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Mass Hang Gliding Association

UPDRAFT

VOLUME 4 NUMBER 11 NOV. 1978 Editor: David Scheumann

MEETING NOTICE

The November MHGA meeting is this Tuesday evening at 8:00 PM. Our usual meeting place is at the ME Bar and Lounge on Route 47 in Hadley Mass.. To get there, take Rt. 9 east from Interstate 91 and then south on Rt.47 at the Aqua Vita Restaurant.

Brooks Ellison will have some movies to show. They are really good I here. See you there!

PRESIDENT'S REPORT

At this month's meeting we will be discussing our reply to the Massachusetts Aeronautics Commission. For those of you who missed the last meeting we received a letter from Mass Aero saying that the manager of La Fleure Airport had complained about our flying over the airport. A committee headed by Mark Laversa has been drafting a reply.

Apparently the complaint was made by the previous owner of La Fleure. At the urging of David Graham of Mass Aero I made an appointment with Wilton Mainard the new owner. As you will recall a year ago we agreed to stick to our side of the river if they would stick to theirs. However, Mr. Mainard maintained that the two engined airplane must fly below the ridge and east of the river on their landing approach to make it. I, personally, find this hard to believe. But, please note, this flight path means that even our sled rides are not free from possible collisions! He indicated that we would be safer if we were over 500 feet above launch. He also claimed that local pilots were not the ones doing 360's around us. (I know I have a tendency to be paranoid but I still sometimes get the feeling that they are trying to scare us away. Alfie had a real close call recently. He even came down immediately even though it was still soarable!

Mr. Mainard and I then discussed the possibility of La Fleure using a right hand turn approach instead of a left hand. He indicated that this was unusual and would increase the danger of collision between powered aircraft. Besides the problem of updating the sectionals, La fleure has no radio approach requirements to warm incoming craft. Our talk then concerned moving our launch. I indicated that we would be willing to move if we could move to an equally as good site. We discussed the north ridge next to the Notch. I told him that there was no road and no landing area. He said Mass Area had money and might be willing to build the road and LZ to increase safety at La Fleure I wonder how the Dept. of Enviromental Management, not the mention Mass Aero, might feel about that!) I said we would look into it. (It's flyable in a north or a northeast)

Finally I asked Mr. Mainard to come to a meeting to discuss this problem. He had a commitment for this one (he really has problems of his own) but indicated his willingness to come in the future.

I hope form this discussion that you see the implications involved. Come to the meeting! Skinner is our best site and we are in danger of losing it!

Your Prez has been appointed a full member of the Holyoke Range Advisery Committee. (I guess they feel Iam respectable enough even if I can't spell.) This committee has no legal standing but its recommendations seem to carry a lot of weight with Gil Bliss (Director of Forests and Parks). Like all other committees or

clubs the work is done by five or six active members while the rest are apathetic. I had the chance to talk with several of the other members. They were not hostile to us- they were even admiring of us. They were hostile to tree cutting - crowds - new roads - and "bull headed" private land ownars. At the meeting that I attended the talk centered around removing the cooking facillites at Skinner. The talk was about the congestion on Sundays and whether removing the grills would get more people thru the park faster. There are good possibilities here for us in this contact.

The letter we sent to the CHGA and my last President's Report seem to have created a stir and talk of hard feeling amoung the clubs. I want to take this opportunity to say that I have no hard feelings. Iam just disappointed in the local pilots - both in the MHGA, CHGA and Windward. I would like to see more cooperation between us and between the members and their organization.

I have heard a lot of talk (and done some myself) about turkeys lately. Let me point out that we have our share in Western Mass. It would also seem that the other clubs are more together then we are. (If newsletters are any indication the CHGA is the best club in the Area.)

It is easy to call flyers in other clubs turkeys. There is one way to prove it (relatively speaking) and that is to hold meets. We had on with Windward last May and we had to eat it, barely. I remember that everyone had a good time (with the possible exception of Walt and myself who were grounded.) Let's hold some more informal meets this Spring. Let's get together, fly together. have some fun. and get rid of the inside each of us. After all, we share our desires and our sites!

HANG KNOWLEDGE

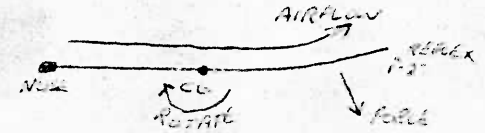
Glider Design and Stability

In this short article, we will review the basic methods of aerodynamically stabilizing glider flight. Stability is the tendency for a craft to fly at of return to straight and level flight. Too much stability would make a kite difficult of not impossible to manuver, too little stability wouldcause divergency outside of a narrow range of attitudes. Thus a trade off must be made by designers taking into consideration safety handling, and performance factors. For the purpose of this article, upward forces shall be away from the top of the kite, and down is opposite.

Pitch - in the early days of hang gliding, the standard rogallos were stable only in relatively small ranges of angle of attack. Some dive recovery was thought possible by the pendulum effect of the pilot's weight. It was theorized that the kite would exert more drag in a dive than the pilot. Thus the pilot would fall faster and rotate the kite into a more favorable angle of attack, It was not reliable.

The first major attempt at pitch stability was the reflexed keel. Loaated behind the CG, the reflex would edeally impart a downward force on the tail and rotate the nose up. See figure 1. Being a relatively simple idea, it

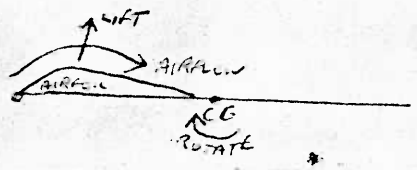
FIG 1



didn't always work, especially when the landing wires were not adjusted properly

Another improvement was the placing of an airfoil in the nose section. At high airspeeds, such as those attained in a dive, the lift created by the airfoil would be an upwards force, rotating the nose upward. See Figure 2.

FIG 2



The next advance took place as the chord of the kite shortened, became more constant, and the sweep (nose angle) increased. A twist was added to the wing tip, called washout, so as to give the wingtips a lower angle of attack, allowing for desirable stall characteristics - the wingtips would stall last- and provide a surface for positive dive recovery. See Figures 3&4.

FIG 3

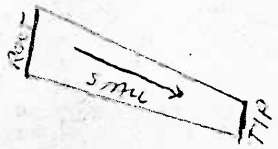
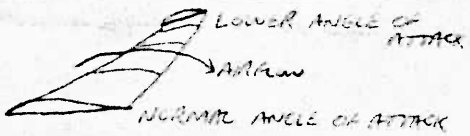
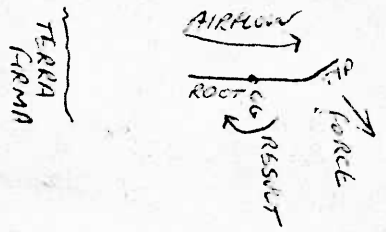


FIG 4



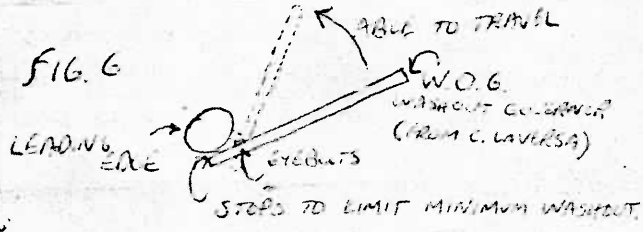
If the root section of a wing were pointed straight down (that's perpendicular to terra firma) the tips would be exerting a downward force. Here it is important to note that the sweep of the wings must place the tips behind the CG so as to rotate the nose upward. See Figure 5.

FIG 5



This system has a number of advantages. The tips may be truncated and allow sail tensioning and washout adjustment. Or the washout governor may be attached so as to provide variable washout as per Figure 6.

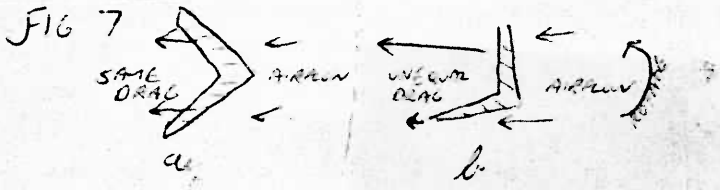
FIG 6



Any or all of these methods may be integrated inot a kite design.

Yaw - enough about pitch, let's yabber about yaw, the stability of which is achieved mainly through sweep angles. If a kite with sweep starts to yaw, the wing attacking the airflow nost directly has more grag imparted to it, and thus rotates the kite into its straight flight. See Figure 7. Again, consideration mus$

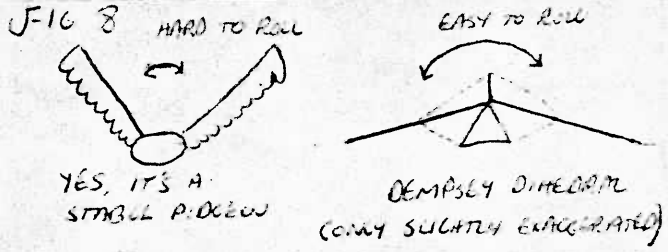
FIG 7



be given to the trade-off between stability and handling performance characteristics.

Roll - A basic method of achieving roll stability is to place the payload below the lifting surface, as is done on many powered aircraft. Stability is also accomplished through the use of dihedral, which places the payload at various relations to the lifting surface. Pidgeons are a good example of lots of dihedral and stable glide (but they lessen it to turn), while John Dempsey's kites roll fast due to the downward dihedral of the wings by design. See Figure 8.

FIG 8



These are only the basic methods used in obtaining stable flight and recovery. There is presently r&d being conducted on tail surfaces.

With todays ships, it takes some very radical conditions to get into a full dive or tumbling situation. Some acrobatics will get you there also. The best practice is to avoid turbulent conditions and to be a conservative pilot.

Mark Droy

CLOSED TO WEEKEND FLYING

Skinner Park is now closed to flying on Saturdays until Spring. Hang Gliding is permitted during the week and up until the first snow fall or when they eventually close up the Park for the winter. Remember that Skinner Park closes its gates at 4:30PM.