

HOW TO THROW AND TUNE *VOYAGER*

By Manuel Schuetz

Look for a very large field (150 x 250 m at least). Best is a soft lawn, so your *Voyager* can't get scratches. A constant weak wind is best. Don't throw in high wind!! If possible, don't practice alone because you can easily lose your *Voyager*.

A. SOFT THROW

Tuning should be flat. First correct the throw and then the tuning. Elevation [horizon-angle] - 10° , layover [tilt-angle] - 80° , wind-angle - ca. 30° . Throw softly with much spin and check the flight-path. Usually *Voyager* will rise consistently and come back with a high velocity and stall 30-50 m in front of you. There should not be an S-like flight-path or even a stall at the right of you (Screw flight-path). If this is the case, tune both arms down (negative dihedral) and check the leading arm – it should have no positive or negative angle-of-attack. After you have done this, try again with the soft throw. If *Voyager* goes just out and back (lands in front of you is possible) on long ellipse, throw like this:

B. COMPETITION THROW: Elevation [horizon-angle] - 5° , layover [tilt-angle] - $70-80^\circ$, wind-angle - ca. 30° . Throw stronger but not with full power. Make the first throw with 10° elevation [horizon-angle] and 70° layover [tilt-angle]. It may happen that *Voyager* doesn't rise at it's furthest point. Like this you can see if *Voyager* would go strait on without return if you would throw with only 5° elevation. If *Voyager* stalls at the back-flight, throw stronger or give some positive angle-of-attack at trailing arm. If it goes very far (more than 180 m) and flies a half-circle with landing at your left, throw with 80° layover or give some positive dihedral and evtl some negative angle-of-attack of leading arm. Note that after each tuning

VOYAGER

Composite LD-Hook

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MADE WITH *MANUEL' PERMISSION* USING
VERY SPECIAL *GEORGI' COMPOSITE TECHNOLOGY*

Shape: full size "Voyager I" - WORLD LD-RECORD (238 m)
BOOMERANG by Manuel Schuetz (CH), 1996

Span: 305 mm

Material: Multi Composite by © Georgi Dimantchev,
developed special for Long Distance boomerangs - Aramid
tape & fabrics (2 types), Aramid/Carbon tape (Russian
VNIIVLON™) in the elbow -area, Glass-fabric + Metal core +
Epoxy-Resin. This special construction guaranties the needed
toughness and stiffness of *Composite Voyager* and allows the
easy tuning of the boomerang with two hands on the throwing
field.

Mass: ca. 75 g

Flight-distance: normally 150+ m, for 200+m is needed a
perfect combination "tuning + weighting + coordination + full
throw-power"

Tuning: positive or negative bending (dihedral) of LA or TA
up to 1 mm and/or just a little positive or negative twisting

Weighting: ø15 mm lead in LA-tip for flight-range 200+m

Throwing: horizon-angle (elevation) - 5-10°, tilt-angle (layover)
- 70-80°, wind-angle – 20-30°.