

EQUIPMENT REVIEW

BY BEN HOFFMAN & ROY COOPER

A forester with 28 years of forestry experience, Ben Hoffman has worked with sulkies since the late 1970s. Roy Cooper, who assisted Hoffman with LogRite's Buck wheeled arch, is an experienced machine operator and mechanic. Both authors had access to three other LogRite models, and Ben Hoffman had tried two—the Junior Arch and the hand-pulled predecessor to the Buck, the Mark 7; when, however, they each realized that the hand-pulled Buck model interested them in its application for moving small trees from firewood thinnings, they decided to pair up to test the model.



LogRite Buck Arch

Most manufacturers of small, wheeled arches, including LogRite, call their products “arches,” but, technically, the correct term is a sulky. Beginning about 1880, wheeled arches, called sulkies, were used in logging, pulled by horses, and later by crawler tractors up to about D-4 size. As larger crawlers came into use, wheels could not adequately support their loads and tracked arches, offering greater flotation, came into being. The tracked versions were called arches.

Although LogRite's new Buck wheeled arch is a relatively simple implement—and might, therefore, not be taken as seriously as it should be—it's important to note from the start that it's a very productive tool. In time studies of the Canadian Port-a-Log skidding sulky in the early '80s, production

rates of 4 to 5 cords per 8-hour day were measured. The Port-a-Log was available in both wheeled and ski-equipped versions, as are the LogRite models. A University of Maine study using a Honda 3-wheeled Big Red averaged 5.25 cords per day over a skidding distance of 742 feet. A similar study of the ski version by Laval University averaged slightly more than 4 cords per day over 623 feet.

Two Configurations

The Buck comes with two possible configurations. The basic arch and wheels can be fitted with a hand use package (right) with tongs and a handle for manual towing, or a tow package (page 6) with a drop tongue, winch, and trailer hitch. It is ergonomically well-designed and well-manufactured; the welding and powder coat finish are excel-

lent, as are wheels, tires, and winch. The Buck is rugged, extremely versatile and would be an ideal tool for an arborist to move heavy bole sections from stump to roadside, or to move logs in a mill yard. In the woods, depending on ground conditions and slope, the hand (manual) version could be maneuvered by one or two people.

The tow version is especially



LogRites hand use package.

LogRite Buck Arch

Log capacity	22 in. diameter
Length capacity	16 ft. fully suspended when using by hand
Length capacity	10 ft. fully suspended when towing
Weight capacity	1,800 lbs.
Tire size	50/30 x 12 outside diameter
Tongs25 in.
Arch width	40 in.
Arch length	42 in.
Arch height	40 in.
Arch weight (towing arch)	170 lbs.
(hand arch)	140 lbs.

Manufacturer:

LogRite Tools, 77 Industrial Park Road, Vernon, CT 06066
 Phone: 800/631-4791 Fax: 860/872-0864
 www.logrite.com ■ info@logrite.com

Manufacturer's Comment:

The Buck Arch was not designed for working in the woods, but was designed for portable sawmill owners to move logs around the mill yard.

log size and length. Since we were skidding thinnings—mostly small trees with a few 12-inch stems—we needed to use chokers. A big improvement over other LogRite arches is that the tongs can be removed and a short chain at the top of the arch allowed us to use chokers to load multiple small stems. Our working area was relatively smooth, but slightly uphill, probably about 2%, so it took both of us to pull the sulky. The hand version is capable of moving an 1,800 pound load, equivalent to a 16-foot, 22-inch (top dib) red oak log. Under ground conditions found in the woods, a maximum load for one person would be 1,000 pounds or less.

versatile. With a properly balanced load, the arch could be towed to roadside with a small tractor or ATV, and then disconnected and hitched to a motor vehicle to transport the load to its destination. One *Sawmill & Woodlot* magazine reader in Iowa uses a portable winch on a home-built sulky to log large trees. He winches the log to the arch,

tows it to the roadside with a tractor, and then hitches the arch to his truck and drives over the highway to his mill.

First we tried the Buck in manual operation with both tongs and chokers. Tongs are fine for large stem sections 8 inches or more in diameter, and can be adjusted in height and position depending on

The Tow Package

Deciding to work smart, not hard, we replaced the manual reach and tongs with the tow package (trailer hitch and hand winch) and pulled it with a small farm tractor. This enabled us to easily handle much

Guaranteed Lowest Prices!



THE BEST LUMBER MARKERS

FOR YOUR VISION SYSTEM

Family Owned & Operated for 20 Years!

24 COLORS, 2 SIZES Covering the color spectrum with a wide range of choices. 2 sizes 1/2" and our long-lasting 3/4."

HEX SHAPED Hex marker provides greater shear strength & less breakage.

BREAKTHROUGH FORMULA with the highest quality fluorescent pigment commercially available in a marker. No skipping, missing, or breaking.

5 DIFFERENT GRADES Not all marking conditions are equal. That is why AMARK produces fluorescent lumber markers in 5 different hardness categories.

MACHINE EXTRUDED AMARK MARKERS are machine extruded, not poured from a mold.

CRAYON HOLDERS Wooden and aluminum holders 3/4" & 1/2" sizes.

RECYCLING! Send us your marker stubs, color and hardness separated. We will re-extrude our wax @ .25, and other wax @ .45 cents a stick.

PO BOX 1524 BORING, OR 97009 TEL: 503-663-9257
 TOLL-FREE: **1-866-66AMARK** (26275)
 Fax: 503-663-2850 Email: sales@amark-flm.com

MAKE A LOT MORE LUMBER

and MONEY!



Made in Texas

SIX
Sawmill Models Available From 13 to 85 HP



LOG-MASTER
 1-800-820-9515 www.logmaster.com

larger loads and multiple stems, but the arch width limited load size. The hand winch is excellent and can lift a heavy load, and we even used it to winch a problem log into the trail. The winch would be a good option on all sulkies as it offers the choice of handling either large, single logs, or several small logs. When used manually, the winch is far easier for loading than the tongs.

We were very pleased with the Buck's performance when towed with a tractor, and it would work



The tow package.

tequally well, and faster, behind a four-wheeler. However, we both considered it too heavy for one-person use in the woods. Considering the lighter loads moved on uneven ground and over small obstacles under forest conditions, a lighter sulky would improve manual productivity.

Suggestions for Improvement

The Buck was designed to handle loads up to 1,800 pounds, but such loads are unlikely in the manual mode in the woods. Because of the shorter reach on the tow version, the maximum log size log would be 12 feet long, about 24 inches on the butt and up to 23 inches at the top, about 285 board feet. A red oak log this size would weight about 1,500 pounds. This load could easily be moved manually on level ground in a mill yard or suburban lawn, but not in the uneven ground conditions of a woodlot. Such a load would be no problem

for a machine.

We recommend a number of improvements for working in the woods.

- 1) Widen the arch to improve stability on side hills and permit loading more stems.
- 2) Place handles on the back of the arch (as on the Mark 7) to facilitate lifting and shifting it laterally.
- 3) Modify both manual and towed reaches to be adjustable in length by placing one or two more holes in their hafts so they could slide deeper into the arch frame.



The narrow arch limited the load size when towing with a machine.



COMMERCIAL PRODUCTS™

The Choice is Easy... Choose the Winner!

Iron & Oak's Commercial Splitter had the fastest time at the 2009 Great Firewood Competition!



For more information, contact us at:
1-800-817-1005 www.logsplitters-ironoak.com



www.LewisWinch.com

8000 POUNDS OF PORTABLE PULLING POWER

The Lewis Winch is a light-weight portable chainsaw winch that uses any chainsaw as a drive motor. Pull up to 4,000 lbs in a straight line or 8,000 lbs using a Lewis Snatch Block.



FITS ALL CHAIN SAWS

IF YOU LIKE THE LEWIS WINCH, YOU'LL LOVE THE NEW

LEWIS MULTI-DRILL



Imagine using your portable chainsaw drill to go ice fishing and build fences or log homes, plant trees and gardens...

Built to last a lifetime!

www.LewisMultiDrill.com

CALL US TOLL FREE: 1-877-906-7711

kiln-direct.com

KILNS FOR LUMBER, PALLETS, AND FIREWOOD

that just happen to be small...

MINIQUICK FIREWOOD KILN



SMALLQUICK FIREWOOD KILN



- WOOD WASTE OR GAS HEATING
- MEETS USDA HT REQUIREMENTS IN 10-16 HRS
- DRY GREEN FIREWOOD IN 24-48 HRS
- MINIQUICK WITH 6 CORD CAPACITY
- SMALLQUICK WITH 12 CORD CAPACITY

Heavy duty
firewood
baskets



Call us today to learn more...

910 259-1624
910 259-1625

WWW.KILN-DIRECT.COM
SALES@KILN-DIRECT.COM

200 A PROGRESS DRIVE, BURGAW, NC 28425

Pioneered in the 60's, Proven World-wide.

Mobile Dimension Saw is Still the Best!



**Accurate Lumber,
High Production,
Easy Operation,
Maximum Log Recovery,
Low Expenses, Makes it
The BEST Saw for You!**

1-877-272-9645

Mobile Mfg. Co.

PO Box 250, Troutdale, OR 97060

Fax: (503) 661-7548

www.mobilemfg.com



www.mobilemfg.com



for different log lengths.

5) Long loads often dragged on the ground. The heel (suggested above) would hold logs parallel to the reach and prevent them from dragging.

6) Add a small



Placing a small log on the ground before bunching the logs makes it easier to choke the load.

Both the hand and tow shafts slide inside the reach and lock in place. By adding more holes, the length could be adjusted and a sliding heel could be pinned to the shafts to lower and stabilize the front of the load. Long loads drag on the ground, which is especially difficult for manual use.

fairlead to the winch to keep the cable from slipping off the spool.

Technique

Before testing the Buck, all wood was pre-bunched trailside with a Junior Arch. When pre-bunching small wood, be sure it is elevated so you can easily slide a choker under it (above right). Failing this, lay a small log across the trail and roll the wood onto it to facilitate choking. With tongs, larger logs can be picked up easily. To lift the entire load into the arch, logs should be no longer than 16 feet in the manual mode because the tail end would be heavier than the

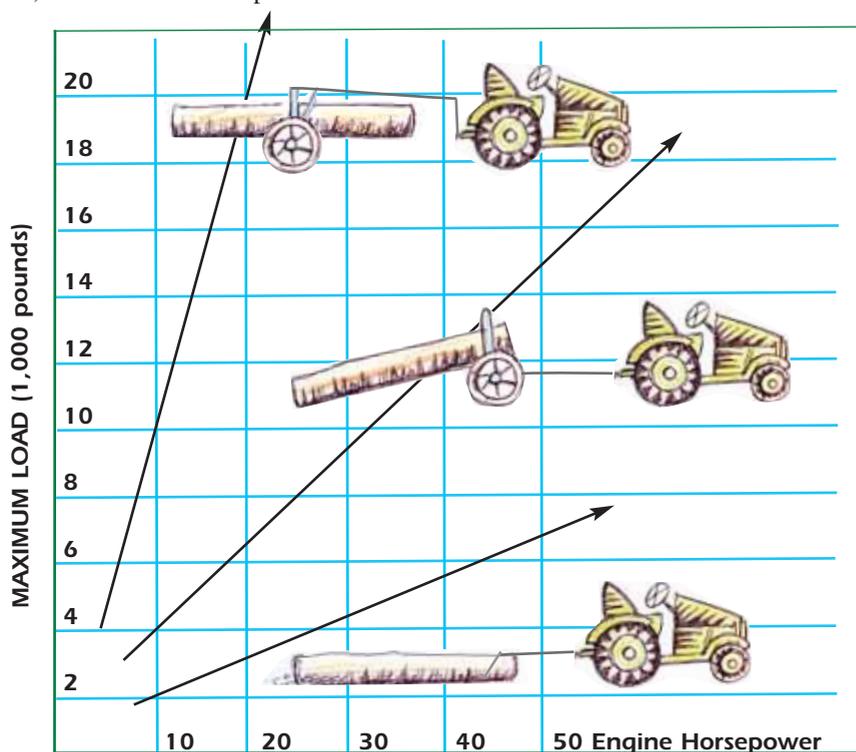
Lengthening the haft of the tow version would permit longer loads.

4) When loads were not perfectly balanced in the arch, the front ends of logs often swung to the side. To prevent this, a curved bracket (heel) under the reach would prevent their swinging. A sliding heel, pinned to holes in the haft, could be used to position it

head, making it difficult to hold down the sulky handle. Twelve-foot lengths work best with the tow package. Longer loads are possible, but might lighten weight on the rear wheels of a four-wheeler and reduce traction. It was no problem with our tractor.

The graphic (this page) shows the tremendous advantage of raising loads in an arch to reduce skidding resistance. Alexson used a load cell with a standard load to measure the effort required to ground skid, drag the load with one end elevated in an arch, and forward with the entire load raised off the ground. This comparison shows the value of getting a load on wheels, especially when the terrain permits lifting the entire load off the ground. On level ground or uphill pulls, it is safe to raise the entire load off the ground to reduce skidding resistance, but when skidding downhill, it may be desirable to drag the end of the load to keep it from pushing the tractor or ATV. This is imperative when skidding manually!

The Buck is an excellent tool for improving the load capacity of a small tractor or four-wheeler, even a small farm tractor with a winch. Research studies have shown that a small tractor with winch can skid about 1/100 cord per horsepower; a 25-hp tractor could handle about 1/4 cord. A wheeled arch greatly increases this capacity. By using a second arch to lift the rear of the load, longer, heavier lengths can be moved. ■



Comparison of load resistance for ground skidding, arch skidding, and forwarding.

Literature cited: Alexson, Andrew T. "The effect of sulkies on skidding production of small farm tractors." MS Thesis, University of Maine (1985).



Built with Pride & Commitment



Since 1970, in a small town in Northern Denmark, Fransgard has been manufacturing forestry

products to meet and exceed our customer requirements. We are continuously rewarded with positive feedback from our

satisfied customers, which is a testimony to our commitment of providing product that meets your demands.

A full range of forestry winch models are available for tractors from 25 – 110hp. A well-established network of authorised dealers is ready to serve and inform you, since that is also a priority at Fransgard. Our reputation speaks for itself!

Fransgard North America • www.fransgard.dk

Contact us for more information and the dealer closest to you.

Tel: 450-654-6126 • Fax: 450-654-2559 • e-mail: allen.tardif@videotron.ca

NEW! **TIMBERKING Sawmills**
TURN TIMBER INTO CASH!

5 Models from Hobby to Super-Pro

TimberKing 2400 – Today's Biggest & Best Super-Pro Mill

Rugged, Hard-Working, Dependable

- **Premium Quality** – Accurate, stable 4-Post design
- **Proud Heritage** – Serving America's Sawyers since 1929
- **Broad Selection** – Weekend to full-time sawyer
- **Best Consumer Protection** – 30-Day FREE Trial, 2 & 5 Year Limited Warranties

FREE FACT KIT!

WATCH LIVE DEMO VIDEOS ONLINE!

- See TimberKing Mills in action
- Watch actual owners saw out logs
- View free videos online NOW

TIMBERKING, Dept. ZN 09, P.O. Box 34284, Kansas City, MO 64120

CALL TOLL FREE 1-800-942-4406 EXT. ZN 09
www.TimberKing.com

TAJFUN Woodlot Essentials!

3 PT. Hitch Firewood Processors
 Cut, split & load 2+ cords/hour with your 55+ HP tractor
 Updated RCA400 Joy, many new features to insure smooth flow & fast through put.

NEW **NEW**

RN3000 live deck holds up to 2 cords of logs for fast seamless production.

3 PT. Hitch Winches

- Oversized swaged cable
- Wide cable drums for maintained pulling capacities even with 200' of cable
- Chain saw, PV or picaroon holders
- Brush guard, tool box, trailer hitch
- Other options available

Brownwood Sales is our Ohio dealer
 2189 Refugee Road, Columbus OH 43207
 419-624-9832

Complete catalog at www.oescoinc.com

OESCO, INC. 8 Ashfield Road on Route 116
 P.O. Box 540 • Conway, MA 01341
 800-634-5557 • 413-369-4335

See OESCO, Inc. with TAJFUN at the Paul Bunyan Show
 Oct. 7-9, 2011 • Guernsey County Fairgrounds, Cambridge, OH