No. 265 JULY 2008

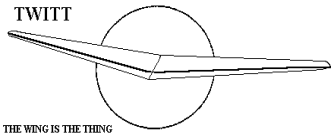
T.W.I.T.T. NEWSLETTER

This is the 2006 working model of any underwater flying wing that is the topic of our July Program.

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., **0807** means this is your last issue unless renewed.

Next TWITT meeting: Saturday, July 19, 2008, 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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President: Andy Kecskes (619) 589-1898
Treasurer:
Editor: Andy Kecskes
Archivist: Gavin Slater

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) 447-0460 (Evenings – Pacific Time)
E-Mail: twitt@pobox.com
Internet: http://www.twitt.org
Members only section: ID – **twitt2008**
Password – **08member08**

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$33 per year foreign electronic

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Wt/#Issues	FRG	AUSTRALIA	AFRICA
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36oz/36	30.00	32.00	22.00
48oz/48	40.00	42.00	30.00
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

Hopefully our members read this section at some point before the meeting so they will know that the meeting will be held at the Gillespie hanger at the regular time. Unfortunately, our speaker was unable to get permission to use the Scripps facility due to some other conflicting events. However, he will have a PowerPoint presentation that I am sure will give us all a good idea of what the program is all about and how these unique "wings" will further developed.

I think you will find the letters section very interesting, especially the one concerning the availability of some Horten drawings and technical data. I have included the examples he sent along so you have an idea of what he is selling. I told him he might have a lot of orders once the word gets out about what he has and can use to make good quality copies (these are a lower quality since they were scanned to electronic transmittal).

The Rohr 2-175 concept training came up again with some interesting items on what was ultimately being planned for this little aircraft. It has been a shame that some of the people associated with the building and development program have passed away without telling the whole story. At least this gives us some more insight at to the scope of the project.

There is a good possibility we will have Dan Dougherty come down and talk to us on his flying wing design that took second place at the SAE competition. This time he has the model in one piece to bring along for show and tell time.

Andy

JULY 19, 2008 PROGRAM

We have a very special program for July with ***Scott Jenkins***, Principal Engineer, Marine Physical Laboratory, Scripps Institution of Oceanography in San Diego making a presentation to the group about the XRay Flying Wing Underwater Glider program. The objective is to develop a fully autonomous, self controlled and self-adapting, underwater glider based on the flying wing design for persistent, novel, unattended passive sensing experiments in the ocean.

2006 Version of the Underwater Flying Wing

Successful, tests of the Flying Wing Underwater Glider could lead to a new generation of gliders that researchers expect to be the largest and fastest to date. They would be capable of traveling thousands of miles under ocean waves, quietly conducting surveillance and gathering data for military and civilian purposes.

The Flying Wing Underwater Glider's likely civilian applications include ocean science research, environmental study and fisheries monitoring. It could map currents or follow marine animals without disrupting their behavior, according to Scott who has spearheaded work on the glider's design.

The meeting will be at the Gillespie Hanger at the normal time of 1:30 pm.

LETTERS TO THE EDITOR

June 5, 2008

Dear friends of TWITT:

I am writing to TWITT in order to send this interesting link about Horten wing 1B restoration and flight in Gonzales Chaves City, Buenos Aires, Argentina.

http://youtube.com/watch?v=k8in4nEyiNA

http://youtube.com/watch?v=QXdTMswP19Y&feature=related

The general data are (as presented on film)

Horten Wing 1B
Owner : Otto Ballod Gliding Club
Year of Construction : 1954
Last Flight : 1972
Builders : Danny Dekker, Francisco Fernandez, Roberto Vilches, Félix Hetch
Restorer: Diego Roldan Knollinger
First Flight (aft. restoration) : Feb, 1, 2008
Pilot : Diego Roldan Knollinger

Technical Data :

Designer : Reimar Horten
Wing Span : 12.40 m
Wing Surface : 21.00 m2
Aspect Ratio : 7.30
Wing Section : Horten
Wing Loading : 10.00 Kg/m2
Empty Weight : 120.00 Kg
Load : 90.00 Kg
Gross Weight : 210 Kg
Material : All Wood

Performance :

V max : 180 Km/h
V stall : 45 Km/h
V sink min : 0.8 m/s @ 60 Km/h
L/D 21 @ 72 Km/h

Best Regards

Miguel Angel Melli
<miguelamelli@yahoo.com.ar>

(ed. – This is a video of a high aero tow of the Horten and then gliding around the field. It is interesting that they are flying it in an open cockpit configuration, which has been the theme in all the various videos that have come out on the restoration.

The second video shows the aircraft before the restoration with the bird's nests and other critter homes.)

June 16, 2008

Dear Mr, Bixel:

I am currently considering the commercial prospects of several WIG designs, and would like to inquire as to the reliability of such aircraft. Should a scheduled service be employed for their operation, how would factors like the weather impede, if at all, the efficiency and operation of such vehicles. Bluntly, what happens if a rouge wave hits one of these things?

I appreciate your time!

Best Regards,

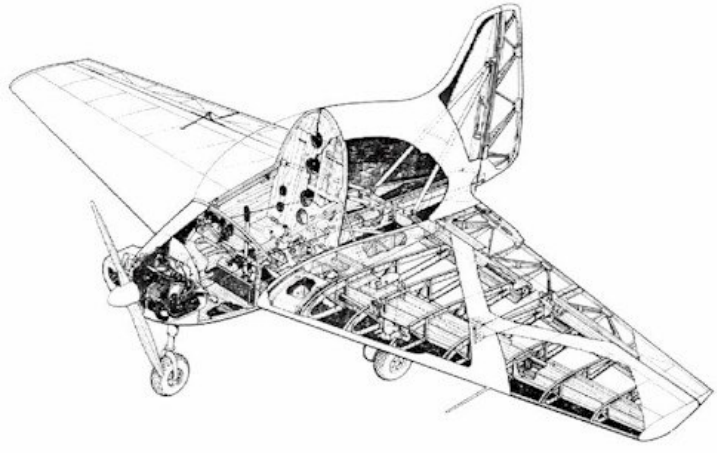
Alex
<alex@tulowiecki.com>

(ed. – We haven't heard anything back from Chuck Bixel, so don't know how he answered Alex.)

June 23, 2008

Hello at TWITT:

I have for sale a set of construction drawings for the Fauvel AV-60. They are in pretty good shape printed onto new paper. Cost is $160US



I forget to mention I also have for sale a great deal of Horten 4 data. This includes most of the construction plans minus the main spar captured by the US in Germany in 1945. The drawings are on 3ft square sheets. I also use to write to Dr Ramer Horten and so I have 100 XA4 sheets and dialogs that deal with the lift distribution of the Horten 4. Really the bones of how the Horten wing works. Its very good quality material.

Also the Northrop file and all the airfoil plots control linkages etc.,

Thanks,

Rob Germon
<germon@xnet.co.nz>

(ed. - Thank you for writing with this information. I can put an ad in our upcoming newsletter about both plans if you would like. I imagine the Horten plans would be a big seller.

If you have the ability, could you scan one sheet and e-mail it to me. I would appreciate it.

We got the following back from Rob.)

Hello Andy,

Be great if you can place an ad for the Horten material. Please find attached some sections of the big sheets along with 2 x A4 of the data theory for lift distribution plots. The drawings are in very good condition and so are the A4 data sheets. Both items are essential for anyone wanting to construct and fully understand how the Horten wings work. The main construction plans are dated 13th of April 1942.

Rob

(ed. – See the samples Rob sent along on later pages.)

June 27, 2008

I still have blueprints of some drawings that I did when Mike Voytish, myself and others from Airesearch joined the Rohr team in Chula Vista. Look at my website under the Rohr 2-175 link.

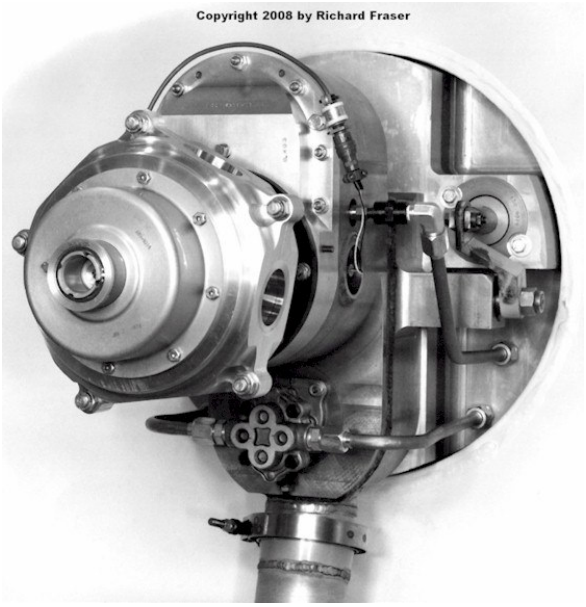
Richard Fraser
<rcfraser@pacbell.net>

http://www.fraseraerotechnologycompany.com

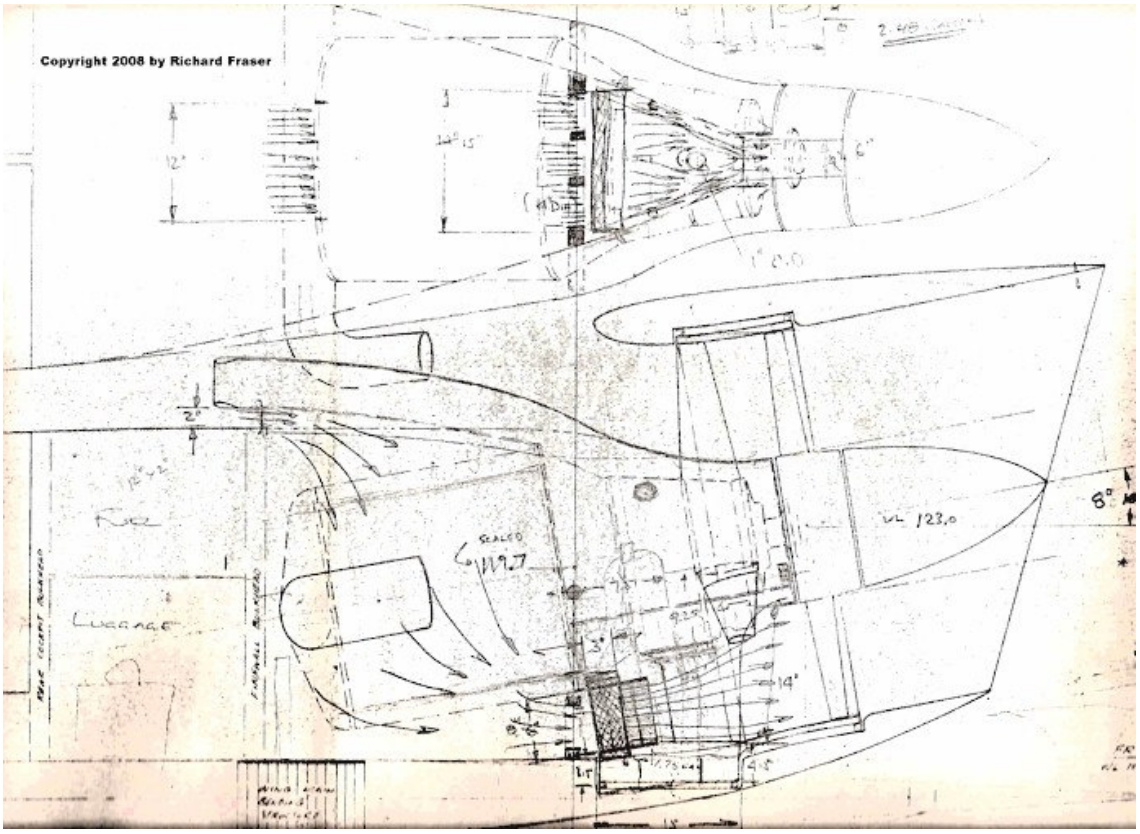
(ed. – I thanked Richard for the link and indicated I would add it to the website when I get some free time from other projects with tight deadlines right now.

I also asked if I could use a couple of the pictures/images from his site for out next newsletter with the appropriate citation of the source, which he approved. He responded with:

"You may use a couple of the pictures/images for your next newsletter. Not too many of us left who took part in these marvelous events. If I could find my Rohr 2KSES surface effect ship drawing book, it would also be another great presentation. I just retired last July from 50 + years in the industry. I retired from Honeywell in Torrance, CA. It was the original Airesearch site in Torrance. Many memories of what we accomplished in those days.")
(Source: http://www.fraseraerotechnologycompany.com/Rohr_2-175_Fan_Jet.html)



ABOVE: The test gearbox above is internal to the vacuum chamber. It was unique because the gearbox and propeller pitch change hub are oil pressure operated (in the presence of a vacuum). Perfect seals required.



ABOVE: An original 1973 conceptual sketch by Walt Mooney. The aircraft did not turn out totally as sketched. It was scheduled for a new gas turbine engine being developed at the same time.

F5Fras13

You might be interested in my F5Fras13 & 15 airfoils which I designed some time ago for improving the flying flea characteristics. I haven't been able to get the French too interested in it.....too bad. It's a better airfoil than what they are using. It has been used in full size aircraft and finally, it will fly soon in France. It's a trailing edge reflex camber for pitch stability. I spent a lot of time and money developing it. The coordinates are free, on my website. It is also ideal for flying wings.

June 28, 2008

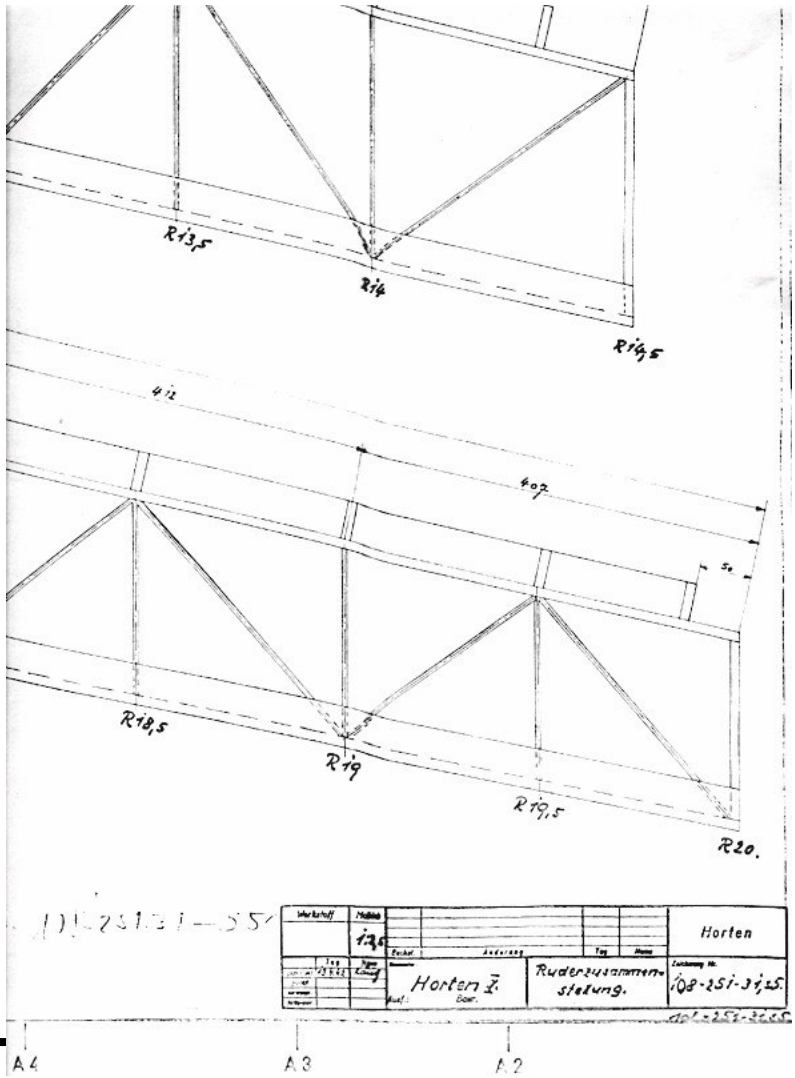
All,

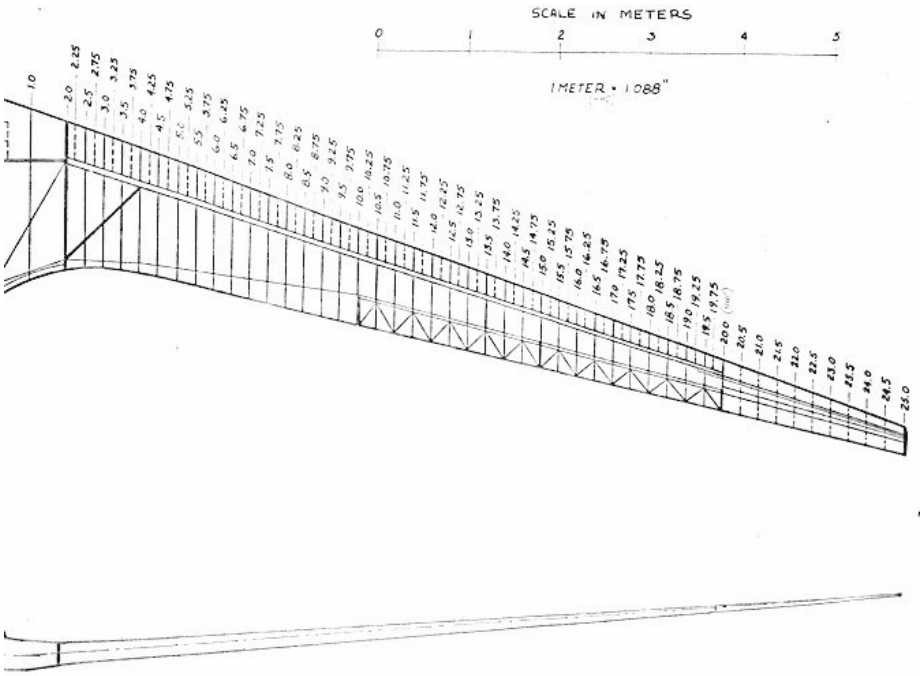
I am a resident of California again. I arrived home last night just before midnight. Its been a bit of an adventure for me.

But it's good to be home...

Al Bowers
<Albion.H.Bowers@nasa.gov>

(ed. – It is good to have Al back home again, although his time in Washington, DC didn't necessarily stop his contributions to discussions on flying wings.)





Nurflugel Threads:

This video was shot by me, and the wings where made by Aderito Esteves.

http://uk.youtube.com/watch?v=FTn-3AD7J5M

The whole process started three years ago, with me learning RC with a flying wing. Strange, or not, I get so used to flying wings that I feel uncomfortable flying things with a tail. So I start building two wings and my friend Aderito Esteves, a experienced builder, also start building wings at a high rate. We do this for fun, so don't expect high performance flying wings. My wings are almost stop in the last year since I have been involved with other projects. But, the building will restart soon.

So you can see some videos of some of the wings:
One of my wings:
http://video.google.com/videoplay?docid=5304833053423952568&q=apsia&ei=apJRSPHjB5mSigKqloXNDA&hl=en

Aderito Esteves wings

http://br.youtube.com/watch?v=-ApkGXJG0Hg
http://br.youtube.com/watch?v=H6WiN77Gddg
http://br.youtube.com/watch?v=2Ehev9KHauk
http://br.youtube.com/watch?v=b8ipvuJFXSE
http://br.youtube.com/watch?v=FTn-3AD7J5M

Jose Almeida.
<malmeida14@yahoo.com>

Greetings from Australia.

I have watched with great interest your videos. Your flying wings fly very well ! Would the plans be available and, if so how could I get a copy ?
Thank you in advance.

Umberto Rossi
<urossi@bigpond.com>

Hi Umberto Rossi,

There is a little problem. Aderito Esteves is an "intuitive" builder. He builds his models directly from his head without designing any plans. It's strange, and even more strange when 90% of his projects fly well at first flight!

However, the flying wing that I built is a copy of an Uzza 3, designed by Johannes W. Leinauer 2003 (unfortunately he died on 20.06.05).You can find all the building material at:

http://web.archive.org/web/20050309095343/leinauer.de/aero/uzza/

For me, there is a slight problem, when I try to land, at 1 meter from the ground, she flies, she flies and never stop... The video that I post as no landing images, but in the first attempt she made almost 50 meters at 1 meter from the ground and the landing was aborted. So I now put a flap like a the tail of a bird (this solution was not tested yet). I also increased the fuselage to avoid lead, since now I can put the battery more forward (it was tail heavy).

I will post some pictures.

Jose Almeida

Nice Bird

http://br.youtube.com/watch?v=LxhP_aqOvLU&feature=related

Matthieu Scherrer
<matthieu.scherrer@free.fr >

I have the plans and I'm looking for some time in my building process to start building this kind of "soarer". Nice bird in deed.

Regarding to the free flight, I have an electric Junior 60 from the 30-40's, and I still think that this kind of models are great trainers, they can fly and land by themselves!! (this is not a nurflugel, sorry).

Jose Manuel Almeida

Indoor Flying Wing

Some time back I saw a drawing for a hand launch glider (indoor model I think), which was reputed to get 3 minutes of flight time. It was all balsa, about 10 inches wing span, sweep back design, and of course it was a flying wing model. Can anybody point me to the plans for this nurflugel and/or the write-up on it?

Warren Bean
<warren.bean@gmail.com>

Warren,

The MacCready "Walkalong" may or may not be in your eye. Perhaps related to your interest:

http://preview.tinyurl.com/5hkuco
http://preview.tinyurl.com/65dkyv
http://tinyurl.com/6ltymt
http://tinyurl.com/5cr8ox
http://www.geocities.com/x_surfer2004/

Joe Faust
<joefaust333@gmail.com >

On my group of indoor we have been flying this type of glider-flying wing, but we need to get the weight down. Flies very well

http://www.geocities.com/x_surfer2004

Chispas
<pchispas@gmail.com>

Are there any discus launched 'wings?

Yes! There are a couple of enthusiasts in Germany who have been developing a "plank" plan form RC-HLG for a couple years now. Launches are great and performance is quite good. I think they're using a Peter Wick airfoil, but I may be wrong on that point. I'm currently working on the July issue of RC Soaring Digest, so don't have the time to look things up right now, but if you remind me later I'll see if I can dig up the web site, complete with movies.

And there's always the Alula from Richter RC <http://www.dream-flight.com/alula.html>. That one's more fun than man was meant to have with a $50 investment.

Bill & Bunny Kuhlman
<bsquared@themacisp.net>

Don't know which one you wanted, but there are dozens of designs. This is about the easiest:

http://www.4p8.com/eric.brasseur/glider.html

Foam is more common now like the Zipper:

http://www.aeronutz.flyer.co.uk/Zipper.jpg

A 3 minute glide would require a very high ceiling and a strong launch, which may not suit your building.

http://www.slingwing.com/

Rick Page
<rick-page@shaw.ca>

Nope none of these is it. Thanks for the info however.

I am betting that the plan I am looking for is an old insert from Aero Modeler Magazine. It may be from around 1995. It was a chuck launched flying wing with a wing span of 9" to 14" made out of balsa. The problem is I can't seem to locate any Aero Modeler plans on line which allows one to see what the plans are for.

Warren

Facetmobile Video

http://www.youtube.com/watch?v=djdG0TNvPio

Norm Mastersn
<nmasters@acsol.net >

New Address

I have settled in at the new address:

Richard Avalon
US Pacific
8401 S. Cherry ave.
Fresno, CA 93725-9448

New phone; 559--834-9107

Same 'WEB' Site, for now.

Richard Avalon
<mitchellwing@earthlink.net>

AVAILABLE PLANS & REFERENCE MATERIAL

Coming Soon: Tailless Aircraft Bibliography Edition 1-g

Edition 1-f, which is sold out, contained over 5600 annotated tailless aircraft and related listings: reports, papers, books, articles, patents, etc. of 1867 - present, listed chronologically and supported by introductory material, 3 Appendices, and other helpful information. Historical overview. Information on
sources, location and acquisition of material. Alphabetical listing of 370 creators of tailless and related aircraft, including dates and configurations. More. Only a limited number printed. Not cross referenced: 342 pages. It

was spiral bound in plain black vinyl. By far the largest ever of its kind - a unique source of hardcore information.

But don't despair, Edition 1-g is in the works and will be bigger and better than ever. It will also include a very extensive listing of the relevant U.S. patents, which may be the most comprehensive one ever put together. A publication date has not been set yet, so check back here once in a while.

Prices: To Be Announced

Serge Krauss, Jr. skrauss@earthlink.net
3114 Edgehill Road
Cleveland Hts., OH 44118 (216) 321-5743

Books by Bruce Carmichael:
Personal Aircraft Drag Reduction: $30 pp + $17 postage outside USA: Low drag R&D history, laminar aircraft design, 300 mph on 100 hp.
Ultralight & Light Self Launching Sailplanes: $20 pp: 23 ultralights, 16 lights, 18 sustainer engines, 56 self launch engines, history, safety, prop drag reduction, performance.
Collected Sailplane Articles & Soaring Mishaps: $30 pp: 72 articles incl. 6 misadventures, future predictions, ULSP, dynamic soaring, 20 years SHA workshop.
Collected Aircraft Performance Improvements: $30 pp: 14 articles, 7 lectures, Oshkosh Appraisal, AR-5 and VMAX Probe Drag Analysis, fuselage drag & propeller location studies.

Bruce Carmichael brucehcarmichael@aol.com
34795 Camino Capistrano
Capistrano Beach, CA 92624 (949) 496-5191

VIDEOS AND AUDIO TAPES

(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.
Cost: $8.00 postage paid
Add: $2.00 for foreign postage

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.
Cost: $5.00 postage paid
Add: $1.50 for foreign postage

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
Add: $2.00 for foreign postage

VHS of Robert Hoey's presentation on November 20, 1999, covering his group's experimentation with radio controlled bird models being used to explore the control and performance parameters of birds. Tape comes with a complete set of the overhead slides used in the presentation.
Cost : $10.00 postage paid in US
$15.00 foreign orders

FLYING WING SALES

BLUEPRINTS – Available for the Mitchell Wing Model U-2 Superwing Experimental motor glider and the B-10 Ultralight motor glider. These two aircraft were designed by Don Mitchell and are considered by many to be the finest flying wing airplanes available. The complete drawings, which include instructions, constructions photos and a flight manual cost $140, postage paid. Add $15 for foreign shipping.

U.S. Pacific (559) 834-9107
8401 S. Cherry Avenue mitchellwing@earthlink.net
Fresno, CA 93725-9448 http://home.earthlink.net/~mitchellwing/

COMPANION AVIATION PUBLICATIONS

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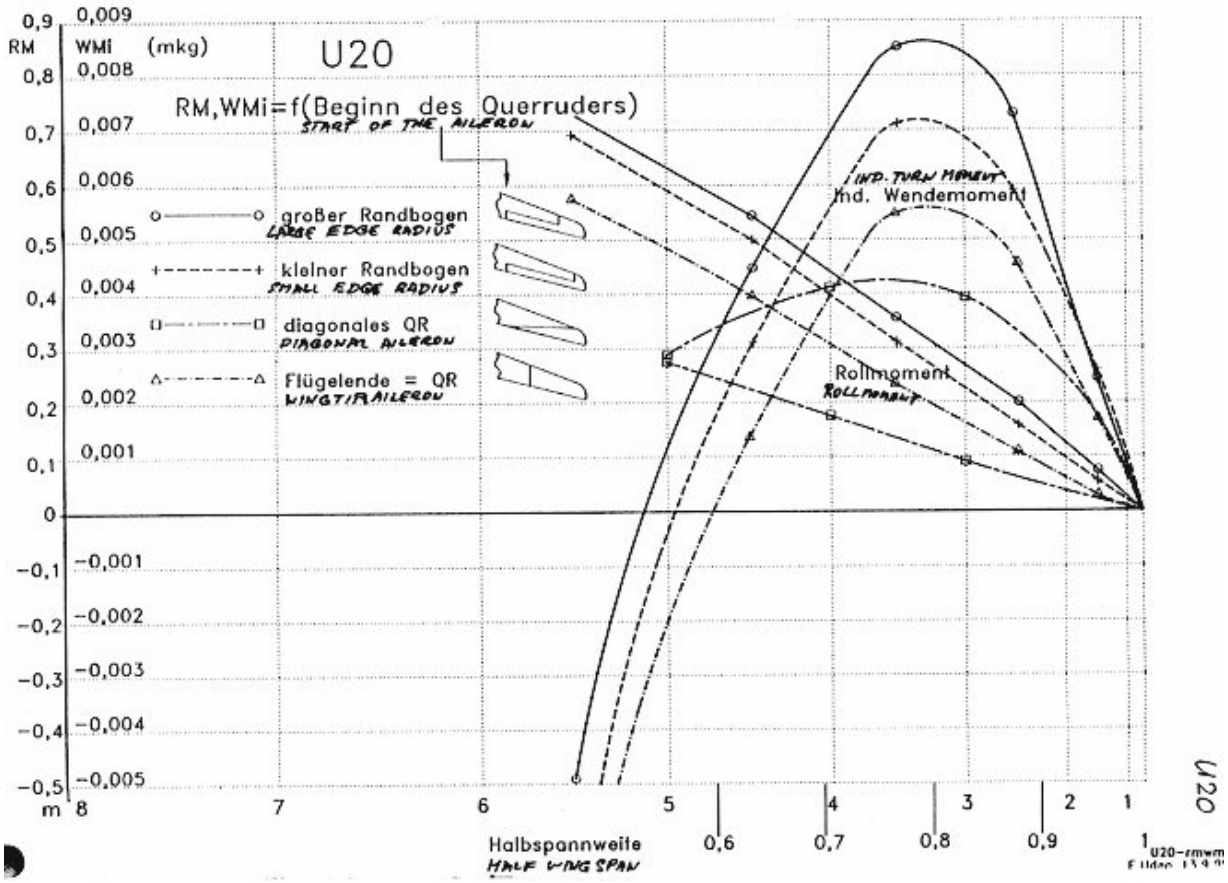
Make checks payable to: Sailplane Homebuilders Association, & mail to Murry Rozansky, Treasurer, 23165 Smith Road, Chatsworth, CA 91311.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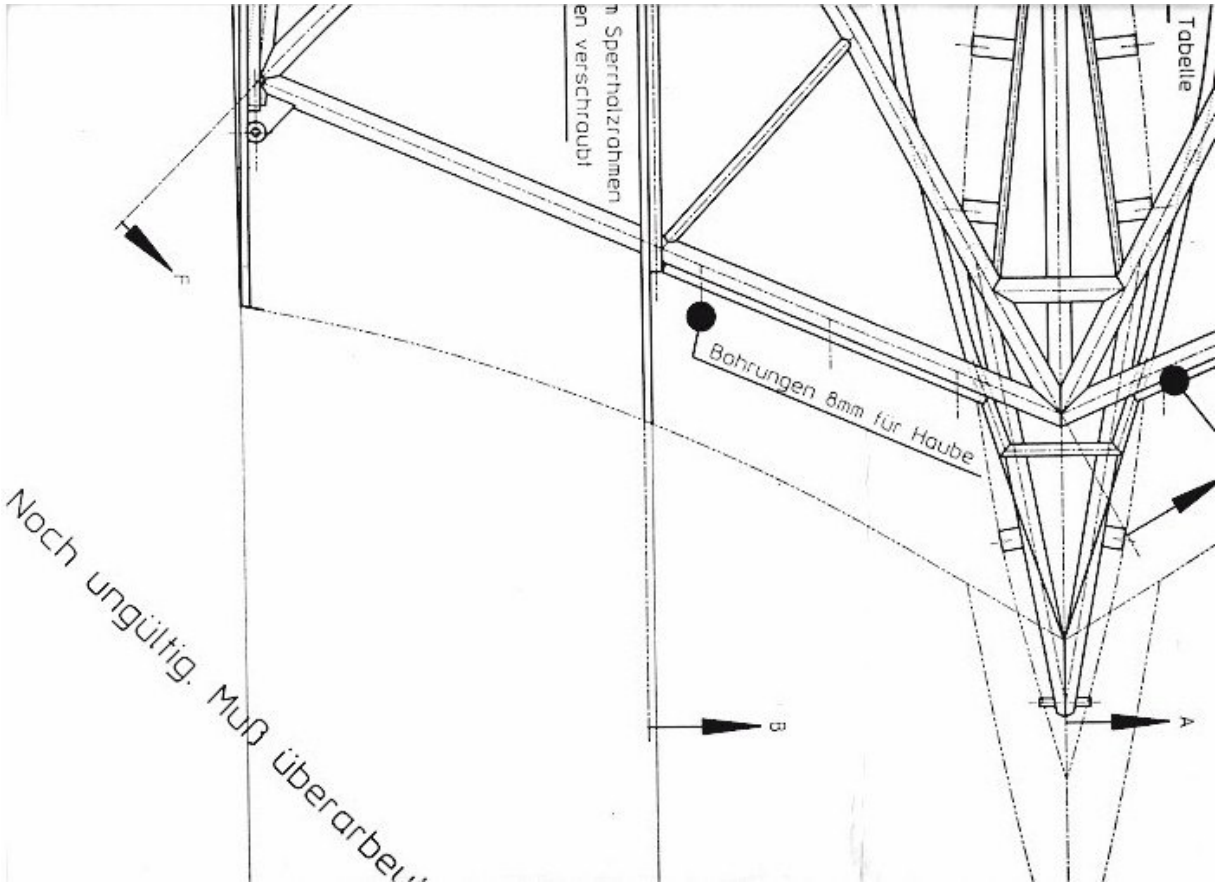
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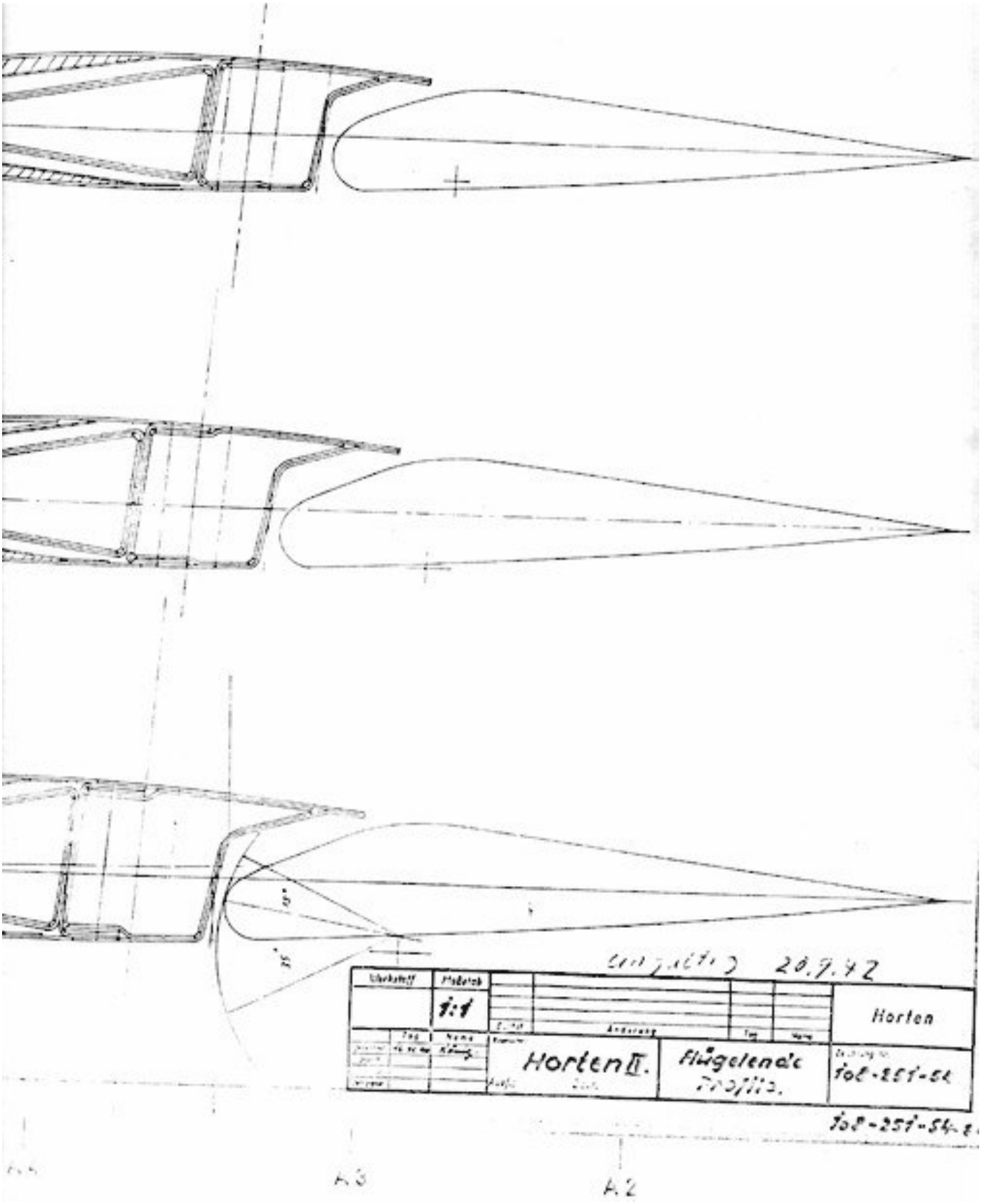
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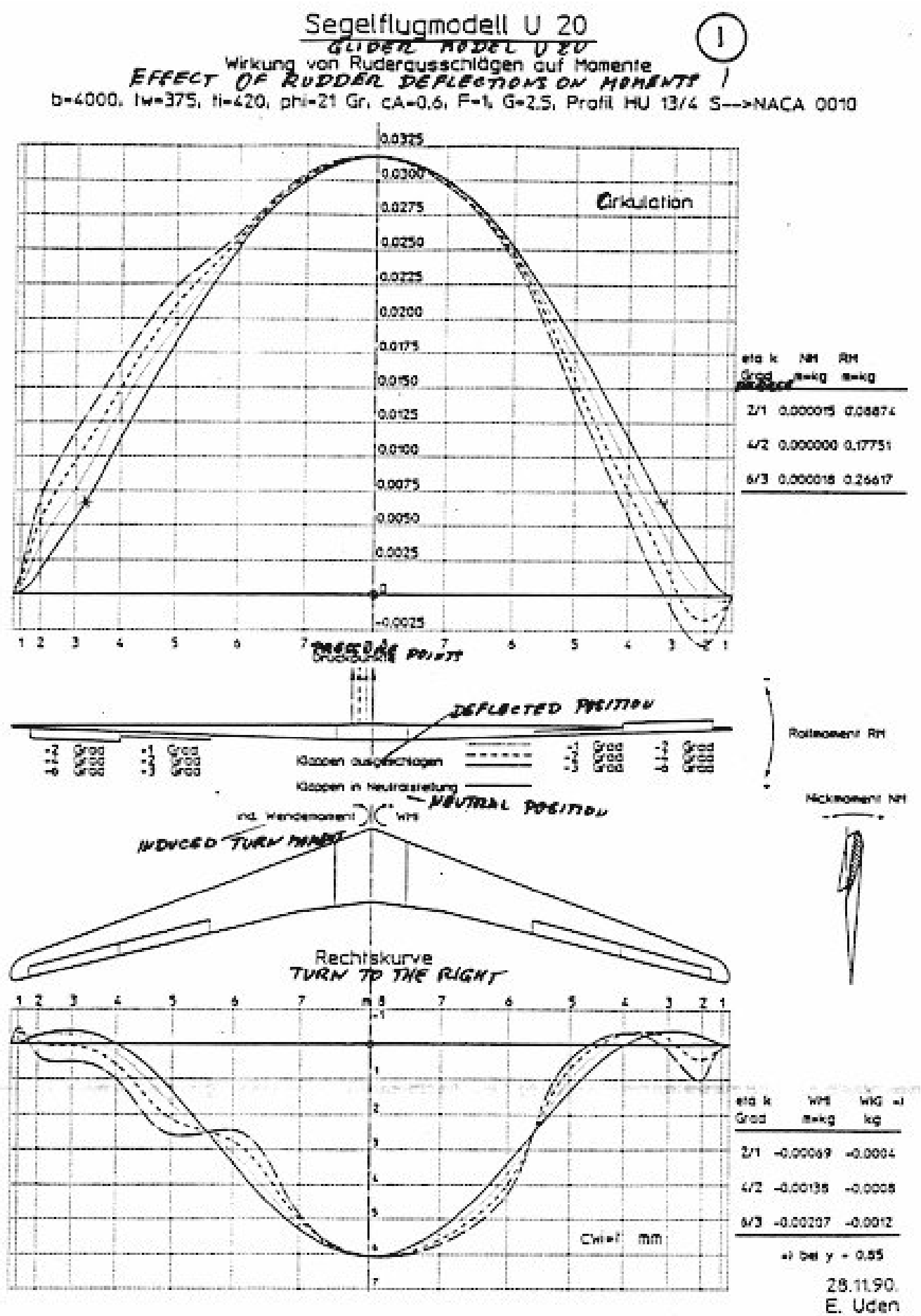
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1
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EFFECT OF RUDDER DEFLECTIONS ON MOMENTS
b=4000, lw=375, li=420, phi=21 Gr, cA=0.6, F=1 G=2.5, Profil HU 13/4 S-->NACA 0010
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4/2 0.000000 0.17751
6/3 0.000018 0.26617
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Rechtskurve
TURN TO THE RIGHT
eta k WMI WKI a
Grad m*kg kg
2/1 -0.00069 -0.0004
4/2 -0.00135 -0.0008
6/3 -0.00207 -0.0012
a) bei y = 0.85
25.11.90.
E. Uden