

Many Happy Returns

Newsletter of the United States Boomerang Association

Issue 72 Spring 1998

And Now... The Main Event!

Your guide to St. Louis '98

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Michael 'Gel' Girvin
in St. Louis.

Many Happy Returns

SPRING
1998

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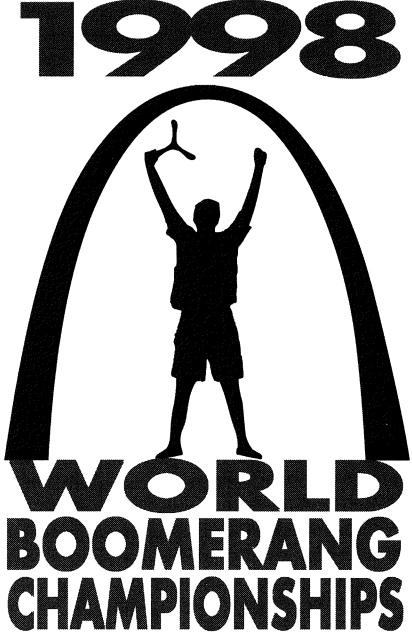
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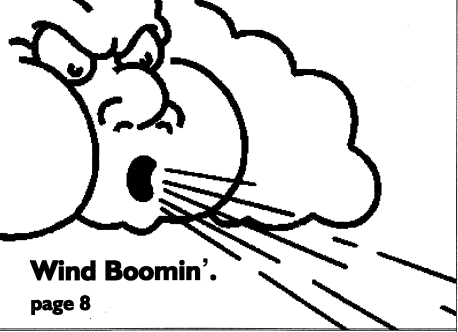
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1998

WORLD BOOMERANG CHAMPIONSHIPS

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$$\theta = \text{Arc cos} \left[\frac{L_1^4 \cdot W_1^2 - L_1^2 \cdot W_2^2}{2 \cdot L_1^2 \cdot W_1^2} \right]$$
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Many Happy Returns



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CONTRIBUTIONS

Many Happy Returns thrives on contributions from its subscribers. Please share your experiences with your fellow boomerang enthusiasts.

Payment for articles published is US\$0.02 per word after editing. Payment for images (photographs, original artwork, etc.) published is US\$0.05 per square pixel after resizing and cropping.

All contributions may be submitted by by e-mail to brazelto@uiuc.edu

or by fax (no images by fax) to
(217) 244-8371 attn: Tony Brazelton

or by mail to
USBA Newsletter
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Deadlines for contributions and advertisements are published inside the back cover of every issue of *MHR*. Contributions will not be returned unless requested. Contributions will be considered donations unless payment is specifically requested.

ADVERTISING

The basic advertising rate is \$2 per square inch. The width of the ad must be 2.4 inches (1/3 page width), 3.75 inches (1/2 page width), 4.95 inches (2/3 page) or 7.5 inches (full page width). Ads may be any vertical length.

Special rates per issue include:

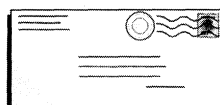
- ✓ Full page \$100 (savings of \$51.50 per issue)
- ✓ Half page \$60 (savings of \$15.75 per issue)
- ✓ 10% discount for four consecutive issues

All advertisements must be pre-paid in USD by check or MO to **USBA**. The editor reserves the right to refuse any advertisement or cancel a contract without notice. The deadlines for all advertisements are published inside the back cover of every issue.

Advertisements may be submitted in any electronic format, including: Pagemaker, Quark, and Illustrator. Scan-ready hard copies are also acceptable. To make your job a little easier, we offer FREE layout and graphic design services for your advertisement. All you need to send is the text and a rough sketch of any graphics you want and **WE'LL DO THE REST!**

Contact Tony Brazelton for more information:

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Letters

I am trying to promote just-for-fun events and am willing to put some money where my mouth is.

In order to promote more just-for-fun events with boomerangs, Left Turn Boomerangs will offer boomerangs or USBA memberships to three winners. All you need to do is hold events involving boomerangs then send Norm Kern a list or photo of those who participated, and a short description of the activities, including the date and location. In early October, Norm will "scientifically" assess how much fun your activities created. The primary factor will be the number of people who had fun and the secondary factor will be the fun in the activities. Special consideration will be given to events which are new this year, and those not associated with official tournaments. The three individuals who created the most fun will be able to select a Left Turn Boomerang from Norm's catalog or a paid one year membership in the USBA. Winners will be announced in the Fall issue of *Many Happy Returns*.

These rewards are intended to promote more just-for-fun events so the following are not included for consideration: events you were paid to conduct (demonstrations for a fee), official tournaments (USBA or Worlds), Toss Across America events. Events which will definitely be considered include free demonstrations, explanations, lessons, making boomerangs, games, Super Novice or team tournaments. Only events in the U.S.A. will be considered.

Send your entries to Left Turn Boomerangs
1640 Haynes Birmingham, MI 48009.

Norm Kern
Birmingham, Michigan

Story time.

I had gotten a little article on booms in the local paper, complete with my picture on the bottom of the front page. Yesterday, the sun was out, and my van needed washing. Arriving at my local car wash, I was immediately greeted by the shoe shine guy as 'Mr. Boomerang'. This was followed by the usual questions: *Do they really work? How do you make them come back?* The young man that writes up the ticket had eager eyes and timid questions. So en-

Quarterly Quote

"In Finnish, 'Ohio' means 'it is over."

With the World Championships coming soon, I am wondering what this can mean."

- Heikki Niskanen
Kuopio, Finland

couraged, I trotted back to the van and snatched out a 'V' I'd made a couple weeks ago and walked to the grassy field next door.

Winds were gusty and rolling, but I was able to catch two of four, even in wingtips. Thinking I'd better quit while I was at least even, I headed back to check the response. Everyone was tickled, but the ticket guy's eyes shined with that look. Now his questions were more bold. He wanted to hold the rang, and pantomimed the throw with my coaching. After I told him that I had made the rang, his face lit up, and said he was going to make one, that he did woodwork at home.

I told him a little about plywood, how to shape the foils, and encouraged him to get after it. He walked away in that all-too-familiar haze of preoccupation. Maybe he's been bit by the boom bug.

Later, I was thinking about the young man's fascination with making a rang, and my own interest, and came to a conclusion. Throw a stick and it does not come back. Throw a boomerang, and it comes back because it has magic in it. Therefore, the process of making a boomerang is putting magic in the stick. That is what makes it fascinating, putting the magic in the stick. Then, either myself or my old friends,

or friends I haven't met yet, can throw the stick and enjoy the magic.

Now, get out there and put in some magic, and you too can be a big hit at the car wash.

*Pat Steigman
Tyler, Texas*

Which side is really up?

Many thanks to Fred Malmberg for his explanation on how to make boomerangs. You can take all of Fred's advice but by changing the order of steps you might save a little heartache or work.

Before tracing the template, you can examine the whole plywood sheet to see which way it bends. Most sheets have a bend which runs lengthwise. Stand it on edge and sight down the length to see which way it bows. You will want to have the boomerang arms bent up when you are done, as Fred explained. Trace the template on the **BACK** or **BOTTOM** of the sheet. This will make the tearout come out on the top of the boomerang blank. This is the side from which you will remove the most wood along the edges so the tearout will have the least effect there.

The other benefit of planning the top and bottom of the boomerang early, is that some boomerangs are not symmetric, so you

wouldn't have the luxury of flipping the blank over. If you wait until later to discover that you have the arms bending down, you will have to fight the natural bend in the wood. If you have a boomerang template which is not the same on both arms, and you are tracing it on the bottom of the wood, be sure to turn the template over. This takes a little thought, but I have found it to be well worth the effort. (This tip was taught to me by Gary Broadbent.)

One last thought: If you are just getting started in crafting your own boomerangs, you may not have a rubber drum. You probably have an electric drill, and you might have a rubber sanding disk. This is also an effective tool for shaping the airfoils of your first boomerangs.

*Norm Kern
Birmingham, Michigan*

I recently attended my first tournament and want to share my recollections with others who are considering attending. I can trace my decision to attend a tournament to the June issue of *Boomerang News*. It contained a pair of great tournament reviews by John Weigel and Jason Smucker. After reading them my mind was made up. A month or so later I found myself getting off the plane in Columbus, Ohio, on my way to the US Open!

I can honestly say that before I even got out of the airport I had a memorable experience. On the way to baggage claim, I heard a page for "the party that is to meet Stephane Marguerite". When I got to baggage claim, I saw this guy standing by an information booth with boomerang decals on his luggage.

I went over and introduced myself to Stephane, offering him a ride to Delaware. Stephane made a call and found out that a couple of other folks were arriving soon and that he was supposed to catch a ride with them. As Stephane hung up the phone, his ride arrived, and he introduced me to Mark Weary and Stevie Kavanaugh.

In seven years of throwing, I had never before seen three other people in one place at one time who could throw a boomerang. Now, before I could even get out of the airport I had (and BOY, could they throw!). I knew this was going to be a great experience.

When I arrived at the field in Delaware, I was greeted by the sight of 30 to 40 people throwing. At some level, I knew this was what I was going to see, but the actual sight of it was just awesome. I sat in my car, completely enthralled, and watched for a few minutes before rousing myself to hit the field.

After I got in a few throws, Dwight Souder and Len Burns came over and introduced them-

(continued on page 21)

OFFICIAL USBA NOTICE: EVENT CHANGE FOR 1998

At the annual USBA meeting at the 1997 US Open in Delaware, Ohio, a majority of those present voted to submit one proposed rule change to a special membership vote, as allowed by the USBA Bylaws. That item was to substitute a combined Trick Catch/Doubling event for the existing separate Trick Catch and Doubling events in USBA Open and Sport division competition. The combined format had already been adopted by nearly every other country with a national boomerang organization.

A special ballot on this issue was mailed to the membership. In

order to pass there needed to be a yes vote from a simple majority of at least 10% of the total membership. As of April 27, 64 ballots (13.9% of the 402 members) were received. The measure passed by 55 yes votes and 9 no votes.

The new Trick Catch/Doubling combined format will be adopted this season. The St. Louis tournament on May 24 will be the first opportunity to compete with the new event.

As a reminder, here is the order of catches for the new event:

TRICK CATCH PORTION (50 points)

Left hand clean	2 pts.
Right hand clean	2 pts.
Behind the back	3 pts.
Under the leg	3 pts.
Eagle catch	4 pts.
Hackey catch	6 pts.
Tunnel Catch	6 pts.
One hand behind the back	7 pts.
One hand under the leg	7 pts.
Foot catch	10 pts.

DOUBLING PORTION (50 points)

Behind the back	3 pts.
Under the leg	3 pts.
Hackey catch	6 pts.
Left hand clean	2 pts.
Tunnel catch	6 pts.
Right hand clean	2 pts.
One hand behind the back	7 pts.
One hand under the leg	7 pts.
Foot catch	10 pts.
Eagle catch	4 pts.

TOTAL POINTS = 100 points

FROM THE

President's Desk

Greetings my fellow boomerangers. Once again it is that wonderful time of year when the leaves on the trees green anew, the songbirds return, and one's fancy turns to throwing boomerangs! The most joyous sighting of spring must surely be the boomerang tracing its graceful arc once again through the warm, azure sky.

This year has the potential to be one of the most exciting ever for the USBA and all throwers whatever your personal emphasis may be. The USBA Board has been hard at work on several fronts, the most currently visible of which was the referendum on the Trick Catch Doubling event rules change. You will note that the ballot doubles as a handy reference in the field while you practice for the new format this year!

The Board, with an able assist from John Koehler, has put together a terrific team of individuals with varied interests, skills and experience on a Rules Committee. That committee has been given carte blanche to reexamine, tinker with and perhaps even reinvent the competitive throwing formats currently in place. You will find an article from them in this issue soliciting your input for consideration during their work. Please do not hesitate to let them know what does and does not work for you in our current formats, and what ideas you may have to make things more interesting, fun and exciting. This applies whether you have been throwing for 10 months or 10 years!

The USBA Board as a whole, and myself in particular as point person, have been working for months toward the possibility of creating an exciting and unprecedented partnership with a major brand in a national marketing campaign that would feature boomerangs. In conjunction with those negotiations the USBA was able to assist the 1998 World Boomerang Championships by obtaining an offer of significant corporate sponsorship support for them.

Your USBA Teams USA Red, United Blue and THE RAD are hard at work preparing for the 1998 World Team Championships. Each team plans to be the one that wins back the World Team Cup. If you have the opportunity to travel this summer plan on making a stop at Southern Illinois University, near St. Louis, Missouri, for some or all of the World Team Cup and Individual Championships. This will be your opportunity to watch and interact with the finest boomerang throwers in the world. Tom Fitzgerald has an incredible week of throwing and events planned. The tournament runs from July 26, 1998 through August 2, 1998.

Finally, the throwing season will open once again with the annual Toss Across America event this May 16, 1998. As of today there will be community demonstration and teaching events occurring on that date in over 20 cities across the United States. Toss hosts, don't forget to provide the *MHR* editor with a report on how your event went including the place, names of throwers participating, the number and types of people who attended and some stories of what happened! Thanks to all of you the Toss Across America continues to succeed as the longest running, official non-competitive event in USBA history!

Till next time, fair winds and blue skies to everyone.

Betsylew Miale-Gix
USBA President

How to be a

CHAMPION

by Kelly Boyer Sagert

I know how to be a boomerang champion. Now, this might sound presumptuous, since I've yet to compete in a tournament. Matter of fact, it *is* presumptuous. But, hear me out, okay?

While many of you spent the 1997 US Open tossing blades of grass into the air, snapping rubber bands, throwing, and catching, I was listening. And what I heard was truly amazing. Three different philosophies of competing, winning and succeeding echoed around that field; and, if anyone here has the guts to combine those three beliefs into one championship-level attitude, it would be difficult for that person to be beaten by anyone else on earth or for the three Teams USA to be beaten by any other country on this earth.

First, the Midwest. These throwers have an extraordinary grasp of sport fundamentals. They're strong, they're

MIDWEST

tough, and their throwing sessions border on the excruciating. They stress basics, they practice repetition of skills, and they work hard on the skeleton of this sport.

You can't tell a Midwest thrower that you've already practiced for an event. They'll just answer, "Well, that's real nice, now, isn't it? Now do it again." Their attitudes remind me of an old story about a painting apprentice. This student had worked long hours on a certain piece of artwork, and he'd toiled over the techniques of stroking the brush.

He then took his completed painting to a master of the art. The master examined it closely, smiled, pointed out what he liked of the work, and then he said, "Now, finish it."

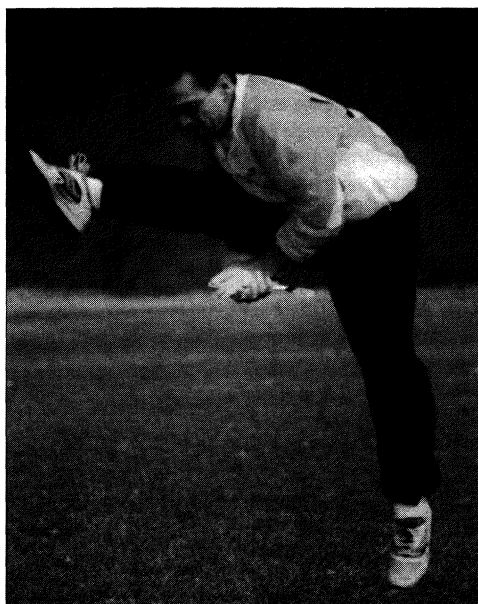
"Finish it? Why, Master, I'm done." "Oh, no, my son. You certainly aren't done," the master said, pointing out flaws, small spots of white burrowed amongst the color.

The student then painstakingly covered the unpainted portions, and he proudly returned. "Now, I am done, most certainly."

"Much better, much better," the master said, "But you are not finished. What about this uneven shading over here, that blotch over there?"

This scenario was repeated, in various flavors, many times over, until the frustrated student finally cried out, "But, Master, when will I ever be finished?" The master looked absolutely astonished at this question. "My son," he said, "why that answer... would be never." And, that, I believe, is the gift of the Midwest throwers. They realize that, even if they win an event, even if they place first in a tournament, even if they dominate their sport, practice is never finished.

Now, head East. Listen to these throwers encourage each



Chet Snuffer: Midwest perfection.



Barnaby Ruhe: East Coast focus.



Steve Kavanaugh: West Coast radness.

other. That's it, they might say, go ahead, find your inner place... but first consider your purpose... then free-flow. You've got to free-flow...

EAST COAST

How different that is from the foundations-first philosophy I hear in the Midwest. The East Coast thinking, to me, is the essence of brainstorming, that floating, right-brained thinking that can be gathered and harnessed, much as a mill wheel can be powered by the force of the invisible undercurrents of clear water. They grasp answers found within a dream, cosmic and spiritual, solutions melded from the dots-not-all-connected kind of thinking that embarrasses the more rational brain. They search for their inner core, they uncover the marrow of the mind.

East Coast throwers know the incredible ability of untapped energy, so they dig deep, they burrow until they are in tune with their subconscious, then they focus their mental and physical waves onto the astonishing boomerang. Following on the artistic theme, think about this:

"New artists must break a hole in the subconscious and go fishing there." (Robert Beverly Hale, *Time*, April 11, 1960)

Or this: "I dream a lot. I do more painting when I'm not painting. It's in the subconscious." (Andrew Wyeth, *Time*, August 18, 1986)

And, maybe this is what the East Coasters are saying. Or, maybe, again, I'm being pre-

sumptuous: "The first job is to get some clarity of understanding about yourself, what you are, and where you are going." (Harry D. Gideonese,

in *Arthur Goodfriend, What Is America?*, 1954).

And, now . . . meditate on these words: awesome, unruly, radical, impassioned, enthusiastic, intense, spontaneous, spirited, combustible. Pack your excuses into the trunk, get your hand slapped for saying "I can't." Just... do it. Of course, the West Coast. These throwers have

WEST COAST

been blessed with the joy and laughter that only the risk takers in life will ever know. Go for it, even though you end up covered in sweat and mud, your boomerang crashing 10 meters from your spectacularly inaccurate dive. Here are additional thoughts: "Go for the moon. If you don't get it, you'll still be heading for a star." (Willis Reed, quoting one of his high school coaches, in Bill Bradley, *Life on the Run*, 1976) "The greatest mistake you can make in life is to be continually fearing that you will make one." (Elbert Hubbard, *Note Book*, 1927)

"I believe in rules. Sure I do. If there weren't any rules, how could you break them?" (Leo Durocher, *Nice Guys Finish Last*, 1975)

"Life is either a daring adventure, or nothing." (Helen Keller, *The Open Door*, 1957) "Kid,

just go down there and throw yourself on the fire." (Andy McDonald, to Steve Raible, *New York Times*, November 14, 1976)

Forgive me, please, for my generalizations, and, God Bless America, go ahead and disagree with my finer points. Feel free to scoff at advice offered from a novice thrower who still needs to ask her husband the direction of the wind. But, also consider this challenge: keep an open mind and mull over these on-the-sidelines, backseat driver kind of observations. And then, please have faith that you can win, that you are going to win, faith meaning this:

"When you have come to the edge of all you

know and are about to step off into the darkness of the unknown, faith is knowing that one of two things will happen: there will be something solid to stand on, or you will be taught how to fly."



Kelly Boyer Sagert is a freelance writer from Lorain, Ohio and is the author of *About Boomerangs: America's Silent Sport* (PLANT*Speak Publications, 1996).

1998 WORLD BOOMERANG CHAMPIONSHIPS



St. Louis
USA

July 26 - August 2, 1998

Southern Illinois University
Edwardsville, Illinois
(in the St. Louis metropolitan area)

Sunday, July 26

Registration and Welcoming Reception

Monday, July 27

Team Test Match I

Tuesday, July 28

Team Test Match II

Wednesday, July 29

Exhibitions

Thursday, July 30

Team Test Match III

Friday, July 31

Individual World Championship

Saturday, August 1

Individual World Championship

Sunday, August 2

Exhibitions
Farewell Party

If you thought this year's World Boomerang Championships in St. Louis was an exciting event for the revenge-minded US Team, you're wrong. It's an exciting event for the entire world boomerang community. And if you happen to live in the US, it's even more exciting. There has never been a bigger boomerang event in the states. You have the opportunity to witness history in the making and to get involved in boomerangs like you never have before.

On the next page you will find everything you need to know about the who, what, where, and when of the 1998 World Championships. The sport, the craft, the science, the art and everything else about boomerangs will be represented. There is truly something, if not *a lot*, for everyone.

You're coming, right?

Mark July 26 through August 2 on your calendar and plan to attend the 1998 World Boomerang Championships in Edwardsville, Illinois. Never has there been a bigger boomerang-related event in the US. And there is something for everyone!

It will be a very busy week, indeed. Of course the main events are the team and individual world boomerang championships, but there are many other events and opportunities for boomerang enthusiasts all week. Exhibition sports open to everyone, a HUGE sales table, and shoptalk with people you've only read about are just a part of what you won't want to miss! It's a worldwide convergence of boomerang knowledge and enthusiasm. A total boomerang immersion experience. You'll only benefit from it if you're there!

Here is a list of all the planned goings-on. As you can see, no matter what your interest in boomerangs, there is something for you at the World Boomerang Championships this summer. See you in St. Louis!

Team Test Matches

19 teams from 15 countries battle it out for the world title. The US has a bone to pick after the disappointing 1996 World Cup loss to Germany. But don't count out Australia, Brazil, Canada, France, Italy, Japan, the unified Scandinavian Team Switzerland, and the International Women's Team.

The distribution of events over the three Test Match days is yet to be determined, but the events are:

- Accuracy
- Australian Round
- Endurance Relay
- Maximum Time Aloft
- Relay
- Supercatch
- Trick Catch/Doubling

Monday, July 27

Team Test Match I

Tuesday, July 28

Team Test Match II

Thursday, July 30

Team Test Match III

Individual World Championship

Open to all. That's right - you have a shot at the title! \$75 registration fee before July 1. \$125 after July 1. Register with Tom Fitzgerald.

The distribution of events over the three Test Match days is yet to be determined, but

the events are:

- Accuracy
- Australian Round
- Fast Catch
- Endurance
- Maximum Time Aloft
- Trick Catch/Doubling

Friday, July 31

Individual World Boomerang Championship Day 1.

Saturday, August 1

Individual World Boomerang Championship Day 2.

Exhibitions

These are the really fun days! Open to all. Free.

Wednesday, July 29

Long Distance competition.
Team Gel team games.
Miscellaneous demos and competitions.
Informal, free lessons from world-class players.
Night throw.

Sunday, August 2

Head-to-Head Tournament.
Miscellaneous demos and competitions.
Informal, free lessons from world-class players.

On-going Events

Boomerang and Merchandise Sales

Try before you buy. Get tips from the pros. Also: Books and literature, pins, magnets, T-shirts, sweatshirts, hats, miscellaneous paraphernalia.

Boomerang Science and Technology Expo

It's a swap meet of ideas. See what's new in boomerang technology all over the world. Learn about new materials, crafting techniques, and boomerang designs. Meet boomsmith legends like Jonas Romblad, Ola Wahlberg, Sigfried Stiller, and more! Design Contest, too!

Fun Volunteer Opportunities

One of the best ways to get the most out of your trip is to get involved! Be an official for the Team Competition! As a range steward, line judge, or timer you will be right in the middle of the hottest boomerang action anywhere. This is fun! Contact Tom Fitzgerald or Bob Leifeld.



Off the Field: What to do and see in St. Louis

Wednesday, July 29

Baseball Game. St. Louis Cardinals vs. Milwaukee Brewers. 7:10 pm.

Tom Fitzgerald has reserved a large block for over 120 boomerang fanatics to see the game together. Scary. Tickets \$6.00. Transportation provided from dormitory to stadium and back. Contact Tom Fitzgerald at (314) 839-1604.

Forest Park

In St. Louis. Great place to walk, bicycle, boat, golf or see the Zoo, Botanical Gardens or the Art Museum (see below). The Shuttle Bug links all parts of this huge park.

St. Louis Zoo

In Forest Park. A world-class zoo that's completely free.

St. Louis Art Museum

In Forest Park. It's free too.

St. Louis Science Center

A fun, interactive and educational museum. Adjacent to Forest Park. Guess what - yep, it's free.

Boathouse

In Forest Park. Cafe, boat rentals, and gondola cruises.

The Gateway Arch

Ride up to the top of this famous St. Louis landmark (featured in the 1998 World Boomerang Championships logo) in an elevator and survey the city and the mighty Mississippi River. (314) 982-1410.

Cahokia Mounds Historic Site

Near Edwardsville, Illinois. Ancient Native American Indian burial mounds. Visit the mounds themselves, as well as an indoor museum.

Riverboat Casinos

On both banks of the Mississippi River. Las Vegas-style entertainment and gambling.

Southern Illinois University Fitness Center

A great place to relax or work out. Indoor and outdoor swimming pools, weight room, indoor track, gyms for basketball, volleyball, badminton, etc. Very close to Woodland Residence Hall (see below). \$0.50/day or \$3.50/week.

Where to Stay

(continued on page 21)

When the wind blows...



GO BOOMERANG!

by Michael 'Gel' Girvin



When I first started to throw,

I would only go out on days when it was calm. I didn't think it was possible to throw with much success in windy conditions. Even the first couple of years that I went to tournaments, I didn't know how to throw in wind. It was not until I lived in the "windy city," Chicago, that I learned how to throw in wind. All it took to learn how to throw in wind, was to go out and throw in wind. It is possible to have success in windy conditions.

There are four basic ways to deal with wind:

- 1) Easy throw, or "surfing throw"
- 2) Humpback throw
- 3) Adding drag
- 4) Adding weight

Surfing Throw

The simplest way to deal with wind is to throw your boomerang with less power. The key to this type of approach is to impart a lot of spin, by snapping your wrist, without providing a lot of forward velocity. The wind speed will supply most of the boomerang's velocity.

Also, you must release the boomerang higher and with more layover than usual; this will prevent the boomerang from getting blown into the ground. In huge wind, throw your boomerang with 40 degrees altitude and 45 degrees layover with no forward velocity and tons of spin. Your boomerang will ride on the wind like a surfer rides on a wave.

Although this is a spectacular way to deal with wind, it is the least effective of the four methods.

Humpback Throw

Throw with a vertical release, high altitude and hard throw! If you utilized this throw on a calm

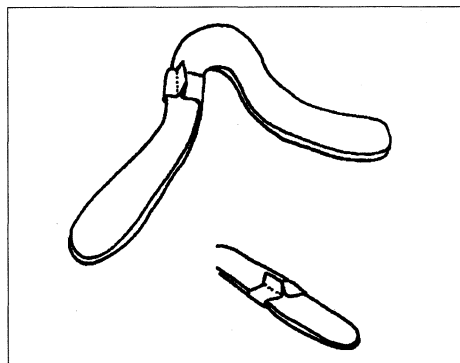
day, your boomerang would fly up high and then crash into the ground half way through its turn. But on a windy day the boomerang will not crash into the ground—the wind will save it from crashing and then push it back to you. The flight pattern goes from very high, to low, to medium high as it flies back to you.

The reason this type of throw works is because the boomerang loses forward velocity as it tries to crash into the ground. Generally, in windy conditions, if you throw your boomerang more vertical and/or with a higher altitude, it will come back more accurately.

Drag

The most effective way to deal with wind is to add drag to your boomerangs. Drag will slow the boomerang down and prevent it from flying over and past your head. If you make your own boomerangs, you can drill holes into your boomerangs. The more holes, or the closer the holes are to the tips, the more drag you will have. If you don't make your own boomerangs, you can still drill holes in the boomerangs you have purchased. Leaving the leading edges dull on your boomerangs will also yield velocity reducing drag.

The most convenient way to add drag is to place



Drag flaps slow down those windy-hot rangs.

taped flaps on your boomerangs. Duct tape or electrical tape will work fine. Wrap your boomerang with tape and fold the tape back onto itself in a small section so that you have a flat flap sticking straight up from the wing. The larger the flaps or the closer the flaps are to the tip the more drag. Every shape will react differently to flaps. So, you will have to experiment to see which location works best for your throw and boomerang. Generally, flaps near the center of the wing in the upper elbow area works best.

Weight

Adding weight, such as taping a coin to the wing, will cause your boomerang to travel further and it will help combat windy conditions. Start with a dime or penny taped to the flatside of the lift arm tip. In windy conditions, use larger coins or multiple coins. Again, you will have to experiment and find which spot works best for your boomerang and throwing style.

When throwing in wind it is helpful to understand that boomerangs don't come back very accurately. If you don't mind a little running, the rewards for a catch are great. And when you do flap, weight, or throw the boomerang just right, and it comes back accurately, it is very satisfying.

The key to learning how to throw in wind, is to go out and throw in wind! Simple as that. Try flaps, weights, humpbacks and surfing. The best solution is probably a combination of one or more these techniques. Try them all, experiment and have fun.



Michael 'Gel' Girvin is a rad boomer from Berkeley, California. Gel is well known for his ability to compete in high winds with not-so-secret weapons like the Bellen Wind and Rad German boomerangs.

70% of everything you need to know about

making boomerangs

Part II

by Fred Malmberg

Here's the other 35%. For those of you who may have missed it, the last issue of *Many Happy Returns* (Winter 1998, #71) featured Part One of this nearly exhaustive article on boomerang construction. In the last issue, Fred Malmberg taught us a good deal about the materials, tools and techniques of crafting boomerangs from plywood, phenolic laminates, or other sheet materials. Part Two delves into the realms of TriFlies, finishing, tuning, and advanced techniques.

So how do you get the remaining 30% of what Fred Malmberg knows about making boomerangs? Fred is working on a book that will cover all of the information in this series of articles in more detail, as well as a few other topics. The book is in its final stages of revision and should be available soon (self-published, Fred Malmberg). This will certainly be the bible of modern boomerang construction for every serious boomsmith.

Your Guide to "70% of everything you need to know: Part II"

Part Two will cover how to modify stock Darnell TriFlies, painting and sealing, tuning, and advanced woodworking techniques like lap joints, strip laminates, and inlays.

The first part of each section will cover the basics of that topic, assuming no prior knowledge of boomerang building at all. This is for the benefit of those new to boomerangs, new to construction of them, new to a certain type of construction, or simply those with a passing interest in knowing how it is done.

Some sections will cover some advanced topics, which will help boomsmiths who have mastered the basics to complete the task faster, more refined, better, or at least with a deeper understanding of it.

If you recently joined the USBA and did not receive the last issue of MHR (Winter 1998, #71), you should seriously consider ordering the back issue so that you have both parts of this important reference tool.

PART I

- I. Materials used to make booms
- II. Hand and power tools
- III. How to make plywood and phenolic boomerangs

PART II

- IV. Plastic TriFly modified boomerangs
- V. Painting and sealing
- VI. Tuning
- VII. Lap joints and strip laminates
- VIII. Inlays

Plastic TriFly Modified Boomerangs

I decided to include a separate section on modifying the well known Eric Darnell plastic TriFly boomerang. It is arguably the most used boomerang (in modified form) in competition today. I personally don't know anyone who competes regularly who doesn't have at least one in his or her bag. I used one once at a Nationals in Ohio (I forget the year) in F/C, at a time when I couldn't step more than two steps at a time (my previously injured knee couldn't move much, due to swelling). I tied for fifth place in the event by taking my time and throwing nearly perfectly each time. People who saw it told me later they never saw a F/C round done that way before, and Eric told me he sold out all boomerangs shaped like that within about 15 minutes. I also recently used a different modified ABS shape as a "Mini-Ironman" boomerang; I used that one boom for F/C, Endurance, and Aussie Round!

The good news is that modifying these boomerangs is fairly easy and fun with the right equipment. To start, you need a pattern (tem-

plate) to use to mark the boomerang, to show you what you need to remove. Templates can be found in various boomerang publications as well as other throwers' bags. What you need here is usually just the pattern for one wing; do not make a large, three-winged pattern for these.

Copy the pattern onto the plastic boom (most throwers prefer the ABS over the polypropylene). with a fine-tip marker. Then, put the pattern on the next wing, and trace that, etc., until all three wing tips have the exact same pattern on them. This also generally means that you will have identical patterns on all three wings.

Large amounts of plastic can be cut off with a bandsaw or a jigsaw, but I usually just grind it off with my 3" x 3" hard rubber drum sander (there is that tool again!). The plastic will melt off, forming mushroom-like balls of very hot plastic. Do not be tempted to pick these off while they are hot! They can burn you. Wait for them to cool, and/or scrape them off with a shop knife kept near the grinder. ABS grinds much better than polypropylene. It's much less "gummy". The other tools used for tight areas (Dremel, Foredom, etc.) work here also, but I find I almost never need them.

When all three wings are reduced to the desired level, the airfoils can be carved. These are done similarly to the plywood models, although there will much less work done on leading edges as a rule (most of the unmodified boomerang already has a leading edge on it). Also, the pretty and useful "glue lines" between the plies are not there, to tell you how deep you are going. I then use a shop knife as a scraper, and pull the blade across the adjusted areas until any unevenness is removed (on the airfoils and on the leading and trailing edges). These airfoils can be sanded with the orbital sander, as in plywood models, but the scraping usually does the trick. The important thing with all plastic models is the tuning, and that will be covered later.

Painting and Sealing

Now we have moved along to the point where we will put a finish on the boomerang. Why put a finish on a boomerang? It isn't because everyone else does it, or because it looks pretty (although that isn't a bad reason, it isn't the real reason). It is for protection. Protection from the water lurking in puddles, rain, snow, and humid summer air. Wood when worked is in a

naked condition; it will last much longer if finished with something. Okay, maybe honey locust will last pretty long even with no finish, but most woods won't handle nature too well. (Honey locust posts are what you see as fenceposts on the eastern seaboard farms. They last over forty years in the ground.) Some sort of finish is needed to preserve your artwork.

Plywood models. I will treat these boomerangs as separate issues, as the finishes for plywood and any rare wood model are pretty much different. The first thing you want to remember is that a finish will not cover up any really bad craftsmanship in the final sanding stages. If your wing edges are not parallel, I would not recommend building up so much finish in the low spots so as to hide your lack of desire to bother to sand it smoothly in the first place. Make certain the boom is as finely sanded as you need it before you think about finishing it.

The first thing you want on a plywood model is some sort of sealer, such as a sanding sealer. These come in both oil- and water-based versions. The water-based is much easier to clean up afterwards, but both seem to work. I would apply either with a disposable foam brush, or, if you do a lot, maybe with some sort of spray gun. In any event, the second thing you want to remember about finishing is to READ THE DIRECTIONS ON THE CAN. If it says it is going to take a day to dry, and longer in humid weather, it probably will. After it dries, sand with very fine sandpaper (usually 220 grit or higher). Clean the fine sanding dust off with either a dry clean towel, or you can use a tack rag (a cloth impregnated with a mild varnish that stays tacky; it is used for just this purpose in furniture making).

Next, if you are going to paint, now is the time to go for it. You can use spray cans, or go whole hog and get an airbrush unit (compressor, airbrush, hose, etc.). I suggest getting a tank of nitrogen to use, if you choose this route, as this is far cheaper than the compressor, and can be refilled at local welding supply houses. In spray cans, a lot of users on the RangList seem to prefer the Krylon brand. I have used it, and liked it also. One item I saw recently at a local Ben Franklin craft store I liked, and wondered why no one else tried. They were selling, near the other over-priced airbrush supplies, stencils to be used on fingernails while airbrushing them. They are small holes, in many shapes, punched on a wheel of maybe five inch diameter. You could hold the stencil near the top of the boom or on it, spray the hole, remove the stencil carefully, and voila! You can be an artist, too.

Let the paint dry. *Completely.* I would run a few pieces of scrap, with both the sealer and some paint on it, and check that with my finger over the course of the next day. If you are not using oil paints, they should be dry before a day is up. That way, you cannot ruin your artwork by test-touching a still wet masterpiece.

Paint by itself is an excellent repellent of water. I do submit, however, that some boomerangs are completely covered with paint. There is usually some bare wood which will have to be protected, too. Remember Achilles? He was protected everywhere, but at his Achilles heel. He's dead. Protect these portions of the boom with a clear final finish coat of some sort. Polyurethane is often used, and is a good choice.

Polyurethane, like most clear coat finishes, sits on top of the surface itself, forming an invisible coat of protection. It definitely repels atmospheric and tangible water sources, but does so at the expense of being able to touch the wood itself. You are actually touching a coat of plastic, after it dries. Well, on plywood, who cares? It may be worth it there, as the protection it affords is worth this minor inconvenience, but this is a concern for rare wood models. If someone buys snakewood, they want to touch snakewood when they touch it, and, by God, the finish shouldn't get in the way. If you polyurethane a snakewood boomerang, then you will only touch polyurethane the rest of its life. Other clear finishes, such as varnishes, marine spar varnish, urethanes, epoxy finishes, etc. all act this same way. Anyway, if you choose to use polyurethane, or a finish like it, make sure you let it dry sufficiently (use a scrap piece, like I suggested before), and, once it's dry, it is ready for use.

In **rare wood** models, I do not use any sort of sealer prior to the finish. I do not want to interfere with the coloration in any way, and sometimes these sealers do have a lighter color to them. I make sure I sand it to as fine a level as I want to first, and then apply an oil finish. Why oil? It is good for this type of boomerang, because if you get a small scratch after using it, you can sand it down, re-oil it, and the newly repaired section looks exactly like the old section; in fact, I guarantee you can't find it. The oil finish penetrates deeply, and tends to darken the wood a little in most cases, but a lot in others. Again, try it on a piece of scrap wood. If it darkens it too much, you may want to consider using a water-based polyurethane. These will darken the wood very, very little, but, then again, you get the problem with feeling only polyurethane when you are finished. I usually end up with the oil finish on my rare wood models. Spe-

cifically, I look for one called "Danish Oil Finish", which is a combination of oils, etc. I like its smell, the way it works, and its predictability. Boiled linseed oil is a good second choice, and there is actually a whole lot of other choices out there to try.

Some people wax their booms. This can be done, but remember, once you wax, you will have to keep waxing. Wax does repel dust better than an oil finish does, and there are some mighty good waxes out there right now. I personally do not wax boomerangs right now, but may try one in the future. The key in this work is to try things, and follow the directions; if it works for you, keep doing it. I have had far more successes than failures in the finishing realm, and believe you will, too. Again, try a scrap piece first; if you don't like what you see there, don't use it on a finished boom.

But, no matter what Steve Cook says, do not paint your rare wood lap joints. I will find you, and have a very deep personal discussion with you if you start doing this.

Tuning and Weighting

The basics in making a good flying boomerang are found in the following three factors: 1) Make a reasonably well shaped boomerang, with suitable airfoils. 2) Make certain it is of an appropriate weight, with proper weight distribution. 3) Make it have an appropriate tune for its desired flightpath.

That is all you need to make any boomerang fly - those three factors. I remember Ted Bailey telling me the trouble they had early in his boom career, duplicating boomerangs as precisely as possible, and then finding the flight paths were not as good as the originals were. Tuning was something discovered experimentally, not by calculated estimation. It is absolutely critical to the flight of a boomerang, especially if you want the boomerang to fly a particular way (i.e., Fast Catch).

If you place a boomerang on a tabletop, flat side down, often there is an observable curvature to the boomerang. If you hold down the elbow, and tap the wingtips, they will make a noise, not unlike a telegraph key does. If the wing is curved upward, as it is slightly in most non-fast catch models, it has what we call *positive dihedral*. Dihedral is the bend of the wing, either up or down, relative to the elbow. We define positive as the direction up, above the curved airfoil; negative is the turning down-

wards, toward the flat side. If the boomerang has negative dihedral, it won't make a tapping sound at the tip; it will make a sound about halfway up the wing, or, by turning the boom upside down, putting the curved side downwards, now it will tap at the wingtips. Make certain your tabletop is flat, and you should be able to check for dihedral with only a little effort. Also, by sighting down the boom wing, like it is a rifle, you can easily tell positive or negative dihedral (Editor's note: In some sources, negative dihedral is called *anhedral* and positive dihedral is simply called *dihedral*).

Positive dihedral tends to make a boomerang fly higher, but shorter distances out from the thrower, depending upon which wing is affected. Negative tends to make the boom fly lower and farther from the thrower. How do you know which wing to bend? I came up with a quick way to determine this years ago, and shared it with Ted who put it in one of his newsletters as an article. You would not believe how many people told me they liked that article, so I am including the basics of it here.

The concept of it is basically you can hold your boomerang up, and determine which wing to bend by superimposing the image of the flightpath you just got with it, with the boomerang itself. Imagine your last flight, no matter how crappy it was. See it as a path in the air. Now, hold your boomerang just over this imaginary flightpath, elbow of the boom pointing away from you, flat side facing the ground.

Now, imagine what you want to do to correct the flightpath. Do you want to bend the first half of the path upwards (the boom never got high enough to return)? Then, bend the first half of the boom upwards, also (for right handers, this is the right wing, which is the leading wing for those familiar with that terminology). Do you want to bend the last half of the path upwards (the boom got high enough at the halfway point, but never fully returned)? Then, bend the last half of the boomerang upwards (for RH, this is the left wing, which is the trailing wing). This analogy works if you must bend the wings down, either wing; it also works on left-handed boomerangs. If the first half is too low, you bend the first half of the boom up, etc. You will be bending a different wing than righthanders will, but your appropriate wing is the other one; all you have to know is the analogy works for you, if you superimpose the boom on the flightpath, and bend the wing where the path is faulty.

You also have to be aware of something called *angle of attack*. Angle of attack is the twisting of the wingtip, so that the leading edge hits the

flightpath at an angle. Look at the boom from the wingtip. Is the leading edge higher or lower than it is farther up, near the elbow? Then you have an angle of attack built into the boom. Positive is defined as when the leading edge is higher than the trailing edge. Negative is when the leading edge is lower than the trailing edge. Positive angle of attack tends to shorten the flightpath, with far less effect on the height of the boomerang than changing dihedral does. Negative gives a little more distance. You will note you can have positive angle of attack and negative dihedral, or negative angle of attack and no dihedral, etc. The two bends are independent of one another. This is important in tuning a fast catch model. Sometimes you need just another 1.5 meters, but no change in flight height. You can either weight it a little, or give it a slight negative angle of attack bend on one arm. One more point on angle of attack - a little is a wonderful thing. A lot can be a lot of trouble. You can easily get a boomerang that "runs out of wind" and doesn't fully return by merely bending the boom just a little too much in an angle of attack change.

Weighting is another concept. Weighting can lengthen a flight of a boomerang either a little or a lot (its usual way of being used), or, it can stabilize a flight by increasing spin retention, depending upon exactly where the weight is placed. Also, it adds stability for wind throwing, which I found out after I needed it, at last year's US Open. Lead tape is a wonderful source of weighting. Pennies are good when you need more weight. Also, those wonderful cheap-looking scissors that cut pennies in half actually do cut pennies in half, and half-pennies are great weights, when you need them. They're also pretty darn cheap.

For permanent weights in wood models, I suggest using the split shot sinkers that fishermen use, available everywhere (K-mart, for example). You can get them in multiple sizes, and they can be hammered into the holes you drilled into the wood for this purpose. These are made of lead - do not melt them! Also, do not eat the metal dust flakes you create when you do this. Clean them up, throw them away, and wash your hands. Lead poisoning can cause mental retardation, and most of the throwers I've met are on their last expendable IQ points! That was meant as a joke, but the warning about lead poisoning was not. It is a real hazard.

Where to weight for which effect? On tri-bladers, it usually doesn't matter too much; choose one of the three. The farther out toward the wingtip you go, the more distance you get from a given weight. Also, if you are stabi-

lizing for wind throwing of a trick catch boom, you probably want it near the tips. Weights near the middle of the arm stabilize the flight in non-wind conditions, and near the center of tri-bladers, it makes the boom seem like it's spinning faster but getting there more slowly.

For two-bladers, weights near the wingtips tend to make it go farther. Weights near the mid-points of the wings decreases distance, but retains spin better. Weights at both wingtips, with a slightly smaller weight at the elbow, tend to give the maximum length possible of a two-blader. For a more full coverage of two-blader weighting, consult John Mauro's booklet, "An Introduction to Boomerangs" (1985, Smith and Flannery).

Other factors influence flight, and are used by competitive throwers on a regular basis. Typically, holes drilled at different places on the boomerang make it a more wind-resistant boomerang (at the expense of a good flight in no wind). The closer the holes are to the wingtips, the more effect they have in making the boomerang drop, especially at the end of the flight, when spin is being naturally reduced.

Flaps also create drag; flaps are pieces of tape with a fold in them, from as small as 1/8" high to 1/2" or more in height. Again, the closer to the wingtips, the greater the effect. Rubber bands act like flaps, and are quickly changed in changing tournament conditions; they interfere with the airfoil at their location, and make the airfoil less effective there, making it a better wind boomerang.

I hope this helps, and I hope it encourages the readers to try their hand at something new. There is a whole world of boomerang construction possible, waiting for someone to pursue it. And, remember, no matter what you make, if you make it well, Gary will buy it. If you make it real well, others will, too. I hope you get as much out of it as I do.

Lap Joints and Strip Laminates

What I am going to do here is to cover the construction of strip-laminate (S/L) booms and rare wood lap-joint (L/J) booms, and will basically cover all you need to know in how they differ from plywood boom construction methods. Once you get the boomerang to the stage where it is what I call a "blank", the airfoil formation, etc. is pretty much the same as with a plywood model.

In S/L booms, you are trying to get the

strength of the wood running the length of the entire boomerang. This lends to the formation of curving boomerangs; V-shaped boomerangs are almost impossible to construct in this manner. Usually, one thin strip of wood runs completely from one end of the boomerang to the other, glued to another thin strip also running from one end to the other, etc., until you have enough length in the chord to form a true boomerang wing width. This is then airfoiled, sanded, tuned, and finished.

Typically, S/L boommakers use a rigid pattern that exactly duplicates the innermost ply, making the pattern as thick as the wood used is thick. For example, if 3" wide pieces of wood are available, then the boomerang blank being constructed will be 3" thick (as opposed to the final 6mm or so); this will be band sawed down to multiple boomerangs roughly 6mm thick, so one gluing operation can easily produce many boomerangs. If the wood used is thin enough, the pieces can be bent around the form, glued to one another, and clamped together, without any steam bending involved in making the wood more pliable. Although this thickness varies from species to species (and some species are not bendable at almost any thickness), I would suggest that if your wood is thicker than 3/32", you will want to steam bend it, to make it more pliable. Some makers, notably German ones, have used veneers of wood to make their S/L booms, with an unusual effect. Steam bending allows you to use wood up to 3/16" or sometimes even thicker. Once the form is made the correct depth, it is usually glued or screwed to another, large, flat piece of plywood or particle-board, so that the forming boomerang has a surface to rest upon. The first piece of wood is laid down next to the form, glue applied to the outer surface only (outer meaning away from the form). The next piece is laid against it, with thin amounts of glue on both sides. The subsequent pieces are laid up similarly (and quickly, depending upon the glue used), except the outermost layer has no glue on the outside. Then, large clamps are placed about every three inches, from end to end, tightly clamping all plies of wood toward the form (the clamps go from the outermost ply of wood used to the inside edge of the form). Some makers use a flexible strip of steel as an additional support for the outermost ply of wood, preventing the clamps from damaging the last ply of wood. The giant blank formed is left untouched for a significant amount of time, so that all glue dries completely; usually for at least a day. The giant blank is removed from the form (previously to making the blank, if you lay down wax paper

over the form before glue up, the removal of the blank from the form will be effortless). It is then sliced down (bandsawed, and be careful with this part) into correct thickness blanks, and then airfoils, sanding, tuning, and finishing occurs.

What glue to use is a matter of some conjecture. Prior to the last few years, the only true options one had were epoxies, and then there were a number of choices. Now, there are some wood glues so strong that they rival epoxies in strength, and I see no reason why some of them cannot be tried. Epoxies have a course history that cannot be ignored, but they are more expensive than wood glues, and some are hard to find.

S/L booms are expensive to make, in that a lot of time and work goes into just making the first one. Just the purchase of enough clamps ought to make your eyeballs widen somewhat, and the form has to be made, etc. The good news is that the second, third, fourth, etc. are almost ridiculously easy to make, and the results are easily seen. Also, this may be the way to make a boomerang that is as strong as possible with wood and glue alone.

L/J booms are different, and involve playing around a little to get the wood down to a blank form. You definitely need a bandsaw, and I suggest a 16" model, even if you have to get a used one, or a Taiwanese model. Also, you need a source for your wood; somebody near you sells wood, and if they know you are looking for unusual wood for certain projects, they often will keep an eye out for unusual pieces. Remember, most of the time they cannot sell highly figured wood, unless they already have bowl turners contacting them. Most woodworkers want walnut to look like walnut, not zebrawood. My suggestion is to find a reasonably dense hardwood (at least as dense as walnut), preferably a local wood that is not too expensive. Your first trip or two into this field may not be your best work; trust me on this one.

You can get your wood in log form, billet form (like a piece of pie, a large wedge-shape cut from a log), lumber form, almost anything but sawdust form. With the bandsaw, if it is bigger than 12" x 2.5" x 0.3", you can use it (and if it is smaller, you can use it as a tip of a wing, or as an inlay. These are pretty much minimal dimensions; leave them larger, if you can. When you cut across the grain of a tree, you are doing what is called *cross-cutting*; when you fell a tree, you are cutting across the grain. Any other type of cut (vertical on a standing tree, or at any angle to vertical except 90 degrees) is called *ripping*. Ripping is much more difficult on a machine

than is cross-cutting; when you put the piece sideways on your bandsaw table, and try to rip pieces to, say, 8mm thick, you will see how slowly it goes, compared with a typical cross-cut.

Anyway, you want the wood to get down close to a usable size. When you get it to such a size, you want to lay out a pattern on each piece of wood, to get an idea of what you want to make. Gary once told me, "There is the way everybody else does rare wood construction, and then there's Fred's way." I always thought it was easier to lay out the pattern, see how the halves fit together, do any adjusting needed, and finalize the shape at the grinder after gluing. Most makers glue them up first, and cut the shape out afterwards.

I use a posterboard template, or, more appropriately, a template "half". Each template here is just one half of the finished boomerang; it is just one wing. I have maybe 6 or 7 template halves I use for rare wood construction; by leaving the cuts thick around the template halves, I have room for final adjusting when I get to the grinding portion. I can also individualize the boom at that time, to keep any interesting variations in the wood, or maybe get rid of the undesirable parts.

After tracing the pattern (usually pencil, sometimes have to go to a red pencil, rarely a marker), I cut out the shape on the bandsaw, leaving at least 1/8" all the way around, especially at the lap joint surface. This can be removed later if needed, but is cannot be lengthened if needed later. After both pieces are so cut, roughly overlay them on the bandsaw table; see how they look with a 5/8" overlap (roughly my overlap; another advantage of having a vertical lapjoint). Adjust the angle between the arms by small wedge removals at the joint surfaces, and I do mean small wedges. Make sure your wedges taper to nothing at either the outer elbow or inner elbow, depending on which way your wedge is shaped.

The next step is to make certain the lap surface itself is perfectly flat. After this step, you will be using the flatness of this piece to determine where the end of your lap joint will reach, so you really, really want it flat. I use a belt sander for this, although you could hand sand by laying a piece of sandpaper on a perfectly flat surface, such as the bandsaw table, grit side up, and carefully sanding the edge back and forth until the edge is flat. Anyway, the flatter this one side is, the easier all the subsequent steps will be.

Now, you must create the lap itself. People ask me, "Fred, your lap joints look so beautiful.

How do you get such great joints?" There are four keys to a really good joint: 1) A sharp router bit, in a 2) router table, with a solid (not two-piece) 3) fence, using 4) good technique

1) is almost self-explanatory. Get a carbide-tipped straight router bit. I use a 1/2" bit (1/4" shaft) in a Sears router in a Sears router table (see 2), above). 3) may be confusing to some; how can I get this one-piece fence; my Sears router table has a two-piece fence? Well, if you clamp a piece of plywood 1/2" thick from one part of the 2-piece fence to the other, cut out in the middle a little for dust collection but leaving the bottom 1/2" solid from end to end, you now have a 1-piece fence. 4) above means not pushing too hard down into the table, nor too hard into the fence, when you are cutting out the lap itself. Either can alter the flatness of the lap, or the evenness of the depth of the cut. When I cut the lap out, I usually cut a groove as deep as the fence allows me, then come back roughly parallel to the fence to get the final part of the wood left uncut the first time. In other words, I've got a 1/2" cutter, making a 5/8" *rabbit* (an "L" shaped cut at the end of the piece of wood). It will have to be done in two passes, no matter how good you are. Keep your fingers away from this bit at all times!

Before you cut, you want to adjust the depth of the bit. I used to measure with a device that had 1/64" marks on it, and I would interpret the thickness of the wood to the nearest half of each mark! That would mean I was measuring to the nearest 1/128", setting the depth on the router bit over and over, passing test pieces of wood through to check if the depth was half the first measurement, etc. And you thought they just looked pretty. It took forever. Then I came across something I never would have first imagined. You can, by eye, tell exactly what half of something is, especially if it is only 8mm thick or less to start with. What I do now is eyeball about half, tending to stay on the low side if anything, lightly touch the boom half to the rotating bit just to mark the wood a little, and pull it away and "eyeball" it. If it isn't deep enough to be exactly half, I adjust the bit for a deeper cut. I rarely adjust the bit more than twice to get it exactly right for a given piece of wood, and it is exactly lapped in the center of its depth. If your lap isn't exactly centered, you will have a ton of work to do later in sanding it down. Take the time to get it centered now.

Check the joint now. See how the pieces of wood fit together. If you aren't happy now, you won't be happy later. If I am not happy with the fit (I usually am, but am giving a worst case scenario), I usually re-sand both ends of the lap

joint slightly (maybe removing 1/32" wood from each) to get them perfectly flat. Then hit the router table again, to get a final depth cut to make up for that 1/32" removed from the end. If it was perfectly flat when it hit the router table, the joint should fit well after it leaves the table. Otherwise, your problem is your technique on the router table, or the flexibility of your "solid" fence.

Ready for glue-up. I use Duro epoxy, two-part, 30 minute (slow dry) type. This is available almost anywhere; I get mine at a local hardware store. Stay with epoxies for L/J booms; the overlap is their only connection, and absolute strength there is essential. Other epoxies would work; check how much work time they give you. Setting time should be at least 30 minutes, as the faster set epoxies aren't as strong as the slow set are. I coat all joint surfaces (kind of like a wide "Z" shape) on both booms, applying the epoxy with the wooden end of a 6" medical Q-tip; I find the round cross-section allows for easy application while rolling the Q-tip. I also introduced the use of vulcanized fiberboard inserts at the lapjoints a number of years ago; these are available from knife making supply companies. An excellent source I use is Atlanta Cutlery. Small quantities can be bought there. If used, they should be cut first, before the epoxy parts are mixed, and be handy, ready for insertion at gluing time.

If no inserts are to be used, glue-up is complete when clamps are applied. I use 1" Pony type spring clamps. Epoxy, I have found, does not stick to these orange plastic/vinyl tips. I typically use three clamps on each boom - two at the outer elbow (one reaching toward the inner elbow area as far as it can reach), and one from the inner elbow area. If you use inserts, they should be thick enough to extend above the surface of the wood pieces slightly, maybe 1/64". Unfortunately, I have found this slight rise often interferes with clamping; the Pony clamps often hit these areas, and disrupt the joint integrity (i.e., cause gaps, which needless to say you don't want). To avoid this, I use something I call "riser blocks", 2" x 1/2" x (4 or 5)mm strips of plywood, placed just to the joint side of the inserts, and put the Pony clamps on these riser blocks instead. Now, the clamps are above the level of the inserts, and no gaps occur.

Set it aside to dry for one full day. Remove clamps, and, if riser blocks were used, remove them also (sometimes they get glued to the surface; pry them off with a shop knife). Now comes the critical part - getting the joint flat and even, and not taking it down too thin to

use as a boomerang. Using your 3" x 3" rotary grinder, remove (slowly and carefully!) the glue and other irregularities from the joint area, first on one surface of the joint, and then on the other. It doesn't have to be perfect, but close, as the random orbital sander will take it down to the final sanding level. If you work too quickly here, you will remove too much wood, and your boomerang will be too thin at the joint - a major problem.

Once you're happy with the joint on both sides, now you can finalize the 2-D shape of the boomerang. I find this to be a lot of fun. This is where your artistic interpretation is realized, as the final form emerges. Once you are happy with that, now you must make the boomerang into a true blank. That is, the elbow joint is probably thinner than the rest of the boomerang, and you must make it equal thickness throughout. I use a combination of the rotary grinder and the random orbital sander to get the uniform thickness that a good boomerang should have. Again, you are doing it mostly by eye; if it looks a little too thick at a given point, sand that given point down (blending it in with

its surrounding areas, at the same time; remember "keep it moving" and "smoothly continuous" from earlier?). The random orbital sander is an EXCELLENT tool for doing this on an almost microscopic level. Once you get used to using the tool, you will find it has tremendous potential. I use grits from 60 (rarely) to as high as 220, depending upon which stage I am at in a given boom construction. 80 grit would be a good choice right after smoothing with the rotary grinder.

Once you have it significantly smooth, you are at the "blank" stage I mentioned earlier. Remember, however, that tuning is definitely more difficult with a rare wood boomerang than it is with a plywood model, although it is possible (covered previously in the Tuning section). Of course, there are no glue lines like plywood has, so depth in applying the airfoils must constantly be watched. Otherwise, the final stages are quite similar to plywood boom construction. Minimal sanding all over should be 220 with a rare wood boom; I usually go to 400 or 600 grit for most of my rare wood models. I personally feel the only appropriate finish on rare wood is

an oil finish, and I prefer Danish oil. Remember that rags with any linseed oil, or almost any other oil used in furniture finishing, are essentially self-combustible, so put them outside on cement near nothing flammable, or immersed in water.

Disadvantages to rare wood L/J booms are the inherent weakness at the edge of the joint (not the joint itself - the epoxy is stronger than the wood it is gluing), and the time needed to make one. Unlike S/L booms, making one does not automatically give you the second, third, etc. However, the rarest forms of wood are not always found as veneers, and the full beauty of the wood can be represented in the form of a L/J in a way that no other construction modality can rival. The better you get at making these, the more you realize that you are merely arranging the natural beauty of the wood in a way that is pleasing to the eye and to the touch, and in a form that can fly. The magic is in the wood, and the fact that it can fly. All the rest is rearranging.



OFFICIAL USBA NOTICE: CALL FOR NOMINATIONS FOR 1998 ELECTION

The United States Boomerang Association is seeking nominations for all positions on the Board of Directors for election to the 1998-99 term of office. Positions include President, Vice President, Secretary, Treasurer, and five at-large directors. All terms are for one year.

You may nominate yourself or another person, provided that biographical and other information is included in the nomination. If you are nominating someone other than yourself, you must provide proof of acceptance of nomination from the nominee. There is no limit to the number of nominees for any position.

All nominees should submit his or her name and the office for which he or she wishes to be considered a candidate. Nominees are also encouraged, but not required, to submit a personal statement including but not limited to: biographical information, reason for running, positions on specific issues, philosophical positions. Please limit your personal statements to 300 words or less. Statements over 300 words will be edited at the discretion of the editor in chief of *MHR*.

The names of the candidates, with their statements (if any), will be published in the Summer issue (#73) of *MHR*, along with an official ballot to be completed and returned by US mail to the USBA Secretary. The 1998-99 term begins September 5, 1998.

All offices are volunteer positions and are not compensated. Reasonable and necessary expenses may be reimbursed. Being a productive board member requires 3-7 hours per week for participation in the conduct of USBA affairs. Although having an e-mail account is not an official prerequisite for nomination, persons desiring a board seat are strongly encouraged to have one in the interests of efficient board operation.

Incumbents wishing to run for re-election must also be nominated. It is not assumed that incumbents are running for re-election.

Following are descriptions of the roles of the officers and at-large directors and the Board of Directors in general, paraphrased from Article III of the USBA Bylaws.

Board of Directors. The Board of Directors comprises the President,

Vice President, Secretary, Treasurer, and five at-large directors. The board is solely responsible for the management, control, and direction of all USBA activities and policies. The board meets at the annual national meeting, held in conjunction with the US Open Tournament, and at least four more times during its one-year term. (During the past two terms the board has met continuously via e-mail during the entire year.) All board members cast one vote on board issues.

President. The President establishes committees and appoints and removes the chairpersons of those committees. The President facilitates and directs board discussions and calls and conducts meetings, whether through mail, e-mail, or teleconference. The president also coordinates the USBA calendar.

Vice President. The Vice President fills in for the President, in case of absence, distributes tournament director packets, solicits bids for the annual US Open, and performs other duties as assigned.

Treasurer. The Treasurer is responsible for receipt and disbursement of USBA funds and maintenance of records of such transactions, including member accounts, USBA contracts, nonprofit corporate filings, quarterly financial reports and governmental financial filings if required, and performs other duties as assigned.

Secretary. The Secretary records the minutes of all meetings, administers all elections and votes, maintains the USBA archives, and performs other duties as assigned.

Members at Large. The at-large members are responsible for special projects and activities as offshoots of board operations.

Don't miss this opportunity to make a real difference. Help the sport, art, and science of boomerangs grow in the direction that you envision. Please e-mail, fax, or mail all nominations to:

USBA Secretary
2405 Lawndale Drive
Champaign IL 61821
fax: (217) 244-8371 (attn: Tony Brazelton)
e-mail: brazelto@uiuc.edu

Your First Tournament what you need but don't yet realize it

by Tony Brazelton

You're finally obsessed enough to make it official: you're going to your first boomerang tournament. You've heard from your friends how much fun they are and you're ready to find out for yourself. You packed your boomerangs, of course. But what about sunblock? A water bottle? Rubber bands? Wet wipes? Garbage bag? Duct tape?

If you can't fathom why you would need one or more of those things at a boomerang tournament, read on. What you learn here should help make your first day on an official USBA boomfield a little more comfortable, a little safer and *a lot* more fun.

Personal Health and Comfort

Boomerang tournaments are all-day affairs. Keeping your body happy and healthy should be the first thing on your mind. I talk about lots of different items here. Keep in mind that not every player carries ALL of this stuff. Discover what your needs are and what works best for you.

Hydration

Keep **water** or a **sports drink** with you at all times. Many players prefer a 50:50 mix of water and sports drink. Lack of hydration can lead to headaches, cramps, and heat exhaustion. Avoid caffeinated beverages; caffeine actually *dehydrates* you. It is a good idea to drink extra water several hours before the tournament to be fully hydrated. Once you start losing water during vigorous exercise, you can't replace it fast enough, no matter how much you drink. We usually wake up in the morning slightly dehydrated, so start drinking early!

Food

Don't be afraid to eat. Don't wolf a Big Mac

right before your Endurance round, but you need nutrients to keep high energy and stave off debilitating cramps. Have a good breakfast at least an hour before the tournament starts. Then, continue to **eat small amounts of food all during the day**. Don't wait until your stomach is screaming at you. Feed it a little as soon as it asks you politely. Some things I have noticed people munching on: Clif Bars, Power bars or other carbo bar, bananas, cookies, fig newtons, dried pineapples, and dried apricots. Every stomach has different sensitivities. Find out what works best for you.

Sun Protection

We need water, food, and *shelter*. You may be spending six hours or more in direct sunlight. If you're not prepared, your day of fun and games could turn into severe discomfort, or even a medical emergency.

Think of it in layers. The first thing you should put on in the morning is **sunblock** (at least SPF 15). If you put it on before you get dressed, you will get better coverage and will spend more time doing it right. The key is definitely thoroughness. Too many times I have heard people regretting having forgotten the

tops of the ears or the nose or behind the knee. Re-apply throughout the day if you sweat a lot or are very fair skinned. Try sunblocks that claim to be water-proof. Many of them are also sweat-resistant. Find a sunblock **lip balm**, too, and reapply *many* times during the day.

The next layer is, of course, **clothing** - wear it. Although bronze-skinned John 'Moleman' Anthony takes this advice rather lightly, you shouldn't strive to earn the nickname 'Melanoma Man'. Fellow bald boomerangers: Don't forget a **hat** or a bandana!

The last layer is the accessory layer. Many people carry an **umbrella** with them all day to use as portable shade when they are not playing. Steve Kavanaugh even runs down the field with his umbrella during MTA, flinging it away at the last moment to make the catch! Other people go so far as to bring a **tent** or awning for between-events refuges from the sun.

You'll want sunglasses, too. Those will be addressed later on in the *Eye Protection* section.

Clothing

Bring lots of it. Change as often as you need to stay dry. This isn't as important to everyone as it is to me. I usually bring five t-shirts and four

pairs of socks, but most people don't seem to bother. There are many **synthetic fabrics** which aid in the quest to keep dry by wicking moisture away from your body. Consider these over cotton. Also on the subject of sweat: there is nothing like a good **cotton towel** to comfortably blot it away from your face.

Prepare for the conditions. Pay attention to the weather forecast and then take it extremely liberally. If there is a slight chance of rain, assume it will rain and prepare for it (see below). If the high is going to be 75, plan for everything from 50 to 100. Dress in layers to keep your muscles' (especially your arm and shoulder) comfortably warm.

Wear comfortable shoes with **good traction** on grass. Soccer shoes and many cross-training shoes work well. I have some trail-running shoes that I find ideal. Bring shoes with large **cleats** for wet or muddy conditions. Change your socks as often as you need to stay dry. Dry feet are happy feet. You want happy feet.

You should also consider bringing **clothes for after** the tournament. A social dinner or the drive home can be much more pleasant without mud and blood smears on a not-so-fresh t-shirt.

Rain

The sun isn't the only bane of boomerang players. There is also rain. Boom tournaments (like every *real* sport), go on regardless of the weather unless there is lightning. You need to be prepared for rain.

The first thing you need is a plastic **garbage bag** big enough for your boombag. Next, keep *yourself* dry. Make sure you pack a **waterproof jacket** that covers well but also allows you free range of motion so your throwing and catching won't be hindered. Waterproof pants are a nice thing to have as well.

On a rainy day, take the above advice on clothing and multiply it by ten. Everything I mentioned in that section becomes much more important when it's wet. With rain often comes colder-than-expected temperatures. Pack a sweatshirt or Polartec jacket to keep the teeth from chattering and the muscles from tightening.

Keeping a grip on your booms in wet conditions is a major concern. That is addressed in the 'Competition' section.

Eye Protection

You want to protect your eyes from two things: the sun and boomerangs. Find sunglasses that are impact-resistant and block all wavelengths of UV light. What the sun can do to your skin is

almost trivial compared to what it can do to your retina. You should also wear eye protection even in overcast or dusk conditions. Shades with amber or clear replacement lenses are great. So are racquetball goggles.

First Aid Kit

Stock it with Band-Aids, bandages, tape, antibiotic ointment, nail clippers, glasses screwdriver and screws, extra contact lens case, braces for tempermental joints, moleskin and molefoam for blisters, and any prescription or other medications.

Miscellaneous

One thing that makes a huge difference in comfort for me is a **lawn chair**. It is really a fantastic breather between events. I like the low-riders that sit just a few inches off the ground. They're nice because they're small so they pack easily and can be used when spotting range.

Competition

Sure boom comps are a ton of fun, but you also want to do your very best. Here are some tips to help you do just that.

Necessities

Boomerangs. You should probably bring these. (Well, I had to mention it in case someone is using this as a checklist!)

Stopwatch. Every boomerang player should have a reliable (no sticky or supersensitive buttons) hand-held stopwatch for timing Fast Catch and MTA. Only the very best wristwatch stop watches are suitable for reliable timing.

Catching Glove. Almost everyone uses one for Fast Catch and Endurance. Some people keep it on for other events as well. Gary Broadbent claims that *real* boomers wear their glove in *every* event - even Accuracy. Bicycle gloves, weightlifting gloves, soccer goalkeeper gloves, and even garden gloves make great boom stoppers.

Windicator. Bring your own and carry it with you as you move from circle to circle. One of the cheapest as sturdiest windicators you can make is a long, telescoping radio antenna from Radio Shack with a strip of mylar taped to the top. Wooden dowels and fishing poles also work. My favorite windicator is the Frazier brothers' 'wienercator', a four-foot long hot dog roaster with a forked end that stabs the ground with frightening tenacity.

Hand-held Anemometer. This is a necessity for some. If you are just starting out, you probably aren't hooked on one of these yet.

But as soon as you get one, you will be. These high-tech little guys take the guesswork out of determining the limits of your rang by measuring windspeed extremely accurately. Thanks to the continuous advances in technology, these are getting better and cheaper all the time. The Summer issue (#73) of MHR will have a review of several new and old models.

Training Journal. Your notes of what works best in what conditions with what modifications. This topic really warrants its own article (any volunteers to write one?) but suffice it to say that you should keep one, and remember to bring it to tournaments.

Appliques

This is all the stuff that you add to you boomerangs to adapt to changing wind conditions. This is another topic which warrants its own article; I really can't begin to address all the techniques of using these things here.

Duct Tape for adding drag. This is the big one, although I don't use it as much now as I used to. If you don't know what to do with it, you will by the end of your first tournament.

Rubber Bands. This what I use more and more over duct tape. I like to have two different sizes in my pocket at all times. I use big ones (1/4" wide) for gross effects and little ones (1/8" wide) for more subtle effects.

Lead Tape for weighting. You can get lead tape from the Boomerang Man (see page 22). Be sure to cover lead tape with normal tape so the lead doesn't come into direct contact with any part of your body. You can also find little adhesive weights at golf shops. I find these easier to remove and reapply than regular lead tape. However, it is not as easy to add small increments as with traditional lead tape.

Coins are also used for weight, but most experimental coin-weighting should probably be done in practice, before you get to the tournament field. Nevertheless, be sure to have a few dimes, pennies and nickels in case you lose one mid-flight.

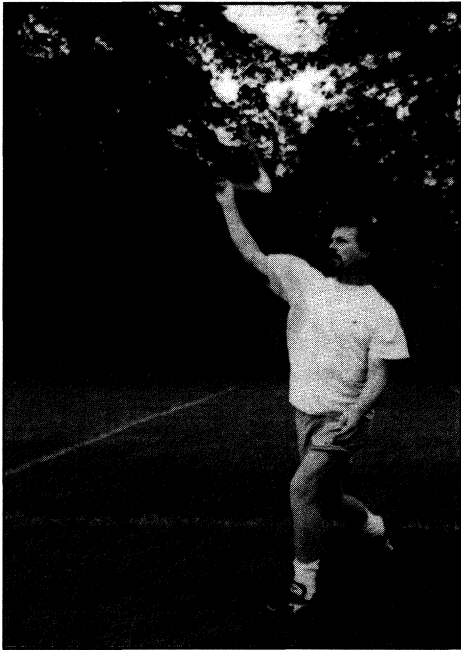
Grip

There are probably more solutions to the problem of wet, slippery boomerangs than there are boomerang players. Here are just a few techniques developed over the history of our sport.

Chamois Cloth. Use it for wiping sweaty hands and booms. There is no substitute. It provides the right amount of oil-blotting and hand-drying properties you need.

Rosin or Chalk. When a chamois just isn't enough, dip into one of these. Chalk is com-

(continued on page 20)



Evolution of a Competition Boomerang

by John Flynn

Having been around the boomerang scene for 17 years now (yikes!), I still learn things at every boomerang tournament, and the 1997 US Open in Ohio offered a textbook example of how a top-notch competition boomerang evolves. There are many things that contribute towards success in boomerang contests, and a good boomerang in your hand for the conditions-of-the-moment is the first essential ingredient.

Every top thrower has a kit full of *great* boomerangs that are specifically suited for that thrower's style and preferences. Each boomerang in the kit has to EARN its spot, through consistent performance or obvious potential that is refined through practice, tuning, flaps, coins, etc. The kit is always looking for improvement and marginal boomerangs are bumped to make room. Boomerang throwing can involve an overload of variables and the goal is to eliminate as many of these as possible, regardless of the conditions, so the thrower can concentrate on throwing and catching.

In February of 1997 I received a nice inside doubler sample from one of the top boomerang makers around. I already had one from a few years back and actually had replaced it in the doubling set with one of my own booms. So I threw the new boom a few times: nice flight, not a lot of time to set up for the catch, though, and an unfamiliar drift at the end of the flight that was different from my normal Trick Catch and Doubling boomerangs. How

ever, since the boom was not made of wood, it was a good choice for practicing hacky catches, while I stayed with my trusty wood model for the other catches.

As the season took shape, I added a penny to one of the wings which added a degree of stability, and used the rang for hacky (successfully) and foot (unsuccessfully) catches after I

sition, which is the key to success in Trick Catch.

So halfway through the ten minute warm-up period, still searching for an answer, I grabbed the new rang and added a penny to one of the other wings and a rubber band to the third wing. This added range and drag, but not much. The unfamiliar drift straightened out and it allowed for easy set-ups. The change was profound and after only a few throws a firm comitment was made to the new boomerang, as if a bumpy plane ride instantly smoothed out.

How I did in the event is not of importance. The key is that the boomerang increased my chances of catching by flying in a way that allowed me to set up confidently for each catch in challenging conditions. That is all you can ask of a boomerang, and now I have a new friend in my throwing kit.

The moral of the story is to try different boomerangs and look for potential. Recognize that when you obtain or make a new boomerang, even a production model, you are actually getting ten to 15 boomerangs. Each weighting combination, flap placement, and rubber band makes that boomerang different and there will be an optimum recipe for a particular weather condition. If you find that combination, think twice before changing the boomerang, or at least write down the magic formula. You may just have a top competition boomerang that will last for years and years.

"Each boomerang in the kit has to earn its spot, through consistent performance or obvious potential."

cracked my trusty wood rang trying a foot catch. The foot catch failures, however, led me to commit to the trusty, now-repaired wood rang for EVERY catch coming into the US Open, but I still brought the new rang in my kit as a back-up.

At the US Open, the wind was up for Trick Catch and adding weight to the wood rang was not the answer. I tried a couple of higher wind models but they weren't right either. Too much drift or too much sink. Either way, I could not consistently get set up into good catching po-



Non-symmetric Balanced Tribladers

by Bill Rusky

What is it?

The non-symmetric balanced triblader (NSBTB) is an innovative departure from the traditional triblader (hmmm... isn't *traditional triblader* an oxymoron?). The NSBTB can have wings of three different lengths, different chords for each wing and angles different than 120 degrees between each wing. But the center of gravity is at or close to the center of the center section (figure 1). Taking a suggestion from the RangList I'll call the center section the *hip* from here on out.

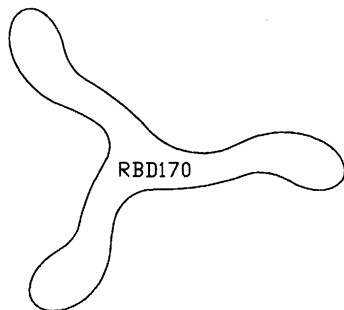


Figure 1. An example of a non-symmetric balanced triblader.

Why non-symmetric?

First: why not!? Second: uniqueness. The NSBTB makes an interesting change from the same old boring symmetric tribladers. Third: an NSBTB can be designed where two of the three wings are longer than the other, and therefore the tips of these wings are outside the wake of the previous wing.

My hypothesis is that this type of design would lead to improved stability and time of hover. While I have not made enough NSBTB boomerangs to prove that they are superior to symmetric tribladers in terms of hover stability and time, I have made enough to know that

good boomerangs can be made using the NSBTB technique.

Why balanced?

What do I mean by balanced? Since a boomerang is not constrained to rotate about any special axis, it will rotate about its center of gravity. So, in effect, all boomerangs are balanced. What I am calling balanced is a boomerang that has its center of gravity located at the center of the hip of the boomerang.

Now many of you who have added weights to boomerangs know that sometimes the boomerang flies better when the center of gravity does not coincide with the center of the hip. So my reason for balancing the boomerang is not to create a better flight. The reason for balancing the boomerang, in my opinion, is that a boomerang which has its center of gravity at the center of the hip is easier to catch one-handed than one that is not balanced that way.

How to design: The equations.

Figure 2 shows the layout of the wings, their angular positions, and the equations that relate them. My own convention is to make wing 1 the long wing, wing 2 the short wing and wing 3 the medium length wing, for right-handed boomerangs. The equations are based on constant chord, straight rectangular wings. If you want wings with varying chord width along the length of the wing you can use the average

chord widths in the equation and still get reasonably accurate results. I won't go through the derivation of the formulae; you can do that on your own for fun!

If you design your boomerangs on CAD and your CAD program has a center of gravity function, then you can tweak your design to get the

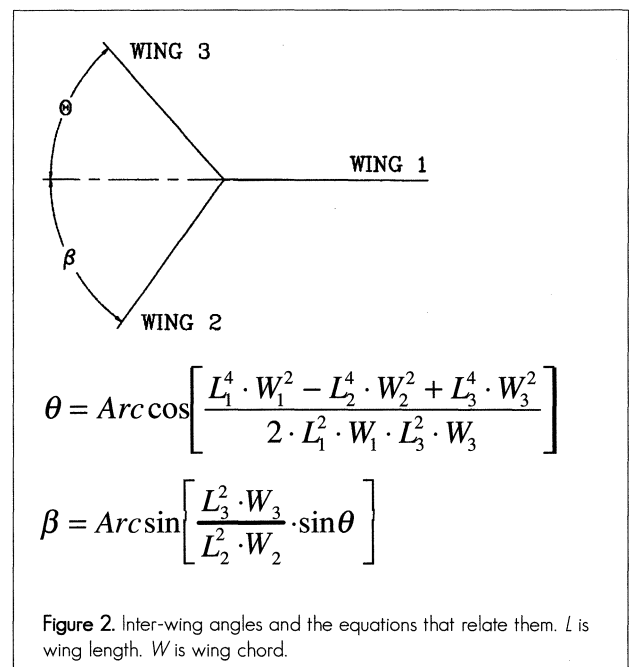


Figure 2. Inter-wing angles and the equations that relate them. L is wing length. W is wing chord.

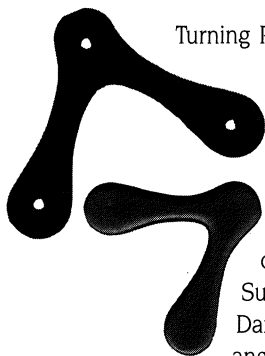
COG even closer to the center of the hip. Often you will be within 1.5 mm (0.060 inches) without even tweaking the design.

I like to have θ and β be between 45 and 60 degrees, but you should try different angles and see what works for you.

OK, you are now ready to go out and design your own NSBTB boom. Have fun!



BOOM fragments



Turning Point, Inc. has developed a new family of boomerang products. Two-armed versions of the popular plastic *TriFly*, foam *Air Dancer*, and indoor foam *FunFly* boomerangs should hit stores sometime this year. Reviews of all of these products will be in the Summer issue of MHR (#73). Eric Darnell, designer of the new boomerangs and all of Turning Point's products, expects to have samples available at the US Open in Amherst. Contact Eric Darnell for more information.

Eric Darnell
Turning Point, Inc.
Star Route
South Strafford VT 05070
(802) 765-4336

look, and will be easier to navigate. Look for the new site to appear very soon.

> Rediboom of Germany is offering a nicely constructed windicator for \$25. Check it out at www.rediboom.com/windicator/windicator.htm or contact Dietmar Reinig.

Rediboom
Hohlweg 7
64686 Lautertal
Germany
+49 6254-1593
rediboom@rediboom.com

> Bill Denny of Chantilly, Virginia is opening a new retail store specializing in kites, boomerangs, hot air balloons, planes, frisbees, and other unique outdoor items. Bill is still looking for new inventory. If you are a wholesaler, please send a catalog to:

Bill Denny
P.O. BOX 222342
Chantilly VA 20153
(703) 378-5017
Email: daytrdr1@aol.com

> Steve Conaway continues to develop his line of recreational and competition boomerangs at his Fillmore, California-based company. Conaway is now offering several G-10 fiberglass resin and G-10/carbon fiber models, the first high-throughput commercial boomsmith to do so. Available now are G-10 or G-10/CF boomerangs for Trick Catch, Doubling and Aussie Round. The summer issue of MHR (#73) will have several product reviews, including some of these boomerangs. But if you can't wait, try them out for yourself:

Steve Conaway
121 Oakdale Lane
Fillmore CA 93015
(805) 524-2913
abosteve@vcnet.com

> The largest commercially available collection of boomerang plans is still growing but it needs your help! Hague Nikolayczyk is assembling *Bumerang Plan Sammlung #3* for Summer/Fall release. Please send you plans to Hague so he can continue to develop this great resource. Collections 2 and 3 are still available (\$15 each or \$28 for both) and contain about 200 pages of plans. To contribute or to order a collection e-mail or write:

Hague Nikolayczyk
Ringstrasse 21
D-539191 Weilerswist
Germany
Helicon@Integriss.phoenix.de

> WWW.USBA.ORG is now fully operational. The USBA would like to extend a very special thanks to Gray Abbott of Austin, Texas for helping the new address come to fruition. Gray provided hard drive space and facilitated communication between the USBA and the government agency which regulates web address names. Work is in progress to overhaul the website. The new and improved site will have many more resources, will have a new, sleeker

new websites

www.usba.org
New address for the USBA website.

subwave.com/rangs
Rangs Boomerangs Switzerland.

www.geocities.com/Colosseum/Sideline/2732/
Herb Smith Boomerang Picture Gallery
by Tibor Horvath.

www.rebel.demon.nl
New website for the Algemene Boemerang Organisatie Holland in Dutch.

www.angelfire.com/sc/palmettobooms
Palmetto Booms.

Please let us know about your new website!
E-mail brazelto@uiuc.edu

MORE BOOM FRAGMENTS ➔

M. H. Rchives

The who, what, when, where, and how of yesteryear

10 years ago

"Jacques Sotty, a 25 year old from Paris, has figured out a way to make real money from boomerang throwing. Sotty's 'stunts', sold to ad agencies, photo distributors, and TV networks, have included a night toss at the Berlin Wall over East Berlin, around a guard tower, and thence back to West Berlin for the catch. When the communist guards in the tower saw the sparkler being lit on the boomerang for the night photograph, they thought an attack was being readied and raised their guns. For a second throw, however, they leveled cameras. Sotty named his boomerang Peace and explained rather elliptically: 'I used a (boomerang) to serve a peace mission; I did the throw to make the wall disappear.'"

MHR #34 SPRING 1988

5 years ago

"In (the) MTA100 (Season Overall Ratings), Will Gix led the pack in every category except for placing average. Bob Foresi had top honors in that category. Will used a Midi-MTA made by Ted Bailey. Bob used a Maxi-MTA, also made by Ted Bailey. Both models were made out of 3 mm birch plywood."

MHR #54 SPRING 1993



> The March issue of Ted Bailey's newsletter *Boomerang News* reported that the French boomerang company LMI & Fox has acquired the rights to manufacture the popular *Spinback 44* and *Spinback 55* boomerangs, originally made and marketed by Tomahawk Boomerangs. *Many Happy Returns* was unable to independently verify this report.

LMI & Fox is also offering a new four-armed fast catch boomerang called the *SkyBlader*. The Yannick Charles-designed boomerang is available in polypropylene, fiberglass resin, or carbon fiber.

LMI & Fox
11 Rue de Docteur LaPeyre
32500 Fleurance
France
jl.orguiel@hol.fr

> Although Gel Boomerangs stopped producing new inventory in November, there are still plenty of Gel boomerangs in stock. Check the Gel Boomerangs website or call Michael 'Gel' Girvin for current inventory.

Gel Boomerangs
www.gel-boomerang.com
(510) 658-2469



First Tournament

(continued from page 15)

pletely dry, while rosin provides some tack. Seeing Gregg Snouffer dip his hand into his chalk bag before MTA is one of the defining constants in our sport.

Moist Towelettes. Call 'em Wet Naps, Baby Wipes, Wet Wipes, or Finger Cleaners. Whatever you call them, these little foil packets of soapy, lemon-scented, reinforced tissues are perfect for cleaning hands after applying sunblock or clearing fingertips of duct tape residue. This just might be the most important thing in my boombag.

DryGrip. Chet Snouffer told me about this silicone lotion which dries on your hands and booms to leave them with a good balance of tack and release-slip. You can usually find this stuff in tennis shops.

Sand Paper. There are at least two uses for this when it comes to grip. Many plastic booms can be etched with coarse sandpaper to provide a textured surface on the wingtip for extra grip. Many LMI & Fox boomerangs even come pre-etched. The other way comes from Eric Darnell and is a bit more extreme. Glue the sandpaper right onto the boomerang. Experiment which grits are best for grip in wet conditions. You can find sandpaper with adhesive backing in hardware stores.

Bicycle Inner Tubes. Huh? Your eyes aren't playing tricks on you. In the glory days of the sport, Al Gerhards used to encase his giant traditional boomerangs in a severed bicycle inner tube for grip in wet weather. I recommend cutting off pieces of rubber and gluing them on in 1998.

Foam Rubber. I don't know of anyone else you uses this stuff, but it works great for me. I get mine from those flimsy, cloth-covered mouse pads with grippy foam on the bottom. Cut 'em up and glue 'em on. This is thicker than inner tube rubber and adds drag. But the payoff is excellent grip even in the wettest conditions.

Remember that no one person uses all of the things listed here. Experiment and find out what works best for you. Likewise, there are certainly more things not mentioned here that other players find indispensable. Write in! Your experiences and suggestions or even half-cooked ideas could make great letters to the editor or even a 'Part 2' to this article!



Letters

(continued from page 2)

selves, making me feel welcome. A half-hour later, folks started packing up and heading for the get-together at Chet's place. I stayed on to throw a bit more. Eventually, I had the field to myself.

There's a peaceful sort of solitude for me in throwing. It's a hard feeling to put into words, but that evening it was there. It was quiet. Winds were calm. The sun was a huge red ball sinking slowly away into a field of dark green to the west. As my Challenger was majestically sweeping through the air, I realized that this was one of those moments. On a field that I had never seen before in Delaware, Ohio... I was home.

The tournament itself was an exciting experience. We were divided into groups which stuck together for the duration. I liked this arrangement because it gave me a chance to get to know some of my fellow competitors. It also gave me familiar faces to help me over the rough spots.

I had help from a lot of people. Dwight Souder answered all of my "first-timer" questions. Gary Broadbent loaned me a boomerang for Endurance. Mike Dickson gave me pointers on Trick Catch. Betsylew Miale-Gix provided us "first-timers" with valuable advice before the endurance event: "Pace yourself, don't throw up." Everyone, and I mean *everyone*, provided encouragement.

At the Open, I learned a lot in a short period of time. I learned more about handling windy conditions. I learned things that will help me make and tune boomerangs for specific purposes. I learned what the right boomerang can do in the right hands. I learned that there are a whole bunch of other folks out there who like boomerangs, and that they're a friendly lot.

I encourage those of you who have not attended a tournament to do so. Also, don't go just to watch. Go and compete. It doesn't matter how well you do, or even if you score in an event. You'll be out there with other folks who share your interest. You'll be able to put faces with names. You'll learn and improve your skills. You'll have a great time. I know I did. I'm already saving for next year!

Carl Morris
Orlando, Florida

P.S. If you make it to Orlando and want to throw, call me. My number can be found in the *Regional Clubs and Contacts* section of MHR (page 23).



St. Louis '98

(continued from page 7)

Woodland Residence Hall

Southern Illinois University. One mile from competition site. Open to USBA members and friends and family of team members. \$25/night/person for a double room. \$38 for a single. Register with Tom Fitzgerald (314) 839-1604.

Comfort Inn Motel

In Edwardsville. A short drive from the field. \$52 per night plus tax (Mention the 1998 World Boomerang Championships to get this reduced rate). (618) 656-4900.

Transportation

A bus service takes you from Southern Illinois University in Edwardsville to the St.

Louis MetroLink public transit system.

Contacts

Tom Fitzgerald
Tournament Director
(314) 839-1604
Fitzreturn@aol.com

'Chicago' Bob Leifeld
On-Field Events Coordinator
(618) 939-9023
chibob@htc.net

1998 World Boomerang
Championships Website:
www.htc.net/~chibob/worldcup.html



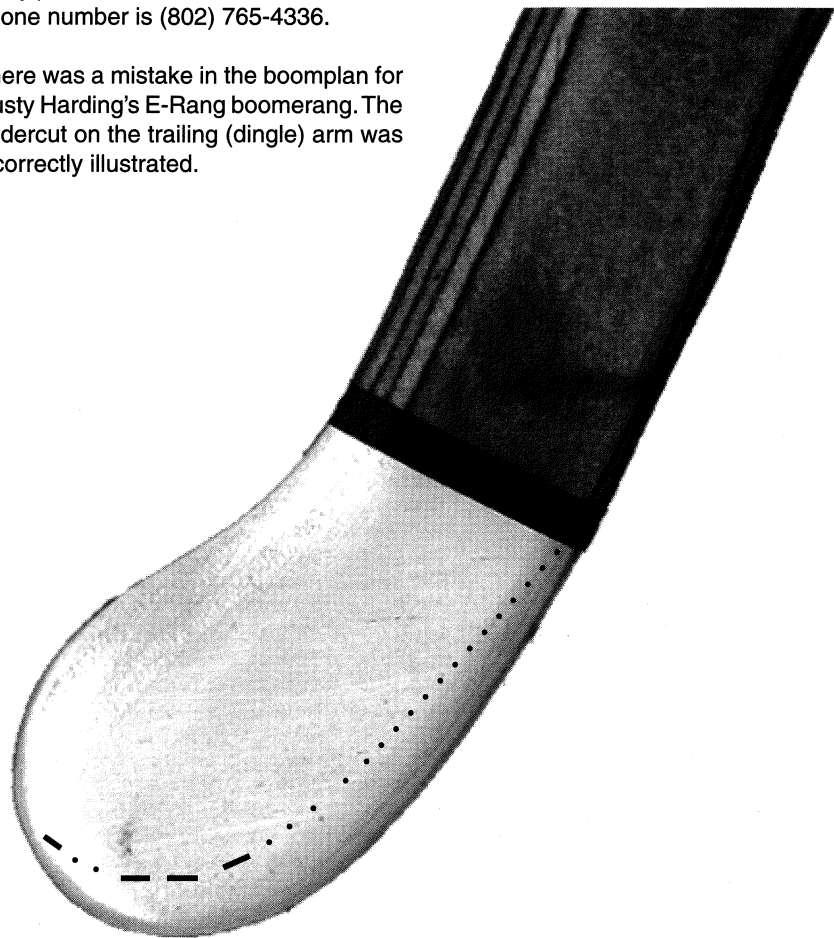
CORRECTIONS

Betsylew Miale-Gix's phone number was incorrectly printed in the Fall issue. Her correct phone number is (425) 485-1672.

Eric Darnell's phone number was incorrectly printed in the Fall issue. His correct phone number is (802) 765-4336.

There was a mistake in the boomplan for Rusty Harding's E-Rang boomerang. The undercut on the trailing (dingle) arm was incorrectly illustrated.

The undercut should be on the leading edge of the trailing arm. The undercut on the lead arm was correctly illustrated. The correct illustration of the undercut on the leading edge of the trailing arm is shown below.



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Phone or fax
(614) 363-4414
 or e-mail
boomerang@midohio.net

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- ◆*Boomerang*, a book by Ben Ruhe \$6.00
- ◆"The Boomerang" an early pamphlet by Ruhe and Hawes \$4.00
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Attention manufacturers and retailers: Any USBA member who manufactures or distributes boomerangs or related products or services may be listed free of charge as a service to our members. Send description to: **Boosmith Listings c/o USBA 2405 Lawndale Drive Champaign, IL 61821** or fax to **(217) 244-8371 attn: Tony Brazelton.**

Calendar of Events

www.usba.org/calendar.html

USBA Sanctioned Tournaments

Date	Event	Contact
May 24	Gateway Classic - St. Louis, Missouri	Tom Fitzgerald (314) 839-1604
May 30-31	US Open - Amherst, Massachusetts	Larry Ruhf (413) 323-4340
June 28	4th Annual West Seattle Open - West Seattle, Washington	Betsylew Miale-Gix (425) 485-1672
July 19	11th Annual Western Oregon Boomerang Roundup - Salem, Oregon	Dean Kelly (503) 581-8050
August 8	Free Throwers Tournament - Delaware, Ohio	Chet Snouffer (740) 363-8332
August 29-30	Emmaus Night & Day Tournaments - Emmaus, Pennsylvania	Barnaby Ruhe (610) 967-3683
September 6	4th Annual Illinois Classic - Champaign, Illinois	Tony Brazelton (217) 352-6184
Sept. 12-13	2nd Annual Kitty Hawk Kites Invitational - Nags Head, NC	Kitty Hawk Kites (800) 334-4777

To petition the USBA to sanction a tournament or other event, contact Betsylew Miale-Gix.

Betsylew Miale-Gix

(425) 485-1672

e-mail: BMGBOOMS-SHOWDOGWG@worldnet.att.net

Other US Events

Date	Event	Contact
May 16	Toss Across America - Ask Betsylew about one near you!	Betsylew Miale-Gix (425) 485-1672
June 19	Summer Solstice Throw - Birmingham, Michigan	Norm Kern (248) 645-9308
July 26-Aug. 2	World Cup Championship - Edwardsville, Illinois	Tom Fitzgerald (314) 839-1604
Sept. 13	10th Novice Tournament - Birmingham, Michigan	Norm Kern (248) 645-9308
Nov. 27	Michigan Turkey Toss - Birmingham, Michigan	Norm Kern (248) 645-9308

A Brief History of

World Boomerang Championships

Year	Site	Winning Team	Individual Winner
1981	City, Australia	USA*	none
1984	City, State, USA	Australia*	none
1985	Paris, France	USA	Chet Snouffer
1987	USA**	USA	none
1988	Barooga, Australia	USA	Rob Croll (AUS)
1988	Europe***	USA	none
1989	Washington, D.C.	USA	Chet Snouffer (USA)
1991	Perth, Australia	USA	John Koehler (USA)
1992	Hamburg, Germany	USA	Fridolin Frost (GER)
1994	Hiratsuka, Japan	USA	Chet Snouffer (USA)
1996	Christchurch, New Zealand	Germany	Rob Croll (AUS)

* 1981 and 1984 were Australia/USA Challenge matches. It was not until 1985 that other countries joined in to begin the World Championship format similar to the one employed now.

** Three venues in Massachusetts, Pennsylvania, and Maryland.

*** Three venues in Paris, Stuttgart, and Geneva.

Regional Clubs and Contacts by State

www.usba.org/clubs.html

AZ	Phoenix	Desert Southwest Boom Chuckers and UFO spotters	Mark Weary & Don Monroe	4026 East Cholla Canyon Dr. Phoenix, AZ 85044	(602) 759-3973
CA	San Diego		John Weigel	1323 La Mesa Ave. San Diego CA 91977	(619) 462-4379
	SF Bay Area	Bay Area Boomerang Club	Michael Girvin	2124 Kittredge St. #61 Berkeley CA 94704	(510) 658-2469
	Santa Barbara		Erik Fields	1501 Clifton St. Santa Barbara CA 93103	(805) 564-4840
	Santa Cruz		Brad Westervelt	Voicemail 800-286-6310, box 748	(408) 338-0818
	Southern	Southern California Boomerang Alliance	Steve Conaway	121 Oakdale Lane Fillmore, CA 93015	(805) 524-2913
	Southern		Paul W.K. Rothmund	533 South Hudson Apt. #1 Pasadena CA 91101	(626) 584-1807
CO	Aurora		Richard Pollock-Nelson	2530 S Ouray Way Aurora, CO 80013-1576	(303) 368-5933
CT	Madison	The Wandering Nutmeg Boomerang Society	Paul D. Sprague	782 Boston Post Rd. Madison CT 06443	(203) 245-8211
	Shelton	Team Gel East	John "Moleman" Anthony	21 Huntington Ave. Shelton CT 06484	(203) 924-6735
FL	Merritt Island	Flite Stix Boom Slings	Rich Surace	855 E Crisafulli Rd. Merritt Island FL	(407) 452-3963
	Orlando		Carl Morris	2602 Breezewind Dr. Orlando, FL 32839	(407) 859-1319
	Southwest Florida		Jeff Sullivan	1715 SE 12th Terrace Cape Coral, FL 33990	(941) 458-5514
GA	Atlanta	Atlanta Boomerang Society	Frank Golder	#2 Capitol Square rm 370 Atlanta, GA 30304	(912) 237-7831
	Swainsboro	South Georgia Boomerang Club	John Derden	131 College Cir. Swainsboro, GA 30401	(217) 352-6184
IL	Champaign	Illini Boomerang Club	Tony Brazelton	2405 Lawndale Dr. Champaign IL 61821	(618) 939-9023
	Waterloo		"Chicago" Bob Leifeld	P.O. Box 242 Waterloo, IL 62298	(301) 933-1073
MD	Rockville		Jim Nieberding	Rockville, MD 20853	(734) 971-2970
MI	Ann Arbor		Ted Bailey	PO Box 6076 Ann Arbor, MI	(248) 645-9308
	Birmingham		Norm Kern	1640 Haynes Birmingham, MI 48009	(517) 349-5234
	Lansing	Mid Michigan Boomsling Club	Steve Collins	4820 Hillcrest Okemos, MI 48864	(612) 228-1393
MN	Mnpls/St Paul	Boomerang Organization Of Minnesota (BOOM)	Stuart Jones	195 E. 5th St. Apt. 605 St Paul, MN 55101	(314) 839-1684
MO	St. Louis	St. Louis Boomerang Club	Tom Fitzgerald	1159 Holly River Dr. Florissant, MO 63031	(505) 294-8842
NM	Albuquerque	Sandia Boomerang Club	Steve Sanders	10408 Woodland, NE Albuquerque, NM 87111	(419) 281-4565
OH	Ashland		Dwight Souder	453 Parkwood Dr. Ashland, OH 44805-4135	(330) 492-RANG
	Canton	Gary Broadbent's Boom Shop	Gary Broadbent	3204 38th St. NW Canton, OH 44718	(614) 263-6840
	Columbus	There And Back Again Boomerang Club	Bob Lackey	31 E Dodridge Columbus, OH 43202	(740) 363-8332
	Delaware	Free Throwers Boomerang Association	Chet Snouffer	PO Box 664 Delaware, OH 43015	(740) 363-4414
	Delaware	U.S. Head to Head Boomerang Tournament Organization	Gregg Snouffer	340 Troy Rd. Delaware OH 43015	(216) 289-6324
	Euclid	Cleveland Boomerang School	Dave Boehm	PO Box 17385 Euclid, OH 44117	(405) 447-2117
OK	Oklahoma City		Joel Bussey	1516 Southern Heights Ave. Norman, OK 73072	(918) 333-0730
	Bartlesville		Steven Graham	924 Yale Drive Bartlesville, OK 74006	(503) 241-9618
OR	Portland		Tim Schallberger	4740 SW Hamilton St. Portland, OR 97221	(610) 434-7305
PA	610 area code		Dave Hendricks	1086 E Gordon Street Allentown, PA 18103-2208	(423) 687-3179
TN	Knoxville	Boomerang Club at the University of Tennessee (BCUT)	David Martin	2912 McNutt Avenue Maryville, TN 37804-2537	(713) 681-0837
TX	Houston	Boomerang Association of Texas	Greg Corum	3233 Magnum Rd. Apt 184 Houston TX 77092	(801) 942-6943
UT	Sandy	Wasatch Boomerang Club	Jim Miller	2095 E. 10095 South Sandy, UT 84092	

In the next issue of

Many Happy Returns

SUMMER
1998

- **USBA Board of Directors Election Ballot**
- **Event-by-Event Tips From the Pros**
- **Tournament Reports**
- **Much, much more!**

Submit your materials **now** for inclusion in the Summer issue of MHR.
See inside back cover for details.

Tired of Waiting for your MHR?

MHR is shipped via bulk rate mail, which saves the USBA about \$700 per year. However, if you live far from the shipping point, you could be waiting up to five weeks for your MHR! Some members have already solved this problem by subscribing to the **MHR Express Service!** It's easy! If you live in the US, simply send a \$0.78 stamp along with your current address to the MHR office in Champaign, Illinois. Your MHR will be sent **First Class** and will arrive just a few days after it comes off the presses. You may do this one issue at a time or send in as many stamps as you wish **Express** mailings. Send in four stamps - get one year of **Express MHRs**. Please be sure to send stamps to the MHR office in Champaign, Illinois and **NOT** the national headquarters in Delaware, Ohio. Any questions should be addressed to Tony Brazelton, editor in chief of MHR.



the United States Boomerang Association

GENERAL INFORMATION

The USBA is a non-profit organization whose goal is to promote the art, craft, sport and poetry of boomerangs through events, competitions, and information distributed through the quarterly newsletter, *Many Happy Returns*.

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GENERAL CONTACT INFO

Address

USBA
PO Box 182
Delaware, OH 43015

Website

www.usba.org

MEMBERSHIP INFORMATION

USBA membership entitles you to four issues of the quarterly newsletter *Many Happy Returns*, reduced entry fees for USBA-sanctioned tournaments, discounts on plywood from Anderson Int'l., discounts on books, and early notice of special offers.

Non-USBA members may receive one free trial issue by submitting the form on the left or by visiting the website.

Check your newsletter address label for issue of expiration. Membership status inquiries should be addressed to the **Treasurer**.

VOLUNTEER OPPORTUNITIES

Want to help out the USBA but don't want to run for a seat on the Board of Directors? The Board and its committees periodically need help stuffing envelopes, conducting surveys, writing and proofreading articles for *Many Happy Returns*, and various other odd jobs. If you would like to help out as a volunteer, feel free to contact any board member.

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Tips for Submitting Articles to MHR

Each issue of *Many Happy Returns* has a subset of themes which are relevant to the time of year that the issue is published. Persons contributing to MHR may wish to keep these themes in mind when deciding on the appropriate issue to which to submit one's writing. Please also keep in mind that contributions need not be limited to these themes. Details for submitting text and graphics can be found inside the front cover.

WINTER Deadline

January 1

Themes

- Making boomerangs
- Calendar

SPRING Deadline

April 1

Themes

- Making boomerangs
- Comp preparation
- Calendar

SUMMER Deadline

July 1

Themes

- Comp technology
- Event summaries
- Calendar

FALL Deadline

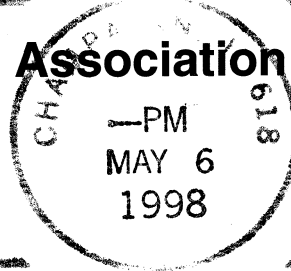
November 1

Themes

- Event summaries
- Calendar



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