

*This space reserved for an
appropriate name.*

Any suggestions ????

15 cents

A Quarterly Newsletter
Issue No. 8 August 1972



BOOMERANG ASSOCIATION OF AUSTRALIA.

QUARTERLY NEWSLETTER. ISSUE No.8. AUG. 1972.

15 cents.

Note;; P.O. Box number of the B.A.A. is;
P.O. BOX 2165 T, Melbourne. 3001.

Report ;;

At this year's Annual Meeting in May, the motions passed included the following;

President. Mr. D. Maxwell.

Vice Presidents, Mr. J. Lewry.

Mr. M. Maxwell.

Secretary, Mr. J. Robb.

Treasurer, Mr. J. Sarrett.

Alterations to Constitution; Section 3 on Membership, was altered Grammatically to include members of eleven years of age in the Intermediate grade.

Section 1 on the Title, was altered to now read 'The name of the organization shall be the "Boomerang Association of Australia" here inafter referred to, as the Association.

This title will be retained until such time as Regional Divisions have been established. When the said divisions have been established, they would become, associations of their appropriate region, and the association would the become the Boomerang Federation of Australia.

It was decided to obtain a post office box for a permanant postal address of the Association. cont. p. EA.

GENERAL MEETING

20th. SEPTEMBER 1972. 8.00 tp 10.30p.m.

at 3 Biscayne Drive, Syndal.

Programme;; Films; no.1. "BOOMERANG"

no.2. "HUNTING A KANGAROO"

General Business; 1. B.A.A. World title recognition.

2. Long distance throwing rule ratification.

Annual general meeting report continued.

Confirmation of rules governing competitions other than basic competitions. The following competitions were discussed and to be drafted for approval at the next General meeting

- Distance competition.
- Consecutive catching
- Most catches in a given time
- Accuracy competition.

General business.

It was decided to obtain a First aid kit for use at Competitions and send a letter to a first aid organization such as St. Johns Ambulance Brigade.

It was decided to investigate the requirements for official amateur status.

There was some discussion on the possibility of Canberra for the venue of the 1973 Australian Championship.

CAR STICKERS.

Please inform the secretary if you would be interested in purchasing a car sticker similar to that shown on the cover of this issue.

PUBLIC RISK POLICY.

Cover to \$100,000 is available to members for \$1.00 per year.

This will insure you against damage to others while participating in B.A.A. organised activities.

A minimum of 40 members is needed to enable the Association to take this policy.

Please inform the secretary if you are interested in subscribing to the policy.

* * * * *

EASTERN SUBURBS

BOOMERANG THROWING CHAMPIONSHIP.

To be held on Sunday 15th. October 1972 at the Burden Park Reserve, Springvale South, Corner Springvale and Haetherton roads, It is to be run in conjunction with the 1972 City of Springvale Youth Expo. Heats will be held at the Reserve, and will run from 11.00 a.m. to 1.30 p.m. on 15th. October.

There will be attempts at breaking the recently set long distance mark accuracy of return and most number of catches.

The Final will be held at the Burden Park Reserve from 3.30 to 4.30 p.m. approx.

A Junior and Senior trophy will be presented.

This venue is quite popular and last year 40,000 people patronised Expo'71.

SPRINGVALE YOUTH EXPO DISPLAY.

We are going to setup a Boomerang display at the Springvale townhall for showing on the nights of 10th, 11th & 12th. October.

On these nights it will be necessary for members to be in attendance from 6.45 p.m. to 10.00 p.m. Set-up is on Monday 9th. from 6.45 to 10.00 p.m.

If you can help at any of the above times please contact me re your availability.

Dennis Maxwell. (home 551.1017 work, 615.5312)

* * * * *

THE ALBURY MEET "

Thanks to the efforts of Albury members, under the leadership of our new Vice President Jeff Lewry, a well organised 'meet' was held in North Albury on Sunday 16th. July 1972.

The programme is reprinted here for members interest, A new form of competition was given a trial run at this meet and proved to be most successful.

The Distance throwing comp, was keenly contested, and the system used in judging this event proved to be both popular and accurate. Members comments on the "Champion of Champion" style of competition would be welcomed for inclusion in future newsletters, and would also be of interest to the B.A.A. executive when planning competitive meetings.

Congratulations to the Albury group, with an extra thanks to Jeff who put a lot of work into making the various trophies.

ALBURY "CHAMPION OF CHAMPION"
BOOMERANG COMPETITION.

Jelbart Park, North Albury. Sunday July 16. 1972.

PROGRAMME.

MORNING COMMENCING 10. a.m.

1. Elimination rounds, Championship competition.
2. Most Accurate Return Competition.
3. Highest number of consecutive catches comp.
- OR Shortest time for 10 catches competition.
(depending on wind conditions prevailing).

AFTERNOON.

4. Distance throwing competition.
5. Final of Championship Competition.
6. Finals of Junior boys and girls ONLY comp.
(these will be held ONLY if sufficient entries)
7. Declaration of "Champion of Champion".
8. Presentation of Trophies.

Entry fees; 50 c minor competitions.
\$1.00 Championship Competition.

Prizes; Trophy for each event, Special Trophy for champion of champions. (Trophies made by Jeff Lewry, polished by Lee and Arthur Janetszki)

Entry fees divided as sweepstakes.

RULES.

Championship Competition. Current B.A.A. rules.
Most Accurate Return. 5 throws plus 1 practice each competitor.
Boomerang must travel 20 metres, closet return to peg wins.
Catch not allowed.
Consecutive Catches Throw from centre of 7.5M radius circle.
Boomerang must travel 20 metres, return and be caught inside

Continued.

Albury 'meet' continued.

First 3 throws, one "practice" unless contestant decided otherwise.

Distance Throwing 5 throws each contestant from behind a base line, 40 metres long, arranged at right angles to direction of throw. Range stewards will mark maximum orbit of boomerang. Qualifying throws must return over base line. Distance will be measured from centre of base line to maximum orbit.

More than one entry will be allowed each competitor in minor events on a priority basis. At finish, second and third top scores must be allowed opportunity of equal number of tries as top scorer.

CHAMPION OF CHAMPIONS. Points will be allotted as follows;

Championship	1st. 10 pts.	2nd. 6 pts	3rd. 1 pt.
Accurate Return.	5 pts.	3 "	1 "
Distance Throwing	5 "	3 "	1 "
Consecutive Catches	5 "	3 "	1 "

At the end of all competitions, thrower with highest point score will be declared winner.

ALBURY RESULTS.

Most Accurate Return.

A. Janetski	first with 3'2 $\frac{1}{2}$ ".
M. Maxwell.	second ' 4'7 $\frac{1}{2}$ ".
H. Robb.'	third 6' 0".

Consecutive Catches.

Jeff Lewry	first	8 catches.
I. Williams.	second	5 "
G. Rawson.	third	4 "

Distance Throwing.

J. Lewry	first distance	82 metres.
M. Maxwell.	second "	64 "
I. Williams.	third "	60 "

Championship event. (current B.A.A. rules).

G. Rawson.	first	90 points.
Joe. Lewry.	second	63 "
I. Williams.	third	58 "

continued.

Albury meet continued.

Junior Championship.

C. Lewry	first	60 points.
D. Brawn	second	21 "
P. Eggleton.	third	18 "

Champion of Champions. (as per highest point score system shown on programme).

G. Rawson.	first with	11 points.
J. Lewry.	second	10 "
I. Williams.	third	6 "

Score sheet for Championship event. (in order of throwing)
(C=catch. A=accuracy. R= range.)

A. Janetzki	4.2.2.	4.6.2.	4.5.2.	4.0.2.	4.4.2.	48
	0.0.0.	0.0.0.	0.0.0.	0.0.0.	0.4.0.	4
I. Williams.	4.4.4.	4.2.4.	4.0.4.	4.0.4.	4.0.4.	46
	4.0.4.	0.0.0.	4.0.4.	4.0.4.	4.0.4.	32
Jeff Lewry.	0.0.0.	4.4.4.	4.4.4.	4.3.4.	0.0.0.	35
	0.0.0.	0.0.0.	2.0.4.	4.0.4.	2.0.4.	20
L. Janetzki.	0.0.0.	0.0.0.	0.0.0.	0.3.2.	0.0.0.	5
	0.0.0.	4.2.2.	0.0.0.	4.0.2.	0.0.0.	14
M. Maxwell.	0.0.0.	0.6.2.	0.0.0.	0.2.4.	0.0.0.	14
	4.0.2.	4.4.2.	0.0.0.	0.0.0.	0.0.0.	16
H. Robb	0.0.0.	0.0.0.	0.0.0.	0.0.0.	0.0.0.	0
	0.0.0.	0.4.2.	0.0.0.	0.0.0.	0.0.0.	6
G. Rawson.	4.2.4.	4.3.4.	4.0.4.	4.0.4.	0.0.0.	37
	4.0.4.	0.0.0.	4.0.4.	4.2.2.	0.2.4.	30
Joe Lewry.	0.0.0.	4.0.2.	0.0.0.	4.0.2.	4.0.2.	18
	4.0.2.	4.0.2.	0.4.2.	4.6.2.	4.6.2.	42
Carol Lewry	4.0.0.	4.0.2.	4.0.2.	4.0.2.	4.7.2.	35
	4.4.0.	0.0.0.	4.0.0.	0.4.0.	0.0.0.	16
non-comp.	0.0.0.	0.0.0.	0.0.0.	0.0.0.	0.0.0.	0
James.						

continued.

Albury comp. cont.
Championship scores.

Finals.

Joe. Lewry.	4.0.2.	0.8.2.	4.2.2.	4.0.2.	4.2.2.	38	
	4.3.4.	4.2.2.	4.0.2.	0.0.0.	0.0.0.	25	63.
G. Rawson.	0.0.0.	4.0.4.	4.0.4.	4.6.4.	4.4.4.	42	
	4.0.4.	4.4.4.	4.0.4.	2.0.4.	4.6.4.	48	90.
I. Williams.	0.0.0.	4.0.4.	4.0.4.	2.0.4.	4.6.4.	28	
	4.6.4.	4.0.4.	0.0.0.	0.0.0.	4.0.4.	30	58.

Score sheet for junior event.

	c.a.r.	c.a.r.	c.a.r.	c.a.r.	c.a.r.		
Jan Nolte.	0.0.0.	0.0.0.	4.3.0.	0.2.0.	4.0.0.	13	
	0.4.0.	0.0.0.	0.0.0.	4.0.0.	4.2.0.	14	
D. Brawn.	0.0.0.	0.4.0.	0.3.0.	0.0.0.	0.0.0.	7	
	0.6.0.	0.4.0.	0.0.0.	4.4.0.	0.8.0.	26	
C. Lewry.	4.4.2.	0.4.2.	4.0.0.	4.0.0.	4.0.0.	24	
	4.6.2.	4.5.2.	4.2.0.	4.4.2.	4.3.2.	48	
Pam Eggleton.	0.0.0.	0.0.0.	0.0.0.	0.1.0.	4.8.0.	13	
	4.0.0.	4.0.0.	0.0.0.	4.8.0.	0.4.0.	24	
Sue Eggleton.	0.0.0.	0.0.0.	0.0.0.	0.0.0.	0.1.0.	1	
	4.0.0.	0.0.0.	0.0.0.	4.0.0.	4.0.0.	12	
Junior Final							
D. Brawn.	0.0.0.	0.0.0.	0.4.0.	0.0.0.	0.0.0.	4	
	4.4.0.	0.0.0.	4.5.0.	0.0.0.	0.0.0.	17	
P. Eggleton.	0.4.0.	0.0.0.	0.0.0.	0.0.0.	0.0.0.	4	
	0.0.0.	0.0.0.	0.8.0.	0.0.0.	0.2.0.	14	
C. Lewry.	4.4.0.	4.2.0.	4.0.0.	4.2.0.	0.0.0.	24	
	4.1.0.	4.5.0.	4.4.0.	0.2.0.	4.6.2.	36	

COMPETITIVE THROWING.

"Our stalwart correspondent Jeff Lewry continues his series of articles on competition throwing"

' The present intention is to continue this series with a somewhat light-hearted run down on various competitions, hoping to be of a little more assistance to B.A.A. members in distant places far removed from regular competition, and perhaps lighting a spark here and there which will result in a few more competitions, however small, taking place: for competition, whether against oneself or amongst a few enthusiasts is the surest, quickest way of raising one's standard of throwing. Also regular competition amongst a few friends can easily lead to the formation of a new club, and this is the way our movement will grow into a national event.

Championship Competition.

Because a given boomerang will fly over 30, over 30, or over 40 metres, one only range steward will suffice, so 3 people trusting each other, and willing to take turns as score-keeper, thrower and range-steward can run such a comp. and come up with a winner.

It may not be generally known that sump-oil is great stuff for marking circles on ground, lasts for months too; not recommended for sports grounds which have a curator in attendance, but ideal on vacant lots or paddocks. One gallon paint tins or a plastic jarmake good marking machines, - punch a hole in the bottom, use a cork for 2 position tap (in or out). String tied to a central peg and the 'markers' handle gives a radius. Fill with sump oil, remove cork, run around circle and lo' a competition ground is marked.

There is a certain etiquette to be observed in competition, designed to save abuse of judges and stewards. Ask the central judge if he is ready before commencing throwing; this ensures he is paying attention'. When you catch a return "freeze" until judge calls out the score in 3 figures (e.g. 4 for catch, 4 for accuracy, 2 for range) and don't move until your brain registers that score is correct similarly if your boomerang comes to rest on the ground don't pick it up until score is called for you can't query a score if you've walked about and shifted things !

Endeavour to position range stewards at maximum orbit of your flight, this way you have best chance of getting correct bonus points for distance, you also increase life expectancy of said stewards in the event of a low throw.

In event of your dropping, an easy catch, it is not considered good form to jump on your boomerang; neither is this good for you if you have only one boomerang; nor

does one shout "Help stamp out boomerangs" at this time, for other competitors might take you literally.

For non-scoring practice throws one can nonchalantly reach out for a one-handed catch. This demonstrates your supreme confidence and has an uneasing effect on the opposition.

Whilst you are actually throwing you cannot abuse the judge for what you consider to be bad decisions, for competitors, the judges decision is final. But you can and should protest about wrong judging of another competitors throwing, for at this time you are only a spectator. Even if it means his corrected score beats yours, still protest, for Boomerang Throwers are unfailing good sports.

The same competitors have been contesting finals of Championships too regularly lately. I feel this is one reason new throwers are not being attracted to the sport, to them it must appear impossible to beat "established" throwers.

I have considered a lot of possible solutions to this problem, but the following seems to have the most merit, with the added advantage of being simple.

Throwers are divided into 3 grades,
NOVICES Those who have never previously entered an OPEN competition, or who failed to score in open competition.
TYROS Those who have never WON in an Open competition.
TITLE WINNERS; Those who have WON an open competition.

Scoring to be the same as at present i.e.
4 accuracy circles, max. points 8; with 4 points or 2 points for catch BUT

Novice throwers must throw 20 meters to qualify as a throw, with a bonus of 2 points for a throw over 30 meters.

Tyros must throw 30 meters to qualify, bonus of 2 points for a throw over 40 meters.

Title Winners must throw 40 meters to qualify, bonus of 2 points for a throw over 50 meters.

It means marking an extra circle, but it reduces range stewards to 2, and probably makes it easier for spectators to follow.

It certainly puts pressure on all throwers to improve, particularly their accuracy, but it puts most pressure on title-winners, for at present development of boomerangs it takes a bit of effort to pelt an accurate return over 50 meters and the bulk of throwers are straining to reach 40 meters, so there won't be too many bonuses from tyros either.

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Stevens, John A. "How to Specify Finishes for Magnesium." Product Engineering, June 6, 1960. Available as a reprint from the Dow Metal Products Co., a division of the Dow Chemical Co., Midland, Michigan.

Innes, William P. "Surface Treatments for Magnesium" Metal Finishing Guidebook Directory, 38th ed., 1970. Current edition \$3.25 postpaid from Metals and Plastics Publications, Inc., 99 Kinderkamack Road, Westwood, N.J. 07675.

May 13, 1972.
San Diego, Calif.

Gordon Rayner.
1531 Dixon
Corvallis, Oregon 97330
U.S.A.

SNIPPETS.

Coals to Newcastle or Manganese to Croote Eylandt!

We have just heard about ex-Melbournite, George Baker, who is a Blasting Foreman with GEMCO at Croote Eylandt. George, who stands six feet in his thongs, is a keen Boomerang thrower and is giving a lot of spare time to teaching the skills of Boomerang making and throwing to the local Aborigines at the Company Township of Alyangula and the Angurugu Mission. From all accounts, his activities are a great success and we look forward to hearing more from George in due course.

- - - - -

Those who attended the National Titles at Swan Hill this year will recall the American entrant John Gerrish. I discovered this advertisement recently in a 1954 edition of Popular Mechanics.

OVERSEAS INFORMATION.

Gordon Rayner of San Diego California has been experimental with a variety of materials for boomerang construction for some years, and has sent the following letter and information on materials to the ex-president Geoff Rawson.

Dear Geoff,

Thank you for your letter of last August. I apologise for my tardiness. However, I have just finished a 60 page book titled BOOMERANG ENGINEERING. I am sending a copy to Ben Ruhe today, and also to the "Society for Promotion and Avoidance of Boomerangs" secretary, Christopher Robinson 12 Stoneham Close, Reading, Berkshire, England. In case you didn't know, that society needs contributions of articles to keep its journal alive. They, through Ben Ruhe, have sent me some interesting information. The enclosed is a portion of my new book.

You are welcome to a copy of the book, the cost will be \$1.50 plus postage, \$1.20 by air 19 cents surface.

I have not had time to make many booms lately. The next project is to make a mould for a fibreglass section with undercamber, for turbulent boundary layer flow, this is covered in the book. The best boomerang I have so far thrown is the))COMEBACK((by Willi Urban of Leutershausen Germany. They are glass reinforced injection moulded nylon with a sharp leading edge. I believe the sharp edge makes boundary layer turbulent.

Concerning the magnesium, AZ31B denotes an alloy with 3% aluminium, 1% zinc, 'B', hardrolled (-H24) Do not use -O, because it is not very stiff, though it may work. You can make fine boomerangs with mag. I have tried one magnesium boomerang since receiving the Urban))cameback((, which was 4½ozs. each arm 20inches long. It flies OK, but is too limp because of its thin section. Mag. boomerangs are very educational because you can vary the dihedral or twist on the spot. I am sure that a mag. boom can be made which would equal the)) COMEBACK((even if it were a near copy. My efforts will be directed toward a fibreglass model, however, because I want to try undercamber.

Sincerely,
Gordon Rayner.

Following is an extract from Gordon Rayner's book.

MATERIALS FOR BOOMERANGS.

Wood is the most common material for boomerang construction. Unfortunately, grain orientations which yield maximum strength are almost impossible to find, unless one happens to live in an area where there are slowly growing acacias or other hardwoods, as did the Australian aborigines. There are several ways to splice straight-grained hardwood to obtain durable boomerang planks, but some of these require special equipment, as well as additional labor.

Thermosetting plastic resins reinforced with fibrous glass have been used to make strong, well flying boomerangs. In general, however, this is a messy process, even if a suitable mould is already in hand.

Injection moulded thermoplastics, reinforced with short glass fibers, are probably the best materials for large production runs, but tooling expense would likely be over one thousand dollars per design.

I have used magnesium alloy sheet in 0.160 and 0.190 inch thicknesses, with good results. These boomerangs should be made with high aspect ratios, at least 9 to 1, and each blade should be at least 10 inches long, preferably longer, for best results. Working with this material takes longer, and requires more physical effort than some will want to spend. A vise, C-clamps, several files, and a bandsaw or jigsaw are required. Magnesium alloy sheet may not be easily obtained in some parts of the world, as it is used primarily in aircraft and spacecraft construction.

Polypropylene, a stiffer, lighter relative of the polyethylene used for squeeze bottles, makes very serviceable boomerangs. Being isotropic, it has no grain structure, so the sheet can be sawed in complex shapes, such as blanks for multi-armed boomerangs, very easily. It is easily cut with ordinary saws or electrically heated knife blades. 0.250 inch thick sheet is stiff enough to make arms at least 15 inches long, though the material is not as stiff as the materials mentioned above. Polypropylene is no problem at all to shape, the absence of grain structure preventing splitting, and tool edges are virtually unaffected. For these reasons, it is an excellent choice for the beginning boomerang shaper. Recently, polypropylene has come into widespread use as a mold material in the making of sprayed-up polyester-glass composite structures. I buy polypropylene sheet remnants as scrap from industry, at a fraction of the cost from plastics distributors.

Polypropylene is the lightest of the common plastics and also one of the least expensive. Because it floats, boomerangs made from this material can be thrown over water with less danger of loss. Dihedral can be bent in by hand during flight testing, though twisting may require a vise or clamp. The plastic returns to its former shape to a slight degree following such bending, but most of the set remains.

continued.

For the highest performance in larger sizes, a denser, stiffer material should be used, but a high lift, light polypro boomerang will climb fast and turn a tight circle.

Polypropylene is also used to make cloth, which has been used for years as an alternative to glass cloth, for the reinforcement of polyester thermosetting resins, particularly for boat repairs. Polypropylene cloth is well suited to used with the more flexible types of polyester, as their properties are complementary. This cloth is much lighter than an equal volume or glass cloth. In addition it is much less abrasive on tools than glass, so it is well suited to prototype construction.

Polypropylene cloth is not as widely marketed as glass cloth. In the U.S., a major supplier of the basic olefin is the Vectra Corporation, of Odenton, Maryland, 21113. Under the name Versatex, the Turner Halsey Co., 50 West 44th St., New York, N.Y. 10036, markets a polypropylene fabric woven from Vectra. One distributor of this fabric is Tap Plastics, Inc., 3011 Alvarado St., San Leandro, Calif. 94577. For an example of the application of this fabric, see "Polypropylene Fuselages" in American Aircraft Modeler Annual 1968, an article by Emile Agosts which begins on page 50. The publisher is Potomac Aviation Publications, Inc., 1012 14th St., N.W., Washington D.C. 20005.

For repeated production of a standard design, but in numbers small to justify injection molding tooling costs, room temperature molding techniques using plaster, silicone molding rubber, or glass or polypropylene reinforced polyester resins are suitable. An example of this method in the section covering the circular arc airfoil undercamber designs.

MAGNESIUM ALLOY BOOMERANGS.

Metal boomerangs can be made very durable, and will take attractive finishes. The author tried to make an aluminum boomerang over ten years ago, but it was too heavy, being solid. If one has the shop facilities required, and is willing to devote the necessary labor, hollow aluminum, titanium, or stainless steel boomerangs can probably be made. Such complexity is difficult to justify, and it is suggested that solid magnesium or beryllium be used instead. The author has had no experience with beryllium, which is very expensive, hard to obtain and toxic.

Those who live near aircraft or spacecraft industry can probably find surplus magnesium alloy sheet without much trouble. In the U.S.A. this product is manufactured mostly by the Dow Chemical Company, Metal Products Department, whose head office is in Midland, Michigan. The author has had good experience with the AZ31b-h24 alloy 0.160" and 0.190" thickness sheet. For boomerangs with arms longer than twelve inches, use the thicker sheet, if possible, though either will give good results. Standard sheet size is 48" x 144", which will make many boomerangs.

continued.

Purchase of a smaller size, for which there will likely be a cutting charge, or a remnant, is suggested. Costs will be much lower if the material is purchased surplus. One such source is the Specmat Co., 13408 Saticoy St., North Hollywood, Calif, 91609. The foreman has offered to trade material for boomerangs.

Lay out the desired shape on the sheet and cut it out with a metal cutting bandsaw or jigsaw. Clamp in a padded vise and draw file the edge to a clean shape. Shape the airfoils with shaering cut files, testing periodically. This is very good excercise. Power equipment can be used, if available, but proceed cautiously until experience is gained, lest too much stock be removed. Use a vise to bend in the twists, unless a lefthand-righthand interchangeable boomerang is attempted.

The great advantage of a metal boomerang is the ease with which twist and dihedral can be repeatedly changed during the experimental flights and at final tuning. When you think that the boomerang has been filed, twisted, and bent to your satisfaction, use finer files first, then successively finer grades of abrasive coated cloth, to give a fine finish.

Magnesium alloy is not self'protecting. A black carbonate forms in the presence of moisture, as during landings in wet grass. Chlorides causes rapid corrosion. Most of the non-electrochemical surface treatments for magnesium are designed to deposit protective chromates on the surface. Such a treatment is important whether it is used as a paint base, or as the final finish. The author has had good results with Dow # 7, a commercial process which involves boiling solutions and is not suitable for the home workshop. It leaves a rich brown protective coating, portions of which will eventually wear away of abraded repeatedly.

Several finishing processes for the home workshop are described below. Persons living near suitable industry may wish to have a plating shop do the work or to have one of the somewhat more durable electrochemical processes applied.

The author would like to correspond with persons who may have success in casting magnesium boomerangs, or who find a shop to do it at reasonable cost. The hand labor involved in making a magnesium boomerang is considerable. Fine magnesium dust mixed in the air will burn rapidly in a semi'explosion. In tha author's experience, however, the particles which result from hand filing are large enough to fall to the floor. They will smolder or burn slowly if ignited. but do not represent any great hazard. Precautions should be taken if sparks, open flame, or welding are present near work area, and the shop area should be swept regularly, as the magnesium dust might be mistaken for non'flammable aluminum.

continued.

DIMENSIONS
IN INCHES

HANDLE TIP
(OPTIONAL)
RIGHT HAND
VERSION SHOWN

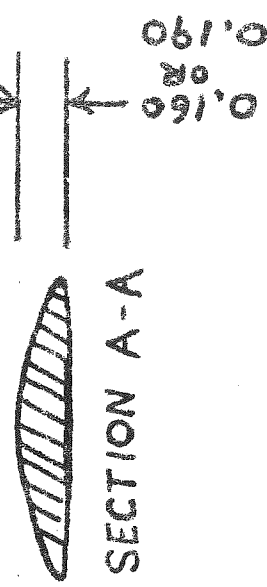
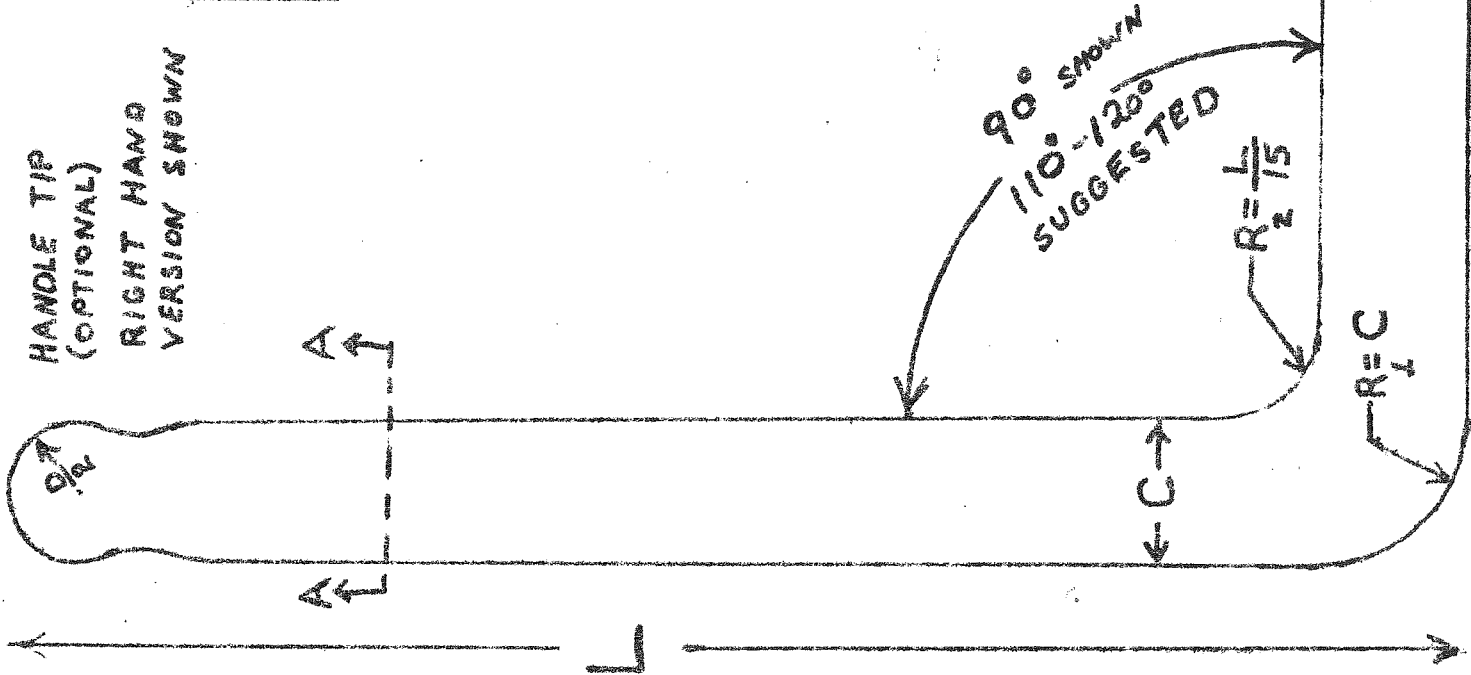
DESIGN BY
GORDON RAYNER
1531 DIXON
CORVALLIS, OREGON
U.S.A. 97330
APRIL, 1972

**MAGNESIUM
BOOMERANG**

MATERIAL: DOW AZ31B-H24 MAG. ALLOY
SHEET, 0.190 OR 0.160 THICK.
L = 15
C = $\frac{L}{10} = 1.5$
USE 0.190 IF L GREATER THAN 12.

TAPER OPTIONAL.
TIP STYLE OPTIONAL.

CAN BE SCALED FROM L=10 TO L=20
VARY ANGLE BETWEEN ARMS BETWEEN 85° & 130°.
ADD TWIST AND/OR DIHEDRAL AS DESIRED.
FINISH: DOW #19, #1, #7, #21, OR #17



BLUNT TIP