No. 165 MARCH 2000

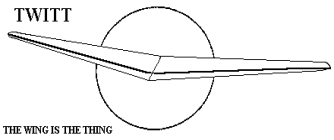
# T.W.I.T.T. NEWSLETTER

**This is a picture of the Horten IA-41 (Ho-XVC) sent to us by Fernando Walter-Siarez (fws@siscor.bibnal.edu.ar). For more pictures, see page 8.**

**T.W.I.T.T.**
The Wing Is The Thing
P.O. Box 20430
El Cajon, CA 92021

The number after your name indicates the ending year and month of your current subscription, i.e., **0003** means this is your last issue unless renewed.

**Next TWITT meeting: Saturday, March 18, 2000, beginning at 1:30 pm at hanger A-4, Gillespie Field, El Cajon, CA (first hanger row on Joe Crosson Drive - Southeast side of Gillespie).**




**THE WING IS THE THING**
**(T.W.I.T.T.)**

**T.W.I.T.T.** is a non-profit organization whose membership seeks to promote the research and development of flying wings and other tailless aircraft by providing a forum for the exchange of ideas and experiences on an international basis. T.W.I.T.T. is affiliated with The Hunsaker Foundation which is dedicated to furthering education and research in a variety of disciplines.

**T.W.I.T.T. Officers:**

| | |
|---|---|
| **President: Andy Kecskes** | **(619) 589-1898** |
| **Vice Pres:** | |
| **Secretary: Phillip Burgers** | **(619) 279-7901** |
| **Treasurer: Bob Fronius** | **(619) 224-1497** |
| **Editor: Andy Kecskes** | |

The **T.W.I.T.T.** office is located at:
Hanger A-4, Gillespie Field, El Cajon, California.
Mailing address: P.O. Box 20430
El Cajon, CA 92021

**(619) 596-2518 (10am-5:30pm, PST)**
**(619) 224-1497 (after 7pm, PST)**
**E-Mail: twitt@home.com**
**Internet: http://www.members.home.net/twitt**

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| 36oz/36 | 14.00 | 19.50 | 14.00 |
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Meetings are held on the third Saturday of every other month (beginning with January), at 1:30 PM, at Hanger A-4, Gillespie Field, El Cajon, California (first row of hangers on the south end of Joe Crosson Drive, east side of Gillespie).

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## PRESIDENT'S CORNER

Well, as you can see from the program announcement our attempt at a real coup for March sort of fell through, big time. I want to thank Bruce for stepping in and covering on such short notice, it was a life saver. We will persue trying to find a way for Al to come out at a later date.

I am quite pleased that we seem to be having a resurrgence in membership over the past month or so. Some of appears to be coming from people finding the web site and liking what they see. One that just came in was a word of mouth from a current member, which is the best way for us to grow. And I know of several others out there in foreign countries that are going to be joining as soon as they can arrange for the payment in US currency.

The other thing that has been going well is the exchange of information between our library and the personal libraries of other enthusiasts. As you will see later in this newsletter, this has included a lot of new material on the Kasper family of flying wings. And along those lines we have found out that Alfred Bodek (the last B in BKB, S.K. Brochocki being the first B) is living in Lomita (a suburb of Los Angeles). We will be looking into meeting with him and hopefully doing a video of his experiences with the Kasper wing. I am also in contact with Brochocki's daughter and expect to have additional unique data sent to us in the near future.

So, as you can see I am really encouraged with the future of TWITT and in the growth of flying wings in both the personal and commercial aviation areas. I hope our re-growth will continue at a steady pace in the months to come so we can expand our ability to exchange information over a wider base of members, which has been our staple of the past several years.

Andy

## MARCH 18, 2000 PROGRAM

Well as things would have it, we must announce that our plans for having Al Backstrom as the featured speaker for March fell through at the last minute. It was sort of a double edged sword when, simultaneously, our transportation arrangements didn't materialize and Al's work took him out of town right around the meeting time.

SO, Bruce Carmichael has graciously agreed to put on a short program for us that should be interesting from a historical perspective. Bruce will present a 40 slide tailless sailplane history. The audience will be asked to identify each sailplane and it's designer, if known. They cover the period from before the first world war to the late 1960's. There may be a few which may not have bee covered by TWITT in the past. Included are two Bruce Carmichael designs which of course never got beyond the 3-view and scale model phase. Come to the meeting and see if any of these designs stump you.

SO, for you history buffs out there, pull out your old books, Soaring magazines and any other publication you think might help prepare you for the challenge layed down by Bruce. (ed. - I'm too young to remember that far back, so there is one competitor down.)

We will also have a video presentation of some material we are sure most of you have not seen before. Most of it has been taken from the cable channels as bits and pieces were shown during extreme machines type shows. I think you might be surprised by some of this footage.

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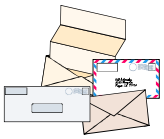


## LETTERS TO THE EDITOR

2/15/00

TWITT:

Thanks for a great year of the TWITT Newsletter. Enclosed please find my check for my renewal for another year.

I am looking for airfoil data for the Horten Ho VII and Ho IX for possible use in a large scale model aircraft. I am also trying to find detailed plans of the Horten's Volksjager competition aircraft. Information regarding potential sources would be greatly appreciated.

I am interested in seeing a list of topics mentioned in previous newsletters as soon as one is available so that I can order the back issues in which I am interested.

Keep up the good work,

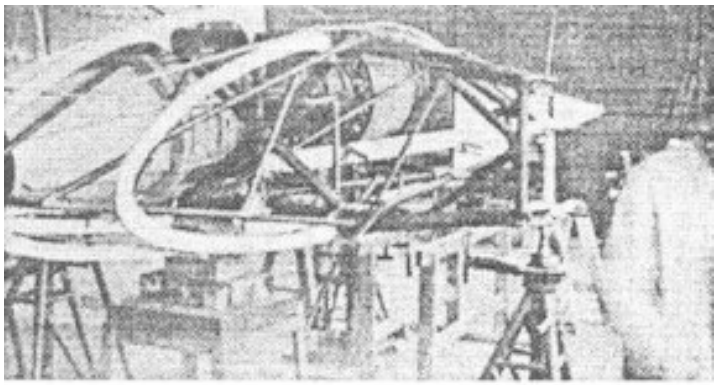
Mark D. Cowan
West Columbia, TX

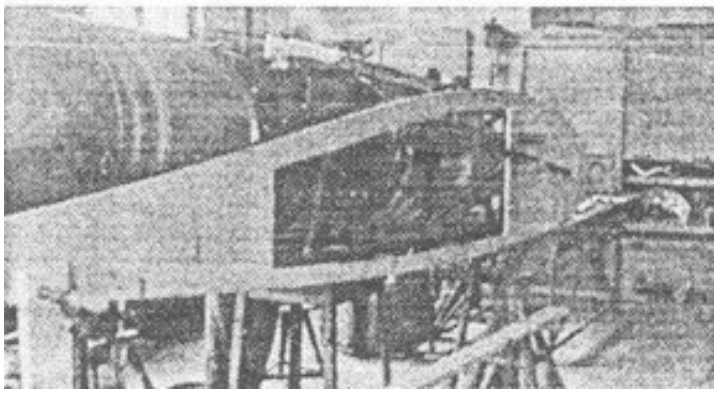
*(ed. - As for the last item in your letter, I have been working a little at a time trying to put together some type of topic index of the newsletters. It has been slow going since it is in competition with a number of other TWITT projects and professional organization commitments. I will continue to work on it and hopefully in the months ahead have something worth publishing even through it may not be complete.*

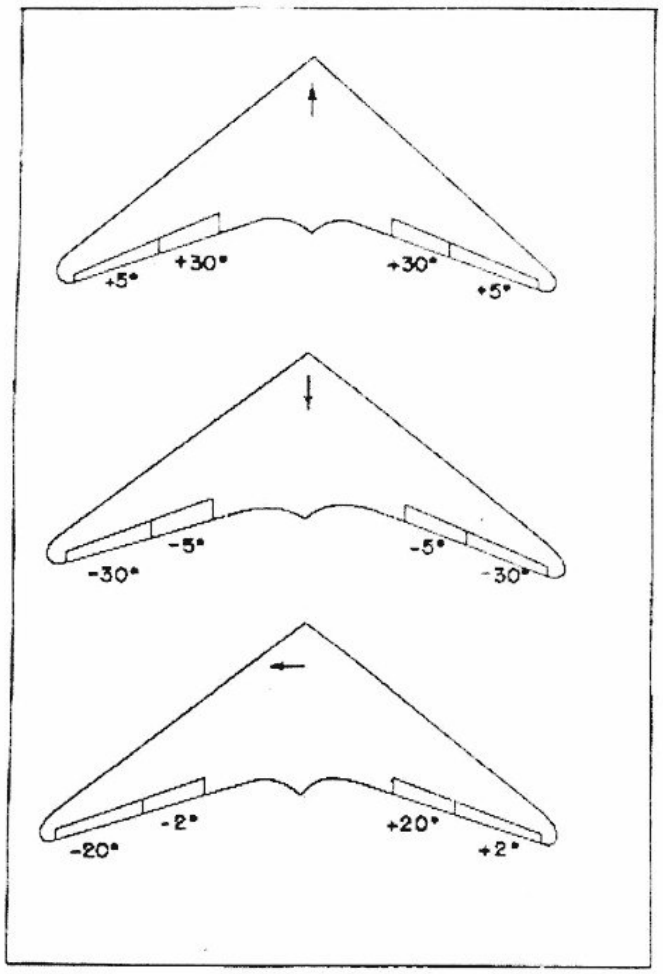
*As for information on the Ho IX, you might want to get a hold of Erik van den Hoogen (see letter below). You might also try Jack Bale at jackbaleplans@dreamsoft.com as he might have some scale plans you could use. Jay Steeby (jsteeby@primenet.com) has also been looking into a Ho229 and has found a good book published by Monogram (monogram@meganet.net) titled Jet Planes of the Third Reich authored by Manfred Griehl. It includes some 3-views by Arthur J. Bentley who is being contacted by Reinhold Stadler (reinhold_stadler@mt.man.de) to see if something can be arranged.*

*I imagine you already have a copy of Nurflügel by Horten and Selinger, but Bob wanted me to relay the following from it's text: the wing was designed with 3 degrees geometric and 1.5 degrees aerodynamic twist, to give it the desired bell shaped lift distribution with all the controls neutral. I have also included a couple of shots from that section of the book, just in case you don't have it and for the enlightenment of others.*

*On the Ho VII, we don't have anything in the library that would be of help, but maybe some of our other members might be able to help with drawings, pictures or model plans. Any Horten Volksjager information will also have to come from the members, since there's nothing on had for that one either.)*








*Top: Stick forward, Middle: Stick back, Bottom: Stick left.*

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2/14/00

***(ed. - The following material was received in the mail the other day and is being presented without any endorsement by TWITT. Although it was not signed, the material seems to indicate it was prepared by Davis. If you decide to look into purchasing a kit, we recommend you due a thorough job of researching this company and it's capabilities to provide the products advertised.)***

No doubt you have been wondering what happened to the Davis Flying Wings. The proof-of-concept Flying Wing Alpha was right at 300 flights. Construction on the larger 2-3 place Flying Wing Gemini was coming along well. Now that there are a few more stockholders who believe in the dream of Jack Northrop and are willing to make it all happen with style.

Orders are being taken for the first production run of Gemini Flying Wing kit to be available in August 2000, and the second run to be available in November 2000. Kit price is listed at $21,500 with an approximately 800 hour construction time.

An information package is available for $15.00 USA ($18.00 overseas-airmail). If interested, contact:

Davis Wing, Ltd.
P.O. Box 5903
Boise, ID 83705

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February 2000

W.C. (Bill) Schultz of Chula Vista, CA sent us some material for the library, and one piece was of more interest than most of the others. It is a 3-view of a design he did in 1972 for a swept-forward, joined wing, 2-place pusher with a 26' wing span. You can see a reduced size version of the page included on this design proposal. There was no text or other information made available, so there is no telling what ever became of the concept.

Also included in the material were copies of some data on the Me 263 and Gotha Go 147 taken from an unknown book. These will be added to their respective areas of the library files.

## ARVIN-SIERRA REMEMBRANCE

## APRIL 29, 2000

The Sailplane Homebuilders Association and the Arvin 2000 Committee are planning on a remembrance gathering at the old Arvin, California flying site. It will be honoring the Arvin glider alumni and give them an opportunity to share their experiences with others. It will memorialize the site as a National Landmark of Soaring, only the 10th such site in the U.S. There will also be a remembrance for those who died in a 1940 midair crash at the site. There will be a recreation of the "glider mail" event by delivering the mail from Arvin to Bakersfield.

Events will include vintage glider flying, model flying and other ceremonies. The plan also includes a vintage glider gathering and social hour at Mountain Valley Airport in Tehachapi, along with a evening barbecue/banquet.

For those interested in participating and/or would like to make a donation to assist with this event contact Janice Armstrong with your name, address, phone number and e-mail address (if applicable). The mailing address is: 21100 Angel Street, Tehachapi, CA 93561, or phone at (661) 822-8852, or e-mail at danarmstro@aol.com.

## BOEING ADVANCED THEATER TRANSPORT

The Boeing Company has a flier out showing its concept for an Advanced Theater Transport (ATT) that would be designed as a medium, four-engined, no-tail, tilt-wing, super-short takeoff and landing aircraft capable of combat delivery of up to 70,000 pounds payloads into austere landing sites in support of ground combat forces.

The unique no-tail configuration permits an extra-wide fuselage capable of carrying major weapons systems, 9

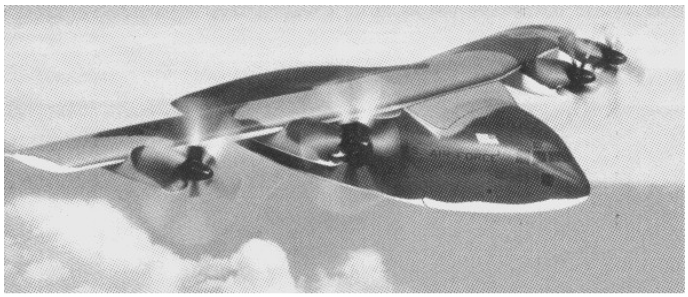
military 463-L pallets, ISO containers, CROP and PLS flattracks. It can deliver and retrieve 60,000 pounds of cargo into a field approximately 750' long at 4,000' altitude in 95 degree conditions. Although it can be refueled in flight, it has sufficient range to generally self-deply worldwide to forward bases without requiring in flight refueling.

Specifications are:

| | |
|---|---|
| Length | 96' |
| Span | 128' |
| Tactical Speed | 300-350 kts |
| Max TO Wt | 269,000 lbs |
| Cruise Speed | 370-410 kts |
| Landing Speed | 32-50 kts |
| Range | 6,200 Nm (2,400 Nm at 72,000 lb payload) |
| Crew | 3 - pilot, copilot, loadmaster |

The flier had a name and address at the Boeing Company, so if you would like more information you might try:

Make Rohrlick
Mail Code C078-0315
2401 East Wardlow Road
Long Beach, CA 90807-5309
Tel: (562) 982-6618
Fax: (562) 593-8851
e-mail: ma.rohrlick@boeing.com

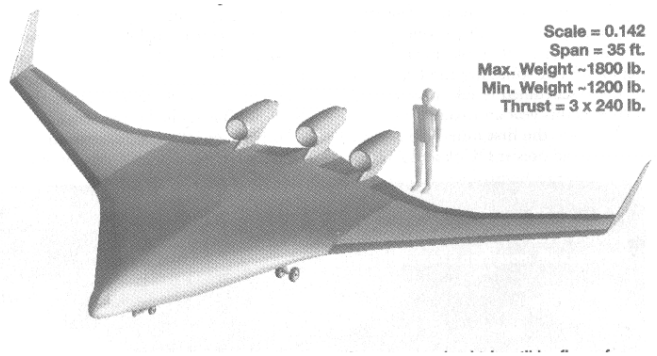


## NASA BLENDED WING BODY

The February 7, 2000 issue of Aviation Week & Space Technology, pp. 48-49, by Edward H. Phillips, has an article on NASA/Boeing's plans for a sub-scale test model of the blended wing body (BWB). Flight tests are being planned for early 2002 to help determine the design's feasibility as a future commercial and military transport.

You can see the dimensions in the graphic below. Each wing panel features seven control surfaces along the trailing edge, and five leading edge slats are installed on the outer wing panels. The flaps, ailerons, ruddervons and winglet-mounted rudders will be electrically operated by actuators derived from the military Joint Direct Attack Munition guidance kit. Slats are fixed in either the deployed or retracted position, depending on research objectives for each flight. The model will be powered by three Williams WJ24-8 engines each developing 240-lb. static thrust derated to 200 lb.

The airframe will be constructed of a thin carbon fiber/foam sandwich with a smooth, fiberglass overlay. They are trying to control the weight to maintian the dynamic scaling and get the inertias right so they can translate vehicle behavior into stability derivatives.




*(ed. - From the last two items it could be surmised that Boeing is sort of committed to long-term research into flying wing technology and capabilities. That has got to help the overall expansion of flying wings into the general aviation segment of the industry and commerial applications are eventually proven to be safe and economical.*

*Hopefully, this coupled with efforts like those of Gilbert Davis with his reintroduction of the Gemini kit will speed the process up. We had hoped that the PUL-10 would be further along in both Europe and the US by this time, but obviously funding and availability of the designers time has somewhat slowed its progress.*

*However, with all this recent activity in the development of flying wing and tailless aircraft, especially at the commercial level, the future of these designs seems well assured.)*

## WEB SITE GUEST COMMENTS

*(ed. - The following items came from our web site guest book, some from members and some from flying wing enthusiasts like you who have visited the site.)*

January 25, 2000

Your page was a great help during the building and trimming phases of my self-designed R/X electric powered wing. It's 144" span using an MH46 airfoil powered by a Keller 2:1 reduction motor on 18 cells. Thanks for a great site.

Ron Stein (rstein1686@aol.com)
Phoenixville, PA

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January 30, 2000

Greetings from a former member. Yea, it had to happen. I've gotten in touch with my inner geek. I'd like to give you and others interested in aviation movies a heads up on my new projects. Visit

http://www.strikerair.com for a preview of something really big. How about it, a flying film written by pilots with action and adventure. Hey you folks have a great day. See you at Oshkosh 2000!

Steve Mahrle (strikerair@prodigy.com)
Oshkosh, WI

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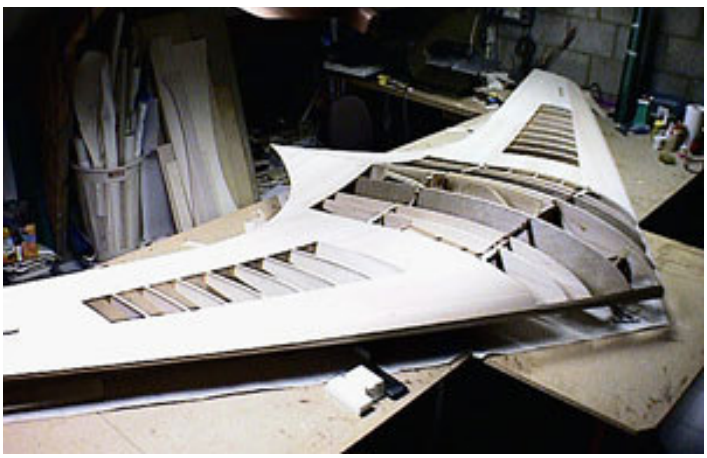
February 6, 2000

Hello. I am a model builder/flyer who makes, together with a friend, big flying scale models from the Horten Brothers. My latest project is a 1/4 scale Horten IX-V-2, powered by two AMT Mercury's. It will be scale, also the handing gear and is planned to fly in July/August of this year. If you want some building pictures, please let me know. I also have a question. Do you know a site where there is something about the ARUP horseshoe planes? I want to build one of these types.

Greetings and a compliment for your site.

Erik van den Hoogen (erik-rc-electric@hetnet.nl)
Born, L the Netherlands

*(ed. - Below are the pictures Erik sent at my request. I have also contacted Richard Snyder about the ARUP designs and he has indicated the best source for drawings would be one of the model magazines from a few years back. Hopefully, these will be of help to Erik.)*

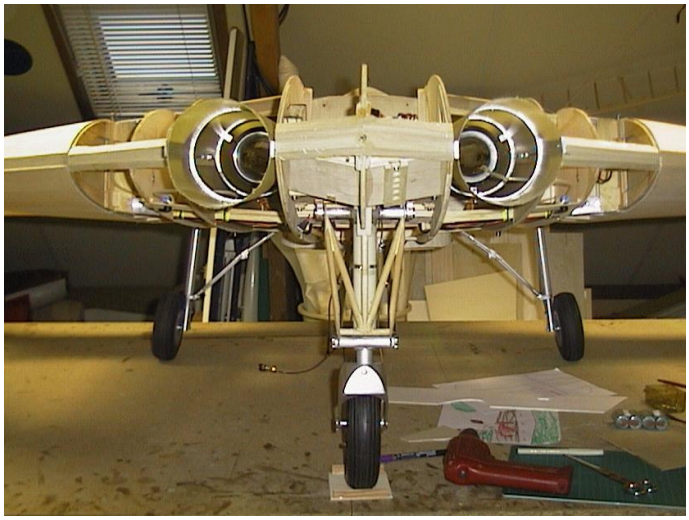


February 14, 2000

Thank you for your response on the ARUP. I hope that I can get some more info. As soon as I can borrow the digital camera from my company I will send you some pictures of the almost ready ARUP.

One more thing. Mr. Heinz Scheidhauer, the Horten test pilot, is helping with the project and is still living at age 87 but in poor health in Germany.

Erik



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February 14, 2000

If you are interested in flying wings, the TWITT newsletter is essential. I discovered it one year ago and it is a pleasure to read it each month. Join TWITT!

Christophe Bordeaux (survol@gliderpilot.net)
France

*(ed. - I couldn't have said it better myself, but then I'm very biased. Thanks for the endorsement in such a public place.*

*Christophe has been a very generous contribitor to TWITT and we certainly appreciate his enthusiasm.)*

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March 1, 2000

Hello. I am a model builder of tailless gliders - particularly "planks", i.e. no sweep back or sweep forward. I have been trying to improve the free flight performance, i.e. I do not use radio control! I use the Swiss section S.1, but can find no aerodynamic data anywhere. My search has brought me to your excellent site and I wondered if anyone knew of any data on this (or any other self-stabilizing 'foils suitable for free flight). My friend, Peter King, has developed a glide performance program, but without data we can't progress any further. Can anyone help, please?

Dave Dent (d.dent@dtn.ntl.com.uk)
Scunthorpe, UK (England)

*(ed. - If anyone out there can help Dave via e-mail, please include TWITT as an addressee so we can stay on top of what is going out and share it with others.*

*For those of you without e-mail capability, but the an answer to the data problem, could you please send TWITT a copy of anything you send to Dave for the same reasons as above. Thanks.)*

## SELECTED E-MAIL TRAFFIC

February 29, 2000

We corresponded about Robert Hoey's work with bird models and my thoughts on pterosaurs. Robert and I are now in contact which is great.

You also said you would try to find a way for me to pay for joining TWITT without incurring enormous charges. Any progress? And what is the chance of getting hold of the video of Hoey's presentation?

Reinhold Stadler in Munich has sent me a stack of valuable reprints, including some on the MacCready pterosaur. Have not yet got to read them, but it looks like splendid stuff.

All best wishes,

Adam Locket (adam.locket@adelaide.edu.au)
Australia

*(ed. - In my reply to Adam I noted I would get back to work on trying to find a way through our bank to take overseas payments via credit card without the necessity of all the equipment.*

*In an earlier message he had mentioned Henry Jex who worked on the MacCready project year ago. Adam is working on getting a hold of him also. Henry has indicated he would be willing to do a program for us later this summer, which should be very enjoyable. We will keep you posted on this.)*

---

February 6, 2000

Thanks so much for alerting me to that website. As you can probably imagine, I will be adding some silk, free-floating flaps on one of my bird models shortly!! I'll let you know how it works.

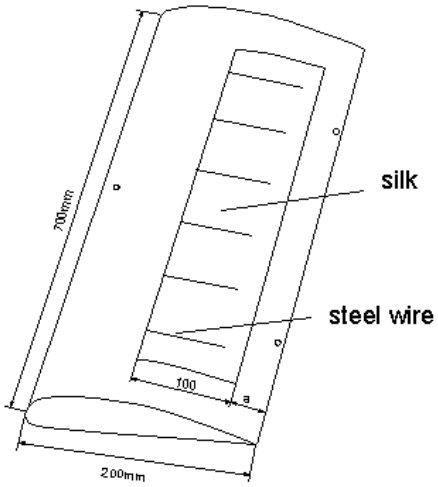
Bob Hoey

*(ed. - I sent the following website info to Bob that I picked up from the Nurflugel bulletin board traffic:*

*http://www.bionik.tu-berlin.de/intseit2/xs2vogel.html*

*This site shows diagrams and polars they have worked out through experimentation. They were trying to prove that flaps that are built according to covert feathers of birds can indeed function as eddy breaks and therefore prevent the sudden drop in lift generation during stall. A copy of one diagram is shown below.)*

**aerofoil with silk flaps**

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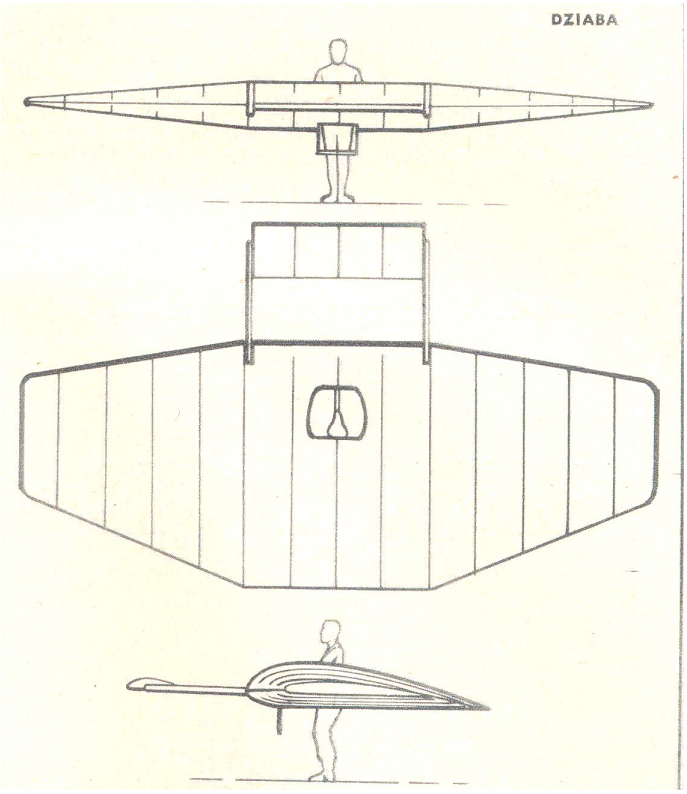
January 25, 2000

I sent you a letter this Friday but forgot to include the disk with the photos regarding the Polish gliders. So, I send you herewith, the photos with the text I have sent to the Krakow museum. You shall probably get my letter in some days (weeks). This letter also includes my payment for the annual membership fee.

With best regards.

Eric du Trieu de Terdonck




*(ed. - I have included the last two pictures Eric sent along with the descriptions he included in the e-mail to the Krakow museum. The other pictures were included on the cover of last month's (February) newsletter. I also asked Eric to pass this information and pictures along to Krzysztof Waskiewicz in Warsaw, Poland.*

*There seems to some interest in Polish flying wings of late, since I have been corresponding with Krzysztof about the designs of Witold Kasper (Kasprzyk in Polish). We have exchanged a great deal of printed matter between us on Kasper. In also indicated he would be sending along calculations for the BKB-1.*

*Some of the new pieces are listed below, although not all of it is in prime reproduction condition. He is trying to put together enough to establish a historic display at the Warsaw Aerospace Museum. I toured the museum back in 1980 and it had a credible display of primarily Soviet aircraft.)*

1. "Grand Champion Ultralight - Steve Pinkham's Kasperwing Celebrates Ultralighting's Early Days," by Mary Jones, Sport Aviation, January 1996, pp. 81-84.

2. "Kasper - The Friendly Wing," by Dan Johnson, Ultralight Flying, The Magazine of the U.S. Ultralight Association, April 1988, Issue 146, pp. 16-18.

3. "Preliminary Report on Vortex Generated Lift," by W.A. Kapser, (Personal Paper), Nov. 20, 1969, 5 pages.

4. Untitled Paper (Short Historical Retrospective), by W.A. Kasper, May 3, 1970, 3 pages.

5. "We Need A Safer Airplane," by Horst W. Petzold, (Personal Paper), Seattle, WA, November 30, 1974, 9 pages.

6. "A New Tailliess Sailplane," by S.K. Brochocki, Canadair Limited, Montreal, Presented at the 8th OSTIV Congress, Cologne, Germany, June 1960, Swiss Aero-Review, November 1960, 5 pages.

7. "Kasper Wing Utilizes Vortex Principle And Can Revolutionize Air Craft Industry," by Horst W. Petzold, National Exhange, (date unknown), pp. 14-15.

8. "In Reinventing The Small Airplane, Less Can Be More," by Jan W. Steenblik, Air & Space Magazine, (date unknown), pp. 113-115.

9. Letter by Witold Kasper, "Promotes Safety and Efficiency (The Controlled Flying Wing)," 2 pages.

10. "Redemption At Issaquah," by Thomas A. Horne, AOPA Pilot, May 1981, pp. 57-60.

11. "BKB-1 / Horten IV," by D. George-Falvy, Senior Specialist Engineer, Boeing Commercial Airplane Co., (date unknown), 13 pages.

12. "Comments After A Brief Flight With The BKB," by H.C. Higins, Former Engineering Test Pilot, (date unknown), 2 pages.

13. "BKB Flight Report. No. 2," by H.C. Higins, October 29, 1968, 3 pages.

14. "First Flight Of BKB-1 Flying Wing," by F.A. Geraldsen, (date around May 1969), 3 pages.

15. Flight test and evaluation of radio controlled models of Kasper Flying Wings of 13 degrees and 20 degrees sweepback, by Thomas L. Richards, Manager, Mock-Up Model Company, Seattle, WA, January 20, 1977, 2 pages.

16. 2 pictures of Witold Kasper in Vancouver along-side Julian Bojanowski, Donimika Picard and unidentifed woman.

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December 30, 1999

I live in Buenos Aires, Argentina and have seen the Horten design IA-41 URUBU (Ho-XVC) already restored (to aestetic shape only) in exhibit at the 'Museo Nacional de Aeronautica' (National Aeronautics Museum) and have some good detailed photographs of it. If you think they can be useful to you, I can send them to you via e-mail. They are scanned in 50k, 80k and 150k .jpg format.

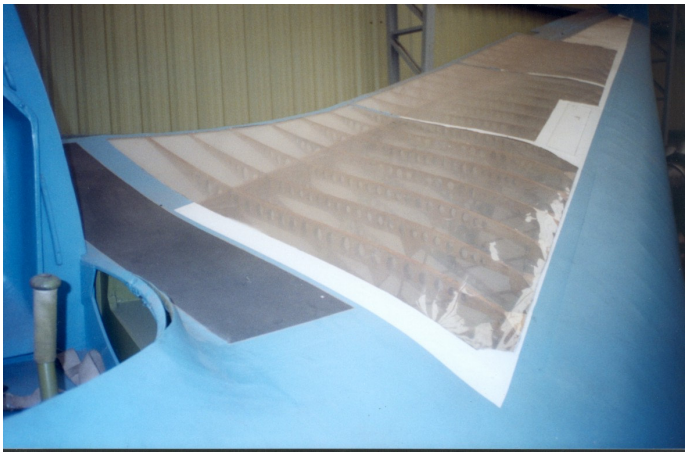
Start a good 2000.

Sincerely,

Fernando Walter-Siarez
fws@siscor.bibnal.edu.ar

*(ed. - Of course I took Fernando up on his offer for the pictures. I have posted them to the web site, but have not had room in the newsletter for the past several months to post a couple for you guys without internet connections. Sorry they are not in color, which is sort of a light turquoise blue.)*

**ABOVE: Starboard wing showing small all movable rudder that replaced the original spoilers, which were hated by some glider pilots. The sky-blue leading edge portion corresponds to the wooden torsion box; behind it, all is fabric. Over the rudder it can be seen an Avro-La Clerva rotor blade.**



**ABOVE: Port wing partially covered in plastic showing reflexed wooden ribs and aft spar. To the left is seen the pilot's stick.**

**ABOVE: IA-41 URUBU (Ho-XVc) was a side by side glider, built in 1951 in Argentina. It was the first glider to go across the Cordellera de los Andes, piloted by Heinz Scheidhauer. Central section is made of wood and steel tubing (notice waling strips). Part of the story of the Horten flying wings in Argentina is documented in the book "Las Alas de Peron" (Peron's Wings) by Ricardo Burzaco published in Argentina (1995) ISBN 987-95666.**