

The USBA

Spreading the word about a modern sport with pre-historic roots

While the boomerang has existed for at least 15,000 years in Australia, boomerangs as an organized sport began in the 1960s in Australia and the United States. In the United States, the boomerang movement was triggered in part by a milestone article on boomerangs in a 1968 Scientific American, and nurtured by the Smithsonian Institute that sponsored yearly educational workshops in the making and throwing of boomerangs. The **United States Boomerang Association (USBA)** was formed in 1980. Now the sport is practiced worldwide, with team and individual world championships held every two years.

There are now hundreds of thousands of recreational boomerang throwers across the US and the numbers escalate annually [based upon boomerang sales estimates by the many cottage industry manufacturers]. These people are competitive athletes, recreational throwers, master woodcarvers, casual woodworkers, aeronautical engineers, high school science teachers, artists, anthropologists, and every other walk of life. The USBA brings them all together into a society that offers a forum for discussion, a vast information resource, news of the boomerang world, and a guiding hand for competition.

The USBA is a 100% volunteer organization charged with promoting the **sport, science, and art of boomerangs** in the United States and worldwide. We work toward these goals on many levels, and grooming players for the international circuit is only one of many USBA activities.

The **Toss Across America** event is the USBA's premier grassroots effort. The annual event introduces thousands of people to the sport at locations all over the country on the same day. Local boomerang enthusiasts, with the help of the USBA, organize events designed to teach their communities about the sport, science and art of boomerangs.



World class athletes.

The USBA sends our top competitors to the World Boomerang Competition. The USBA National Expo is held yearly, and anyone can attend and compete in a division of their peers.

Is There a Boomerang Club Near Me?

It is highly likely there is a Boomerang club near you. Visit www.usba.org or write to the USBA for a list of boomerang clubs in your area.



World Records and Fun Facts

The world record for **long distance** with full return is 238 meters. This was achieved by **Manuel Schütz** from Switzerland.

John Gorski of Avon, Ohio threw an MTA boomerang that stayed in the air for 17 minutes before he caught it.

Many MTA boomerangs never come down within sight. This is referred to as "skying" the boomerang.

The largest returning boomerang ever made measures more than eight feet across. The smallest is about four inches.

Michael Girvin of Seattle, WA, threw and caught a boomerang over 800 times before he stopped. He never dropped; he just got tired.

THE GAME

How it's played

OK, so you throw the stick and it comes back. Sounds like fun. But how does a boomerang competition work? What do you do? Boomerang competitions are a test of accuracy, distance, speed, catching ability, strategy, reading the wind, and boomerang design. There are six main events contested at USBA tournaments, although there are many more boomerang games and events for which records are kept or that are played merely recreationally. Use the diagram of an official boomerang field below to help you understand how the following events work.

ACCURACY is like a game of darts where you throw from the bull's-eye. A boomerang with a minimum range of 20 meters is thrown from a bull's-eye. Points are awarded according to where the boomerang lands with respect to the 2m radius bull's-eye.

In **AUSSIE ROUND**, you score points for distance, accuracy and catching. Maximum distance points are awarded for a 50m flight. Maximum accuracy points are scored for a boomerang that lands in the bull's-eye. If you catch it, you get points for that too. Aussie Round is complicated to score, fun to play.

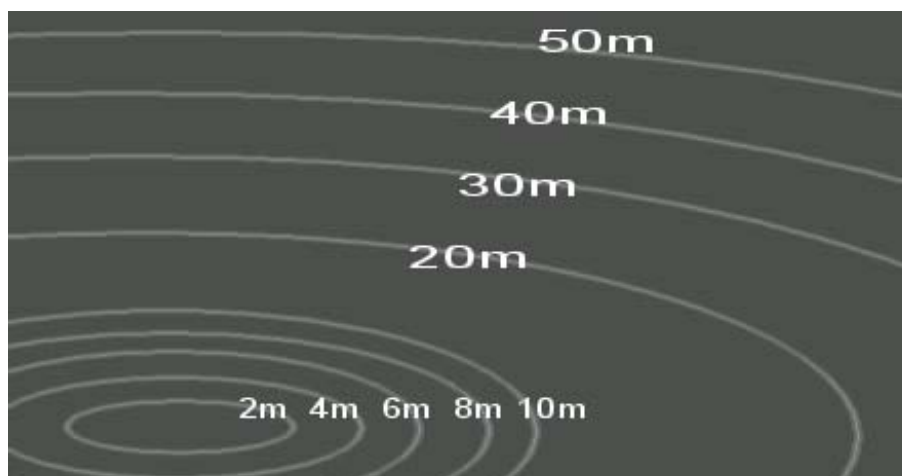
TRICK CATCH is just what it sounds like. The harder the difficulty level, the more points you get. Players show off with under-the-leg, behind-the-back, hackey, foot catches, and more.

FAST CATCH is all about speed. Speed of the boomerang and speed of the player. The time it takes for five throws and five catches is measured. Shortest time wins.

ENDURANCE is Fast Catch for 5 minutes. Most number of catches in that time wins.

MAXIMUM TIME ALOFT (MTA) Throw a specialized boomerang VERY hard and watch it hover down VERY slowly. Longest hang time wins.

All boomerangs in competition must have a minimum range of 20 meters.



Accuracy Circles

Aussie Round Circles

COMPETITION

Judging the best and training the rest



Individual Tournaments can be track meet style (one player at a time) or head-to-head. Most players compete in every event. Your scores and tournament placing are published online and in the USBA newsletter. **Team Tournaments** have relays and races in addition to the regular individual-style events. At **Regional Tournaments**, teams are usually picked at random the day of the tournament for maximum fun and mentorship. At **International Team Tournaments**, you come with a practiced team and compete for national pride. Four players compete at any one time, but a team may have as many as six.



Regional Tournaments and the US Open

The USBA sanctions dozens of domestic tournaments, including the annual US Open (the winner of which is declared the national champion) and US Team Championship.



Skill Levels

One of the best things about the USBA and the sport of boomerangs is that it is open to everyone. The **Novice** division is for beginners who are just learning the basics. The **Intermediate** division is the largest division and is open to all players

except those with international comp experience or a national title. The **Advanced** division is open to all players but is intended to determine the best player on the day.

International Competition

There are currently 22 countries with national boomerang organizations. World individual and team championships are held every two years.

A Brief History of Competition

Year	Location	Winner
1981	Australia	USA
1984	USA	Australia
1985	France	USA
1987	USA	USA
1988	Australia	USA
1988	Europe	USA
1989	USA	USA
1991	Australia	USA
1992	Germany	USA
1994	Japan	USA
1996	New Zealand	Germany
1998	USA	Germany
2000	Australia	Germany
2002	Germany	USA

International competition began in 1981 with an Australian-US team challenge match down under. The US team, to the surprise of those who assumed Australians were the only boomerang experts, swept the three-day contest. Since then, the US has dominated the sport, winning 10 of the last 14 world team championships, which are now held every two years. The Germans, however held the top position for six years, until the US team won it back on their own turf in 2002.

FROM THE STONE AGE TO THE NEW MILLENNIUM

Aerodynamic **throwsticks** were developed by Stone Age civilizations in different parts of the world as long as 15,000 years ago. The Australian aborigines are the best known; however, these special hunting weapons were also developed in other areas including ancient Egypt, the American Southwest, and eastern Europe. **While there are many stories of how the returning boomerang came to be** (many rooted in myth and misinterpretation), most anthropologists agree that it originated from the throwstick. The throwstick, called a kylie by the native Australians and a rabbit stick by the Hopi Indian people of pre-European America, was a heavy, non-returning aerodynamic weapon thrown horizontally to kill or stun prey. At some point (perhaps by accident) the stick became more curved and refined (and much lighter) so that, when thrown vertically, it would return to the thrower. These true boomerangs were probably only used for fun and games, not as weapons. Today's modern boomerangs are sports equipment and should be treated with the same respect as a baseball. Baseballs and boomerangs both can be dangerous when used carelessly. When used properly, they are safe and fun.



Not boomerangs. These heavy clubs are non-returning throwsticks, from which the much lighter returning boomerang may have evolved. For pictures of returning boomerangs, see the front cover.

HOW DOES IT WORK?

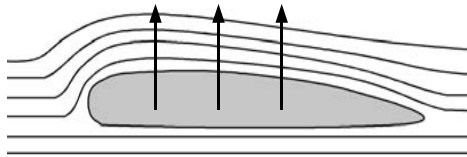
The Science of the Boomerang's Return Flight

Although stone age civilizations invented the boomerang, the aerodynamics and physics of its flight are still not completely understood by today's experts.

The really short version: Boomerangs return as a result of the principles of aerodynamic lift and gyroscopic precession.

The short version: Understanding why a boomerang comes back is as easy as understanding why an airplane wing generates lift and why you can steer your bicycle with no hands. The wings of a boomerang are airfoils, like an airplane's wing. When moving through the air, airfoils generate lift because of their shape, which causes air to move faster over top surface than the bottom surface. Faster moving air over the top surface causes relatively higher pressure on the bottom surface, causing the wing to "lift" up.

Boomerangs are thrown **almost vertically**, like a knife or tomahawk. As the boomerang moves forward through the air, it is also spinning, and more lift is generated at the top of the spin than at the bottom. Because the wing



at the top is moving forward and spinning forward, whereas the wing at the bottom is moving forward, but spinning backward the wing at the top is actually moving faster through the air. Since the wing at the top position is moving faster through the air, more lift is generated at the top position. If the boomerang were not spinning, more lift at the top would cause the boomerang to fall over, like a three year-old on a bicycle with no training wheels. But it doesn't. It turns gently, like a cocky 12 year-old steering his bike with his "no-hands" maneuver. Why? Because of gyroscopic precession. Gyroscopic precession states that any force supplied to a spinning object will take effect 90 degrees forward in the direction of the spin from the where the force was applied. So, you want to make your bicycle turn left. But instead of pushing the wheel to the left (from the front), you push it from the top, but the effect takes place on the front. The same thing happens with a boomerang. The maximum lift takes place on the top of the spin, but the lift force takes effect on the front, causing the boomerang to turn and, ultimately, to return.

Need more details? Check out www.usba.org for a complete boomerang science bibliography.

RESOURCES

Where to go from here

HOW CAN I LEARN MORE ABOUT BOOMERANGS?

The best way to keep in touch with the boomerang community is to join the USBA. Our quarterly newsletter connects boomers worldwide with articles by and for USBA members on all subjects boomerang related. Every issue contains articles on making boomerangs, physics and aerodynamics, competition, sociology, history, boomerang news, an event calendar, listings of USBA-affiliated clubs and businesses, letters from members like you, and special feature articles. Subscription is \$15 per year (\$20 international) which includes all other benefits of USBA membership. Family memberships (up to three members) are \$25.

ON THE WEB:

Visit the United States Boomerang Association website at www.usba.org. A one-stop site for all your boomerang information needs.

WHERE CAN I FIND A GOOD BOOMERANG?

Boomerang have an undeserved reputation that they simply do not work and that they are hoaxes. This may be due to the multitude of boomerang-shaped toys misleadingly labeled as boomerangs found in many department stores and the like. A good place to look for real boomerangs is a specialty kite store. But the surest way to purchase a real boomerang is still by mail order direct from the manufacturer or dealer.

Visit www.usba.org or write to the USBA for a list of mail order and online boomerang companies.

SUPPORT BOOMERANGS IN THE USA?

When you join the USBA, you support the growth of our sport. You already know that boomerangs are cool. Don't you wish everyone did? Your membership helps us tell more people about boomerangs through our website, brochures like this one, the Toss Across America event, and our annual US Open & Boomerang Expo. Support the sport of boomerangs in the USA and receive these benefits for just \$15 a year!

- Newsletter keeps you up on the latest news
- E-mail updates for breaking news & announcements!
- Participation in all USBA events and functions.

Send your check or money order for \$15 to:

United States Boomerang Association
3351 236th Street SW
Brier, Washington 98036-8421
USA



Visit us on the web at [HTTP://WWW.USBA.ORG](http://WWW.USBA.ORG)

Or join our Yahoo! Group at

http://groups.yahoo.com/group/USBA_info

Books & Other Resources

Sagert, K. B. (1996)
"About Boomerangs: America's Silent Sport"
PLANT*SpeakPublications.

Ruhe, B & E. Darnell (1985)
"Boomerang: How to Throw, Catch and Make It"
Workman Publishing.

Ruhe, B (1977) "Many Happy Returns: The Art and Sport of Boomeranging"
Viking Press.

Walker, J. (1978, November)
"Amateur scientist: Boomerangs! How to Make Them and Also How They Fly"
Scientific American. 162-72.

Hess, F. (1968) "The Aerodynamics of Boomerangs."
Scientific American, 219. 124-136.

United States Boomerang Association

BOOMERANGS

AN INTRODUCTION TO THE ANCIENT SPORT OF THE FUTURE!

