No. 295 JANUARY 2011

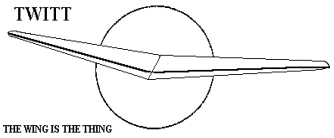
T.W.I.T.T. NEWSLETTER

In memory of Al Backstrom

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., **1101** means this is your last issue unless renewed.

Next TWITT meeting: Saturday, January 15, 2011, 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.

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Members only section: ID – **20issues10**
Password – **twittmbr**

Subscription Rates: $20 per year (US)
$30 per year (Foreign)
$23 per year US electronic
$33 per year foreign electronic

Information Packages: $3.00 ($4 foreign)
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$1.00 ea + bulk postage

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60oz/60	50.00	53.00	37.00

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 (#1720), east side of Gillespie or Skid Row for those flying in).

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PRESIDENT'S CORNER

This is an interesting issue with a lot of information on the BKB-1 flying wing. We haven't had much interest in this over the past couple of years and Stefanie Brochocki has been pre-occupied with other things and not as involved in her research on the BKB-1 history.

We are sad to announce that Al Backstrom passed away in August 2010 in Austin, Texas. We learned of it through a message from Serge Krauss and I found an obituary from Austin that seems to have confirmed it. Al was a key figure in the development of tailless sailplanes over the years and was always willing to offer his assistance to those who wanted to learn more about designing flying wings. I have included some shots of his designs on the cover.

I hope everyone had a joyous holiday season and was able to get through the New Year's celebration without too much of a hangover. My holiday got interrupted with a major flooding of my lower floor due to the heavy rains we experienced. I now sit in a more barren room since my office furniture is mostly in the family room, whose furniture is in the living/dining rooms. Now the long task of trying to figure out about putting down new carpeting or go some other route in the event we have another rainy season with the potential for more flooding. At least I was able to keep my computer up and running so this issue could get published.

HAPPY NEW YEAR

Andy

LETTERS TO THE EDITOR

December 24, 2010

I recently rejoined TWITT after a 10 yr. hiatus. I have more free time now as I approach retirement. I have been looking for a full size flying wing project, specifically a motor-glider. There seems to be few options in the form of proven designs that can be homebuilt. I have combed the Internet and have a collection of books on the subject (everything you recommend and then some).

I just put a check in the mail to purchase plans for the Fauvel AV36 & AV361 (Falconair in Alberta, Canada has them). Most of the information I have been able to glean speaks highly of these designs and it looks to me to be a simple matter to motorize them (I have better then average fabricating skills). Some people complain of the landing gear placement, which looks fixable to me if you follow the pattern of the Marske or Schweizer designs. Tow hook design is also mentioned. Flight characteristics are said to be forgiving. Is there any tendency towards tumbling? Design strength is said to be over 6 G's (12 G's by some accounts--hard to believe) Derek Piggot's article mentions a crash landing by an experienced pilot in the design.

AV-36

I realize that the designs are dated and use obsolete airfoils. A switch to a Wortman section might be worthwhile? Their performance is not world beating, but with a comfortable seat and my iPod I should be able to stay up all day (even with $50/gallon gasoline). Glide ratio is not that important if you have a motor to fall back on. Sorry I'm not a purist and I am open to improving the designs somewhat, although I don't think I want to take the time to build an AV-48. I am not opposed to working in some carbon fiber if it will lighten and strengthen the design. It could fall under part 103 if built lightly enough with a motor.

Are there any other shortcomings or problems with the designs I should know about? I understand that you have a file on the designs. I doubt the plans I have sent away for have been updated since the 1960's and I don't want to reinvent the wheel. At this stage any information would be helpful. I could use a mentor!

AV-361

I plan on coming to one of your Spring meetings in my old Mooney M20E (another work in progress) and would love to have a look at what ever information you have.

Sincerely,

Ron Webb
<gaspass2@aol.com>

(ed. – Welcome back to TWITT and thanks for the information on your plans for building a flying wing. I will get busy and see what we have in our archives on these designs, but I am not sure we have much more than some pictures and drawings that have been collected over time.

Hopefully, some of our members have a little more information on the Fauvel designs. Members, if you do have something please include TWITT in your e-mail so we can share it with the rest of the group.

I can recall seeing Jack Lambie bring his Fauvel to the Elsinore glider port in southern California in the 1950s and it always caused a stir. This was because it was a flying wing and due to the way it was carried in the trailer with the complete glider held in a cradle nose down into the trailer bed.)

December 9, 2010

Alex Butkus to Norm Masters: "I have not been able to find a technical paper documenting the SAAB vortex lift experiment mentioned on your website. If you could direct me to your source, I would appreciate it very much."

Norm's response: The original report is "SAAB report TP-74.51" I got a copy of the original Swedish document in the package of papers about Witold Kasper that T.W.I.T.T. sells. In 2003 a retired Swedish aeronautical engineer translated it for me but most of my papers are in taped-up boxes in preparation for moving. At that time I sent copies to Stefanie Brochocki and the president of TWITT Andy Kecskes. You might ask Andy if he added it to that package or archived it. Here's the bibliographic web page:

<http://www.twitt.org/KASPBIBLIO.html#KASPERBIBLIO>

That original experiment at SAAB wasn't really very promising. Although the test wing archived a very high sustained cl (as I recall it was greater than 3) the blower was actually producing more thrust than the propulsion engines.

This may also be interesting to you: "AIAA-00-2608 Control of vortex breakdown by blowing along the core". I haven't read it because I'm not a member but you can probably get it through the university library.

If you're looking at powered vortex lift systems I think suction is more promising. I uploaded a document on a suction stabilized vortex to RCG last year:

<http://www.rcgroups.com/forums/showthread.php?t=979409&page=3&highlight=artificial+sink#post11314119>

(ed. – The TWITT package of Kasper material does not include a foreign language article so I will need to have Gavin look at the archived material in the hanger.

Here is some other information from Norm on the same subject. I have included the main piece from the link and a couple of the pictures.)

A few days ago a guy posted a message on a bulletin board I that I use a lot saying that he has most of Kasper's papers including full size copies of the original BKB-1 blueprints. He also posted some pictures of the wing of the powered plane that Kasper and some investors built.

The thread is at:
<http://www.homebuiltairplanes.com/forums/aircraft-design-aerodynamics-new-technology/2943-witold-kasper.html>

Norm Masters

Re: Witold Kasper

I know this post is old but I just had to reply.

I have all the names and places but to keep this short and so I don't have to retrieve my notes.

As you can read in various publications the powered version was crashed during a test flight, test pilot survived but the plane was beyond repair.

After an attempt at restarting the project and failing heath of Mr. Kasper the remains of that aircraft where stored with a friend of Mr. Kasper in Kent Washington USA.

Then with the passing of Mr. Kasper and his friends passing the son of that friend was the heir of the powered version (wood wing, engine, instruments, seats etc) and along with all Mr. Kasper's notes BKB-1 full size plans. He has all the plans/notes and engine/instruments but not the wing; it is sitting in my fathers backyard in North Dakota sadly it is in bad shape from the crash and wood rot. It was cut in half for transport but wasn't usable anyway. It's still there as of 12-07-2010.

I have detailed pictures of it. My father also has a set of BKB-1 plans.

You can see video of the BK 1 tumbling at Kasperwing Ultralight Aircraft, Aerial Photography and I have copies of video on VHS tape. My father had seen the BK 1 tumbling in Issaquah Washington before the airport was removed (I have many fond memories of watching gliders and parachutists there). Oh my father is a Kasper nut and even has the Ultralight Kasper wing Model C the model A&B's where production planes with Kasper wing tip controls and weight shift the C model was a prototype with more conventional 3-axis controls (as in spoilers and elevons) and was very heavy.

Mr. Kasper was working on a propeller with Kasper style winglets but the man he was working on that project (along with struts for the flying wires on the ultralight) was killed in a car crash.

As far as his work the only real advantage he had was total control and stability during slow speed flight. The controls would not be useful for short takeoffs (very draggy) while other slotted wings and variable geometry leading edge configurations work well for that and jetliners don't need to fly that slow.

The leading edge flaps make it so that the wing doesn't stall and creates a vortex that forms a tube that rolls behind the leading edge flap when deployed that is fed from the middle of the wing and progresses to the wing tip exiting over the controllable wing rudders and tip elevons making the plane controllable and stable during the vertical mush. This vortex also has the effect of making the airfoil a very thick one and keeps the air flowing over the wing just like the vortex in the back of a pickup truck.

The Kasper Wing ultralight could also be set into this vertical mush through weight shift and is also viewable in video at the

http://www.kasperwing.com/Kasperwing%20Stall.WMV

There are no leading edge flaps on the ultralight it is just pushed into a "stall" and held there with weight shift and the same vortex feeds the wing tip controls allowing the slow controlled vertical descent .

The TWITT material and Mr. Kasper's patents are all the info one needs to understand all this. Aircraft Wing With Vortex Generation - United States Patent # 3,831,885

His stuff only works for flying wings because the vortex needs to exit over the control surfaces and standard rudder elevators aren't in the right place for that to happen.

If anyone needs more details let me know.

James Geisler, Jr.
<gpen6@hotmail.com >

(ed. – The following was a reply through the group by Stefanie Brochocki, who is a member of TWITT. There is some dialog in other messages that goes along with this but I wanted to mainly get Stefanie's comments due to it being a long time since she has said much about her research.)

Hello,

I am a new member. I joined because I'm the daughter of Stefan Brochocki who was the designer of the BKB-1 glider, which Kasper acquired after its initial testing phase of several years in Canada. There is an enormous amount of public misconception about this glider. I have made information available through TWITT about ten years ago. I haven't actively pursued this topic for several years due to time constraints and other commitments in my personal life. I have researched many of Kasper's claims. I won't go into that now, but I urge caution in your 'consumption' of such. Meheen is now aware of many of the concerns about claims expressed by Kasper in his book. Much of the vaguely cited research in this book was based on Ed Polhamus' work on large, powered, delta-wing aircraft. I talked to Ed about that very thing. it had little in common with the BKB.

To answer your immediate questions; there were two powered aircraft, that I am aware of, that Kasper based on the Brochocki BKB concept. One was an obscure powered glider, the other a proposed production item that lost a number of people a fair amount of money. To my knowledge neither of these aircraft ever flew beyond a few yards. Kasper's use of the BKB concept in these and his Bekus adaptation of the BKB-1 design violated an agreement he had signed at the request of my father when he (Kasper) had acquired my father's share of the ownership of the glider. Interestingly, it is not generally known that Fred Bodek, the other B in BKB, continued to maintain his share of the ownership. This was among the many details that Kasper did not make known is his many publicized writings.

As for the tumbling, the BKB did indeed tumble. There is evidence only of nose-up tumbles. I have film

footage of this. There is no evidence of it ever having tumbled nose-down despite Kasper's claims.

Hope this provides some delectable food for thought. I will not be able to post much as I'm heavily bogged down in some debilitating home renovations right now. I hope to be much more active in pursuing this topic in the future.

Stefanie Brochocki

(James added: The name of Walter Serafin doesn't appear in my notes but the name of Mr. Kaspers friend doesn't ether. The son of that man is Wayne Smith who in 2000 was living in Burien Washington and yes the copy of the BKB-1 my father has are copies of the original BKB-1 plans they are full size and cost a lot to reproduce.)

Stefanie responds:

I understand Walter passed away. He had a lot of Kasper's papers, but apparently did not have a complete set of BKB plans. Walter would not share anything with me as he was a Kasper fan who would not accept various facts about the BKB origins. Andy Gelston was building a composite version of the BKB. My family had provided copies of the original plans in our possession. Strangely, we were missing the wing plans. When Andy visited Walter several years ago in Chicago, he found Walter's set did not include the wing either. I regret that I have not pursued this matter as I should have. I would dearly love to have a complete set. Time passes and the old crowd is aging or passed on. Documents and plans get thrown in the trash. We have lost so many pioneers and their work.

I do have some leads as to where some complete sets may be found. An old friend and former gliding colleague of my dad, Leo Schober, had a set. It may have been only a copy of the BKB plans with Kasper's Bekas adaptation drawn on top. But I believe it was complete when I saw it. Leo is sadly now suffering from Alzheimer's. His wife does not know what became of his many sets of plans (including the Ho IV and others). I will try to contact one of his sons who I think may (hopefully) have salvaged these items. Also, I believe Jim Geisler of Oregon had some copies. They appeared to be complete when I visited him years ago.

There is also the possibility that Kasper took plans with him when he returned to Poland before he died. There is a museum there that has a lot of his papers. I have never followed up on that.

I couldn't find the video of the BKB-1 tumbling at the website you noted. You quoted BK 1, so I'm not sure what you meant. There seems to be some confusion in the literature over the Kasper Wing which was an ultralight and the BKB-1 which was a tailless glider. The glider was designed solely by Stefan Brochocki of Montreal, Canada. Mr. Brochocki at the time was employed as an aeronautical engineer at Canadair Ltd. The Kasper Wing design was based on patents surreptitiously obtained by Kasper on Brochocki's original drawings, design, and intellectual property. He did not inform Stefan about these patents. Mr. Brochocki only found out about them years later and inadvertently.

The patent you refer to references data previously patented by Mr. Kasper using data and specifications from the BKB-1 glider designed by Brochocki. I have attached a scanned image of a document signed by Witold Kasprzyck in 1960 before he changed his name to Kasper. *(below but hard to read)* The Certification Type Record for the BKB-1 registered for the Canadian D.O.T. will show that all Kasper's designs, patented or otherwise, were all based on this original type record data in contravention of the attached agreement. This information is available through the Canadian Archives in Ottawa.

Mr. Kasper misled the US Patent Office in attempting to patent this data. Not only was the BKB-1 design published internationally by Mr. Brochocki well before these patents were filed, but the design concept in particular, its tailless aspects, wing design, and control system were presented on Mr. Brochocki's behalf at the 1960 OSTIV Conference in Cologne, Germany.

Mr. Kasper, although involved for a limited time with the manufacture of the glider with Stefan Brochocki and Alfred Bodek, took no part in the design. Mr. Kasper presented with no design credentials when signing on to the project and was known only to Mr. Bodek and Mr. Brochocki as an excellent glider pilot and instructor. Mr. Bodek, however, was an accomplished aerodynamicist and collaborated with Stefan on the mechanical aspects of the BKB control system. It is that original control system and the wing planform that Kasper patented and subsequently modified for use in the "Kasperwing".

Our family requests that in future all references, publicly stated, to Mr. Kasper's "designs" should cite the originator of that specific wing design and control system as Stefan Brochocki.

Mr. Brochocki made no claims about the Kasper "Vortex Lift" theories, as yet unsubstantiated, and did not wish to to connected with them in any way.

Ah, it's so much fun to talk about this stuff again!

Stefanie

From Bill Hinote:

Well, I think I've made an interesting discovery. Look at this website:

http://chomikuj.pl/Chomik.aspx?id=BKB

--although it's in Polish, several things are obvious. First, there are 2 nice color images (stills) of the BKB-1 in flight. More importantly, if you go to the videos link you will find 2 vids; the first (shorter) vid is of a Kasperwing ultralight on floats and probably isn't interesting to those following this thread. However, the second one is more than 4 minutes of the BKB-1 in action. It's grainy and shows its age but is still fascinating to watch.

Most importantly, if you watch the tumbling sequence starting at :47 you'll see a tumbling first with a nose-up rotation, followed by a NOSE-DOWN rotation! I guess this proves that the BKB-1 would tumble in both directions.

Much of the rest of the tape consists of loops, chandelles etc. and not tumbling. I have the distinct impression that these maneuvers may represent unsuccessful efforts by the pilot to induce tumbling.

I invite others to view this video and provide corroboration to my observations here. I could be wrong and I don't want to introduce yet another error in the BKB-1 mythology.

Stephanie, do you recognize the pilot exiting the BKB-1 after landing, near the end of the video?

Stefanie replies through a series of messages:

That video was sent by me to a fellow in Poland who was working on the BKB story. He was very curious about the tumbling and delighted to hear that there was footage. My dad got the old 8mm footage from Kasper. It was very grainy as you say, and dirty with the grime of years before I took an interest in it. I had a friend, a very creative friend whom I asked to clean it up and edit it. He cleaned it up as well as he could and the result is what I showed at a TWITT meeting in the late 90s. Unfortunately, the friend had felt creative enough to feature the nose -up tumble in slow motion (OK) and REVERSE (yikes!). I asked him to correct this, but a variety of circumstances conspired to prevent this happening. I should never have dropped this or let the video out of my hands. The Polish fellow was not supposed to air this version. It's all my fault! And now the aviation world will take this doctored video as proof that the BKB did a nose-down tumble. It ain't so, at least on this footage. ***The nose-down tumble is a doctored sequence and did not actually occur!***

BTW the pilot is this case is Kasper. I have another film still on the old reel which I got from a fellow in Seattle, Gerald ?????, who was piloting the glider himself. It also shows a nose-up tumble.

Does anyone know what happened to Walter Serafin's collection? He said he had some films. In fact I think he sent me one. I don't think there was anything noteworthy on it. He would not show me the one he claimed he had showing the tuft test evidence of vortex lift on the BKB. Harry Higgins, then Chief of Aero at Boeing, was present at that test and witnessed nothing unusual about the tuft behavior. I have his written assessment of that test as well as his own

flight tests of the BKB. I have all the Canadian test records as well.

The original BKB-1 was black and white when shipped to the US from Canada around 1964. Kasper painted it red and white and eventually named it the BKB-1a, letting on that it was his remake. It wasn't. This was the aircraft that crashed in the 70's when piloted by Curtis McPhail. It was also the one stored in the cowshed.

The other red and white one, the Bekas, Kasper's long-winged version, was the one piloted by Linn Emrich in another crash. The wing was unstable and prone to twisting, what Kasper tried to claim was dynamic soaring. Linn and I became long distance friends before he died. We had many phone conversations and emails, so I know this for a fact. I also have the newspaper article that reported the crash and have talked with eye witnesses.

The yellow one (Aha, your dad will love this!) still exists relatively intact but unflyable at the Turkey Dusting Landing Strip outside Phoenix, Arizona. At least it was there in 2000. I filmed it suspended in the hangar. I forget the name of the old fellow who owned it. I have it somewhere in my records. he was trying to sell it. It was not a BKB version. It was the longer wing; measured it myself. I don't believe it ever flew successfully.

I visited the NASA engineer who did some wind tunnel tests at one of the east coast bases. Wish I could remember names quickly. It's in my notes. I videotaped the interview. Basically he said there was no substance to the claims of vortex lift on the BKB wing. I believe subsequent testing by Saab could only induce a vortex with blowing. Norm can explain that better than I. BTW this was the same engineer that built the first R/C model of the BKB. He gave me the model! It was featured in one of the magazine articles in TWITT's archives. Perhaps you read about it.

I should warn you that in my research I found that very few of Kasper's claims were substantiated by another party. You have probably noticed that available literature is largely based on Kasper's word. I could not find anything to substantiate the vortex lift claims and I've talked to a lot of people about this! I've also read everything I could get my hands on. It would be great if the claims were true. We'd welcome it!

As far as the flying performance of the BKB is concerned. We know it tumbled nose up. It's on film. There is one eyewitness report of it tumbling nose-down. None of Kasper's BKB-based designs flew successfully or at all except the Bekus, which was the longer winged adaptation of the BKB. However it was so poorly engineered that its wing was prone to dangerous torsional movement. That was evident in the crash that injured Linn Emrich. Many of the plans for building these design adaptations were sold without ever having been built or tested, despite claims to the contrary. The motorglider was a good example of that.

I have many BKB flight test reports from the original Canadian test team including David Webb and David Marsden. They are very objective in nature. They noted the tendency to tumble, but not as a merit, because they were trying to avoid tumbling. It was Kasper who accidentally discovered that the BKB could recover from a tumble. I have test reports done by Dez George-Falvy and Harry Higgins (Chief of Aero at Boeing) on the BKB-1 after Kasper had tinkered with it. All of these men are accomplished aerodynamicists. Kasper would not publish Harry's report. George-Falvy did tumble the glider in testing. He noted its ability to mush as did the Canadain test-pilots. None of them considered the mush mode useful, as landing in the mush mode would still sustain damage to the aircraft and/ or injury to pilot. The reports by these men are credible.

George- Falvy was familiar with flying wing behavior and so did not attribute to the BKB the almost supernatural powers of flight that Kasper claimed. The BKB ***was*** a well-designed aircraft, he noted, having many of the desirable characteristics of the HO IV, yet produced in a basement on a tiny fraction of the resources that went into that glider's development. If one were not familiar with flying wings one might easily be influenced by Kasper's self-promoting descriptions of the BKB's performance. In truth it was impressive (and still is) but it's not black magic. Please take this into account when reading Kasper. The BKB was the only successful design he promoted, but it was not his design.

Stefanie

From PlnCraze, who started all this discussion:

Thank you to all who have replied to this thread. I started it with the hopes of pulling together all of the stories of Kasper that had been published in magazines or quoted out of context in an article on another topic. It seemed that when Kasper's ideas

were challenged by someone who either did a wind tunnel test or built a flying model to test his theories that there was not a definitive answer whether Kasper was right or wrong. Those who did the tests were hesitant to declare that Kasper was wrong but I do not think anyone ever tested his ideas on a full scale aircraft so there was never a final answer.
The book Meheen published had charts and drawings, which made it look like it was the result of tests but no airplanes were constructed which would prove these ideas. When I first read of Kasper's ideas it seemed that he had a great idea, which nobody noticed. I realize now it is more complicated than that. Thanks again.

December 14, 2010

I just got my copy of TWITT and I noticed an announcement about an agreement that Wicks had to kit the U-2.

I had called Wicks last week and inquired about the cost of the kit. Much to my surprise, the guy I spoke to said that he was expecting a call from Richard Avalon to complete the deal.

Much to his surprise I told him that Richard had died nearly 2 years ago.

The result of all of this conversation was that Wicks had started talking with Richard about doing the kit. Richard died before the deal was finished. Wicks tried on several occasions to contact him by telephone and left messages on the company recorder. These messages were never answered by anyone. Their latest call was about 4 weeks ago. Wicks was not aware of the article that was published in some airplane magazine which is what started a lot of activity on the U-2 Yahoo Group which resulted in a lot of phone calls to Wicks concerning the price and availability of a kit.

I have spent a few months looking at this design and have been investigating some of its flaws that have been discussed on the Yahoo Group. I mentioned a few of these problems to the Wicks representative.

As I understand the situation now, Wicks is waiting for a return phone call from Carol Avalon who is in India and will not return until some time around Christmas. They are also looking into the design problems and are trying to assemble a complete list of the materials that would be necessary to build the airplane so that the kit can be priced out. They said that they would be contacting the magazine and investigating why the article was published. If memory doesn't fail me, I seem to recall that the guy I spoke to at Wicks was concerned about producing a kit for a plane that had design problems and that he felt that someone (he didn't say who) should correct these flaws so that a safer airplane would be built before they offered a kit.

I am not an insider on this issue. I only want to build a self-powered flying wing glider and the U-2 seemed like the best candidate to achieve that end. The call to Wicks was for information only and as it turns out I knew more about the airplane, its history and its present situation than Wicks did.

I don't know if any of this is of value, but I did want you to know what the situation was at Wicks.

Walter Luikey

(ed. – Thanks for the update on the story with Wicks. I noted last month that there wasn't anything on their web site, so now we know why since a deal really hadn't been completed.)

December 29, 2010

You may be interested in this thread on RCG:

<http://www.rcgroups.com/forums/showthread.php?t=1320227>

The builder of this model, Paul Westrup, wanted to add flaps to the plane but hadn't had much success with a previous model so he asked for help. As you can see in the videos at the end (go to the bottom of the linked page), we did a pretty descent job. He wrote an article for the December issue of Radio Controlled Soaring Digest showing the plane and

<http://www.rcsoaringdigest.com/>

describing it's flight but not how to design the flaps. I'm working on an article showing the graphical method that I used to place the flaps for minimum pitch. I should get that to you some time in late January.

Norm Masters

Nurflugel Bulletin Board Threads

December 31, 2010

I was just looking through the current Flying Models magazine and noticed an ad for a laser cut kit "Designed by the **late** Al Backstrom..." Not remembering any notice here or in Andy's TWITT Newsletter ('hope I didn't misplace one!), I did a Nurflugel search and found no mention of Al's passing. So I went the "Google" route and soon found a mention on a model plane forum that he had passed away this past August. Since Al was the designer of the Backstrom "Plank" series that everyone here knows and an enthusiastic modeler, I thought I'd mention this for anyone else who, as I, had somehow missed the news.

Serge Krauss

(ed. – This note from Serge was the first we have heard of Al's passing. His newsletters mailed to Austin TX have not come back, but I did find an obituary notice from the Austin American-Statesman on 8/10/10 that stated Albert A. Backstrom had passed away on 8/4/10 at age 83 and is survived by his wife Marion. So I think this is confirmation of what Serge is reporting.)

January 1, 2011

Thanks Serge, I hadn't heard.

I remember about 12 years ago when Al spoke at the Central Division SHA/ESA meeting in Colorado. He talked about his work on the plank and opened up for questions at the end. I asked how long it took them (3 guys - he was the engineer) to build the prototype. I can't remember if he said 60 or 90 days. We all let out a collective gasp in surprise. He took it the wrong way - that we thought it was too long! So before anyone could say anything, he then explained that they only worked on it a few nights a week, because they were spending most of their weekends flying! How cool is that.

Al was a kind, generous gentlemen. Godspeed!

Dennis Olcott

Adding elevator to the lower wing of Easy Riser:

I once found a booklet on how to add those elevators. They hinge on the trailing edge on the lower wing.

Will they alter the stall-free behavior of the Easy Riser?

Greetz,

Koen (alias nestofdragons)
<salsa_dancer@live.be>

"Will this alter the stall-free behavior of the glider?"
Absolutely Koen. By changing the airfoil (that's what flaps, rudders, elevators and/or ailerons do) you lose stall-free >behavior... or more directly you force the wing to change it's angle of attack overwhelming any natural stability...

"Is it a "good idea"... hmmm... if you want an Easy Riser then, NO it's not a good idea... but if you want to make it into a totally different aircraft then go ahead... because that's what you'll >get... a whole new bird!!!

Timothy
<flytch@yahoo.com>

I placed a reaction of Timothy below and my new vision about this problem. It is getting really a bit too high for me to guess what is right. Can anybody confirm or comment my vision?

Timothy, you confirm what I feared.

But ...wait a minute ...uh ...new vision on this problem all of the sudden came to mind. Try to follow my explanation.

1) Stall happens when you ask too much lift at too low speed. If it happens on the Easy Riser the lower wing still lifts , but the upper wing looses its lift due to its higher AoA (angle of attack). Due to the stagger of both wings, the upward force in FRONT of the CG gets less and the nose of the Easy Riser descends to a point the upper wing gets lift again.

2) If I place an elevator in the middle section of the upper wing, it will work as a elevator on a canard. If you want to pull up too hard at too low speed, this section will be more sensitive to stall as it gets a more hollow at the bottom airfoil. So it will stall which makes

the nose drop which makes the speed rise which gives control again. Right?

3) I fear that the drop of the nose will be a bit larger with the elevator on the upper wing if the pilot does not place the stick back into neutral position. Right ???

4) One thing that I have no idea how it will act in flight is the fact that when the elevator is going down the airfoil will get a more hollow shape at the bottom. And ...those airfoils are no longer auto stable. At high angles of attack the pressure point of lift gets shifted backwards. So ... in the worst case you even totally loose the lift in front of the CG and your airplanes nose will point downwards just when you want to go upwards. Any idea how far I am from the truth?

Koen

Hey Koen

Is this the funky thing you are talking about? http://www.youtube.com/watch?v=sPJDz4PG3Wwlooks A-10 airworthiness to me.

But tell me: why do you want to up and kill yourself with tweaks to someone else's design? Much better to kill oneself on a design completely out of oneself mind in my opinion (and practice).

Marco
<mrk@karenfuxia.com>

We had a few of them transformed into canards, years ago. They worked fine.

Cheers.

Bruno
<msmprod@optusnet.com.au>

Horten IV Airfoils

Does anyone out there have any information as to the airfoils used on the Horten VI? A review of the information I have in my possession doesn't provide any usable details. Any help would be greatly appreciated.

Regards,

Jack Ralston
<jralston@bihrle.com>

Your title says Horton IV but the body says Horton VI. Which would you like? I have a scale model of the Horton IV that I am enlarging to a 104" wingspan. What would u like to know?

Conestogaman
<conestogaman@yahoo.com>

The original H IV and H VI had the Horten Tropfen with 10% thickness at the tips.

At the root they had the Horten Standard, though not the 13% thick version linked below, but beefed to 16 % instead.

You can find them here:

http://tracfoil.free.fr/airfoils/profils/dat/horten.dat
http://tracfoil.free.fr/airfoils/profils/dat/htropfen.dat

Andre Kubasik
<andre@kubasik.de>

Following the recent thread on this subject I have just uploaded a file called Horten Profiles to the Nurflugel newsgroup site. I used the references given in the thread to draw up each profile to the same chord length and lined them up in a single image for comparison.

File: /HORTEN PROFILES.jpg
Uploaded by: henfreyb <chris@palanquin.plus.com>
Description: Horten wing sections relating to the H VI

You can access this file at the URL:
http://groups.yahoo.com/group/nurflugel/files/HORTEN%20PROFILES.jpg

To learn more about file sharing for your group, please visit:
http://help.yahoo.com/l/us/yahoo/groups/original/members/web/index.html

Regards,

Chris Bryant
<chris@palanquin.plus.com>

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Coming Soon: Tailless Aircraft Bibliography Edition 1-g

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(ed. – These videos are also now available on DVD, at the buyer's choice.)

VHS tape containing First Flights "Flying Wings," Discovery Channel's The Wing Will Fly, and ME-163, SWIFT flight footage, Paragliding, and other miscellaneous items (approximately 3½+ hours of material).
Cost: $8.00 postage paid
Add: $2.00 for foreign postage

VHS tape of Al Bowers' September 19, 1998 presentation on "The Horten H X Series: Ultra Light Flying Wing Sailplanes." The package includes Al's 20 pages of slides so you won't have to squint at the TV screen trying to read what he is explaining. This was an excellent presentation covering Horten history and an analysis of bell and elliptical lift distributions.
Cost: $10.00 postage paid
Add: $ 2.00 for foreign postage

VHS tape of July 15, 2000 presentation by Stefanie Brochocki on the design history of the BKB-1 (Brochocki,Kasper,Bodek) as related by her father Stefan. The second part of this program was conducted by Henry Jex on the design and flights of the radio controlled Quetzalcoatlus northropi (pterodactyl) used in the Smithsonian IMAX film. This was an Aerovironment project led by Dr. Paul MacCready.
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An Overview of Composite Design Properties, by Alex Kozloff, as presented at the TWITT Meeting 3/19/94. Includes pamphlet of charts and graphs on composite characteristics, and audio cassette tape of Alex's presentation explaining the material.
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VHS of Paul MacCready's presentation on March 21,1998, covering his experiences with flying wings and how flying wings occur in nature. Tape includes Aerovironment's "Doing More With Much Less", and the presentations by Rudy Opitz, Dez George-Falvy and Jim Marske at the 1997 Flying Wing Symposiums at Harris Hill, plus some other miscellaneous "stuff".
Cost: $8.00 postage paid in US
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