

Tuning Your Atlatl

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Tuning your Atlatl

by Dean Pritchard

Having built many atlatls of various designs for several years, I have reached some interesting conclusions about the spearthrower.

- Every atlatl seems to acquire a soul once it is finished. You can build a half dozen identical atlatls and every one of them will handle differently.
- Any rigid atlatl will work well and will accommodate almost any design. A tree branch or a hammer handle with a properly positioned spur, for example, will suffice.
- An atlatl with any amount of elasticity will produce a whole new challenge. The elasticity will have to be adjusted (tuned) to allow synchronization of the atlatl with the dart.

You are probably asking yourself "so why even bother with a flexible atlatl?" For the same reason that a pole vaulter uses a flexible fiberglass pole instead of the old rigid design. The athlete can gain extra lift by virtue of the release of stored (latent) energy within the pole itself.

A synchronized flexible atlatl will basically do the same thing and allow the dart to travel with greater efficiency (in terms of distance, but not necessarily in accuracy). The major drawback to this style of atlatl is the requirement that all of the darts must be the same weight and spine. Fortunately, most modern aluminum and fiberglass darts can meet this requirement.

Atlatl tuning is a necessary process if you expect optimal performance from your spear thrower. This process is time-consuming but it will allow you to maximize your throwing ability. Tuning will also help diminish the misfires often associated with modern thin walled aluminum darts and the heavy acceleration power curve required for long dart flights. The procedure listed below is based on the "energy-reactive" paddle type atlatl design and the assumption that the atlatl spur is properly positioned (see note).

First, let me set up this discussion by mentioning that your dart will flex wildly as it leaves the atlatl, with a series of de-flexing and re-flexing. The law of physics implies that the pointed end of the dart will momentarily remain stationary as the other end being accelerated by the spear thrower. This phenomenon will cause the dart to arc for a few milliseconds. This arch or bow can be extreme if the dart is not properly spined for stiffness. The dart, at this point, is also building up latent energy. Your atlatl, if properly designed, will flex and absorb most of this energy. Therefore, at or