). Both are engineering landmarks and world-record structures in their categories (highway lift bridge and suspension bridge, respectively). Historical information on the bridges has been included in the report -- the Marine Parkway Bridge, under Jacob Riis Park (Sec. II.A); the Verrazano Narrows Bridge, under Fort Wadsworth (Sec.III.E). Because of their pre-eminence as visible structures, they warrant inclusion in Gateway interpretation and planning.

Though the writer feels strongly about several of the comments, the purpose of this report was not to make recommendations, but to identify historical and architectural resources and place them in a general historical context. That purpose has been accomplished. It is believed that sufficient data are included to justify the comments. They remain however comments, and recommendations and programs must still be evolved from these and other data.

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Chapter I

JAMAICA BAY UNIT

A. FLOYD BENNETT FIELD

Located in Brooklyn, Kings County, New York, Floyd Bennett Field is bounded on the southwest by Flatbush Avenue, where the entrance to the field is situated. To the southeast is Rockaway Inlet; to the east, Island Channel (in Jamaica Bay); to the north, Mill Basin (into Jamaica Bay); and to the northwest, Shore Parkway.

1. General History

Floyd Bennett, the first municipal airport for New York City, grew out a study on airport facilities for metropolitan New York (Report of the Fact-Finding Committee on Suitable Airport Facilities for the New York Metropolitan District, 27 Nov. 1927). Both New Jersey and New York officials, as well as aircraft, commercial, and industrial representatives, served on the Fact-Finding Committee. The report listed Mitchel Field and Rockaway Naval Air Station, both on Long Island, and Miller Field, Staten Island, as operating "Federal or State Fields" in the metropolitan area. Roosevelt Field and Curtiss Field, both on Long Island, and Hadley Field and Teterboro Airport, both in New Jersey, are listed as operating "Commercial Fields." In addition, nine fields in New York and eight in New Jersey are listed as "Intermediate Fields" in the metropolitan area. (For a listing of the "The Airports of New York (1909-1972)," see Sir Peter Masefield, Gateways to the World: The Airports of New York and London [New York, The Wings Club, 1972], 21-23; the list gives latitude and longitude for some 68 fields and, in many cases, the dates of their establishment and operation.)

Though Floyd Bennett was not an early airport, it was the first municipal airport of the City of New York. The site chosen was not one of the primary sites selected by the Fact-Finding Committee, but a secondary site. This choice was probably due to two factors. First, the construction of the facility was assigned to the City Department of Docks. Since the late nineteenth century this municipal department and many groups in the Brooklyn-Queens areas surrounding Jamaica Bay had been pushing for the commercial and industrial development of the bay into a new port for the City of New York. Both municipal development and dredging work by the Corps of Engineers had been undertaken in the bay in several different projects between 1900 and 1927. (For additional information on the commercial port development of Jamaica Bay, see the sections of this chapter on Jamaica Bay Wildlife Refuge and Canarsie Pier -- B and C, below.) The second factor was that Clarence D. Chamberlain, transatlantic flier and expert on planes and landing fields, had been hired by the city as a Consulting Engineer on Aviation (Aero Digest, April 1920,138). Relatively flat, the Barren Island location -- with ready capability for dredge and fill operations as part of existing or planned programs, with almost no obstructions in approaches from several directions, with a site easily recognizable from the air, and with adequate open water adjacent for a seaplane base -- seems to have been Chanberlain's choice over others.

The name of Floyd Bennett was chosen early for the field. It appears in the 1929 Annual Report of the Department of Docks. Bennett (1890-1928) was a local flier. He had gained considerable fame as copilot for Adm. Richard E. Byrd in the Greenland expedition of 1925, and he had piloted Byrd's plane on the 1926 exploration and flights to the North Pole. Both

Byrd and Bennett, naval aviators, were given Congressional Medals of Honor for their feats. Bennett assured his position as a popular hero in 1928, when he flew to the Arctic in an effort to assist fliers of the Bremen that were downed on Greenly Island while attempting as East-West trans-atlantic flight. He had been asked by the New York World and the North Atlantic Newspaper Alliance to fly to their rescue. In New York he picked up spare parts for the downed plane and medications for the drew and began the flight to Greenly Island, where the two Germans and one Irishman were stranded. Already suffering from a cold, Bennett insisted on making the mercy flight, but continued only part way after he had become too ill with pneumonia to continue. He in turn became an object of rescue, and Col. Charles A. Lindbergh flew medicine to him in Murray Bay, Canada. Bennett died in a hospital in Quebec in April 1928.

Bennett became a greater national hero when his body was brought back in special trains, with layovers for lying in state and public viewing. He was buried with full ceremonies at Arlington. Many other honors followed. Admiral Byrd named his plane for the South Pole expeditions the Floyd Bennett, and plaques and memorials were erected. Of all the honors, Cora L. Bennett seemed most pleased with her husband's name as the for the New York airport. In her book about him (Floyd Bennett [New York: Payson, 1932], his best biography) Mrs. Bennett recalls that the scene at the dedication of the airport

> brought back memories. I well remember that once Floyd and I motored out there, when the name of Barren Island was synonymous with its desolate appearance. Looking across the wastelands, Floyd turned to me, and said: "Some day, Cora, there will be an airport here." (163)

Floyd Bennett was officially dedicated on 23 May 1931. Though the Administration Building would not be completed until that fall, the hangars were complete; and the field had been used by planes for some time. Opening ceremonies were carried on a nationwide radio hookup (NBC), in connection with Army Air maneuvers involving some 650 planes. With an opening statement by radio, Douglas MacArthur began the maneuvers and dedication from Washington.

At the airport Mayor James Walker officially opened the field. Mrs. Bennett spoke briefly and unveiled a plaque dedicating the facility to her husband. Clarence D. Chamberlain, who had flown to the filed with Ruth Nichols and others, appeared. Capt. John H. Towers, pilot of the NC-4 (first plane to cross the Atlantic), was there, as was Lt. Eric Nelson, who participated in the first flight to circle the globe. Clarence Young, Assistant Secretary of Commerce for Aviation, spoke of the ceremonies as "one of the important events for aviation." F. Trubee Davison, Assistant Secretary of the Army for Aviation, and other military notables were also in attendance. Admiral Byrd flew to the field and made aerial photographs, and Colonel Lindbergh led planes of the 152nd Observation Group in the maneuver flight over the field. Foreign dignitaries were there, along with some 25,000 spectators. [New York Times, 24 May 1931]

The crowd would have been larger, but for the fact that the great Army flight was to appear at other points in the city. It had landed at several fields in the area and, on 23 May, massed at given rendezvous points. Engaging in mock battles and maneuvers on the way, the planes flew across the Battery and to other points. The 650 planes and 1,400 men in the sky at one time were a force that was called the "strongest ever assembled under a single command" [New York Times, 23 May 1931]. The Times noted on 24 May that

> from early afternoon when Mayor Walker . . . arrived until hundreds of planes, soaring like a swarm of insects out of the mist and clouds over the sea, circled turned and passed before the administration building and reviewing stands in a vast aerial parade twenty miles long, the sky was the focus of all eyes . . . .
>
> It [the air armada] appeared in the dim northwest about 6 o'clock in stately procession above the skylines of Brooklyn and Manhattan. Flies against the clouds, hundreds of them, flies slowly growing in size as the armada drew nearer . . . .

There had been an air show before this massed armada appeared. The uses and attributes of the fighters, bombers, and pursuit planes had been demonstrated. The demonstration culminated when the massed planes crossed the field at tiered altitudes of 300-600 feet, with bombers below and other aircraft above. There can be little doubt that it was a scene never before equaled; and the expenditure of moneys for the air armada brought protests from throughout the country, especially when the planes continued to put on demonstrations in the area and into New England.

When the National Aeronautical Chamber of Commerce (NACC) in its Aircraft Yearbook for 1932 reported on progress in landing-field and airport construction, it noted that

> the year witnessed the opening of several of the finest new airports yet constructed, including New York's new municipal port, Floyd Bennett Field, with the longest runways in the world. (152)

Airway Age (6 June 1931) carried two pages on the dedication, with photographs and text. Included among the prints is a photograph of the Administration buildings, with the opening crowds and many planes on the field. There are also two close-up photographs of hangars. The wording on Hangar 3 is "City of New York - Dept. of Docks - Floyd Bennett Field." The lean-tos at the sides of the hangars are in place, but the center sections are not yet constructed. The article includes the following descriptions:

> The eight hangars which have been completed have inside dimensions of 120 ft. by 140 ft. and along side of each there is a leanto which measures 20 ft. by 120 ft. The aluminum doors have a clearance of 22 ft. each and hangars rest on 250 pre-cast concrete piles 14 in. square and 45 ft. long. These piles were jetted down through two layers of bog by using a nozzle pressure of 120 lb. per sq. in. The hangars are of steel and brick construction, each hangar containing 250 tons of steel and approximately 80,000 brick. No provision has been made for heating the hangars as yet.
>
> The administration building, which rests on Raymond concrete piles, cast in place, is 185 ft. by 72 ft. and has two stories and cellar in addition to a two-story observation tower. This building which was started on February 7, 1931, was topped out on May 1, at a cost of $4000,000. It is heated with a steam heating plant equipped with an oil burner . . . .
>
> Neon lights, forming letter 6 ft. high, spell out the name of the airport. . . .

> One of the facts influencing the choice of this particular site was the fact that it now becomes a unit in the development of Jamaica Bay as a seaport. (582)

Between 23 May and 31 December 1931 the Airport Manager reported the following data:

Number of Visiting Planes:	Commercial	1,153
	Military	605
Passengers Carried		17,700
Mail Handled		4,000 lb.
Number of Students Instructed		50
Number of Landings (approx.)		25,000

)New York City, Department of Docks, Sixtieth Annual Report, for the year ending 31 Dec. 1931). The report for 1932 (Sixty-First Annual Report) notes that the field was in the forefront as "the most desirable American Field as an ocean hop terminal." It continues:

> The schedule for 1932 included Stanley Hausner on June 3, 1932, for Warsaw, Poland. Mattern and Griffin, July 5, 1932 for round the world flight. Solberg and Petersen, August 28, 1932 for Oslo, Norway. The Hutchinson family, August 23, 1932, for London, England. Ulrich, Newcomer, Pisculli, September 13, 1932 for Rome, Italy.
>
> The prospects for the 1933 season for long distance flights from the field are even brighter. Already four transatlantic flights are scheduled to leave the field with indications of half a dozen more.
>
> The reason for the choice of Floyd Bennett Field by these renowned fliers lies in the long concrete runways cited by most experts as the finest in the country, and in the fact that the field borders on Jamaica Bay, providing unlimited room for takeoffs and landings. In weather conditions, also it excels its nearest neighbors. a dozen large transport planes landed on the field because of fog at their own terminal.

There were suggestions for a pneumatic tube to carry mail from the airport to the main Brooklyn Post Office and then downtown. Clarence Chanberlain favored this construction and believed that, with the tube and adequate transportation facilities to and from the airport, it would become the area's preeminent field. (Aero Digest, April 1930)

On the North and East River shores in Manhattan were planned auxiliary commuting fields that would shuttle passengers between the field and downtown Manhattan in eight minutes (Department of Docks, Sixty-First Annual Report, 10)

Repeated attempts were made to secure airmail contracts for Floyd Bennett Field, but these continued to go to Newark, where most of the commercial airliners went as well. Only American Airlines flew out of Floyd Bennett (American Guide Series, Guide to New

York City [New York: Random House, 1939], 503) -- an then only from New York to Boston. Airmail and freight were the lifeline that made flying profitable; and denying these contracts to Floyd Bennett lessened its desirability for the commercial carriers -- as did its isolation. While it is no further from downtown than Newark is, transportation from Newark to Manhattan was more direct and easier to use.

That very isolation, however, made it an ideal field for record flights; and the field continued as one of the great airports of the world in that sense, the chosen destination or starting place for hundreds of record fliers. there was also no lack of general business -- if we with to measure the success of the field by actual use. the Aircraft Yearbook for 1934 reports that in 1933 there were 51,828 landings and takeoff, 52 airline passengers, 27,193 other passengers, 98 bags of mail, and 100 pounds of express (159); for that same year Newark, with 19,232 landings, had 120,000 airline passengers, 1.5 million pounds of mail, and 425,000 pounds of express. It is likely that the airline passengers, the mail, and the express that did land at Floyd Bennett came from planes that, prevented by weather conditions from landing at Newark, proceeded on to Floyd Bennett, which was hardly ever closed by weather conditions.

In an attempt to dramatize the lack of both commercial and airmail contracts for Floyd Bennett, Mayor Fiorello LaGuardia the following year staged a publicity stunt that most who remember Floyd Bennett Field not credit to Mayor Walker and the building of Floyd Bennett. In the only account of the story that was located (in Aerotrade News, 3 Dec. 1934, a mimeographed news sheet for employees of the Consolidated Aircraft Corporation, Buffalo), this is what happened:

> Mayor LaGuardia, the flying mayor of New York City, is doing his best to switch the New York Air Terminal from Newark to the New York Municipal Airport, Floyd Bennett.
>
> LaGuardia lately bought a TWA ticket from Chicago to New York and when the plane pulled into Newark Airport he refused to get out, saying that his ticket read New York and he meant to have the plane land in New York. So, a special flight was made to drop Mayor LaGuardia off at New York as he desired, landing him on the municipal airport, which is just as far from Times Square as the Newark Airport. . . .
>
> The only advantage to Floyd Bennett is that it is on the water and flying boats could be used for the taxi service to Manhattan and taking the passengers to various bases on the waterfront.

These taxis never materialized. It was necessary to have the commercial passengers to operate the air taxis, and the commercial airlines flew where the airmail and air-freight contracts allowed them to fly. These contracts were for Newark.

With 51,828 landings in 1933, Floyd Bennett was nevertheless the second busiest airport in the nation. Only Oakland, with 66,000 landings, was busier. (Aircraft Yearbook for 1934, 159)

To the end of the decade the field continued to be the scene of recordbreaking flights. Its Airport Register, which all pilots signed, would be one of the primary aviation documents of the pre-World War II era; but the Register's location -- or even its survival -- is unknown.

With the opening of LaGuardia in 1939, Floyd Bennett ceased to have commercial potential:

> It closed to commercial service on 26th May 1941 and became "Naval Air Station New York" [or the Brooklyn Naval Air Station] after the U.S. Navy had bought it from the City for $915 million. The 387-acre site was enlarged to 1,288 acres and a new slipway added for flying boats.
>
> In December 1943, the Naval Air Station became the MATS terminal for 24 daily trans-Continental flights on War service and the Floyd Bennett Air Cargo terminal handled all North Atlantic cargo.
>
> Yet another stage in the history of the old Barren Island site came in May 1971 when the title "Naval Air Station" was dropped and Floyd Bennett became a Naval Air Reserve Training Detachment -- a technical training center for ground crews. In that year also the Port of New York Authority discontinued negotiations with the U.S. Navy on the purchase of the Field for which the Navy sought $1,200,000 against the Port Authority's offer of $750,000 plus $300,000 annually. [Masefield, Gateways,33]

The Navy had begun negotiations to purchase the field from the City in 1939. On 31 March 1941 the final recommendation for purchase was approved, and the airport was acquired. (Record Group 72, Box 1162, National Archives)

By 1971 the field's fortunes had come full circle, with the City negotiating for repurchase. When the historic portion of the field was turned over to the National Park Service, both the military and the municipal occupation ended. Floyd Bennett Field is now headquarters for the Jamaica Bay Unit, Gateway National Recreation Area, National Park Service, Department of the Interior.

2. Construction

a. 1927

Report of the Fact-Finding Committee on Suitable Airport Facilities for the New York Metropolitan District (29 Nov. 1927).

This printed report grew out of public hearings, examination of a list of requirements for airports, and research on the ownership and desirability of various sites. Two sites in the Jamaica Bay area were recommended; both had some connection with the proposed development of Jamaica Bay as a port, and both involved city-owned land. First choice (Site 9) was on the proposed East Island section of the Port development, near the present JFK Airport. The second choice in the area (Site 39) was described as "partly sand fill and partly marsh land, on the westerly shore of Jamaica Bay, lying north of Barren Island and bounded on the southwest by Flatbush Avenue" (10). Ultimately, Site 39 (with some modification in actual siting, in order to place it on Barren Island) was chosen.

b. 1928

> "New York commenced its development of Barren Island in 1928 . . ." (The Aircraft Yearbook for 1939, 106).

Construction was carried out by, and under the supervision of, the New York City Department of Docks. This procedure was logical, since transportation was involved, as was freight; and the airport was viewed as one step in the development of Jamaica Bay as a port. The site, dredging, fill, transportation, and facilities to service the airport were viewed in the context of how they dovetailed with the Jamaica Bay Port development.

> New York City, Department of Docks , Fifty-Seventh Annual Report (for the year ending 31 Dec. 1928).

An aerial photograph shows the Floyd Bennett site on 22 March 1928, before fill operations were stated (95). Another photograph shows the site on 22 April 1929, after sand-fill operations were completed (96). Contact No. 1917 covered leveling of existing fill and distributing it to an even grade of 16 feet above mean low water -- hydraulic fill in the amount of 2.6 million cubic yards from Rockaway Inlet Shoal, of 850,000 cubic yards from Mill Basin Channel, and of 1 million cubic yards from the Jamaica Bay Main Interior Channel. This was one of two contracts let during the year; it was let in May 1928, and a fill area of some 387 acres was completed. Contract No.1935, because of settling, was subsequently let for 833,000 more cubic yards of fill; it too was completed. Contract No. 1941 was prepared, to be let early in 1929. The Fifty-Seventh Annual Report noted further:

> In January 1928 the Commissioner of Docks was instructed by the Mayor to proceed with studies and plans for designing and constructing a municipal airport on property under the jurisdiction of this Department between Flatbush Avenue and Jamaica Bay. . . . This area had been partially filled in by sand pumped from the Jamaica Bay Channel. Prior to 1928, the Department's new plan called for a number of log piers into Jamaica Bay Channel from the bulkhead line. This bulkhead line was moved outshore so as to increase the area available for this improvement.
>
> From the beginning of the year 1928, our studies and information gleaned from every possible source, proved to us that the great problem of constructing a proper airport at the location designated was the placing, as economically as possible, of a layer of earth on the area described in the foregoing so that proper grass would grow and so that we would have a landing field which would be resilient enough to support the shock of airplanes landing and taking off. To this end we consulted authorities in the United States Department of Agriculture, Columbia University, Cornell University and the Connecticut State College of Agriculture. the consensus of their opinion was that a minimum of 4" of proper subsoil after compaction and a minimum of 3" of proper top soil after compaction would, when properly fertilized and the proper mixture of grass seed placed in the top soil, secure for a field that would be useful and would be satisfactory for the purposes intended.
>
> It was desired to have a certain area of the field equipped with runways for take-off purposes only and it was deemed advisable that these should be constructed of some hard material and not grass; therefore intensive studies were made of the most suitable material to use for this purpose.

> We examined extensively the merits of various kinds of material for these take-off runways, such as asphalt, bituminous macadam, wood blocks and other kinds and its was finally determined to construct these runways of a specially prepared reinforced concrete. . . .
>
> Studies were begun during 1928 for hangars, pavement, a seaplane base, fire prevention apparatus, motor vehicle apparatus, machine tools. lighting, electric power, removal of obstructions, administration building, grand stands for spectators, sewage disposal, water supply, areas to be devoted to concessions, gasoline and oil requirements on the field and in fact all that goes toward making up the Class AAA airport at rated by the United States Department of Commerce. (97-98)
>
> U.S., Department of Commerce, Aeronautics Branch, Bureau of Air Commerce, Construction of Airports (Washington: GPO, April 1928).

General layout and arrangement of Floyd Bennett follows the recommendations in this report for "A1A" rating, evidently the same as the "AAA" rating mentioned in the Department of Docks report (above). The Department of Commerce publication contains a layout diagram and (6-9) diagrams for the individual parts of the airport, as well as text recommendations concerning airport layout and construction -- as in the following examples:

> Airport buildings should be arranged along the side of the landing area where they will interfere least with landing and takeoffs. (6)
>
> The buildings should be places most conveniently for surface transportation and for light and power. . . . Provisions should be made for a road to connect the airport and its buildings with the nearest highway or main road without crossing the landing area. (7)

c. 1929

> New York City, Department of Docks, Fifty-Eighth Annual Report (for the year ending 31 Dec. 1929).

Though no architect is listed in any of the reports or records located for the Floyd Bennett structures, a possible architect was Edward C. Remson, of Fellheimer and Wagner, Architects. The firm was consulting architect for Curtiss Airports Corporation and for New York Air Terminals, Inc.; and, and having won honorable mention in the Lehigh design competition in 1929-30 (Lehigh Portland Cement Company, American Airport Design [New York: Taylor, Roger & Bliss, 1930], Remson was actively involved in airport design and competition. Whenever the original contracts are examined 9if they can be found), the examiner should find drawings and specifications and can verify the architect's name.

Contract No. 1967 (building of hangars and appurtenances at the Floyd Bennett Field - $1,051,000.00). Plans and specifications were prepared for 14 hangars; the number was reduced by the Board of Estimate and Apportionment to eight. Advertised at the end of 1929 to be let early in 1930, this contract included the following items:

I. Hangar Foundations
II. Subsoil Structures
III. Structural Steel Framing
IV. Covering for Steel Framing
V. Paving
VI. Sliding Hangar Doors
VII. Hangar Floors
VIII. Concrete Apron an Gutter Trough
IX. Paving, Glazing an Finishing

Contract No. 1935, supplementary to Contract No. 1917 (hydraulic filling); work begun in January 1929. Contract No. 1917 (hydraulic grading and filling - $591,814.74); let in 1928 and completed 16 May 1929.

Contract No. 1978 (protective fence - $14,354,00). Sand blowing over the airport fill area was a great menace and the hardest physical problem to combat during construction. To halt sand drift, this contract authorized a screen wood fence to be placed along the northerly end of the airport.

Contract No. 1941 (concrete runways, top soil, subsoil and grassing - $725,700.16); work begun late in 1929. The contract included a privet hedge some 5,637 feet in length along the northerly side of the field; two reinforced concrete runways 50 feet wide, one 4,000 and one 3,110 feet long; placing of 1,563,800 square yard of subsoil 4" in thickness after compaction; top-soil treatment, fertilization, and seeding of some 155 acres; building of temporary wooden platform of some 4,000 square feet. The contract was substantially completed by the end of the year.

Contract No. 1963 (widening reinforced concrete runways - $103,651.00). The contract authorized widening of concrete runways to 100 feet. Under Contract No. 1941 the 50-foot width had been authorized only because funds were not available for greater width. Work was begun on 14 November 1929.

Contract No. 1979 (placing of top soil and for grass seeding, soil treatment, and fertilization for remainder of field not covered in Contract No. 1941 - $170,000).

The Fifty-Eighth Annual Report noted:

> During 1929 in addition to the preparation of plans, specifications and the supervision of the work mentioned in the foregoing, this Division continued its studies of the various problems with which we were confronted within the construction of the Airport. We have gleaned information from every possible source, and have laid out a seaplane base, a complete lighting system for the field Administration Building, heating plant, garage, comfort stations, landscaped area for the Administration Building, grandstands for spectators, parking areas and enumerable other details which go to make up a complete Airport, and one which will secure the highest possible rating from the Federal Department of Commerce. . . . The Department by intensive study has developed an Airport which it is believed will be a great credit to New York City. (90)

d. 1930

New York City, Department of Docks, Fifty-Ninth Annual Report (for the year ending 31 Dec. 1930).

Building at Floyd Bennett. Status of contracts is given as follows:

1941 - completed 11 February 1930 by J. T. Walsh.

1963 - completed 20 May 1930 by Fleming & Sheppard.

1979 - completed 2 June 1930 by F. L. Walsh; actual cost - $170,537.01.

1978 - completed 2 August 1930 by M. D. Lundin Company; $8,865.21

1997 - (parking area - $19,160.00 - Fleming and Sheppard); in progress.

1999 - (seaplane base - $148,164.00 - Charles B. Vachries); in progress.

e. 1931

New York City, Department of Docks, Sixtieth Annual Report (for the year ending 31 Dec. 1931).

An excellent photograph of the field on Sunday, 25 January 1932, shows the status of construction at the time (facing page 18). A foldout (facing 16) showing the field, docks, and wharves in Jamaica Bay illustrates the manner in which the Department of Docks viewed the field as only one part of the development of the Jamaica Bay port. The drawing shows a full airfield, seaplane base, dirigible hangar, and a mooring mast. No information on construction of the dirigible hangar has been located, though a mooring mast may have been constructed later.

In a discussion of the various building appear the following statements:

Eight hangars of fireproof brick and steel were erected. they are fitted with a specially designed aluminum alloy door which requires no motorized power to operate; this can be opened in a few seconds in case of an emergency. . . . An administration building of imposing architecture occupies the central portion of the group of buildings. [The cost is listed as $4 million.] (16)

The Administration Building, a structure about 200 feet long by about 70 feet wide, of colonial type, has been fully completed since August and has received favorable comments from all sides as the quality of the work therein, and also of the architecture of the building itself. Eight hangars are completed. Four of these have been rented.

[The Administration Building] contains facilities for a restaurant, cafeteria, post-office, dormitories, lounge, weather bureau and Department of Commerce room. While only itinerant flying has been the main activity, the airport nevertheless is one of the most active in the East, and has attracted large crowds of people, particularly on Saturdays and Sunday. (19)

Status of contracts is given as follows:

2000 - (Administration Building - $249,079.45); completed 14 October 1931 by Longacre Engineering Company.

1997 - completed 14 May 1931 by Fleming & Sheppard.

1999 - completed 21 October 1931 by Charles F. Vachries; actual cost - $155,564.

2048 - (taxi strips and fillets - $18,495.00 - Thomas McMillan Co.); in progress.

f. 1932

New York City, Department of Docks, Sixty-First annual Report (for the year ending 31 Dec. 1932).

Status of contracts is given as follows:

2031 - (floodlight - $26,356.00 - Sperry Gyroscope); completed 17 January 1932.

2048 - completed 10 December 1932 by Thomas McMillan Co.

2053 - (sand fences - $3,510.00 - Independent Fence Co.); completed 2 February 1932. This was a removable wire fence. The Report notes:

In case of take-off of heavily laden planes and to give certainty and flexibility of traffic control of planes, vehicles and sight seers, this removable fence has already proved its worth.

It is interesting to note at this point the growing popularity of the field in regard to long distance flight take-offs, for several of which part of this fence was removed and in conjunction with 100 foot concrete runways has proved the basic engineering layout of the airport a second to none. (46-47)

2088 - (repair of hangar roofs - $12,000.00).

2090 - (excavating and grading at airport - $14,000.00).

g. 1937

Post of New York Authority, Overseas Air Terminal at the Port of New York (New York, 1937).

The report recommends that a mooring mast for dirigibles be constructed at Floyd Bennett Field, "so as to provide a station stop at New York regardless of where the airship companies may establish their terminal base. A low mast (60 feet in height) could be so located as not to create a hazard to airplane operation" (2). The report also recommends

extension of the runways to 5,000 feet (2) and notes that to date $13 million has been expended on Floyd Bennett Field (12), of which a photograph is included (24).

h. 1936-38

Charles T. Abernethy, Final Report of the Works Projects Administration for the City of New York (New York (New York: Works Projects Administration, 1943).

The report notes that changes in airport construction and needs had been so rapid between 1931 and the inception of the WPA that multiple changes required at Floyd Bennett Field were turned over to the WPA:

> The entire field was graded and an adequate drainage system was installed. Two new 3,500 foot runways, 147 feet wide, one equipped for blind flying, were built. Underground passenger tunnels were constructed. A field lighting system was installed. Lean-tos were added to the existing hangars for housing machine shops and other field necessities. a pump house and a dope house were build. The Administration Building was extensively repaired and altered. A fire sprinkler system was installed in all buildings, a parking field, roads, walks and fences were constructed. (164)

(See also WPA in New York City A Record of Accomplishments [n.p.,1938], 18; the report includes an illustration of the field.)

i. 1939

National Aeronautics (May 1939) notes that improvements have been made to the seaplane facilities at Floyd Bennett (30), but does not detail them.

j. 1942-43

The Final Report of the WPA (see Subsection h, above) notes:

> When Floyd Bennett Field . . . was taken over by the Navy as a U.S. Naval Air Station, the WPA undertook soil stabilization work, the planting of extensive areas with beach grass, and the construction of numerous recreational facilities, such as baseball diamonds, running tracks, tennis courts, etc. (173)

3. Record Flights, 1931-39 (See also Appendix C.1, below)

From its opening ceremonies (23 May 1931), in which both Adm. Richard E. Byrd and Col. Charles A. Lindbergh participated, Floyd Bennett Field was visited and used by almost every famous American flier of the time, and by many foreign fliers as well. Among the Americans were Howard Hughes, Wiley Post, Jimmy Doolittle, and according to Sir Peter Masefield (Gateways to the World: The Airports of New York and London [New York: The Wings Club, 1972], 33 -- hereafter cited as Masefield) and Amelia Earhart. It was from Floyd Bennett Field that Douglas Corrigan's beginning a flight to California and landing in Ireland earned him the nickname "Wrong Way."

Some of the record flights from or to Floyd Bennett are described in the chronological listing that follows. The information includes type of plane, engine, and flying time (with colons thus separating hours:minutes:seconds). Additional material on the pilots and their flights is included (slightly paraphrased from the contemporary accounts credited in brackets), though some of it does not related directly to Floyd Bennett Field, is also apparent from the accounts.

Floyd Bennett was opened 28 years after the first flight at Kitty Hawk. It was not an early airport; yet flight, especially in its commercial applications, was still being tested. During the decade of the 1930's Floyd Bennett was probably preeminent in the number of record flights that were planned and begun here or that ended here.

a. 1931

28-30 July. Russell N. Boardman and John Polando fly from Floyd Bennett Field to Istanbul, Turkey, in 49:20 -- establishing a distance record of 5,011.8 miles. Bellanca CH, Wright J-6 motored.

The record for long distance without refueling, one of the world's most coveted aviation records, was brought back to the United States for the third time in recent years when one-time cowboy, motorcyclist, and wing-walker Russell N. Boardman and former garage mechanic John Polando flew their monoplane ***Cape Cod*** from New York to Istanbul, Turkey, in 49 hours and 20 minutes. (National Aeronautical Chamber of commerce, ***The Aircraft Yearbook for 1932*** [New York, 1932], pp. 487, 112-13. Published annually, these NACC reports are hereafter cited as ***Yearbook***, followed by the year; page numbers indicate sources of the statistical listings and the discursive accounts, respectively. Each yearbook records events for the year prior to publication).

28-29 July 1931. Hugh Herndon, Jr. and Clyde Pangborn ***fly*** from Floyd Bennett Field to Moylegrove, Wales, in 31:42--later continuing as far as Japan on a projected flight around the world. Bellanca Skyrocket, Pratt & Whitney Wasp motored.

17 October 1931. Hugh Herndon, Jr. and Clyde Pangborn ***land at*** Floyd Bennett Field--completing the flight around the world begun on 28 July.

The eyes of New York socialite Hugh Herndon, Jr., and old-time barnstormer Clyde Pangborn

were on a bigger stake then the honor of being the first to cross the Pacific nonstop when they took off from New York on the morning of 28 July and chased after the Istanbul-bound *Cape Cod,* which had left the same field 17 minutes before them. They were out to break the eighty-day record of Post and Gatty for circling the globe. Their plane, the monoplane *Miss Veedol,* was slower than the Winnie Mae; but their longer cruising range enabled Herndon and Pangborn to take turns at the controls, while Post

had been required to fly without relief. Delays, bad weather, and repairs caused them to fall well behind the Post-Gatty schedule; they decided to fly to Tokyo to attempt the first nonstop trans-Pacific crossing for a $25,000 prize offered by a Tokyo newspaper, *Tokyo Asahi.* They wired for permission to fly to Japan, but did not wait for an answer. Upon arrival in Japan they were arrested for flying over and photographing secret Japanese military installations. After weeks of questioning they were tried, and each was fined $1,025. Permission to leave the country by air was held up. Finally permission was granted for one takeoff. If that failed, they must leave Japan by steamship.

It was something of an anticlimax to their experiences when on 3 October they got off from Samishiro Beach, 280 miles north of Tokyo. Soon after they were over the ocean, Herndon's cutting of a wire that let the plane's landing gear drop into the sea reduced the load by 300 pounds and the head resistance by 17 percent. Landing at Wenatchee, Washington, they had completed the first nonstop Pacific flight and one of the longest trips in history--4, 558 miles--in 41 hours. The ship landed on its iron belly, slid along in a cloud of dust, and tipped up on it's nose. The propeller snapped, but the plane settled back with a thud. The fliers were not scratched. As they crawled out of the plane, they were met by a representative of the *Tokyo Asahi;* he was waving the coveted $25,000-prize check.

With a new landing gear and propeller on their plane, Herndon and Pangborn started a leisurely trip across the country and timed themselves to arrive at their starting point, Floyd Bennett Field, on Sunday, 18 October, during the Four-Field Flying Show staged by the aviation industry for the benefit of New York's unemployed. ***(Yearbook, 1932****,* pp. 487-88; 115-18)

10 December 1931. Herbert Schiff Trophy is awarded to U.S. naval Reserve Aviation Base, Floyd Bennett Field (***Yearbook*, 1932**, p. 488).

Announcement was made of the award of the Herbert Schiff Trophy, for the aircraft squadron or unit flying the greatest number of hours during the year without serious accident, to the U.S. naval Reserve Aviation Base, Floyd Bennett Field (***Aero Digest***, December, 1931).

b. 1932

3 June. Stanislaus F. Hausner is forced down at sea on an attempted transatlantic flight *from* Floyd Bennett field and is rescued by a British tanker eight days later. Bellanca Pacemaker, Wright Whirlwind motored. (***Yearbook, 1933***, p. 382).

5-6 July. James Mattern and Bennett Griffin fly nonstop from Harbor Grace, Newfoundland, to Berlin, Germany, in 18:41--later continuing as far as Borisov, Russia, on an attempted flight around the world. Lockheed Vega, Pratt & Whitney Wasp motored.

With their eyes fixed on far more than the conquest of the Atlantic, James Mattern and Bennett Griffin took off *from* New York's Floyd Bennett field before dawn on 5 July in their monoplane ***Century of Progress*** and headed for Harbor Grace as their first point of call. Their hearts were set on nothing less than bettering the remarkable eight-day record of Wiley Post and Harold Gatty for a flight around the world.

Losing little time at Harbor Grace, they headed eastward along the great-circle course. Eighteen hours and 41 minutes later they set their wheels down on Templehof Airdrome in Berlin. They had made the first non-stop flight from North America to Berlin, and they already were many hours ahead of Post and Gatty's time. Spending little more than three hours in the German capital, they headed for Moscow, 10 hours ahead of the record time.

Soon after they reached the Russian border, one of the tail surfaces was damaged by a hatch that flew off. The fliers decided to make a landing in the dark. They sighted what appeared to be a pasture and set their speedy plane down. A few seconds later they were helping one another out of the wrecked plane. They had landed in a peat bog. Their hopes for a world record dimmed as they examined the damaged plane, beyond

hope of immediate repair. Berlin papers hailed their great nonstop flight to Germany and pointed out that their time ver the Atlantic, about 11 hours, was the fastest crossing yet made. (***Yearbook, 1933***, pp. 382, 96-997; photograph of the plan at Templehof, p. 96).

25 August - 11 September 1932. George Hutchinson, with his wife and two children, navigator Peter Redpath, mechanic Joseph Ruff, radio operator G. J. Altflisch, and photographer Norman W. alley--flying from Floyd Bennett Field on a projected transatlantic flight in short hops--is forced down off the coast of Greenland and is rescued two days later by a British traveler. Sikorsky amphibian, 2 Pratt & Whitney Wasp motors. (***Yearbook, 1933***, p. 382).

29 August 1932. James G. Haizlip flies from Lost Angeles to Floyd Bennett Field, in 10:19--establishing a transcontinental record. Wedell-Williams, Pratt & Whitney Wasp Junior motored.

Col. Roscoe Turner flies from Lost Angeles to Floyd Bennett Field, in 10:58. Wedell-Williams, Pratt & Whitney Wasp Junior motored.

While Major Doolittle was preparing for his successful challenge to the world's speed record for land planes, an old transcontinental speed mark that he cherished was wrested from him by James H. Haizlip, who streaked across the continent from Burbank, California, to New York's Floyd Bennett Field in 10 hours and 19 minutes--cutting 57 minutes from Doolittle's time for the West-to-East flight. Haizlip's performance of 29 August carried with it victory in the Bendix Trophy Race--the trophy being offered for the fastest time from Los Angeles to Cleveland during the National Air Races.

Close behind Haizlip on that momentous evening came Roscoe Turner, who also bettered Doolittle's time but was 39 minutes too slow to nose out Haizlip for the trophy and transcontinental honors. (***Yearbook, 1933***, pp. 383, 102).

13 September 1932. William Ulbrich, pilot, with passengers Dr. Leon M. Pisculli and Edna Newcomer, flying *from* Floyd Bennett field on an attempted transatlantic flight, is lost at sea. Bellanca Skyrocket, Pratt & Whitney Wasp motored. (***Yearbook, 1933***, p. 383).

14 September 1932. Col. Roscoe turner flies from Floyd Bennett Field to Burbank, California, in 12:33--establishing a new East-West record. Wedell-Williams, Pratt & Whitney Wasp Junior motored.

Turner came into his own on 14 November , when he made a new record for the East-to-West transcontinental flight by bettering an earlier mark of 14 hours and 50

minutes made by the then Captain. (now Commander) Frank Hawks (***Yearbook, 1933***, pp. 383, 103; photograph of Turner before the engine of his plane, p. 103).

Streaking from Floyd Bennett Field, California speed flier Col. Roscoe Turner sliced 2 hours and 17 minutes off the time set by Lt. Comdr. Frank Hawks in 1930 and captured for himself a new East-to-West transcontinental speed record. Turner took off from Floyd Bennett Field at 7:46 a.m. (EST) and averaged 199.2 mph against strong headwinds over the entire route. Leaving Los Angeles for New York on 19 November, Turner had hoped to make a round trip between the two cities in 22 hours, but at Columbus a blown-out tire forced him to abandon the attempt.

For years handsome, debonair Roscoe Turner has been jumping in and out of newspaper headlines until today he is one of the country's best-known if not best pilots. Both turner and his flying make good newspaper copy. Well aware of the value of publicity, he is today almost as well known for his precisely pointed waxed moustache and the lion cub that for months flew with him constantly as he is for his colorful aerial exploits! (***National Aeronautic Magazine***, X [December, 1932], 10, with a picture of Col. Turner and his plane.

C. **1933**

2 June. Lt. Comdr. Frank M. Hawks flies nonstop from Los Angeles *to* Floyd Bennett Field, in 13:26:15--establishing a new West-East nonstop record. Northrop Gamma, Wright Whirlwind R-1510 motored.

Another remarkable flight across the country was the nonstop record made by Lt. Comdr. Frank Hawks, who left Los Angeles at 5:15 a.m. (PST) and landed at 11:19 p.m. (EST). This nonstop record broke his former record of 17 hours and 36 minutes, made on 28 June 1929. Average speed was 181 mph. (***Yearbook, 1934***, pp. 388, 137-38)

11-12 June. Capt. J. Errol Boyd, with Robert G. Lyon and Harold P. Davis, flies nonstop *from* Floyd Bennett Field to St. Marc, Haiti, in about 24:00. Bellanca monoplane, Wright Whirlwind motored.

On 11-12 June 1933, Capt. J. Errol Boyd and two companions made a non-stop flight from Floyd Bennett Field to St. Marc, Haiti, a distance of about 2,470 miles, in about 24 hours. Their plane was the famous eight-year-old Columbia, veteran of two transatlantic and many other long nonstop flights. (***Yearbook, 1934***, pp. 388, 138)

> **15 June 1933.** James J. Mattern, on an attempted flight around the world, flies from Floyd Bennett Field across the Atlantic and then as far as Siberia, where he is forced down--later flying part of the way back to New York. Lockheed Vega, Pratt & Whitney Wasp motored.

Another daring attempt to make the first solo flight around the world was that of James Mattern, who left New on 3 June. On 15 June he was forced down with a wrecked plane in Siberia, to remain 14 days on the banks of the Anadyr River before he was rescued by Eskimos. He broke his ankle in the crash, and he had only a small supply of chocolate and biscuits, which was exhausted in five days. The Eskimos took him to their village. On 5 July they brought him into the town of Anadyr, where the radio reported him to be alive. (***Yearbook, 1934***, p. 388, 131).

> **1 July 1933**. Col. Roscoe turner flies from Floyd Bennett Field to Los Angeles, in 11:30--establishing a new East-West record. Wedell-Williams, Pratt & Whitney Wasp motored. (Yearbook, 1934, p. 388; photograph of Col. Turner and his plane, p. 138).

> **1 July - 12 August 1933**. Gen. Italo Balbo, leaving from Orbetello, Italy, with 25 seaplanes of the Italian Air Force, flies to Chicago via Iceland and Labrador--23 of the planes returning to Rome via New York, Newfoundland, and the Azores. Savoia-Marchetti S-55X, 2 Isotta Fraschini Asso motors.

Gen. Italo Balbo and his armada of 25 seaplanes manned by nearly 100 officers and men took off from the water at Orbetello, Italy, on 1 July 1033, on what was to be the greatest mass flight in aviation history. They lost one seaplane and a member of its crew while landing at Amsterdam on the west bound flight.

General Balbo flew his armada from Chicago to New York in perfect formation and, several days later, flew on to Shoal harbor, Newfoundland. During the departure

from Ponta Delgada another seaplane was wrecked. (***Yearbook, 1934***, pp. 388, 131-32; photograph of General Balbo's flagship, p. 132)

Its site on Jamaica Bay makes Floyd Bennett Field particularly suitable for seaplanes, an advantage impressively demonstrated in 1933 by the visit of 24 giant Italian seaplanes under Gen. Italo Balbo on their way home after a transatlantic trip to the Century of Progress Exposition in Chicago. A ramp for seaplanes, 50 x220 feet at the eastern end of the field, gives access to ample water space. (***Guide to New York City***, p. 504)

> **15-17 July 1933**. Capt. Stephen Darius and Stanley T. Girenas fly from Floyd Bennett Field to Soldin, Germany, where they are killed in a crash. Bellanca, Wright Whirlwind motored.

One of the most daring and tragic flights of the year was this one of the Lithuanian-American pilots

Capt. Stephen Darius and Stanley Girenas. After two years of preparation they left Floyd Bennett Field

on 15 July and flew nonstop toward Lithuania, their native land, only to crash in a forest near Soldin,

Pomerania, during a storm.

> **15-22 July 1933**. Wiley Post, starting from Floyd Bennett Field flies around the world in 7 days, 18:45.5--covering 15,596 miles in 4 days, 19:36, and establishing a new record. Lockheed Vega, Pratt & Whitney Wasp motored.

In the same *Winnie Mae* (the Lockheed monoplane in which he and Harold Gatty made their record

flight in 1931) Wiley Post, fling solo this time, on 22 July landed in new York after having flown

around the world in seven days, 18 hours, and 49 minutes. The record made by post and Gatty was

eight days, 15 hours, and 51 minutes.

Post used not only the same plane, but the same engine on both flights. The engine, a supercharged Pratt & Whitney Wasp, had logged 846 hours before the takeoff

from Floyd Bennett. New cylinder heads, with modern thin fins for cooling and new sodium-cooled valves, were the only alterations to the veteran engine--that and a Smith controllable-pitch propeller, which at 15,000 feet pulled the Winnie Mae at 200 mph and allowed flight at high altitudes. In Russia, Post dropped from 21,000 to 200 feet before he could see the ground. New instruments helped him through bad weather. Writing in Sperryscope (Oct. 1933), Post asserted:

There were hours when I was forced to fly absolutely blind or above the clouds. It was called a solo flight, but I never could have made the record without the efficient little co-pilot--the Sperry Pilot for automatic flying. Without it the strain of flying through the worst weather I ever saw would have been too great.

Most of the first hop from New York to Berlin was flown in clouds and rain. Between Khabarovsk, Siberia, and the Alaskan coast the automatic pilot did all the work and took me through a continuous blind stretch for seven hours.

At a luncheon for Post by the Aeronautical Chamber of Commerce, he was presented with an

illuminated parchment scroll, which read (in part):

Your flights have reflected great credit upon American airplanes, engines, instruments and fuels. By your technical knowledge, flying skill, dauntless perseverance and supreme endurance you have wrought mightily in displaying before the world the excellence of American engineering and construction in aeronautics. (***Yearbook, 1934***, pp. 389, 130-31; photograph of Post and the plane, p. 130).

This accomplishment by Post is summarized by Norris and Ross McWhirter, ***Guinness Book of World Records***(New York: Sterling, 1972), as follows:

> The earliest solo flight around the world was made from July 15 to 22, 1933, by Wiley Hardeman post (U.S.) in the Lockheed *Vega* "Winnie Mae" *starting* and *finishing* at Floyd Bennett Field, New York City. He flew the 15,596 miles eastwards in 7 days 18 hours 49 minutes--in 10 hops with a flying time of 115 hours 36 minutes. (***p. 321***)

5-7 August 1933. Lt. Maurice Rossi and Paul Codos fly from Floyd Bennett Field to Rayak, Syria, in about 55 hours--establishing a distance record of 5,657.387 miles. Bleriot 110, Hispano-Suiza motored.

d. **1934**

28 February - 25 April. Laura H. Ingalls flies from Glenn Curtiss Airport, North Beach, New York, on a 17,000-mile tour of South America, including a solo flight across the Andes, and returns to Floyd Bennett Field. Lockheed Air Express, Pratt & Whitney Wasp motor.

When Miss Laura Ingalls brought her Wasp-powered Lockheed Air Express to earth at Floyd Bennett Field on 25 April 1934, she had completed-a 17,000 mile flight to South America--having flown alone since her departure on 28 February--one of the outstanding accomplishments of women in the air. *(**Yearbook, - 1935**,* pp. 426, 1-1 8-79; photograph of the plane at the North Beach airport, p. 179)

14-15 May. George R. Pond and Cesare Sabelli fly *from* Floyd Bennett Field to Lahinch, Ireland, in 32:00--later flying on to Rome, Italy. Bellanca Pacemaker, Wright Whirlwind rotor.

The transoceanic flying season was opened on 14 May 19311, when George R. Pond and Cesare Sabelli flew their Whirlwind-powered Bellanca Pacer from Floyd Bennett Field to Lahinch, Ireland, in 32 hours. Later they flew to Rome, Italy, their original destination. They tried a return flight, but wrecked their machine when they became lost in Wales**.** *(**Yearbook-1935**, pp.* 427, 180)

27-28 May. Paul Codos and Maurice Rossi fly from Paris, France, to Floyd Bennett Field, in 38:27. Bleriot 110, Hispano-Suiza motor

The second nonstop airplane flight ever made from continental Europe to New York was completed on 28 May 1934., when Maurice Rossi and Paul Codos landed their big Hispano-powered monoplane at Floyd Bennett Field in an attempt to break their own nonstop distance record made in 1933, when they flew 5,657 miles from New York to Syria). Rossi and Codos had planned to fly nonstop from Paris to Los Angeles, but the

strain of carrying 12,54O pounds of gasoline at the outset proved too much for their veteran French plane, and they had to drop down in New York.

> **1 September**. Col. Roscoe Turner flies from Burbank, California, to Floyd Bennett Field, in 10:02:57--making a new transcontinental record. Wedell-Williams, Pratt & Whitney Hornet motor. ***(Yearbook, 1935****,* p. 428)
>
> Over the same course Colonel Turner had set an earlier record of 12 hours and 33 minutes (***National Aeronautic Magazine, X [Dec. 1932], 10***)

e. **1935**

> **15 January**. Maj. James H. Doolittle, with two passengers, flies an American Airlines plane nonstop from Los Angeles to Floyd Bennett Field, in 11:59--making a transcontinental record for passenger transport airplanes and a nonstop West-East transcontinental record. Airplane Development Vultee, Wright cyclone engine. (***Yearbook, 1936, p. 438***)

Flying blind from Pueblo to the Atlantic seaboard, Maj. James H. ("Jimmy") Doolittle recently set a new transcontinental record for transport airplanes. Though forced many miles off course during his dash by shifting winds and heavy fog, Doolittle touched his plane's wheels at Floyd Bennett Field at exactly 8:26 a.m.--having crossed the continent from Los Angeles in 11 hours and 59 minutes, which bettered by nearly five minutes the mark set in November by Capt. Eddie V. Rickenbacker. Upon his arrival Doolittle said:

> "With any kind of flying weather the trip could have been made in considerably less time. We flew at least 300 miles out of the way. The steady northwest wind drifted us far south of our course. Several times I used a knife to try to scrape the ice from the windshield but didn't have much success with this. Occasionally the moon would come out through the clouds but for the most part everything was blackness around us".

Mrs. Josephine Doolittle (the flier's wife) and Robert Adamson (of the Shell Petroleum Products Corporation, San Francisco) accompanied Doolittle on the flight. (***National Aeronautic Magazine, XIII [Jan. 1935], 15--with a photograph of Doolittle being welcomed at Floyd Bennett Field***)

> **20-21 February**. Leland S. Andrews, with copilot Henry Meyers and radio operator G. D. Rayburn, flies and American Airlines plane from Los Angeles to

Floyd Bennett Field, in 11:34:16--making a transcontinental record for a passenger transport airplane. Airplane Development Vultee, Wright Cyclone engine. (***Yearbook, 1936, p. 438; photograph of Andrews and the plane, p. 153***)

30 April. D. W. Tomlinson, with H. B. Snead and Peter Redpath, flies a Transcontinental and Western Air (TWA) plane nonstop from Burbank, California, to Floyd Bennett Field, in 11:05:45--making a record for transport airplanes and for nonstop West-East transcontinental flight. Douglas CD-1, 2 Wright Cyclone engines.

One of the most amazing flights for the year was Comdr. D. W. Tomlinson's nonstop flight from Los Angeles to New York on 30 April 1935. Tomlinson was flying so fast when he reached New York that he had to keep on going for 10 miles out over the Atlantic Ocean and then turn round, in order to slow down and get low enough to glide into Floyd Bennett Field.

They had navigated solely by instrument, without any relation to the surface. Toward evening they made ready to land in New York. Checking their speed on the instruments, they found that they were flying at a speed of 280 mph--with the aid of a high tail wind and the three-mile-high layer of light air through which they were traveling.

Within one minute of eight o'clock they streaked across Floyd Bennett Field, but they could not stop. They were too high, and they were going too fast. For 10 miles out to sea they worked at slowing down and dropping down closer to the surface, then turned and glided into the airport. They had made the 2,400 miles across the continent in 11 hours and five minutes--beating by 28.5 minutes the remarkable record for transports established by Leland s. Andrews on 21 February 1935 in a Cyclone-powered Vultee transport. They estimated that the Sperry gyropilot had reduced their time considerably, because it had kept them within 10 miles of their true course throughout more than 80 percent of the flight. (***Yearbook, 1936, pp. 439, 149-51; photographs: the crew loading the plane, p. 150; Tomlinson in the cockpit, p. 151***)

16-17 May 1935. D. W. Tomlinson and J. S. Bartles make 14 speed records at Floyd Bennett Field. Douglas DC-1, 2 Wright Cyclone engines. (***Yearbook, 1936, p. 439***)

18 May 1935. D. W. Tomlinson and J. s. Bartles make 8 speed records for airplanes at Floyd Bennett Field. Douglas DC-1, 2 Wright Cyclone engines.

Speed with loads--demonstrating the increasing efficiency of transport planes and engines--featured many of the record flights of the year. Most impressive, perhaps, from the view point of performance and the number of records broken were the flights made by Comdr. D. W. Tomlinson and Joseph Bartles. On 17 may 1935 they broke 14 records when they completed 5,000 km on nonstop flying over a closed course in 18 hours, 22 minutes, and 49 seconds; average speed for the triangular course was 169.03 mph. They flew an official 1,000-km closed course between Floyd Bennett Field, Washington DC, and Norfolk, VA. Tomlinson and Bartles had intended to fly it five times; but when a very low ceiling developed over the Norfolk area after the fourth lap, and after a flight to and from Washington, they completed the fifth lap in six short shuttle flights between Newark Airport, North Beach Airport (in Queens), and Floyd Bennett Field.

Their payload weighed slightly more than 2,200 pounds (a long ton). Their fuel load, which they considered necessary to power the two 715-hp Cyclone engines for 1,500 km (or 3,100 miles), was 1,600 gallons of gasoline. All told, the loaded plane weighed 24,845 pounds. Despite the burden the pilots were able to fly at an altitude of 10,000 feet (nearly two miles above the surface) with a winged craft aggregating 12 tons. They broke five world records and nine American records.

Not content with that performance they went up next day and made five more records over the same course. They also bettered all their marks of the previous day for distances up to 2,000 km. They completed the first lap of the 621-mile closed course in 3 hours, 16 minutes, and 4 seconds--at an average speed of 190.143 mph, which broke the former world record. The second world record to go to the pilots on their second day of record breaking was for flying a 2,000-kg (4,410-pound) payload for 1,000 km. They

had doubled their payload of the previous day; and at 190.143 mph on the first lap they took the record away from the French, who had held it since 1933 at 158.6 mph. Tomlinson and Bartles also broke by substantial margins the three records for flight without payload requirements that they had set the day before.

Thus their two days of effort can be summarized as in the table (see the top of the next page). (***Yearbook, 1936, pp. 439, 149-50; see also "Official Aviation Records," Aero Digest, Jan. 1936, pp. 36 ff***).

11 July 1935. Laura Ingalls flies nonstop from Floyd Bennett Field to Burbank, California, in 18:23--making an East-West transcontinental record for women. Lockheed Orion, Pratt & Whitney Wasp engine.

Laura Ingalls who made an adventurous flight around south America in 1934, climaxed her career in 1935 by record flights for women each way between New York and Los Angeles. She took off from Floyd Bennett Field. She had made two previous attempts at a transcontinental record by trying to fly from Los Angeles to new York. This westward flight was planned to thwart whatever jinx had first forced her down in a dust storm and, on her second attempt, had piled up enough mechanical trouble to stop her at Indianapolis. This westward flight was to be successful, though the lightning and dense rain clouds of a bad storm over Arizona threatened to hold her up. (***Yearbook, 1936, pp. 440, 153-154; photograph of Laura Ingalls and her plane, p. 154***.)

18 July - 16 August 1935. Thor Solberg, with radio operator Paul Oscanyan, flies from Floyd Bennett Field to Bergen, Norway, via Canada, Greenland, and Iceland. Loening amphibian, Wright Cyclone engine.

Thor Solberg, Brooklyn manufacturer, realized his ambition of many years when on 16 August 1935 he and his radio operator, Paul Oscanyan, set down their amphibian in the harbor at Bergen, Norway, after having flown by easy stages from New York. They had left Floyd Bennett field on 18 July. (***Yearbook, 1936, pp. 440, 144***).

12 September 1935. Laura Ingalls flies nonstop from Burbank, California, to Floyd Bennett Field, in 13:34:05--making a West-East transcontinental record for women. Lockheed Orion, Pratt & Whitney Wasp engine.

Shortly before midnight on 12 September 1935 the crowd at Floyd Bennett Field saw Laura Ingalls fly back nonstop from Los Angeles in 13 hours, 34 minutes, and five seconds--averaging nearly 200 mph and breaking Amelia Earhart's record of 17 hours and seven minutes. "My radio went out of order west of Columbus when I needed it most," Miss Ingalls explained. "I found myself flying on the wrong beam and so I just turned east and came on." (***Yearbook, 1936, pp. 440, 154***).

21-22 September 1935. Felix Waitkus flies nonstop from Floyd Bennett Field to Ballinrobe, Ireland, on a projected flight to Lithuania. Lockheed Vega, Pratt & Whitney Wasp engine.

Among the daring flights of the year was that of Felix Waitkus, a young pilot who yearned to be the first to fly to Lithuania. He left Floyd Bennett Field on 21 September and made his way up the New England coast to Nova Scotia, which was the last land he saw during the flight. Over Newfoundland and the ocean he flew through fog, rain, and clouds. After leaving the comparative safety of the North American continent, young Waitkus discovered that he was using too much gasoline and that he could not hope to reach Lithuania. So he decided to drop down in Ireland to refuel. Aided immensely by hourly broadcasts from an Irish radio station, he flew all through the night by instrument only. At times he flew nearly two miles above the sea, but twice found ice forming on the wings and had to come down very low until it thawed off in the warmer strata of air. Over Ireland he ran into a heavy mist, which caused him to land in the first open field he saw. Unfortunately, one wing struck the ground first and skidded the ship around--smashing the landing gear and breaking things up generally. But he had flown from New York to Ballinrobe, Ireland, in 23 hours and 15 minutes. (***Yearbook, 1936, pp. 440, 143-44***).

f. **1936**

21 April. Howard Hughes flies from Miami, Florida to Floyd Bennett Field in 4:21:32--setting the intercity speed record. Northrop Gamma, Wright Cyclone engine. (***Yearbook, 1937, p. 411***)

2-3 September. Harry Richman and Henry T. ("Dick") Merrill fly from Floyd Bennett Field to Llwyncelny, Wales, in 18:38 on an attempted flight to London. Airplane Development Vultee, Wright G Cyclone engine.

Whether one crosses it by boat or by plane, the Atlantic is still a wide ocean. At one stage or another the crossing is bound to cast up the aviator high winds or fog and, very often, rain or sleet or snow. Richman and Merrill set their plane down in a bog at Musgrave Harbor, Newfoundland--ending the first round-trip Atlantic flight in history. Richman, actor and private pilot, wanted to be the first to fly from new York to London and return. He took with him Dick Merrill, veteran transport pilot for Eastern Air Lines. They also carried the blessing of Dick's boss, col. Eddie V. Rickenbacker, American ace of aces in the world War and head of the Eastern Air Lines system. They left Floyd Bennett Field late in the afternoon. They had named their ship *Lady Peace*, and theirs was a relatively peaceful flight eastward. They landed in a cow pasture near Llwyncelny, Wales. Still, they had crossed the Atlantic in record, 18 hours and 38 minutes, at an average speed of 210 mph.

Facing a headwind, they took off from Southport Beach, England, in pitch darkness on 14 September. They had ordered a steak dinner in New York for the next evening. They were happy in the thought that they were the first aviators to demonstrate actually that one crossing of the Atlantic was not enough; they were making a return trip. Halfway across the ocean the weather began venting its spleen against these men who were daring its terrors a second time. On 21 September, Richman and Merrill flew the *Lady Peace* back to New York from Newfoundland. Thus ended one of the most adventurous flights of the year. (***Yearbook, 1937, pp. 412, 143-44; photograph of the plane, p. 141***).

4 September 1936. Louise Thaden and Blanche Noyes make the women's East-West transcontinental speed record--flying from Floyd Bennett Field to Los Angeles, in 14:55:01. Beechcraft, Wright whirlwind engine. (***Yearbook, 1937, p. 412***)

6-7 October 1936. Kurt Bjorkvall flies from Floyd Bennett Field on a projected flight to Stockholm, Sweden, but is forced down in the Atlantic off the Irish coast and is picked up by a fishing boat. Bellanca Pacemaker, Pratt & Whitney Wasp engine. (***Yearbook, 1937, p. 413***).

28-30 October 1936. Capt. James A. Mollison flies from Floyd Bennett field to Croydon Airport, London, England, via Newfoundland--making a record flight from Newfoundland to Croydon: 13:17. Bellanca Flash, Pratt & Whitney Wasp engine.

At 8:44 on the morning of 27 October 1936 at Floyd Bennett Field a sleek, streamlined Bellanca monoplane roared up out of the morning mist and pointed its nose for harbor Grace, Newfoundland. At the controls sat Capt. James Mollison, clad in a dinner jacket beneath his heavy flying suit. He was setting out to establish a new West-East record for the Atlantic crossing.

When he landed at Croydon Airport, London, 13 hours and 17 minutes after leaving Harbor Grace, he became the first pilot ever to reach London nonstop from America, the first pilot to fly the Atlantic three times, and the third man to fly the Atlantic solo and reach his predetermined destination nonstop (the other two having been Col. Charles A. Lindbergh and the late Wiley Post). (***Yearbook, 1937, pp. 413, 144; photograph of the plane, p. 143***).

14 December 1936. Maj. Alexander P. de Seversky flies from Floyd Bennett Field to Miami, florida, in 5:46:30--making a new speed record. Seversky Sev 3, Wright Cyclone engine. (***Yearbook, 1937, p. 414***)

17 December 1936. The thirty-third anniversary of the Wright Brothers' first flight at Kitty hawk is celebrated in a national aviation day. (***Yearbook, 1937, p. 414***)

g. **1937**

9-10 May. Henry T. ("Dick") Merrill and John Lambie fly from Floyd Bennett Field to Croydon Airport, London--making a stop in Essex--in 20:59. Lockheed Electra, 2 Pratt & Whitney Twin Wasp engines. (***Yearbook, 1938, p. 409***)

13-14 May 1937. Henry T. ("Dick") Merrill and John Lambie fly from Croydon Airport, London, to Floyd Bennett Field, in 24:22:25--including a stop to check gas

at Squantum, Massachusetts. Lockheed Electra, 2 Pratt & Whitney Twin Wasp engines.

Dick Merrill and his copilot, John S. Lambie, flew from New York to London and back to New York again with pictures of the coronation of George VI. (***Yearbook, 1938, pp. 409, 150-51; photograph of the plane, p. 150***)

h. **1938**

4 July. Howard Hughes arrives at Floyd Bennett Field to begin preparation for a flight around the world.

Several thousand persons were at the Brooklyn airport when the Hughes plane arrived. After bringing the plane up in front of the Administration Building before the applauding crowd, he taxied it to hangar 7, where it will be stored. Then he talked to newspapermen in an office in the hangar. (***New York Times, 5 July 1938***)

10-14 July. Howard Hughes (pilot), navigators Harry P.M. Connor and Lt. Thomas Thurlow, radio engineer Richard Stoddart, and flight engineer Ed Lund fly around the world in 3 days, 19:08:10 (New York, Paris, Moscow, Omsk, Yakutsk, Fairbanks, Minneapolis, New York = 14, 701 miles). Lockheed 14 monoplane, two 1,100-hp Wright Cyclone engines.

There seemed to be no particular reason for duplicating or improving the records of famous aerial globe-girdlers until 1938. Early that year, however, Howard Hughes (of a very inquiring frame of mind) decided to make a scientific world-flight for a comparatively new reason; navigational tests would be made with improved equipment. Long-distance flying in any direction and for whatever purpose would receive the benefit of exhaustive checks and double checks along scientific lines. The flight proved the great advances made in aviation. Just as Hughes himself had a parade of achievement to equal or surpass, his latest flight also provides future pilots, navigators, engineers, radio operators, mechanics, and others with a mark at which to shoot. (***Yearbook, 1939, pp. 467, 154-60; photograph of the plane, p. 157***).

Aero Digest (Aug. 1938) called the Hughes flight "one of the most remarkable flights in the history of aviation"; and National Aeronautics (Aug. 1938) carried several articles on the flight, to Floyd Bennett Field, on preparation for the flight, and on the use of radio and other equipment tested in the flight. Hughes' plane was called *The New York World's Fair*, *1939*, and during the flight the crew maintained contact with special radio facilities at the Fair.

17-18 July 1938. Douglas Corrigan flies nonstop from Floyd Bennett Field to Baldonnel Airport, Dublin, Ireland, in 28:13 (3,150 miles). Curtiss Robin, 175-hp Wright Whirlwind, J-6 engine.

Young Douglas Corrigan, in common with many other American youths interested in aviation, held Charles A. Lindbergh in the esteem usually reserved for idols. Corrigan had been captivated by Lindbergh's hop to Paris in 1927 and, whether he was at first conscious of it or not, began to guide his own career along channels that one day would see him acclaimed another nonstop flier of the North Atlantic. Doug Corrigan did not believe in taking many chances either, though the relatively ancient Curtiss Robin that he finally acquired, after having learned to fly and working as a mechanic in aircraft plants, was not regarded as the safest ship in which to traverse the Atlantic.

The Federal licensing authorities, ever alert to protect daredevils from themselves, warned Corrigan not to attempt too much with his plane. Though experts frowned on its outmoded lines, the plane was considerably older than the motor; and the authorities, ever alert to protect daredevils from themselves, warned Corrigan not to attempt too much with his plane. Though experts frowned on its outmoded lines, the plane was considerably older than the motor; and the authorities finally gave in to an Irishman's winning smile. Off Corrigan flew to New York. There was some sort of understanding that the carefree pilot would return to California at the end of his vacation in the East. Early on the morning of 17 July 1938, Corrigan jumped into his plane, the door of which had to be fastened with a wire because of a defective catch, and ostensibly made

preparation to take off for California from Floyd Bennett Field. Airport officials *assumed* that that was Corrigan's plan.

But to the amazement of field attendants, Corrigan headed out to sea with his old crate and kept on going. Twenty-five hours later he landed in Dublin, Ireland, where with that same captivating grin used so effectively on the West coast he explained: "My compass must have been wrong. I must have flown in the wrong direction. I thought I was over California, but when I came down to see there was nothing but water." That is how "Wrong Way" Corrigan got his name. (***Yearbook, 1939, pp. 467, 160-61***)

Aero Digest (Aug. 1938) noted that he flew without permission from the Commerce Department, that he had his experimental license suspended, and that he "proffered amazement at landing in Ireland instead of California, declaring he had 'made a bad mistake' in setting his compass."

10-11 August 1938. Alfred Henke, Rudolf von Moreau, Paul Dierberg, and Walter Kober fly from Berlin, Germany, to New York city in the record time of 24:50:12. Focke-Wulf FW 200, 4 BMW Hornet engines.

13-14 August 1938. Alfred Henke, Rudolf von Moreau, Paul Dierberg, and Walter Kober fly from New York city to Berlin, Germany, in the record of 19:55:01. Focke-Wulf FW 200, 4 BMW Hornet engines. (***Yearbook, 1939, p. 468***)

Four German aviators completed one of the most outstanding round-trip Atlantic flights last month when they landed their four-motored Focke-Wulf Condor *Brandenburg* at Templehof Airdrome. They had taken off from Berlin on 10 August; and after a 24-hour, 58 -minute nonstop flight to New York, they left two days later and made the return flight in 19 hours and 55 minutes--with several new records to their credit.

The East-West flight was the first nonstop venture between Berlin and New York, and it broke all nonstop distance records for the difficult crossing; the West-East flight clipped 5 hours and 50 minutes from the only previous nonstop westward crossing, made by the late Wiley Post on the first leg of his 1933 round-the-world flight.

First intending to make a round-the-world flight but canceling their plans because of the Howard Hughes feat, the men surrounded the flight with complete secrecy until they were 18 hours out. (***Aero Digest, Sept. 1938***)

> **3 September 1938.** Jacqueline Cochran flies from Burbank, California, to New York City, in 10:27:55--setting the women's West-East trans-continental record. Serversky, Pratt & Whitney Twin Wasp engine.

Though she did not set as fast a record as that of Frank W. Fuller, Jr., in a similar plane in the 1937 Bendix Air Race, Miss Cochran holds all honors for women in a West-East hop. Flying at 16,000 feet and "smoking" oxygen to combat the thin air at such altitudes, Miss Cochran relied solely on her instruments for all but a half-hour of her fast flight. Stopping at Cleveland only long enough to refuel, she took off for Bendix and was clocked above that field before she winged over to Floyd Bennett Field for a landing. (***Yearbook, 1939, pp. 469, 162-63***)

Figure 7. Floyd Bennett Field, Administration Building (Flatbush Avenue Façade), 1931 (photographed August, 1975)

Figure 8. Floyd Bennett Field, Administration Building (Detail, Field Facade)

(photographed August, 1975)

i. **1939**

24 May. Francisco Sarabia, Mexican aviator, flies from Mexico City to Floyd Bennett field (2,350 miles), in 10:45--beating the nonstop record flight time of 14:19 set by Amelia Earhart on 8 May 1935. Sarabia, who flew a Bee Bee racer, was killed in a crash while taking off for the return trip from Washing, DC on 7 June. (***Yearbook, 1940, p. 433***)

4. **Existing Buildings**

To ascribe historical/architectural value, Floyd Bennett field must be considered as a whole. The limits of the 1931-42 field should first be determined and then used as the boundaries for historic Floyd Bennett Field. In addition to the runways, taxiways, and ramps, the group of buildings along Flatbush Avenue (the original airport structures) ought to be considered as historic. Some 13 structures are included in the complex: the Administration building, eight hangars, and smaller support buildings.

Constructed in 1931, the Administration building is of red/black brick in Flemish bond, with rusticated stone quoins, foundation, water table, and entablature. A brick parapet projects above the entablature.

Each facade of the building is in three parts, with the center section projecting. On the Flatbush Avenue side the center projection contains a three-bay recessed entrance. Both the clock within the entrance area and the polychrome globe with wings above the recess survive.

On the runway facade the center projection is semi-octagonal, topped with a steel-frame, glass-enclosed control tower. There is a balustrade first-floor observation deck to each side. The building was modified in 1936-38 as part of the WPA construction program at the airport, but the changes do not seem to have affected the facades.

All hangars--there are eight of them--are in buff-to-reddish-brown glazed brick in 1/5 and mechanical bond, with concrete and pressed-tin trim. Steel is the primary structural materiel for the hangar expanse, and doors were originally of an aluminum alloy. All hangars and the lean-tos to the exterior sides of them were constructed between 1929 and 1931. The fill sections between the paried hangars were constructed somewhat later (ca. 1936).

The hangars are paired, with two pairs--four hangars--on each side of the Administration building. All have art-deco trim, which ranges from an "NYC" medallion with wings over all hangar entrances to crossed propellers and wings in the center brick sections between hangars 3&4 and 5&6 on the sides facing the Administration Building. Decorated concrete panels also survive over the entrance and between the two levels of windows flanking the entrance on the center section of Hangars 3&4. Slight variations in design exist in the center sections of each of the hangar pairs.

Earlier city of New York markings can be seen over entrances to Hangars 7&8.

An earlier front entrance survives on the Flatbush Avenue rear façade of hangar 1.

Facing Hangars 1&2 is a buff brick service building with the "FBA" medallion (probably ca. 1931). A small generator building nearby is in the same design, but without the medallion (and probably ca. 1936).

Near Hangars 5&6 is the pump house, with its concrete "Pump House" cornice parapet (1936-38, as is the small generator building nearby).

The runways are generally survivals of those laid out and first constructed between 10920 and 1938, though most have probably been repaired many times.

A portion of the airport approach form Flatbush Avenue also survives-- including a pair of cast-iron standards (one of which still has its glass globe in an urn shape) and the cast-iron flagpole.

The navy seems to have occupied Hangar 5 in early 1931 and used it before the airport was formally opened. The navy later used Hangars 1&2.

While preparing for his round-the-world flight in July 1938, Howard Hughes used Hangar 7 for his plane *The New York World's Fair*, 1939; and he held a press conference there upon his arrival on 5 July.

The specific uses of other hangars is not yet known, but the Administration Building was used by every flier to fly to the field, since the Airport Register was kept there. It would probably be safe to say that this building, between 1931 and 1939, was visited by more well-known aviators than was any other building in the world. Many of those that used the building are still known to most adults in the street today-- Earhart, "Wrong Way" Corrigan, Hughes, Post, Rickenbacker, Doolittle, and Byrd, among others.

As a complex, the site--the field, the runways and supporting taxi strips and aprons, and the hangars, support buildings, and administration building--is a superb surviving example of airport construction in the era. The airport follows closely the Department of Commerce requirements for an "AIA" rating, the highest possible.

At the time of its construction the field had the longest runways in the work. At its opening the largest air armada ever assembled under one command participated in the ceremonies. The number of first flights that began or ended here is considerable.

It is perhaps fortunate that the field never was a commercial success. Had it been, then surely the historic area would have suffered drastically from remodelings, changes, and clearance. Since these did not occur, the field has survived intact.

5. Comments

Floyd Bennett Field should be nominated to the national Register of Historic Places; it might well qualify also for status as a Registered National Historic Landmark. Certainly it meets the criteria for both. The fact of its age--it is only some 44 years old--is not a consideration, since the age of flight itself coincides with this century. Transcontinental commercial flight is even younger-stemming in no small part form the pioneering flight made to and from Floyd Bennett Field.

6. Suggestions for Additional Research

a. Municipal Records

Most of the research that remains to be done on Floyd Bennett field can be accomplished in new York. The most obvious records would have been generated by the Department of docks. It is possible that all construction contracts exist; for that reason, and as a guide to the records, contract numbers have been given in the section of this report covering the construction of Floyd Bennett Field (Subsec. 2 of this chapter, above). One place to begin this research into official records is in the municipal reference and Research center (on the 22nd floor of the New York Municipal building, in Manhattan). A particular search should be undertaken to locate drawings, plans, and elevations for the surviving structures on the field.

The *Annual Reports* of the department of docks ought to be exhaustively searched for the entire period, beginning with 1929 at the latest and continuing to 1942. (Generally, they have here been used form 1927 to 1932).

b. **WPA Records**

It would be good to inquire here also about the New York city records for the works progress Administration. The financial records of this agency are included in Microcopy T-935, Federal Works Agency, Works Progress Administration, at the National Archives. These records are poorly indexed and difficult to use. Given the time and personnel, they could lead to discovery of information on cost, dates, and other particulars on the work completed at Floyd Bennett field under WPA auspices. (But if local WPA records exist, they would of course, be an easier source to use).

c. **Navy and Other Local-User Records**

The files that remain wit the navy at Floyd Bennett field ought also to be checked, as should the Coast Guard records and the New York City Police records there. These should reveal evidence of the involvement of these groups with the field. (It is possible that the U.S. Naval Historical Association, Annapolis, MD, could be helpful).

d. **Local Newspapers**

A major source of information is, obviously, the local newspapers. The *New York Times* and the *New York Herald-Tribune* ought to be the first checked. Both are generally indexed, and the dates given in this report provide leads for checking on local reactions to events at or uses of the airport.

e. **Local Repositories**

The files of the Brooklyn Public library, Local History section, and those of the Long island Historical Society (also in Brooklyn) ought to be checked.

f. **Oral History**

There should be still in the area a large number of individuals with remembrances of the field; they could be of great value in its restoration and interpretation. An effort should be made to locate surviving employees of the field and aviators that used the field. Both would be prime sources of oral history; and, armed with the foreknowledge available in this report, a competent interviewer should be able not only to gather many data from oral sources, but also to capture from those that were involved the flavor and character of the era of the field's operation. Because of the relatively recent dates involved, location of such individuals should not be difficult.

g. **Airport Register**

A special effort should be made to locate the Airport Register. It may be in the municipal records, in private hands, or still in the files of the Department of docks. Wherever it is, it is an important aviation document that ought to be publicly owned and preserved. By day, month, and year it would provide the best possible source of information on whoever used the field. As a museum piece of aviation autographs, it would have few (if any) peers.

h. **Aviation Publications**

The general engineering indexes to aviation publications have been used. Most such publications often carried a column (with a title such as "In the News") that consisted of shorter items on what aviators were doing or what was happening at given airfields. These smaller items are not indexed. Many of the indexes to titles may mention simply New York City Airport--or something similarly broad--while the article may specifically concern Floyd Bennett Field. Given the time to flip through long runs, say 1929-41, while reading for Floyd Bennett information, the investigator would find in these publications a good deal of additional information. (Several publications are mentioned in the text, though there are others).

i. **General Sources**

Generally, the indexes at the Library of congress and the New York public Library have been checked for material, and likely collections at the National Archives have also been used. Published volumes on many of the aviators that flew from Floyd Bennett Field have been checked, usually with negative results. Published sources, especially those that have been indexed (with the exception of the daily newspapers), or general news publications have been checked.

The most likely sources of new materials are the New York daily newspapers, municipal records, the aviation press, and oral-history interviews.

B. JAMAICA BAY WILDLIFE REFUGE

Jamaica Bay Wildlife Refuge comprises marshes, hassocks, tidal flats, parts of the Bay itself, and on Rulers Bar Hassock a developed area. An island running north-south slightly east of the center of the bay, Rulers Bar is traversed by Cross Bay Boulevard and tracks of the New York City Transit Authority. The Wildlife Refuge development is on the northern part of Rulers Bar. The Broad Channel community of residences and commercial interests is located on the southern part of the island. The refuge is partly in Kings County, Brooklyn, and partly in Queens County, Queens, New York.

. 1. General History

Despite its use over a long period of time, Jamaica Bay remained a relatively natural ecosystem until the beginning of this century. It was then that the City of new York and the Corps of Engineers began to implement plans for development of the Bay as a great seaport. (For the history of this development, see Sec. C of this Chapter, below).

As channels were dredged, fill areas created, and waterways into the Bay bulkheaded, the system began to change. Earlier, the Bay had been a center for commercial and sport fishing:

> Throughout the 19th century, until the beginning of world War I, the Bay provided clams, oysters, lobsters, crabs and finfish for the people of New York. These delicacies were highly valued at that time, partly because the Bay was regarded as a particularly good source of seafood. At the turn of the century, the Oystermen's Association of Canarsie operated 266 boats to work 500 to 600 oyster plots in the Bay. In addition they boated 10,000 bushels of clams each year . . . . {Jamaica Bay Environmental Study Group, Jamaica Bay and Kennedy Airport (Washington: National Academy of Sciences, 1971), p. 49]

The Bay is today about half its 1907 size, if the marshlands and supporting estuarine areas that surround it are counted as parts of it. By 1921 the natural interactions that cleansed the Bay and made it healthy had been so changed that the area was closed as a commercial shellfish area. Though people do still fish, and many still eat shellfish from the Bay, its commercial potential was destroyed during the first 20 years of this century.

Though little was done to implement the port proposals for the Bay after the construction of Floyd Bennett Field in 1929-31, the area still remained on city maps as a potential port. In 1938 Park Commissioner Robert Moses was able to have this mapping changed to potential park development, and in that year actual transfer of areas for park development and rezoning for the purpose began. It was not until 1948, however, that most of the land in the present Wildlife Refuge was transferred to the Department of parks. The transfer barred industrial use and insured the "eventual development of the north shore of Jamaica Bay as a park and wildlife preserve" (***New York Times, 21 January 1949***).

Lines of the Rockaway Branch of the Long Island Rail Road, constructed on trestle in the 1870's, ran across Rulers Bar. When the line was abandoned by the railroad in 1950, it was taken over by the New York City Transit Authority. The Authority wished to replace the aging trestle with a dredged embankment, and an agreement was reached with the Park Department whereby the embankment was allowed in exchange for the creation of artificial basins that would fill with fresh water and once again attract

waterfowl to the area. By 1953 these ponds were complete. ***(Elizabeth Barlow, "Keeping Jamaica Bay for the Birds," New York, 8 December 1969***).

In 1954, the Park Department and the New York State Department of Conservation reached agreement on the operation of the area as a wildlife refuge, and it was established (***Jamaica Bay and Kennedy Airport, p. 53***).

Herbert Johnson had been appointed resident superintendent of the refuge in 1951. He began the transfer of vegetative cuttings from other areas and the propagation of wildfowl food and stabilizing plants in the area. Seedlings from the seedlings from the Japanese black pines at Jacob Riis park were extensively used, and waterfowl began to return to Jamaica Bay:

> In 1958, five years after the refuge was started, 208 species had been sighted at Jamaica Bay; the following year the count had climbed to 238; in 1960 it stood at 242; while today (1969) the growing list is poised at 310. [***Barlow, p. 61***]

The area continues to grow in popularity and in the number of waterfowl sighted.

2. **Comments**

Within the Jamaica Bay Unit of Gateway there is an unusually complete collection of areas that epitomize both the use and misuse of Jamaica Bay. Floyd Bennett Field and Canarsie Pier began as units in the development of the Bay as a great seaport. Canarsie evolved for recreational use. Floyd Bennett eventually came into public ownership as part of Gateway. In a recreated Bay environment, where the Port backers intended a great island made from fill, with docks, wharves, and major commercial and industrial uses, the Wildlife Refuge reestablishes a link between the Bay and its past.

The three areas offer unusual interpretive possibilities in recreating the environmental and development history of the Bay.

3. **Suggestions for Additional Research**

The bibliography included in the national Academy of Science Report (1971) contains a good reading list for those interested in the Bay and in the Wildlife Refuge.

The municipal records of both the Department of Docks and the Department of Parks will contain much material. The actual establishment of the Wildlife Refuge is so recent that it shuld be relatively easy to retrace. The New York press printed many articles, and the files of the Department of Parks should be complete.

In addition, Herbert Johnson, who seems to be largely responsible for the development of the area, would be an invaluable subject for oral interviews.

C. CANARSIE PIER

Canarsie Pier is located in Jamaica Bay at Canarsie, a section of Brooklyn, Kings county, new York. At the base of Rockaway Avenue, it is reached either by way of that street or by way of Shore Parkway, which borders on the pier grounds on the northwest. To the southeast the pier projects into island Channel, a dredged channel for ships that borders the west and north sides of Jamaica Bay. The end of the pier faces southeast, with views toward Canarsie Pol and lower Jamaica Bay.

1. General History

Henry A. Meyer's *Looking Through Life's Window: Personal Reminiscences* (***New York: Coward-McCann, 1930***) is probably the best single published source on the potential development of Jamaica Bay as a port for the City of New York. Entitled "The World's Future Harbor," Part VI of the book makes up most of the work and leaves little doubt of Meyer's support of commercial and industrial development of Jamaica Bay. The section contains maps and photographs, including a drawing of Floyd Bennett Field (facing p. 158), maps of Jamaica Bay as it might appear if it were intensively used as a port (facing pp. 154, 192), and an aerial photograph of Canarsie Pier (facing p. 234). The Bay is shown as totally dredged and filled: its entire perimeter--from Rockaway

Point, by Rockaway, around the Bay by Canarsie, and back to the Floyd Bennett site--is bulkheaded.

Intensive pier development was projected in the area on either side of Canarsie Pier and in dock basins on all sides of the Bay. Complete dredging and filling of the interior of the Bay created two huge land areas--East and West Islands. West, the larger of the two, was to include at least three major basin and docking areas. Meyer wrote as follows:

> Jamaica Bay awaits the touch of the magic wand that will transform it in to the wonder harbor of the World. With a shore front that skirts for twenty-five miles along a densely-peopled upland, and with an area equivalent even in its undeveloped state to the sum total of all of the most important harbors of Europe and British Isles, Jamaica Bay is open for improvement. Like a long arm beckoning to the ships that sail the Seven Seas, Rockaway Point stretches forth a protecting arm to cover the entrance to this vast land-locked harbor wherein the world's greatest armada might swing easily to its anchors, while fierce storms rage without on the heaving bosom of the Atlantic. (p. 147)

Tracing the general history of the Bay, Meyer noted that it was used as a harbor by Dutch traders in the seventeenth century and as a storage basin by the shipping board during world War I, when some 110 oceangoing vessels were stored there (p. 208). He noted further:

> When the State of New York by the Acts of 1909 and 1912 granted to the City of new York all of the lands under water and hassocks owned by it within the confines of Jamaica Bay as situated within the Boroughs of Brooklyn and Queens, it did so for harbor purposes or commercial purposes only, thus restricting the use to which the City of New York could put the said lands, it being then the intention of both the City and the State to cooperate with the national government, under House Project 1488, Sixtieth Congress, Second Session, to proceed with the development of Jamaica Bay as a great sup-port tot he Port of new York, and no other use was then contemplated to be made of any of the lands brought within the scope of such development. (pp. 171-72)

In 1930, when Meyer's book was published, he could point with pride to the dredging and channelization already accomplished and with some condescension to pocket parks at two or three places on the perimeter of the Bay. But his greatest pride--

examples that the plan was actually being carried forward--lay in two developments, both then underway: Floyd Bennett Field and Canarsie Pier:

> On August 8, of this year [1930?] . . . the Brooklyn Chamber of commerce sponsored an inspection tour of the area attended by a number of high officials. Senator Royal S. Copeland, Borough President Batten of Queens, Clarence Chamber [a] in, Airport Engineer and trans-Atlantic flyer, Postmaster Fireia [?], Commissioner Meyer (the author himself, who was a real-estate developer in the Jamaica Bay area, as well as a Commissioner of the New York City Department of docks) and a host of others were present. After a dinner at Lundy's, the group boarded the Lundy Brothers' Effort II, and were taken from Sheepshead Bay through the Rockaway Inlet and along the channel as far as it has been dredged. They observed the progress being made at the Brooklyn airport, inspected the industrial development at Mill Basin, and looked over the huge pier at Canarsie. All pronounced themselves highly impressed with the progress that had already been made. (p. 210)

Certainly, there was reason for the developers to be pleased. Floyd Bennett, then taking shape, was quite visible; Canarsie probably was impressive, at least in size. Together, they pointed toward ultimate development of the Bay.

When the Corps of engineers surveyed Jamaica Bay in 1907--channelization and dredging had begun under provision of the river and Harbor Improvement Act of 1880--they found that, even though all available maps were studied, there was no comprehensive map of the Bay. Corps surveyors set out to produce one. When they had completed it, they were able to report:

> By reference to the map, it will be noted that Jamaica Bay occupies the major portion of the southeast quarter of Greater New York. It has a water surface of 16,170 acres, or 25-1/4 square miles, and is surrounded on three sides by low marshes which aggregate 8,500 acres. In addition to this there are 4,200 acres of marsh land lying in the bay, but isolated from the main body, so that, all told, Jamaica Bay, with its adjacent marsh lands, which in time of excessive flood tides are completely overflowed, covers a territory 28,870 acres in extent. This is equivalent to 45-1/2 square miles. (U.S., congress, House, H. Doc. 1506, 60th Cong., 2d sess., 1909--covering the report submitted 31 May 1907).

Describing the Bay, the document remarked that the only settlements of note on the north shore were at "Canarsie, which is quite popular with fishermen and where quite an extensive oyster business is centralized" (p. 14) and at Bergen Beach. The report also noted that "a steamer approaching Ambrose Channel from the sea would travel 8-5/8

sea miles to Canarsie landing" (p. 15). It noted further that, with the exception of Idlewild and Rockaway Beach,

> there is but one other place on the mainland available for shipping; this is Canarsie Landing. To this place the Government excavated a channel about 150 feet wide and 6 feet deep at mean low water from the landing to the big channel, and protected the outer ends of this by two dikes. At the present time there are but 5 feet of water in this channel, although the business done here in the oyster trade alone amounts annually to 450,000 tons. (p. 17)

The report recommended bulkheading, channelization, and jettying certain areas of the inlet to protect channels.

Subsequently reporting on Jamaica Bay, Rockaway, and Dead Horse Inlets, House Document 148 (60th Cong., 2d sess., 26 February 1909) contained a map showing proposed bulkheads, pier lines, and commercial channels. The area around Canarsie landing was suggested for intensive development. The *Report on the Proposed Plan of Operations for Jamaica Bay Improvement* (New York City, Department of Docks, 1911) modified the 1909 plan somewhat, but in the direction of more intense development. (The Department had also published a *Report on Jamaica Bay Improvement* [1910]).

By 1926, plans for construction of commercial piers were far advanced; and the logical point for the first major construction seemed to be Canarsie, already served by channel of sufficient depth and already supporting considerable commerce. The first contract was let that year:

> **Contract No. 1858** - Canarsie Pier, 600 x 400, under construction at a cost of $487,269. 75% completed, A. M. Hazel, Inc., contractors. [New York City, Department of docks, *Fifty-Fifth Annual Report* (for the year ending 31 December 1926)]

By the time the Fifty-Sixth Annual Report for the year ending 31 December 1927) was printed, the Department was able to report:

> **Contract No. 1858** - a pier 600 feet long and 400 feet wide, with side platforms of concrete construction throughout, including piling, at the foot of Rockaway

parkway, Canarsie, Jamaica Bay, was completed on March 19, 1927, by A. M. Hazel, Inc., at a cost of $487,889.00.

The cost overrun for the pier was a mer $620. This later annual report included the following:

Contract No. 1904 - filling in of Canarsie Pier . . . contract was submitted on April 27, 1927. Bids were opened on August 10, 1927, and contract awarded to W. H. Gahagan, Inc. work was completed on December 2, 1927, at a cost of $19,999.98.

With completion of that contract the commercial life of Canarsie Pier ended, even before it had begun; for only miniscule amounts of additional money would be made available for its future development. Several factors account for this financial neglect. Obviously, construction began in an era of severe shortages of money, especially during the next decade. Monies that were available were expended on necessary care and upkeep and, in some cases, on development of existing facilities in the already heavily developed commercial-dock areas of the City.

Monies available for the Jamaica Bay Port were plowed into Floyd Bennett Field, and even that was reduced in size; only about 60 percent of the planned hangar facilities were ever constructed. The airfield had two advantages over the pier: (1) it was being constructed in an era of intense popular interest in aviation heroes and the craft they flew; (2) construction of the field was a matter of pride for the City (though a major American municipality, New York had no landing field of its own; and Floyd Bennett was to be the first). Most supporters probably did not consider Floyd Bennett to be a part of the Port development. Supporters of the Port were pleased to sit and wait. The field, they reasoned, would bring a resurgence of commerce and industry in the area, after which the Jamaica Bay Port would boom. Canarsie Pier would be completed, and the Bay would be developed.

That these prospects never materialized is due to more than the commercial failure of the airport (in spite of its aviation success) and the tightness of money.

Canarsie Pier and the entire commercial development of the Bay were caught in the 1930's in a web of park and parkway development under Commissioner Robert Moses that effectively curtailed commercial/industrial development of much of the Bay. The Shore Parkway cut off many of the basins proposed to the north, reclaimed wetlands that were scheduled for bulkheading and commercial development, and closed off possibilities of further development of Canarsie Pier for commercial and industrial development. Across Flatbush from Floyd Bennett Field, Marine Park took shape and, when completed, bridged Rockaway Inlet to the Point, where Jacob Riis Park was being rebuilt to become a major recreational area. These works prescribed a broad arc around the base of the Bay.

Moses gave adequate published warning of his desires for the Bay--in the program Published on the Occasion of the Opening of the Marine parkway (3 July 1937). He twitted those involved with the Port:

> The parkway, with its great lift bridge and approaches has been completed in twelve months, which is record time for an undertaking of this magnitude. There has been no hitch in the plans and do delay in any department of fabrication and construction. There has been no red tap, no bureaucracy, no waste and no friction in connection with this undertaking. . . .
>
> Given a little more imagination and honesty of purpose in the past, the city would not today be in the position of having to recapture and reclaim painfully and bit by bit from private exploitation, parts of its once magnificent shore front heritage. . . .
>
> (Marine park and Jacob Riis Park) will change the notions which have prevailed for many years as to the future of Jamaica Bay, and will emphasize residence and recreation as more important than industrial development in this area.

Into a frontal attack moved Robert Moses on 18 July 1938, when he submitted to Mayor LaGuardia a new plan for the Improvement of Jamaica Bay, in which he first reconstructed the history of Jamaica Bay development that had led to the construction of Canarsie Pier:

> Thirty years ago the first plan to transform Jamaica Bay. . . .into a vast industrial port and ship terminal was proposed. . . .In 1922, as the result of much propaganda and pressure from interested property owners, speculators and commercial inters, and in the absence of any disinterested investigation, the city adopted a plan under which the water and marshlands in the bay were to be substantially blotted out by two large islands approached by a system of navigation canals, bordered by mile after mile of industrial piers and wharves. . . .
>
> The plan still appears on the official map of the city of New York, although the status of Jamaica Bay as a seaport is not perceptibly different today than it was thirty years ago. . . .and the attempt to foster harbor development at Canarsie by the construction of a large pier proved abortive. . . . In the main over 95% of the entire Jamaica Bay area, as far as industrial development is concerned, has not advanced a step toward the grandiose scheme of 1922.

Moses recounted his own successes: Jacob Riis Park, the Marine Parkway Bridge, the widening of Cross Bay Parkway, rehabilitation of Rockaway Beach, development of marine Park, and the Shore parkway, as well as "the wiping out of the old dilapidated Canarsie amusement area and the expansion and improvement of a new Canarsie Beach Park." Moses called for a complete rezoning of the bay and its surrounding area--transferring all islands to the Park department for recreational use:

> Jamaica Bay faces today the blight of bad planning, polluted water, and garbage dumping. Are we to have here another waterfront slum, depriving millions of future inhabitants of Brooklyn and Queens of the advantages of boating, fishing and swimming in safe inland waters? Must we continue the construction of expensive, artificial swimming pools in this region, where the waters of Jamaica Bay, protected from pollution can meet the problem as nature intended it to be met

Moses used visual warfare as well. He included a sketch labeled "Civil Nightmare," which showed covering the Bay, a mountain of smoking garbage--its odors carried on the winds across Brooklyn and Queens. A second sketch showed expanses of clean water with pleasure craft, fishing boats, and around the perimeter of the Bay wide sandy beaches.

Moses carried the day. Another report to the Congress from the Corps of Engineers (H. Doc., 76th Cong., 2d sess., 19 April 1940) noted that "fishing-party vessels operate from a pier at Canarsie on the north shore" (p. 2); that ""a pier was constructed

at Canarsie, but no railway connections or facilities for handling cargoes were installed: (p.12); and that

> the city pier at Canarsie is utilized by pleasure craft and party-fishing vessels and for the transfer of infrequent shipments of scrap iron and receipts of building materials; no freight handling facilities are available on this pier. (p. 13)

The report also noted that modification of harbor lines would probably be necessary as a result of the "apparent abandonment by the City of New York of its original plan for industrial development of Jamaica bay" (p. 25). The survey noted that rezoning being undertaken severely limited commercial and industrial development along the north and west shores of the Bay. (There was to be another Corps survey of the Bay: H. doc. 665, 80th Cong., 2d sess., 28 January 1948).

With the rezoning begun by the city in 1938, Canarsie finally passed form potential commercial to recreational use. The Department of Parks began the cleanup of Canarsie park, which by then was polluted and lined with trash. In the 1920's and '30's the golden city Amusement Park and numerous boisterous beer and dance halls had flourished in Canarsie; as the area's waterfront developed into a fishing and recreational center, these too were cleaned up. (New York City, Planning Commission, Plan for New York City, Brooklyn [1969], p. 174).

As part of the Park Department development in the late 1930's the pier seems to have been resurfaced, landscaped, and planted; and a concession stand and comfort-station structure were built. A traffic circle was developed at the base of Rockaway boulevard, and access and egress ramps from the Shore Parkway were constructed.

Begun in 1926 as a commercial and industrial pier to be used for heavy shipping, Canarsie pier became by 1940 a recreational development serving nearby residential Canarsie--and persons seeking fishing, sunning, strolling, and other activities on a pier that was being used by people rather than for cargoes.

2. **Existing Structures**

Canarsie Pier is approached by a circular drive, with parking in the center of the pier. Flagstone promenades surround the parking areas on three sides, with concrete walks on the outer perimeter of the three water sides. The pier and its fill exist essentially as they were when completed in 1927.

A stucco, flat-roof, three-part concession stand--with wave-pattern frieze, dolphin inserts, and porthole-like round windows--is probably from the 1930's recreational development of the pier. The existing treatment of the surface of the pier and plantings on the pier are from the same period (ca. 1940).

A wooden bait shack and barge to the right of the pier are of unknown date and history. Both are, however, consistent with the history of the pier: the bait shack manifests its long use as either a dock for fishing vessels or a place for fishing, and the barge reminds one of the original reason for which the pier was constructed--commercial and industrial cargoes.

3. **Comments**

The pier itself is, historically, a good example of commercial pier development, while the concession stand and landscaping are an equally good example of adaptation to recreational use. Moreover; the concession stand is architecturally pleasing and suited to its marine environment.

Epitomizing the history of conflicting plans for Jamaica Bay, Canarsie Pier thus has a great deal of historical value, especially as a three-dimensional historical document for interpreting the post-1900 development of the area.

4. **Suggestions for Additional Research**

The files of both the Brooklyn public library and the long island historical society should contain information on Canarsie and on Jamaica Bay. Canarsie seems to have had a particularly colorful and interesting history, which would be useful in interpreting the pier.

For the period of construction of Canarsie Pier, the files of the Department of docks and the department of parks should be studied. Each would contain full information on the plans of its Department and ought to contain surveys, plans, and drawings. Photographs are also likely to be available.

Here again, oral history from interviews with residents of the area (there must be many whose residence spans the period from 1927 to the present) ought to return much information, as should the use of local newspapers, Chamber of commerce publications, and other local publications.

Chapter II

BREEZY POINT UNIT

A. JACOB RIIS PARK

Jacob Riis Park is located on the Rockaway Peninsula, Queens county, New York. Rockaway Inlet and Jamaica Bay are to the north, and the Atlantic Ocean is to the south. To the east is Neponsit; to the west, Fort Tilden. The Marine Parkway Bridge empties traffic onto Beach Channel Drive at Jacob Riis Park.

1. General History

Until the early part of the twentieth century the site of Jacob Riis park was a natural barrier-reef area:

> The survey of 1835 shows that the area which is now Jacob Riis Park was then wholly under water and its eastern boundary was located about 2,000 feet west of the tip of the east spit of Rockaway Inlet. The park covers what was at that time the gorge of the inlet. The survey of 1855 shows that the east point spit had extended westward about 5,000 feet during the 20-year period but the park, under consideration, was still mostly under water. By 1878 the spit had moved west for an additional distance of about 1 mile and the Jacob Riis Park area was almost entirely above the high-water line. During the following 49-year period (1878-1927) the shore line along the park front had become straight by cutting back 60 to 80 feet along the eastern half of the beach and building out from 0 to 400 feet at the western end. From 1927 to 1934 the shore line shows very little movement as beach-protective structures had been placed along this and adjacent beaches before this period. (U.S., Congress, House, *Beach Erosion at Jacob Riis Park, Long Island, NY*, H. Doc. 397, 74th Cong., 2d sess., 17 November 1936).

According to the *New York City Guide* (American guide Series [New York: Random House, 1939]), the area of the park remained undeveloped, though it was privately acquired and known as the hatch Tract. The tract was taken by the city in 1912 through eminent domain, ostensibly for park purposes. The G*uide* also notes that the area was called Telawana Park before the name of Jacob Riis was adopted (p. 594).

Whatever the chronological sequence of names and development of plans for park use, the area saw its first notable use, now obliterated, as the Rockaway Naval Air Station (or U.S. Naval Air Station at Rockaway Beach). The area was leased form the city by the Navy in 1917, and construction of the air station began almost immediately:

> The station faced Jamaica Bay and had a hangar for servicing HS-2 flying boats, another for housing blimps, and, during 1918, a 110 x 165-foot hangar was erected to house two NC boats. A second NC hangar was authorized, but its funds were lost in the "peace hysteria" and frantic demobilization that occurred after the Armistice. (Richard K. Smith, first Across [Annapolis ND: Naval Institute Press, 1973], p. 28)

The NC boats were Navy-Curtiss flying boats, developed jointly by the Navy and Glenn Curtiss. Four of them had been ordered, and with them the navy would attempt the first crossing of the Atlantic by air. Smith's account of the bringing of the planes to Rockaway gives some idea of the status of the aircraft industry at the time:

> The Locke Body Company that fabricated the wings and tail groups was located at 453 East Fifty-sixth Street, in the heart of New York City. The

> transportation of these large assemblies through the busy streets of Manhattan Island, across Brooklyn Bridge, and into the hinterland of Long Island promised to be awkward at best, so the movement was made in the dead of night. Motor trucks of any great size did not exist in 1918 and the only wagons capable of handling the large NC wing panels happened to be those of a company that specialized in hauling theatrical scenery. It was a bizarre procession that made its way through Manhattan's streets during the August nights of 1918: a naval officer in an automobile waving a red lantern to warn away oncoming traffic, followed by a caravan of horse-drawn wagons carrying the NC wing sections and tail assemblies, all hung with red lanterns. An officer in another automobile brought up the rear, with a red lantern in hand to ward off traffic astern. This was an operation that had to be repeated for the components of the NC-2, NC-3, and NC-4. And it had to be repeated twice with each aircraft: once from New York City to the Curtiss plant for preliminary assembly, and again from Garden City to the Naval Air Station at Rockaway. . . .
>
> Within a week of the arrival of her components at the air station, the NC-1 stood assembled in Rockaway's hangar. After being duly weighed, and her empty weight determined as 12,956 pounds, fuel and oil were pumped aboard and her engines were tested. She was ready to fly.
>
> On Friday, 4 October 1918, the formidable silhouette of the NC-1 was towed from the cool shadows of her hangar into a bright noonday sun. . . . (pp., 28-29)

Test of the NC-1 and the other planes continued through the winter and into the spring of 1919. A number of pilots participated in the tests. One of the, John towers, was acquainted with the 37-year-old Assistant Secretary of the Navy, Franklin D. Roosevelt, who was interested in the testing of the NC flying boats and in Navy plans to fly the Atlantic. Roosevelt often helped the Rockaway crews cut red tape. In April 1919 he visited Rockaway. Two of the pilots, Richardson and McCulloch, showed the planes and the station to the Assistant Secretary;

> Roosevelt showed the greatest interest in all phases of the projected flight, and when Richardson asked him if he would like to go for a flight in the NC-2T, Roosevelt accepted with the enthusiasm of a small boy. Richardson had not intended to fly that day because the weather promised nothing but rough air; but it seemed ungrateful to allow the Assistant Secretary of the Navy to return to Washington without a flight in one of the NC boats.
>
> The NC-2T was warmed up, Richardson, Roosevelt and McCulloch climbed aboard, and the flying boat was lowered into the bay. Roosevelt climbed up into the pilot's nacelle directly in front of the center engine, and just behind the pilots where he could see everything. The flight was only nine minutes long; after takeoff they flew out over the Narrows, up New York

> Harbor, across Brooklyn, and back to Rockaway. According to Richardson it was a rough flight with turbulent air bouncing the plane all over the sky; he and McCulloch had a constant struggle with the ailerons to keep the wings level. Roosevelt observed all this activity with great interest, but seemed to think it was normal. (pp. 58-59)[Was this possibly Roosevelt's first airplane flight? And also the first by a present, former or future President of the United States?]

Glenn Curtiss, developer of the plane, was also often at Rockaway. Later, Richard E. Byrd arrived. Byrd had developed instruments and navigation procedures to be used on the transatlantic flight. When the four NC planes left Rockaway on 8 may, Byrd flew along in one of the. Testing his instruments and observing his procedures in flight, he would go as far as Newfoundland.

Only one of the planes actually made it across the Atlantic--the NC-4. Though it was somewhat smaller than the *Mayflower*, and certainly different, it landed 23 days later at the Barbican, in Plymouth, England, the exact spot from which the *Mayflowe*r had set sail in 1620. (Masefield, p. 32)

Norris and Ross McWhirter's Guinness book of world Records (New York: Sterling, 1972) lists under "Transatlantic flight" the following entry:

> The first crossing of the North Atlantic by air was made by lt. Cdr. (later Rear Admiral) Albert C. Reed (1887-1967) and his crew (Stone, Hinton, Rodd, Rhoads and Breese) in the Curtiss flying boat NC-4 of the U.S. Navy, from Newfoundland, Canada via Azores, to Lisbon, Portugal, May 16-17, 1919. The whole flight of 3,936 miles originating from Rockaway Air Station, long Island, NY on May 8 required 53 hours 58 minutes, terminating at Plymouth, England, on May 31. (p. 319)

The navy lost its lease at Rockaway soon thereafter; and though they sought permission to use Miller field, underutilized by the Army, they were refused. They did not have another permanent station in the area until 1931, when they moved into the still unfinished Floyd Bennett Field. Command Read was present at the dedication of Floyd Bennett on May 31, 1931. From the Administration Building tower he could have locked across to the site of the Rockaway Naval Air Station, where a new park was building.

Though the actual sequence of demolition has not been determined, the area was again in New York City hands by 1924; and the name Jacob Riis Park had already been chosen by that time, for it appears on a map of 1 July 1924 as the name for the park on the Rockaway Naval Air Station site (*New York City's Parks, Playgrounds and Parkways and Their Proposed Extension,* special committee report to Mayor Walker (July 1930); the map is included as an appendix).

Born in Denmark in 1849, Riis later emigrated to America. As a journalist, photographer, and philanthropist he wrote and lectured on behalf of the poor in New York. *How the Other Half Lives*, his 1889 work, was read by Theodore Roosevelt; and the two men became lifelong friends. Many other titles followed, including *The Cleaning of Mulberry Bend* (1895), *Making a Way Out of the Slum* (1900), *What Bad Housing Means to a Community* (1911), and *The Battle With the Slum* (1913). His autobiography, *The Making of an American*, was published in 1901. Riis died on 25 May 1914. Perhaps the best of the biographies is by Louise Ware: *Jacob A. Riis, Police Reporter, Reformer, Useful Citizen* (New York: Appleton, 1938). Ms. Ware notes: "Within easy reach of new York's crowded streets is the park named for Jacob Riis in recognition of his untiring effort to secure a playground for the people" (p. 290).

Stabilization of the park area at Jacob Riis began in 1923, with a system of groins attached to a bulkhead at the eastern end of the park. A similar system of groins and bulkheads was installed at the western end of the park in about 1927 (H. Doc. 397, p. 9).

The *New York Times* (19 October 1932) announced the unveiling of new plans for Jacob Riis Park and noted that the planned improvement, including an 18-hole golf course, would cost $2.5 million and that the landscaping had been developed by Julius V. Burgevin, landscape architect.

Albert C. Benninger, park commissioner for Queens, made the plans public and announced that the park was planned to serve 250,000 people. In addition to the golf course, it was to have two parking lots for 6,000 cars each, three landings for small boats, a landing station, a yacht basin and basin for larger craft, and four recreational piers. There were to be separate playgrounds for boys and girls. Also to be included were 18 tennis courts, a swimming pool, a bathhouse for 5,000 persons, an athletic field and grandstand for 20,000, a pageant ground with space for two baseball diamonds and a skating rink, handball and volley ball courts, and two field-hockey enclosures. The plan called for 20,000 trees and 50,000 shrubs to be planted. A 20-foot wide walk was to circle each of the separate recreational areas, which would be divided by hedges of trees and shrubs.

Burgevin, the landscape architect, explained that Joseph Gatringer, assistant architect of the Park Board, had assisted him in drawing the plans. Both Burgevin and Benninger acknowledged the assistance of the Regional Plan Association of New York. The Association noted in its 1933 report (From Plan to Reality) that

> a number of plans from various sources had proved inadequate for this park and development was already underway early in 1932. A sketch was drawn up in April, 1932, to point out the regional considerations involved in the problem and to focus attention on the fact that it was essential to have a comprehensive plan to guide further development.
> (pp. 82-83)

A photograph of the "Bathing Pavilion in Jacob Riis Park," evidently already completed, appears in the report (p. 83). The structure seems to be the first-floor section of the present bathhouse; this section still exists on the Jamaica Bay side of the building. On-site investigation may reveal that parts of the towered Ocean Bathhouse are also from this era.

These facts may well explain why the present bathhouse is so often referred to as "reconstructed." They may also explain the plethora of architects' and landscape

architects' names associated with the project. A plaque on the bathhouse lists the date as 1932, and the architect appears as Stoughton & Plonck. Certainly, the basic structure was completed by the time of the 1933 photograph. Julius V. Burgevin can be credited with most of the landscaping, which has not changed appreciably, except in the Mall area. Burgevin credits architect Joseph Gatringer as having assisted in developing the plan, but his contribution is not yet known.

We come now to the 1936-37 "reconstruction" of the bathhouse and the construction of the mall. The New York City Department of Parks report *Shore Parkway Extension and Marine Parkway* (12 December 1936) notes that

> a large central mall west of the parking field will lead to new buildings containing a cafeteria and other concessions. The existing bathhouse south of the parking field has been enlarged and renovated to provide facilities for about 10,000 persons. A restaurant will be located on the second floor of the building. . . .

The report contains excellent surveys and plans of the area (p. 6), an aerial view of the park under construction (p. 15), construction photographs (pp. 26-27), and an excellent drawing of the new concession buildings, labeled "Central Mall" (p. 24). Thus, it is possible to date the first floor and general style and arrangement of the Bay bathhouse as 1932-33. The Ocean side--with towers, stairways, and changes in interior arrangement--would then be 1936-37.

The question f architects still remains. Clinton P. Lloyd is listed as Chief, Architectural Design for the Marine Parkway Authority, under which the new park program at Jacob Riis was supervised. Gilmore D. Clarke is listed as landscape architecture consultant; Aymar Embury II, as architectural consultant.

On the basis of style, it would be easy to assign the Central mall construction Embury. Both the style and the materials are similar to much of the resort and other work of Embury; and if the designs are not his, he certainly played an important part in shaping the.

The park was used publicly before 1933 and probably was so used until 1937, when it opened officially--or almost opened officially. The *New York Times* noted on 7 June 1937 that the beach at Riis park was to open on 19 June. The cost was placed at $3,750,000. The headline noted that "Attractive Seaside Resort Has Been Created on Former Waste of Sand Dunes," and the article stressed that there were "No 'Coney Island' Features":

> Emphasis is placed on the natural aspect of the park, the care with which the beach has been expanded and all the so-called typical Coney island attractions eliminated. Surf rolling between the jetties at Riis Park carries more of the thunder and spray usually associated with the seaside. . . .
>
> Jacob Riis Park occupies a sandy strip east of fort Tilden. Twenty years ago it was a seaplane and dirigible base where patrols watched for submarines. Virtually neglected until 1929, the place became the inspiration of an unparalleled series of plans and projected developments.
>
> Much of the existing bathhouse was built under Park Commissioner Albert Benninger. . . according to a design submitted by the Regional Plan Association of 1932. . . .
>
> Benninger's bathhouse was pared down to suit a simpler style of architecture. Private dining rooms and dance pavilions have given way to increased locker facilities--6,000 for men and 4,000 for women--a marine cafeteria paneled in Mediterranean blue tiles and a spacious sundeck forty feet above the sea.
>
> A boardwalk, a half mile of which is decked with Douglas fir from the Pacific Coast, follows the beach line. Oregon fir is used for the ship's rail bordering the promenade. . . .
>
> The mall is at the middle of the ellipse. Clean stone buildings equipped with modern refrigerating and kitchen equipment stand ready for use. Plantings along the mall and in other parts of the park include portulaca, verbena, petunia, sea holly, bayberry and beach plum. Japanese black pines have been planted in addition to large strips of beach grass. Topsoil is still being unloaded in many places. . . .

On 20 June the *New York Times* carried aerial photographs of Jacob Riis details and interiors of the bathhouse, and a view of the boardwalk looking toward the mall. It noted that the city was to open the new bathing area, which has "the country's largest, single-unit, paved parking space, with a capacity of 14,000 automobiles."

On 26 June the *Times* finally reported Jacob Riis park as open, but that entry too, is somewhat enigmatic. Reporting on the opening of both Jacob Riis and Orchard Beach, the writer stated that they

> were opened for the season yesterday without ceremony. . . . The lack of ceremony was due to the fact that both beaches were in service last year, although without many of their present facilities.

It is further noted that, at Jacob Riis,

> bathhouses. . . can accommodate 10,000 bathers--that is, it has that many lockers--and several hundred thousand can take advantage of its beach with its mile-long boardwalk. . . . The beach park has a staff of 150. . . .

Jacob Riis did have formal opening, however. On 3 July 1937 the Marine parkway was formally opened, with the first public use of the Marine Parkway Bridge; and Jacob Riis Park was included in the opening ceremonies (program, *Published on the Occasion of the Opening of the Marine Parkway, July 3rd 1937*). The program devoted more space to Jacob Riis than to the bridge. There are seven photographs each of Jacob Riis and the bridge, but also two plans for the former.

Work at Jacob Riis is listed as having been accomplished by "Work Relief" under the U. S. Works Progress Administration. Commissioner Robert Moses wrote as follows:

> Large areas of marshland previously useless and unsightly have been reclaimed by sand pumped in from Rockaway Inlet. New roadways have been constructed and a new sea wall and boardwalk built to allow an increase of seven hundred feet in width of the main portion of the beach. The bathhouse has been remodeled to provide additional bathing, comfort and refreshment facilities. A mall has been constructed to afford pedestrian access from the bridge to the boardwalk, where people who do not care to use the beach may walk or rest in pleasant surroundings. Where the mall meets the boardwalk two buildings have been constructed providing beach shops and food bars for people using this area. Dances will be held here at night. The boardwalk is bordered by game areas and play field, including tennis courts and an 18-hole pitch-and-putt golf course. The seventy acre parking field capable of parking 14,000 cars has been constructed of concrete and is the largest single paved parking space in the United States.

> We have been asked whether Jacob Riis Park will be a second Jones Beach. The answer is no, because we lack the acreage and the control of surrounding lands which make Jones Beach so spacious and protected, and, in addition, we have had to contend with the initial poor planning of Jacob Riis Park. If the advice of the Long Island State Park Commission, given to the Queens Park Department several years ago, had been followed, and if experience at Jones Beach had been considered, there would have been a great deal less reconstruction to do at Jacob Riis Park in the last two years. This, however, is water over the dam, and it is only worth mentioning to emphasize the fact that it is high time that public shore front developments in the metropolitan area be carried on by those who combine some recent success with a reasonable appreciation of future problems.

Moses would like to have seen all the Rockaway beaches and Breezy Point in public ownership--and under the control of his Park Department. He was also using the occasion to fire opening salvos in his plans to change the zoning designation on all of Jamaica Bay from "port" to "park."

Charles T. Abernethy listed the work done by the WPA at Jacob Riis as

building jetties

> into the ocean and an additional 400 feet of beach were added by hydraulic fill. A seawall 4,660 feet long was built the length of the beach and along this 41-foot promenade. The existing bathhouse was entirely built [sic] and enlarged. A parking field of reinforced concrete covers 62 acres and accommodates 14,000 automobiles. [*Final Report of the Work Projects Administration for the City of New York* (New York: WPA, 1943), p. 158]

At some point the four-dial post clock (manufactured by the Howard Clock company, of Boston, and said to have been moved form Flatbush Avenue in Brooklyn to Jacob Riis) was installed at the bend of the boardwalk between the Mall and the Bathhouse.

With the exception of the relatively recent resurfacing of the promenade and demolition of the balustrade, Jacob Riis Park remains as planned in the late 1920's and constructed in the early-to-mid 1930's.

2. **Existing Structures**

The Bathhouse, Central Mall structures, and most of the landscaping of the 1930's park survive.

Of brick, concrete, and tile, the Bathhouse building is a pleasingly massive structure, with forecourt locker/shower areas to the land façade and a two-story section (flanked by towers with tile polychrome decoration) to the Ocean side. With more careful on-site examination, it should be possible to determine which parts of the structure come from each of the two construction eras. Certainly the one-story section on the Bay side comes from the 1929-32 construction (Stoughton & Plonck, architects). The towers, the two-story section, and unknown sections connecting both buildings date from the 1936-37 construction period. The building is an excellent example of recreational architecture of the early twentieth century.

The Central Mall structures flank an open court. Each contains a two-story square-columned building, with one-story sections flaring outward I semicircles on the beach side. These buildings (1936-37) bear great stylistic similarities to known structures by Aymar Embury II. A bust of Jacob Riis, now missing, was once located here.

The relatively formal landscape plan of Julius V. Bergevin seems to have been generally followed. The cast-iron light standards, hydrants, and call boxes from the early 1930's development survive, as do many of the plant species--all of which have naturalized well and give great charm and beauty to several park areas.

One infused object, said to have stood originally of Flatbush Avenue in Brooklyn, is the four-dial post clock manufactured by the Howard Clock Company of Boston. The pedestal, faces, and general decoration survive, though the clock is now electrified. Such clocks (manufactured from ca. 1880 to ca. 1925) are relatively rare. (constructed in the 1920's, a similar clock--the Baxter Clock, New Bern NC--has entered on the National Register of Historic Places).

One additional structure that should be mentioned, though it is not now a part of Jacob Riis Park, is the Marine Parkway Bridge. It grew out of the same plan and was completed at the same time as the Center mall and the enlarged Bathhouse at Jacob Riis. It continues to dominate the skyline from many areas of Jacob Riis and is used by many visitors to the Park. In addition, it bridges Rockaway Inlet joining the Jamaica Bay Unit of Gateway to the Breezy Point Unit.

The bridge is significant in its own right as an architectural and engineering feature. It was constructed in 1936-37. Madigan-Hyland were the engineers; Emil H. Praeger, chief engineer; Clinton P. Lloyd, chief of architectural design. Consultants were Robinson & Steinman and Waddell & Hardesty, engineering design; Gilmore D. Clarke, landscape architect; and Aymar Embury II, architect. The Frederick Snare Corporation and the American Bridge company were the contractors.

Total length of the bridge is 4,022 feet, 6 inches; the width is 44 feet for the roadway and 6 more feet for the sidewalk. The bridge consists of three spans, each giving a 500-foot-wide clear channel. The flanking spans give a clearance of 50 feet above mean high water. The lift span has a clearance of 55 feet at all times and 150 feet when raised.

The lift span is 540 feet--at the time of completion the longest highway lift span in the world. That record probably still stands, since lift spans are an unusual and fast disappearing bridge type.

3. **Comments**

There is no doubt that Jacob Riis Park would qualify for nomination to the national Register of Historic Places. The quality of its design, both landscape and architectural, and knowledge of the architects and landscape architects that worked with

it give it significance, as do the continuity of plans and the long history of the park as a planned entity--stretching back to at least 1923.

As an early example of the Regional Plan Association's approach to park development and as an important part of the work of Robert Moses, Jacob Riis is a prime survivor.

In the automotive era of the 1930's there may even have been some interest in the fact that Jacob Riis opened with the world's largest paved parking field, capable of accommodating 14,000 cars. The success of the lot as a money-raiser for the Bridge Authority and the fact that it was often filled with cars must have played some small part in showing later parking-lot and shopping-center operators that the public was not averse to great areas of unrelieved paving, even in such an unlikely setting as the superbly landscaped Jacob Riis Park.

In addition, the earlier history of the site as a testing area for airships, flying boats, and navigational instruments is significant. Association with Curtiss, Read, Byrd, and F.D. Roosevelt is also significant. Above all--as the assembly, test, and training site for the NC-4 flight, the first across the Atlantic--the area is significant in aviation history.

4. **Suggestions for Additional Research**

For the history of the Rockaway Naval Air Station, there are several possible avenues of research. The Smithsonian Institution will be displaying the NC-4 in the new Air and Space Museum, when that facility opens in 1976 on Washington's Mall. In connection with the plane and its display, a material might be shared with the Park Service, so that Rockaway material could be extracted. The U.S. Naval Historical Foundation (Annapolis, MD) might also offer information and leads.

For Jacob Riis Park, the Regional Plan Association, the Queens Park department, the New York City Department of Parks, and Marine Parkway Association have records that ought to be searched to settle questions of architectural attribution and construction

sequence. Local newspapers and residents that remember the Park before World War II would also be prime sources.

Only audio-visual sources for Rockaway have been used at the national Archives. There is still material that would be of interest in old military records.

B. FORT TILDEN

Fort Tilden is located on the Rockaway Peninsula, Queens County, New York. The general boundaries are the Atlantic Ocean to the south and Rockaway Beach Boulevard to the north. To the northeast is the southern end of the Marine Parkway Bridge, and to the east is Jacob Riis Park. To the west are beach-house developments and Breezy Point-Rockaway Point.

1. General History

> The official records of World War I list the base as a permanent post, located 3 miles southwest of Rockaway Park. . . .Named in honor of the Honorable Samuel J. Tilden, noted American statesman. Acquired by purchase, 1917; known as Rockaway Beach until July 26, 1917. Station of the Coast Defenses of Southern New York, Middle Atlantic Coast Artillery District; area, about 309 acres. [Order of Battle of the United States Land Forces in the World War, 1917-19, Zone of the Interior, Vol. III, pt. 1 (Washington: GPO, 1949), p. 794]

Samuel Jones Tilden, for whom the post was named, lived from 1814 to 1886. He was Governor of New York in 1875-76 and Democratic candidate for President of the United States against Rutherford B. Hayes, the Republican candidate, in 1876. Tilden won the election in popular votes. The contested electoral votes of several states were, after some months, given to an Electoral Commission (established by Congress in January 1877) to decide. Hayes would win if he received all the contested votes; Tilden, if only a single one were awarded to him. Made up of eight Republicans and seven Democrats, the Commission gave all the votes to Hayes and, on the basis of electoral votes, awarded him the election, 185 to 184. Scholars still are split on the outcome, though most seem to consider Tilden to have been the actual winner.

Fort Tilden seems not to have been the earliest fortification on Rockaway Point, but to have been the successor to a blockhouse erected there during the War of 1812. The report of the Commissioners of Fortifications to Governor Tompkins (23 September 1814) contained the following (according to *Notes Concerning Government Land,* RG 77, Land Papers, Rockaway Beach, 1903):

> The entrance to Jamaica Bay, on the south side of Long Island, affording to the enemy a safe landing for boats of small burthen to within a few miles of the Navy Yard, it was judged prudent to fortify that passage, as well as to guard that landing, as to afford protection to our coasters, who frequently take shelter in that bay from enemy's cruisers. This according with your Excellency's sentiments, we caused a strong block house, mounting a 24-pounder in the top, to be erected on the west end of Rockaway Beach, at the entrance of that bay. This has been taken charge of by the United States and an adequate force is stationed thereat .. .[National Archives, Record Group 77, Engineer Land papers; all records hereinafter referred to by RG (Record Group) number are manuscripts from the national Archives].

Evidently, though the survey could not be located, lands were acquired from Nathaniel Ryder on or near the present site in 1812 and were surveyed by Morris Fosdick the same year. Title seems to have remained with the Government; for when the Treasury Department requested transfer of the land for a Life Saving Station, to be moved from Barren island to Rockaway Point, Secretary of War Jefferson Davis granted the transfer from War to Treasury, with a notation:

> Certain points along the shore of Long Island, including Rockaway Beach, will need to be occupied in time of war by blockhouses or other temporary defenses. This can be done as well with the land in possession of the treasury Department as if we held it. . . .[RG 77, Land Papers, 9 January 1856].

In a later deed a portion of land leased to Aaron A. Graw is described as:

> a point of land on the West End of Rockaway Beach being that portion of said beach opposite to and nearest Barren Island near Long Island land adjoining the land formerly of Nathaniel Ryder on which a fortification was formerly erected by the United States. [Queens County Clerks Office, Liber 384, page 210, 24 August 1872].

The Life Saving Station at Rockaway seems to have been established in the mid-nineteenth century, and it was still in operation into the twentieth (RG 26, two plans--one dated 16 May 1905 and the other undated; successor to the Life Saving Service is the

U.S. Coast Guard, formed in 1915 by combining the Revenue Cutter Service and the Life Saving Service).

Fort Tilden was established on 19 February 1917 (RG 407, letter, 30 November 1920) and officially named Fort Tilden on 24 July 1917 (RG 77, Document File, Office of Chief of Engineers).

By 27 March 1917, platforms for four 12-inch guns were already being constructed (RG 77, Drawer 142, Sheet 72); and by 18 April four 6-inch guns, a searchlight, watchtowers, and other permanent construction was already underway (RG 77, Drawer 142, Sheet 43-2).

Cantonment buildings for housing troops were under construction by 27 December 1917. Specifications for construction of a concrete storehouse were approved on 15 April 1922, and on 10 June of that year an emergency contract was let to the concord construction company for the building of three concrete-and-tile ammunition storehouses. (RG 77, Office of Chief of Engineers, Document File)

Records of the 3-inch fixed AA Battery #5 indicate that the emplacement was begun in June 1918 and completed in 1919, guns mounted September 1919, revetment constructed January 1942, concrete base extended September 1942, and camouflage structure completed April 1943. AA Gun #3 and Batteries Baker, Fergusson, and Harris are also listed. (RG 392, Entry 225, Battery Emplacement Books, ca. 1945)

A technical inspection on 12 May 1920 lists an east and a west battery, each with two 6-inch guns. Under barracks and quarters it reports also that tracks for four 12-inch mortars were then being laid:

> One unit, consisting of two temporary barracks, one mess hall and one latrine, is now occupied. Two similar units are unoccupied. Two similar units are unoccupied. Two large temporary buildings which could be used for barracks for the accommodations of about 100 men are also unoccupied. There are 7 temporary officers quarters on the post, all occupied. All temporary buildings are in a vary good state of repair.

Four officers and 80 men are listed as personnel at the post. (The inspecting officer did not concern himself with why four officers were occupying seven officers quarters). The inspection also lists the *Fitzsimmons* (a 15-passenger boat), five Dodge touring cars, one five-ton truck, one three-ton truck, three saddle and two draft horses, eight mules, one buckboard, one ambulance, three escort wagons, one dump cart, and one dump cart (sanitary). (RG 407, AG 333.1)

At the time of the establishment of the fort, the area still consisted mostly of tidal marsh. Only along the Atlantic was there a relatively stable strip of sand, which continued across to the Inlet at the eastern end of the reservation, adjacent to the Life Saving Station. On 14 November 1921 steps to protect the four guns from drifting sand were suggested. Conditions at the post were reported to be bad. It was recommended that as dense a growth of vegetation as possible be promoted at the post and that penthouses be constructed to protect the guns. (RG 407, AG 634.4)

Just a month earlier, Fort Tilden had been withdrawn from the Coast Defenses of Southern New York and assigned to the Coast Defenses of Sandy Hook, New York (RG 407, AG 320-2, HQ 2d Corps Area, Bulletin No. 39 [29 August 1921], par. 1). This reassignment made good sense geographically, and the Army obviously considered it to make logistic sense as well. Sandy Hook projects from the New Jersey Coast in a gentle southeast arch, while Rockaway Point projects in the opposite direction from the Long Island coast. On either side of the entrance to New York Harbor, forts at the two locations would serve as supporting fortifications in protecting the harbor entrance.

In 1922 construction of railroad tracks for ammunition supply was approved, as were the designs for 16-inch gun emplacements at Tilden (RG 407, AG 662, 21 February and 21 September 1922). Though the fort was occupied by only a caretaker force, 1922 was an active year for construction at Tilden. That year New York City requested that some 94 acres of the post be ceded to the city, so as to be added to

Jacob Riis Park. The War Department replied that it considered Tilden "an active post not having been abandoned" and, thus, could not grant the request (RG 407, AG 602-3, 11 August 1922).

Shelters for the 16-inch guns were still being considered for construction in 1924; and they were evidently constructed, since funds were available (RG 407, AG 634.4, 27 February 1924). In June 1929 eight concrete platforms for 3-inch antiaircraft guns were constructed (RG 392, Entry 225, 27 November 1929).

Apparently, the post continued in caretaker status, with construction continuing. It was described in 1939 as constituting, with Fort Hancock, the outer defense of New York Harbor:

> The guns of the post are of 16-inch and 6-inch caliber. The 16" battery, the largest in service, has a range of 50,000 yards and fires 2,100 pound projectiles. In addition to the seacoast defenses, Fort Tilden has three 3-inch anti-aircraft guns.
>
> The fort is a match for any potential invader, although the casual visitor may not be aware of it. Guns appear from the sand dunes, then disappear as if by magic. Smaller cannon mounted on rubber-tired wheels can be dragged to strategic spots by tractors and trucks to augment the fixed defenses. Many a harmless looking dune is a potential dump for powerful munitions.
>
> The fort often bustles with the excitement of sham battles and extensive drills. Every summer the Sixty-second Anti-aircraft Regiment executes new maneuvers, a battalion of coast defense artillery experiments with the big guns, and swooping airplanes simulate war conditions in mock attacks on New York. [*New York City Guide*, p. 593]

An intensive period of construction at fort Tilden began within that era. By 1940 a dirigible hangar is shown at the post on Rockaway Beach boulevard (Sheet #542, Coast and Geodetic Survey, 31 July 1940). A Post Hospital, a permanent brick structure, had been erected in 1938 (the date on the building); and brick officers quarters and headquarters buildings were erected in the same era. Work continued on weapons emplacements, magazines, and so--into 1941. Contracts for more than $750,000 in construction were let in 1940 (Edwin A. Osborne, "Rockaway--One of the Major

Protection Points of New York Harbor," *Rockaway Review* [Rockaway Chamber of Commerce, 1941], p. 39).

The same source reported that by 1 January 1941, personnel at the post had been increased from the small caretaker staff to seven officers and 170 men; that by 1 march the number had swollen to 30 officers and 500 men; and that by 1 June personnel at the fort numbered at least 1,000 men.

> To accommodate the rapidly increasing personnel, the housing facilities at the fort also had to be expanded. This included over 90 barracks and other new buildings erected within the past year or so. In 1939 the Ordnance building and station hospital were completed and by December last [1940] the Post Exchange, dispensary and six of the cantonment buildings were completed. Fifty five more of the cantonment type of buildings were completed by February 26th, 1940 [1941?].
>
> At the present time there are more than 90 of the cantonment buildings erected at the fort, ample to accommodate approximately 1,800 men.
>
> . . . . while the inadequate gun equipment at several of the Coast Artillery forts in the New York area was scored by Congressman J. Parnell Thomas following his recent tour of the Harbor Defenses of New York, he found at Fort Tilden a battery of the finest and most powerful guns along either coast of the United States. Work on the installation of these guns was completed in 1924. Among the big weapons at the fort are two 16 inch guns, capable of carrying shells at a distance of over 25 miles, in addition to 6 inch guns and a number of smaller caliber weapons.
>
> An intensive training program is being conducted at Fort Tilden consisting of long road marches, infantry drills, artillery drills, mass calisthenics, etc. Plans are also being made for an extensive firing program this year. Thus far, two service practices have been completed. These included one six inch battery practice and a 16 inch battery practice.
>
> On Tuesday, May 27th, 1941, the first review ever held at the fort took place . . . conducted by Brig. Gen. Philip S. Gage, USA, Commanding general of the Harbor Defense at Sandy Hook.
>
> Residents of the Rockaways were given an opportunity to see how well trained the men at Fort Tilden really are on Memorial Day, when three batteries from the reservation took part in parades in the community. . . .[Osborne, loc., cit., with photograph captioned "The Largest Gun in the World at Fort Tilden"].

Osborne reported that one of the 6-inch batteries fired on what was believed to be a German submarine during World War I. (Activity at the fort during World War II is not known to the writer). A 1945 plan (RG 392, Entry #225, n.d.) shows AA # 3 Battery on

Rockaway Beach Boulevard, near the Blimp Hangar. Battery Harris is shown near the southern center of the fort--with Battery Kessler on the beach near the southern end, Construction #220 roughly in the center of the Atlantic Beach, and Fergusson Battery on the eastern (beach) end of the fort, near the Life Saving Station site.

Along with the necessary control and power installations, at least four Nike silos were installed at fort Tilden in the late 1950's. Records on the installation of these were not available, though records ought to be searched now that the program has been terminated.

2. **Existing Structures**

Most of the quarters on the post probably date from the era of circa-1940 construction. Building T-147 (frame, 1-story) is probably the oldest of the remaining frame structures (ca. 1920), and T-106 (stucco, 2-story duplex quarters) is probably the oldest of the officer for administrative housing structures (and probably dates from a. 1920 as well).

Building 102, now used as the headquarters of lthe Breezy Point Unit, is probably from the construction era circa 1938, as are the Commanding Officer's two-story brick house and the Executive Officer's 1 5-story brick house. Erected by the Quartermaster Corps in 1938, the Post Hospital survives, as do at least four other brick quarters from the same era.

Wooden barracks range from one-story gable-roof to two-story buildings with hip roofs and pents above the first story. The designs of such structures did not change appreciably between the World Wars, though the majority of these cantonment buildings--to judge from their construction materials and what is known about construction at the post--seem to be from the construction era circa 1940 to world War II.

The parade ground and enough quarters, support buildings, roads, and trees survive to show a typical layout of the World War I to pre-World War II military post.

There are multiple weapons emplacements. The two bunker emplacements were probably constructed circa 1922 and improved circa 1943. The concrete and terra-cotta tile ammunition sheds and the railroad that serviced them seem to have been constructed circa 1922. Two secondary-support batteries exist; and in the line of tertiary defense, at least two smaller gun emplacements.

Also surviving in the area are remnants of portable wooden roads, probably used in transporting the rubber-tired portable guns from point to point.

Four silos for Nike missiles exist--two of them in operating condition, complete with elevators. The control centers, superstructure, and computer equipment housing are also intact, though the equipment itself has been removed.

There are bomb shelters, mine casements, ammunition-storage magazines, decontamination centers, and other underground facilities throughout the area. The exact location and number cannot be known until the area has been surveyed.

Remains and the flagpole of the Rockaway Life Saving Station survive at the Atlantic beach (southeast) corner of the fort.

3. **Comments**

Three major periods of American foreign policy and military reaction are represented at fort Tilden: World War I, World War II, and the Cold War era. All brought distinctive changes to the fort, and three-dimensional evidence of each of these eras survives.

While earlier forts are not al all rare in public ownership, complexes from this era, with their facilities retained, are; and an excellent case could be made for retention. Preservation of the fort would complete the chronological scope of military areas under Gateway jurisdiction--from pre-Revolutionary sites at Fort Wadsworth, through all the in-between eras, to recent Nike installations at Fort Tilden.

The bunkers remnants of military railroads, portable roads, ammunition sheds, and Nike installations have great interpretive potential; and a program of great interest to the visitor could be evolved around them. Tilden is not a place where well-known men were stationed in great numbers, nor is it a place where many newsworthy events occurred. In those ways it is typical of most of the military posts of its era. But there is a growing recognition that it is just as important to preserve the typical--if not more important, since the typical represents the mass of our history--as to preserve that which is unique and atypical.

It would be possible to make a case for preservation here and, on this basis, for listing on the National Register of Historic Places. Tilden is the only post of its era in Gateway ownership. And, in combination with Floyd Bennett Field (Brooklyn Naval Air Station), Jacob Riis Park (Rockaway Naval Air Station), Miller Field, Fort Wadsworth, and fort Hancock, there is an astounding amount of military history, over a long chronological period, in one compact area--all, with the exception of Rockaway Naval Air Station, having three-dimensional remains. Fort Tilden must be considered as an integral part of this New York Harbor Military Historic District.

4. **Suggestions for Additional Research**

It is not possible to judge the extent of the remains at Fort Tilden until the area has been surveyed and existing structures mapped. These pre-requisites should be accomplished.

Current files at Fort Hamilton might yield much material on fort Tilden, as would surveys of the local press.

Material in official records on the Nike installations ought to be located and studied. This study would return construction dates, engineering features, and the full history of the Nike program as evidenced at Tilden. The Historic American engineering Record might well be interested in recording these installations for their engineering features.

Because of the recent date of the installation, oral history about Fort Tilden would also be plentiful during the research.

Files of the Coast Guard Station might contain information on the Rockaway life Saving Station. Treasury records at the National Archives (Washington, DC) contain much information; and to help interpret and understand the site (included in the Fort Tilden part of the Breezy Point Unit), these records would also return interesting material.

C. BREEZY POINT

Breezy Point is located on the southwestern tip of the Rockaway Peninsula in Queens County, New York. To the north and west are the waters of Rockaway Inlet; to the south, the waters of the Atlantic Ocean.

1. General History

Commenting on the official opening of the marine parkway Bridge and Jacob Riis Park on 3 July 1937, New York city park Commissioner Robert Moses noted the shortsightedness of the City in not having acquired more land for ;park development on the Rockaway peninsula:

> It is high time that public shore front developments in the metropolitan area be carried on by those who combine some recent success with a reasonable appreciation of future problems. The failure of previous city administrations to acquire more land at Rockaway Beach from the ocean to the inlet, including Breezy Point, is the one cloud on the horizon on this opening day. Given a little more imagination and honesty of purpose in the past, the city would not today be in the position of having to recapture and reclaim painfully and bit by bit from private exploitation, parts of its once magnificent shore front heritage. [Program, *Published on the Occasion of the Opening of the Marine Parkway, July 3rd 1937*]

It seems likely that Commissioner Moses was referring to land at the end of the peninsula, actually Rockaway Point, which had been developed privately and named (for obvious reasons) Breezy Point. The name seems to have been used by both a beach development and a beach club. It appears on the 1955 Geological Survey maps (Coney Island quadrangle sheet) in that context, while the land itself is identified as Rockaway

Point. This identification follows through on all other maps of the area that were checked, including the Coast and Geodetic Survey charges (Sheet No. 542) from 1899 to 1973. As late as 15 December 1916 (all dates refer to the date on chart 542, from which this information was taken), the point is shown in its barrier-reef configuration; and the chart notes: "condition in 1914 changing rapidly". (On 12 April 1911 the chart had noted: "Rockaway Point is subject to great changes").

Between 1916 and 1922 there seems to have been considerable stabilization and buildup, so that by the later year (12 July 1922) a small beach colony is already shown on Rockaway Point, roughly opposite and south of (across Rockaway Inlet) the eastern end of Manhattan Beach.

Jettying of the north and western shores of the Rockaway Peninsula (which allowed the current beach configuration at Rockaway Point) does not appear on the chart until 12 October 1931; the chart for 30 October 1930 does not show the jetty.

From 1931 until 29 October 1934 the jetty was under construction. On that latter date is shown as completed to its present length. Evidently, however, the fill of sand south and east of the jetty took place slowly; and as late as 31 July 1940, there is still very little stable beach in the area. This condition prevailed through the 1940's and 1950's, though by 26 April 1954 a considerable buildup between the Ocean and the jetty has begun.

By September 1961, the Atlantic Ocean beach seems to be stable, though on 20 May 1963 it is shown once again with inlets--and unstable. By 13 January 1964, evidently, bulkheading and stabilizing had begun on the ocean side of the point, which had reached its present configuration.

2. **Existing Structures**

There are not known to be any existing structures of historic value on the Point.

3. **Comments**

There is an interesting environmental history involved here, since the land at the end of the peninsula is all twentieth century and built up by jettying and bulkheading--thus interrupting the natural barrier-reef forces at work before this century. Apparently, the reclamation program began with channelization of Rockaway Inlet into Jamaica Bay and continued as part of the measures adopted to protect the Rockaway Inlet Channel. In this context is should be determined whether it took place naturally after jettying.

If it did occur naturally after jettying, then this development would contrast sharply with ladfill operations (as at Great Kills Park) and dredge-and-fill operations (as at Jacob Riis Park, South Beach, Floyd Bennett Field, and elsewhere). The contrasts in the reclamation techniques could be an interesting part of the interpretive history of the area.

4. **Suggestions for Additional Research**

Inasmuch as the geographic designation for the area at the end of the Rockaway peninsula seems to be "Rockaway Point", it would be interesting to know the origin of "Breezy Point" and then to differentiate between the two names in Gateway publications and programs.

Local real-estate atlases, Chamber of Commerce publications, and similar sources should be of help, as should residents of the Breezy Point developments.

Chapter III

STATEN ISLAND UNIT

A. GREAT KILLS PARK

Great Kills Park is located in Richmond County, Staten Island, New York. It is bounded on the northwest by Hylan Boulevard, from which the park is entered by Emmet Avenue. To the west are the towns of Great Kills, Great Kills Harbor, and Crookes Point. Raritan Bay is on the southeast, where the boundary continues along the bay to Oakwood Beach. The northeast boundary of the park is slightly northeast of Emmet Avenue.

1. General History

A 1930 plan developed by the New York Regional Plan Association shows a vast formal development labeled "Proposed Bath House Group, Great Kills Park, Staten Island". The major structural grouping is arranged in the shape of a giant goblet, with its bowl on Crookes Point and its stem a pier in the Atlantic. The sides of the bowl flank a swimming pool. On the beach is a semicircular structure (forming the curved bottom of the bowl); and at the end of the pier is a sizable rectangular structure (the base of the goblet). Above the bowl of the giant goblet a parkway bisects Crookes Point. On the other side of the parkway, and stretching between it and Great Kills Harbor, is a landscaped formal garden, with flanking structures that include several greenhouses. (*Information Bulletin #2* [New York: Regional Plan Association, 20 April 1931])

In 1933 the same association reported as follows:

> In September, 1923, a sketch was drawn up to point out the advantages Crooke Point would offer as a park. Local associations used this sketch in promoting the project. The city, in 1929, purchased Crooke Point and considerable area of the swampy hinterland. In December, 1929, another sketch was drawn up to point out additional lands needed to round out the park boundaries. Since that time additional lands have been acquired and the Federal Government in February, 1932 moved the bulkhead line of the peninsula out to coincide for the most part with the pierhead line, making considerable expansion possible in the shallow waters of the Lower Bay. The only remaining land to be desired for adequate development is along the inland shore of the Great Kills harbor. [*From Plan to Reality* (New York: Regional Plan Association, 1932); aierial photograph of the harbor, p. 82]

A photograph appearing with the report notes that marshland, the sandbar, and "a considerable area of land underwater will be reclaimed and developed as a marine park".

The plan remained just a plan. Four years later the New York City Department of Parks published Improvement of Great Kills Harbor (28 September 1937), with photographs and maps. The suggested improvement again included dredging of the harbor, a fixed bulkhead, landfill south of Crookes Point, bathhouse facilities, and bathing beaches.

In early 1940 fill operations at Great Kills finally began. By the middle of 1949 the depositing of 15 million cubic yards of fill in sandy marshy areas or in areas previously under water brought the park to its planned size. Between early 1955 and late 1959 some 213,000 cubic yards of clay, mixed with 285,000 cubic yards of sludge, were dumped over this fill to create topsoil. By mixing readily available clay with sludge reclaimed from city sewage, the topsoil was created at a cost of some $1,000 per acre, which can be compared with an average price of $4,500 per acre for topsoil during the period. (New York City, Department of Parks, *The Reclamation of Park Areas by Sanitation Fill and synthetic Top Soil,* 9 October 1950)

The park was opened to the public on a limited basis on 1 July 1949. Facilities were provided when the bathhouse was opened at 9 a.m., 30 May 1952. The following is from publicity for the opening:

> Great Kills Park and Beach, a major project in new York City's great water front development and reclamation program, is patterned after Jones Beach in Long Island and Orchard Beach in the Bronx. The 1,300 acre park , when completed, will include, in addition to the existing beach, bathhouse and parking area; a 10,000 foot boardwalk, boat house, athletic fields, playgrounds, walks, bicycle paths, 5,000 car parking field, picnic areas and a pitch and putt golf course.
>
> The new 6,600 locker bathhouse is constructed of gray brick and limestone and designed to quickly and efficiently serve a maximum number of people. The planned sequence of operation from entrance to beach exit with parallel facilities for men and women, starts at the cashiers booths at the north end of the building. Along the passage to the locker areas are the key issue counter, suit and towel rental section and valuables checking counters. Within the brick walled locker areas are individual roofed sections branching off from the main circulation. Each section includes dressing areas, lockers, and showers. Comfort stations are located at the end of the main circulation. Additional areas in the bathhouse include lost children, police, first-aid and employees' rooms. Immediately to the north, foundations have been built for a large concession building. Pending completion, temporary food and refreshment facilities have been built in the bathhouse.
>
> Park employees and equipment, at present, are grading an area adjacent to the existing parking field, where an additional 900 cars may be parked. This work will be completed the early part of June and this temporary parking field will be used on peak days to take care of the increase in attendance expected with the opening of the new bathhouse. [New York city, Department of Parks, press release, 28 lay 1952]

1. **Comments**

Though there are no old or historic structures in Great Kills Park, the park itself may well be historic. The park was an early recommendation of the Regional Plan Association that took some 30 years from inception to public opening; nevertheless, Great Kills park and Beach proves the usefulness and foresightedness of both this plan and succeeding plans of the New York City parks Department.

The development also demonstrated the use of sanitary landfill to provide recreational space and the use of sewage sludge to create inexpensive growth surfaces over the fill.

As ultimately developed, the park is also an example of changing ideas and concepts in park/recreational planning and construction. From grandly formal areas offering multiple facilities to a variety of active and passive recreational users transported to the park by rapid transit, the area evolved into a simpler site for sunners and bathers transported largely by private automobile.

Great Kills park contrasts sharply with Jacob Riis Park, which was planned in the same era and was suggested as part of the same regional park development. Jacob Riis, too, was later modified for service by private automobile, though it remained a formal, planned development. The one is a grand park of the pre-World War II era; the other, a product of simpler mid-twentieth-century recreation concepts.

A. MILLER FIELD

Miller Field is located in New dorp, Staten Island, Richmond, New York. The entrance to the field is from New Dorp Lane, which is also the southwestern boundary of the field. The northwestern boundary is somewhat southeast of Hylan Boulevard. The northeastern boundary is somewhat northeast of Elm Tree Avenue, which is within the boundaries of the field. The southeastern boundary is in the waters of Lower New York Bay.

1. General History

a. Miller Field

The construction of seven hydroplane stations on the Atlantic coast was approved by the Secretary of War of 1 august 1918. After study, some relocation form the sites authorized seemed necessary; and the Director of Military Aeronautics reported:

> One of these stations was for a hydroplane squadron at Fort Hancock, NJ. It has been found that Fort Hancock is in no way suited for such a station, and after a thorough survey and investigation of adjacent territory, a site on Staten island was selected. This site has been approved by the General Staff. [RG 407, Adjutant General, letter, 2 October 1918]

The tract selected was known locally as the Vanderbilt Farm, New Dorp, the second Dutch settlement on Staten Island. The tract was described as having a long history:

> The history of this tract dates back to 1677 when the land came into the possession of one John Daly who is believed to have been a British soldier, as a royal survey was made for him in that year. The Daly tract composed the southeast portion of the present post which contains the Elm Tree Beacon. This beacon derived its name from an immense elm tree which stood on the site of the old lighthouse and on which ships entering or leaving the harbor would get their bearings.
>
> Daly held the land for approximately eight years, then conveyed it to Paulus Richards on October 13, 1685, taking a lease on it for a period of seven years. The ultimate disposition of the land is not recorded but it must have been acquired by William Britton, the owner of the northwestern portion of the present post, as Britton conveyed both the Daly and Britton portions to Hendrick Van Lawa in 1719. The land passed in 1748 to Johannes Simonson, who willed it to James Egbert in 1797. On the death of James Egbert, it was conveyed by the partitioners of his estate to Richard Conner Jr., on September 19, 1831. From Richard Conner Jr., the land was transferred through various owners and finally possessed by Walter Livingston who conveyed it to Cornelius Vanderbilt by gift, thence by will to George W. Vanderbilt and finally through his heirs, Edith S. and William K. Vanderbilt, it came into the possession the United States Government. [History of Miller Field, New York, 1936, RG 407, Adjutant General 314.75, pp. 1-2; the tract was acquired by Cornelius Vanderbilt in 1843 and conveyed to his son, William H. Vanderbilt on 26 February 1855]

Another relevant document (labeled "Staten island Project, History") notes that the project was approved on 15 August 1917, that the New Dorp site was recommended on 9 September 1918, that the purchase of the land was approved by the Secretary of War on 1 November 1918, and that on 31 January 1919 the Purchase, Storage, and Traffic Division was asked to acquire title. This document lists advantages of the New Dorp over the Fort Hancock location. New Dorp

> Combines facilities for water and land planes. Centralized location simplifies the work of patrolling New York Harbor and vicinity, and makes it possible to coordinate with any battery in the harbor. The site embraces 175 acres with 1750 feet of beach which is available for hydroplane hangars and upon which it is believed no work will be necessary to prepare for flying as the water is of sufficient depth. Landing field to the rear of the beach extends practically the

> entire length of the property, is in excellent condition and will require a very small amount of fill. Beach and landing field are sufficient in extent and area for the operation of two hydroplane squadrons and one land squadron including sufficient area for necessary hangars, shops, etc… labor and material for construction may readily be obtained in New York city. The roads in the vicinity are good macadam. Supplies are easily accessible by railroad or by boat. Supplies may be brought in by water, rail or road. [RG 407, Adjutant General 323.5, n.d.]

The first estimates on construction at the field seem to have been made in October 1918, and they included four hangars (RG 18, Army Air Force Central Decimal file, 120.13). the facility was at that time designated "Hydroplane Station, Coast Defense, Staten Island".

Negotiations were then already underway for acquisition of the Vanderbilt property. On 31 December 1918 Talbot Root, attorney for the Vanderbilt Estate properties, wrote that he had notified the tenants on the property of the possible takeover. There were several tenants, including a farmer and an occupant of the "Mansion", a sizeable mansard dwelling located near the land end of the property approximately in the center of the field. There seemed to be no difficulty with these; Mr. Root wrote, "I can fully understand that the Government will require almost the entire land for aviation or balloon purposes . . . ." He did ask that exceptions be considered for the two churches on the property--on Catholic and one Episcopal. Both denominations had buildings that belonged to the societies. (RG 18, letter, 31 December 1918). One was used as a construction office, and both were demolished by 1925.

The deeds were finally signed on 12 March 1919 (RG 407, Central file, AG 680.1, Miller Field). On 14 May 1919 a requisition for authority to purchase, in the amount of $420,041.48, was signed (RG 18, Army Air Forcer, Central Decimal Files 1917-38, Miller Field). This requisition was approved by the Secretary of War on 22 May 1919, and the first contracts for work were let on 17 November 1919 (*History*, p. 2).

On 6 December, the Director of Air Services requested the field, then referred to as the "Air Service Coast Defense Field at New Dorp," be named "Miller field", in memory of Capt. James e. Miller, who had been killed in action on 9 March 1918 (RG 18, Army Air Force, Central Decimal file, Miller field). This renaming was accomplished by War Department General Orders No. 1 (5 January 1920).

Born in New York city on 24 March 1883, James Ely Miller was graduated from Yale with the Class of 1904. He then worked with the Knickerbocker Trust Company and became manager of the 34th Street branch and a vice president of the Columbia Trust Company. Enlisting as a private in Squadron A, Cavalry, New York National Guard, in 1911, he was commissioned as a First Lieutenant in the 1st Battalion, Signal Corps, New York National Guard, on 1 July 1916. He accepted appointment as a Captain, Aviation Section, Signal Officers Reserve Corps, on 5 May 1917 and was assigned to active duty. He commanded the Signal Corps Detachment at Fort Wood, New York, before he left for France on 23 July 1917. On 20 February 1918, after several other assignments, he took command of the 85th Air Squadron, which left for the front on 16 February 1918. He was killed in action on 9 March 1918 in an air battle with two German planes, the second such battle of the day. He became, in terminology finally approved by the War Department, "the first aviator serving with an American unit to be killed in combat in France" (*History,* pp. 2-3).

In adapting the Vanderbilt Farm to air station use, trees, shrubbery, and fences were removed for the field; the stable was converted into a garage, its paved barnyard into a parking lot, and its wings into storerooms; the mansion was converted into an officers mess and the dairy into a radio receiving station (RG 407, TAGO, Central file, Projects, Miller Field, 14 May 1920).

The field was in use by July 1920. That month came a directive:

> In order to make a tactical test on short notice of the speed with which a Photo Section can work in the developing and printing of negatives taken from the air, and as a demonstration of one of the practical uses of aircraft, that there be taken motion pictures and still pictures of the International Cup Race at Sandy hook, on such days as there are contests.

In compliance, the Commandant at Mitchel Field reported that the basic communication had been

complied with:

> The film companies named . . . were notified that there would be a plane furnished to take motion picture cameramen into the air to photograph the yacht races. The Pathe and Gaumont Film Companies were the only companies to accept the invitation and then only on the first day of the race.
>
> The races took place just off Staten Island, hence the photographic dark room lorry was taken to New Dorp Landing Field, the new Coast Patrol Station on Staten Island, where all planes landed and turned their plates over to the photographers who developed and printed them, and turned the finished prints over to the newspaper reporters. After the third race [of eight races] the photographic lorry was returned to Mitchel Field where all operations, until the finish of the race, were conducted.
>
> All newspapers in New York were notified that they could procure finished prints of the races at New Dorp Landing Field, and many were there to get them. Finished prints were ready for distribution thirty minutes after the planes had landed, which made it possible to publish these pictures in the editions of the following morning. The New York Times, Tribune, Herald and News, also the Boston Post and Herald had representatives at the field after each race, others were notified, but sent no representatives. The out of town papers were more eager for pictures than the New York papers, and consequently gave the Air Service more publicity. [RG 18, Air Corps Central File, 1917-38, 373, Aerial Flights, International Yacht Race]

There were complaints after this from several quarters, since others were furnishing such photographs on a commercial basis, and the Army action was viewed as unwarranted infringement on private business.

Miller Field was turned over to the Air Service by the Construction Quartermaster on 20 July 1921 (RG 18, Army Air Force, Central Decimal Files, 1917-38, Miller Field, 20 July 1921). The letter describing the transfer lists the following buildings:

> 2 Landplane Hangars
> 2 Seaplane Hangars
> 1 Aero Repair Shop
> 1 Motor Test house

1 Dope House
1 Aero Storehouse
1 Boiler House
1 Armorers' House
1 Gasoline Pumping Station and Tanks
1 Sewage Ejector House
1 Pier, Float, and Boat House
1 Concrete Seaplane Ramp
Concrete Pavements
Concrete Roads
Macadam Roads
1 Barracks and Mess
1 Post Exchange
1 Administration Building
1 Photographic Building
1 Fire Station
1 Radio Transmission Station
1 Bachelor Officers' Quarters
1 Steel Flagpole
4 Hose Cart Houses
1 Storehouse
1 Guard House
1 Infirmary
1 Field Officers' Quarters
Set #1 Company Officers' Quarters
Set #2 Company Officers' Quarters
Set #3 Company Officers' Quarters
Set #4 Company Officers' Quarters
Set #5 Company Officers' Quarters
Set #6 Company Officers' Quarters
Set #7 Company Officers' Quarters
Set #8 Company Officers' Quarters
Set #9 Company Officers' Quarters
Set #10 Company Officers' Quarters
Set #11 Company Officers' Quarters
Set #12 Company Officers' Quarters
2 NCO Four Family Houses
1 NCO Two Family House
1 Utility Shop and Storage Yard
1 Garage and Storehouse Structure
1 Radio Receiving Building
1 Club House
Galvanized Steel Fence
Walks
Sodding, Seeding and Planting
3 Radio Masts, 85' each
Water distribution System and Hydrants
Gasoline Pumping Equipment and Service System
Sewage System and Sewage Disposal Plant
Electric Light and Power Distribution System
and Transformers

Surface Drainage System

Attempting to land on 29 October 1921, a martin bomber had become stuck in a plowed field; a tractor had to be rented to haul it back to solid ground. Such conditions seemed to persist; and it became necessary to investigate and evaluate the field, though some attempt had been made to improve the hangars by installing heating during that autumn (RG 18, Army Air Forces, Central Decimal Files, 100).

On 20 July 1922 a board, consisting of the two officers at the field, met to inspect the work and report (RG 18, Army Air Force, Central Decimal Files, 1917-38, Miller Field). They recommended that the two church buildings be demolished and that the airdrome be lengthened by demolition of the Vanderbilt Mansion, which was then being used as an officers club. Their findings on the construction of many of the buildings was not particularly complimentary to the builders. They noted, for example, in inspecting the hangars that

> The hangar group of buildings has been graded to such a low point that exceptionally high tides flood the floors of these buildings to a depth of six or more inches while the ramp leading from the concrete area in front of these buildings to the beach has been graded so low that it acts as an inlet to the flood waters; this condition applies to the land and sea plane hangars, the motor test building, the aero-repair building, the aero-repair boiler room, the dope shop, and the aero-repair storehouse. These buildings were flooded to a depth of six inches by the high tide of January 29, 1922.
>
> Numerous other deficiencies in construction were pointed out by the board.

The status of Miller Field was at that time in doubt. The Commanding General of the 2nd Corps Area had recommended that it be made a sub-post of Fort Wadsworth. In recommending to the War Department against this action, the Air Service Executive noted:

> 1. Although this office has no immediate plans for the active operation of Miller Field, the following considerations make advisable its retention as an operating station:

(a) Centrally located for work involving aerial adjustment of coast artillery fire and mine spotting.
(b) Available as a sub-base during maneuvers, problems or exercises using Mitchel Field as a base.
(c) Way station for aerial travel along Atlantic Coast
(d) Logical terminus of air routes leading into New York
(e) Available for use by seaplanes. (Mitchel Field is not).
(f) To be used as ultimate station for concentration of Air Service activities in 2nd Corps Area, in case of such extreme reduction of the Army as to necessitate abandoning Mitchel Field.

1. At the present time it is impossible to determine what the status of the Air Service is going to be. It is highly probable that should the Army be materially reduced that the Air Service will receive a corresponding cut. In case this reduction is so great as to make it impossible to maintain more than one (1) squadron in the vicinity of New York, it is the opinion of this office that it would be logical and proper to concentrate at Miller Field which has permanent quarters and installation. This would make it practicable to salvage and sell all the temporary and rapidly deteriorating equipment at Mitchel field with a view at a more opportune time to taking proper steps to build up a permanent airdrome at Mitchel Field.

3. In view of the above it is recommended that no action be taken which will in any way interfere with the facilities or future operation of Miller field as an Air Service station, and that any assignment of units to that station be with the understanding that Air Service requirements may at any time make their removal necessary. [RG 18, Army Air Force, Central Decimal Files, 1937-38, Miller Field, 11 March 1922]

The Secretary of War ordered Miller field turned over to Fort Wadsworth as a sub-post on 29 March 1922 (with the understanding expressed in para. 3, above), and on 26 May of that uyear the 102nd Observation Squadron of the New York National Guard was given permission to move from Mitchel field to Miller.

It was also in 1922, that the Navy, having lost Rockaway Naval Air Station to park development, sought first the joint Army-Navy use of Miller Field, then land from the Fort Tilden reservation to which the Rockaway facility could be moved (RG 407, AG 602.3). Both possibilities were turned down by the Army.

The Remington-Burnelli Aircraft Corporation tested their plane at Miller Field in 1923. Equipped with two 550-hp Atlantic-Galloway engines, the plane was being tested for the Army when it crashed at Miller Field. Repairs were made there in one of the

hangars, and the tests continued. (RG 18, Air Corps Central File, 1917-38, Miller Field, 24 August 1923)

During the period of 1923-24, Lt. Erick Nelson seems also to have been frequently at Miller Field. Nelson was a member of the Stockholm Club, whose clubhouse was across New Dorp Lane from the field. An Army flier, he (in his plane, the *New Orleans*) and Lt. Lowell H. Smith (in his plane, the *Chicago*) made the earliest flight around the world, between 24 April and 28 September 1924, in their Army Air Service Douglas amphibians. The aircraft, with interchangeable floats and wheels, took 175 days to fly the 26,100 miles in 57 legs. The actual flying time was 351 hours and 11 minutes. (Norris and Ross McWhirter, *Guinness Book of World Records* [New York: Sterling 1972], p. 320)

The fliers naturally became popular heroes, and it is said that President Coolidge and the entire Cabinet canceled all appointments and stood in the rain more than four hours to greet the fliers when they arrived in Washington after having accomplished their "first". Nelson seems to have been a popular member of, and frequent visitor to, the Stockholm Club. The hero

> flew to Miller Field and was accorded a reception and demonstration equaled by few others who have ever graced Staten Island's shores. The field is located opposite the clubhouse with its beautiful grounds, lawn, shrubbery and flower gardens. Upon the field, and opposite the clubhouse, are the Vanderbilt barns and the famous tower (Elm Tree). The great field was packed with members of the colony and club, and with fellow aviators. Lieutenant Nelson on this occasion gave demonstration flights for his clubmates of Number 9 Cedar Grove Avenue, New Dorp.

The New York National Guard seems to have sought several times during this era to acquire the field; but they were always resisted by the Air Service, which was still uncertain of its future and was still viewing Miller field as a necessary, if not active, field.

Another event during 1924 that may have brought crowds to the field, on 28 June (during a National Guard Aviation Meet), was the requested flight of the Navy

Department's airship *Shennandoah*, then stationed at Lakehurst, New Jersey (RG 407, TAGO, Central file, Projects, Miller field). The navy promised to comply with the request. And on 12 September (Defense Day), when New York was attacked by simulated invaders, which were repulsed by air power, another kind of battle took place on Staten Island, when air forces attacked the land base at fort Wadsworth. The festivities began with a parade, in which the field's 102nd Observation Squadron, First Ordinance Company and First Tank Company participated. Then planes from Miller Field bombed Fort Wadsworth. Afterward there were demonstrations of various types at Miller Field. In the bombing of fort Wadsworth, flour bombs were used; and one aviator, Lt. Edward Wetherdon, became something of a celebrity by not just scoring a hit, but by putting one of his flour bombs in the barrel of one of the Fort's big guns. Five army planes from Miller carried out the bombing. (*New York American*, 13 September 1924)

With public ceremonies on Armistice Day, 11 November 1924, a tablet donated by Lieutenant Miller's mother and friends was unveiled at the field. The program of the event (RG 18, Air Corps Central File, Miller Field) notes that Col. T. A. Baldwin, Jr., spoke on Miller Field, and Philip J. Roosevelt unveiled the plaque, which read as follows:

MILLER FIELD
NAMED IN G. O. WO1 W. D.
JANUARY 5, 1920
IN MEMORY OF
JAMES ELY MILLER
CAPTAIN
UNITED STATES ARMY
WHO WAS THE FIRST
AMERICAN AVIATOR
KILLED IN COMBAT
IN FRANCE

The plaque caused a good deal of comment within the Air Service. In 1925 it was finally decided that a more accurate claim to fame for captain Miller would be "the first aviator serving with an American Unit killed in combat in France" (RG 407, TAGO, Central File, Project, Miller Field, AG 680.470)

In reporting the unveiling to the Air Service in Washington, Col. C. B. Humphrey, commandant at Miller Field, noted that

> several planes of the 102nd Observation Squadron, of this stationed, flew over the Administration [building] and dropped flowers just as taps were sounded.
>
> All of the troops of this command were assembled at the services, and there was a large attendance of citizens of this community as well as from New York City. [RG 18, Air Corps Central File, 13 November 1924]

There were frequent requests to use the field and its facilities, most of them from aircraft companies or groups testing aircraft. Not all requests were taken with equal affability, however. On 2 April 1925 a request came from Schavan Airways, asking

> use of Anchorage, runway to water, and use of beach at Miller Field, S.I. Until we find a suitable water front on South Shore of S.I. We have tried to locate for [*sic*] hangars on South Shore but have not been successful, as yet. This runway and beach is not being used at present.
>
> We are two Americans, George Schaaf and Lawrence Van de Nyden. We have formed a Company known as Schavan Airways and have three flying boats. Knowing that you are enterested [*sic*] in the promotion and progress of Commercial Aviation, and of the training of civilions [*sic*], we entend [*sic*] to carry on all kinds of commercial work and we also entend to run a training school for pilots. Mr. Schaaf has had 13 years of experence [*sic*] in the designing, building and flying of aircraft. We will not cause any inconvience [*sic*] or create a nuisance. We do not entend to carry on operations from this beach. Just to set up and ancher [*sic*] until we can find a suitable location.

The commanding officer at Miller Field, in forwarding the letter to the Commanding General, 2nd Corps Area, disapproved the action and commented:

> It is my belief that the individuals concerned are not what they represent themselves to be, that this is merely a guise so that they may act in the capacity of "bootleggers". They know, that with the assurance of a place on a military reservation, they would be protected to a certain extent, at least, much more so than they would were they to have their headquarters off the reservation. . . .
>
> As to the "13 years experience in the designing, building and flying of aircraft" of Mr. George Schaaf, I have my doubts. This man, with "13 years experience" was unable to navigate an airplane last summer while he was on the post and was the cause of an injury to an officer, a Lieutenant Kidd, I believe. His ability as a designer was very vividly demonstrated when an inspection of his plane, after an accident, showed a 2x4 being used as an upright strut. This is the same man who attempted to get permission from some source to have his plane kept in the National Guard hangar but without result. He has been operating along

> the coast during the past autumn and winter as a "bootlegger" but to date, has not been caught with the goods.
>
> I believe that his companion, is also in the same enterprise but I have not herd anything mentioned about him in this connection. Yet, it is reasonable to say that he too, has the same intention as his friend George Schaaf. [RG 18, AG 680.44, 2 April 1925]

The Army, like the Navy, scheduled spectacular flights--Lt. Nelson's round-the-world flight in 1924 was one such--ostensibly aimed at the training of pilots and amassing flying experience. In 1926 were planned a series of Pan-American flights, which would serve (in addition to showing the capability of Army aviation) as goodwill missions to Central and South America. Loening Amphibian planes were to be used, and at least one of them was tested and serviced at miller Field (RG 18, Army Air Forces, Central Decimal Files, 200, 20 October 1926). It seems logical that several or all of the planes were tested and serviced there, since eight of the ten pilots that were to take part in the Pan-American flights trained at Miller Field (RG 18, Army Air Forces, Central Decimal Files, 353.9).

The Aeronautical Chamber of Commerce considered these flights significant enough to list them in "Epochal Flights of 1927, "though they actually began on 21 December *1926 (Aircraft Yearbook, 1927* [New York: Aeronautical Chamber of Commerce, 1926], pp. 195-96; the *Yearbook* for 1928 [pp. 36-37] also discussed the flights);

> The expedition comprised five Loening amphibians equipped with inverted Liberty engines. The flight under command of Maj. H. A. Dargue, Air Corps, USA started from Kelly Field, san Antonio, Texas, on December 21, 1926, and ended at Bolling Field, Washington, DC, on May 2, 1927. Twenty five foreign nations and colonies in North, Central and South America were visited, the point farthest south being Vladiva, Chile, about 40 degrees south latitude. The Andes were successfully crossed, and there were long stretches of flying over open sea as well as over tropical jungles. The expedition gave a splendid account of itself, and again demonstrated the utility of the amphibian type of plane in negotiating such diversified terrain of land, sea, mountains and swamps as was encountered in the Pan American flight. There were many landings and takeoffs on both land and water and the crossing of a number of high mountain ranges which proved the value of the amphibian under all kinds of difficult flying conditions.

Two of the pilots were killed during the flight, when two of the planes collided in the air over Argentina. The other two pilots parachuted to safety. In Washington at the end of the flight all the returning pilots were met by President Coolidge, members of the Cabinet, and diplomatic representatives of all the countries visited. Each pilot was awarded the Distinguished Flying Cross for his feat, with posthumous awards going to the two pilots that were killed.

Miller Field may have played host to several foreign teams during 1926. On 12 April 1928 the field was advised that German aviators might be visiting; and on 5 May, that Royal Canadian Air Force visitors might land there (RG 18, Air Corps Central File, 680.2, Visitors). It is not known whether both of these worked out like the projected flight of Col. Charles Lindbergh to Miller Field in June 1927. After his transatlantic flight and glorious receptions in Europe, Lindbergh returned by ship to Washington. There, after public ceremonies, a parade, and the awarding of citations and medals, he was scheduled to fly the Spirit of St. Louis to New York on 13 June. The commanding officer at Miller field was wired that

> NO AIRPLANE WILL BE CLEARED FOR MILLER FIELD, NEW YORK ON DAY LINDBERGH FLIES FROM WASHINGTON TO NEW YOUR STOP ANTICIPATE THIS DATE WILL BE MONDAY JUNE THIRTEENTH [RG 18, Air Corps Central File, 373, Flights, Miller]

Rope barriers were erected at the field, and all was in readiness for the Lindbergh landing. The *New York Times* on 13 June 1927 headlined: "New York in Holiday Mood. Greets Lindbergh Today; Coming in His Own Ship, Shifts to Seaplane in Harbor; His Final Day in Capital One of Continuous Ovation". Beneath the headlines a schedule noted that at

> 11:30 a.m. Colonel Lindbergh will transfer from amphibian plane in the Narrows to the Steamer "Macon", from which he will review a marine parade representing every type of vessel in the Harbor.

The article beneath the headlines stated that:

> a high official explained that the point to which the "Spirit of St. Louis" is to be flown by colonel Lindbergh is being kept secret in response to the wishes of the aviator. He fears that if his destination were announced in advance of his departure, the landing point would be so congested as to jeopardize a safe landing and threaten the destruction of his plane, as well as personal injury. . . .

During the stay in Washington the plane had been repainted and repaired. It was ready to fly to New York, then to St. Louis. It would make flights over specific points along the way, to be seen and honored with its pilot. In spite of Lindbergh's wishes, any New Yorker must certainly have known that he would land at Miller Field. He was, after all, to enter the harbor through the Narrows, land at the Battery, and then parade through Manhattan. Miller Field was the logical landing place, and crowds flocked there on the morning of 13 June to see him land.

The nest day, 14 June, the New York Times reported in banners across the front page: "Millions Roar Welcome to Lindbergh in City's Greatest Triumphal Pageant; Governor and Mayor Pin Medals on Him"; as the headline to another story: "Crowds at Flying Fields"; and, as a consolation to those waiting at Miller Field, the subhead "Throng at Miller the First to See Lindbergh's Plane Pass". The article reported as follows:

> Uncertainty as to the landing place of colonel Lindbergh in his hop from Washington to this city yesterday caused crowds to gather at many flying fields at dawn in the hope of getting a close-up of the transatlantic flyer as he stepped form his plane. This was particularly the case at Miller Field on the edge of New York Bay at New Dorp, Staten Island.
>
> About 600 motorists had driven to this base for National Guard fliers before 6 a.m. By the time Colonel Lindbergh and his escort of pursuit planes. . . had passed over the south end of Staten Island on their way to Mitchel Field on Long Island at 11:38 a.m. the crowd there had increased to about 5,000.
>
> . . . Despite the assurances of colonel James Justice, Commandant at Miller Field, that orders for the reception of Colonel Lindbergh there had been canceled forty-eight hours before, the crowd insisted on staying. They passed the time watching the preparation for the departure of eight National Guard Airplanes that were to join the escort to colonel Lindbergh.

> When Colonel Lindbergh's plane came through a thick haze to the south of Prince's Bay, the crowd felt compensated for its stay. Besides the wonderful spectacle presented by the flier and his escort as they flew close along the Staten Island shore. . . they realized that they were the first of the waiting throng to witness the arrival.
>
> The National Guard planes . . . had taken to the air about half an hour before Colonel Lindbergh's plane appeared and had swung into formation as the expected plane sped up the Bay. The maneuvers brought cheers, and as Colonel Lindbergh passed in his plane, hats, flags, sweaters, and coats were waved to let him know that New York's reception had begun.
>
> Before New York Bay was reached, the escort planes had clustered in groups of three and a few minutes later all had passed out of view.
>
> Still the crowd waited and there was some commotion when the National Guard planes were seen coming back to the field at a terrific pace. They reported that colonel Lindbergh and the Army escort planes had continued to Mitchel Field.
>
> Two motor trucks, loaded with flowers, loosely tied in bunches, which had arrived at Miller Field, were quickly emptied and the flowers distributed among the observers on the National Guard planes. Later when the planes left to join in the escort of colonel Lindbergh in his flight from Mitchel Field to quarantine the flowers were dropped on Colonel Lindbergh as he made the change form his Army plane to the amphibian which was to take him to the Steamer Macon. The flowers were given by florists of the city as their contribution to the reception of the famous flyer.

Another article in the *Times* noted that Lindbergh skirted Staten Island, where "crowds lined Miller Field in the hopes he would land there after all". After glimpsing Lindbergh's plane, the Miller Field crowds had time to seek other vantage points at the narrows to see the landing of Lindbergh in the Bay and his triumphant progress--between fireboats and steamers with whistles blowing--up the Harbor to the Battery. Lindbergh did not come in the Spirit of St. Louis. A valve malfunctioned when he tried to start the plane at Bolling Field, and he actually made the flight in another plane made available by the Army.

Aviation from Miller Field continued to be carried on largely by the New York Air National Guard, though the field commander was a non-aviator--he was a tank-troop commander. This dual occupation sometimes brought friction. One such incident

occurred in early 1928; and since it was not re to the liking of the National Guard, Congressman Fiorello LaGuardia was asked to intervene. On 23 March he wrote the Secretary of War:

> I am sure that it is your desire and the policy of your Department to extend every possible courtesy to civilian flyers. In fact, Mitchel Field is known the world over for its courtesy and willingness to cooperate at all times and be of assistance to visiting planes or planes landing in an emergency. I believe that is true in every Army Air Field throughout the continent. It is therefore with a great deal of distress that I am compelled to call your attention to the conduct of the Commanding Officer at Miller Field, Staten Island, New York. As you know, part of the military reservation at Miller Field has been assigned to the New York National Guard. The Guard has a splendid organization. I am certain that it compares favorably with any group organization in the United States. They fly constantly. It is composed of a splendid set of men. All of their equipment is in splendid condition and they have made hosts of friends all through the United States not only for the Guard aviation, but also for the Army. The military contingent consists of a tank company and it is under the command of a Lieutenant Colonel, a Colonel Upham, I believe. This Lieutenant Colonel, whoever he may be, has certainly displayed a narrow-minded attitude with an extraordinary amount of arrogance. He knows nothing about aviation, but that makes no difference for the simple reason that he has nothing to do with aviation. He has taken it upon himself to assume command of the flying field and the personnel of the National Guard. He has issued orders that private planes cannot land on the field without first obtaining permission from him. Just how a plane in distress flying over Staten Island would get in communication with him I do not know. It has been customary for planes from the Bellanca Company to land at Miller field and the relation between Mr. Giuseppe Bellanca and his factory and Miller Field is most friendly and cordial.
>
> A few days ago a Mr. Kahn landed his Bellanca plane at Miller Field and motored over to the factory. While he was away the Colonel discovered this plane of the field and tied a tag on the plane inquiring who had given authority for the plane to land and for the owner of the plane to report to him immediately. If this is not a dumb pinhead thing for one who holds a Colonel commission to do, I don't know what is.
>
> The other day one of the national Guard officers was flying and made a landing not to the pleasure of the Colonel. Again, I repeat the Colonel had absolutely nothing to do with the flying, and the Colonel "ordered" the man from flying for a certain specified time. It so happened that this National Guard officer took sick and had to go to the hospital, which prevented a real test of this colonel trying to give orders that he has no right to give.
>
> Miller Field, as you know, is located at the lower end of Staten Island land it may very often happen that civilian planes may be forced to land there. It is also natural for civilian planes to visit the field and many times distinguished native and foreign flyers at the invitation of the National Guard, use the field. Commander Byrd at one time landed there with his plane, Commander DePinedo

assembled a new plane at that field. Fortunately at the time the present stupid Commanding Officer was not in charge.

Incidentally, I desire to point out that if this officer would attend to his own duties properly he would have enough to keep him busy without interfering with the splendid National Guard organization. He has about 115 men. The equipment is all rundown. I venture to state that not one-third of the tanks can be taken out and used.

It is my request that you investigate the conduct of this officer and that he be instructed not make a fool of himself, to refrain from interfering with the National Guard and to let the officers of the National Guard organization, to whom the field has been assigned, decide as to the rules of the field and who should land there.

I trust you will give this matter your immediate attention because the conduct of this fool officer is causing a great deal of friction and annoyance. Sincerely, f. LaGuardia [RG 18, Air corps Central File, Miller Field]

The congressman also took the matter to the floor of the House and to the *New York Times* ("LaGuardia Assails Miller Field", 25 March 1928).

It was certainly impossible for the Army not to investigate Colonel Upham; and, taking each of the matters in turn, the Army did. It found that the field had never indeed been assigned to the New York National Guard, but that under orders of 10 June and 10 October 1922, the National Guard had been allowed the use of Building No. 38 (known as "the seaplane hangar") and that the post remained a regular Army post. The regular Army garrison at that time consisted of 10 officers and 168 enlisted men, plus six attached enlisted men.

The effect of the investigation was to reassert the authority of the Army commander at the base and to find him blameless of anything other than commanding the field as it should have been commanded. The regular Army flight-instructor was replaced, and one National Guard officer was prohibited from flying at the field.

The papers concerning the investigation are interesting because of what they reveal about the use of the field. LaGuardia, a flier, seems to have been a frequent visitor to Miller Field and to have make many flights from the field in Army planes. The papers confirm the use of the field by the Bellanca Aircraft Corporation and the presence

there of Rear Admiral Byrd's plane, to be used for exploration at the South Pole. (RG 407, TAGO, Project File, Miller Field, AG 580.82)

Also mentioned in the course of the investigation is an invitationto Colonel Lindbergh to visit the field. He is said to have replied that, when he did, he would not fly but, to keep the crowds down, would come unannounced. A request for fencing supplies mentions that they were needed at certain times such as "air meets, preparation for landing of Col. Lindbergh, etc." (RG 407, AG 475.4 24 April 1928). This reference may be to colonel Lindbergh's flight to New You're the year before, but it could as well be to a later flight when he actually landed.

Dorothy Valentine Smith, *Staten Island, Gateway to New York* (Philadelphia: Chilton Book Company, 1970), states that Admiral Byrd's plane to be used in Antarctica was tested at Miller Field (pp. 218-19).

Miller Field has another association with Byrd--or, rather, with his co-pilot and pilot on the North Pole flights, Floyd Bennett. When the *Bremen* was downed on Greenly Island in the gulf of St. Lawrence, Floyd Bennett flew with Bernt Balchen to their rescue. Bennett was not in New York when the downing occurred, but he was asked to fly to the downed fliers. Bennett was familiar with the topography of the area, and Herta Junkers (daughter of the German builder of the plane) was in New York with the only available spare parts. Bennett flew to New York to begin the mercy-flight preparations at Miller Field; and on 19 April 1928.

> in a Bellanca plane, Floyd, Balchen, Tom Mulroy--Commander Byrd's chief engineer on the Arctic trip--and Charles Murphy, a *World* reporter, all set out for Detroit, where the party was to pick up a Fort tri-motored plane for the dash to Greenly Island.
>
> Already suffering from a congested head and throat, Floyd found the ride anything but pleasant in such rough weather. Bernt Belchen, too, was suffering from a severe cold when they started off from Miller Field. By the time they came down on the field at Ford's factory, in Detroit, both were feverish. [Cora L. Bennett, *Floyd Bennett* (New York: William Parquahar Payson, 1932), pp. 139-40]

Bennett was hospitalized in Detroit at Edsel Ford's insistence, but later continued on the mercy flight, the flight on which he contracted pneumonia and died.

In Spring, 1929, the American Aeronautical Corporation used the field for the assembly on "one S-55 twin-hulled Savoia-Marchetti flying boat and one type S-62 Savoia-Marchetti flying boat" (RG 407, AG 680.44, Miller Field). In Fall 1929, the New York, Rio & Buenos Aires Airlines requested permission to use facilities at Miller Field to test their Consolidated "Commodores", which would be used in the South American end of their route (RG 18, Air Corps Central File, 680.3, Use of Miller Field).

It has also been reported that Igor Sikorsky assembled his first seaplane at Miller (*Staten Island Chamber of Commerce, Staten Island, New York 50th Anniversary* [1945], p. 35). A check through several publications on Sikorsky, better known for his development of the helicopter than for his connection with seaplanes, failed to confirm this report; but it is certainly possible. Sikorsky did have his first American factories in New York City and did, indeed, assemble and build seaplanes there. One of these, the *Yankee Clipper*, made him famous and proved, through its use by Pan-American, that transoceanic passenger flights were possible and could be profitable.

In 1932, the Meteorological Station that had been established at Miller Field in 1927--but now made obsolete by teletype weather reports--was phased out (RG 18, AG 047.2, 6 January 1932).

In 1935, under the Works Progress Administration, work began at Miller Field on the National Guard facilities; and improvements were made in the Seaplane Hangar, Building 38 (RG 18, Air Force Files, 600.1, 16 December 1935).

The Vanderbilt Mansion and its old water tower were finally demolished in June 1936 to permit an extension of the field (History, p.2), and the barns were demolished in 1937 (RG 165, Entry 234, #27839, 11 February 1937; pictures of the mansion and barns on George W. Vanderbilt's "model farm", ca. 1907, appear in Dorothy Valentine Smith's

This Was Staten Island [Staten Island, NY: Staten Island Historical Society, 1968], p. 105).

On 4 July 1938, a salute to the nation--one shot for each state--was fired from Fort Washington, Fort Tilden, and Miller Field (which also had coastal gun fortifications). (*New York Times*, 3 July 1938)

In 1938-39, a considerable amount of work was done on the Army facilities, including the hangars at Miller. Garages were constructed, as were a sewage lift pump and a new flagpole area. Lean-tos were constructed on the hangars, and repairs were carried out on almost all billets and the Administration building. (WPA Notebook at Miller Field)

Though there were proposals to convert Miller into an Air Freight and Overseas Shipping Terminal in 1941, they were never acted upon (RG, 165, G-4, Miller Field); and the post seems to have weathered World War II quietly. Some new work was accomplished on the coastal weapons installations, and the light and watch tower (Building 46) was constructed in 1944 (WPA Notebook). Miller, as a sub-post of Fort Wadsworth, served sometimes as an overflow post for troops, sometimes for POWs, sometimes for refugees. It was probably during this era that buildup of the beach began; when constructed, the hangars were almost at the water's edge.

Miller Field is probably remembered today by some for the midair collision on 16 December 1960 between a United Airlines DC-8 and TWA Super Constellation, which occurred over Miller Field, with a loss of 134 lives. Others may remember it as a training ground for green-beret troops. (*Staten Island Gateway*, pp. 218-19)

a. **Elm Tree Light Station**

Elm Tree - A large tree standing at the foot of New Dorp Lane was, according to Conner and Sprong's Map of 1797, "a mark for vessels leaving and going from New York to Amboy, Middletown and Brunswick". The present Elm Tree Light has taken its place. It appears on maps of 1836 and 1850.

[Charles W. Leng and William T. Davis, Staten Island land Its People (New York: Lewis Historical Publishing Company, 1930), I, 341]

Whether or not a beacon was actually hung in the elm tree is not known. Certainly by 1852, however, there was a light; for on 31 August of that year two range beacons were recommended for the Swath Channel of New York Harbor "to be placed on Staten Island, near the elm Tree beacon" (RG 26, Lighthouse Clipping Files, Gedney's Channel, NY Harbor).

The Lighthouse Clipping files for the light station on the Swash Channel include records for the new Dorp light and for the elm Tree Light Station. Both stations were manned in 1856, though construction was already under way (unless otherwise indicated, RG 26, Lighthouse Clipping files, Elm Tree Light-Station, NY, Staten Island).

The Annual Report for 1855 indicated that the Swash Channel beacons were nearly ready for occupancy and lighting (p. 310). The six lights being constructed at the same time were described as "three hexagonal towers, three keepers; dwellings, with light-turret in the center, and three separate keepers' dwellings, all of wood, upon foundations of brick laid in cement".

A later photograph (1891) indicates that the Elm Tree light was originally one of the three hexagonal towers with separate keepers' dwelling. Evidently replacing the earlier private or New York State beacon, it was lighted in November 1856.

Repairs to the beach (including jettying to prevent storm wash) and to the light are indicated in 1867, 1868, 1869., 1870. 1871, 1872, 1874, 1878, 1879, and 1883.

In 1889 it was reported that

> a change in the channel during recent years made it necessary to shift the light at Elm Tree, to make the range accurately, and correspondence was entered into with the owner of the adjacent property to ascertain the cost of the proposed new site. It is proposed to move the tower from which the Elm Tree beacon is shown to the northeast so as to place it on the prolongation of the axis of the Swash Channel, New York Bay, and thus in connection with the light at New Dorp, to properly mark this important range.

The site was acquired in 1890, and work began on moving the tower. Foundations were laid, and the tower moved onto the New Dorp and Swash Channel range in 1891. In 1892, the basement of the old tower site was fitted for use as a cellar, a plank walk was built from the keepers' dwelling to the tower, and the tower braces were lengthened.

As a war measure during 1898, the tower was discontinued as a light from 28 April to 1 August. Except for repairs in 1899, 1900, and 1905, there were no major changes until 1907, when the "intensity of the light was increased by changing the illuminant from mineral oil to incandescent oil vapor".

Abandoned by 1924, the Light Station was subsequently sought by the Army, which wanted to remove obstructions to flight at Miller field; it was felt that the presence of the lighthouse was an obstruction to use of the field by heavy bombers (RG 18, Army Air Forces, Central Decimal File, G-4 12188); however, it remained on site.

The light is identified on the August 1960 site plan of Miller Army Air Field (copy at Miller Field) as "Elm Tree Light, Coast Guard". On the same site that it was moved to in 1890, it may be a twentieth-century enclosure of the old light. It is likely that the light actually served a useful navigational purpose and that, after the acquisition of the land by the Army, the lighthouse was allowed to remain on its site to the rear of the hangars at Miller Field. It probably was a useful beacon in landings and takeoffs at Miller, especially at night. Besides, heavy-bomber use of the field never took place. The light is again abandoned, though the tower stands.

1. **Existing Structures**

The two hangar buildings (Buildings 33 and 38) seem to date from 1921. Their basic form and shape are intact, though modified with changed hangar entrances, additions, and some change in materials. Hangar 38 (two hangars) seems to have been the seaplane hangar; Hangar 33 (also double), the land plane hangar. Hangar 38

seems to be the less changed, though the two-story concrete addition (1938) and the present hangar doors are later additions.

The Titusville Iron Works furnaces (Titusville, PA) and fan system for the hot-air heat in the hangars (installed in 1921) survives--one of the more interesting interior features and an example of technological and engineering development for heating such spaces.

There is an unusual amount of glass for buildings of this era, as well as quite interesting steel roof framing, including the trussing system and monitor that were widely used in train sheds of the 1920's and earlier eras. The hangars were obviously the center of the field's operations and activities--the place where planes were stored, serviced, and tested. They are notable also because of their engineering and because they are surviving examples of early hangars planned in 1919-21.

Building 26 (The Administration Building), now used as headquarters for the Staten Island Unit of Gateway, is stucco, one-story, with center portico and paired columns. It was constructed in 1921. The end porches have been removed. The Miller field plaque was on this building.

The "Mansion" structure (Building 6) took its name from the Vanderbilt Mansion. After that was demolished in 1936, this officers quarters--as the largest and most imposing dwelling on the field--inherited the mane. It is a four-unit apartment house, brick in 1/5 common bond, two-story frame structure, with center entrance, built in 1921.

Houses 9, 10, 11, 12, 14, 15, 16, 17, 18 19, 20, 21, and 24 are all two-story, frame, single-family dwellings, built in 1921.

House 13 (the commanding officer's) is a two-story frame structure, with cross gable roof and finish that sets it apart from the lesser houses and accounts for its local designation as the General's House".

Houses 22 and 23 are two-story duplex frame structures with center entrances. These were also built in 1921.

Practically all these structures were modified or remodeled--to the extent of re-shingling, insulating, and so forth--in 1938-39, under a Works Progress Administration program at the field.

Buildings 3, 4, and 5 are frame four unit garages, constructed in 1939.

Building 7 is a small brick sewage-lift pump, built in 1939.

Structure 46--a concrete, four-level, square light-and-watch tower--was constructed in 1944 as a part of the coastal defense changes at the field. The concrete gun platforms that flank the beach entrance to the flagpole area and other weapon-support slabs and a circular bunker/emplacement on the beach also seem to date from the era circa 1940.

The flagpole (missing) in its raised rubble work circle with surrounding stone walls and passages to the beach was located in 1921, but the walls seem to date from the 1938-39 construction.

Runway-light housings of concrete at the sides of lthe field survive, and numbers of runways are said to be in place.

To the rear of Hangar 38 is the elm Tree Light, a concrete octagonal tower with the light housing missing. Though it is of relatively recent construction, it is successor to a beacon in the immediate area that dates back at least to a 1797 elm-tree landmark and a nineteenth-century light station.

3. **Comments**

While the structures here do not--architecturally--match those of Floyd Bennett field, they are earlier; the structures at the two fields manifest differences between military and municipal construction. Miller field is essentially open space--its runways were sod, with concrete seaplane ramps--and typical for the field's date of

construction. The air age was scarcely 16 years old when construction began here' and since there was very little experience in constructing such field, the buildings, layout, and use are all historically important. The field could certainly qualify for listing in the National Register of Historic Places, because of both its long history after an early construction date and its use by many famous aviators. Especially important are the number of planes assembled, tested, and evaluated here.

The presence of Elm Tree Beacon, with its long history, is an added attraction; and the existing lighthouse could be important and interesting in interpreting the navigational history of the area. In addition, it is a pleasing structure that manifests a long architectural lineage in lighthouse design.

4. **Suggestions for Additional Research**

Here, as in other units, much information about the field could be gleaned from the local newspapers. The general-history narrative (Subsec. 1 of this e section, above) gives specific dates and general time frames for checking. Oral history should also return valuable information.

National Guard records ought to contain information on the field, as should files at Fort Wadsworth. Both the guard and the Fort have long associative histories with Miller Field's history, and records should be available.

The WPA Notebook on 1938-39 construction at the post, with photographs of all the buildings and coded construction cards, can yield much additional information; and it should be carefully studied.

For suggestions on additional research in the field's military records in repositories outside the new York are, see the general Note on Historical Research and Research materials (Appendix A, below).

C. **SOUTH BEACH AND MIDLAND BEACHES**

South and midland Beaches are in Richmond county, Staten island, New York, on the lower Bay. They stretch between fort Wadsworth at Seaside Boulevard and Miller field at Elm Tree Avenue. The northwest boundary is Seaside Boulevard, and the northeast boundary is the waters of the Lower Bay. The Verrazano-Narrows Bridge and waterborne traffic to and from new York Harbor are visible from all areas of the Beaches; boardwalk and promenade.

1. **General History**

On 6 June 1935, Joseph A. Palma, President of the Borough of Richmond, proposed the construction of a board walk and beach along south Beach. The project, for which plans had already been drawn, was estimated to cost $1,092,961 and was described as follows:

> Construction of 50%, Section "A", a boardwalk and public beach from Fort Wadsworth to Miller Field, Borough of Richmond, New York City. Boardwalk is on composite pile substructure with concrete and wood superstructure, 13,000 feet long and 40 feet wide, complete with comfort stations and necessary appurtenances.

The proposal also included a public beach 325 feet wide extending the full length of the boardwalk, and the necessary groynes and jetties to protect the beach (WPA Project 65-97-1669, Microcopy T-935, roll 41, National Archives).

On 3 July 1937, Palma and Mayor Fiorello H. LaGuardia, officially opened the completed Franklin D. Roosevelt Boardwalk. Some 25,000 persons attended the dedication, and there was a parade with more than 5,000 participants. The project was reported to have cost more than $2 million (*New York Times*, 4 July 1937).

Perhaps, President Roosevelt had been invited to the opening; in New York that day he was showing reporters through the forest at Hyde Park (*New York Times*, 4 and 5 July 1937). Whether or not he was invited to the ceremonies, use of his name was not unusual, though its application to a boardwalk might have been. Roosevelt was a New Yorker though--and a former governor. The WPA, which had made the

boardwalk possible, was part of his legislative program to pull the country out of the Great Depression. Besides, he had just been overwhelmingly elected to a second term; and he was a Democrat, as was LaGuardia.

Still, on 30 November 1937, in transmitting park plans to Mayor LaGuardia, Park Commissioner Robert Moses opposed the development at South Beach:

> As early as 1934, I protested vigorously against the development of South Beach in the interest of local real estate developers, and declined to consider the boardwalk scheme when it was proposed to me by local real estate promoters. . . . I strongly advised against it. When the State granted the lands under water, I protested to at least two of the Federal Works Progress Administrators against the use of relief funds to build the boardwalk and beach under the conditions fixed by the promoters in dedicating their frontage to the city.
>
> In communications to the Federal Administrators in 1935, I made this statement, the truth of which can be fully realized today:
> "All boardwalks of this kind have for their purpose leaving the public only a narrow and often submerged strip of sand between high and low water at the outside of the boardwalk, and permitting the private owners to capitalize all the frontage on the other side by building shops, cheap hotels, restaurants, bathing pavilions, and even tent colonies. The strip of beach left to the public is always unmanageable.
> "It cannot be properly policed or kept clean. It is overcrowded. While some temporary real estate values may be built up and taxes collected by the city, in the end the development collapses and becomes a mess. This is the history of every beach on the south shore of Long Island up to Jones Beach. The purpose of the scheme always is to capitalize every square inch of privately-owned property on the inside of the boardwalk, and to leave the public with nothing of permanent value. In almost all cases the boardwalk is built so near the water that it, and the buildings back of it, become undermined, and then the whole undertaking can be saved only by the building of enormously expensive and ugly jetties, breakwaters and groins".
>
> Previous to the construction of this boardwalk there had been an old boardwalk about 100 feet west of the new one. This was built on the ground level and is now in such bad repair that it is dangerous to walk upon. It is flanked on the west side by old dilapidated amusement places that constitute a fire and health menace. . . . Despite the protest I pressed and the conditions existing along the old boardwalk, the new one was constructed with no safeguards against another like development.
>
> There are already striking evidences at South Beach of the prophesied deterioration through unfavorable private development back of the boardwalk. . . . The only answer is to acquire all privately owned property now from the boardwalk to the present Seaside Boulevard. The acquisition of this property will protect the boardwalk, provide additional beach, afford space for games,

> and substantial parking areas, and also for future bathhouses, and will permit the widening and reconstruction of Seaside Boulevard as a genuine 100 foot marginal roadway with separate lanes. [New York City, Department of Parks, *The Improvement of Coney Island, Rockaway and South Beaches]*

Moses estimated the cost of acquiring the necessary land at $600,000 and the cost of demolishing existing beach development at $675,000. He noted that "there is no time to be lost". The park proposal contained several photographs of the development along south Beach and plans for the proposed development between Fort Wadsworth and New Creek.

When these proposed developments were accomplished is not known, but at the time of the publication of *The WPA in New York City: A Record of Accomplishment* (1938) Franklin D. Roosevelt Boardwalk is pointed to with pride (perhaps naturally so, since it was constructed with WPA funds and labor):

> . . . the fourth largest in the United States, the new promenade extends along a mile and one half stretch of the South Shore from Fort Wadsworth to New Creek. A new beach 250 feet wide was also constructed by pumping sand from the Lower Bay . . . . (p. 20)

In that same year the *New York City Guide* noted:

> The strand east of Donegan Hills, between Fort Wadsworth and Staten Island Marine Park, was once known as south Beach, a fashionable summer resort in the 1890's. It has never regained its former status, although in recent years the beach has become a favorite of residents of nearby New Jersey industrial towns. The attraction of a two-million-dollar boardwalk . . . constructed by the WPA. . . and easy accessibility by way of the projected Brooklyn-Staten island vehicular tunnel (if and when built), may again make it a popular retreat for New Yorkers. The beach now comprises six units--South, Graham, Midland, Woodland, New Dorp, and Oakwood--of which Midland Beach, with its amusement facilities is the most frequented. (p. 609)

It seems likely that, with the demise of the WPA and the coming of World War II, Commissioner Moses' plan was not carried out until after the war--though land acquisition may have begun earlier.

In 1958 the Department of Parks announced (by an 18 July press release) that the first stage of the south Beach development between Elm Tree Boulevard and Iona

Street had been finished. This completed work included a bathhouse with self-service lockers, a comfort station, a food-concession building, a building for beach-chair and umbrella concession, a promenade 4,245 feet long, a picnic area, a parking field for 1,770 cars, two playgrounds (containing eight handball and four basketball courts), six shuffleboard courts, a roller-skating rink, play swings, jungle gyms, slides, and seesaws. A lost-children's shelter and bus-waiting shelter were also completed. Reported seeded were three softball diamonds, one with three-tier bleachers.

A subsequent press release (20 December 1959) reported that contracts for $2,479, 487 had been awarded for the second stage of construction. The release identified south Beach as

> A 2-1/2 mile waterfront strip between fort Wadsworth on the north and Miller field on the south. The northerly 1-1/2 miles was acquired by the city in 1935 and a boardwalk was built. . . .Subsequently, additional property was acquired back of the boardwalk for adequate recreational facilities.

The second-stage development included additional parking fields, extension of the promenade to the boardwalk by connecting ramp, a bathhouse for men and women, a bus shelter, playgrounds, comfort stations, a new lighting system, rehabilitation of the existing boardwalk, a softball field, a new flagpole, a building for the beach-chair and umbrella concession, and a food concession building.

By a press release of 27 May 1961 the Department of parks announced the completion of this development stage--noting that it would be opened to the public on Tuesday, 30 May 1961. The same release noted that Seaside Boulevard was being improved and that the sewer and repaving and construction work along the boulevard would make access difficult.

General access to the area for New Yorkers was no longer hoped to be through a vehicular tunnel, but by way of the Verrazano-Narrows Bridge.

The area now known as south Beach included South, Graham, and Midland Beaches. The first two seem to have been beach colonies, with the WPA boardwalk constructed at south and a private amusement park at Midland. By the time Park development was completed in the 1960's, all three areas were referred to as South Beach.

Post-World War II development seems to have carried out Commissioner Moses' recommendations of the 1930's and insured public access to the beach.

2. **Comments**

Franklin D. Roosevelt Boardwalk is a wooden boardwalk on piers, with concession stands/bathhouse and roofed platforms. It survives substantially as built. It ought to be considered an historic structure, and its proper name should be resurrected.

Whatever the accuracy of its claim to have been the "fourth largest in the United States," it was a singular achievement, 1.5 miles long, and the only surviving wooden boardwalk in park areas within Gateway National Recreation Area.

Such wooden structures were a prominent feature of nineteenth and early twentieth century beach development. Because of the difficulty and expense of upkeep, such structures are becoming increasingly rare; there are relatively few of them left on the east coast. Wooden boardwalks were not built to withstand use by the heavy motorized vehicles to which they are often subjected today; they were for use by strollers and by wheeled beach chairs.

If this use is re-established, it should be possible to utilize all or part of the boardwalk structure--the last remaining vestige of such construction in areas administered by Gateway and a rare survival in East Coast beach developments. Whether or not there are others in the metropolitan area has little to with the question of preserving this one. The Franklin D. Roosevelt Boardwalk is a part of Gateway, and it is owned by the Park Service; its preservation should be considered only in that light.

3. Suggestions for Additional Research

Published and unpublished materials at the National Archives, the New York Public Library, and the Library of Congress have been used.

Records remaining in the files of the new York city Department of parks should verify the acquisition and development sequences. The files of the Works Projects Administration (which began as the Works Progress Administration) would also provide valuable information. Financial records concerning WPA work at south Beach (on microfilm in the National Archives) have already been checked; however, they did not contain drawings, plans, specifications and names of contractors. To complete the history of South Beach development, it would be useful to have this information.

Files of the Staten Island Historical Society and of local libraries may also contain information. It would be especially interesting to know something of the nineteenth century use of these beaches. Though such information is not necessary to consideration of structures now on the beach, it could, however, bring continuity to our attempt to understand the history of the development and use of South and Midland Beaches.

D. HOFFMAN AND SWINBURNE ISLANDS

1. General History

> They [Hoffman and Swinburne Islands] were constructed about 1870 to serve as Quarantine Stations for immigrants. The Quarantine Stations were closed in the 1920's. In 1938 additional buildings were constructed on Hoffman Island for use as a training school for the U.S. maritime Service. In 1947, the school was closed and the island has not been used since that time. . . .
>
> The larger island, named for John T. Hoffman, who was Mayor of New York in 1866 and Governor from 1868 to 1872, is approximately 11-1/2 acres in area. Swinburne island is about 2-1/2 acres in area. Both islands are surrounded by masonry walls and are about 11 feet above sea level. [New York City,

> Department of Parks, *Hoffman and Swinburne Islands, Protection and Extension of south beach Park in the Lower Bay at Staten Island*, 24 December 1956]

On an 1880 map (*Proposed Staten Island Rapid Transit Route,* RG 77, Officer Chief of Engineers, Land Papers, Fort Wadsworth) the islands are labeled Hoffman Island and Dix Island. Dix seems to have been the larger of the two at that time. It is not known when the name was changed to Swinburne.

In addition to the uses already mentioned, there was at least one other use for some of the buildings on Hoffman Island--a military hospital:

> Embarkation Hospital No. 3, temporary medical establishment, located in Quarantine Hospital (owned by State of New York) on Hoffman Island, New York Harbor. Hospital facilities used on per diem basis under dual control of civilian management and Medical Department. Operated as Army hospital, Hoffman island, December 1917-July 1918, when re-designated Embarkation Hospital No. 3. Under Primary Port of Hoboken during period of operation. Abandoned January 1, 1919. Used for treatment of genitourinary cases. [*Order of Battle of the United States Land Forces in the World War, 1917-19, Zone of the Interior* (Washington: GPO, 1949), Vol. III, pt. 1, p. 770]

After the U.S. maritime Service School closed in 1947 , the islands were unused and ultimately were declared surplus property. On 23 November 1956, the New York City Parks Department indicated to the General Services Administration their intent to acquire; and GSA acknowledged on 28 November. The acquisition price was set at $10,000. Bernard Baruch donated securities in trust to provide the funds for the acquisition, as Robert Moses declared:

> Mr. Bernard Baruch has given to the Park Department $10,000 to buy these islands for the preservation of the beauty of the lower Bay and Harbor and for the protection and extension of south Beach Park . . . . [*Hoffman and Swinburne Islands*, 24 December 1956]

Moses had been concerned lest the islands not be acquired by a governmental agency and be made available for commercial exploitation and development. In making the islands an extension of South Beach, the plan that he envisioned included joining them into one island with a size of some 250 acres.

The area between the islands would be used to dispose of compacted garbage. It was estimated that it would take at least 10 million cubic yards of compacted material--some 25 million cubic yards of waste as it comes from the truck--to create the new recreation area.

2. **Comments**

All structures on Hoffman Island, which had the greater concentration of buildings, are said to have been destroyed; buildings remain on Swinburne--empty, unused, and in disrepair.

Transportation to the islands was not available to the consultant. They were viewed only from the Staten Island shore, and from that vantage point it was not possible to make a determination concerning whether or not there may be historic remains on either island.

3. **Suggestions for Additional Research**

Records concerning both islands should be available in Record Group 90, Public Health Service, entries 12, 13, 15, and 38. Included are photographic prints and negatives showing Public Health Service hospitals and buildings, 1880-1938. Record Group 121, Public Building Service, entries 35, 37, 38, 39, and 43, should also contain material--possibly including plans, specifications, drawings, architects' notes, and photographs. Indexing of these records in the Cartographic Division is not complete, and a quick search did not reveal what amount of material should be available. Records in audio-Visual were not checked, but photographs should be there. A quick search in the textual records indicated that there are specifications for buildings, though none were located for either island.

Local repositories in New York City were not searched specifically for material on Hoffman and Swinburne--nor were indexes at the Library of Congress.

E. Fort Wadsworth

The area of the Fort Wadsworth Military Reservation covered in this report is between the bluff on which Fort Tompkins is located and the waters of new York Harbor at Verrazano Narrows. Beginning at the northern boundary of the reservation, the area contains all installations between those two geographic limits to the south boundary of the Fort at south Beach. From north to south the structures covered are as follows:

- Battery Robert Catlin (North Cliff Battery
- The Mining Casemate Building (Building 140)
- The Torpedo Storage Building (Building T-5)
- Fort Richmond (Fort Wadsworth/Battery Weed/Fort Wadsworth Light Station), located at the Narrows
- Battery Bacon (South Cliff Battery, north)
- Battery William Turnbull (South Cliff Battery, center)
- Battery Barbour (South Cliff Batter, south)
- Battery Hudson
- Battery Charles Mills
- Battery Emory Upton (Battery Ravenna/Fort Newton)
- Battery Dix (Battery Hudson NO. 2)

The general orders naming the batteries use in some cases only the last name, in other cases the full name; names used in this report follow the wording of the general orders. (For a layout of the areas covered, see RG 77, Corps of Engineers, Drawer 41, Sheet 77-2, "United States Reservation, Fort Wadsworth, New York", corrected to 1900). Several other structures (See Subsec. 2, below) are also in the area.

1. **General History**

   a. **Fort Richmond**

In transcribing the following account by Robert Krist ("Fort Wadsworth", The Staten Island Historian, XVIII [July-September, 1957], 18-19), footnotes have been bracketed at the points in the text that reference is made to them:

> The . . . settlement . . .of 1661 [Oude Dorp] contained a blockhouse and its proximity to the fort Wadsworth area marks the beginning of the uninterrupted use of this post as a military installation. Only 20 feet square, the wooden defense was guarded by six or, at most, ten men, armed with a grand total of two rifles. This Dutch garrison proved inadequate to stave off an attack by the duke of York's fleet in the following year, and control of the region fell to England.
>
> The British clearly recognized the strategic value of the position straddling the Narrows. In 1707, they levied a tax of 3,000 pounds on the justices of Richmond County to defray the cost of fortifying New York city. Part of the funds were channeled into the construction of additional blockhouses along the Narrows.
>
> With the start of the Revolutionary War, the Staten island garrison again, came into prominence. It is almost certain that Fort Wadsworth was used by General George Washington's men as a lookout and signal post. The entry for April 25, 1776 in the General's log book, which he kept for the Continental Congress to record war expenditures, shows an item of 16 pounds, ten shillings, "To the Expen. Of myself and part racctg. The sevl. Landing places of Staten Island". [Charles W. Leng and William Davis, *Staten Island and Its People, A History 1609-1929,* Vol. I, p. 176] A week after Washington's reconnoitering mission he sent a detachment of men to the heights overlooking the Narrows to keep watch for the arrival of the British fleet. The troops were posted on what was then "Signal Hill", now the location of the Fort's flagstaff. To communicate with New York City, they used a primitive version of the telegraph. Black and white kegs or large balls were hoisted on the old flagstaff to signal the approach of enemy vessels.
>
> Early in July, 1776, General Howe landed without opposition an English army of 9,000 men on Staten Island. Shortly afterwards his brother, Lord Howe, sailed into New York Harbor with a large fleet, and landed 20,000 more troops on the island. Lord Howe commanding the combined armies, crossed the Narrows a month later. A small garrison, later reinforced, was left on the island. One of the Britons' first jobs during the Fall of 1776, was the rebuilding of Staten Island's defenses, including the fortresses on this site. The British occupied the island until 1783.
>
> At the end of the Revolution, the fort earned another distinction, although rather a dubious one: it was the target for the last British shot of the war. On Evacuation Day, November 25, 1783, a large civilian crowd gathered on the heights at the flagpole, near the present Fort Tompkins quadrangle, to jeer at the British as they sailed out of the harbor. The crew of one British gunboat, smarting form their defeat and resenting the Staten Islanders' derision, fired a shot into the crowd.

After the Revolutionary War the islanders levied taxes to restore damaged fortifications. They renamed this part of the island Fort Richmond. By 1808, four garrisons protected signal Hill: Fort Richmond at the edge of the Narrows, Forts Morton and Hudson on the slopes of the Hill, and Fort Tompkins, on the peak of the Hill.

Despite restoration efforts, the island's defenses were scarcely adequate as the War of 1812 drew near. In 1808, the same year the four forts were reconstructed, all of Staten island had only 164 guns. New York's Governor Daniel D. Tompkins, frequent benefactor and idol of the Islanders, and later a vice president of the United States, appropriated $25,000 for further fortification of the narrows. With the outbreak of war, several artillery companies manned the batteries on the island, and 500 militiamen arrived at Fort Richmond in August, 1812. Two weeks later the Narrows defenses reached a maximum when 12 companies of volunteers arrived. But they were relieved from duty in November when news of the victories of the "Constitution" over the "Guerriere" and of the "Wasp" over the "Frolic" belatedly reached New York.

Early in 1813, several British vessels were sighted off Sandy Hook. The fort swung into action. As one historian describes it, ". . . the furnaces for heating the cannon balls were made ready. The telegraph, consisting of a number of white and black balls or kegs, hoisted in the preconcerted manner, gave signals easily seen from New York". [Ibid,, Vol. I, p. 220] But the batteries' state and readiness, and the defensive precautions that had been taken, saved New York from assault; the British ships were deterred and steered clear of the Narrows guns.

Still further precautions were taken. In June, 89 additional cannon were mounted at forts Richmond and Hudson,. The 24th U.S. Infantry arrived in the late Fall, bolstered by a regiment of New York volunteers. And in April, 1814, Governor Tompkins secured another $50,000 to complete forts Tompkins and Richmond. Until then, Tompkins had been only a series of temporary earthworks. Historians report that on its completion in May, ". . . the cornerstone was laid with great ceremony. A special steamboat was engaged and the band captured when the 'Macedonian' was taken supplied the music". [Ibid., vol. I, p. 220] Red sandstone was used to rebuild the two outposts; Fort Tompkins resembled old Castle Williams, currently used as the Governor's Island stockade, in its architectural style. Fort Richmond was half-moon shaped.

Governor Tompkins pressed for more improvements and in October, 1814, another $50,000 was appropriated. The blockhouse and earthworks at Prince's Bay were strengthened, and the caliber of the cannon at the forts along the Narrows was increased. By 1815, the shores near the present fort bristled with 900 cannon, including 25 thirty-two-pounders, 5 eighteen-pounders, and 7 nine-pounders.

News of the Treaty of Ghent, concluding the war of 1812, did not reach New York until February 11, 1815, although the peace was made December 24, 1815. The celebration on Staten Island ". . .took the form of a national

> salute from the guns at Fort Richmond, followed by a 'feu de joie' from the infantry with an extra ration of liquor". [Ira K. Morris, *Morris's Memorial History of Staten Island,* Vol. II, pp. 34-5]

New York State appointed an agent to negotiate a sale of Fort Richmond to the Federal government on 10 February 1818. Other acts followed in April 1826 and April 1830; and on 6 February 1836 an act repeating authority to sell to the United States was adopted. In the 1836 act the State ceded jurisdiction. (RG 77, Engineers, Land Papers, Fort Wadsworth)

Though the sale did not occur, the State, on 5 April 1841, replied to a request from the Secretary of War for immediate occupancy of the Staten Island defenses. The commissioners of the State land office replied:

> that so rare as the board has any authority on the subject its assent is cheerfully given to the occupation of the said forts and military works by the government of the United States, its officers or agents for the purpose of repairing and improving them, until provision be made for the purchase of the title of this state to the same.

In transmitting the authorization to the Secretary of Way, the Secretary of State of New York noted that though the commissioners really lacked the authority for the transfer, they could doubtless secure authorization from the legislature. It was felt that this would produce unnecessary excitement, and the authority of the board was deemed to be sufficient. (RG 77, Engineers, Land Papers, Fort Wadsworth, formerly Fort Richmond)

The Secretary of War had written to William H. Seward, Governor of New York, on 13 March:

> At this juncture it is particularly important that all the great Atlantic cities should be placed in as secure a situation as possible from a sudden attack by an enemy; and this is especially necessary with regard to the great and wealthy City of New York which a hostile fleet could so readily penetrate and lay waste. . . .
>
> On 25 March, George Totten (of the Engineer department) wrote to the
>
> Secretary of War:
>
> Before any purchase can be made, it will be necessary to obtain the sanction of Congress through a specific appropriation, and to that end I will bring the subject

> again to your notice at the proper time for making a call on that body. In the meantime it is very desirable that the military structures erected by the state on the grounds or rather that a portion of them, should be submitted to such of the more indispensable repairs, as the small means now available for contingent & incidental operations in fortification will permit and I have therefore to recommend that application be made to the proper authorities for permission to enter without delay upon the grounds in question, and take possession of any of the Military works thereon for the purpose of repairing them, or improving their efficiently--using for such purpose any material now there belonging to those works.

Governor Seward concurred and on 17 March asked the State commissioners to grant the necessary authorization (RG 77, Engineers, Land Papers, Fort Wadsworth, formerly Fort Richmond). It was against this background--and in the face of knowledge that war was being pursued in the West--that the unusual and possibly illegal action of the commissioners occurred.

Capt. Robert E. Lee, then stationed at Fort Hamilton and superintending work there and at Fort Lafayette, was given the added duty of superintending the work at forts Richmond and Tompkins and at Battery Hudson. On 2 September 1841, Lee transmitted a sketch of Fort Richmond to Colonel Totten. (RG 77, OCE, Letters Received)

In pursuing this work Lee wrote to Colonel Totten on 2 January 1842. Maintaining that the Federal government already owned the land in question, Lee thus precipitated an argument that involved much of the legal machinery of the State and generated lengthy and detailed memorandums and briefs on the ownership of Fort Richmond. Lee wrote:

> I have the honor to submit the following statement in reply to your letter of the 27 ulto, relative to certain lands on Staten Island that have been ceded by the State of N.Y.
>
> 1. Bluff Point. By the last Sec of the Act of 20 march 1807 Chap. 51 Laws of New York, it is enacted "That the lands belonging to the people of this State at Bluff Point, on Staten Island, which shall by the Pres. Of the U.S. be deemed necessary for fortifications, are hereby granted to the U.S. for that purpose".

> I believe the point here referred to, to be the South Eastern extremity of Staten island, which forms the site of batteries Hudson & Morton & Forts Tompkins & Richmond. This point has been long known to the Pilots & inhabitants under the name of the bluff, & I know of no other point on the island which could be required by the U.S. for fortifications. It was I understand originally granted by the Crown of England to Lockman & Van Deventer, from whom it descended by inheritance to John V. D. Jacobson, who sold it to the state of N. York. I have endeavored to get sight of copies of the original patent & deed, in the hope that the name of the point might be therein designated, but as far as I can learn they can only be found at Albany.
>
> The Cession of this land however from some cause seems never to have been perfected. It is stated in a note, Revised Statues, N.Y., p. 68, not to be designated by any instrument of acceptance or by an Act of possession, & I find it enacted in the 2nd Sec. Of the Act of 10th Feb 1818 Chap. 4, "That it shall & may be lawful for the person administering the government of this State to institute a negotiation with the government of the U. States, for the sale of the fortifications & buildings belonging to this State at the Narrows on Staten Island, & the lands connected therewith & to report the same to the Legislature at their next Session for their consideration".
>
> In the concurrent resolution of 19 April 1830 p. 428, it is again Resolved "That a negotiation be opened with the general government, by or under the direction of the Acting Governor, for the sale of the ground & fortifications at the Narrows on Staten Island, & that the proceedings therein be reported to the Legislature at their next Session". The Act of 6 Feb. 1836 also authorizes the Commissioners of the Land Office to sell the same to the U. States.
>
> From the correspondence that must have taken place between the Governor of N.Y. & the Govt. of the U.S. under authority of these acts the history of the transaction might be traced & the identity of Bluff Point with the lands at the narrows be probably established.

Evidently, it was decided that the 1807 offer included only a part of the land now being offered. The Federal government agreed; for on 15 February 1847, it purchased State lands that included the fortifications. (RG 77, OCE, Letters Received)

On 23 October 1847, Maj. Richard Delafield, in his annual report on Fort Richmond, was able to write that he had surveyed the site for the fort but could do no further work until the site and plans had been approved (RG 77, OCE, Letters Received; all annual reports from this source are arranged numerically by the name of the officer filing the report).

In his annual report dated 30 September 1848 major Delafield wrote that the work of placing a coffer dam around the site had begun in October 1847 and that stone cutting and excavation had commenced in November. He reported inclement weather during that winter and difficulty in securing pumps to keep water from the construction site. Finally in April, however,

> On the 22nd the foundations for a part of the south curtain having been sufficiently opened, the first concrete foundation of the scarp wall was laid on that day.

Though he had used single underscoring for the April entry (above), in the next month (May) he underscored parts of a sentence by double lines:

> The concrete base was formed as fast as the excavations progressed, and on the **15th** of **the month the first stone** of this work **was laid in the salient angle of the South Channel Bastion**, from which time to the end of the month masons were engaged setting stone in the foundations and building up the scarps.
>
> The recapitulation in the report stated:
>
> The masonry in these foundations, and the scarp wall, with its connecting piers, has been built up to the general level of (6;6") above low water mark, excepting a more difficult portion in the south west bastion, which has been delayed by the necessity of piling the foundations. The first stone in this work was laid on the 15th of May last, and by the end of September, in a period of three months and a half, all the foundations and masonry below water had been secured, with the above mentioned exception.

For the next two years, work continued slowly--partly because of problems with the site and partly because of a lack of money; Delafield had but $28,000 in 1849 and $9,000 in 1850, though he requested appropriations of at least $50,000 a year.

Delafield remained in charge of the construction through 11 October 1854, when he filed his last annual report for the Fort Richmond work. Capt. George Dutton superintended the work in 1855-56. Maj. J. G. Barnard took over the work in 1857. Lack of funds, bad weather, and other factors had caused the construction to go so slowly that still only two tiers of the casemates were completed--and then only in sections of the walls. By the time Barnard filed his annual report dated 19 August 1859,

he had assumed responsibility for work also on Fort Tompkins, where demolition of the old fort had begun. For Fort Richmond he was able to report:

> During the year the 3rd tier of arches have been entirely completed--the scarp carried to its full height--the cordon and blocking course set--the concrete roofing of the arches laid--about 3/4th of the roof surface asphalted and the dry bricks, butter arches & man-holes made, and a portion of the earth put over the casemates.
>
> The flag-pavements of the 2nd & 3rd tier of casemates have been laid and the iron rails for their guns procured--and a large portion of the masonry of these casemates pointed.
>
> The stone for the Columbiad platforms of the barbette tier have been provided and cut, and the iron rails &c provided.
>
> The stone stairs in the two central towers have been built, and the stone procured & cut for the breast height wall, and all the stone required for the work provided. . . .
>
> The work is now capable of receiving 3/4th of its armament and may be considered efficient to that extent for all purposes of channel defense.

Barnard noted that the gatehouse and drawbridge had not been started. Moreover, since Fort Tompkins had also not been started and Fort Richmond was not designed to house troops (that function was relegated to Fort Tompkins, which was intended to house troops and protect Fort Richmond, which in turn was the military installation designed to protect the harbor), it was necessary to mount a force on the heights to protect Fort Richmond. On 20 August 1860 Barnard was able to report:

> During the year the asphalting of the arches has been completed, the system of roof drainage arranged, and the roofs covered with earth: the barbette columbiad platforms and breast height walls and parapet constructed: the iron circles, both of the casemate and barbette guns have been attached. The exterior magazines have been built up to the coping, doors and magazine fixtures arranged throughout the work, with the exception of locks and wire gauze, which is now being prepared.
>
> The sodding of the parapets and terre-pleins is nearly completed.
>
> The work can therefore count its entire armament consisting of 116 channel-bearing, and 24 light flanking funs, & can store its ammunition therefor.

> Not being designed to have quarters for a garrison, it is the more important to press forward the completion of Fort Tompkins, which provides bomb-proof quarters for the garrisons of this and the other water batteries of this locality.

Barnard noted that the foundations for Tompkins were completed but that lack of appropriations was hampering the work.

Major Delafield, once more superintending the work in 1861, reported on 23 November for Fort Richmond:

> This work is in a condition to receive all its guns and other munitions and equipment. A number of the guns have already been mounted, in the casement and barbette tiers . . . .

Mentioning painting, adding iron traverse circles, working on the gatehouse, erecting iron railings, and so on, Lt. Colonel Delafield reported on 28 October 1862 that "progress has been in perfecting details . . . ."

Consideration was evidently being given at the time to finding a new name for the fort. One note indicates:

> Fort at Staten Island, NY to be called Fort Herkimer. Fort at Sandy Hook, NJ, to be called Fort Alexander. (RG 77, OCE, Letters Received, C. 5555)

Though the fort itself, can be said to have been completed by 1862, the guardhouse and entrance still had not been completed. Maj. F. E. Prime, the superintendent in 1865, noted in his annual report dated 9 August:

> During the coming year operations will consist in constructing the guard house &e at the main entrance & cleaning out the ditch and completing painting.

That work was finally completed in 1867, when the guardhouse--its plans had been modified several times--was finally completed, along with two cisterns, the ditch (moat), and sluiceways (Don C. Kingman et al., *Index to Reports, Chief of Engineers, U.S. Army, 1866-1912: Fortifications* [Washington: GPO, 1916], II, 1887).

By that time the fort was already officially known as fort Wadsworth--having received that name in 1865:

> The military post on Staten Island, New York Harbor, now known as Fort Richmond, will hereafter be called fort Wadsworth, in memory of the gallant and patriotic services of Brigadier General James S. Wadsworth, who was killed, at the head of his command, in the battle of the Wilderness, Virginia, May 6, 1864. [War Department, General Orders No. 161, 7 November 1865]

General Wadsworth, a New Yorker, had been appointed to the Army from his own state. Serving as Volunteer Aide-de-camp to General McDowell in 1861, he was appointed Brigadier General of volunteers on 9 August of that year and Brevet Major General of Volunteers on 6 May 1864, for gallant conduct at the battles of Gettysburg and the Wilderness, Virginia. Two days after the last promotion he was killed in battle at the Wilderness. (William G. Walker, History of Fort Wadsworth [New York, 1936], p.7--mimeographed).

The area around the fortifications had become crowded with buildings hastily constructed to receive Volunteer troops during the Civil War. By 1867, permission was being sought to destroy some of them, at almost the same time that the Quartermaster was suggesting erecting quarters to be used by the troops (RG 92, consolidated correspondence File, OQG, 14 January, 5 and 20 June 1867). On 14 January Maj. Gen. S. Van Vliet wrote to the Assistant Quartermaster General:

> Your letter of the 10th instant, in which I am instructed to cause temporary barracks to be erected at Fort Wadsworth, NY, upon the plan, a tracing of which was enclosed, is received.
>
> In reply permit me to state that the Engineer Department has allowed the troops to occupy the casemates, which as they are very comfortable, is satisfactory to the command.
>
> Would it not therefore be better to defer erecting the quarters until spring, owing to the lateness of the season, the probability that no quarters at all will be required, and the consequent saving to the government . . . .

Evidently construction was deferred, for the 30 June inspection report notes that the men at Fort Wadsworth are in "casemated barracks" and that the "men's quarters, guard house and prison" are "new"; and evidently the fort continued to be occupied by troops, though the garrison was small and the fort had deteriorated because of lack of

funds for upkeep. In 1883, troops were reported "quartered in casemates" (RG 92, OQG, Consolidated Correspondence File, 26 December 1883.

When Lt. Gen. Philip H. Sheridan visited Fort Wadsworth in 1884, it was still garrisoned. Sheridan wrote to Secretary of War, Robert T. Lincoln on 2 September 1884:

> I have the honor to report that on august 25th last, I inspected Fort Wadsworth, NY Harbor, a permanent casemate work, just opposite Fort Hamilton at the Narrows. It is a beautiful post with a reservation containing about 100 acres. There is one company of the 5th Artillery stationed there.
>
> The fort was originally built for short-range artillery, and is now useless under the changes brought about in modern warfare, but is the most beautiful masonry work I ever saw. It would make, now, a fine stone-quarry for public buildings, or answer as a good storage place for ordnance.
>
> The casemate quarters are perfect and are on the second floor. The company occupying them are royally quartered. The officers' quarters are in buildings outside the work. The hospital is in a casemate and is in good condition. There is nothing needed at this post and I have no recommendations to make in reference to it. At present Fort Wadsworth is under control of the Commanding Officer of Fort Hamilton, an awkward and expensive condition of affairs, and I will direct a change to be made so that the two posts will form separate and distinct commands. This will be in the interest of economy and meet the wishes of all concerned. [RG 94, Reservation file, Fort Wadsworth]

The distinctions between Fort Tompkins and Fort Wadsworth were quite apparent at the time, and there is no doubt that Sheridan meant Fort Wadsworth (Fort Richmond). Calling it a "beautiful post", noting that troops were "royally quartered", and stating that "it is the most beautiful masonry work that I ever saw", Sheridan was certainly impressed with the site and the Fort. His superlative seems to be an unusually strong statement for someone with his military experience; but the fort is still, in 1975, impressive enough to evoke similarly strong emotions.

Sheridan was also as good as his promise, for by General orders Number 11 (headquarters Division of the Atlantic, 3 September 1884) Fort Wadsworth was reestablished as one of the garrisoned posts of the division. Lt. Col. W.W. Closson, 5th

Artillery, was assigned to its command; and Battery B, 5th Artillery (Van Reed's), was named its garrison.

In a June 1886 report, Defenses on Staten Island at the Narrows of New York Harbor (RG 77, OCE, Drawer 41-a), Fort Wadsworth is described:

> This fort, situated at the foot of the cliff on the west shore of the Narrows, is a casemated, bastioned, granite work of three channel bearing fronts, the gorge being closed by a masonry wall three feet thick and twenty six feet high above the parade. It contains three tiers of guns in casemates and one in barbette. It is designed--in connection with the adjacent works--to throw a heavy concentrated fire on vessels approaching or attempting to pass through the narrows, crossing its fire with that from Fort Hamilton and batteries, on the opposite side of the channel.
>
> Its construction was begun in 1847 and finished in all respects, essential to its defensive powers in 1854; everything done since that date having been matters of detail.
>
> The three tiers of casemates were originally arranged for and provided with a total of 85 platforms for 8 or 10 inch smooth bore guns or corresponding rifles all supplied with 4-inch pintles. In 1876 the casemates in the 1st tier next to the northern bastion was arranged for a torpedo operating room, thus leaving but 84 platforms for 10-inch guns. There are also 24 platforms for 4 pdr. Howitzers, 3-inch pintles, located in the flank casemates of the four bastions.
>
> All these casemate platforms are permanent and in serviceable condition.
>
> The barbette is provided with its full complement of 31 permanent center pintle platforms for 8 or 10 inch smooth bore guns or corresponding rifles, all supplied with the later style of 4-inch pintles, and all in a serviceable condition.
>
> The work is generally in fair condition. The masonry needs re-pointing, especially on the north flank and upper portions of the scarp wall, and also the parade wall. On the west side, or wall from washing from the grounds and long slope in rear of the fort, and a considerable amount of silt and rubbish encumbers other parts of the ditch. The long unfinished slope in rear of Fort Wadsworth has been strengthened by a rough sustaining wall, but it still wants grading and sodding. . . .

In October 1889 the Secretary of War authorized funds for arranging casemates at the Fort for the accommodation of four batteries. The work included flooring, ceiling and painting casemates, and the installation of wooden doors and windows. The accompanying material noted that at the time there were already three batteries at the Fort. (RG 92, Quartermaster, Consolidated Correspondence File)

Proposals were made for construction of torpedo-storage buildings within the parade of Fort Wadsworth in 1892, though a site outside the walls--revetted into the hillside between Wadsworth and Tompkins--was accepted by 17 December of that year (RG 77, Engineers, Drawer 43, Sheet 90, "Proposed Torpedo Storage Building"). Evidently construction took place during 1893, and the building was sufficiently completed by April 1894 that finishing of the building and laying of the railroad track into it could both be done (RG 77, OCE, correspondence, #13053).

Though the mining casemate building does not appear on 1894 plans of the fort (the Torpedo Storage building does), the building does appear on 1897 plans (RG 77, Engineers, Drawer 43, Sheet 92, July 1897); evidently it was completed by that time.

"Fort Wadsworth" was reaffirmed as the name of the fort in 1897 (War Department, General Orders No. 16, 11 February 1902).

By that same general order Fort Wadsworth was re-designated Battery Weed in honor of Captain Stephen H. Weed, 5th U.S. Artillery, Brigadier General, United States Volunteers, who was killed in the Battle of Gettysburg, Pennsylvania, July 2, 1863.

A New Yorker, Weed had graduated from West Point on 1 July 1854 and entered active military service as a Second Lieutenant (Walker, *History*, Annex #3, p. 12).

In 1903 the Fort Wadsworth light Station was transferred to a permanent station stop the barbette tier of the fort (see Subsec. C, below), and in 1912 the completion of a 36-inch searchlight station on the southeast bastion was reported (RG 77, OCE, Correspondence, #38651).

By 1917 the fort was being used for ammunition storage; some 895,000 pounds were stored there that year (RG 407, AGO, 602.3, Fort Wadsworth; for 1893 photograph of ammunition stored in parade, see Krist, *Staten Island Historian*, p. 17).

In design, Fort Richmond is from the Third system forts, as were most seacoast fortifications built between the mid-1820's and the Civil War. The design was generally

based on the hexagon. Fort Richmond is a half-hexagon or trapezoid, with its long flat side toward the land and the three massive fortified sides facing the water. Emanuel Raymond Lewis, Seacoast Fortifications of the United States: An Introductory History (Washington: Smithsonian Institution press, 1970), suggests that the form was

> Dictated in part by the traversing limits of the casemate gun carriages and the size of the embrasures. Since these weapons were restricted to 60 degrees of lateral movement, adjacent for t fronts had to intersect at angles of at least 120 degrees if dead spaces (areas outside the arc of any gun's fire) were to be avoided within the target area. (p. 52)

Lewis suggests that Fort Sumter and Fort Pulaski are historically the two most important of the Third system forts. He notes:

> The forts of this era were almost invariably built within a few feet of sea level to deny passage to ships that might otherwise slip past beneath the fire of guns on elevated sites, and to permit ricochet fire, a widely used technique of skipping cannonballs along the surface of the water, which to a large degree relieved gunners of having to determine target distances and required them only to point their guns in the right direction.
>
> High densities of armament were, or course, attained with the multiple tiered casemate design that masonry construction made possible. . . .
>
> A few of the later works on the most important harbors were in fact constructed with up to four tiers of armament. Two excellent examples are Fort Richmond, New York, and fort Winfield Scott, San Francisco . . . .

As examples of surviving Third system forts, Lewis mentions only the four named forts.

Within the general era and design concepts in vogue there remains a question of responsibility for the specific design of Fort Richmond. Robert E. Lee, who did the initial survey and work at Fort Richmond after the Federal engineers arrived, was a master of the defense concepts involved and was well versed in other forts of the type. He may have made suggestions; but if he drew any plans or designs, they have not been located. Lee was on the site at least as late as 1845, when he mapped the ground and position of old Fort Richmond (RG 77, Drawer 43, Sheet 1, September 1845).

In that same year J. G. Totten drew the first plans for the rebuilding of Fort Richmond (RG 77, Drawer 43, Sheet 2, 25 November 1845). "Rebuilding" involved

demolition of the old half-moon shaped fort and construction of the new trapezoidal fort, with three casemated tiers and a barbette tier. Since this is the form that the construction followed, Totten can be credited with the general design. And he was responsible for additional drawings (e.g., that showing roofing detail and manner of covering the roofs--RG 77, Drawer 43, Sheet 25, April 1850) and for other later detail.

As the work got under way, drawings showing details and sections seem to have been made under the direction of the supervising engineer, Richard Delafield. His drawings in 1847-48 (RG 77, Drawer 43, Sheets 4-9) show significant features of construction engineering, but few details. Inasmuch as he was superintending the work and completing the drawings, he can certainly be credited with design authority as well, and some of his later sheets show considerable detail. Delafield, moreover, designed the classical framing of the entrance (RG 77, Drawer 43, Sheet 15, 10 July 1849).

One other individual had a major influence in the design: J.G. Barnard authored modifications of the stair towers and their housing (RG 77, Drawer 43, Sheet 48, 23 April 1859--and others). He was certainly the designer of the two-story gable-roof guardhouse at the land entrance. The beautiful color drawing of the present guardhouse (RG 77, Drawer 43, Sheet 55, 8 may 1861), modified from earlier plans by Barnard, is labeled "Fort Richmond. Drawbridge and Guard-House Designed by Maj. J. G. Barnard, U.S. Engineers . . . ."

Various draftsmen signed the drawings, which were subject to approval by the Engineer Department; but these four men were the major design and engineering influences on Fort Richmond. Responsible for surveying the site, Robert E. Lee must have determined that the present site was the most desirable for the new fort. In conversations with his replacement, Totten, Lee must have influenced the design. Totten was responsible for the general form and plan and for considerable detail. Delafield was also responsible for engineering features and for some detail (e.g., the

entrance). Barnard was the last of the four, responsible for the guardhouse at the entrance and for stair-tower and other design.

One could scarcely imagine a more notable group of men--all distinguished engineers, designers, and military tacticians. During the Civil War, while Lee was commanding Confederate forces, Totten, as Chief of Engineers in the War Department, was supervising all U. S. military construction. Delafield worked with Totten and, upon the latter's death in 1864, became Chief Engineer. Ringing Washington with a series of major and minor fortifications, Barnard superintended the construction of defenses for the capital city; his detailed drawings of these defenses are among the best surviving examples of military construction in the mid-nineteenth century.

That these four men were involved in this particular construction is evidence of the importance with which the War Department viewed the work; that they did their work well is evidenced by the superb structure that remains.

In the vicinity of the fort in recent years there seems to be only one other major construction that has affected it profoundly, and that is the Verrazano Narrows Bridge. Work on the bridge, designed by Othmar H. Ammann, was begun in 1959; the structure was opened to traffic on 21 November 1964. It is the world's longest single-span bridge, with the single suspension span measuring 6,690 feet between supports. The center span is 4,260 feet long. To allow for the curvature of the earth, the 690-foot towers are out of parallel. (Norris and Ross McWhirter, *Guinness Book of world Records* [New York: Sterling, 1972], p. 269). The bridge is also the world's highest suspended water-crossing. It was constructed by the Triborough Bridge and Tunnel Authority, with Robert Moses, Chairman. Ammann and Whitney were consulting engineers; Steers-Snare, tower foundations; Johnson-Kiewit, anchorages; Bethlehem Steel Company, Staten Island tower; Harris Structural Steel Company, Brooklyn tower; American Bridge Division

of U. S. Steel Corporation, cable work and suspended structure. (Edward M. Young, *The Great Bridge* [New York: Ariel/Farrar, Straus & Giroux, 1965])

b. **Fort Tompkins**

In location and name, Fort Tompkins survives from the earlier fort that was erected by the State of New York during the War of 1812. After acquisition of the forts (Richmond and Tompkins) by the Federal government in 1847, the existing structure continued to be used by Federal forces, though a new fort was planned on the site of Fort Tompkins.

Maj. J. G. Barnard in his 1858 annual report noted that

> as . . . the plans were not completed and approved by the War Department until the end of April/58 nothing could be done on the work before that date . . . the 8th of July, when the work of demolishing the old work and grading the site commenced . . . . [RG 77, Office of Chief of Engineers, Letters Received]

In his next annual report:

> Operations were commenced on this work early in July 1858. They have consisted during the year in demolishing the old work and excavating the site . . . . [RG 77, Office of Chief of Engineers, Letters Received, Barnard, 19 August 1859]

By 30 June 1860, work on the foundation had been completed; and the scarp walls had been raised to the first-tier level (RG 77, Office of Chief of engineers, Letters Received, Barnard, Annual).

For two reasons work on Fort Tompkins was slower than that on the various batteries at the Narrows and on Fort Richmond: first, the existing fort was more serviceable than the existing batteries and the work at Fort Richmond; second, the existing fort was not viewed as being as important to the defense of new York as Fort Richmond was. Referring to a Board of Engineers report of 1836, Barnard noted in his 1859 annual report:

> This, Fort Richmond finished, is by far the most important of the works, whether in progress or yet projected, for the defense of New York; more important to be

> commenced and pushed to completion than either Fort Tompkins or the proposed work at Sandy Hook.

Evidently, Barnard pursued his work and set his priorities in accordance with that statement, which he fully supported.

After the beginning of construction in late 1859, work progressed relatively rapidly and was evidently far advanced by 1866. Work on the casemates--bricking, concreting of floors, and furring of walls--was begun in 1866-67. It was not until 1872, however, that the masonry work for the fort was completed, with the construction of the sally-port arches, walls and passageways, and the granite parade wall (which was nearly finished). In 1875 the first eight casemates were prepared for quarters, and the fort was evidently ready for occupancy. To that date $1,470,300.41 had been expended on the work. (Kingman et al., II, 1887-88)

c. **Fort Wadsworth Light Station**

Appropriations for the lighthouse at Fort Tompkins were approved on 11 May 1826; land was conveyed from the state on 4 June 1828. The light seems to have been approved, erected, and lighted first in 1828. (RG 77, Engineers, Land papers, Fort Richmond, Fort Wadsworth Lighthouse)

The lighthouse seems to have had 14-inch reflectors and tin lamps until 1849, when these were changed to 21-inch parabolic reflectors and brass lamps. In 1855 the light is reported to be 'a fourth-order lens, 270°, fitted with valve and argand lamps, for the nine argand lamps and 21-inch reflectors".

Periodically, the site was reported as damaged by artillery fire from the fort; and repairs were often deferred for several years because of work on the fortifications and inability to choose a proper site until the fortification sites were fixed. Finally in 1871 it was reported:

> The Light-house at this station must be removed shortly to the interior of the works of defense. Its present site is required for the purposes of a battery now in

> course of construction. Experimental firings are of frequent occurrence at this fort, during which the glass of the lantern is broken. As a temporary expedient a wooden frame has been made, and alight will be exhibited therefrom near to the present Light-house, at a point designated by the Engineer officer in charge of the fort. For a dwelling surmounted by a tower, at the new site of the Light-house, the sum of $8,000 is asked. [RG 26, CG, Lighthouse Clipping Files, Fort Tompkins Light Station]

The tower being replaced was evidently stone, for the Engineers reported in 1872 that the old lighthouse at Battery Hudson was being taken down and stone was being transferred for use in the traverse magazines at Fort Tompkins. Evidently, this work was begun with funds appropriated on 10 June 1872 and was completed by 30 June 1873. The old site was soon covered by work in progress on Battery Hudson. (RG 77, Engineers, Land papers, Fort Richmond)

Work on the new light house was completed in 1872, and the new light was lighted on 20 December 1873 (RG 26, CG, Clipping file, fort Tompkins Light Station).

> fixed white, 4th order, 58' high (above mean high water), visible 13 3/4 miles; tower on drab dwelling, with mansard roof, lantern black. [Light House Board, *List of Light-Houses, Lighted Beacons and Floating Lights* (Washington: GPO, 1882), p. 32]

In 1890 a new lens was installed, and the light changed from a fixed white to a red-and-white flashing light. The 1892 report stated:

> The light at Fort Tompkins at present is well back of the point it is intended to mark. It is therefore proposed to move it from there to an angle of the stone fort at Fort Wadsworth, where it will better serve as a mark to the channel leading directly into New York Harbor. A fog signal at Fort Wadsworth would be of especial service to the large commerce going through the Narrows during thick weather. The fog bell at Fort Lafayette is serviceable to vessels bound to Coney Island, but it is too distant to be of much use to vessels using the other and more frequented side of the channel. The change will make it necessary to build a lantern and watch room on the salient of the fort, and to place a fog signal house and apparatus at the foot of the wall.

There matters stood until 1895, when it was reported that a battery of five high-powered modern rifles was being completed directly to the rear of the lighthouse. In 1896 money was appropriated for the establishment of a for signal at Fort Wadsworth, though the

light still remained in the battery's line of fire. (RG 26, CG, Clipping File, Fort Tompkins Light Station)

Authority for the establishment of the fog signal was given on 15 December 1897, and construction was begun (RG 77, Engineers, General Correspondence, Entry #103--a photograph of the fog signal at Governor's Island, copied at Wadsworth, is included; the signal is a delightful little Gothic Revival structure, with the bell on top).

As a war measure, the light was discontinued between 28 April and 1 August 1898, when it was re-lighted. On 3 March 1901, funds were appropriated for removal of the light to Fort Wadsworth and for construction of a combined light and fog signal. (RG 26, CG, Clipping File, Fort Tompkins Light Station)

With the establishment of the fog signal at Fort Wadsworth--

> a 1,282 pound fog bell, with a striking machine striking a blow every fifteen seconds, was established May 16, 1898, on the northeasterly angle of the sea wall at Fort Wadsworth--

the name became the Fort Wadsworth fog-signal. Plans and specifications for the new light were drawn in 1902. On 11 May 1903, the machinery for the fog signal was discontinued and installed in the new light--now officially the Fort Wadsworth Light-station:

> The construction of the new tower was begun on October 16, 1902, and it was completed and the light first shown o May 11, 1903. This light and fog-signal station is to take the place of Fort Tompkins light-station and Fort Wadsworth fog-signal station, which were discontinued on the same date as this light was first shown. [RG 26, CG, Clipping File, Fort Wadsworth Light-station]

In 1908 the light is described as follows:

> Fort Wadsworth, on the NE'ly salient of Fort Wadsworth, Staten Island, NY W'ly side of the Narrows, New York Bay.
>
> Flashing alternately red and white, interval between flashes, 10 sec.
>
> 4th order light.
>
> Distance visible: 14-1/4 nautical miles.

Red-brick, semicylindrical tower, with red-brick, square building in rear, and a lead-colored, wooden frame, supporting the bell in front; cylindrical, black lantern.

Bell struck by machinery a single blow every 15 sec. [*Lights and Fog Signals of the United States* (Washington: GPO, 1908), p. 108]

That seems to be the structure that remains--though repaired since that time. Its date of discontinuance is unknown.

d. **The Batteries**

Battery Robert Catlin, formerly known as the North Cliff Battery, was named in honor of Capt. Robert Catlin, U.S. Army, wounded in action at Weldon Railroad, Virginia, on 21 August 1864 (War Department, General Orders No. 194, 27 December 1904). From Illinois, Catlin graduated from West Point on 11 June 1863 and was appointed Second Lieutenant, 5th Artillery. He became Captain, 43rd Infantry, on 28 July 1866 and retired on 15 December 1870. He died on 28 December 1903. (Walker, *History*, Annex #3)

Work was evidently begun on this battery in 1862. By 1866 seven platforms for 15-inch guns had been built, as had a breast-high wall. The principal magazine was completed in 1868, and additional masonry in principal and two traverse magazines was completed in 1872. Repairs and work on maintenance continued throughout the nineteenth century. (Kingman et al., II, 1886). The battery was described in 1905 as "Battery of six 3-inch R.F. guns" (RG 77, OCE, Correspondence, 42146/46, 14 January 1905).

Battery Bacon, formerly part of the south Cliff Battery adjacent to Fort Richmond on the south, was named in honor of 1st Lt. John D. Bacon, 6th U.S. Infantry, who on 12 October 1847, died of wounds received at the Battle of Churubusco, Mexico (War Department, General Orders No. 78, 30 march 1903). From Maine, Bacon graduated from West Point on 1 July 1840 (Walker, *History*, Annex #3).

Battery Bacon was described as "the 15-pdr. Battery, north end of South cliff Battery" (RG 77, OCE, Correspondence, 42146/22, 4 June 1903). Begun in 1858 and completed by 1866, work on the South Cliff Battery was substantially modified in 1876-77; and repairs and changes continued throughout the rest of the nineteenth century (Kingman et al., II, 1887).

Battery William Turnbull was named in honor of Brevet col. William Turnbull, U.S. Army, Topographic Engineers (War Department, General Orders No. 194, 27 December 1904). From Maryland, Turnbull was appointed to West Point on 30 September 1814; commissioned Second Lieutenant, Corps of Artillery, on 1 July 1819; served with distinction in the Mexican War; and died on 9 December 1857 (Walker, History, Annex #3). The battery is described as "Battery of six 3-inch R.F. Guns, between Batteries Bacon and Barbour" (RG 77, OCE, Correspondence, 42146/46, 14 January 1905); it seems therefore to have been the center section of the south Cliff Battery.

Battery Barbour was named in honor of Capt. Philip M. Barbour, 3rd U.S. Infantry, who was killed on 21 September 1846 at the Battle of Monterrey, Mexico (War Department, General Orders No. 78, 30 March 1903). From Kentucky, Barbour graduated from West Point on 1 July 1834 and was commissioned Brevet Second Lieutenant, 2nd Infantry. He was commissioned Second lieutenant in 1836, First Lieutenant in 1837, and captain in 1845 (Walker, history, Annex #3). The battery mounted two 6-inch R.F. guns and two 4.7-inch R.F. guns (RG 77, OCE, Correspondence, 42146/58, 1 February 1906), and it was at the south end of the south Cliff Battery.

Battery Hudson was named officially "after the old earth battery in which located" (War Department, General Orders No. 43, 4 April 1900). In location and name it is the oldest of the existing batteries. It was evidently constructed by the State of new

York before the War of 1812. Fort Hudson/Battery Hudson was already in existence as early as 1808, when it and Fort Morton (on the slopes of the hill), Fort Richmond (on the edge of the Narrows), and Fort Tompkins (on the top of the bluff) were reported to be fortifications to be used in defense of the Narrows (Krist, p. 18). The battery was well developed, with upper and lower gun-platforms and, along with Forts Tompkins and Richmond, seems to have constituted the major defenses of the west side of the Narrows (see "Map of a Piece of Land situated near the Fortifications belonging to the State of new York at Staten Island, Being a Proposed Site for Erecting a Light House," may 1828--RG 26, CG, Fort Tompkins Light Station).

Under the supervision of Capt. Robert E. Lee, work was begun on repairs to Battery Hudson by the Federal government in 1841, before the site was acquired by the Federal government. On 26 August of that year Lee reported:

> The breast wall at Battery Hudson is near completion. We have commenced grading the terreplein and laying the foundations for traverses.

For sometime thereafter Lee's letters to the Chief of Engineers contained monthly reports on the work at Battery Hudson (RG 77, OCE, Letters Received). This work was evidently completed by Lee (See Subsec. a of this section, above).

Col. R. Delafield's 1863 annual report (RG 77, OCE, Fort Richmond, D6420, 28 September 1863) shows $23,074 to have been expended on Battery Hudson. Making the battery a strong permanenet fortification, this work included cut stone, granite brick, and concrete masonry. Additional work began on the battery in 1866; in 1872-73 major work was undertaken, including additional magazine and masonry construction (see Subsec. c of this section, above); and work continued throughout the rest of the nineteenth century (Kingman et al., II, 1886).

Evidently the battery was still inuse until at least 1941, when it was recommended that it be salvaged. At that time it mounted two 12-inch D.C. guns (RG

165, G-4, Letter, Harbor Defenses of Southern New York, 27 June 1941; in this same letter Battery Upton is listed as having two 10-inch D.C. guns and is also recommended for salvage).

Battery Charles Mills was named in honor of Brevet col. Charles J. Mills, U.S. Volunteers, who during the Civil War served with distinction before he was killed in action at Hatchers Run, near Petersburg, Virginia, on 31 March 1865 (War Department, General Orders No. 20, 25 january 1906). From Massachusetts, colonel Mills was appointed Lieutenant, 2nd Massachusetts Infantry, on 5 September 1862; he became Captain, Assistant Adjutant General, U.S. Volunteers; on 25 July 1864 (Walker, History, Annex #3).

This battery is described as "two 6-inch R.F. guns (to the right of Battery Hudson; these guns are in separate emplacements, and are separated by a road)" (RG 77, OCE, Correspondence, 42146/58, 1 February 1906). Evidently, work was begun in 1872 and substantially completed the next year; additional upkeep was carried out during the rest of the nineteenth century (Kingman et al., II, 1889).

Battery Emory Upton was named in honor of col. Emory Upton, 4th U.S. Artillery, who died on 15 March 1881 (War Department, General Orders No. 16, 14 February 1902). A New Yorker, Upton graduated from West point and was appointed a Second lieutenant on 6 May 1861 and assigned to the 4th Artillery. He became a colonel on 1 July 1880 and died soon thereafter (Walker, History, Annex #3).

This battery had previously been Battery Ravenna and the, along with Battery Clifton, had been designated Fort Newton, in honor of Gen. John Newton, chief of Engineers, U.S. Army, who for amny years was in direct charge of the works in New York Harbor (War Department, General Orders No. 66, 24 November 1897).

Work on Upton, which mounted tow 10-inch guns, began in July 1896. Platforms were ready for carriages by December of that year, and parapet and magazine were complete. As a modern battery it was completed in 1898. (Kingman et al., II, 1890)

Battery Dix was named in honor of Maj. Gen. John A. Dix, U.S. Army, who served during the War of 1812 and the Civil War and died on 21 April 1879 (War Department, General Orders No. 78, 30 March 1903). Dix was born in New Hampshire on 24 July 1798. From the State of new York, he was appointed an Ensign in the Army on 10 May 1813 and later became a Lieutenant. He became Major General of volunteers on 16 May 1861. Dix served as U.S. Senator (1845-49) and as Governor of New York (1872). (Walker, History, Annex #3)

Battery Dix is described as "the 12 Battery" (RG, 77, OCE, Correspondence, 42146/22, 4 June 1903). It was probably begun in 1898 as a 12-inch emplacement viewed as a part of Battery Hudson, and it was completed in 1900 (Kingman et al., II, 1891).

All the batteries retained armament at least as late as 1906 (RG 77, COE, Fort Wadsworth, New York Harbor, Drawer 43, Sheet 21-2). Defenses on Staten Island at the Narrows of New York Harbor, dated June 1886 (RG 77, COE, Drawer 41, Sheet 3) contains a good description of the batteries to that date.

Lewis (*Seacoast Fortifications,* Fig. 47) notes:

> Typical of the manner in which Endicott period batteries were located with respect to older works was the siting of new installations on Staten Island, New York, around 1900.

Lewis suggests that, with the exception of Battery Mills, all the batteries at fort Wadsworth are Endicott batteries constructed between 1896 and 1907. Battery Mills, he suggests, encompasses positions for four 3-inch guns moved during World War II to that battery from Bacon, Turnbull, and Barbour. While there is little doubt that work was

being accomplished during these eras and that Batteries Upton and Dix are Endicott-period batteries, the origins of all the others are much earlier. Only a careful on-site study of the remains will reveal how much work from earlier eras survives at the batteries, how much is from the Endicott period, and how much is from later nineteenth-century construction.

It was not possible within the context of this report to determine what portions of the batteries date from what construction period. It seems likely that all the fortifications are nineteenth century, though work was probably accomplished on most of them (excepting Hudson and Upton, as noted above) during World War II. Records of that era are difficult to locate--especially in the case of Fort Wadsworth, since it is still an operational base.

It is also not clear which of the batteries are actually to be apart of Gateway. The memorandum LI425-NAR(L) of 8 May 1975 (to Regional director, North Atlantic Region; from Chief, Division of Land Acquisition, North Atlantic Region) lists in Exhibit "F" Battery Barbour, Battery Hudson, Battery [Charles] Mills, and Battery Dix as fortifications to be acquired. It would hardly be reasonable to exclude Battery Bacon and Battery William Turnbull--between Barbour and Fort Richmond. Battery Robert Catlin (just north of Richmond) and Battery Emory Upton are also below the bluff; and, if that marks the boundary of the area, they would also be included in the transfer.

2. **Existing Structures**

Structures to be surrendered to the National park Service at Fort Wadsworth include a series of superb fortifications and support buildings in stone, brick, brick and stone, and brick and concrete.

Battery Weed (the present name for Fort Richmond/Fort Wadsworth) is the most visible--and the most important--of the structures. In the three units of Gateway covered by this report, it is presently the only structure that is listed in the National Register of

Historic Places. The structure is a trapezoidal, dressed-stone, four-level battery, with three casemated tiers and one barbette tier. The land side consists of a scarp wall and a two-story guardhouse behind a classically framed entrance. It is a spectacular piece of military architecture, called by Gen. P. H. Sheridan after an 1884 visit "the most beautiful masonry work I ever saw".

Just to the front of this work is the gable-roof Torpedo Storage Building (Building T-5), constructed in 1893-94. The structure is brick, with an outward-coursed brick cornice that continues around gable ends at the eaves and a dressed-stone foundation. It is built into the bluff--one-story at the upper end and two-story facing the fort. Some iron shutters and portions of the marine railway that serviced the building survive.

The nearby Mining Casement Building (Building 140, ca. 1897) is also unusual in its workmanship; it seems to be from an earlier era than the documentation indicates.

Throughout the area are structures from various eras. These structures are of architectural interest, though they are not directly part of any of the batteries. The structures include remaining portions of a dressed-masonry retaining wall near Battery Hudson and portions of a dressed-stone seawall and wharf (now partially obscured by landfill), which juts into the Narrows below Battery Hudson. Various concrete pillboxes or bunkers are in the area. Building 338 (ca. 1944) is a watch/light tower, similar to the one at Miller Field.

Of the batteries included in the area, the oldest is Battery Hudson, which was constructed on the site at least as early as 1808. Robert E. Lee worked on the battery; and major work (including construction of cut stone, granite, brick, and concrete masonry) was carried out on the battery in 1865. It continued to be used--and probably modified--until World War II. Other batteries are the following:

Battery Robert Catlin, begun 1862 and substantially completed by 1886

Battery Bacon, begun ca. 1866 and substantially modified in 1876-77 and later

Battery William Turnbull, begun ca. 1866 and substantially modified in 1876-77 and later

Battery Barbour, begun ca. 1866 and substantially modified in 1876-77 and later

Battery Charles Mills, begun 1872

Battery Emory Upton, 1896-98

Battery Dix, 1898-1900

Work in most of the batteries is probably from several eras, including twentieth-century modifications.

Battery Robert Catlin is probably the most picturesque of the batteries. Situated on the north cliff above Battery Weed, it is more evocative of an ancient Central American ruin than of a North American fortification. Overgrown and accessible only through dense undergrowth, it is in relatively good repair and seems to be holding its own. Because of its long history, Battery Hudson is probably the most important of the batteries historically, though others--especially Battery Robert Catlin--are significant architecturally.

3. **Comments**

A great deal of confusion derives from the multiplicity of names that the various fortifications have borne. This situation is particularlly unfortunate in the case of Battery Weed, the original Fort Wadsworth. It was successor to Fort Richmond, which occupied its site for nearly half a century. The present structure was originally called Fort Richmond. Though it bore that name for less than a decade before being renamed Fort Wadsworth (a name it lost to the larger installation), it would seem to be desirable to restore the name "Fort Richmond" to the fortification. "Battery Weed" is singularly inappropriate, though that would seem to be the official current name. Fort Richmond is a major fortification--probably the best piece of work architecturally in any of the units covered by the report--and a superb example of its type. Totally unlike the other

batteries in the area, it is and was a fort; and restoring the name "Fort Richmond" would clear up much confusion--especially since "Fort Wadsworth" is now applied to the larger military post, which remains in active use.

The same type of confusion is associated with the batteries, most of which have had several names. (The last-assigned names have been used in this report). Great differences in military architecture exist among the various batteries; and, together with Fort Richmond and the support buildings, they span a long chronology--both historically and architecturally. Taken together, they are a superb collection.

Though Fort Richmond (Battery Weed) is already on the National Register of Historic Places, there are inaccuracies in the listing, which should be corrected. Fort Tompkins is also on the Register, and that listing contains several basic inaccuracies. Richmond and Tompkins might be considered as an historic district on the Register, which district might be enlarged to include the batteries and support structures. The military district appears to meet al the criteria for listing.

The Torpedo Storage Building and the Mining Casement Building are works very different from the other structures in the area and --especially the Torpedo Storage Building--of sufficient architectural value to warrant full consideration for preservation and use.

Part of the charm of the area, especially in such a sub-area as Battery Robert Catlin, comes from the battle between the man-made and the natural environment. The setting and approaches to the several structures on the relatively steep bluff buttress an impression of "ancient ruins", and the visitor reacts in a surprised and quite empathetic manner. Efforts at stabilization/preservation would continue to evoke these feelings I the visitor, while efforts at restoration would probably result in a less positive response.

Maintained by the Fort Wadsworth past, the existing museum and display at Fort Tompkins should also be considered in planning interpretative and use programs for Fort

Richmond and the adjacent batteries. Since many visitors to Gateway will approach these by way of fort Tompkins, it is necessary that programs be coordinated in some mutually supportive manner.

The Verrazano Narrows Bridge passes almost directly over the Fort and is visually very much a part of the area.. The bridge and the views of shipping through the Narrows, of Fort Hamilton across the Narrows, and of the Statue of Liberty and New York city in the distance are vital parts of the scene. All should be considered in the evolving of interpretative programs.

4. **Suggestions for Additional Research**

A good deal of material should survive in existing military records at Fort Wadsworth. An effort should be made to determine what material is there and to copy or extract any data that concern the National Park Service area.

The copied material forwarded as attachments to this report (especially the multiple sheets of drawings, plans, elevations, surveys, etc.) also contain much information, It can best be used on site. It is detailed enough that, when it is used in connection with the text of the report, it should be possible--especially for fort Richmond--to date exactly almost every foot of the various walls. Though less numerous, data on the batteries too can be used on site to great advantage.

Local collections, especially in the files of the Staten Island Historical Society and those of the local Public Library, will probably contain a large amount of general material on the fort. The difficulty is in differentiating what happened at Fort Richmond and its adjacent batteries and what happened on the larger post--a problem compounded by the duality of the name "Fort Wadsworth".

In the museum at Fort Tompkins there may be displays and filed material that relate directly to the areas covered in this report. The model and maps in the museum at least assist in helping visitors to orient themselves; and an effort should be made to

determine what basic artifactual, graphic, and textual material there relates to the subject matter of this report.

Additional suggestions on research are made in Appendix A (below).

Appendix A

NOTE ON HISTORICAL RESEARCH AND RESEARCH MATERIALS

1. **General**

Materials located by the writer while accomplishing research for this report were copied when it was felt that they contained more pertinent information than could be extracted. These copied materials usually contain more information than is used in the report. It was felt that the copied materials would be necessary for use in accomplishing fuller histories of the various units and that the future researcher should not need to retrace steps taken by the writer. Materials copied fall into several broad categories:

- Photographs
- Other graphics
- Published material, bound volume
- Published material, periodical or newspaper
- Published material, other (e.g., limited-circulation annual reports, Chamber of Commerce brochures, etc.)
- Manuscripts

Copied materials have been arranged by area within the various units. There is considerable intermingling of information on the sites, however. Material on Jacob Riis Park, for example, may also mention South Beach, Great Kills Park, or Fort Tilden; material on Fort Tilden may also mention Fort Hancock or Fort Wadsworth; material on Miller Field may concern Fort Wadsworth or Jacob Riis Park (Rockaway Naval Air Station); and so on.

The list of attachments (Appendix B, below) is arranged chronologically within the areas. Abbreviated entries give date, subject matter, and source. The copies themselves are more fully identified.

The writer chose from among this material (and a considerable amount of other material used) those dates, incidents, personalities, or events that he felt to be interesting or representative. There may be equally important information in the copied materials submitted with the report. Certainly much of the copied matter is equally interesting and useful for going beyond a "General History".

Materials from which the writer merely extracted (i.e., made notes) is generally mentioned in the text, which contains leads to a large amount of information not included in the attachments. The extracted notes are not submitted with the report.

2. **Use of Atlantic Coast Charts**

Charts of the Coast and Geodetic Survey, National Oceanic & Atmospheric Administration, Department of commerce, were checked for areas within the various units. None of these charts was copied. They should be readily available from various sources in Boston and in New York; because of the information they contain on development of the various areas, it would be useful at some point to copy selected charts.

Chart 369 covers the entire Gateway Area; 540 and 541, specific areas in the Staten Island Unit; 285, all Staten Island areas at a smaller scale; 542, the Breezy Point and Jamaica Bay Units. Moreover, 542 consists of at least 63 separate charts, each based on a new survey, between 1899 and 15 December 1973. By flipping through such a chart it is possible to trace the growth--and often the use--of the areas. Construction sequence of runways and facilities at Floyd Bennett Field, for example, can be placed in a general chronological context by using the charts. The chart for 8 August

1928 shows the outline "site of Municipal Airport", and each succeeding chart marks construction progress.

Canarsie Pier can be checked in the same way. It first appears on the charts as of 16 January 1926, when there is indication of the placement of the pilings for the pier, under a contract for bulkheading and fill that was let that year--and so forth.

For obvious defense reasons, the charts are less useful for military installations, but they do generally show interesting detail.

A survey of these charts--and either their copying or their extracting for overlays--is recommended.

Geological Survey, real-estate atlas, and other maps are also useful; but the Coast and Geodetic Survey charts are the prime cartographic source.

3. **Location of Material Checked by the Writer**

Three major repositories were used by the writer: the Library of Congress (Washington DC; and Geography and Map Branch, Alexandria, VA), the national Archives (Washington, DC, with multiple Record Groups and Branches), and the New York Public Library (Manhattan, New York, NY).

In addition, the files at the areas themselves were checked, as were files of the National park Service (Washington, DC).

Of the material available at Gateway, the Works Projects Administration notebook (with photographs and buildings surveys of work at Miller Field) in the Unit files at Miller Field is perhaps the best manuscript and graphic material available in any of the units. The notebook should be copied and used more extensively in evolving plans for uses of the various structures at Miller Field.

Indexes, bibliographies, and catalogs were checked at all repositories; and such material as could be located in them was used.

4. **Location of Additional Material**

Though there may be large amounts of manuscript material in repositories outside the New York area, most of the additional material that should be checked is probably located in New York. The local-history collections in the public libraries of Brooklyn, Queens, and Staten Island might contain material, as might also the archives of the Staten Island Historical society and of the Long Island Historical Society.

Information on the various military installations, Miller Field, Floyd Bennett Field, and Fort Wadsworth may remain in the active files at Fort Wadsworth and at Floyd Bennett Field. Additional material on fort Wadsworth, Fort Tilden, and Miller Field may be at Fort Hamilton.

The new York newspapers; local newspapers in Staten Island, Brooklyn, and Queens; Chamber of Commerce publications; and similar sources--all should yield additional information. The local press can be checked for given dates (e.g., of dedications, special events, record flights) to buttress and give depth to information already reported.

It is probable that local sources will provide the majority of the available graphic materials. Graphics may range from press photographs to snapshots. (In his text, the writer has noted the presence of--but has not copied--graphics in materials used. By noting them in chronological order in the text, the intention was to make it easier to assemble them for copying if they should be needed in the future for restoration, preservation, or interpretive purposes).

Because of the age of most of these facilities (twentieth-century), there are probably hundreds of knowledgeable individuals in the New York area with information to give. These may include persons that worked at the installations, were stationed there, accomplished contract construction there, or were simply interested observers because the installations were in their neighborhoods. Clippings, programs, and other materials that they may have collected can be most valuable. Snapshots should not be

overlooked as possible sources. A major contribution f these individuals, however, would be oral; and perfect circumstances exist for accomplishing oral-history interviews.

The New York City Department of Docks and the New York City Department of Parks are logical sources. It is possible that from their files the future researcher will be able to extract plans, specifications, surveys, and other materials that will be invaluable.

When as many different areas and types of activities and involvement are represented as there are in the various Gateway areas, the research opportunities are almost endless. It is thus highly unlikely that we will uncover all ties that there is to know about the Jamaica Bay, Breezy Point, and Staten Island Units in the foreseeable future. Conversely, it is likely that as the Gateway program evolves, we will constantly learn more--even without actively pursuing research--as information is offered by Gateway visitors and users.

5. **Possible Locations for Additional Research Materials**

Post-1940 information about military installations is sometimes difficult to locate, since much information is still classified, especially on installations that were active until relatively recently. The difficulty is compounded when, as at Floyd Bennett Field, part of an installation remains active while part has been deactivated. It is also complicated by multiple agency usage (e.g., Navy, Coast Guard, and Army in one installation--as at Floyd Bennett). Certain installations (e.g., the Nike emplacements at Fort Tilden) often defy prolonged efforts to obtain adequate material on construction and utilization.

Generally, there are sources that may contain additional information, though the type of information available is not easy to determine without actually querying or visiting and using material.

The following repositories may contain additional material on construction, events, and personalities at the military units within Gateway:

Navy Historical Division

Building 210, Room 410
Washington Navy Yard
Washington, DC 20374

Department of the Army
U.S. Military History Research Collection
Carlisle Barracks, PA 17013

Historical Division
Air University
Maxwell Air Force Base, AL 66112

Regional Archivist
New York Records Center
Building 22
Military Ocean Terminal
Bayonne, NJ 07002

There may also be additional information on each of the posts in the Modern Military Division of the National Archives in Washington. Generally, the land records have been checked for construction to about 1943. Records here on recently deactivated installations generally cover no more than the period of early World War II, though there is probably additional information on each of the installations in this report. For the current project a preliminary search in the Modern Military Division did not justify the spending of additional research time tin these records.

There should also be material in the

National Personnel Records Center
9700 Page Boulevard
St. Louis, MO 63139

Previously housed in Kansas City, records relating to posts have been combined with the personnel records in St. Louis. For each of the Services there are research specialists that could assist in determining what material, if any, is in St. Louis that might relate to the areas in Gateway.

For Post-1941 construction or use at any of the military installations, it is possible that material in files that are presently restricted might be freed for use. Probably the

best sources here to ascertain what material might be made available could be determined at the following address:

Records Management Division
Department of the Army
Room GA084
Forrestal Building
Washington, DC 20314

Office, Chief of Engineers
Division of Real Estate Records
Room 3G092
Forrestal Building
Washington, DC 20314

Using these sources would probably return little material on Fort Wadsworth that would be useful. Some useful material on the beach fortifications at Miller Field and at Fort Tilden might be uncovered--and some on the group of post-World War II administrative buildings at Floyd Bennett Field.

The most interesting material would probably be on the Nike installations at Fort Tilden, but most of that information seems to be still restricted.

Appendix B

LIST OF ATTACHMENTS

Material is arranged by units and areas in the order that they appear in the report. All material cited has been Xeroxed, Photostatted, photographically reproduced, or by some other process mechanically copied. The material is more fully identified on the copies themselves. For purposes of identifying types of material copied, the following abbreviations are used:

PH - Photographs

OG - Other Graphics

PMB - Published Material, Bound volume

PMN - Published Material, Newspaper or periodical

PMO - Published Material, Other (e.g., limited-circulation annual reports, Chamber of Commerce brochures, etc.)

MS - Manuscripts

Each entry (in chronological order) given type of material, short description, source, and (if more than one page), number of pages. When material of a type different

from that shown by the primary code (above) is included (e.g., a handwritten letter that contains a photograph and a map), a notation is made (e.g., MS, including PH and OG).

The copied material is arranged in chronological order by area and is transmitted as attachments to this report.

Material from the National Archives has been identified on the list only by Record Group number (e.g., RG 407). Material from the following Record Groups is included:

18 - Records of the Army Air Forces

26 - Records of the United States Coast Guard, Light-House Services

69 - Records of the Works Projects Administration

72 - Records of the Bureau of Aeronautics

77 - Records of the Office of the Chief of Engineers

80 - General Records of the Department of the Navy

92 - Records of the Office of the Quartermaster General

94 - Records of the Adjutant General's Office

111 - Records of the Office of the Chief Signal Officer

165 - Records of the War Department General and Special Staff, G-4, Harbor and Coastal Defense

306 - Records of the United States Information Agency

363 - Records of the United States Army Commands (Army Posts)

392 - United States Army Coast Artillery Districts and Defenses, 1901-1942

407 - Records of the Adjutant General's Office, 1917-

Microcopy Number 617 - Returns from U.S. Military Posts, 1800-1916

Generally, citations used in the body of the report are complete when the material used was taken form the author's notes (which are *not* included as attachments to this report); when material cited is less detailed since this list and the attachments are part of the report.

General

Ca. 1974 - OG, map of Breezy Point Unit, Gateway National Recreation Area

- OG, map of Staten Island Unit, Gateway National Recreation Area

- OG, map of Jamaica Bay Unit, Gateway National Recreation Area

- OG, general map, Gateway National Recreation Area

I. JAMAICA BAY UNIT - A. Floyd Bennett Field

1927 - PMO, report of committee on suitable airport facilities for New York (29 Nov), 9 pp., including OG

1928 - PMO , annual report of Department of Docks (31 Dec), 6 pp., including PH

1929 - PMO, annual report of Department of Docks (31 Dec), 4 pp.

- PMN, article on the Field, *Aero Digest* (April), 2 pp., including PH

1931 - PMN, article on dedication, *Airway Age* (6 June), 2 pp.

I. JAMAICA BAY UNIT - A. Floyd Bennett Field (Continued)

- PMB, sections from *Aircraft Yearbook for 1932*, 12 pp

- PMB, section from biography, *Floyd Bennett*, 7 pp., including PH

1932 - PMO, section from *Official World and American Air Records* (1 Jan)

- PMB, section from *Aircraft Yearbook for 1933*, 8 pp.

- PMO, annual report of Department of docks (31 Dec), 6 pp.

- PMN, article on Roscoe Turner flight, *National Aeronautic Magazine* (Dec)

1933-35 - PMN, official aviation records, *Aero Digest* (Jan 1936)

1933-39 - PMO, sections from *Airports and Established Landing Fields for 1933, 1936, 1939,* 3 pp., each including PH

1933 - PMN, articles on the Field, *National Aeronautic Magazine* (Aug)

- PMB, section from *Aircraft Yearbook for 1934,* 14 pp.

1934 - PMN, article on LaGuardia's refusing to alight at Newark and being flown to Floyd Bennett, *Aerotrade News* (3 Dec)

- PMN, section from *Aircraft Yearbook for 1936* 8 pp.

1935 - PMN, article on Doolittle flight, *National Aeronautic Magazine* (Jan)

- PMN, section from *Aircraft Yearbook for 1936,* 9 pp.

1936 - MS, concerning WPA program at the Field, RG 72 (15 Dec), 9 pp. Including OG

- PMB, section from *Aircraft Yearbook for 1937,* 12 pp.

1937 - PMB, section from *Aircraft Yearbook for 1938,* 6 pp.

1938 - PMB, section from *Aircraft Yearbook for 1939*, 12 pp.

1939 - PMB, section from *New York City Guide,* 2 pp.

- PMB, section from *Aircraft Yearbook for 1940*, 12 pp.

- MS, acquisition of Field by Navy Department, RG 72 (27 Nov), 5 pp.

1941 - MS, aviation facilities at Field, RG 72 (11 Feb), 4 pp., including PH & OG

- MS, report of survrey of existing conditions at Field, RG 72 (13 May), 8 pp.

1972 - PMB, section from Masefield talk on New York and London Airports (c. 1972),
With list of New York City airports and section on Rockaway NAS and Floyd
Bennett, 5 pp.

ca. 1974 - OG, map of Floyd Bennett Field, Gateway National Recreation Area

1975 - PMN, article on Naval command at the Field, *Sunday News* (6 July)

I. JAMAICA BAY UNIT - A. Floyd Bennett field - Photographs

1926 - PH, Floyd Bennett, pilot of the Foker Polar plane, RG 80 (2 Dec), 80G-452926

1931 - PH, site of a seaplane hangar, RG 80 (6 Aug), 80G-466293

1932 - PH, departure of Volante family and plane, RG 306 (Sept), 306-NT-173, 352C

1934 - PH, arrival of Joseph LeBrix, Rossi and Codos at the Field, RG 306 (7 Jun), 306-NT-93950

- PH, Joseph LeBrix before Administration Building, RG 306 (7 Jun), 306-NT-179-14C7

1936 - PH, aerial, original runways and construction beginning on mid-'30's runways, RG 80 (Jan), 80G-466040/1, 2 photos

1939 - PH, aerial oblique, Administration Building and hangars, RG 80 (Jan), 80-CF-71245-4

1941 - PH, aerial, with WPA improvements, RG 80 (26 Dec), 80G-354089

- PH, aerial oblique, hangar area and Administration Building, RG 80, 80G-311272

1942 - PH, aerial oblique, Administration Building and hangars, RG 80 (24 Jan), 80-CF-71245-4

- PH, aerial, seaplane hangars, RG 80- (4 Feb), 80G-354815

- PH, aerial, buildings and Field essentially as completed by WPA, RG 80, 80G-354816/7/9, 3 photos

- PH, aerial, hangar area, planes, and equipment, RG 80, 80-CF-71245-2A/-6, 2 photos

1943 - PH, change of command at Floyd Bennett Field; Capt. Kenneth Whiting relieved by Capt. E. O'McDonnel, before Administration Building, RG 80 (25 Feb), 80G-36562/6, 2 photos

- PH, aerial, additional runways completed, with some new construction and Jacob Riis Park and Fort Tilden in background, RG 80 (Aug), 80G-

77821/2/3/4/5, 5 photos

- PH, aerial, Field at present size, runways being completed, RG 80 (1 Nov), 80G-85508/09/10/11/12, 5 photos

1944 - PH, aerial, RG 80 (13 April), 80G-225127/28/29/30/31, 5 photos

- PH, aerial, Jacob Riis Park and Fort Tilden in foreground, RG 80 (4 Jun), 80G-235181; also aerial, RG 80 (4 Jun), 80G=235184

- PH, aerial, RG 80 (17 Dec), 80G-291504/5/6/7/8, 5 photos

I. JAMAICA BAY UNIT – B. Jamaica Bay Wildlife Refuge

1930 - PMB,, Xerox of Meyer's *Looking through Life's Window* (copy supplied by Gateway), 237 pp, including PH and OG

1938 - PMO, text section, New York Department of Parks, *Plan for Jamaica Bay* (18 July), 4 pp

1940 - PMB, examination and survey of the Bay by Corps of Engineers (11 April), 28 pp, including OG

1949 - PMN, article on park land in Bay, *New York Times* (17 Jan)

1969 - PMN, article on the Wildlife Refuge, *New York Magazines* (8 Dec), 5 pp, including OG

1971 - PMO, sections from report by National Academy of Sciences, *Jamaica Bay and Kennedy Airport,* with suggested reading list, 14 pp, including OG

- C. Canarsie Pier

1909 - PMB, description of Jamaica Bay and the Pier (31 May), 5 pp, including OG

1974 - PMN, article, *Canarsie Digest* (3 Aug), 5 pp, including PH

II. BREEZY POINT UNIT – A. Jacob Riis Park, including Rockaway NAS

1918-19 - PMB, notes on assembly of NC planes at Rockaway and first flight across the Atlantic, *First Across (c. 1973), 7 pp*

1918 - PH, NC-4 at Rockaway: "Largest flying boat in the world tested at Rockaway," RG 165 (21 Dec), 165-ww-185B-13/14/15, 3 photos

- PH, Fort Tilden in the foreground, RG 80 (27 Dec), 80G-454992

1919 - PH, aerial, RG 80 (7 Feb), 80G-457000

1929 - MS, LaGuardia letter concerning removal of air station from Rockaway, RG 72 (1 Jun)

- MS, memo on reason for removal of Rockaway station, RG 72 (3 Jun), 2 pp

1930 - MS, Navy Board of Survey with Queens Commissioner of Parks concerning Rockaway NAS, with list and description of buildings, RG 72 (19 March – 23 July), 17 pp

- MS, Chief of Naval Operations with JAG, survey of property at Rockaway NAS, RG 72 (8 Aug), 11 pp

1932 - MS, restoration of Rockaway NAS site for Park use, RG 77 (13 Jan), 55 pp

II. BREEZY POINT UNIT – A. Jacob Riis Park, including Rockaway NAS

1936 - PMB, study of beach erosion at Jacob Riis Park, Corps of Engineers (21 Jan), 23 pp, including OG

1937 - PMN, article on opening of Jacob Riis Park, *New York Times* (7 Jun)

- PMO, program for opening of Marine Parkway Bridge (3 Jul), 12 pp, including PH and OG of Jacob Riis Park

1939 - PMB, section on Park, *New York City Guide,* 3 pp, including OG

- **II. BREEZY POINT UNIT - B. Fort Tilden**

1903 - MS, use of Rockaway beach for blockhouse during War of 1812, RG

77, 2 pp

1905 - OG, “Rockaway Point Life-saving Station,” RG 26 (16 May)

1917 - OG, map of “Temporary Defenses, Rockaway Beach, NY,” RG 77 (18 April), Drawer 142, Sheet 73-2

- MS, naming of the Fort, RG 77 (26 July), 3 pp

Ca. 1920 - OG, “Rockaway Point Station,” RG 26

1920 - OG, map of post, RG 407 (25 March), 10 pp

- MS, designation of Organization Day at post, RG 407 (19 Feb) 2 pp

- MS, technical inspection at Fort, RG 407 (12 May), 6 pp

1921 - MS, assignment to Coast Defense of Sandy Hook, RG 407 (31 Oct)

- MS, construction of penthouses for 6” guns, RG 407 (14 Nov), 7 pp

1922 - MS, designs for 16-inch emplacements, RG 407 (21 Feb), 2 pp

- MS, unprotected power plant, RG 407 (17 Jul), 5 pp

- MS, penthouses for anti-aircraft guns, RG 407 (28 Jul), 6 pp

- MS, Fort land desired for park purposes, RG 407 (16 Aug), 5 pp

- MS, designs for 16-inch rifles, RG 407 (11 Nov), 5 pp

1924 - MS, shelters for 16-inch rifles, RG 407 (27 Feb)

1927 - MS, conditions at Fort, RG 407 (11 Nov), 5 pp

1928 - MS, board to determine permanent installations of weapons, RG 407 (2 Feb), 5 pp

- MS, subpost of Fort Totten, RG 407 (22 Mar), 4 pp

- MS, list and description of buildings on land of life-saving station, desired by Army, RG 407 (10 Aug), 3 pp

- PMO, executive order reserving land for post, RG 407 (2 Nov)

- OG, map of quarters, roads, water and sewer lines, etc., RG 407 (5 Dec), 6 pp

II. BTREEZY POINT UNIT – B. Fort Tilden (continued)

- OG, map of routing of fire control and aerial li8nes, RG 407 (Dec), 6 pp

1929 - PMO, executive order correcting metes and bounds, RG 407 (16 Feb), 2 pp

- MS, storage of ammunition for 16-inch guns, Battery Harris, RG 407 (6 Mar), 2 pp

- MS, firing platforms for 3-inch guns on trailer mounts, RG 392 (27 Nov)

1935 - MS, designation of Battery West as Kessler, RG 407 (29 Nov), 2 pp

- MS, suggested designation of Battery East as Battery Hatch, RG 407 (29 Nov), 4 pp

1936 - MS, description of limits of post, RG 407 (9 Apr), 13 pp, including OG (survey of 30 June 1928)

- MS, acquisition of Coast Guard land, RG 407, (11 May), 4 pp

1937 - MS, annexes to harbor defenses of southern New York, seacoast guns, RG 407 (23 Jun), 75 pp, including OG (on Forts Tilden and Wadsworth and Miller)

- MS, use of beachfront by New York Department of Parks, RG 407 (12 Jan – 13 Aug), 51 pp

1938 - PMO, metes and bounds of post, RG 407 (1 Mar), 6 pp, including 1932 metes and bounds

1939 - MS, designation of Battery Kessler and Battery Ferguson, RG 407 (1 Dec), 6 pp

1941 - MS, recommendations of site board for defense, RG 165 (19 Feb), 5 pp

- MS, recommendations of site board for defense, RG 165 (6 Mar), 29 pp; including OG

1942 - PMO, section on Fort, Coast Guard, Bay etc., *Rockaway Review*, 13 pp
ca. 1974 - OG, map of Fort Tilden, Breezy Point Unit, Gateway National Recreation Area
1975 - PMN, clipping, "Fort Tilden's a Summer Festival," *Daily News*

III. STATEN ISLAND UNIT – A. Great Kills Park

1931 - PMO, design for Great Kills Park, Regional Plan Association
1933 - PMO, concept for Great Kills Park, Regional Plan Association, including PH
1952 - MS, New York Department of Parks press release on opening of new bathhouse (28 May), 3 pp

III. STATEN ISLAND UNIT–B. Miller Field, including Elm Tree Light Station

1828 - MS, deed, Reservation at Narrows, RG 26 (4 June), 2 pp
1837-56 - MS, clipping file, Gedney's Channel Light, RG 26, 3 pp
1852-1907 - MS, clipping file, Elm Tree Light, RG 26, 4 pp
1855-1907 - MS, clipping file, New Dorp Light, RG 26, 2 pp
1880 - OG, proposed Staten Island Rapid Transit Route, RG 77
1891 - PH (Xerox of blueline PH), Elm Tree Light, RG 26 (30 June)
1917-19 - MS, project history, RG 407 (15 August 1917 – 18 April 1919), 2 pp
1918-19 - MS, data on acquisition of Vanderbilt property, RG 18 (5 September 1918 – 28 January 1919), 2 pp
1918 - MS, site for coast defense station moved from Fort Hancock to New Dorp, RG 18 (2 Oct)
- MS, requested authorization for hydroplane station, RG 18 (17 Oct), 2 pp
- MS, memo on construction (for director of military aeronautics), RG 18 (5 Nov), 5 pp
- MS, tenants on Vanderbilt farm, RG 18 (31 Dec), 2 pp

1919 - MS, estimate for construction, RG 18 (13 Feb), 2 pp
- MS, estimate for construction, RG 18 15 Feb), 2 pp
- MS, deed, RG 407 (12 Mar), 15 pp, including OG
- MS, request for expenditure for sanitation and supplies, RG 8 (28 Mar), 5 pp
- MS, site for aero coast defense station New Dorp, RG 18 (18 Apr), 5 pp
- MS, purchase of gasoline tanks, RG 18 (5 June), 5 pp
- MS, request for vertical photograph of station, RG 18 (3 Oct)
- MS, request that field be named Miller Field, RG 18 (6 Dec)

1920 - MS, general order naming field Miller, RG 407 (5 Jan), 2 pp
- MS, changes to be made in structural steel and sliding doors, RG 18 (27 Jan)
- MS, additional construction at Field, RG 407 (14 May), 2 pp
- MS, photographs of international yacht race, RG 18 (6 Aug), 6 pp
- MS, suggestion for adoption of bascule hangar door, RG 188 (8 Sept), 2 pp

1921 - MS, turnover of Field to Army from construction quartermaster, RG 407 (11 July), 3 pp
- MS, acceptance of Field, with list of buildings, RG 18 (20 July), 2 pp

ca. 1922 - PH, aerial, Field as completed (two churches, farm lanes, Vanderbilt Mansion, barns and Elm Street Light in place; seaplane ramp not completed), RG 18 – plus copy negative
1922 - MS, board to investigate construction conditions at Field, RG 18 (20

Jan), 17 pp
- MS, status of Field, RG 18 (11 Mar)
- MS, request from Navy for use of Miller, RG 407 (11 Aug), 2 pp

ca. 1923 - PH, aerial, substantially as ca. 1922 (above), except field graded, farms lanes closed, and Field road system established, RG 18 – plus copy negative

1923 - MS, tests on Remington-Burnelli type airplane, RG 18 (24 Aug), 2 pp
- MS, establishment of Field by executive order, RG 18 (18 Dec), 5 pp

1923-24 - MS, transfer of lighthouse ground to War Department, RG 407 (2 December 1923 – 22 January 1924), 6 pp

1924 - OG, survey of Elm Tree Light Station, RG 407 (24 Feb), 8 pp
- PH, aerial, substantially as ca. 1922 and ca. 1923 (above), RG 18 (10 Mar), 2 photos – plus copy negatives
- MS, Army acquiring exclusive jurisdiction over Field, RG 407 (7 May), 7 pp
- PMO, metes and bounds of Field, RG 407 (17 May), 4 pp
- MS, transfer of light to War Department, RG 18 (6 Jun), 7 pp
- MS, aviation meet, RG 407 (24 Jun), 2 pp
- MS, Defense Day activities at Field, RG 18 (18 Sep), 7 pp, including PMN
- MS, transfer of Naval Reserve unit to Field, RG 407 (8 Nov), 2 pp
- PMO, program for dedication of Miller Field plaque, RG 18 (11 Nov), 2 pp
- MS, Armistice Day exercises at Field, RG 18 (15 Nov), 4 pp, including PMN
- MS, approval of plaque wording and status of Miller's death, RG 18 (9Dec), 4 pp

1924-25 - MS, Notes on erection of Miller Field plaque, RG 407 7 October 1924 – 25 July 1925), 32 pp, including OG

1925 - PMB, notes on Vanderbilt estate and Erik Nelson association with Miller Field, *Staten Island's Claim to Fame,* 6 pp
- MS, request for use of Field by Schavan Airways, RG 18 (2 Apr), 2pp
- MS, notes on acquisition of Miller Field, RG 407 (27 July), 3 pp

1926 - MS, training of pilots for Pan-American flight, RG 18 (26 Oct)
- PMB, notes on Pan-American flight, *Aircraft Yearbook for 1927,* 4 pp

1927 - PMB, notes on pan-American flight, *Aircraft Yearbook for 1928,* 2 pp
- MS, visit by Royal Canadian Air Force, RG 18 (5 May)
- MS, landing of Lindbergh, RG 18 (8 Jun)

1928 - MS, visit by German aviators, RG 18 (12 Apr)
- MS, LaGuardia suggestions for investigation of Field, RG 18 (23 Mar), 5 pp
- MS, investigation conclusions and documents, RG 407 (11 July) 94 pp
- MS, engineering supplies, rope for holding crowds at Field, RG 407 (24 Apr), 2 pp

1929 - MS, assembly of Savoia-Marchetti flying boats, RG 407 (19 Apr), 4 pp
- MS, test of Consolidate Commodores by new York & Buenos Aires Airline, RG 18 (18 Sep), 2 pp

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- MS, close of meterological station, RG 18 (6 Jan), 5 pp
- MS, notes on use of Miller Field, 1919-32, RG 18 (14 Jun), 2 pp

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1935	-	MS, WPA work at Field, RG 18 (16 Dec), 2 pp
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ca. 1940	-	PH, aerial (doctored), with Field enlarged, WPO construction between hangar and New Dorp Lane completed, RG 18 – plus copy negative
1941	-	MS, proposed use of Field as air freight and airplane shipping terminal, jRG 165 (15 Aug), 6 pp
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		III. STATEN ISLAND UNIT – C. South and Midland Beaches
1926	-	MS, pollution of South Beach from Fort Wadsworth, RG 407 (26 May)
1937	-	PMO, New York Department of Parks comments on development at South Beach and proposed development (30 Nov), 7 pp, including PH and OG
1939	-	PMB, comment on beaches at Donegan Hills and Richmond, *New York City Guide*
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		III. STATEN ISLAND UNIT – E. Fort Wadsworth, including Fort Wadsworth Light Station
General	-	MS, from Gateway Files, Miller Field, *The History of Fort Wadsworth* (n.d.), 18 pp, including OG
1826-1901	-	MS, Fort Tompkins Light Station, RG 26, 6 pp
1842	-	MS, ownership of Staten island fortifications, including letter of Lee and history of ownership, RG 77 (2 Jan – 11 Feb), 44 pp
1847	-	PMB, House Document No. 8 repairs at Staten Island (1847)
1848	-	MS, annual report on construction, RG 77 (20 Oct), 9 pp
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Ca. 1890	-	PH, RG 92, 9 photos: 92-f-72-1 – General View, with Fort Wadsworth Light Station, Hoffman and Swinburne Islands, batteries 92-f-72-2 – General View 92-f-72-3 – Looking South-West