

Many Happy Returns

No. 35

\$2.50

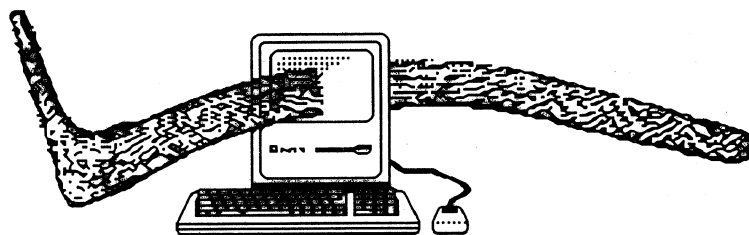
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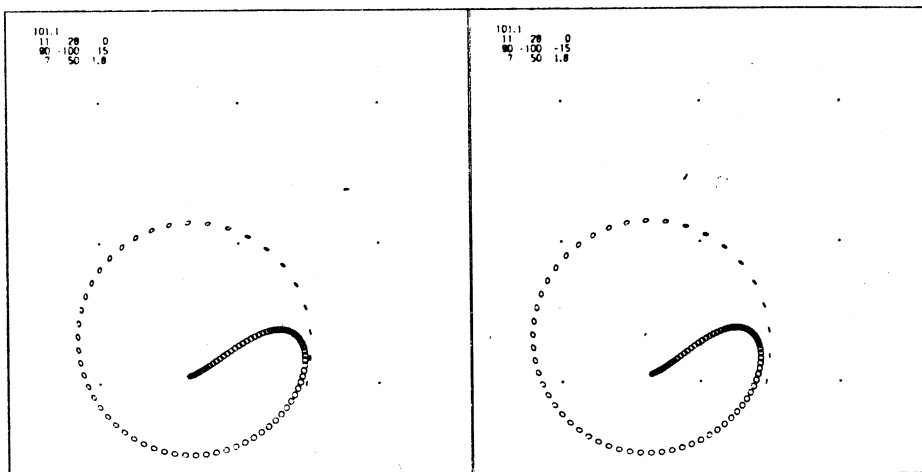
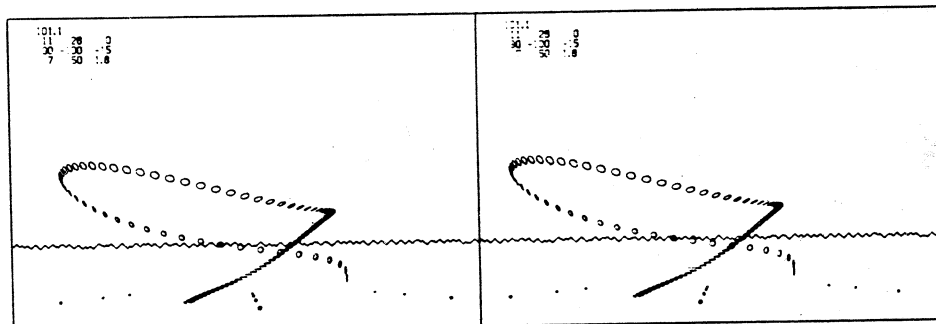


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BOOMERANGS & COMPUTERS



3-D Computer Plots by Felix Hess

USBA President's Column

Here it is the end of the term again and this column will reflect closing thoughts and suggested action items for the new board of directors (and membership) during the 1988/1989 term.

If this column doesn't sound like Carmen, you're right. She authorized the editor to glean appropriate material from her recent board letters while she was on diplomatic tour with the USBA team in Australia.

The 1988 USBA Nationals was a weak point in our organization this year. No firm bids for a site were received until very late in the term. Then we had two bids at the same time and a difficult choice was made to hold the Nationals in Lehigh Valley, Pa. (Peter Ruhf is site coordinator) instead of in the Los Angeles area (Bob Kley as site coordinator). Once the board vote was made, other problems surfaced such as: the only date available in Lehigh Valley was the same weekend as Marjorie Gerrish's tournament which had been announced some time before and could not be changed because of the tie in with the Portland Rose Festival. This is something we must avoid in the future as East Coast people who want to go to Portland cannot attend, and West Coast people who want to go to the Nationals find the choice a matter of economics and a loyalty to their own region and group of throwers. Coordination must be improved in the future. The USBA will attempt to keep the USBA Nationals as late in the year as possible in the near future. The Nationals should climax a season, not start it off. A site will be selected as soon as possible and will be rotated as evenly as we can do so between the East, West, South, and Midwest. How about other regions such as Colorado, Kansas, and Missouri? At the time of this writing, the most likely sites for next year's Nationals are to be Los An-

geles (Bob Kley) and Colorado (Jim Mayfield). Are there any other bids? It's better to have too many than too few!

The format of the Nationals may require change in the near future to accommodate the needs of the membership. The number of tournaments nationwide is on the rise. We need a conference format at the Nationals to improve our communications through meetings and working committees. Of course there will be lots of time for demos and throwing and other fun things.

USBA PROMOTION is a key concept that keeps the organization strong and the benefits at a premium. At this time, the membership stands at between 400 and 500. In order to keep the services flowing, such as this newsletter in it's present quality, it is necessary to raise the dues or increase the membership ranks. This newsletter is produced entirely on a volunteer basis with more than 100 hours donated free for typesetting, generating mailing labels, distribution, etc. Your membership rate of \$2.50 per issue only pays for the printing and mailing charges. There is no surplus and the USBA even lost money this year. To reduce this strain on newsletter production, and avoid a dues increase to \$15 or \$20, it is necessary to boost the membership ranks. If we had several thousand members, we could put out a superb newsletter with color photos and the works! Look what Life magazine puts out at a cover price of \$2.50. We can do it too. And how do you help? How about a membership drive? Do you have a boomerang friend with a birthday coming up. Ten bucks will buy a cheap, but meaningful gift.

Do you ever receive news coverage or publish articles on boomerangs? The editor sees lots of these items that members send in for review in MHR. When you read these articles, they emphasize how wonderful the subject person is and that is all. They leave the reader

hanging with the thoughts: "Wow, boomerangs sounds neat. But how can I get involved?" All it takes is a small blurb to say " Hey, there is an organization out there that promotes boomerangs and can get you in touch with quality boomerangs and throwers from your area." Don't forget the USBA address. You'll do both the reader and the USBA a service. A large percentage of our ranks are new members who purchased a copy of the Klutz Press or Ruhe/Darnell book and wrote in to join because the authors gave mention of USBA with an address that they could contact. So please remember this section the next time you are covered by the media or write an article.

There have been numerous revisions made to the 1987 USBA rules that apply to the 1988 season. These include the following:

Clean LH & RH catching is added after the barefoot catch and before each repetition of the behind the back, under the leg, and barefoot catch. First place thrower's last turn is with a drop, rather than when placing is decided.

MTA 50 has been replaced with MTA 100. MTA 100 becomes the rated MTA event with scores outside the 100 meter circle counting for MTA unlimited records.

Doubling sequence to include two rounds of legal catches of any kind followed by two rounds of one handed catches by any hand with the fifth and subsequent rounds to include a one handed catch in each hand.

Endurance becomes monitored more closely with the requirement of 2 meter circles replacing markers and requiring at least two counters.

The rating system has been modified to moderate the impact of a competitor who is exceedingly strong in one event, but not in other events. This will insure that the composite overall favors those individuals who are strong in all of the rated events.



No, the "V" is not another new kind of boomerang; it is the universal symbol of victory.

Yes, the USBA Team did win the 1988 World Cup in Barooga last May. At least that is what CNN news and the USBA team say. Final results were not made available to the USBA team at the conclusion of the test match. The following information was submitted by Barnaby Ruhe and Eric Darnell upon their return to the USA. The team members and MHR apologize for any inaccuracies listed below.

The USBA team dominated the games, commanding an early lead over the second place Aussies by 45.5 to 34.25 points during the first test match on May 8. The Americans took first place honors in all events during the first test match. Barnaby took firsts in both MTA (37.14 seconds) and Australian Round. Chet Snouffer set a new Australian record for Fast Catch with a time of 22.53 sec.

The American lead was strengthened (with blustery winds) during the second test match on May 11 as the USBA team placed first overall again. This time with a score of 39.5 and an increased margin of 3 more points over the second place Australian team. Conservative throwing in tricky winds was something the USBA team learned from the Aussies in the 1984 test series in Delaware, Ohio.

The Australian team rallied during the last team match (May 14) to beat the American team by 2

points with a score of 42.

The overall team placement is summarized below:

U.S.A.
Australia
France
Germany
Holland
Switzerland
Japan

All the teams had strengths that will grow and mature for the next International Competition Event. Barnaby was impressed with Yoshinobu Sakimitsu whose presence was always felt with upsets such as his first place in Accuracy during the second test match and first place in MTA during the third test match. The strongest throwers during the Cup were Barnaby Ruhe, Chet Snouffer, Rob Croll, and Olivier Vouktchevitch; not necessarily in that order. Eric Darnell, employing Barnaby's Slime Technique, racked up lots of important second and third overalls. Event overall honors went to Chet Snouffer in Consecutive Catch, Barnaby Ruhe in Aussie Round (only 1 point ahead of Rob Croll), Rob Croll in MTA, and Olivier Vouktchevitch in both Accuracy and Fast Catch.

Oh yes, there was also an open competition so that everyone, both on and off the teams, could compete for individual honors. The number one individual competitor was Rob Croll of the Australian team. Further details will be covered in the BAA Bulletin.

There was an auction to raise funds for the cup. The maximum price paid for a boomerang in this auction was \$200 *Australian*, for a very special Janetzki Skippy.

A lesson to be learned by this event is that experience with age can indeed be a valuable asset. The USBA team was the oldest team with one competitor in his 30's and two competitors in their 40's. These guys had to take a nap every day and hit the sack early each

evening. The three Australian team members were all age 29. Watch out America, next year they will all be in their 30's.

We need to congratulate all competitors for their valiant efforts toward making this event a success. Each competitor had to earn the right to participate by being the best from his country. Each paid a considerable amount of money and donated a tremendous amount of time to practice and be part of what was truly the closest thing to a real Olympic competition that boomeranging has ever seen.

And of course we can't forget the organizational efforts of the Aussie hosts during their bicentennial celebrations, especially Dennis Maxwell who encountered numerous set backs, but was always able to overcome them by adjusting and compromising until an equilibrium was established. Dennis deserves the boomerang award of the year for his efforts.

Sponsorship was also important as many teams received financial boosting from important commercial sources. These sources need to be cultivated and nurtured for future boomerang events such as the 1988 International Team Cup in Europe this summer and the next World Cup, possibly held in the USA in the near future.

In closing, many of you read newspaper articles about the USA team refusing sponsorship from Philip Morris, a tobacco company. Instead, they chose to accept less funding from an anti-smoking association. It is their right to do so. No disrespect was meant to the tobacco company; the team only wished to be associated with a healthier image. The team was on their own to obtain sponsorship. As an organization, USBA needs to develop a committee to handle this function so that the team can concentrate on throwing, not politics and fund raising. If you can help future teams out in this effort, contact **USBA** now at **P.O.Box 182; Delaware, Ohio 43015.**

1988 Midland Michigan Mid Winter Boomfest in the Mud

*condensed from a submission
by Chicago Bob*

The Midland Throwers Alliance and Twisted Tech's 1988 Terror Tourney: Booms on Ice, fell prey to an incredible thaw that brought premonitions of Spring to the Midwest. The (non-rated) tournament, which was supposed to be held in arctic conditions on a frozen lake in Midland, Michigan was forced landward by several days of 40 and 50 degree temperatures.

The comps were held on a football field which was surrounded by a cinder track with three inches of standing water. The wind was blowing a steady 20 mph and gusting up to 35 mph which necessitated some interesting modifications to otherwise tame events.

In Accuracy, a thrower was allowed to hit his 'rang once to knock it into the somewhat expanded center circle of 12 metres. Rick Szumski took first place honors.

Position culminated with throwers all over the field. Guy Sabrie took first place honors with a position only 20 metres from the bullseye.

MTA became a 50 yard dash through the moat with Rick Szumski making a brilliant 14 second catch on the moat.

Part II of the tournament was dedicated to unspeakable pseudo-team events such as Combat 10 which brought out aggressive and violent behavior in otherwise tame competitors who were now completely soaked, mud caked barbarians out for a boom brawl.

After several hours of rain, wind, and slime, the real men of 'ranging reluctantly left the field, enriched by the experience and plotting complicated schemes for their less courageous counterparts who stayed indoors to eat pop-tarts and watch 'Wheels of Fortune' on TV.

Fourth Annual Hampton Roads Boomerang Tournament

by Dennis Joyce

The Fourth Annual Hampton Roads Boomerang Tournament was held on April 9. This was the first tournament of the year and provided an ideal warm up for a rusty U.S. Team.

The day was a chilly and blustery one. When John Koehler won Consecutive Catch with a foot catch and Ron Tamblyn won Accuracy with 27 points, it became apparent that it was a Potomic Boomerang Club day.

Mike Forrester followed with a win in Fast Catch at 31.09 seconds (Complete with diving catches). John "Fast" Flynn took Aussie Round with a score of 57. MTA 100 was won by Ray Laurent (23.42 seconds). Endurance was won by Rob Parkins (33 catches) followed by Mole Man with 23 catches. Doubling went to John Koehler with 4 catches.

The overall winner with 4 second places was James Jordan (53.75 points) of the Potomic Boomerang Club. This was his first overall tournament win and successfully demonstrated that anyone can employ Barnaby's Slime techniques. John Flynn came in a close second overall, just 0.25 points behind Jim Jordan with 53.50 points. John Koehler was third overall with 46.25 points; Peter Ruhf was fourth overall with 41.50 points; and Mike Forrester was fifth overall with 40.16 points. Congratulations to all!

Third Annual South Georgia Boomerang Tournament

by John Derden

The South Georgia Boomerang Club held it's third annual tournament on Saturday, April 30, 1988, on the Campus of the East Georgia College in Swainsboro, Georgia. Weather conditions were excellent - light winds, overcast skies, and temperatures in the 70's. Sponsored by the Swainsboro Pizza Hut, the Pizza Hut Spring Fling '88 featured competition for both veteran and novice throwers. A total of 24 throwers from Georgia, Florida, Tennessee, South Carolina, North Carolina, Virginia, Maryland, and Indiana arrived to try their luck.

Sixteen veteran throwers competed in 7 events: Consecutive Catch, Accuracy, Fast Catch, Aussie Round, MTA 100, Doubling, and Juggling. Jim Jordan repeated his recent overall victory at Hampton as he took firsts in Consecutive Catch, Fast Catch, Juggling, and Doubling. Overall veteran results follow:

1. Jim Jordan	65.3 pts
2. Dennis Joyce	61.0 pts
3. Ray Laurent	51.5 pts
4. Jesse Robertson	49.1 pts
5. John Derden	44.3 pts
6. Tim Maultsby	35.5 pts
7. David Philpott	23.7 pts
8. Rhodes Perdue	15.3 pts
9. Alan Winterrowd	15.0 pts
10. Bob Poole	14.4 pts

John Derden and Neil Kalmanson served as Head Judge and Scorekeeper, respectively.

In the novice competition, eight enthusiastic newcomers entered the fray. Consecutive Catch, Accuracy, Fast Catch, Aussie Round, and Position were the featured events. The top three throwers were (1) Eric Richardson, (2) Michael Hennessey and (3) Keith Mundis. Amazingly, Michael Hennessey only used an old Wham-O to finish second overall.

TOURNAMENT CIRCUIT

The summer season is upon us and several tournaments are right around the corner. The following listing is the best information that the USBA has on upcoming events. Make sure you notify the USBA President as soon as you know that you are hosting an event. An additional card to the editor of MHR will help to insure that your event gets advertised. You may call the USBA hot line at (619)-298-4283 for updated tournament information. "The Leading Edge" newsletter also covers upcoming events. Call Chet Snouffer at (614)-363-8332 for further information.

June 17-19, 1988

USBA NATIONALS
Bethlehem, Pennsylvania
Contact Peter Ruhf at:
P.O. Box 112
Emmaus, Pa. 18049
(215)-432-0724

June 19, 1988

PORTLAND ROSE FESTIVAL
Portland, Oregon
For further information, call
Ted Welker at
(503)-236-2804
or Marjorie Gerrish at:
4885 S.W. 78th Ave.
Portland, Or. 97225
(503)-292-5697

July 9, 1988

4th Annual Gel Boomtest
Billy Martin Field
1 P.M. until 8 P.M.
Oakland, California
Contact Michael Gel Girvin at:
520 The Alameda
Berkeley, Ca. 94707
(415)-525-5810

August 6, 1988

FREE THROWER'S #9
Delaware, Ohio
Contact Chet Snouffer at:
51 Troy Road
Delaware, Oh. 43015
(614)-363-8332

August 7, 1988

CVNRA OPEN COMPETITION
Cleveland, Ohio
Contact David Boehm at:
Cleveland Boomerang School
Box 17385
Euclid, Ohio 44117
(216)-442-6024

August 14, 1988

WESTERN OREGON OPEN
Salem, Oregon
Contact: Dean A. R. Kelly
3350 Neef Ave., S.E.
Salem, Or. 97302
(503)-581-8050

September XX, 1988

St. LOUIS OPEN
St. Louis, Missouri
Contact Tom Fitzgerald at
1159 Holly River Drive
Florissant, Mo. 63031
314-839-1604

September 18, 1988

SUMMER'S FINAL FLING
Portland, Oregon
Contact Doug DuFresne at:
4235 S.W. Crestwood Dr.
Portland, Or. 97225
(503)-292-4316

October 1, 1988

POTOMIC OPEN
Gaithersburg, Maryland
Contact John Koehler at:
37 Dufief Ct.
Gaithersburg, Md. 20878
(301)-340-1538

INTERNATIONAL COMPETITION

West Germany

23/24 July - Munster
Contact: Carsten Palfner
Wieganderweg 64
4400 Munster
Tel: 02501/614825 or
02501/24367

Switzerland

**20/21 August - Geneva
International Team Cup**
Contact Kaspar Kramis or Phil-
lipe Haake at:
Boomerang Club
Case Postal 23
1225 Geneve

West Germany

**23/24 August - Stuttgart
International Team Cup**
Contact Uli Konzelmann at:
IM Hummerholz 80
Leutenbach 2
Tel: 07195/660044
or Michael Siems at:
Rosenbrunnenstrasse 4
6940 Weinheim
Tel: 06201/12385

France

**27/28 August - Paris
International Team Cup**
Contact: Olivier Vouktchevitch:
51 Avenue Pasteur
92400 Courbevoie

Each of the International Team Cup sites will have the first day as an open individual tournament. The second day at each site will be for competition between predesignated teams. Only team members will be allowed to sell boomerangs. Only two bladed boomerangs will be allowed in competition. A new event: "Team Super Catch" will be added to the team competition agenda.

NEWS FROM POLAND

Pawel Valde-Nowak was recently featured in MHR as the discoverer of the world's oldest 'rang. He will soon be making a replica of the **Tusk Boomerang** for Ted Bailey to determine if it is capable of a return flight. Look for the results in a future issue of MHR.

Janusz Jacek, founder of the Polish Boomerang Club was proud, but amazed to find out that his country is host to the World's oldest boomerang as reported in MHR #33 (Winter '88). Pictured below with his brother: Mieczyslaw and a David Philpott boomerang, Jan is looking for someone who would be willing to send him a good 35mm camera for taking boomerang action shots in exchange for Polish crystal, linen, or other merchandise. The Russian cameras available in Poland are not so well suited for these purposes. Interested parties can write to Jan at the following address:

Janusz Jacek
FABRYKA MASZYN
38-100 STRYZOW
ul. 1 Maja
POLAND



NEWS FROM DOWN UNDER

Brother Brian Thomas writes to inform us that the BAA has a new officer roster. Peter Byham retains his position as President; Mark Schafer is Senior Vice President; Joan Byham is Treasurer; John Gibney is Secretary; Dennis Maxwell is assistant secretary; Cheryl Groenen is Registrar; and Brother Brian Thomas is the new BAA Bulletin Editor. The May 1988 issue of the BAA Bulletin (#57) had a refreshingly new and entertaining style. A subscription is highly recommended to all interested parties.

Lorin Hawes writes to say he was delighted to meet various members of the World Cup teams as they passed through his area. Lorin has hopes that there will soon be a Japanese edition of his book. He mentions that the Australian federal government banned the logging of Northern Queensland rain forests for conservation reasons. It means the end of good hardwood plywood such as what is used on his M-17 model. He bought up all he could (several tons) and plans to retire when this supply is exhausted.

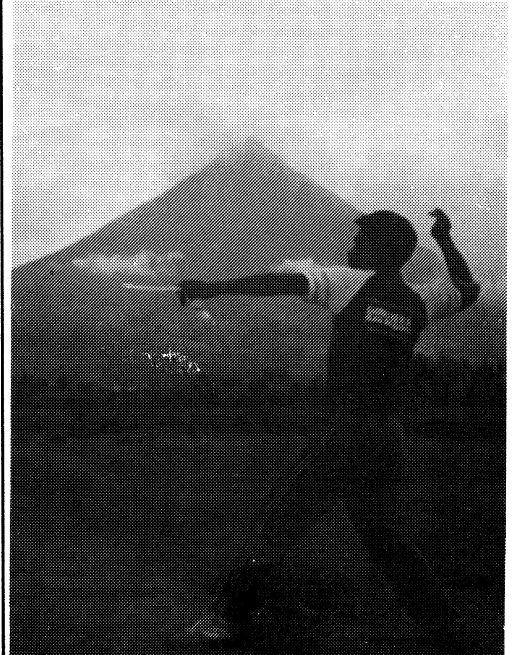


Patch donated by Br. Thomas

NEWS FROM THE PHILIPPINES

Another nation has joined the boomerang movement with a club that is forming in the town of Guinobatan located at the base of the world's most perfect cone volcano: Mt. Mayon in the Philippines. Erwin P. Brojan, who is a mail carrier by profession has really been bitten by the boomerang bug. He obtained a copy of MHR and wrote to almost everyone he could. Erwin is looking for other correspondents and boomerang makers willing to trade or explore the opportunities for retailing. Ted Bailey made a trade with him and was very happy with the natural elbow made out of "GUAVA" wood that was sent in exchange. A photograph of Erwin P. Brojan and Mt. Mayon is shown below. Erwin can be contacted at the following address:

Erwin P. Brojan
Guinobatan Post Office
Guinobatan, Albay
4503
Philippines



La Perouse Boomerang Club de France

Jacques Thomas, founder of "La Perouse Boomerang Club", has recently completed a trip to Australia to celebrate the landing of the French Explorer 'La Perouse', who landed in Botany Bay just 6 hours after the British First Fleet on January 26, 1788.

Jacques has produced over 200,000 cardboard boomerangs as a promotion for

CROCODILE

"Crocodile Dundee". Using one of these promotional boomerangs, Jacques accomplished an unusual feat on his return flight from Australia. He threw his boomerang on February 20, 1988 and caught it on February 19, 1988. This feat required the assistance of the flight captain, Jacques Fournel who precisely defined the instant the plane crossed the International Date Line going from west to east. Can any of the readers claim a more difficult throw and catch? A true scale outline of the cardboard promotional boomerang used for this feat appears to the right of this paragraph.

DUNDEE



Jacques Thomas makes the catch of the century with a boomerang that wasn't thrown until the following day.

The membership of the USBA offers it's condolences to Jacques over the death of his father **Louis THOMAS** who recently passed away at the age of 95.

St. Louis Boomerang Club

Tom Fitzgerald, founder of the newly formed "St. Louis Boomerang Club" is really taking boomeranging seriously. Besides giving demonstrations at public schools and putting on boomerang exhibits at various sites within the St. Louis County Library System, Tom has started publishing a newsletter. The cost is only \$5.00 a year, and includes a membership card too! A group of St. Louis Boomerang Club members meet every Sunday at 9:00 AM in Koch Park in Florissant. The group plans to hold a tournament in September or October. You can send in your \$5.00 for membership in the St. Louis Boomerang Club and request information on St. Louis area activities by writing to Tom at the address below:

St. Louis Boomerang Club
1159 Holly River Drive
Florissant, Mo. 63031

MTA PERSPECTIVE A POINT OF VIEW

by Alex Buzz Woodruff, BBS

Today is a very windy day here in England, as I peer out across the countryside I am thinking to myself - why not today? Why not today indeed? Good visibility, not much rain for a change, and the perfect howling gale from the south to give me the chance of setting up a record. On top of this, flights to Paris are on special offer at the moment so I might just go for it.

"Go for what?" you might ask. I'll tell you: an MTA record. For yes, under present rules I could quite easily go to the top of the Eiffel Tower, chuck off my best MTA rang, and assuming it's caught a nice bit of lift to get it across the channel, catch the first plane back and wait for it in England. With the front pushing Southerly winds over fast, my MTA would be back in England after 4-5 hours. Then I'd have it, my MTA World Record!!

All of this would be perfectly legal of course, and might get my name in the Guinness Book of World Records. It doesn't matter where you throw from, nor where the rang goes, so as long as I catch it the record stands.

This is, in my opinion, bloody ludicrous!!! Taking no credit away from present records, but quite honestly, can't we put some limit or boundaries, allowances, good and bad throws?

As is accurately pointed out: - an MTA is a rang
- MTAs fly like a rang (out, round, up, etc.)

-MTAs hover like other rangs
-boomerangs don't necessarily need to come back.

But, and this is where I would like openly to make a strong suggestion: where do we draw the line? After my open letter in "The Leading Edge", I would like to back up Chet's (and Wilhelm Bretfeld's) sensible idea, of the solution to the free rein given to throwing:

MTA 100. This means in simple terms an MTA record will only stand if it is caught within 100 meters of the place it was thrown from. What could be more sensible?

In those terms the MTA, which in dead still conditions - perhaps with nice warm thermals - does after all come back, nobody could complain. I certainly won't, and nor should those throwers who enjoy MTA as the most exciting activity of boomeranging for some time. MTA can be a great spectator sport, and keeps you nice and fit, so if you like my (our) suggestion please write in to MHR to express your opinion, and help to bring back a bit of sense to the pursuit of MTA.

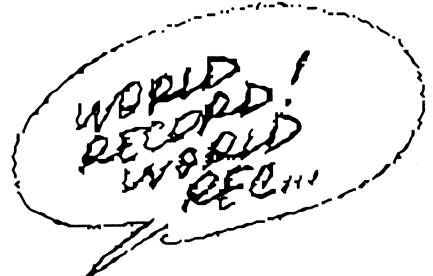
In addition, if you have more food for thought, please don't hesitate to write to me. I'm willing to hear and listen!

Alex Buzz Woodruff
Poppy Lands
Crowthorne Road
Bracknell
Berks RG12 4DS
UNITED KINGDOM

MTA PERSPECTIVE ANOTHER VIEWPOINT

by Ted Bailey, USBA

MTA, with or without an accuracy clause is certainly a controversial subject. Those who prefer MTA 100 often insist that everyone do it their way. I personally like the idea of MTA 100, but not at the exclusion of MTA unlimited. Why pick on MTA? Why not put similar restrictions on all other events too? Let's restrict juggling to the 100 meter circle. Let's require that a distance



boomerang land inside the 100 meter circle. The USBA rules committee has made MTA 100 the 1988 rated event for MTA.

Conditions are usually windy at U.S. Tournaments. Throwers may have to put their MTAs in the closet and throw clubs. Is this what the competitors want? What do people prefer when pleasure throwing in their favorite field at home. I produce a lot of MTA boomerangs, and nobody yet has ever asked for a mediocre 30 second MTA.

Perhaps a compromise is in order. Imagine this scenario: Throw from anywhere within the 100 metre circle. Throws caught outside the 100 metre circle count for MTA unlimited. Throws caught inside the 100 metre count for both MTA unlimited and MTA 100. At the conclusion of 5 throws, average the best of the two scores. The potential for strategy and excitement is unlimited. If someone keeps it inside the 100 metre circle every throw, his best throw is his score. If the MTA consistently floats beyond the 100 metre circle, then the thrower must average a zero into his score. The best strategy is a good MTA 100 score, then shoot for the moon!

YET ANOTHER MTA PERSPECTIVE

by *Gordan Shuttleworth, BBS*

Is an MTA "stick" a boomerang or not? The answer is undoubtedly YES. How do I reach this conclusion? Well, that's easy. Firstly, if one takes an MTA rang that is finely tuned for maximum flight duration and throws it in the right manner, what happens? It zooms round it's wide spiral climb until at it's zenith it begins hovering. From this point on it is at the mercy of the air currents and of course, is likely to drift some distance from the thrower. This is where all those against MTA (unlimited) shout "See, it doesn't come back. It's not accurate. It's not a proper boomerang." Well, this just isn't true. If you take the same MTA 'rang, tuned in exactly the same way, lean it over some 30-40 degrees and give the gentlest of flicks into the air, you will witness a perfectly normal, or acceptable boomerang flight path, with a high degree of accuracy. Indeed, a couple of years ago at one of the Horniman competitions, I saw Tony Slater sell a couple of MTA 'rangs to some new enthusiasts who proceeded to go and use them in the accuracy competition. Why not? They came back, just like real boomerangs and they always will when thrown in the right way.

Another thing to do is to de-tune an MTA. Bend out the dihedral, alter the angle of incidence on the arms and you'll soon have a 'rang that will refuse to spiral up as usual, but instead act more like a fast catch boomerang. I honestly feel that the MTA 'rang, stick, glider, or whatever you wish to call it is a very versatile piece of equipment. There is one situation where I have found the MTA 'rang indispensable and that is when teaching youngsters. Let me explain. During the summer of '87, I was asked to do a demonstration at a children's recre-

ation camp. I agreed and, on the day, all the kids were assembled by the side of the football pitch which I was to use as a throwing field. The breeze was just right and I was able to give them a display of many different types and shapes of boomerangs. There were many "oohs" and "cors" to be heard from the side line. When I finished, I was immediately asked by one of the adults in charge if I could teach some of the kids to throw. I agreed to take them onto the field in groups of three and do my best with them. It was soon evident, however, that some of the youngsters just were not strong enough to get some of my easy to throw 'rangs to fly properly. I began to see disappointment creeping onto their faces. I desperately rummaged through my case in an effort to find something they could handle. It was then that the idea came to me of letting them try with a couple of old MTA 'rangs I'd found at the bottom of my pile. Magic. All of a sudden even the smallest of the group were flying these 'rangs full circle. It was definitely MTA BOOMERANGS that saved the day and brought smiles of delight to a lot of young faces.

Now I always keep a few old MTA sticks around specifically for use in teaching the young and not so strong. At one time I used to pooh pooh MTA, but nowadays things are different. I may not be among the the strongest of competitors in an MTA event, but this type of boomerang has given me a lot of pleasure and that is good enough for me.

One final point, as the old saying goes (I think) "you can please some of the people all of the time and please all of the people some of the time, but you can't please all the people all of the time". This holds true in the boomerang world, but the important thing is that we debate and discuss our differences and keep it friendly rather than argue. Above all: Keep Chuckin'.

BOOMERANG SEEKING MISSILES

The U.S. Army has really done it this time. It has developed a new missile that selectively seeks spinning blades.

The following article appeared in the **New York Times** concerning the U.S. Army's new Sergeant York air defence gun:

"The weapon is a computerized radar-guided pair of guns mounted on a tank chassis. Designed to shoot down planes and helicopters, the weapon is programmed to fire at whirling blades. In recent tests, the newsletter **Defense Week** reports, the first production model ignored all the targets presented to it. . . . Instead it zeroed in on what it considered a more promising target: the exhaust fan in a nearby latrine."

SUPER QUICK REPAIR

by *Frank Beagle, Kankakee, Il.*

Got a small nick or dent in your favorite 'rang? Fastest fix in the outback is to pour a small amount of baking soda on a piece of paper. Apply a drop of super glue to the damaged area. Place the damaged area with the glue into the baking soda. Immediately remove it from the baking soda and examine it. You will find a rock hard substance in place of the nick. It may be necessary to do this several times to fill a larger ding. Once this nick is covered with this substance, use a file to bring it back to the original outline. It may be painted or just left as is. This fix is good on wood, paxolin, and polypropylene plastic. It is faster than a five minute epoxy, neater, and a heck of a lot harder!

News Flash! Charles Pell will attempt to set a World Record for the largest boomerang to ever be thrown and caught on August 13 at the Cranbrook Institute of Science. Call Ted Bailey at (419)-471-9989 for more information.

MORE FAIRY TALES COME TRUE

by Ted Bailey

Brother Brian Thomas has really been bitten by the MTA bug and has supplied the following accounting of what our boomerang friends from down under have been doing.

Rod Jones started out the Australian Bicentennial Year with the longest known throw and catch of a MTA boomerang up to that time. On January 1, 1988, Rod put it up for 4 minutes and 5 seconds and caught it only 250 meters from where it was thrown. Another 40 meters and it would have landed on the roof of a house.

Brother Brian is an accomplished thrower in his own right. He currently holds the

world record for Australian Round in a competition with 90 points. He recently had a great MTA flight of 1 minute, 25.45 seconds. It hit a telegraph wire, a small tree, and then finished in a gutter less than a metre from his hand. The total drift was 200 metres. He finished the day with consistent flights of 40 seconds for each throw.

At the Barooga Comps in January, Bunny Read threw his MTA out of sight. In March, at the Moomba Comps, Bunny had it back. Peter Byham had advertised in the local area and a farmer found it in his paddock 3 1/2 kilometers from the throwing point. As a reward, the farmer was given several of Bunny Read's other boomerangs.

Gerhard Bertling, master boomerang craftsman and computer wiz, has created a new MTA concept with some

interesting side effects. Throwing his NEW WAVE MTA with several times up to 42 seconds in dead calm, he decided to try the Super Catch. He threw the MTA, did his 5 Fast Catch sequence, and looked up to see his MTA still hovering at about 30 meters. Instead of coming down, the MTA started climbing straight up until it disappeared from sight. Another sacrifice to the Jet Stream God!

John Koehler is warming up for the new season by trying to break his own Endurance World Record of 60. He recently did 63 in practice which did not include five drops.

Jurgen Gerberding of Marburg, West Germany takes first prize for the longest throw and catch in history (with a witness) of 4 minutes and 17 seconds on Easter Sunday using a copy of a Bailey MTA. On the following day, the MTA was lost to the Jet Stream God after a chase of more than 7 minutes.



BOOMERANG MAN

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SUPER CATCH HONOR ROLL

Ted Bailey
Gary Broadbent
Rob Croll
Eric Darnell
Doug DuFresne
John Flynn
Mike Forrester
Michael Girvin
Rob Greer
Thomas Hartmann
Dennis Joyce
John Koehler
Barnaby Ruhe
Chet Snouffer
Olivier Vouktchevitch

BOOMERANGS in MUSIC, LITERATURE, and on TV

by Ted Bailey

One of the biggest blunders in boomerang archival material is the color photograph on the last page of the April, 1988 issue of **Outside magazine**. The photo is titled "Fruit Loops" with a sub-heading of "World Boomerang Champion Eric Darnell". Actually, the photo is Peter Ruhf in the same photo that appeared in the August 1985 issue of **Life** magazine.

Garry Lamothe and Gary Broadbent both contributed copies of greeting cards that have a boomerang theme. Apparently there are lots of greeting cards out there with boomerangs integrated into the scene.

The March 1988 issue of **Scientific American** mentioned in its "100 Years Ago" column that a party of Australian Natives gave an exhibition to a group of German scientists in Munster who were endeavoring to discover the cause of the boomerangs curious flight. It does not mention whether or not they ever figured out why a boomerang returns.

Philip Hu, USBA member, sent in an advertisement for a San Diego Bank that he clipped out of the newspaper. A large boomerang in the background emphasizes a theme for many happy returns on an Interest Rebate Credit Card.

It seems that almost every television show has a boomerang scene in it at least once. The latest to surface was **Mr. Ed**, the talking horse. It was an unusual sight to see the horse try to throw a boomerang. Wilbur finally tossed it out the window only to have it return through the barn door and knock papers off his work table. He eventually broke the boomerang over his knee to Mr. Ed's dismay.

Gene Holzer of the St. Louis Boomerang Club brings to our attention the character called: Captain Boomerang in the **FLASH** comic books since the 1960s. Flash issue No. 117 featured the introduction of

Digger Harkness, Aussie Boomerang Expert who turns criminal and performs feats with boomerangs that would put us all to shame.

Gene points out that the comic openly plagiarizes Compton's Encyclopaedia. Boomeranger's who wish to obtain copies of these comic should go to comic shows and ask for issues #117,124,148, 155,174,234,243,278,310 and 311. There may be other issues also. Issue #117 will cost about \$20 if you can find it. The others are much less and can be purchased for \$1 to \$5. Another boomerang character is depicted in the Sub-Mariner/Hulk **Tales to Astonish** issue #81 which introduces a man called simply: Boomerang. **Dagwood** #49 has a boomerang on the cover.

Lee David wrote a novelty fox trot called "**The Boomerang**" in 1919. The editor has a copy if any of the readers care to send a SASE. Gary Broadbent has identified a song called "**Boomerang**" in the soundtrack of "**Children of a Lesser God**". Actually, there are many songs with the title "Boomerang". Ask for this title at your record store by the following artists: **Down Under Country; The Echos; Tom & Jerrio**. These are all different songs too, not remakes. Other titles to look for include: "**Boom Boom Boomerang**" by **The De Castro Sisters** and "**Do the Boomerang**" by **Jr. Walker & the Allstars**. And of course there is always: "**My Boomerang Won't Come Back**" by **Charlie Drake**. Back in 1966, **Lorin Hawes** made a 7" 33 1/3 record on "**How to Throw a Boomerang**" on one side and "**How to Play a Didgeradoo**" on the flip side. This scarce collector's record was part of a "**Skills of Australia**" kit that he sold at his tourist trap. The USBA video archives has these on a new audio tape available now. The address is listed on page 19.

Jim Fielder has found an incredible article on boomerangs in a

relatively new publication called "**Australian Geographic**". Issue #8 (Oct/Dec 1987) has an extensive article on everything from the oldest boomerangs ever found in Australia to modern computerized designs by Sam Blight who turns over \$300,000 a year in boomerangs. Here is an Australian publication that readily admits that boomerangs originated outside of Australia.

Doug DuFresne found his strip laminated boomerangs featured in the March/April 1988 issue of "**CAD interface**", a journal for users of the "Drafix" CAD program for the IBM PC. In addition to a color photo on the cover, a three page article appears on how he uses CAD in his boomerang design efforts.

Gene Holzer of the St. Louis Boomerang Club sends in a menu from "**Jimmy's Deli**" with a sandwich called "**The Boomerang**" which has meatballs, hot pepper, cheese, and pepperoncinis. I certainly hope this doesn't return.

Garry Broadbent has found a line of boomerang lollipops in the Cleveland area.

The Boomerang Man has announced that "**Boomerangs - Making & Throwing Them**" by **Herb Smith** is now out of print. There are only 30 copies left. You can order one for only \$5.00 plus \$1.00 P&H. See the Boomerang Man ad on page 10.

The 1988 edition of the famous "**Guinness Book of World Records**" is way behind the times on boomerang records. It seems you must be an Aussie or be in Australia to have a record officially recognized. Bob Burwell has the MTA record at 28.9 seconds. Bob Croll has the consecutive catch record at 653. Bob Burwell has the record for distance throwing at 364.1 feet. They mention that Peter Ruhf made a throw of 375 feet under US rules. *Editor's note: Peter Ruhf claims this was done under Aussie rules in Australia under the direction of the BAA. He was the only American present at the time.*

NEW PRODUCTS

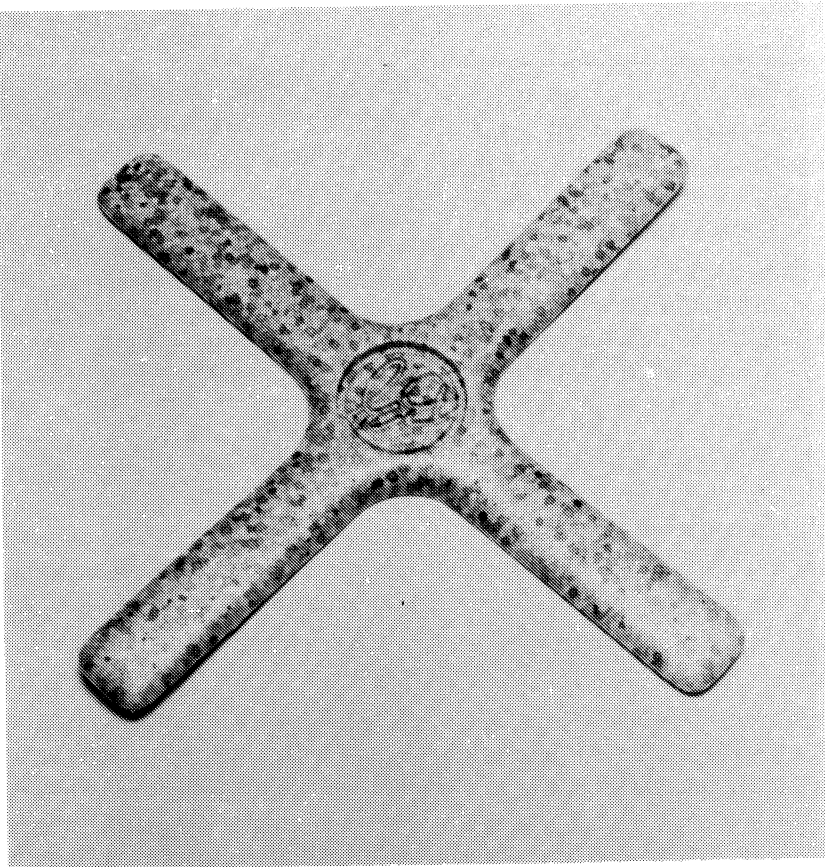
by Ted Bailey

Flite Rings - This new product (bottom left) was briefly mentioned in the Winter issue of MHR. It is now available on the market and I have been inundated with requests on where it can be purchased. The Boomerang Man currently has this product available at a price of \$15 per set with postage at \$3 for the first set and \$1 for each additional set to the same address. You can write to the Boomerang Man at:

Boomerang Man
1806 No. 3rd St.
Monroe, La. 71201-4222

What if you live in Europe and want to purchase the kit? I recently shipped the 3 lb. kit by airmail to Germany at \$20. You need to send the Boomerang Man a lot more than \$3 for shipping or you can order the kit from the following address:

Kurt Naef
Fpielzeug CH 4314
Zeiningen
Basel
Switzerland



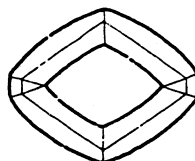
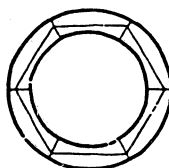
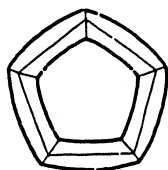
Sentinel Products, Inc. has released several new flight products that are really fun. The new toys, with an emphasis on safety in product design includes a aerodynamically designed **Ninja Star** with 7 rubber suction cups in place of the metal points; a foam flying disc called the **Spaceflyer** that can be safely thrown indoors; a flying cylinder called a **Pocket Rocket** which flies somewhat like a cross

between a flying disk and a football; and two indoor boomerangs.

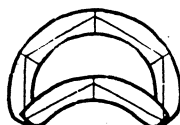
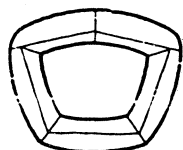
A boomerang called the **ZOO-MERANG** (photo above) has been around for some time now and is available through several sources, including the Boomerang Man and Ruhe-Rangs. This large polyethylene four blader was developed by Bob Foulke and can be thrown in a very limited space. Several throwers have reported times as low as 8 seconds for a sequence of 5 throws and catches using this one in their living room.

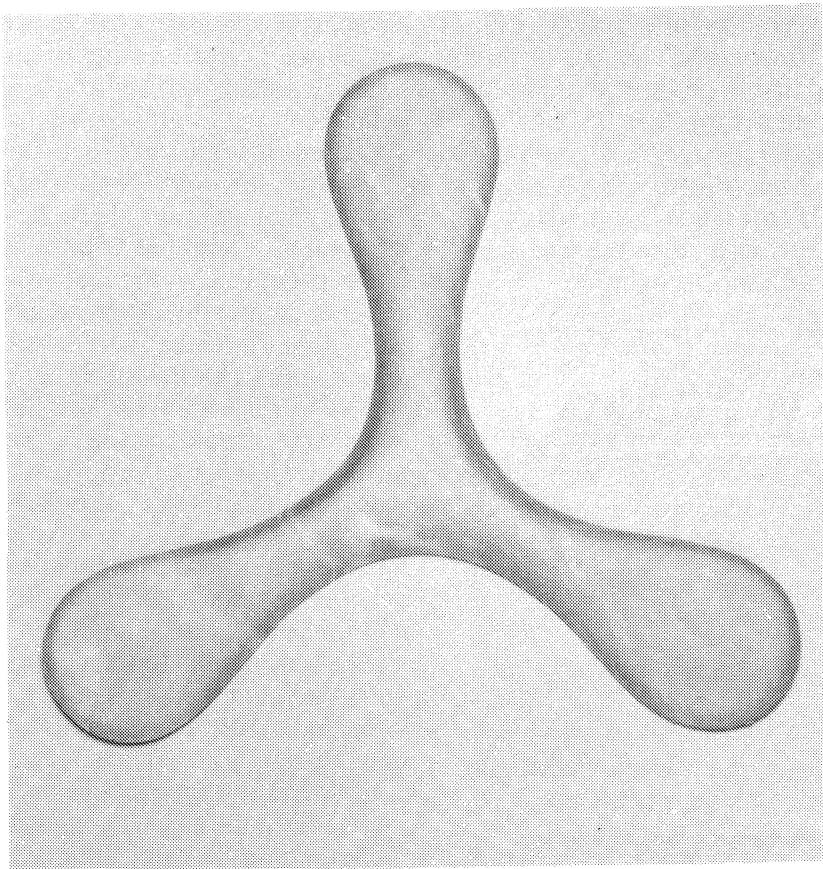
The **Zoy** is just coming on the market and gets five stars for designer Eric Darnell who has transformed his "Instant Gratification" wooden tri-blader into a high performance indoor model. Constructed out of Sentinel's "skin-soft" Microcell crosslinked polyethylene foam, the boomerang has symmetrical airfoils (as does the zoomerang) so that it can be twisted for either LH or RH operation. A very durable product with a weight of less than an ounce. The product is pictured on the top left of page 13.

All of Sentinel's Products are



Flite Rings™





available at most East Coast Kite Shops and at Woolworth's and K-Mart Nationwide. The two boomerangs retail at about \$5.95 each. Get yours today.

The **ROOM-O-RANG** is a unusual single bladed boomerang that can be purchased from:

The Goose Company
P.O. Box 18928
San Jose, Ca. 95158

The price is \$5.95 + \$1.50 P&H for two of the devices. A description of this unusual species of boomerang can be found in Bernard Mason's Classic text on boomerangs available through Dover Publications. Mason refers to it as a tumblestick. Thanx to Gene Holzer of the St. Louis Boomerang Club for this discovery. Order yours today.



The new "BOOMERANGLE"

Mickey Kinley has come up with an ingenious new product called the **Pocket Prop** or the **Boomerangle**. These beauties, constructed of natural hardwoods, have separate pieces for the lift and dingle arms. You can attach the arms with any included angle for various effects. Great in competition as accuracy booms, the **boomerangle** comes complete with throwing instructions at the low, low price of \$15. This includes shipping costs. I really enjoy mine. You can order yours from:

Mickey Kinley
4554 Sunrise Blvd.
Delray Beach, Fl. 33445

ALAN SCOTT CRAIG ART BOOMERANGS

Alan Scott Craig, boomerang thrower from the recently released movie "**The Baghdad Cafe**" has started selling incredibly beautiful art form boomerangs depicting real and imaginary animals such as birds, tigers, dragons, fish, etc. Priced from \$30 to \$95, these are a must for any serious collector. Serious inquiries only should be directed to Alan at the address below:

Alan Scott Craig Studios
405 Camino Manzanas
Thousand Oaks, Ca.
91360
(805)-379-1421

CHEAP POSTAGE

Few people realize that stamp collecting can be a poor investment unless you are willing to purchase stamps with a value greater than \$100 each. Lots of people rush to the post office and buy a sheet of every commemorative stamp issued. What happens when you go to sell your collection of mint stamps? Nobody wants them. Dealers will give you 80% of face value, a little more if you are lucky. If you use a lot of postage in your business or hobby, there is an opportunity to decrease your postal expenses by buying these postage stamps from distributors at about 90% of face value. A reliable source for discount postage is:

Karl Anderson
Box 35
Provo, Ut. 84603

Write to Karl and ask for more details. How can anyone go wrong with such an offer?

BOOMERANGS & COMPUTERS

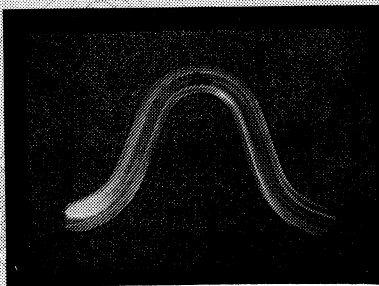
by Ted Bailey

Computers have become a big part of our lives in the past couple of decades. This marriage between man and machine extends to the boomerang in a big way.

The USBA membership listing is maintained on an **IBM PC** by Tom Tuckerman, a computer specialist in Cleveland. Tom also regulates the USBA rating system on the **IBM PC** with a routine he specifically developed for USBA. The 1987 USBA rule book was synthesized on an **IBM PC** by Doug DuFresne who also runs his business and designs boomerangs on his Computer. The USBA newsletter has been formatted on an **Apple Macintosh** since 1984 using sophisticated page layout programs which integrate art and text as done in this issue. So much for the management of the organization. How are computers used in the development of boomerang technology?

March/April 1988 \$3.95
CAD interface
THE TECHNICAL JOURNAL FOR drafix CAD USERS.

Outback Boomerangs



Doug DuFresne uses his **IBM PC** and a **CAD** (Computer Aided Design) program called **DRAFIX** to draft the outline shapes of his strip laminating molds. He then

prints the patterns at full size, glues them to wood and bandsaws on the dotted line to produce more accurate patterns than can be obtained by hand. His story was highlighted in the March/April 1988 issue of "**CAD interface**", a magazine for **DRAFIX** users illustrated at the lower left of this page.



Sam Blight from Perth, Australia is featured in the Oct/Dec 1987 issue of **Australian Geographic** magazine (pictured above). Sam and his partner, David Bromilow produce 15,000 boomerangs a week in 20 different styles. He has developed the most sophisticated computer program for boomerang design in Australia. It takes the guesswork out of development and allows the user to input changes in boomerang shape and see what effect these changes have on flight.

Sam is not unique in his use of computer analysis to study the flight of the boomerang. The grand daddy of all computer programs was written by Felix Hess as part of the requirements for his PhD in Applied Mathematics. He later published his PhD dissertation as a 555 page text that is the most complete theoretical work on the boomerang ever completed. Dr. Hess began his studies with the mathematical modeling of boomerang flight dynamics coupling spherical pendulum motion with aerodynamic lift and drag

forces. His studies were backed up with wind tunnel testing of unsteady pulsing airfoils and night throwing with lights to compare his theoretical flight paths generated on his computer with actual flight paths. Not stopping there, he rigged his computer to print out stereoscopic viewing pairs as depicted on the cover. A special pair of glasses allowed the viewer to see the full profile in 3-D. The USBA video archives also has available a movie made by Dr. Hess which adds the dimension of time to the analysis. The original plates for this classic text are lost, but a reprint may possibly be made available through Wilhelm Brefeld in the near future. Stay tuned to MHR for details in the next issue.

Right on the heels of Felix Hess and Sam Blight are two German Engineers who also have developed computer programs for predicting the flight dynamics of a boomerang. Both of these scientists have similar *time marching* models where each position of the boomerang at a given instant is dependent upon it's orientation during the previous time step. Gerhard Bertling of Berlin, West Germany shares his program with the readers on the pages 15 through 17. A sample of Klaus Dabelstein's output is shown on page 18. Perhaps we will have the honor of publishing Klaus Dabelstein's program in a future issue of MHR.

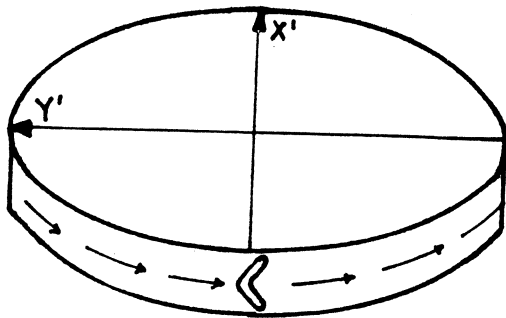
Another computer analysis technique is called *Quasi-static* analysis in which flight characteristics such as diameter and flight time is defined based upon input geometry. The editor is in possession of a fine example of this technique by Dr. Leziro Silva of Sao Paulo, Brazil. The program listing and description is too lengthy for this issue and will be printed in a future issue of MHR. Other designers are encouraged to send their programs to the editor of MHR for future chapters on this series about how computers are used in the the design and analysis of boomerangs.

BOOMERANG FLIGHT SIMULATOR

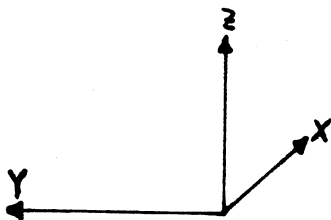
by Gerhard Bertling

Program Description

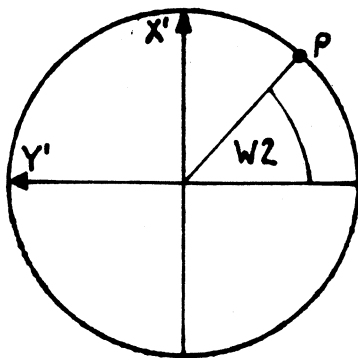
The boomerang travels on the edge of a large disk with the boomerang plane perpendicular to the disk plane.



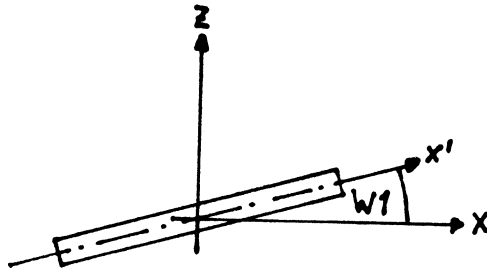
The disk lies in a rectangular coordinate system with the X-Y plane parallel to the ground.



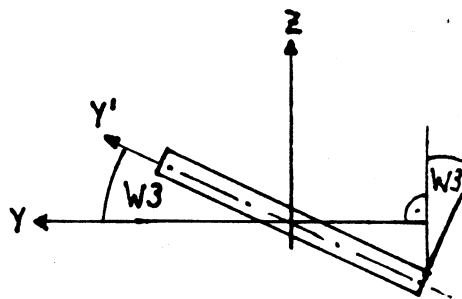
The angle $W2$ determines the boomerang's current angular position.



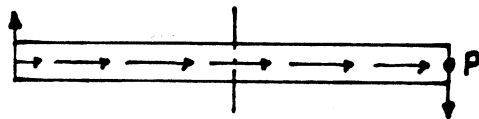
$W1$ is the angle between the X-axis and the ground.



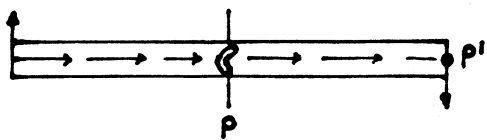
$W3$ is the angle between the Y-axis and the ground.



At the moment of release, $W1$ is given by the incline and $W3$ by the tilt. The LAY OVER (P) is figured as a tilt of the disk to the right.

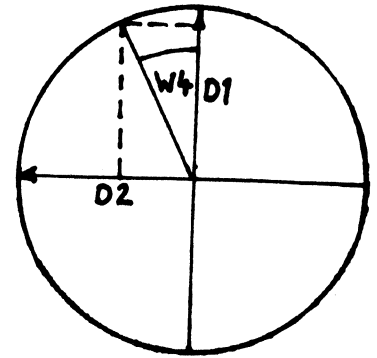


The influence of gravity tilts the disk also. P' acts downward.



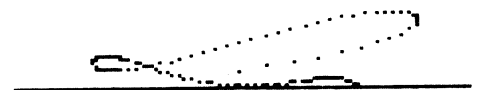
The movements caused by gyroscopic precession were calculated as described in Felix Hess' article in "Scientific American, Nov., 1968. The total precession is called D , with the components $D1$ causing a turn to the left and $D2$ result-

ing in LAY OVER. The ratio of $D1/D2$ is given by the angle $W4$.

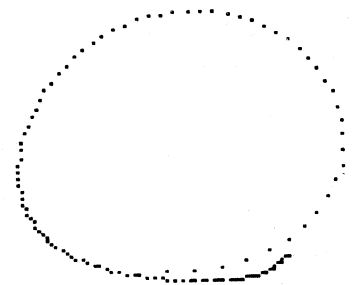


The position of the boomerang was calculated with intervals of 0.1 seconds and two projections were drawn:

1) XZ: from the thrower's right.



2) XY: from above.

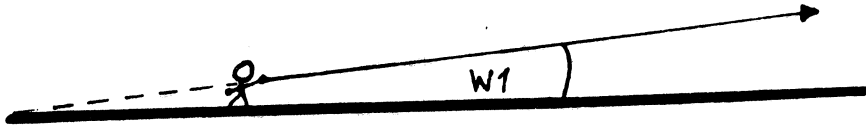
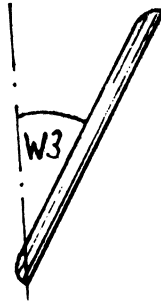


With a slightly modified graphic routine, the projections as depicted on page 17 were drawn. YZ or the plane from the thrower's view was added. The dot size is a measure of the distance from the boomerang to the viewer.

The program was developed on an Apple II+ computer, but should run with some minor modifications to the graphics routine on virtually any computer utilizing Basic as an operating language.

PROGRAM INPUT DATA:

Throwing velocity: meters / second
 Aim or incline angle (W1) : degrees
 Tilt (W3) : degrees
 Lay Down Factor (P) : degrees



PROGRAM LISTING:

```

1 REM *****
2 REM *
3 REM *                APPLE II+
4 REM *                BOOMERANG FLIGHT SIMULATOR 1.3
5 REM *                written by Gerhard Bertling 29/3/1988
6 REM *
7 REM *****
10 HOME
11 INPUT "VELOCITY = "; V
12 INPUT "AIM = "; W1
13 W1 = W1 / 180 * 3.14
14 W2 = 0
15 INPUT "TILT = "; W3
16 W3 = W3 / 180 * 3.14
17 K1 = .06
18 INPUT "LAY DOWN = "; W4
19 W4 = W4 / 180 * 3.14
20 K3 = .975
21 W5 = 0 : W6 = W3 * SIN (W1)
22 X = 40 : Y = 2 : Z = 2
23 BX = 0 : BY = 0 : L = 1 : B1 = 0
24 DEF FN ASN(Q) = ATN(Q / SQR (- Q * Q + 1))
25 HGR2 : HCOLOR = 3 : HPLLOT 140,0 TO 140, 191: HPLLOT 0, 0 TO
    279, 0 TO 279, 191 TO 0, 191 TO 0, 0
26 T = 1 / 10 : G = 9.81
27 GOSUB 66
28 S = V * T
29 DX = S * COS (W2) : DY = S * SIN (W2)
30 X = X + DX * COS (W1) * COS (W5) - DY * COS (W3) * SIN (W6)
31 Y = Y + DY * COS (W3) * COS (W6) - DX * COS (W1) * SIN (W5)
32 DZ = DY * SIN (W3) + DX * SIN (W1)
33 D = K1 * S
34 D1 = D * COS (W4)
35 D2 = D * SIN (W4)
    
```

Table of Variables:

V = velocity in meters / second
 W1 = angle between the X' axis and the ground, perpendicular to the ground.
 W2 = angle of flight direction.
 W3 = angle between the Y' axis and ground, perpendicular to the ground.
 W4 = measure of Lay Down.
 W5 = angle between X and X' axes, projected to the ground.
 W6 = angle between Y and Y' axes, projected to the ground.
 W7 = current aim (incline)
 W8 = angle between the X' axis and the ground, perpendicular to the disk.
 W9 = angle between the Y' axis and the ground, perpendicular to the disk.
 X,Y,Z = coordinates in meters.
 S = distance in meters.
 T = time interval (default to 0.1 seconds).
 G = acceleration of gravity as (9.81 meters / second ^ 2).
 L = flag (L = -1: boomerang lays down)
 K1 = Hess' boomerang constant.
 K3 = drag factor
 D = angle of precession
 D1 = turn left component of precession.
 D2 = Lay Down component of precession.
 D3 = Aim (incline) decrease due to gravity.
 DA = movement of the X' axis.
 DG = movement of the Y' axis.
 M = scale of drawing
 A\$,B0,B1,Bk,BX,BY,DX,DY,DZ,Q : misc. constants.

 V,W1,W3,W4,X,Y,Z,T,K3,M : variables that can be altered before running the program.


```

36 W7 = FN ASN ( DZ / S )
37 D3 = ( W7 - ATN ( TAN ( W7 ) - G * T / V / COS ( W7 ) ) ) *
    COS ( B1 )
38 DZ = DZ - G * T ^ 2 / 2 : Z = Z + DZ
39 V = SQR ( V ^ 2 - 2 * G * DZ ) * K3
40 DA = - L * D2 * SIN ( W2 ) - D3 * COS ( W2 )
41 DG = L * D2 * COS ( W2 ) - D3 * SIN ( W2 )
42 W8 = FN ASN ( SIN ( W1 ) / COS ( W3 ) )
43 W9 = FN ASN ( SIN ( W3 ) / COS ( W1 ) )
44 W1 = W1 + DA * COS ( W9 )
45 W3 = W3 + DG * COS ( W8 )
46 B0 = ATN ( SIN ( W3 ) / SIN ( W1 ) )
47 Q = SIN ( W1 ) ^ 2 + SIN ( W3 ) ^ 2
48 IF Q <= 1 THEN 57
49 W8 = FN ASN ( SIN ( W8 + D4 ) ) : W9 = FN ASN
    ( SIN ( W9 + D5 ) )
50 W1 = FN ASN ( SIN ( W8 ) * COS ( W3 ) ) : W3 = FN ASN
    ( SIN ( W9 ) * COS ( W1 ) )
51 BK = B0 - ATN ( TAN ( B0 ) * COS ( B1 ) ) : B0 = ATN
    ( SIN ( W3 ) / SIN ( W1 ) ) : Q = SIN ( W1 ) ^ 2 + SIN ( W3 ) ^ 2
52 IF L = 1 THEN 55
53 L = 1 : BX = BX - 2 * BK + 3.14 : BY = BY - 2 * BK
54 GOTO 57
55 L = - 1 : BX = BX + 2 * BK - 3.14
56 BY = BY + 2 * BK
57 B1 = FN ASN ( SQR ( Q ) )
58 W6 = B0 - ATN ( TAN ( B0 ) * COS ( B1 ) )
59 W5 = FN ASN ( TAN ( W1 ) * TAN ( W3 ) ) - W6
60 W6 = BY + L * W6
61 W5 = - BX + L * W5
62 W2 = W2 + D1
63 GOSUB 66
64 IF Z > 0 THEN 27
65 GET A$ : TEXT : END
66 M = 2.5
67 HPLOT 260 - M * Y, 191 - M * X : HPLLOT 140 - M * Z, 191 - M * X
68 RETURN
69 END

```

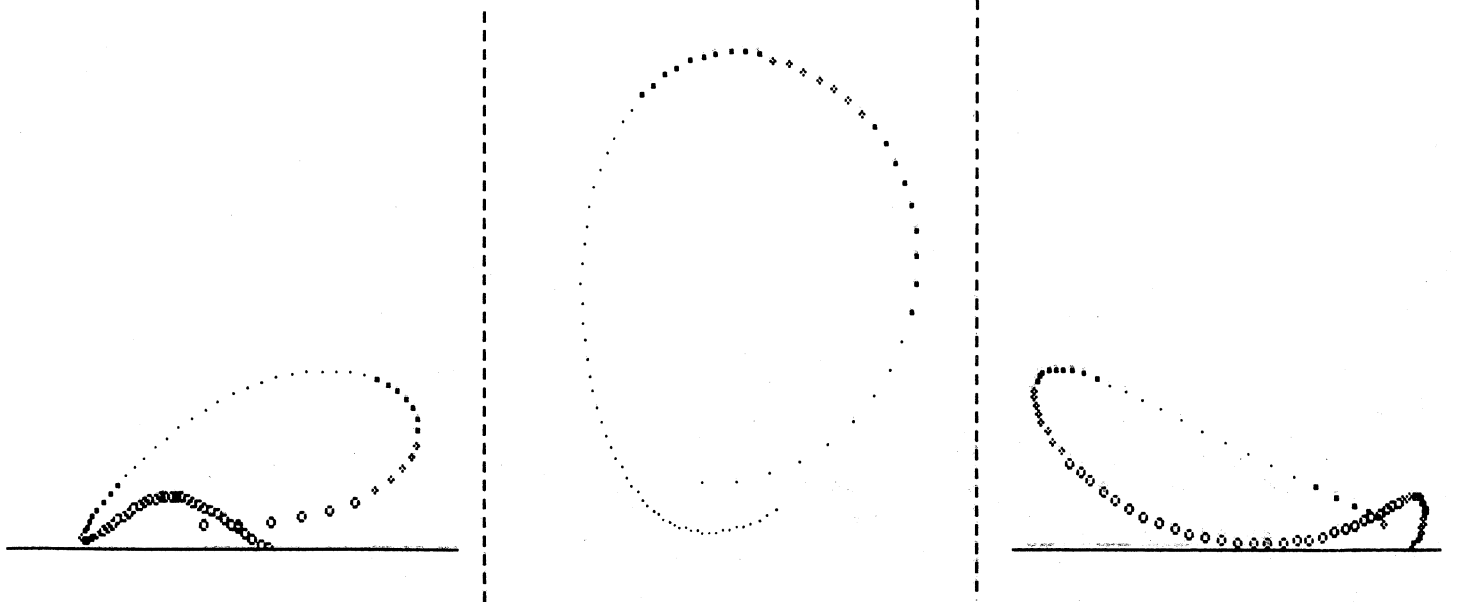
Commentary on Boomerang Flight Simulator 1.3:

This program is not quite perfect. The calculated orbits differ from the orbits calculated by Felix Hess, particularly near the end of the 'flight'. I would be glad to hear from someone who has written a better program. Or perhaps someone has the original Felix Hess program? Let me hear from you!

Gerhard Bertling
Putbusser Strasse 32
1000 Berlin 65
West Germany

Sample Program Output: for the Conditions of:

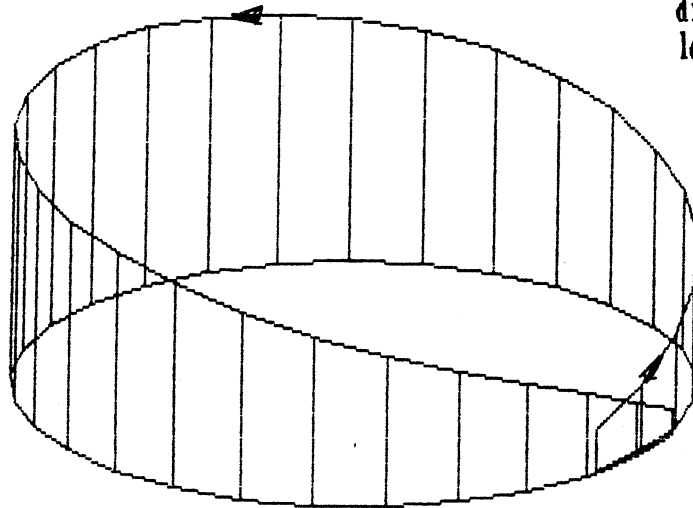
Velocity = 35 meters / second
Aim (incline) = 10 degrees
Tilt = 30 degrees
Lay Down = 5 degrees



COMPUTERS IN ART AND ANIMATION

Simulated boomerang flight does not necessarily need a scientific basis to be enjoyable. Some years back, Rob Gasser, a USBA member from Toledo was given a junior high school project to synthesize an animated show on his Apple IIc computer. His graphical flight representation has a length of about 20 seconds and closely simulates a real boomerang's flight path.

Paul Sprague, USBA director at large and coproducer of this newsletter has also created simulated boomerang flights on a computer. Using the powerful new Apple Macintosh IIGS, he has created a beautiful rendition of a boomerang in flight. One of the frames in the animation is depicted below. Paul creates such animations by layering each frame on top of the previous frame in a drawing program. The program successively displays each frame in the same order that it was created to simulate motion much the same way as a movie projector simulates motion. Paul is a masterful artist in creating logos and other art



COMPUTER PROGRAM OUTPUT
BY KLAUS LABELSTEIN (see story on page 14)

work on his Macintosh computer. Future issues of this newsletter will show some of his creations. The editor of MHR invites the membership to send in other submissions on how you use a computer to help you with your boomerang hobby. There are possibly many uses for a home computer that were not covered in this issue. *To be continued.*

COLLECTABLES

I pay the highest prices for Donnellan, Janetzki, Onus and other collectable boomerangs. Also buy/sell/trade Australian Aboriginal throwsticks, clubs, shields, bowls, spear throwers, etc. And of course, I also offer a fine line of performance boomerangs such as World Class MTA sticks and fabulous minis. You'll be pleasantly surprised at what I have available now! Write or call for further information:

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2967 Gracewood Rd
Toledo, Ohio 43613
(419)-471-9989

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FRAME FROM PAUL SPRAGUE'S ANIMATION

USBA INFORMATION PAGE

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1/2 Page	\$115
1 Column	\$80
Per Column inch	\$10

10% discount for four consecutive issues. Camera-ready copy preferred. Composition billed at \$10 per hour. Publisher reserves the right to refuse any advertisement or cancel a contract without reason. All advertisements should be mailed to:

John Flynn
RR #2 Box 209-8
White River Jct., Vt. 05001

The deadline for advertisements is March 1 for the Spring issue; June 1 for the Summer issue; Sept. 1 for the Fall issue; and Dec. 1 for the Winter issue. Early ads with payment receive best placement.

NEWSLETTER SUBMITTALS

All submittals to this newsletter should be mailed to the editor:

Ted Bailey
2967 Gracewood Rd.
Toledo, Ohio 43613

The deadline for submittals is the same as for advertising; or whenever sufficient material is received. Material should include print quality art or photos. All material may be edited as necessary.

USBA STORE

The USBA's fund raising store is in full operation under the stewardship of Dennis Joyce, USBA Vice-President. Some two dozen items are available including books, back issues of MHR, mylar stickers, USBA T-shirts and many more goodies. For more information, Write to:

USBA STORE
P.O. Box 2996
Newport News, Va.
23602

USBA VIDEO ARCHIVES

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Garry Lamothe
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Easthampton, Ma.
01027

Write for a price listing of selected titles including: historical tournament reviews, scenes from both domestic & overseas shows, scientific, and ethnographic materials, etc. **FLASH!** New items include an exciting audio tape.

USBA information and listings are available at the USBA headquarters staffed by Chet Snouffer. For information on USBA, write:

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Delaware, Oh. 43015

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All membership dues should be paid directly to the membership chairman by check or money order in U.S.A. dollars. Domestic and Canadian dues are \$10 per year or \$150 for life. Overseas dues are \$20 per year or \$250 for life. Check your membership expiration date which is printed on the newsletter mailing label.

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