

# The Aero Historian



Volume 38 Number 4

Website: <http://www.aerohistorians.org>

April 2004



One of our members, Gary Chambers, is currently flying off "somewhere in the Middle East". A couple days ago he sent this interesting photo of a some of the international air traffic. An Ilyushin Il-76TD of an Iranian Airline

## **BREAKING NEWS!** **Special Business Meeting** March 26, 2004 by Johannes Allert

A special meeting was called by Ken Hornby due to a deadline of April 1 for bid applications.

The Special meeting regarding the IPMS R5CON bid for 2005 was held at Fleming Field 26 March 2004. In attendance were: Ken Hornby - President, Steve Macey, Larry Donovan, Steve Erickson, John Roll, Terry Love, Jim Kaltenhauser, Johannes Allert.

Steve Macey presented the overview of the bid. It would be held at the Thunderbird on 22-24 Sept. 2005. It would be using the "Hall of Tribes" room which is approximately 4000 sq. ft. TCAH would be required to sell 40-50 rooms. The main vendor/display area would cost \$1000 per day, taxes not included. Individual rooms would go for \$79. Below are the cost comparisons and projections for 2005:  
**Actual 2003 - Estimated 2005**

Expenses:	
Hotel	\$1818 - \$2100
Awards	\$1438 - \$1500
Postage	\$118 - \$130
Paperwork	\$317.96 - \$370
Total	\$3692 - \$4100
Income:	
Vendors	\$1190 - \$1200
Trophy Package	\$800 - \$800
Registration	\$2670 - \$2700
Raffle	\$870 - \$600
Total	\$5530 - \$5300

After a brief discussion, the group voted 7 in favor and 1 abstain to present a bid to the IPMS R-5 Coordinator.

In lieu of not receiving the bid, the club members present, reserved the right to discuss holding a 2 day "Nordic Con" event during the same time period. Subject to be discussed further and decided upon at the regular April General Meeting/Business meeting.

The meeting adjourned at 215pm. Thanks to all who took the time to show up, participate in a discussion and vote. A Reminder to all. IT'S YOUR CLUB!

## **Our New Emblem**

Our new logo, has a bit of history attached to it. The original redesign for our TCAH logo was meant to represent a Minnesota-based, aviation-themed organization, replicating the feel of a squadron patch. It is based on the first unofficial logo of U.S. Naval Reserve Training Base "B" once located at South St. Paul Municipal Airport, also known as Fleming Field, where we now meet. The Navy version was originally designed by Walt Disney studios in April, 1941, at no cost, by request of the Commanding Officer of the Training Base. The penguin represented the cadets who were training to fly at the base, located in "one of the coldest spots in winter". We have superimposed this emblem over an outline of the state of Minnesota with a star located over the Twin Cities metro area. This should be appropriate for TCAH, seeing that although there are some pilots amongst our group, most of us are "flightless birds" in "one of the coldest spots in winter".

## TCAH Officers

**President**, Ken Hornby  
651-552-0888

**Vice-President**,

**Secretary**, John Dunphy  
952-758-6519

**Treasurer**, Tom Norrbohm  
612-881-5763

**Historian**, Tom Norrbohm  
952-881-5763

## Newsletter Info

*Article Submission Deadline: 22nd of each month.*

*Editor*

**George Mellinger**  
(melli004@gte.net)  
5212 West 47 Street, Apt. 2  
Sioux Falls, SD 57106  
H:605-362-5603

*Distribution Editor*

**Newsletter Photographer**  
**Steve Jantscher**

**Send articles to:**

Via E-mail: melli004@gte.net

Via Snail-mail:

George Mellinger  
Attn: TCAH Newsletter  
5212 W. 47 Street, Apt.2  
Sioux Falls, SD 57106

Send Change of address notice to:

Tom Norrbohm  
9936 Columbus Ave. S.  
Bloomington, MN 55420

## TCAH This Month

The monthly meeting will be held Saturday April 10 at Fleming Field, South St. Paul, beginning at 11:00 AM for contest entry and set-up. The official meeting begins at 1:00 PM. Come early, and hungry. This month there is no theme, due to our annual contest-awards-Pizza happening. Register your models before smearing tomato paste on your fingers and contest models.

## General Meeting Minutes

March 13, 2004

by John Dunphy

Ken called meeting to order at 1:30. Old Bus the new club rosters are out some minor changes were made to club by laws it now takes 5 members and 2 officers to form a quarm this was voted on by the club and approved. The new club logo was also voted on with the resules at next mouths meeting. Next mouth is the club contest Steve Macy is in charge of this. Any one who can help in any way is more tha welcome. Setup will start at 11:00. The meeting will beegin at 1:00 not at 1:30. We need some help to pick up the pizza and pop 2 people would be greath.

NEW BUS club photo will be at the April meeting at the Hanger at flemming field. Steve Jantscher will be taking the pictures and there will be several options. Terry Love is looking for people interested in a Airline merovblev convention if interested contatct terry. George Mellinger mentioned that the Seattle Air Museum is having a WW2 fighter display opening this summer. Next we had a guessed specker. Mr. Bob Provost was a TBM Avenger pilot in WW@ Bob gave presentation on the Raid on Yamamoto. This was very well done. Thank you Bob. Thanks alsoto Noel Allard for setting this up.

## Business Meeting Minutes

March 13, 2004

By John Dunphy

.Bus meeting was held after the genral meeting. With 12 people showing up. Color on the newsletter was talk about and it was decided not to do that at this time. It was brouth up about the club should make a bid to host the R5 in 2005 after some disicion the matter was tabled. The next matte that was talked about was if the club shold send a form letter in support of him-being awarded the Medal of honor. Or leave it up to the membes todo it on there own this matter was tabled for a further meeting.

## On The Show Table

March 2004

Aircraft

Gary Anderson  
Smer 1/48 Sopwith Camel  
Monogram 1/48 Fokker D.VIII

Steve Macey  
Hasegawa 1/48 Ki-61  
Hasegawa 1/48 TBF-C

Steve Rewey  
KP 1/48 Su-22M4

Dennis Strand  
Hobbycraft 1/48 I-16 Type 18

Fletcher Warren  
1/72 OH-13S

Armor

John Dunphy  
DML 1/35 T-34-85

Other Models

Bernie Kugel  
Games Workshop Warhammer  
Space Marines

## TCAH Calendar

May - VE Day - Late war European Theater. Luftwaffe models returning from January will be shot down.

June - RAF & Commonwealth

July - Red, White & Blue.

August - Campaign Theme - Guadalcanal.

September - Aircraft of the War on Terror.

October - TCAH salutes the United States Marine Corps.

November - Club election & auction  
No theme.

Deember - Campaign Theme - Eastern/Russian Front.

## Treasurer's Report

March 2004

by Tom Norrbohm

We have \$7902.94 in the bank and 85 members on the roster. You all should have received the club Constitution and By-Laws along with an UPDATED Roster in the mail by the time you read this.

## From the President

by Ken Hornby

This month's meetings will be one of the biggest this year, as it will include the presentation of our annual TCAH club awards, and the Club Contest and Pizza Bash. We've done something special this year and invited the Zumbro Valley Scale Modelers to enter the competition. We'll all have to put a little extra effort into our entries this year as those "Rochester boys" will give you a run for your money. You've had a long dull winter to put the finishing touches on your masterpieces so I hope to see a great turnout. Let's fill those tables! And remember, everyone who enters a model gets a free slice of pizza. OK, I guess everyone who shows up gets a free slice of pizza. Still, build something and bring it – this is your chance to be heaped with praise and/or abuse by the peer group that matters most. Above all, it will be a fun time.

One more thing we will be doing this month, weather permitting, is taking a club photo. As discussed at last month's meeting, I've been in contact with the Commemorative Air Force - Southern Minnesota Wing, located just down the hanger line from our meeting place. They have agreed to let us use one or more of their available aircraft as a backdrop for our photo. Our own "photog" Steve Jantscher will take photos in several different formats, including a panoramic shot sure to please. In the coming months we will have a chance to view the photos, and they will be made available for purchase by club members at very reasonable prices. So dress appropriately and, at all costs, avoid spilling pizza sauce down the front of your shirt. If inclement weather prevents us taking the pictures this month, we'll try again in May. I also want to remind anyone who volunteered to provide something for the Richard Fleming display we are putting together for the airport that you have only about a month left to complete your project. I'd like to have everything ready by our May meeting, so plan accordingly.

In other news...If you missed last

month's meeting, you missed an interesting one. First off, thanks are due again to Noel Allard for providing us with another guest speaker. I'd like to invite Mr. Provost to return at a future date to expand on his personal experiences. What do you say, Noel? We also held the vote for our club awards. There were 31 paid members present and all 31 voted. Be there this month to see who won the battle of the hanging chad. Maybe you noticed a little something different on the front page of this issue and on our website. Along with the normal club awards, the final logo design was established by majority vote at last month's meeting. There should be an introduction to the historical context of the design elsewhere in this issue. Given our club's present location and our reason for being (aviation history), it seems quite appropriate.

There was also a discussion of the contents of the updated Constitution. If my mind hadn't been clouded by lack of sleep caused by the unremitting pain of a broken tooth, I might not have needed to be later reminded that the vote we took to make several requested changes was in fact unconstitutional under Section 8 of our By-Laws. Therefore, I will accept the changes discussed as proposals to be reviewed, and a vote for final approval of those proposed changes to the Constitution and By-Laws will be held at April's business meeting.

Finally, it is with regret that I must inform the membership that our Vice President, Bernie Kugel, has, for personal reasons, decided to resign his office. After communicating with several members concerning this issue, I have appointed Steve Macey as "interim" Vice President, and will seek a vote ratifying my decision at this month's meeting. Beware; I will be looking for a volunteer to take over "newsletter distribution" duties. Along with putting the final clear-coat on your contest entry, you may want to spend some time in front of the mirror, practicing your uncomfortable, distracted, aloof, awkwardly shifting in your seat, I'm-

sorry-I-didn't-hear-you, head down, moment-of-silence look, and, of course, the ever popular two-foot shuffle.

## Russian SIGNALS

by George Mellinger



All right, I've found the smoking gun. Proof of what I've long suspected. American jets are so...so *shiny*. And all different shades of shiny metal at that. Look at one of those jets made by Frank Cuden or John Eian, and they're covered with patches of different varieties of metal - more shades of silver than Testors makes of green. Just like the museum examples and photographs.

Then you look at a Russian jet. And it seems to be just one blob of rather scruffy aluminum color, except for maybe the exhaust regions, and possibly cannon blast panels and airbrakes. All rather dull -- and all the same dull metal color at that. What gives?

In my latest shipment of magazines from Mat-Rodina, I got confirmation of a suspicion. Russian fighters were not natural metal but unnatural metal. Series production aircraft during the 1950s and later were finished with an overall coat of protective laquer, to which was added 6% aluminum powder shortly before application.

Of course, on later fighters, with radomes and electronic panels, such as the MiG-17PF and MiG-19PM, and so forth, the radomes could not be so finished, because the metallic paint interfered with the electronics. which is why these fittings were painted in one of three colors, white, radome green, or gray, the three Soviet paints which were found not to interfere with the electronic function. Incidentally, during this early period, the "gray" color was of a distinctly light bluish tint similar to an undersurface color.

Further we should note that metal color was not used for the internal

(Continued on page 5)

## Book Review

*V-Bombers, Valiant, Vulcan and Victor* by Barry Jones  
Reviewed by Bob Steinbrunn

Crowood Aviation Series. Hardcover, dust jacket, 8 7/8" x 11 1/4", 192 pages, 267 black & white photographs, 31 color photographs including 7 on the dust jacket, 3 appendices, 2-page index.

For those with only a passing familiarity with Britain's triumvirate of V-Bombers (such as this reviewer) and who would like an excellent overview of the design and testing stages, the operational history, the political climate, the impact on world history, and the final phasing out of these three futuristic bombers, this book is recommended.

The book is broken down as follows:

Introduction

Chapters:

1. Birth of the Weapon
2. Conception of the Bombers
3. Belfast's 'Insurance' bomber
4. The 'Unfunny' Bomber from Weybridge
5. Testing the Shapes
6. Avro's God of Fire
7. HP's Champion
8. Debut of the B.1s in Service
9. A Short Life, but a Full One
10. Enter the Mark 2s
11. The Armament Saga
12. Tanking and Surveying
13. War Games and War
14. Testing Times
15. Debrief

Appendix I V-Bomber Production and Serial Blocks

Appendix II V-Bomber Squadrons

Appendix III V-Bomber Conservation  
I would assess this book to be an excellent general historical reference on these three aircraft. Modelers desiring in-depth information on small details, variants, camouflage and markings, and the host of other arcane and esoteric points will find their purposes served best elsewhere by other specialist publications.

I found my copy at Amazon.com for \$34.47, marked down 30% from \$49.95, where, incidentally, one reader reviews this volume and awards it five stars out of five.

## TCAH Annual Contest

Chairman: Steve Macey

The annual TCAH Model Contest will be held April 10, 2004 (the second Saturday in April) at the Terminal of the South St. Paul Municipal Airport (Fleming Field). Registration will begin at 11 AM and close at 1 PM. Judging will begin at 1 PM. Judges will be selected by the Contest Chairman. Any current TCAH member may volunteer to judge. The rules and categories are as follows:

**RULES:**

1. You must be a paid member of TCAH or an invited guest of TCAH (See contest chairman for details).
2. No joint projects.
3. Entry fee is \$0.50 per model.
4. Judges will be selected and will have the authority to disqualify models if needed.
5. Models which have previously placed first in a TCAH or IPMS sponsored contest can not be entered, but may be displayed.

**CATEGORIES:**

1. The following is a general guideline that can be changed by the contest chairman to reflect types or quantity of models entered. Any category can be subdivided if necessary.
2. Junior--those members or children of members who are under 17 years of age.
3. Novice--those who have never entered a TCAH contest (TCAH member) or any member who has entered a contest but has not placed.
4. General--Out-of-box models.
5. Advanced--those with minor modifications. This will normally be limited to "drop-in" accessories (i.e. seats, seat belts, wheels, etc.) or minor metal work (i.e. ignition harness, brake lines, etc.).
6. Master--models that have been extensively modified or altered (i.e. extensive use of resin, photo etch or parts substitution).
7. Non-aircraft models will be entered into their own separate categories.
8. Categories can be subdivided if the number of entries warrant.
9. These descriptions are meant to serve a guidelines only. The contest

chairman reserves the right to make a final decision if a question of category placement arises.

**JUDGING**

1. Judges are to be selected by the contest chairman from volunteers. Entrants are encouraged to judge but not in the category entered.
2. Only one-third of the models entered in each category will place.
3. Judges will pick the best 10% in each category and list them in order with the best being first.
4. If less than 3 Models are entered than only one award will be given.
5. The annual TCAH Memorial Model award will be voted on by all TCAH members present considering only TCAH member models. The model receiving the most votes will receive the award.
6. Any TCAH SIG or special interest group may present an award. The Chairman shall be notified by the group of their intent to do so. And the award shall be in the hands of the chairman at the time judging begins.

I'll need a few members to help set up and register models. If you would like to help or be a judge, call me at 651-735-4334 or E-mail me at RCAF\_413@Yahoo.com.

## From The Trenches

by Merrill Anderson

I'm baaack, with a scouting report on the future offensives against your wallet!

Eduard, who seems to be 'going for it' in terms of quality, has announced releases in 2004 of (sorry all 1/48) several WWI kits, 'all new' releases of the Fokker E.III, Morane N, (two of their early crude attempts) and a 1/48 DH.2 (an accurate BUILDABLE kit will be much appreciated, by me at least). For "later in the year" (that usually means sometime next year) they plan a Fokker DVII and a Bristol F2B (Bristol Fighter).

Eduard has some serious competition from Roden, who plan to release the whole series of Fokker DVII's they made in 1/72, in 1/48. Despite some problems with build-

*(Continued on page 5)*

## Spraybooth Logic

If Only...

By Dave Pluth

If only Hasegawa would come out with the one variant of Spitfire that is really the one I want to build. I know that they already do several as does Tamiya, but they just aren't my favorite type of Spitfire, so I'll wait to build the rest until that one comes out.

If only there was a cockpit set for that Corsair that got the cockpit floor right, then we'd have a model that would be an award winner. I think I'll wait for that before I build mine.

If only Eduard would have put out that Profipack of the Ki-115 first, I would buy it and build it right away. For now, I'll just hold off and wait until it comes out before I start my build.

If only I could afford that milling machine, I would be able to make my own parts and really do some cool things.

If only I was better at painting, I would build more models.

If only that decal set was released in 72nd scale as well as 48th, I would buy four of them and build every aircraft on the sheet!

If only I could finish something, it would get me over the building slump I'm in.

Anyone notice a pattern here?

Now don't get me wrong, there's nothing wrong with wishful thinking, but a little bit does go a long way in this hobby.

Are you waiting for that "certain" variant to come out from one of the better model makers? Well, here's news for you, it probably isn't coming any time soon and you aren't getting any younger!

Are you waiting for a great detail set for that "certain" model? Here's more news for you, you'll only use half of it anyway! Scratch-build what you really need and move on!

Are you waiting for the next release of a "certain" kit because you are convinced that it will be better than the first or will have a couple of spare bits? Well, this one you may have me on, that might actually be worth it. However, you still have more than enough projects on the

shelf of doom!

Are you wishing that you could build better? Paint better? Decal better? Well, there's really only one way to do that, practice!

Finally, do you feel like you are in something of a building slump? Do you have bunches of kits that you have started, but very few you have finished? Maybe it's time to stop jumping from kit to kit and finish something.

I think we all suffer a bit from "if only" syndrome. It gives us good reason to put our challenges aside and move on to the things that we like to do. There are definitely times that you need to do this. That one kit from hell that taunts you as you walk into the hobby room or that decal that you screwed up while you were putting it on may be some of the reasons you have. Summer vacation or those home improvement projects may be others. Heck warm weather and a bright summer day or an autumn afternoon to watch football or to go hunting with your dog may be others.

We all have "reasons" that we stop building models. Sometimes those reasons keep us away from the hobby room for a matter of days or weeks. At times it may be months and for a few out there it may be years.

The good news in all this is that there always seems to be something out there that tweaks us and gets us rolling again. Watching this happen with several members of the local club has been a very educational experience.

A few years back our club sponsored a "109" contest. Everyone had to build the same Revell 48th scale 109 kit. When I first heard the idea, I kind of rolled my eyes and thought it was pretty stupid. However, I would be proved wrong, yet again. The contest drew more than a dozen entries, many of which were from people that hadn't completed a kit in a number of years, this along with some of the club regulars who produce very consistently made for a rather impressive display.

I wish I could tell you of a story-book ending that one of those new fellows won the contest, but if mem-

ory serves, they didn't. However they have won some "Most Improved Modeler" awards in the club and are now regularly bringing in their finished works to inspire a whole new bunch of guys.

So, the challenge for the month is to not only "shut up and build", but to put aside your "if only" to do it. The results might surprise you and the other modelers you know.

*(Trenches continued from page 4)*

ing the kits, they will allow you to make nearly every version of the DVII in 1/48. Also coming from Roden, in 1/48, are 'both' versions of the SE5a, and a raft of British two seaters, the DH4, DH9, Bristol F2B, BE2C, and the BE12 (single seat fighter version of the BE 2 series). Although Roden has seemingly scaled back their 1/72 efforts, they plan to release five versions of the Sopwith Camel, (recently added were the T.F. ground attack version, and the late, Bentley BR1 powered version) as well as the Junkers D.I all metal fighter, and the Curtis H.16 Flying boat (which was used by the U.S. and Royal Navies during the war).

Hi Tech still promises a 1/48 Gotha G.III, a 1/32 Albatros D.V, a 1/48 Voisin LAR Bomber and a 1/48 Sopwith Snipe, as well as a D.II to D.I conversion for the Eduard Albatros.

On the 'ground front', Emhar and RPM have already released their 1/72 kits, the last, the British Whippet, was released last month. Recent releases of ground subjects include a resin St Chamond French tank, and from Hecker and Goros a 305mm Skoda trench mortar, 1/35 scale, in white metal (for around \$100).

*(Russian Continued from page 3)*

surfaces, such as cockpits, which were finished in the standard medium gray. And yes, that also included the early generation of MiG-21s; the customary "scrub suit green" cockpit color appears to have been introduced only for the middle generation of MiG-21s from the end of the 1960s. Vietnam-era MiG-21F and -PF aircraft featured medium gray cockpits.



## A History of Airfoils

by Don Stauffer

© 2004

### Part 1

Airplanes have certainly changed since their beginnings. So also have the airfoils they use for their wings. The airfoil refers to the cross section of the wings, looking from the wingtip towards the fuselage, or vice versa. One can date an airfoil just by looking at it, in the same way that one can date an aircraft to a period even if one is not familiar with the particular aircraft.

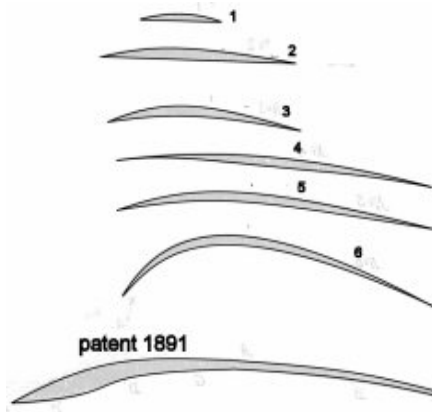
The first airfoils were straight lines. Originally, the lifting surfaces were planes. Lifting surfaces go back to antiquity in the kite, the first type of aircraft. Developers in the late eighteenth and for much of the nineteenth century still intended to use the plane surface, and referred to the lifting surface as an aeroplane. The term continues today when we speak of a monoplane, biplane, or triplane.

In the early eighteenth century careful observers noticed that bird's wings were curved, and considered that a curved surface might generate lift better than a flat, or plane surface. Sir George Cayley, considered by many the father of aeronautics, confirmed with his whirling arm aerodynamic test rig that this was indeed true. However, even Sir George, for most of his aircraft designs, continued to use a flat lifting surface.

Further, when people did begin to design airplanes with curved wings, they didn't really pay much attention to the exact curve. Many used a simple arc (segment of a circle). Concern with the exact shape of the curve awaited testing with the first wind tunnel, by Francis Wenham in 1871. Another Englishman, Horatio Phillips, built the second wind tunnel on Wenham's design, and did the first extensive development of airfoils. He patented airfoils in the 1870s.

Significant in Phillips' airfoils is that they are double surfaced. Up until then, and even for a considerable time thereafter, most people covered only the top surface of a

wing with fabric, as one would a kite. Phillips' airfoils, however, had a distinct upper and lower surface, usually with different curvature. In fact, Phillips' No. 2 airfoil had a flat bottom, like the much later Clark Y airfoil.



Interestingly, both Langley and Lillenthal used the earlier idea of the single surface (kite) airfoil. The Wright brothers, however, used a decent double surface airfoil, after doing extensive testing on their own wind tunnel. Glen Curtiss, however, continued to use a single surface airfoil for most of his earlier designs.

A look at World War 1 aircraft would show that while the aircraft configuration had advanced much in the decade since the Wright Flyer, this was not true of the airfoil. The majority of WW1 airfoils look very similar to that of the Flyer. If one sees a wing rib of a Curtiss Jenny, for example, one has a hard time telling it from a Wright rib.

Eiffel 10, 1903 Wright Flyer



However, by the time of WW1 there were a number of aerodynamics research centers starting operation, and airfoil design was one of their major activities. Three noteworthy centers were the Royal Aircraft Establishment (later the Royal Aircraft Factory), the Eiffel laboratory in Paris (the Gustav Eiffel of the tower fame) and a laboratory at the German University of Gottingen. Many early airfoils carry a number such as RAF something or Gottingen something.

The US got into the government aero research late, forming the N.A.C.A. in 1917, but it was not until the early postwar years that the organization had a wind tunnel. The N.A.C.A. rapidly caught up, however, and by mid-twenties NACA airfoils were among the best in the world. One neat feature of the N.A.C.A. airfoils is that the identification number of the airfoil actually contained its shape, following a code. Thus to state that an airfoil is a NACA 24012 actually tells the reader the exact shape of the airfoil, by using the number 24012 and a plotting code to plot out the shape.

The desire for speed drove the big change in airfoils during and following WW1. Engine power had certainly increased since 1903, but drag was still very high. There were two factors that influenced airfoil design to improve speed. One was aerodynamic, the other structural. Early airfoils, while having good lift at high angles of attack (needed when flying slow as in takeoff, landing, or certain maneuvers), when the angle was lowered as allowed by increasing the speed, the airfoils still carried a high drag, due to their undercamber. This limited the top speed of an aircraft even if lots of power were available. What was desired was an airfoil that had reasonable lift at high angles of attack, but whose drag was low at lower angles of attack (at higher speeds), where less lift coefficient was needed (since the lift varies as the coefficient, but as the square of the speed), yet low drag.

The second problem with thin, undercambered wings was even more important at first. A biplane had a lot of drag, due to wing bracing. Even the first monoplanes, using lots of bracing, still had a very high drag. What was needed was the cantilever wing, even if a biplane, but ultimately the cantilever monoplane.

But the strength of a wing spar, especially to upward forces, depends on the depth of the spar—that is, the thickness perpendicular to the airflow or parallel to the lift force. A thin wing does not allow a deep, strong, spar, and hence the

(Continued on page 7)

## Airline Chatter

by Terry Love

Spirit Airlines, the low cost Florida-based airline, presently operates 32 MD-82s, and are looking to expand its fleet to about 60 aircraft, so they ordered up to 95 Airbus A-320s with a firm order for 35 with options for 60 more. Spirit is the largest privately owned airline in America.

Seating pitch is the distance between seats on an airliner. The less distance between the seats, the more seats you can get on-board an airliner. Some of the low fare airlines really cram you in there like sardines. Let take an common Airbus A-320. NWA seat pitch is 36 inches, and the aircraft holds 148 seats. Jetstar has 30 inches seat pitch, and holds 177 seats. 6 inches between seats makes a BIG difference. JetBlue, Valuair, and Virgin Blue all use 32 inches of seat pitch.

Air Deccan is India's new low-cost airline. They are starting out with 7 Airbus A-320s. They will all hold 180 seats.

USA 3000, another low cost American airline, will fly Baltimore to Nassau starting May 1 using Airbus A-320s.

Continental Airlines will begin service on June 17 from Newark to Oslo, Norway. SAS pulled out of that route because it was not profitable.

Valuair will lease two more Airbus A-320s.

Singapore Airlines has a fleet presently of the following aircraft: 30 Boeing 747-400s, 51 Boeing 777s, 3 Airbus A-340s-500s Also Singapore Airlines has the following aircraft on order:

8 Boeing 777s, 2 Airbus A-340-

500s, 10 Airbus A-380s.

UPS is cancelling an \$1.6 Billion order for 20 Airbus A-300 freighters. UPS still has 70 Airbus A-300 freighters.

Austrian Airlines is purchasing 9 used Fokker 100 airliners from American Airlines.

Air Tran Airlines - ATA - will not expand into any new destinations this year. ATA will take delivery of its first Boeing 737-800 out of a 100 plane order, this year.

Bombardier of Canada delivered its 1,000th CRJ, Regional Jet, last December. They have orders for 1,356 more.

Air Tran Airways - ATA - said that they will phase out all of their RJs - Regional Jets - and replace them with new Boeing 717s (Douglas DC-9 updates). ATA cancelled its contract with Air Wisconsin and immediately signed a contract with United Airlines to expand their support. ATA has 508 flights per day to 45 destinations. Atlanta is their hub. ATA is the Boeing 717 (Douglas DC-9 updates) largest customer. ATA just ordered 10 more. ATA also ordered 100 Boeing 737-700s for heavier traveled routes. If you think that ATA is a low cost airline, how do you pay for almost \$4 Billion worth of airplanes?

Boeing is considering closing the Boeing 717 production line due to slow sales - 49 last year only.

Northwest Airlines, on March 11, 2004, flew Douglas DC-9-31, N955N, fleet number 9905, msn 47160, for its last flight to Doltham, Alabama for scrapping. It was the 241st Douglas DC-9 built and one of the first Dc-9s bought by North Central Air-

lines. It was delivered on January 15, 1968. It ended its life with 88,300 hours of flight, and 101,500 cycles on the airframe.

Boeing delivered 25 new airliners in February - mostly 737s. Boeing also said that the price for their new Boeing 7E7 will be \$120 million each which is about the price of a Boeing 767-300ER.

Republic Airways ordered 16 Embraer ERJ-145LRs. Cost is \$320 million. Presently, Republic has 85 Embraer jets.

Northwest Airlines will begin service Minneapolis to Springfield, Missouri on June 14. Springfield serves Branson, Missouri.

KLM will begin service Amsterdam to Atlanta on October 31 using Boeing 767-300ERs.

Shanghai Airlines had ordered 2 Boeing 757-200s converted into freighters, since there is more consistent profits in cargo instead of passenger service.

*(Airfoils Continued from page 6)*

wing of a craft with a thin airfoil is weak.

Tony Fokker was the first to break the impasse. He paid attention to data coming from Gottingen, showing there were excellent thick airfoils. These had maybe slightly less maximum lift, but in spite of their thickness they had as low as, or even lower, drag at very low angles

Ge 428 (Fokker D-VII)



of attack. And, they were thick enough to allow spars strong enough for cantilever wings. The later Fokkers, such as the DVII, DR1, and DVIII did have struts, but much fewer than competing designs, and virtually no bracing wires.

# Directions to the Club Meeting Location

## Where: South St. Paul Municipal Airport, a.k.a. Fleming Field:

Fleming Field is located on the southern extremity of the city of South St. Paul, on the bluffs above the Mississippi River, south of I-494, west of Concord Street and East of Highway 52.

## If you are 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 in front, with more parking available to the left near the line of hangers across the street.

Since the streets form intercity boundaries between South St. Paul and Inver Grove Heights, the street names change at the corners where you will be turning.

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 Steve Erickson at (763) 521-9948

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 editor.



The Internet Model Shop!  
Great Stuff!  
Great Prices!  
Great Service!

John Roll  
Vice President  
john@rollmodels.com

2709 Vale Crest Rd.  
Crystal, MN 55422-3427  
Bus: 612/545-0399  
Fax: 612/545-0899



GEORGE ASADOURIAN  
OWNER

Valley Creek Mall  
1750 Weir Dr.  
Woodbury, MN 55125  
Phone (651) 702-0355  
Fax (651) 702-0610  
www.hobbytown.com

Twin City Aero Historian  
Atten: Bernie Kugel  
2080 Ivy Avenue East  
St. Paul, MN 55119

Return address requested