ITU A|Z • Vol 15 No 2 • July 2018 • 225-240

Civil aviation in Turkey in 1920s and 1930s: Büyükdere AEI facility

Nedime Tuba YUSUFOĞLU
tuba.yusufoglu@gmail.com • Department of Architecture, Faculty of Architecture, Yıldız Technical University, Istanbul, Turkey.

Received: August 2017 • Final Acceptance: July 2018

Abstract

The seaplanes used for supporting the fleet for the military purposes during World War I, have been used as a new form of transportation technology in 1920s and 1930s as "Golden Age" of aviation in Western countries (in Europe and United States) for the civil and commercial purposes; it has become considerably popular and in great demand. In those years, as an issue being approached in Istanbul simultaneously with Europe and United States, culture and voyage of seaplane had remained as an issue implied and not being significantly researched. Newly-emerging and young many European companies have anticipated route of Turkey as the shortest cut to travel to and connect with East, taken steps and built facilities accordingly and made relevant connections. In this paper, Italian AEI (Societa Anonima Aero Espresso Italiana), being established in 1920s in Büyükdere, European side of Istanbul for civil aviation services, is construed architecturally based upon Archives of the Prime Ministry of the Republic.

Keywords

Aviation architecture, Büyükdere AEI (Aero Espresso Italiana), Civil and commercial aviation buildings in Turkey, Plane, Seaplane.

doi: 10.5505/itujfa.2018.21033

1. Introduction

Along with the invention of aircraft at the beginning of 20th century (1903), aviation industry has emerged and aviation architecture has developed for this new flying machine. Within the context of aviation architecture, parallel running has been made in our country during the period characterized as "Golden Age" (1918-1939) of aviation in the West (particularly in the United States).

As widely known, technological developments had been firstly used in wars throughout the history. Putting emphasis on the aircraft by Europe and the United States is related to voyage fantasy to far east and colonial policies (Spenser, 2008) (Kronenburg, 2002). The opinions on aircraft and aviation defined as "winged gospel" defined by Joseph Corn are one of the consequences of a belief that the aircraft would be a part of life in near future (Corn, 1983). Aircraft would be a perfect vehicle to reach at far east and other colonies. Furthermore, aircraft has distributed a brand new perception, space-time experience, speed, movement, entertainment and sport into the life of 20th century (Yusufoğlu, 2017; Yusufoğlu, Kara Pilehvarian 2017).

Despite of the fact that Istanbul has lost its former political power in 1920s along with moving its capital to Ankara with the proclamation of Republic, Istanbul; it continued to distract attention of international private enterprises with its population, history and geographical advantages. Many European companies considered Turkey as a shortcut for travelling to and getting in touch with the East. Therefore, similar with the request and application of privilege of French CIDNA (Compagnie Internationale de Navigation Aérienne, initially CFRNA) company located in Istanbul Yeşilköy (San Stefano) for civil and commercial aviation service[1], Italian AEI (Societa Anonima Aero Espresso Italiana) decided to construct a facility in Istanbul, Büyükdere in the same years and applied to the Turkish government for the required enterprise and permits. The company aimed at giving service with seaplane as the new, popular and luxury transportation form of that period for civil and commercial purpose. In fact, there has always been a symbiosis condition between water and aviation structures. Many earlier airports have been located close to water in order to accompany to seaplane. Seaplane was a vital part of American industry in 1930s. It has become common for constructing and managing their own airports in the major companies of the United States in 1920s and 1930s. Pan American Company had "Dinner Key" terminal in Miami designed by a well-known architectural office Delano&Aldrich in 1934. Aesthetically attractive design has been referred to as the first modern passenger terminal design (Douglas, 1996) (Figure 1). La Guardia is its leading and extremist example. Large "Clipper" seaplane of Pan-am has been defined as luxury voyage during 1930s and carried out transatlantic passenger transportation by air (Eggebeen, 2007).

Figure 1. *Seaplane was a vital part of American industry in 1930s. Miami Dinner Key terminal of Delano&Aldrich, 1932 (Pearman, 2004).*

American seaplane voyage and culture in 1930s was identical in Istanbul, Republic of Turkey during the same period. In this regard, AEI seaplane station facility located in Istanbul Büyükdere must be reviewed.

2. Italian AEI (Societa Anonima Aero Espresso Italiana) facility

Airport / seaplane station facility, established in Büyükdere located in the Bosphorus, is an "industrial heritage" that has been almost unknown in architecture and urban history. The first study considered this subject within the context of architectural history is related to Haluk Zelef (2014). Haluk Zelef discussed AEI facility in his article titled "*Impacts of Seaplanes and Sea-*

[1] *See: Yusufoğlu, 2017, Aviation and Aircraft Industrial Structures in Turkey: 1923-1940, pp. 397-419.*

ports on the Perception and Conception of the Modern City: The Case of Istanbul". In this article, Zelef's reviews were developed by bringing unpublished Archives of the Prime Ministry of the Republic (BCA) documents and projects into light.

Air travel has appeared as a totally new form of transportation in the initial period of 20th century. Along with the invention of aircraft and possibility of air travel, aviation architecture has begun to develop. Airport for passenger transfer and commercial transportation has emerged and developed in 1910s, 1920s and 1930s. Airports brought along installation of the systems such as airline route and network etc. It necessitated the installation of airline network systems together with the invention of aircraft in the 20th century. On the other side, a new competition started between land planes and seaplanes. In those years, however zeppelins and touristic cruises were popular in transatlantic transportation, seaplanes emerged as a brand-new alternative. Many European companies established their airline services for transportation and post service in 1920s. Creating this new expensive commercial network on seas rendered service to requests of the Western countries for colonization, namely political purposes as mentioned above.

In those years, Italian companies took first steps to establish connection/link between Istanbul, Odessa and Varna, Antalya and Ankara in order to provide airline service through seaplane with Turkish-Italian partnership (Sarıgöl et al. 2009). One of these companies is Societa Anonima Aero Espresso Italiana (AEI).

The first airfield and facilities located in Istanbul were introduced and constructed in Yeşilköy in 1912 for the military purposes during the period of Ottoman Empire (Yusufoğlu, 2017). Along with World War I and the developments in Europe afterwards, some foreign airline companies which were newly established in Europe considered the route of Turkey and Istanbul as an important itinerary in order to provide connection with Middle East. French CIDNA applied to Turkish government accordingly for civil and commercial aviation activities. Apart from CIDNA, another foreign airline company, Italian AEI applied to Turkish government for air service. As CIDNA, this application was accepted for a period determined with the agreement under certain conditions (supervisions and non-performance of or limitations in domestic flights). Apart from CIDNA, Italian AEI established a seaplane facility located in Bosphorus, Istanbul.

Having established on December 12th, 1923, the first Italian international air transportation company Societa Anonima Aero Espresso Italiana (AEI) has been operated to a high degree in 1920s and 1930s in order to provide seaplane service amongst Italy, Greece and Turkey. The Italian company applied to Turkish government with a detailed offer containing model of seaplanes, airport to be constructed, required facilities (hangars) and flight route in 1924 following its establishment. AEI was granted for the authorization to construct its sea airport with the agreement made thereof. The seaplane station of AEI was permitted with the agreement made with Turkish government only for civil uses. Technical specifications of aircrafts and the materials to be handled in company's seaplane station are described in the annex of agreement (BCA 1) (BCA 2) (Archive of the Prime Ministry of the Republic).

Flight route would be between "Brindisi, Athens, Izmir (Smyrna) and Istanbul" or between "Brindisi, Athens, Thessaloniki and Istanbul". Rhodes Island was added into this network in 1930 (on the island of Rhodes the Italians were very busy with archeological findings - see Prange, 1998). The route would only be by sea generally in parallel with the coastline (BCA 1).

After the War of Independence (1919-1922) and prior to proclamation of newly established Republic of Turkey, Italian airline company authorities were contacted in Ankara and an agreement assuring 11-year privilege was signed. Even though a project was prepared in order to facilitate landing in the neighbourhood of Kokaryalı in Izmir (Smyrna), Istanbul was accepted as the sole destination due to military reasons. Greek authorities acted in a

similar manner with the negation of Turkish authorities as ignoring Izmir and rejected to consider Thessaloniki appropriate as a destination.

According to Article 1 of Separated (Supplemented) Contract, cancellation of facility constructed by Company in Küçükçekmece because of which the field is prohibited, and construction of hangar and scaffolding in Kefeli Köy, Büyükdere were accepted. In case Company did not request for cancellation in Küçükçekmece, 15.375 Liras in total as field fee (1525 Liras), 1850 Liras for planted areas (cultivation) fee and 12.000 Liras for scaffolding would be paid to Company according to Article 2. It has been understood from these articles that Lake of Küçükçekmece was envisaged for site selection (BCA 1, BCA 2). Haluk Zelef indicated in the written documents dated January 2015 between Italian company and Turkish Government that Golden Horn was mentioned for site selection. As it has been considered that there was sea traffic density in Golden Horn on those days and Lake of Küçükçekmece was considerably far from city center, 5-acreage land of field in Büyükdere was selected as the location for facility in the largest section of Bosphorus (Zelef, 2014). There are underlying reasons as when considered from an historical aspect at first, as mentioned above, the field has been used as a resort, recreation and hunting lodge by local and foreign people residing at Istanbul in the middle of the 19th century, and hosted to "Büyükdere Meadow" and "Seven Brothers Plane-Tree" that was known as created from nine trunks within this meadow (later 7 roots remained)[2] . This field was used as an airfield for military aircrafts in the World War I (Anonymous, 2017a).

In respect of the reasons why the airline company selected this field are; firstly, this location had many advantages. It was close to summer houses of many diplomatic representatives and to non-Muslim wealthy population of the city at the end of 19th century who were the potential customers for an airline company. More importantly, the site selection offered many technical advantages; it enabled to be protected from high wind of rough sea and accompanied to a large water surface in order to assist planes to land easily particularly by being away from sea traffic. The location of station in Bosphorus offered some military advantages to Turkish authorities. The point which was considered by Zelef is that; neither Dardanelles nor Bosphorus (Istanbul) was under the control of Turkey and there were limitations in military-based areas until Montreux Convention in 1936; they had to be at a distance of 15-20 km from the coasts. AEI facilities, as revealed by this convention, were permitted to be used under the military supervision as per these conditions (Zelef, 2014).

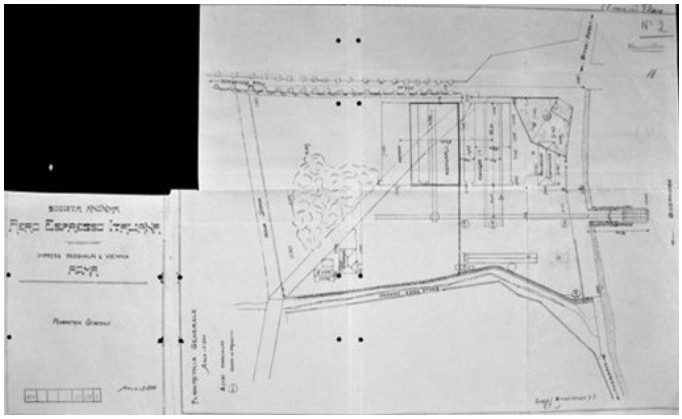

Figure 2. *Layout plan of AEI facility (BCA 2).*

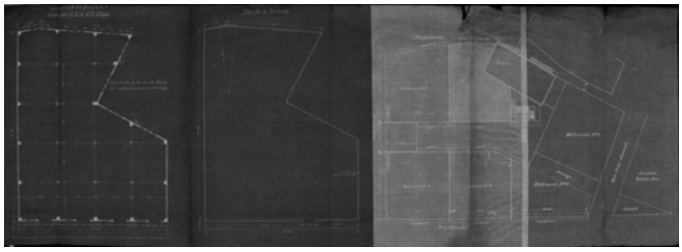

Figure 3. *Field application plans of AEI facility (BCA 2).*

AEI presented the completed plans of airport to Ministry in November 1925. AEI was also granted privilege for importing materials regarding construction and its activities (Sarıgöl et al. 2009). Immediately after signing 20-year agreement between AEI and Turkish government on the date of December 31th, 1925, Turkish Government approved the project on December 31th, 1925 and allocated 20.000 m² on-shore fields. The project included a management building (main terminal / station building), a building for employees, two hangars, a port as well as required fittings and warehouse build-

[2] *This plane-tree was pictured in the gravures of French artists in the World War I.*

Figure 4. *AEI scaffolding (BCA 2).*

Figure 5. *Public view of the facility (BCA 2).*

Figure 6. *Public view of the facility (BCA 2).*

ings. Constructions of airport and pier were immediately initiated.

The documents numbered 230-0-0_61-27-1 related to Archive of the Prime Ministry of the Republic (BCA) include information regarding aircraft station, plans, projects and photos (BCA 2). The content of this file consists of workshop, hangar, staff building, scaffolding plan and their photos. There are also information regarding facility cost and other technical information within the same documents. The summary information and conclusions below are accordingly specified below:

The station is located at the distance of 20 km from the bay of Büyükdere; two roadways link this station to the city by land. One of these roadways connects with way of Maslak from Hacı Osman hill and this road was reconstructed as asphalt. The other roadway meets way of Maslak from Kireçburnu, Tarabya and Istinye. The bay of Büyükdere has a good sea surface for the planes to land and the dominant Eastern wind blows across the bay from Bosphorus of Black Sea. Sea waves are slack which does not prevent approach and movements of planes as the section across the bay of Büyükdere and the section on Anatolia shore of Bosphorus constitute a good wall of protection against Eastern wind (Figure 2 and Figure 3).

According to BCA documents, "scaffolding and sledge system" was as below: A rough sea in such an extent that it was impossible for the planes to be taken out from and launched to the sea was rarely seen. Particularly the opportunity for launching the plane to the sea has always existed. There was a reinforced concrete and stone wheeled guide installation in the station. The planes were lifted up with a crane having electrical 7-horsepower engine. It could also be used to pull the planes from sea to guide with additions such as tackle. The planes had mooring facilities such as iron, chain, anchor and mooring ropes. These were located close to the guide in an appropriate style (BCA 2) (Figure 4). Technical equipment such as wireless antenna was available as well.

The information obtained from BCA documents regarding "Construction and Installation made for Various Services" was as below: Büyükdere plane station contains of installation that would be useful for an activity much more than its currently executed activity level. The station had specifications appropriate for many lines to navigate without adding something into the existing installation. There was one more hangar building in Büyükdere station beside Faller station, which was sold to the Greek Government; even though there was no building (situated) intended for residence of the officers, the facility in Büyükdere had a size and excellence suitable for longer distances and more expenditures as it was sufficient for the expenditures between 1- Brendizi Istanbul and 2-Brendizi Rhodes carried out twice in a week and Brendizi-Egypt route carried out every day (BCA 2) (Figure 5, Figure 6).

Divisions of bureaus and offices for Bureaus and Offices of Station- Rooms Allocated for Passenger Service- Sections Passed for Residence are as below.

2.1. Management center (Main terminal building / Station building)

There are two subject matters related to Management Center. In BCA's folder documents, there are plan, section and view drawings of the building. There are texts in Italian language and metric measurement system on these drawing documents. The layout of the drawing is comprised of the plan of two floors, one section and one roof plan. The drawings have 1/50 scale and the size of the building is 27.80x11.10 m (308,58 m^2). But it is not clear whether this building has existed before or Italian company has constructed it.

In the interviews and researches made in-site for the building, it has been stated that the management center (the main terminal building) was built as a "hunting lodge" by Sultan Abdulhamid II (1876-1909) or Mehmet VI (1918-1922); after that, it has provided service to aviation facilities (Taş, C., 2015; Zelef, 2014; Anonymous, 2017b). As this building cannot be seen in military maps of 1906 and Istanbul maps of the period (for example in Istanbul map published in French by Necip Bey) and can be seen in "German Blues" prepared by "Istanbul Maps Company" from 1926 to 1928, it has been thought that this building could also be built by Italian company. The architect's identity of the building can be questioned whether he was Gulio Mongeri[3]. The function of "Büyükdere Aircraft Station" in German Blues has been explicitly expressed; the management center near Bosphorus in an area close to the shore, near-by inward aircraft hangar, repair shop and office staff and crew buildings on stream side (Figure 7).

Space functions of management center (main terminal building) in BCA documents were regulated as is: Apart from bathroom and kitchen sections, it had 2 halls and 16 rooms. On the ground floor, 1 hall would be used for the services such as custom and passport inspection, ticket check, luggage weighing and passenger waiting as well as 1 scaffolding for management bureau, 1 clerk bureau, 2 custom offices, 1 flight bureau and dressing room wardrobes of pilots, 1 residence for wireless phone officer of radio sta-

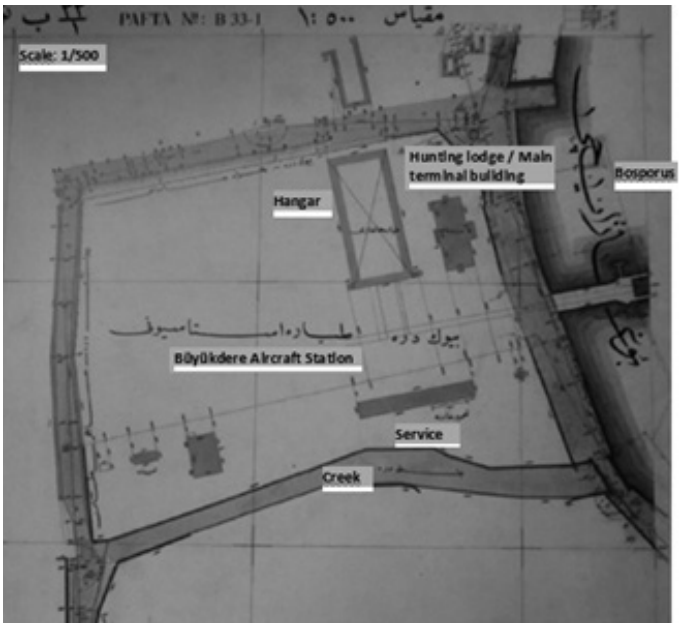

Figure 7. *German Blues map showing AEI facilities.*

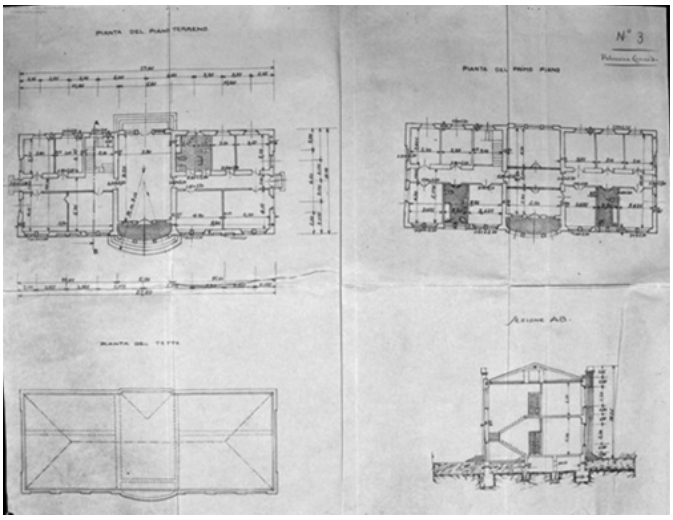

Figure 8. *AEI management / main terminal building, plan, section and the roof drawings (BCA 2).*

Figure 9. *AEI management / main terminal building view (BCA 2).*

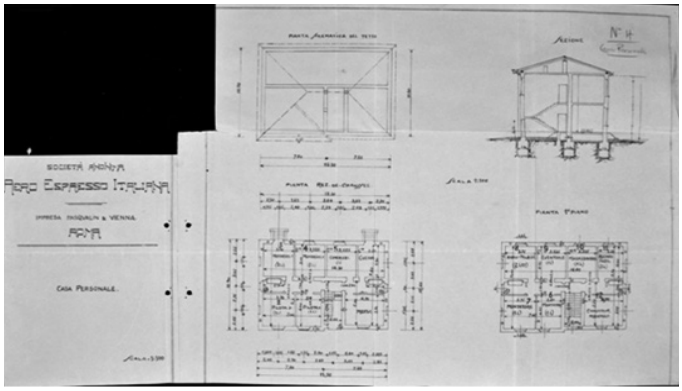

Figure 10. *Building of AEI officer and servant, plan, section and roof drawings (BCA 2).*

Figure 11. *Building view of AEI officer and servant (BCA 2).*

tion and scaffolding, 2 (primary) residences for pilots; on the top floor, 1 hall, 6 rooms which were allocated for residence of scaffolding headman, 1 room for servant, 1 room for residence of station clerk would be used (BCA 2) (Figure 8, Figure 9).

The architecture of AEI management/main terminal building has a style of "National Style". The building also gave service to the passengers of modern airline companies. Crown gate/central portal (main entrance), symmetrical façade arrangement, wide eaves, pointed Ottoman arches, turquoise ceramics used in façade and interior area are explicitly typical features of the style of "National Style". Despite of the fact that the building has been revised several times in time, it has substantially survived in its original state.

2.2. Building allocated to residence for officer and servant

It was comprised of 13 rooms. There were 3 bathrooms, 1 kitchen and 1 storeroom available and they were divided as is: 1- large room-station dining hall, 1-large room-intended for residence of custom officers, 1-cook rooms, intended for residence, 1-wardrobe, 1-intended for residence of station driver, 1-intended for residence of warehouse officer, 7-bedrooms at plane employee's disposal, the building allocated for residence of both manager and officer were equipped with heating system. Furthermore, there was hot water works in the building related to management (BCA 2).

The building at "National Style" style is simple in the highest degree (Figure 10, Figure 11). The building has survived almost in its original state; the windows at façade only were repaired and renewed.

2.3. Hangars

The station had two hangars. The original hangars were destroyed; and instead, reinforced concrete hangars/ateliers were built. On the other hand, written information with projects related to the original state of these hangars were obtained from BCA documents. In the light of these documents, the hangars can be reviewed. One of them was wooden and covered with corrugated iron. The size of this hangar was 52 m and opened section (irradiance) was 20x7 m. It was used from the year of 1926. With the existing internal rail installation, there were 2 planes in the type of "WAL". When one more rail line was added, there were 3 planes in this type in the hangar. The space located in this hangar was being used as carpenter's shop, tool house and worker wardrobe (BCA 2).

The second hangar was constructed in 1928 in accordance with object accounts of Brest and its partners accepted by German government and the projects approved by Ministry of Nafia (Public Works) management. The framework of this hangar was made of iron and covered by sheet and armored glass plates. Its size, length was 50 m, opened section (irradiance) was 10x30 m; its furniture was concrete. There was a central rail line available. There was also a longitudinal and central beam and durable against 5-ton weight. There was a movable 2-tones tackle on this rail. S.66 type 2 large planes could be located in this hangar. In case of comparison between two hangars, metallic hangar was lighter, more useful and more durable. This hangar could

[3]*Italian-origin architect was an academician in Istanbul Fine Arts Faculty in this period and that he could be involved in this project as a designer or consultant. Mongeri, as a part of this style (National Style), built many important buildigs in the new capital city Ankara. In the end of the 1920s and the early years of the 20th century, he became the architect of Italian embassy in Istanbul. This had to lead him to contact AEI.*

be in such a condition that could be easily disassembled. On the other side, workers could work relatively in a more difficult condition compared with the other hangar during extremely hot and cold weather (BCA 2).

These two hangars, with the size of 52x20x7 m and 50x30x10 m, located in Istanbul were constructed "with Italian speed" (Prange, 1998). The archive drawings were substantially detailed. In the drawings which were obviously designed and manufactured by a company from Milano "Pasqualin&Vienna", construction details and all construction information and details from infrastructure (foundations) to superstructure construction are seen. The hangars were assembled on-site (Figure 12, Figure 13, Figure 14, Figure 15, Figure 16, Figure 17). As stated above, these original hangars were destroyed and instead, reinforced concrete hangars/ateliers were built.

When number and capacity of hangars constructed by AEI Company are considered, Brindisi with 12-aircraft capacity was the main base and headquarters of airline service; Istanbul and Athens stations had smaller facilities to protect the aircraft. Athens covered a portable hangar with the size of 52x28 m (Prange, 1998). However, constructing the facility's hangars in Istanbul as reinforced concrete was one of the suggestions, it was not made of this material.

2.4. Building of various services

In this building, there were automobile garage, warehouse and workshop; in the workshop, there were machines and required tools. Having been constructed with the technique of masonry construction was in a style of "National Style" (Figure 18, Figure 19). The building has survived. And it provides service as a cafeteria.

Fuel tank (refuelling), electricity, water and fire protection installation have been planned in detail and created in AEI facility (BCA 2). In the same BCA (2) document, the relevant cost list of Büyükdere Pier is stated as below: The land (field purchase, filling etc.) was approximately 946.000 Italian Liras; building (management building, pilot, servant residence and service building, small building for crane, SCIOVOLO shed and scaffolding, light railways etc.) was approximately 1.850.000 Liras; hangars (material fee, shipment, assembly etc. costs, base and furniture) were approximately 1.593.000 Liras; tools (machine, furniture/goods, engine, vehicle etc.) were approximately 660.000 Liras as 5.049.890 İtalian Liras in total. The rate dated 26.8.1935 of that period was taken as basis (BCA 2).

Despite of the fact that the hangars were documented in BCA documents and that there were drawn projects,

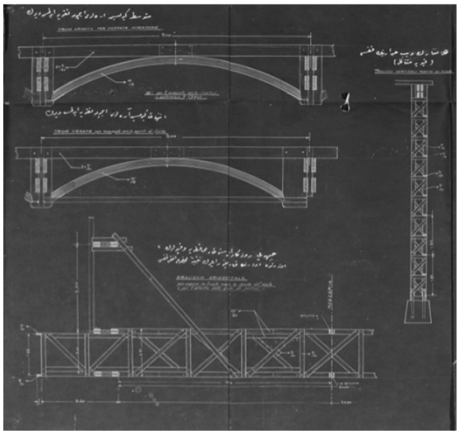

Figure 12. *AEI hangar no: 1 building (BCA 2)[4].*

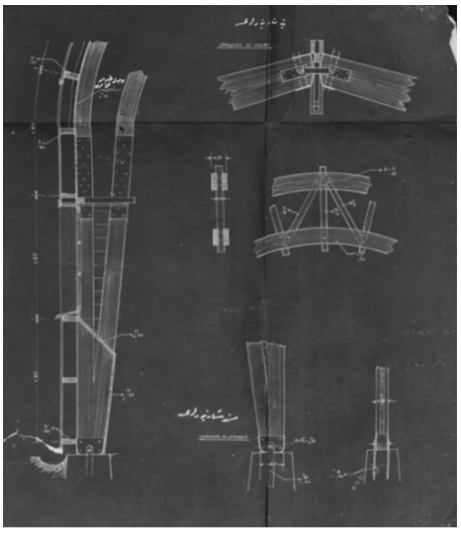

Figure 13. *AEI hangar details (BCA 2)[5].*

Figure 14. *AEI hangar details (BCA 2)[6].*

[4]*BCA, file no: 230-0-0-0_61-27-1_Information, plan regarding Büyükdere Seaplane Station.*

[5]*BCA, file no: 230-0-0-0_61-27-1_ Information, plan regarding Büyükdere Seaplane Station.*

[6]*BCA, file no: 230-0-0-0_61-27-1_ Information, plan regarding Büyükdere Seaplane Station.*

Figure 15. *AEI hangars, general view (BCA 2).*

Figure 16. *AEI hangar no: 1 building (BCA 2).*

Figure 17. *AEI hangar no: 2 building (BCA 2).*

Figure 18. *View of building with various services (BCA 2).*

Figure 19. *View of building with various services (BCA 2).*

constructions of other buildings were not completely clear. There are some doubts regarding that these buildings have existed before or were built for a certain purpose. Especially, as mentioned above; it is not clear who, when, for which purpose designed and who constructed the management building/main terminal building.

The architectural language of seaplane facility may be evaluated in general as below: In the agreement signed for the facility, there was a condition to construct an "ultramodern" facility. This matches with the "high modernism" ideology of Mustafa Kemal as the founder of the Republic of Turkey. Well-resolved/planned places (for administrators, pilots and passengers), advanced hangar technologies and interior arrangements are the concrete reflections. Interestingly, "local" architectural language (National Style) of main terminal building (hunting lodge) and other buildings are in contradiction with the ultramodern style of hangar buildings.

The main terminal building reminds train stations of the 19th century (particularly the interior space). This should not be ignored because there are significant connections with the trace of the 19th century in the development of aviation in the 20th century, especially in 1920s and 1930s (for example, connection of composition of modern airline with railway stations/train station buildings) (See: Yusufoğlu, 2017). While railway and exhibition/Expo structures marked on the 19th century, aircraft and aviation marked on the 20th century. While railway investments (and network/network systems) were given importance as of the middle of the 19th century, aviation investments (and network/network systems) became important in the 20th century, especially in 1920s and 1930s.

Besides, according to Sibel Bozdoğan, when "National Architecture" is considered with a historical perspective instead of the style, it can be said that it is the first "modern" discourse in Turkish architectural culture. Turkish architects made calculations with new building types, construction techniques and design principles for the first time (Bozdoğan, 2012). According

to her, all architectural culture of this period of the Republic is composed of a great effort regarding the reconciliation betwen "modern" and "national". Architectural culture and manifacturing of this period of the Republic (1920s and 1930s) compared foreign ideas and local realities but it is not an issue encountered only in Turkey but ambiguity, complexity and discrepancies seen all around the world (Bozdoğan, 2012). Accordingly, this facility has a particular importance as it is the concrete/symbolic expression of an important effort regarding the reconciliation of the period of the Republic between "modern" and "national".

Another important trace of the 19th and 20th century railway and aviation connection can be seen in the chain of ferry port stations constructed along the coasts of Istanbul between 1913 and 1917. These beneficial small structures have the features of "traditional", "national" and "local" reinforcement of modern life which was well-planned for inter-urban and steam-power transportation (Zelef, 2014). Similar example can be given for the chain of airports and seaplane stations. Accordingly Le Corbusier pointed out this in his book "Aircraft" written in 1935 as "*new rails... airborne vehicles!*" (Le Corbusier, 1987). In 1930s, prototype designs of railway stations were built in the various places of the country. These designs are repetetive, easy to carry modern images symbolizing the connection of central state to rural areas. Architectural language of these stations are composed of symmetrical, simple arrangements, flat roofs and geometrical façade compositions made in vertical and horizontal volumes (Bozdoğan, 2012). Similarly; the number and place of sea ports in the shores of Istanbul were discussed and international urban planners were invited for a competition in 1933. These people were French urban planner J. H. Lambert, Alfred Agache, German planner Herman Elgötz and French planner Henri Proust (Agache, 1934; Elgötz, 1934, 1935). Henri Proust highlighted the potential use that may be brought by seaplane in the city. Proust could not see that transportation via seaplane was comprised of connecting Istanbul to the other cities only but he speficied that this transportation type might be used as a part of daily routine in the city. He also evaluated the use of amphibious aircraft in the shores of the country as Istanbul, Bursa and Yalova (Proust, 1937). Indeed, it has been considered to locate seaplane stations in many points in long shores of Istanbul and Turkey (as railway stations/train station buildings) and to create an aerial chain in those years. In Decennary Plan of Proust (Plan Décennal 1943-1953), an industrial region was also included in planning for seaplanes (Bilsel, 2010). Indeed, enforcement of the First Five-Year Industrial Plan in 1934 is among the indicators that the state gave importance to industrial investments and this importance reflected on aviation policies and investments/facilities. In this sense, the reason why Turkish Government (after a long period of war years) allowed Italian AEI seaplane facility to carry out civil and commercial aviation under strict supervisions and controls can be explicitly understood.

Another subject matter pointed out by Sibel Bozdoğan is the most modern-like residences (villa-type single houses or multiple houses with garden) were constructed around new station buildings (station neighborhoods) for State Railway personnel in many rural cities (Bozdoğan, 2012). The same situation can be observed for AEI aircraft facility and Büyükdere as well. Aircraft facility was constructed in an area determined as around modern and luxury residence/life area (holiday resort of administrators and notables of the Ottoman State). This can be considered as a reflection of aviation, modernism and modern architectural language. In addition to that, while the State was publishing railway construction, new train station buildings, images, statistics etc. proudly in the magazine "Railways" in 1920s and 1930s, it increased the efforts to develop meteorology organization and its network and information/maps related to aviation network began to be created. The maps showing flight route of AEI can be seen in the relevant documents. Another figure marking his name to aviation and advertisement industry in this

period of the Republic was Ihap Hulusi Görey. He put his signature under the advertisement posters of Turkish Air Association (THK) and State Airlines (DHY) (See: Web resources related to Ihap Görey).

The Republic of Turkey has given particular importance to the construction of factory; in this regard, after a short while from the proclamation of the Republic, an aircraft factory was created and opened in Kayseri (1925). These structures were important both as modern buildings in general and as constructed manifestations/symbols of the idealism of "high modernism" of the Republic (Bozdoğan, 2012). As pointed out by culture historians, aircraft and relevant flight metaphor has created "a fantastic milestone with deep implications in modern avantgarde movement" (Bozdoğan, 2012) (Wohl, 1994). Passion of aircraft was received favorably in Turkey in which the founder of the Republic of Turkey was personally interested in civil aviation. After a short while from the proclamation of the Republic, establishment of Turkish Air Association (THK) and Turkish Bird, the school building located in Ankara with aircraft metaphor which was designed by Ernst Egli, as among the leading architects of the period, who was invited to Turkey are the concrete indicators that the recently-founded State gave importance to aviation policies (See: Alpagut, 2012).

Besides, the use of local features / local architecture and even "oriental" touch could be accepted as a result of several policies pursued by the company and in order to be accepted by Turkish authorities, to look well and to gain sympathy and even to create as a business mindset (Zelef, 2014). It means that, the victory gained by the country against the occupying forces after War of Independence should have been supported with art and architecture, namely cultural policies which has become an official language in art and architecture and granted privilege to nationalism in Turkey of that period (See: Bozdoğan, 2014). Therefore Italians took visionary strategic movements by employing retired army pilots as a part of their personnel (and it has been stated in the articles of the agreement that a certain percentage of the personnel must be Turkish). On the contrary to the facilities of AEI airline company which was established close to seaplane station of the military in Brindisi and Athens/Phalero, this facility located in Istanbul must be evaluated as a civil facility (Anonymous, 2016a). A wide villa for the pilots, administrators and president in Brindisi and a two-storey (duplex) villa was constructed for the pilots and management offices as a residence in Athens (Prange, 1998).

AEI established its headquarters at the address of Rue de Pera No: 146 in Istanbul, Galata in 1925. In the beginning of 1926, AEI brought four Savioi Marchetti S.55 seaplanes (I-AEGD, I-AEGP, I-AEGR and I-AFER) to Istanbul and obtained permit to carry out weekly test flights which were not providing income between Büyükdere and Pazarköy (Sarıgöl et al. 2009). The airport began to provide its first air service between Istanbul-Athens-Brindisi on August 1st, 1926. According to Turkish Air-mail Stamp expert Bill Robertson, the first flights of AEI were performed with three aircrafts departing from three cities simultaneously:

"*Three aircrafts were prepared at dawn: One of them was in Brindisi, the others were in Athens and in Büyükdere. All of them departed at 09.00. Pilot Maddelena departed from Brindisi with I-AMES landed to Brindisi at 14.00 and Pilot Captain departed from Athens with I-ADIM landed to Brindisi at 14.00 and Pilot Captain Berardi departed from Büyükdere for going to Athens with I-AFER. There was no direct flight between Brindisi-Istanbul on that day*" (Robertson, B.) (Sarıgöl et al. 2009).

The tickets were sold at the office of AEI in Galata and the passengers were carried to and from the bus. All meteorological information between Büyükdere and Athens as the first flight were provided by Yeşilköy Meteorology Station. At the end of 1926, AEI, as stated in the agreement, began to send Turkish pilots and machinists for employing and training. There was an agreement made between Greece and Turkey for the purpose of obtaining flight permit to fly on Turkish airfields for Greek pilots and on Greek airfields for Turkish pilots.

3. AEI and perception of the city

It must be discussed about AEI airline company, the passengers and aeriel view/perception of the city: AEI seaplanes were being operated in 3 main fields: Post/mail service, carried freight and passenger. Yet, the use of seaplanes for touristic purpose went back to 1930s. Unlike today, travelling with seaplane was a dream transformed to reality by ordinary "elite" or "super-elite" (See: Prange, 1998). The ticket from Italy to Istanbul or Rhodes included a stay in the famous hotel Grande Bretagne in Athens if an overnight stop was to be made. Travelling by air was an expensive experience. An airmail ticket from Brindisi to Istanbul cost for instance Lires 1300, in those days a two months working man's salary! Futhermore; the passengers had to be very careful not to fall in the water while disembarking from the plane. Flying was more for adventurous characters with strong nerves in those pioneer days! (Prange, 1998). Moreover; in tour organizations, exchanges between Turkish and Greek passengers, Suphi Nuri Ileri worked as one of the civil employees of AEI.

One of the most well-known people flying in AEI was Mrs. Evangeline Land Lindbergh who was the mother of Charles Lindbergh. Charles Lindbergh enjoyed a world-wide reputation by flying from New York to Paris for 3600 miles, 33.5 hours alone without stop in May 1927 and announced as a hero. His mother came to Istanbul in September 1928 with a Dornier Wal to escape from invasion of paparazzi. Before coming back to USA in January 1929, she accepted a diamond-studded prize presented by Turkish Air Association (THK) (Sarıgöl et al. 2009).

The campaign brochure of AEI S.A: Aero Espresso Italiana Crociere Aeree in Oriente opened "magical landscape" as "an extraordinary fantastic book" similar with Eastern inspiring voyage with geographical themes. "New, fascinating beauty" was also enriched with orientalist enthusiasm. Another campaign publication, tourism brochure "S.A. Aero Espresso Italiana Ente Nazionale Industrie Turistiche", gave an opinion for Eastern Mediterranean geography when looking down on pas-

Figure 20. *Aerial photographs taken above Istanbul with AEI seaplanes of Own Maynard Williams published in the magazine of December 1928 National Geographic (Williams, 1928).*

Figure 21. *Aerial photographs taken above Istanbul with AEI seaplanes of Owen Maynard Williams- European side, Robert College and around (Williams, 1928).*

Figure 22. *Aerial photographs taken above Istanbul with AEI seaplanes of Owen Maynard Williams- Çanakkale, Kilitbahir Castle (Williams, 1928).*

Figure 23. *Aerial photographs taken above Istanbul with AEI seaplanes of Owen Maynard Williams- Entry of the Dardanelles, Kum Castle at the place viewing Aegean Sea (Williams, 1928).*

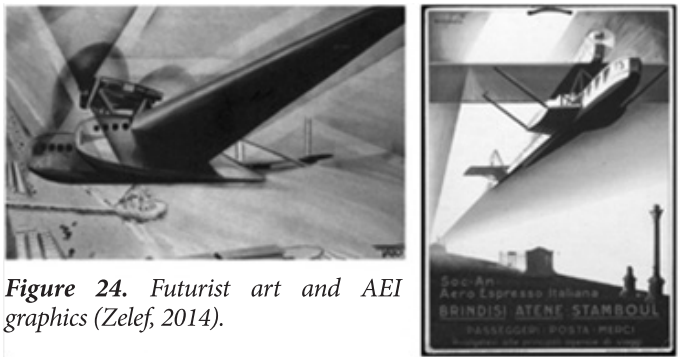

Figure 24. *Futurist art and AEI graphics (Zelef, 2014).*

sengers (S.A. AEI) (Zelef, 2014) (Anonymous, 2016b; Anonymous, 2016c).

The poetical tone in the brochure was concluded by being reflected with the roles of "grandness", "majesty", "spaciousness", "illimitableness", "endless beauty" in the explanations of Mehmet Ali as one of the pilots participated to AEI. He claimed that the passenger seeing Bosphorus would not want to go down back anymore when they saw the most beautiful panorama in the world:

"...And then the most beautiful panoramas in the world under your feet. Mountains, seas, shores and brooks were flowing. The rudest person travelling in the plane could be a poet instantly. The sluggish frame narrowing the pleasure of eyes on land does not exist on air. There is grandness, majesty, expansion as far as the eye can see, illimitableness and an eternal beauty above. You must see Bosphorus from above. I assure you that you would not go back to touch down" (Mehmet Ali) (Kandemir, 1935; Sarıgöl et al. 2009).

Explanations of orientalist passengers followed the explanations in which historical and natural value of the city were defined with graves, mosques and roads. Modernization attempts of the city and the structures constructed at the age of Republic across Bosphorus from 19th century could be watched from above throughout the flight route.

Many photos taken from above with AEI seaplanes were published in December 1928 National Geographic magazine, in the article of Owen Maynard Williams. Apart from Istanbul, the locations on flight route, for example Çanakkale was photographed from above. Within this context, these photos have a nature of being historical document and historical heritage (Figure 20, Figure 21, Figure 22, Figure 23).

Similar with Owen Maynard Williams mentioning aerial views taken from AEI aircrafts, another person as one of the well-known journalists of that period and mentioning aerial view is Yunus Nadi. He thought to go back to Istanbul with a plane for his return as he had to go to Kayseri for Ankara-Kayseri railway opening ceremony, so he could be in both Kayseri and Istanbul. He travelled to Istanbul Yeşilköy airfield at the speed of 70-80 km with an open-top plane with one passenger capacity. The aircraft departing from Kayseri in the morning on May 30th, 1928, arrived to Istanbul at afternoon on the same day. Having explained what he saw in detail, Nadi specified that he could not forget brilliance of rapidly changing landscape and aerial voyage throughout his life (Nadi, 1930).

"Manifesto dell'aeropoesia" announced by F.T. Marinetti appeared in 1930s in Italy, the one regarding aviation of Futurist manifesto, "aero-pittura" and "aero-poesia" themed graphic works were seen in tourism brochure of AEI (See: Yusufoğlu, 2017) (Figure 24). This trend is frequently seen in promotional brochures of AEI. In these brochures; seaplane, Turkey and Istanbul themes are frequently used (Figure 25, Figure 26, Figure 27).

Aviation has been qualified as the subject matters of aircraft and seaplanes "aero-poesia" and Futurist literature, therefore they are inspiring for authors and there are also popular authors in Turkey. In Intermezzo by Fikret Adil, how people perceive new transportation form in Büyükdere in 1930s was reflected (Adil, 1988).

AEI carried out 148 round trip flights between Istanbul and Athens by carrying 401 passengers, 800 kg courier and 303 kg letters in 1932 as the most brilliant year (Sarıgöl et al. 2009). But along with the breach of company laws and political tension increasing between Italy and Turkey due to Mediterranean policy of Mussolini and violations of rules, Turkish Government terminated the agreement and purchased the facility on February 21st, 1936:

"Despite of that AEI Company carried out commercial air services between Istanbul and Brindisi, it has been

observed that it also flies within prohibited regions and around. Despite of being warned many times, it continues to violate our rules. Under the license dated June 27th, 1935 and numbered 104/964/7362, Board of Deputies decided to terminate the agreement of AEI and its assets to be purchased." Grand National Assembly Decree no 2919, June 27th, 1935 (Sarıgöl et al. 2009).

When AEI Büyükdere facility is taken into account together with "Civil Aircraft School" of Vecihi Hürkuş situated in Kadıköy and "Beşiktaş Aircraft Factory"[7] of Nuri Demirağ and "Yeşilköy Airfield and Sky School" facilities intended to be operated with these facilities, they constitute integration. The districts in Istanbul such as Büyükdere, Kadıköy, Beşiktaş and Yeşilköy have historical importance in the context of national and international initiatives[8]. Architectural structures and facilities of the national and international enterprises in the context of aviation is an evidence of importance given to aviation in this period. Furthermore, aviation architecture is the ground of the "modern identity".

4. Conclusion

Having been operated as a popular example of the new transportation form for that period with a nature and size equally good with Western examples in 1920s, AEI facility and seaplane service is the concrete evidence of existence of considerably significant and technologic development for Republic of Turkey. One of the main industrial policies of Republic of Turkey was aviation. These facilities and structures which were almost unknown in architecture and urban history have a separate importance within architecture history because it has many innovations. Thanks to the use of progressive/advanced technology, it must be considered as a part of "heritage of aviation industry" in Turkey. Unfortunately, it has been seen that transmitter, railway transmission device, original hangars were revised and the area was separated from its particular crucial components. In this respect, it can be put forward that Istanbul has lost an unmatched modern aviation complex.

Figure 25. *Aero Espresso Italiana, 1930 tourism brochure (Anon., 2016a).*

Figure 26. *Aero Espresso Italiana, 1932 tourism brochure (Anon., 2016b).*

Figure 27. *Aero Espresso Italiana post vignette related 1920s and 1930s (Anon., 2016c).*

[7] *See: Yusufoğlu, Kara Pilehvarian, 2017, Beşiktaş Aircraft Factory (1936-1943).*

[8] *See: Yusufoğlu, 2017, "Aviation and Aircraft Industrial Structures in Turkey: 1923-1940", Ph.D. Thesis, YTU, Istanbul.*

As AEI facility includes examples of modern architecture as well as National Architecture style, it has historical importance. Combination of newly developing aviation architecture and function scheme with this manner (such as terminal/station building) must also be interpreted as a very interesting innovation. In this regard, it is emerged that Istanbul has no missing part compared to example aviation architecture in the US and Europe, namely Istanbul consists of parallel running regarding the use of "seaplane" as a new and brilliant luxury travel type on Western examples in 1920s and 1930s. Air service for civil and commercial purposes in Turkey integrated with Eastern fantasy of West and orientalist discourse, modernity with AEI, a new energy sparked. The railway stations of the 19th century and the chain of ferry ports of the beginning of the 20th century brought the chain of seaplane stations (aerial network chain/connection) into question in 1920s and 1930s. Aerial photographs taken from the aircraft became historical documents of view from those periods.

The airport was transferred to Turkish Fleet in 1937. In other words, the facility was nationalized. Today all these facilities survive (only hangars were re-constructed/re-built) and are operating as Turkish Coast Guard Command. Recently, the importance of AEI facilities in Büyükdere has been forgotten and it has been discussed to convert "hunting lodge" of Ottoman period as the management building of the facility into a museum. Yet, the facility (management/terminal building, hangars, port, officer building, various service building, warehouse/workshop etc.) has a unique historical importance in terms of many aspects and breaking grounds. This facility is considerably the concrete indicator of "aviation architecture" and even "aviation culture" in Istanbul in 1920s and 1930s.

References

Adil, F. (1988). *Intermezzo (Bohem Hayatı)*, Brief Presentation of Iletisim Publishing, Istanbul.

Agache, A., (1934). "Büyük Istanbul Tanzim ve Imar Programı" (Arrangement and Reconstruction of Greater Istanbul), in "Cumhuriyet Dönemi Istanbul Planlama Raporları 1934-1995" (Planning reports of Istanbul in the Republican Period 1934-1995), ed. Şener Özler, TMMOB Istanbul Büyükkent Branch, 2007, Istanbul, 47-48.

Alman Mavileri: I. Dünya Savaşı Öncesi Istanbul Haritaları, Istanbul Büyükşehir Belediyesi (German Blues: 1913–1914 Istanbul Maps Before the World War I), Published by Greater Municipality of Istanbul, 1913-1914.

Alpagut, L. (2012). Cumhuriyetin Mimari Ernst Arnold Egli, Boyut Publishing Group, Istanbul.

Anonymous (2017a), Aero Espresso Italina, http://www.buyukderebalikcilardernegi.biz/aeroexpresso.pdf, (Accessed date: 16.10.2017).

Anonymous (2017b), AEI: Aero Espresso Italyana, https://aeroturk.blogspot.com.tr/2017/04/aei.html (Accessed date: 16.10.2017).

Anonymous (2016a), Aero Espresso Italiana, (Lo Storico E Glorioso Idroscalo Di Brindisi 1914-1969), http://www.brindisiweb.it/storia/idroscalo.asp, (Accessed date: 04.10.2016).

Anonymous (2016b), Travel Brochure for the "Soc. An. Aero Espresso Italiana", 1932, http://www.travelbrochuregraphics.com/Airline_Pages/Airlines_16/AEI1.htm, (Accessed date: 04.10.2016).

Anonymous (2016c), Travel Brochure for the "Soc. An. Aero Espresso Italiana", http://www.travelbrochuregraphics.com/Top_Level_Pages/Airlines/Airlines_Page_16.htm, 1932 (Accessed date: 04.10.2016).

Archive of Prime Ministry of Republic (BCA) Documents-1: Document Location no: 230-0-0-0_56-2-1 File Documents (The offers regarding Istanbul Brindisi airline organization and hangar construction made by Aero Espresso Italiana Aircraft Company, plans of the type to be used, route map to be followed 09.12.1924).

Archive of Prime Ministry of Republic (BCA) Documents-2: Document Location no: 230-0-0-0_61-27-1 File Documents (Information, plans, photographs, material list regarding Büyükdere Seaplane Station and the agreement between Aero Espresso Italiana Company Public Works 26.08.1935).

Bilsel, C., Pinon, P., (eds.) (2010). *From the Imperial Capital to the Republican Modern city: Henri Prost's planning of Istanbul (1936-1951)*, Istanbul Research Institue, Istanbul.

Bozdoğan, S., (2012). *Modernizm ve Ulusun İnşası - Erken Cumhuriyet Türkiyesi'nde Mimari Kültür*, Istanbul, Metis Publication, 3. Edition.

Corn, J. (1983). *The Winged Gospel: America's Romance with Aviation 1900-1950*, New York, NY: Oxford University Press.

Douglas, D. (1996). *The Invention of Airports: A Political, Economic and Technological History of Airports in the United States, 1919-1939*, PhD Thesis, The University of Pennsylvania.

Eggebeen, J. (2007). *Airport Age: Architecture and Modernity in America*, PhD Thesis, The City University of New York.

Elgötz, H., (1934). "*Cumhuriyet Dönemi Istanbul Planlama Raporları 1934-1995*", ed. Şener Özler, TMMOB Istanbul Büyükkent Branch, 2007, Istanbul, 22.

Elgötz, H., (1935). Istanbul Şehir Planı, *Arkitekt 50*: 61-68.

Ihap Hulusi Görey, graphic works related to aviation, http://www.kokpit.aero/index.php?route=image/image_gallery&image_gallery_id=320&page=6, 25.11.2015.

Ihap Hulusi Görey, graphic works related to aviation, http://www.tasarimdelisi.com/tasarimlar/sanat/turk-grafik-sanatinin-kurucusu-ihap-hulusi-gorey/, 18.07.2016.

Kronenburg, R. (2002). *Houses in Motion- The Genesis, History and Development of the Portable Building*, Wiley-Academy, Second Edition.

Kandemir, (1935). Görmüş Geçirmiş bir Türk Pilotu İle Başbaşa, *Hafta Dergisi*, 71.

Le Corbusier, (1987)(1935). *Aircraft*, Trefoil Publications Ltd., London.

Nadi, Y. (1930). *Kırk Dokuz Saat Zeplin ile Havada*, Istanbul Republic Printing House.

Pearman, H. (2004). *Airports- A Century of Architecture*, Harry N. Abrams, Inc. Publishers, New York.

Prange, V., (1998). *Aero Espresso Italiana S.A.*, PECO Printing, Amsterdam, The Netherlands.

Proust, H. (1937). "*Istanbul Hakkında Notlar" (Notes About Istanbul), "Cumhuriyet Dönemi Istanbul Planlama Raporları 1934-1995*", ed. Şener Özler, TMMOB Istanbul Büyükkent Branch, 2007, Istanbul , 121.

Sarıgöl, G., Hürtürk, K., Kline, S. (2009). *Türkiye'de Ticari Havacılık Tarihi-1909/1967 Pervaneli Uçaklar Devri*, D Publishing, Istanbul.

S.A Aero Espresso Italiana Ente Nazionale Industrie Turistiche, 3.

Spenser, J. (2008). *The Airplane: How Ideas Gave Us Wings*, Smithsonian Books, HarperCollins Publishers, New York.

Taş, C. (2015). Interview, Turkish Fleet Personnel.

Williams, M.O. (1928). *National Geographic*, December.

Wohl, R., (1994). *A Passion for Wings: Aviation and the Western Imagination 1908-1918*, New Haven, CT: Yale University Press.

Yusufoğlu, T., Kara Pilehvarian, N. (2017). Beşiktaş Tayyare Fabrikası (1936-1943) / Beşiktaş Aircraft Factory (1936-1943), *Megaron, YTU Faculty of Architecture, e-journal*, 12(2), 249-262.

Yusufoğlu, T. (2017). "Türkiye'de Havacılık ve Uçak Sanayii Yapıları:1923-1940" (Aviation and Aircraft Industrial Structures in Turkey: 1923-1940), Dissertation, YTU, Istanbul .

Zelef, H. (2014). "Impacts of Seaplanes and Seaports on the Perception and Conception of the Modern City: The Case of Istanbul", *Journal of Urban History*, 40(6), 1028-1053, SAGE Publications.