



Lindbergh 1/78 G4M "Betty"  
by Bob Arko

## Japanese Army Air Force Heavy Bomber Evolution

by Peter Starkings  
Reprinted from 'JAS Jottings',  
Vol. 5, No. 2, 1999

### Part 1

#### INTRODUCTION

From the time they first developed their air arm, the Japanese Army was very slow in appreciating the need for a long range heavy bomber aircraft, particularly in an offensive role. They clung to the idea that the main task of aircraft was reconnaissance, protected by a fighter escort. Furthermore, they saw themselves concerned mainly with possible relatively local operations against Russia or China, so little effort was applied to heavy bomber development.

Subsequent events in China and Manchuria during the 1930s caused them to reappraise and re-organize their use of aircraft and develop, albeit still reluctantly, new types for new duties. Heavy bombers did not receive serious attention until the mid 1930s, which, compounded by later delays in developing replacements and bringing them into service, was to have far reaching consequences for Army operations in WWII.

In any event, the three examples classified as heavy bombers by the Army which did see service in WWII (Ki-21, Ki-49 and Ki-67) were only really comparable to contemporary Allied twin engine medium bombers in general performance terms. Much new development effort was diverted

into overcoming their shortcomings or converting them to meet other more pressing needs of the moment. The latter included torpedo bombers, anti-submarine patrols, night fighters, transports and, almost inevitably, *Kamikaze* attacks.

#### EARLY FOREIGN INFLUENCE

In 1921 the Army obtained a Farman F50P from France, which they designated Type Tei 1 Bomber, followed by one F60.Bn.2 in 1922 and two F.60M (an improved version) in 1923, which were designated Type Tei 2 Bomber. These aircraft were imported to study the feasibility of daylight bombing with this category of aircraft, in readiness for possible establishment of a heavy bomber squadron.

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## TCAH Officers

**President**, Larry Donovan

**Vice-President**, Merrill Anderson

**Secretary**, Mark Jacques

**Treasurer**, Dave Hueffmeier

**Historian**, Tom Norrbohm

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## TCAH This Month

The monthly meeting will be held Saturday January 9, at Fleming Field, South St. Paul, beginning at 1:30 pm. Vendor baiting will begin about 12:30, so come early.

Picture your model someplace in the Newsletter!

## From the President

*by Larry Donovan*

Although this newsletter will "hit" your e-mails, Website, or mail after the 1st of January, I do hope that everyone and your families had a wonderful and safe Holiday Season. For those of you in "warmer" climes, and do not have to contend with the condensation of your breath in freezing workbenches we "up north" envy you greatly. For those of the club who are now frost and/or snowbound for the rest of the winter, let us know if we should send the St. Bernards to rescue you....or should we just send the cask of Brandy?

If you missed December's meeting, we had a wonderful turnout for the year-end club contest. This 2nd annual event drew 65 models to the tables, each one showing a high degree of craftsmanship. My thanks go to the judges (ie. the club membership!) and to Bernie Kugel for tabulating the results. Kudos also to the vendors who participated in accepting the prize certificates awarded to the winners in each category. There were some great things about this year's contest. The "big" scale, 1/32nd, made a comeback with some excellent entries. Most gratifying was the participation in the "Juniors" category. As far as the latter, there were some very well built and finished models that were of great quality. I know I have written on the topic before, but attracting a younger generation into the hobby and actively encouraging that participation will continue to increase our membership in the years to come. A very special thanks to the adults who mentor the younger modelers for helping this come to fruition. I will not take up the time to further "expound" on this topic, but for those interested to pursue it further, the current issue of **Military Aircraft Modeller** features an editorial by Neil Robinson addressing the same issue---my limited vocabulary can not put it better than he.

Going into the New Year, specifically the January meeting, we have two tabled items from the December meeting to discuss. The first one, which I feel is very important that we should take it up before the first break concerns Nordic Con. The first step in this process concerns whether we will go ahead and have the event in 2010, or as some have expressed, should the club "take a break" and recharge our collective batteries before holding another event. If the expression of the club is to hold a Nordic Con this year, the next issues are when and where. Our IPMS chapter contact, John Roll, has received word from our Regional leadership that as of now IPMS is holding September 26th open so we do not conflict with another club(s) dates, as we ended up doing in 2009. Another consideration is to choose a venue, as the Knight's Hall in Fridley will be unavailable to us for 2010. Thus if the club decides to hold another Nordic Con we will have to approve a site in January. Bob Maderich and John Ross will be reporting to the Club at the January meeting with potential sites as well as the fees to be incurred in securing one. Finally, if we are having a 2010 Nordic Con, it is incumbent, as far as advertising the event with all due speed, that we decide on a theme in the January meeting.

To give an alternate view, what will the club do unique or special if we decide to not have a Nordic Con this year. I suppose one way to approach this is to do nothing "special", that Club members are "burned-out". Another alternative would be to bring back the annual Club Banquet, which has not been done for several years, certainly not in my experience as a club member. Finally some have suggested an alternative such as an "Invitational Contest", which would be along the lines of our year-end contest.

Whether we choose a Nordic

*(Continued on page 3)*

## Airline Chatter

by Terry Love

U S Airways will reduce capital outlays over the next three years by \$2.5 billion by deferring delivery of 54 Airbus airliners. U S Airways will take delivery of 28 Airbus A-320s and A-330s since the financing for these are already in place.

U S Airways lost \$80 million in the third quarter of 2009 – usually the most profitable quarter of the year that consist of July, August, and September.

Delta Airlines has retired the last ex-Northwest Airlines Boeing 747-251F freighter. On December 26, the last eastbound freighter arrived in Asia via Anchorage, Chicago, and Los Angeles. It was retired to Pinal Air Park, near Tuscon, Arizona.

Korean Air purchased five Boeing 747-800s valued at \$1.5 Billion.

COPA Airlines ordered two more Boeing 737-800s. COPA presently has 13 of the Boeing 737-800s in their fleet.

Airbus has ended production of the Airbus A-340 long range airliner. A total of 216 were built. The last one was delivered on October 8, 2009 to Global Jet who will configure it into a VIP aircraft.

Boeing's new 747-800 fills the need for an airliner between 300 and 550 seat aircraft. The -800 is stretched 18.3 feet from a Boeing 747-400 providing 467 seats in a three class configuration. It has a range of 8,000 nautical miles using the new GENx-2B fuel efficient engines. It provides a 13% lower seat-mile cost than the 747-400, and 26% more cargo volume. It has a newly designed wing and a "glass cockpit". It draws on technologies discovered in the development of the new Boeing 787 Dreamliner.

United Airlines announced their long anticipated order for 25 Boeing

787 Dreamliners and 25 Airbus A-350s. All major airlines will be watching the economics of this order. Both aircraft are designed and built on the same requirements using very similar technologies. Who ever has the best economics will sell LOTS of airplanes. Deliveries to United Airlines will be between 2010 and 2019 as United Airlines retires their Boeing 747s and Boeing 767s. United Airlines also obtained 50 more jets from each manufacturer as options. Cost is around \$9 billion.

Boeing's new Boeing 787 Dreamliner had its first flight on December 15. It was a major milestone in the development of the new high tech airliner. The first flight lasted 3 hours and performed perfectly.

Japan Air Lines will likely choose Delta Airlines as an overseas partner instead of American Airlines. Why? Because Delta Airlines is old Northwest Airlines in the Pacific, and Northwest Airlines has been on great terms with JAL for years.

All Nippon Airways – ANA – ordered 5 Boeing 777-200ERs and 5 Boeing 767-300ERs for \$2.1 billion. The Boeing 767 order is a real surprise for Boeing who is considering halting the production of the 767 series due to few orders on the books for it. However, Boeing is stretching out production of the 767 pending the huge US Air Force decision for the next tanker orders, which could be a version of the 767. ANA is also considering ordering the Boeing 787 Dreamliner. ANA is hoping to grab growth as big rival Japan Air Lines – JAL - downsizes due to financial and economic reasons.



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Con, or one of the alternatives, I personally feel that if one raises their hand to vote "yea" you are also committing yourself to help in that alternative in some fashion. For example if we do a Nordic Con can you help with the registration table so we can do shorter shifts in that area. Can you help judge a category; the majority of our judges at 2009 Nordic Con came from outside the club...don't get me wrong here, I deeply appreciate other clubs helping out, but could we have more judges from our club? Maybe you can help with advertising, contacting vendors, helping setup and breakdown on the day of the event. The point is that it seems to me that we see the same faces doing the work year in, year out (and I am personally speaking, **not** speaking for the club or the office of Club President!). And if we do not have a Nordic Con what do we want to do as an alternative? I urge everyone to carefully weigh these questions so when we decide at the January meeting we can have a very thought provoking discussion on these topics.

Another issue that was tabled at the December meeting was the issue of Senior dues. Our new Secretary, Mark Jacques, will be briefly summarizing the proposal elsewhere in this Newsletter. I urge you to read this letter so we can have a definite vote on this topic.

Finally (at last!), the club officers will return to holding a business meeting after the regular meeting. I really want to stress that this meeting is open to **all** of the Club, we definitely want to be totally transparent here. Some of the issues/topics will be progress reports from the Nordic Con chair (if we are having the event); potential guest speakers; discussion of how the Club has decided a particular action and how best to carry that decision out per the Club's wishes. It could also be a forum where Club members outside the leadership group

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can take ideas and proposals for future club activities. Based on such meetings under previous administrations, I do not foresee taking more than half an hour to forty-five minutes in length; with most being under fifteen minutes. Again I want to stress the completely open nature of these meetings---except for our super-secret Rites of Initiation, you know drinking blood-red wine and so on....

In closing I am looking forward to all of the ideas to come in the January meeting, and hopefully, weather permitting, we will have a great turn-out representative of the club. Who knows, with the up and down weather in the past four months, it may be sunny and seventy degrees in the shade in January---el Nino you know. Happy modeling and see you at the meeting!



### Tabled For Discussion

by Mark Jacques

New business from 12 December 2009 T.C.A.H. general meeting tabled for discussion at the 9 January 2010 meeting: 1.) Amend the Constitution and By-Laws to address the class of "Senior" member; 2.) Discussion of Nordicon – do we: a.) continue to hold a Nordicon event in 2010, b.) if so, in what form?

**Tabled Item 1:** Proposal to amend the Constitution and By-Laws to address "Senior" members. As written the Constitution and By-Laws of the Twin Cities Aerohistorians address member ship as follows:

#### *"Twin Cities Aero Historians*

#### *(T.C.A.H.) Constitution*

#### *Article Eight*

Anyone with an interest in aviation is eligible for membership. The payment of annual dues is required for membership. Junior members (those under 18 years of age) pay

one-half of regular dues. Non-dues paying members will not receive the monthly newsletter."

#### **"By-Laws of the Twin Cities Aero Historians (T.C.A.H.)**

**3) Membership: Membership in T.C.A.H. is open to anyone with an interest in aviation history, without limitation as to the number of members. Membership shall comprise of three types:**

a. Regular: Regular members shall be required to pay annual dues, be invested with the right to vote and be awarded all privileges to which regular members shall be entitled.

b. Honorary: An individual whose membership has been awarded for an outstanding contribution to T.C.A.H. or the field of aviation. Honorary members do not pay dues or have the right to vote or to hold office.

c. Life: An honor, which may be awarded by vote in a meeting called for said purpose to a long-standing member with distinguished and measurable (e.g. T. C.A.H. Officer, contest chairman, newsletter editor, etc.) service to T.C.A.H. who has relocated to a geographic area that would preclude regular attendance of meetings. Life members do not pay dues, but retain all other rights and privileges accorded to Regular members."

**Discussion:** Each November when the discussion for dues comes up the question is called for the rates for "Junior" and "Senior" membership. It has been the practice of the club to vote to allow dues rate for both of these classifications to be at one-half the rate of "Regular" members. For purposes of this discussion, the age threshold for senior member qualification has been offered to be 60, 62 or 65. Another point for this discussion is: should "Junior" members be invested with the right to vote and be awarded all

privileges to which regular members shall be entitled?

The proposed changes are highlighted in **RED**. (Editor's note: the red text only shows up in the online version of the Newsletter.) It is proposed to amend Article Eight of the Constitution to read:

#### *"Twin Cities Aerohistorians (T.C.A.H.) Constitution*

#### *Article Eight*

Anyone with an interest in aviation is eligible for membership. The payment of annual dues is required for membership. Junior members (those under 18 years of age) **and Senior members (those 60, 62, or 65) years of age or older** pay one-half of regular dues. Non-dues paying members will not receive the monthly newsletter." Note: the age threshold must be assigned by general vote.

It is further proposed to amend Item 3 of the By-Laws to read:

Either Option 1: **"By-Laws of the Twin Cities Aero Historians (T.C.A.H.)**

**3) Membership: Membership in T.C.A.H. is open to anyone with an interest in aviation history, without limitation as to the number of members. Membership shall comprise of five types:**

a. Regular: Regular members shall be required to pay annual dues, be invested with the right to vote and be awarded all privileges to which regular members shall be entitled.

**b. Junior: Junior members shall be required to pay annual dues (at one-half the rate of Regular members), be invested with the right to vote and be awarded all privileges to which regular members shall be entitled.**

**c. Senior: Senior members shall be required to pay an-**

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**annual dues (at one-half the rate of Regular members), be invested with the right to vote and be awarded all privileges to which regular members shall be entitled.**

d. Honorary: An individual whose membership has been awarded for an outstanding contribution to T.C.A.H. or the field of aviation. Honorary members do not pay dues or have the right to vote or to hold office.

e. Life: An honor, which may be awarded by vote in a meeting called for said purpose to a long-standing member with distinguished and measurable (e.g. T.C.A.H. Officer, contest chairman, newsletter editor, etc.) service to T.C.A.H. who has relocated to a geographic area that would preclude regular attendance of meetings. Life members do not pay dues, but retain all other rights and privileges accorded to Regular members."

Or Option 2: " **By-Laws of the Twin Cities Aero Historians (T.C.A.H.)**

**3) Membership: Membership in T.C.A.H. is open to anyone with an interest in aviation history, without limitation as to the number of members. Membership shall comprise of five types:**

a. Regular: Regular members shall be required to pay annual dues, be invested with the right to vote and be awarded all privileges to which regular members shall be entitled.

**b. Junior: Junior members shall be required to pay annual dues (at one-half the rate of Regular members), be awarded all privileges to which regular members shall be entitled.**

**c. Senior: Senior members shall be required to pay annual dues (at one-half the rate of Regular members), be invested with the right to vote and be awarded all privileges to which regular members shall be entitled.**

d. Honorary: An individual whose membership has been awarded for an outstanding contribution to T.C.A.H. or the field of aviation. Honorary members do not pay dues or have the right to vote or to hold office.

e. Life: An honor, which may be awarded by vote in a meeting called for said purpose to a long-standing member with distinguished and measurable (e.g. T.C.A.H. Officer, contest chairman, newsletter editor, etc.) service to T.C.A.H. who has relocated to a geographic area that would preclude regular attendance of meetings. Life members do not pay dues, but retain all other rights and privileges accorded to Regular members."

**Tabled Item 2.:** Discussion was raised regarding the viability of continuing to hold another Nordicon event in 2010 after sustaining a net loss for the first time (due to a combination of factors enumerated by Bernie K.). Questions:

1. Is the T.C.A.H. to hold another Nordicon event in 2010?

2. If the answer is No, what then?

a. Join with other local clubs to compete for an IPMS Re-

gional Event?

b. Table for later discussion in X months?

3. If the answer is Yes;

a. In what form?

i. As held before?

ii. As an invitational for Local Clubs (RPM-Mpls, MMFS, MSM, etc.)?

iii. Other?

b. When?

c. Where?

d. Form "Permanent" committee? (Note, we already have an Ad-Hoc committee listed on the TCAH web-site [Bob, Sean, and Larry] published as contacts for Nordicon.)



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After evaluation, the aircraft were considered unsuited to the duty required of them and Kawasaki were invited in 1924 to develop a new heavy bomber with better performance. In turn, Kawasaki requested Dornier to assist in preparing the design, which was done with great secrecy in Switzerland under the designation Do.N.

By early 1926 two Kawasaki-Dornier Do.N prototypes were completed by Kawasaki and the design was finally accepted a year later as Army Type 87 Heavy Bomber. A further 26 were built between 1928 and 1932, including a small number by the Army Artillery Arsenal at Atsuta. Four were used experimentally on operations during the Manchurian incident of 1931, but they were not liked by their crews who considered them to be too slow and vulnerable.

CONTINUED FOREIGN

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## TCAH Annual Club Contest by Bernie Kugel

We had our second annual club contest this past month. We had a total of 65 entries by 24 members. We had 8 categories and gave out gift certificates to be used on our vendors.

The winners are:

### Category 1, Aircraft 1/72

1st	John P. Ross	F-100
2nd	John R. Ross	F-117
3rd	Steve Janstcher	Predator

### Category 2, 1/48 and larger Aircraft up to 1936

1st	Merrill Anderson	Fokker E.II
2nd	Mark Krumrey	Neiuport 28

### Category 3, 1/48 Aircraft 1936-Present

1st	John Bernier	P-39
2nd	John R. Ross	Bf-110
3rd	Dennis Strand	B-26

### Category 4, Armor all scales

1st	David Nelson	Merkava Mk IV
2nd	Mark Jacques	Polish Firefly
3rd	Steve Jantscher	Panzer 38T

### Category 5, Ships

1st	Don Stuafter	Borodino
2nd	Chuck Bauer	Suvarov
3rd	Gary Anderson	Black Falcon Pirate Ship

### Category 6, Auto and Misc.

1st	Bob Ferriera	240Z Datsun
2nd	Bob Maderich	Bugatti
3rd	Don Stauffer	Ferrari

### Category 7, Juniors

1st	Nicholas Rewey	Corsair
2nd	Jacqueline LeVinte	VW Beetle

### Category 8, 1/32 Aircraft 1936-Present

1st	Tom Norrbohm	Bf-110
2nd	Steve Rewey	Ki-84 Frank
3rd	John Dunphy	P-47



## Upcoming Model Events

**6 February 2010 – Hope It Don't Snow Show** – Zumbro Valley Scale Modelers @ Ramada Hotel & Conference Center, 1517 16<sup>th</sup> St. SW, Rochester, MN, 9:00 am to 5:00pm. Registration begins at 9:00 am.

**27 March 2010 – 6<sup>th</sup> Annual Model Show and Contest** – IPMS/South Central Modelers @ Five Lakes Center, 308 South State Street, Fairmont, Mn.

**22 to 24 April 2010 – AMPS 2010 International Convention** – The Armor Modeling and Preservation Society @ WW2 Victory Museum, Auburn, IN. 2010 Theme: "Bought & Forgotten".

**29 May 2010 – Boots and Treads Show** – Minnesota Military Figure Society @ Flemming Field Municipal Airport Terminal Building, 17345 Henry Street, South Saint Paul, MN.

**6 June 2010 – 16<sup>th</sup> Annual NNL-North** – RPM Minneapolis @ Bloomington Knights of Columbus Hall, 1114 American Blvd., Bloomington, MN 55420

**4 to 7 August 2010 – IPMS/USA National Convention** – IPMS/USA, West Building, Phoenix Convention Center, Phoenix, AZ.



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### INFLUENCE

At the time Type 87 Heavy Bomber production commenced, Mitsubishi was negotiating secretly with Junkers in Germany to obtain design data and manufacturing rights for a heavy bomber version of the four engined G-38 passenger aircraft. At that time Germany was forbidden to build military aircraft, but the G-38 could be modified for export to include armament and other features, being designated K-51 for this purpose. During April 1930 tools and materials arrived in Japan from Germany accompanied

by a team of Junkers engineers to enable Mitsubishi to build it.

The first aircraft was completed by mid 1931 and accepted in the following year as Army Type 92 Heavy Bomber. Five more were built by 1935 and they were one of the World's largest aircraft at the time, with a wing span greater than that of a B-29 Superfortress and capable of carrying two tons of bombs with a range of 2,500 Km, or up to five tons over shorter distances. Their very existence was shrouded throughout in secrecy, even to the extent of receiving a retrospective Kitai number (Ki-20) a few years later and not being displayed in public until just before they were retired in 1940.

Although deployed to the operational 7th Sentai and said to be intended for possible bombing of the Philippines from a base in Taiwan (some 10 years early!), none saw actual combat. By the time the last one was completed in 1936, the Army realized they were already obsolete, being too cumbersome and suffering engine reliability problems. Instead they were used for trying different engines in various combinations and for general research in Japan and Manchuria.

In early 1931, Mitsubishi imported a Swedish assembled and militarized twin engined Junkers K-37. It was flown operationally in Manchuria and an impressive performance there lead to the Army issuing specifications for Mitsubishi to develop both heavy (Ki-1) and light (Ki-2) bombers from it. The former was intended as a replacement for the ageing Type 87 Kawasaki-Dornier Do.N.

In order to meet the heavy bomber specification, Mitsubishi decided to build an enlarged version of the K-37, using experience already gained in manufacture of the much larger Ki-20. One novel features of the design was the dispersal of fuel tanks throughout the air-

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frame so that damage to one would not jeopardize the whole fuel supply system. Another was that the aircraft had to incorporate simple dis-assembly so that it could be easily transported by rail!

A mock-up was approved in mid 1932 and the first prototype completed by the following Spring. However, as had happened previously with the Do.N, the intended Japanese built engines were not ready and imported English alternatives were again used for the two prototypes, this time Rolls-Royce, no less! Although the imported engines were some 100hp greater than those intended, the maximum speed still fell short of that specified by around 10%. Nevertheless, increasing demands for the ailing Type 87 to be replaced led to acceptance later in 1933 of the Ki-1 as Army Type 93 Heavy Bomber.

The Type 87 was replaced by Type 93 as soon as they became available, but all was not well with the Mitsubishi engines now fitted. Apart from engine reliability in itself, a worse associated problem was that level flight could not be maintained on one engine, when control became very difficult. In an effort to rectify matters, the 71st aircraft was extensively modified. The engines were placed lower on the wings, the undercarriage was extended and streamlined, the cockpit canopy was extended and some of the outer wing corrugations were replaced by a smooth skin covering.

This Type 93-II, Ki-1-II, (the earlier version retrospectively designated Type 93-I, Ki-1-I) showed some improvement, but was still regarded as slow and heavy by its crews, who generally disliked it. Nevertheless, it was used with limited success in Manchuria and Northern China, manufacture continuing until a specification for its replacement was issued in early 1936. By that time 118 had been produced in total.

## THE LAST OF THE FOREIGNERS

However, by early 1936 there were already increasing demands from the Army in China for heavy bombers. In order to make up the shortage until sufficient numbers of a replacement were available, the Army was obliged to purchase 85 Fiat BR-20s in 1937 and 38, which they designated Type I (for Italian).

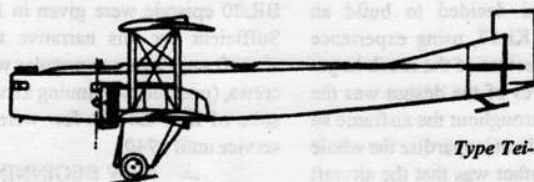
The aircraft were again unpopular with their Japanese crews, (possibly continuing xenophobia?), but, in spite of this, the last few were not retired from service until 1940.

(to be continued)

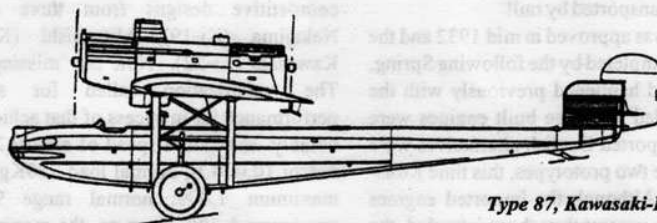


## JAAF HEAVY BOMBER EVOLUTION

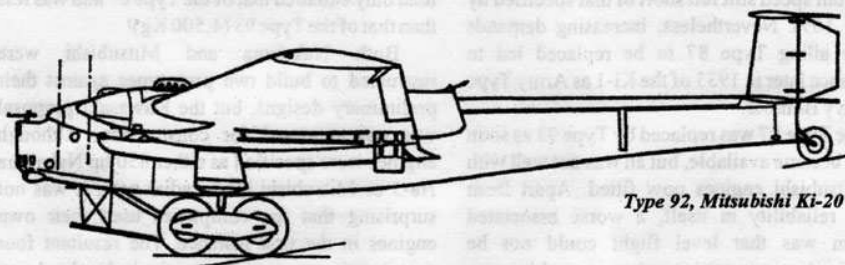
Foreign Types and Foreign Influence, 1921-1936 (to same relative scale)



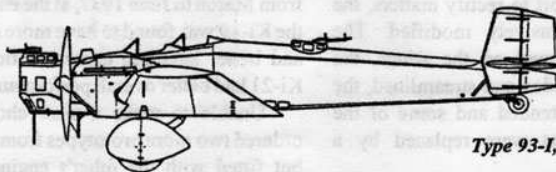
Type Tei-2, Farman F-60M



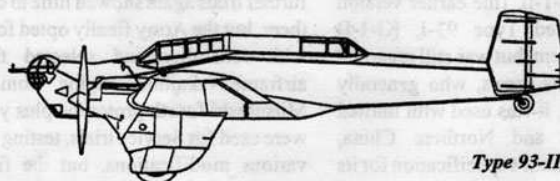
Type 87, Kawasaki-Dornier Do.N



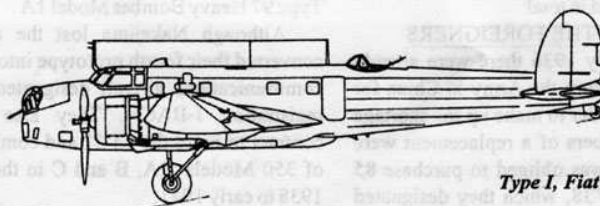
Type 92, Mitsubishi Ki-20



Type 93-I, Mitsubishi Ki-1-I



Type 93-II, Mitsubishi Ki-1-II



Type I, Fiat BR.20, RUTH

## Directions to the Club Meeting Location

**Where: South St. Paul Municipal Airport, a.k.a. Fleming Field,** located on the southern extremity of South St. Paul, south of I-494, west of Concord Street and East of Highway 52.

### If coming from the western Twin Cities going east on 494:

- Exit at the 7th and 5th Avenue exit (Exit No.65)
- Turn right (South) on 7th Ave and go approximately .6 miles to a 4-way Stop sign. This is South Street W. To your left there will be a McDonald's; to your right front there will be a Walgreen's.
- Turn left (East) at the 4-way Stop onto
- South Street W and go approximately .6 miles. Along the way you will encounter three more Stop signs—the third Stop sign (Henry Avenue) will be a "T" intersection. At the "T" intersection on your left will be homes and on your right softball fields.
- Turn right (south) onto Henry Ave. and go approximately .2

miles toward the Fleming Field airport terminal building.

### If coming from east Twin Cities on westbound 494:

- Exit at the 7th and 5th Avenue exit (Exit No.65)
- Turn left (South) on 7th Ave and go approximately .6 miles to a 4-way Stop sign. This is South Street W. To your left front there will be a small strip mall; to your right there will be an Amoco station.
- Turn left (East) at the 4-way Stop onto
- South Street W and go approximately .4 miles. Along the way you will encounter two more Stop signs—the third Stop sign (Henry Avenue) will be a "T" intersection. At the "T" intersection on your left will be homes and on your right softball fields.
- Turn right (south) onto Henry Ave. and go approximately .2 miles toward the Fleming Field airport terminal building.

The terminal is on the right with parking available.

Twin City Aero Historian  
**Rick Schmierer**  
1852 E. 39 Street  
Minneapolis, MN 55407

Return address requested

The Aero Historian is published monthly by the Twin City Aero Historians, Inc., a joint chapter of the American Aviation Historical Society and International Plastic Modelers Society/USA, for members and readers as part of their annual dues or fees.

The group is open to aviation enthusiasts from teenagers on up who are interested in aviation modeling, photography, collecting, art and writing. For more information contact Dave Nelson at 651-765-1914.

The Twin Cities Aero Historians (TCAH) meet the second Saturday of every month at 1:30pm.

See above for the new meeting locations and directions.


Mail Newsletter material and address changes to the treasurer.

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