

## Cross-country hop-ups for Yamaha's 1994 screamer

**A**sk any woods rider what he's looking for in a motor and the first thing he will mention is good torque. He wants to be able to navigate around tight trees without continually feathering the clutch. He wants a machine that will climb over unexpected logs and rocks. When the going gets slippery, he wants a machine that will find traction and not spin the tires. However, if that rider is also looking for a brand-new, high-performance

machine, he's in a bit of a dilemma.

The only currently available high-performance quad, the Yamaha Banshee, is an incredible sand dune machine. With great top-end, it will shred sand forever. Carving sixth-gear bowls and screaming up hills are its forte. In the woods, though, the Banshee is a handful. With its "on or off" powerband, snaking around tight terrain requires good clutch work. Apply too much power in the wrong place and the medi-

ocre tires simply spin. What to do?!

With Duncan Racing's success rebuilding Banshees (witness their win at the '93 Pont-de-Vaux) and their success with two-time cross-country champ Bob Sloan (on a FourTrax), we wondered what type of Banshee DR would suggest for the woods. We asked Loren Duncan to take a brand-new '94 Banshee right out of the crate and go crazy with it.

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# DUNCAN WOODS BANSHEE

**3&4:** What are you trying to achieve with this woods Banshee?

**Duncan:** Improve rideability while maintaining reliability. Our first goal was to make more torque. Face it; the Banshee is based on a two-cylinder road racing motor and it will never make strong low-end power like a CR250 or even a FourTrax 250R. But we can improve torque—the area between the low and mid. First and most important is our Paul Turner Midrange Pipe and Silencer. Next, 34mm Keihin PJ carbs, our National XC [cross-country] porting, and the Paul Turner Power Head, which provides more coolant capacity and is more reliable than stock. Also, it uses O-rings instead of gaskets and the domes are interchangeable, so you can tune for different elevations and compression.

**3&4:** Any other mods for improving torque?

**Duncan:** Our fiber reeds and our boost bottle, which improves low-end throttle response.

**3&4:** How about the gearbox and clutch?

**Duncan:** The Banshee shifting tends to be a bit notchy. Our shift star mod makes shifting much smoother. The stock clutch goes away very quickly,

◀ *The Banshee motor is oversquare; the bore is bigger than the stroke. This translates into great top-end but mediocre bottom-end. The Duncan Racing motor mods help to extract the maximum torque from the 350. Holeshot tires hook up that power in the goopy stuff.*



# WOODS BANSHEE

and we've installed the Duncan Racing Clutch Kit [fiber and steel plates and springs]. It will take more abuse, will hold up better, and shifts as well as the stock setup.

**3&4:** Why did you choose Holeshot XC tires?

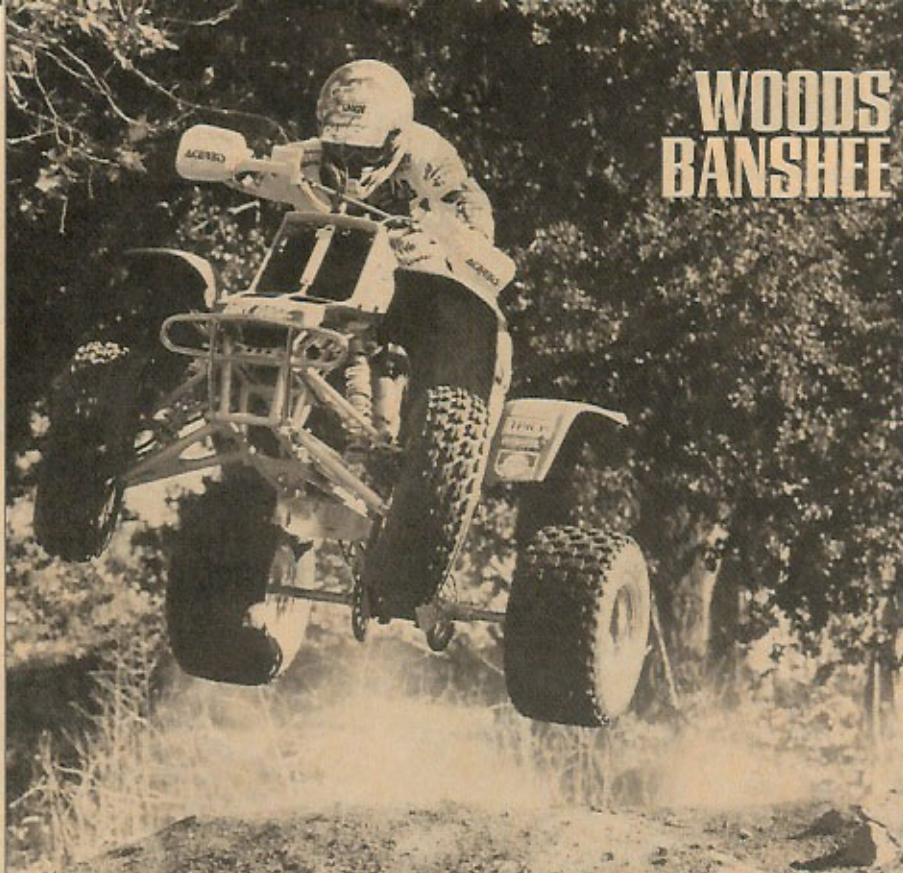
**Duncan:** They have an amazing track record in cross-country: Every overall cross-country winner for the past two years—that's 29 events—has been on them. The fronts are four-ply and the rears are six-ply. Very beefy and good traction. We used Douglas 190 Red Label wheels all around. They are stronger yet lighter than stock and are the best-quality rim money can buy.

**3&4:** What kind of suspension setup are you using on the Banshee?

**Duncan:** In the front, PEP shocks, and in the rear, the stock Banshee shock revalved by PPS [Pettersson Pro Suspension]. The stock shocks are okay, but just not up to demands of racing or aggressive play riding. Both PEP and PPS are very good companies that can work with any rider or situation. The swingarm is a JP which is around one inch over stock and uses a Honda-type carrier and chain adjustment system. The Banshee adjustment setup is much too slow for cross-country racing where there are pit stops. Because the quad needs to be able to fit between tight trees, we run an Xcalibar axle at stock Banshee width.



Since all MXers cut their front fenders, it was a different experience for Mark Ehrhardt to ride a machine with the front wheels hidden by fenders. With the footpegs moved down slightly and Renthal QuadRacer bend handlebars, the Banshee suits his riding style.



# WOODS BANSHEE

The Duncan woods Banshee takes to the air. Leave it to an MXer (like Mark Ehrhardt) to find the jumps. Douglas Red Label rims, as well as PEP and PPS suspension, handled the rough stuff with ease.

**3&4:** Any other miscellaneous items?

**Duncan:** We're running OMF skid plates, Renthal [QuadRacer bend] bars, our own steel-braided brake lines, Acerbis handguards [when the mud gets really bad] and Motion Pro cables. The OEM cables only come in sizes to match the stock carbs. All that stuff adds up to make a great machine.

## RIDIN' IT MTGP CHAMP GOES WOODS BURNING

● Since Duncan Racing's star woods rider Bob Sloan was back east when it came time to test, we asked two-time Mickey Thompson Gran Prix champ Mark Ehrhardt (also with Duncan Racing and on a FourTrax) to put in some time on the Banshee.

**3&4:** It seems that this machine still has a noticeable power hit, but it's now closer to the bottom-end, it isn't as violent and is more rideable. How does it compare to the Duncan Banshee you won with at Pont-de-Vaux?

**Ehrhardt:** Much more torque! You sacrifice a little on top, but for woods you need that low-end. I don't think you can get much more bottom than that out of a Banshee.

**3&4:** How about suspension?

**Ehrhardt:** It felt great for jumping and high-speed bumps. It's a bit stiff on low-speed stuff but it just needs dialing in. Some of the stiffness you feel may be due to the Holeshots, which are really beefy tires. For cross-country you need that puncture resistance, so it's a worthwhile tradeoff. Overall, they hooked up and worked well.

**3&4:** You are used to running a wider rear end for MX and stadium. Did the narrower setup bother you?

**Ehrhardt:** I noticed it, but it's just a matter of adapting. You can't win a cross-country race if you can't fit between the trees and rocks!

**3&4:** How about miscellaneous items?

**Ehrhardt:** The handguards saved me; those branches can really hurt your knuckles! The brakes felt great. I might move the footpegs down a bit, but not back. The QuadRacer bend Renthals seem to work good for me on either a FourTrax or a Banshee. And the shifting was much smoother.

**3&4:** Would you like to race woods?

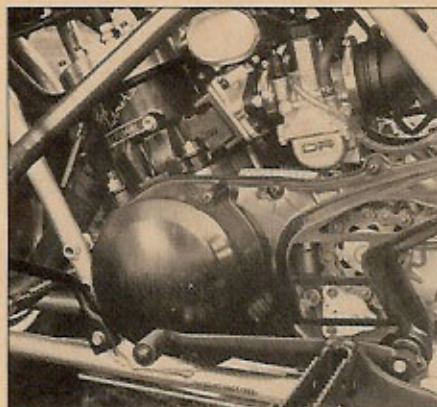
**Ehrhardt:** It would be neat to try, but you'd have to watch out for the trees! Those woods guys really haul through that stuff.

**3&4:** Are you ready for the Mickey Thompson series?

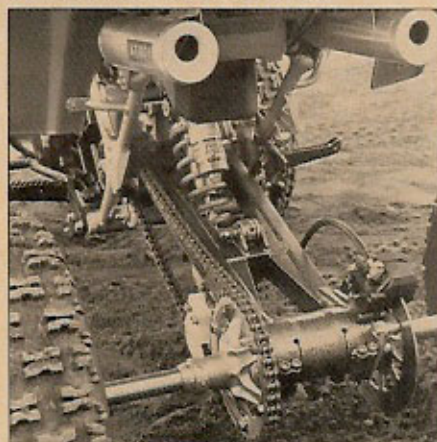
**Ehrhardt:** I've been riding two 30-minute motos a day, one on the quad and one on my two-wheeler, plus training. I'm ready! □



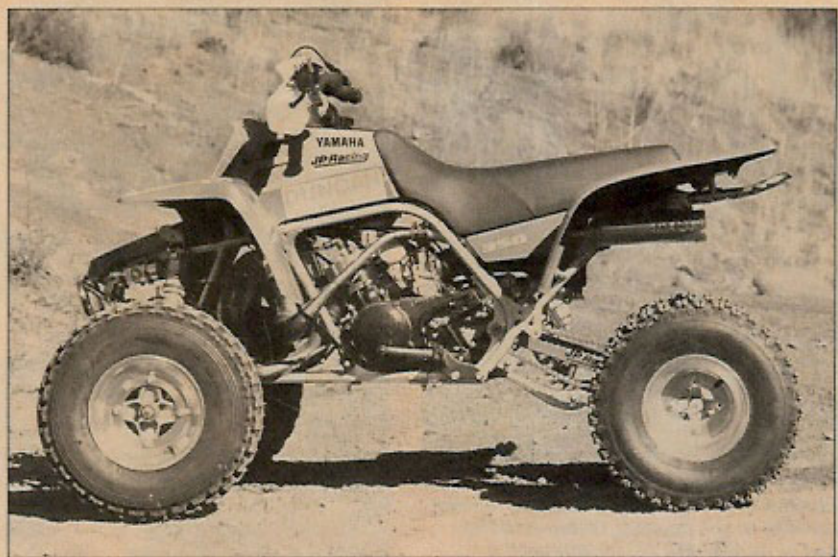
Holeshot cross-country fronts are similar in profile to the popular Ohtsu R101Rs used in muddy MX races, but with a strong four-ply design they hold up much better than the "Ohts" in woods. Also note the PEP front shocks—far superior to the stock units for any type of riding.



Here is your ticket to better Banshee performance in the woods. The Duncan motor setup includes porting, head, carbs, boost bottle, shift star mod, silencers and pipes (which don't require trimming of the stock plastic). Note the OMF engine skid plate, which wards off rocks and roots.



A JP FourTrax-style swingarm allows using a much faster chain adjustment system than the stock Banshee's. (Due to a communication snafu, the swingarm would not accept the OMF swingarm skidplate, which we planned on running.) Also seen here: JP axle, Duncan steel-braided brake lines (purple), PPS-valved rear shock, Fat Boy silencers and 6-ply Holeshots.



#### DUNCAN RACING/PAUL TURNER RACING 1994 YAMAHA WOODS BANSHEE

Description	Claimed Benefit	Retail Price
<b>ENGINE</b>		
1. Paul Turner Midrange Pipes & Fat Boy Silencers	Most important engine mod, improves low/midrange power	\$399.00
2. Paul Turner National Porting for Cross-Country (woods)	Enhances low-midrange power, improves rideability	450.00
3. Paul Turner Racing Powerhead by Duncan Racing	Improves cooling, allows tuneability by interchanging compression domes	299.00
4. Duncan Racing Keihin 34mm PJ carbs w/CR throttle & cable	Improves and smooths out overall power, easier to jet	325.00
5. K&N filter	Better airflow for better throttle response	34.50
6. Pro Design manifold/boost bottle combination	Offers smoother, more rideable low and midrange power	219.95
7. Duncan Racing DR-C33 clutch kit	Increased clutch life, handles additional power, shifts well	160.00
8. Duncan Racing Shift Star Mod	Easier shifting	25.00
9. Duncan Racing fiber reeds	Better overall performance	39.90
10. Pro-Design aluminum airbox manifold	Secures air filter and allows riding w/airbox lid removed	65.00
<b>CHASSIS</b>		
1. JP Axcaliber axle	Stronger than stock	349.95
2. JP +2" swingarm w/round bearing housing	Superior strength, better handling, easier chain adjustment	599.00
3. JP disc brake hub	Lighter weight	88.95
4. JP axle locknut	Secures axle positively	69.95
5. Duncan Racing steel-braided front brake line kit (purple)	Improves braking response, decreases brake fade	79.99
6. Duncan Racing steel-braided rear brake line kit (purple)	Improves braking response, decreases brake fade	29.99
7. Petterson Pro Suspension revalved rear shock	Improved handling and rideability	150.00
8. PEP remote reservoir front shocks (9.5" travel))	Improved handling and rideability	(pr.) 525.00
9. Douglas Red Label front rims	Superior strength, lighter weight	(ea.) 54.00
10. Douglas Red Label rear rims	Superior strength, lighter weight	(ea.) 57.00
11. ITP Holeshot front tires, 4-ply	Better control, more flat-resistant	(ea.) 54.95
12. ITP Holeshot rear tires, 6-ply	Excellent traction, better flat resistance	(ea.) 64.95
13. Duncan Racing chrome front bumper	Stronger, improved appearance	109.95
14. OMF swingarm skidplate (Honda style)	More durable	89.95
15. OMF engine skidplate	Offers excellent protection for engine	29.95
<b>MISCELLANEOUS</b>		
1. Motion Pro Terminator clutch cable	Smoother clutch action	21.95
2. Renthal handlebars	Rider preference	59.95
3. PEP clutch perch assy.	Remove parking brake	N/A
4. Duncan Racing numberplates	Necessary for competition	24.95
5. Trick Racing gasoline	Cooler-burning, consistent quality	4.25/gal.
6. Maxima 927 Pro Series premix	Absolute best lubrication	18.95—1/2-gal.
7. Acerbis handguards	Rider safety	25.95

For more info call Duncan Racing, [619] 258-6306.

