

The '95 Grand National Championships promised to be an exciting event this year, with extra riders flocking from the West due to the canceled Mickey Thompson series. More riders equals more action! Also, #2 rider Doug Gust has just been aching for a chance to take out the eight-time consecutive champion, LRD's Gary Denton. Gust has had his share of bad luck and is more than ready to finally win a championship. However, Gary hasn't seemed to slow down with age, and still demonstrates the drive to win. He will not be an easy obstacle to get around.

#### ROUND ONE, MX: LONDON, KY

The opening round in London, Kentucky, was the first of Gust's wins this year, and he did it in pouring rain and sloppy mud. Denton was back in fourth behind Joe Byrd and Travis Spader, and never managed to work his way up on the one-line track. Gust said it was not an easy win and he was worn out, but happy to start the season off on a good note.

#### ROUND 2, TT: DANVILLE, VA

Danville, Virginia, was host to the second round of the GNC series, and was the first TT of the year. Said Krank-It rider Doug Gust, "I have been working on my TTs because that's where I seem to be lacking. I really need to get some good starts this year and maybe a holeshot or two." Gust managed a fifth behind Joe Byrd, Doug Eichner and George Balhan. TT specialist Gregg Bakker was the big winner for

*Mickey Thompson champion Mark Ehrhardt launches his Duncan/Lobo quad in the Nationals. He is a fast and talented rider, but seems to be having some hard luck this season. After five rounds he is only sixth in the points standings. ►*



# GRAND NATIONAL CHAMPIONSHIPS

the day—but where was Denton? He was stuck back in the pack and only placed 11th. "What can I say? It was just one of those days," grumbled Denton.

#### ROUND 3, MX: BLOUNTVILLE, TN

This year the Muddy Creek Raceway again lived up to its name, due to a wicked rainstorm the Saturday before the race. The first moto promised to be a mud bath and the riders prepared by applying duct

◀ *Former GNC 250 Pro champ (yes, there was someone else besides Denton!) Rodney Gentry is among the top ten in points at mid-season. Photo by John Arens*

tape to their wrists and donning tattered practice gear. The start was like watching a mud bog race, with the quads skipping and sliding down the straight, spraying globs of mud in every direction.

Slipping into the first turn was Tim Farr (Baldwin Racing) and, as the pack slowly worked itself out, he hammered the throttle and sped away. By the end of the moto a definite single line was appearing, and by the start of the second the sun was beginning to peek through the cloud cover. Gust took the second moto on a much improved track, but with a

*Turning point at mid-season?*

# GRAND NATIONAL CHAMPIONSHIPS



▲ Here Gary Denton does what he is known for: pulling the holeshot. Since the opening round Denton has not finished consistently and is third behind Tim Farr in the points. Gary feels he has plenty of time to be in the running at the end, though.

Doug Eichner has totally dominated the Open Pro class on his Duncan/Laeger Banshee. Past Open champ Roy Lampron, also mounted on the 350 Yamaha, trails in the points. Other West Coast riders like CT Racing's Nic Granlund have not fared so well. He broke his wrist on his practice track. ►

## ROUND 4, MX: BUCHANAN, MI

Red Bud is always a tough track and provides the fans with a good show, but this year's race was as muddy and sloppy as Muddy Creek—if not more so. Said Doug Gust, "I knew I had to get out front quickly to avoid all the muddy roosts, and luckily that's what happened. After I pulled a lead I just kept up my momentum and never backed off."

Doug went on to take first in both motos with little opposition. "Only Joe Byrd got close in the second moto but I was able to hold him off," explained Gust. Denton took third overall, followed by Tim Farr, Mark Ehrhardt and



Mark's Duncan teammate, Doug Eichner, all slogging through the muck to round out the top five. Said Ehrhardt, "I just can't seem to put it all together this year and bad luck is plaguing me in just about every race. My Duncan/Roll Design bike is working great and I guess it's up to me to start doing better."

## ROUND 5, TT: INDIANA, PA

The Challenger Raceway in Pennsylvania was home of the second TT of the series, and the big guns of TT racing were out with a vengeance. Gregg Bakker (Curtis Sparks Racing) totally dominated the race and is absolutely one of the fastest TT racers in the country. In second was Tim Farr, sport-

Photo by John Arenis

Points leader and GNC runner up Doug Gust gets rad after winning back-to-back motos at Red Bud. Gust is certainly one of the fastest motocrossers this year.

second in the first moto and a first in the second, Gary Denton was the overall winner, with Gust in third behind Tim "Mr. Mud" Farr.



▲ **Muddy Creek lived up to its name this year and proved to be more of a swamp than a creek. There was only one good line to follow, and if a rider got out into the deep stuff the chances were good of getting stuck.**

*Photo by John Arens*

◀ **Amateur racing is hot this year, with record rider turnouts. One of the more popular classes is the 200 Air-Cooled, where Lonnie Weaver is tearing it up.**

*Photo by John Arens*

ing an all-new, nickel-plated chromoly frame with a no-link rear suspension and other top-secret tricks.

Farr looked like he was the only one capable of running with Bakker on this day, but by the time he got out of the pack Bakker was gone. Dave Kister (Krank-It Racing) showed up Sunday before the race, jumped on a bike he had never ridden before, won his heat and took third overall for the day. Title contenders Doug Gust and Gary Denton both had a miserable day and posted very low finishes: Denton was eighth and Gust was tenth. This allows Tim Farr to pass Denton for second in the points standings, but Gust still retains

his points lead. Said Denton, "It's not over yet and I will be there at the end—just like always."

#### ROUND 6???

The next round of the GNC series is at the High Point Raceway in Mt. Morris, Pennsylvania, and the big boys will be out in force as the points race heats up. Gust needs to stay consistent to maintain his lead and Denton needs to get on the gas to catch him.

Joe Byrd and Tim Farr are both perched within striking distance should the champion and the points leader falter. Top MTGP riders Doug Eichner and Mark Ehrhardt are still in the mix and potential upsetters should either one

#### 1995 GNC MX/TT MID-SEASON POINTS LEADERS (After round 5)

##### Pro 250

1. Doug Gust (108); 2. Tim Farr (98); 3. Gary Denton (96); 4. Doug Eichner (73); 5. Joe Byrd (73); 6. Mark Ehrhardt (66); 7. Todd Vescovi (62); 8. Gregg Bakker (60); 9. Rodney Gentry (57); 10. Dave Kister (57)

##### Open Pro/Am

1. Doug Eichner (128); 2. Roy Lampron (88); 3. Mark Burns (60); 4. Jackie Steel (50); 5. James Voyle (45)

##### Pro/Am 4-Stroke

1. Tom Miller (109); 2. Ben Jackson (108); 3. Randy Lawson (84); 4. Brad Warner (69); 5. Jeremy Schell (67)

##### Pro/Am Supermodified

1. Todd Vescovi (82); 2. Harold Goodman (81); 3. Chris Berger (71); 4. Glen Hellman (58); 5. Jeff Rastrelli (55)

##### 250 A

1. Harold Goodman (99); 2. Sean Sermini (69); 3. Ben Jackson (68); 4. Keith Little (64); 5. Roy Lampron (61)

##### 250 B

1. Mark Krotky (84); 2. Justin Gandy (80); 3. Bryant Tapp (73)

##### Open B

1. Roger Lwerks (119); 2. Brian Jones (80); 3. Henry Lindley (59)

##### 250 B 4-Stroke

1. Byron Goggin (104); 2. Tim Ashley (98); 3. Kevin Carroll (96)

##### 200 Air-Cooled

1. Lonnie Weaver (126); 2. Sean Tidey (98); 3. Rock Boriel (84)

##### Senior/Vet 30+

1. Chris Berger (130); 2. Roger Lwerks (106); 3. Jerry Huckabey (76)

##### 250 Women

1. Heather Rose (150); 2. Sheila Ritchie (102); 3. Leslie Wells (67)

##### 85cc Modified

1. Doug Lawson (150); 2. Nathan Dallas (99); 3. Johnny Hale (96)

##### 85cc Super Stock

1. Nathan Dallas (120); 2. Kyle Grissom (114); 3. Jeremy Buley (94)

##### 60cc Modified

1. Nathan Tuttle (145); 2. Amanda Campbell (126); 3. Jody Carroll (46)

get on a hot streak—which could very well happen. Even former GNC champ Rodney Gentry is in the hunt. Look for more GNC action in our next issue.

(Thanks to George Davis for help with this story.) □



# BANSHEE WOODS/MX PIPE SHOOTOUT

*Dyno battle at White Bros.*

**H**ow do most people pick an exhaust system? They might buy the pipe on their buddy's ATV (the one that always beats them). Or they might check out the machines that are winning the championships. There is, however, another way to help make that decision: a dyno run. A dynamometer is a measuring tool that shows how much horsepower an engine makes at various rpm. It doesn't show everything you need to know, but it shows an awful lot.

## **WHAT A DYNO DOES & DOESN'T DO**

In off-road conditions, traction is a big factor. On asphalt, it's not as tough getting the power to the ground, but in conditions where the tires are often

spinning as much as they are hooking up, traction is critical.

There is no way a dyno can reveal or even factor in changing traction conditions and how a motor might respond to them. A dyno does, however, reveal a ton of useful data. In addition to showing horsepower, it can show drag caused by transmission oil and drag in the drivetrain caused by bearings, seals, the chain and brake pads. It can show rich and lean spots in carburetion, top speed and how much horsepower is gained by shifting at the proper time. It can show rate of acceleration and deceleration. While a dyno does not provide the absolute bottom line for determining performance, it provides hard,

cold numbers and is, at the very least, a great starting point.

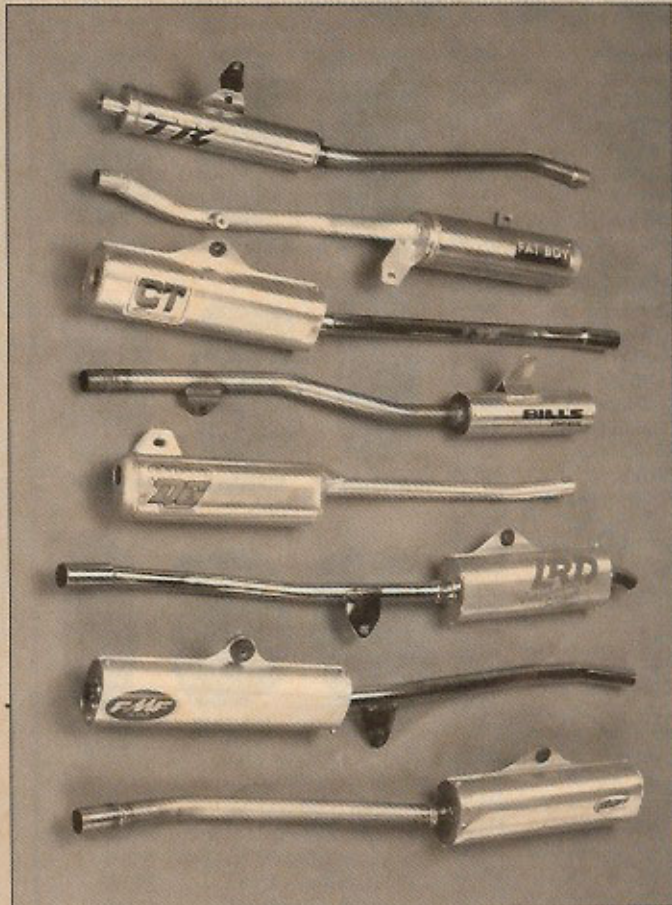
## **WHITE BROS. DYNOJET 150**

For an unbiased comparison of Banshee pipes we went to White Bros. ([714] 692-3404), near Los Angeles. Though this huge outfits sells a wide range of performance equipment for ATVs and dirt bikes, it leans more toward four-strokes and doesn't currently manufacture its own Banshee pipe.

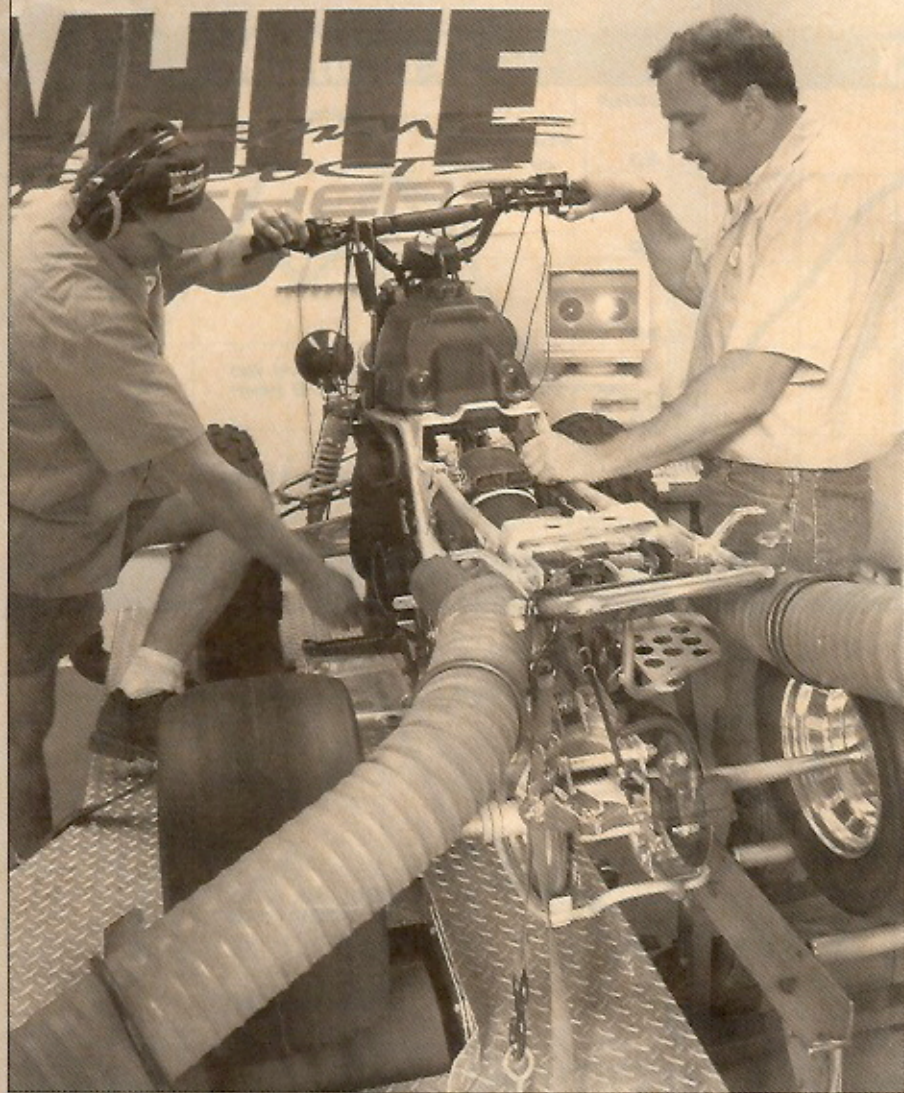
Unlike other dynos, which provide resistance and progressively "load" the motor, White Bros. Dynojet takes readings from a 900-pound freewheeling drum that contacts one rear tire. Most experts feel this is a more realistic meth-



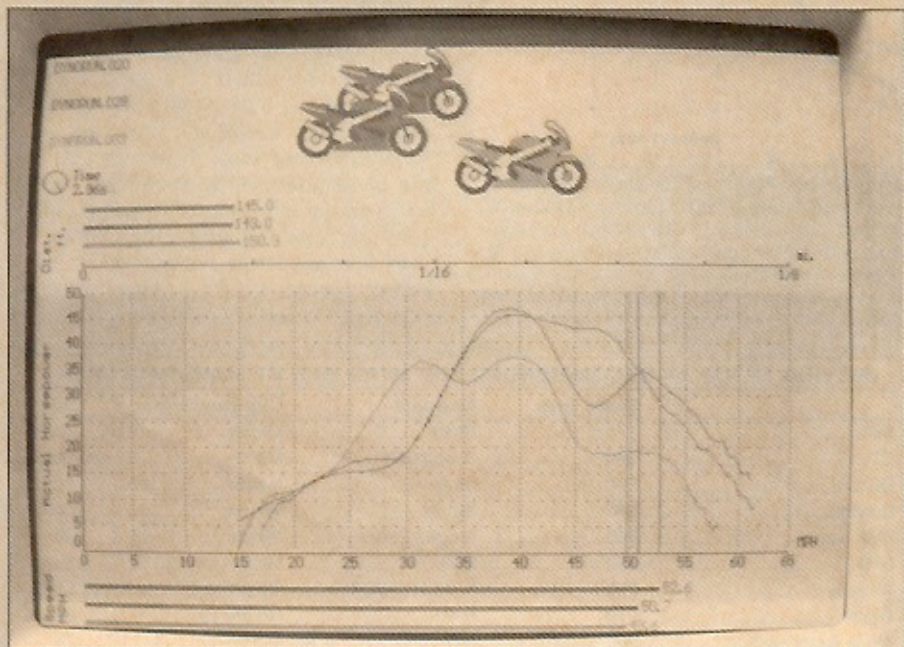
*Banshee pipes from top to bottom, left to right: FMF, CT, Trinity, DG, Duncan, Bills, Toomey and LRD.*



*Banshee silencers from top to bottom: Toomey, Duncan, CT, Bill's, DG, LRD, FMF, Trinity.*



We couldn't have found two more knowledgeable dyno experts than Mike Wymer and Gary Jones, or a better facility than White Bros. in southern California. Though no dynos are built specifically for quads, Gary and Mike fabricated a roller assembly for the right rear wheel and a support for the right front. Those large vacuum tubes vent exhaust fumes.



After the runs are complete, the Dynojet 150 allows "drag racing" (on the computer) any combination of three pipes. As the rpm increases, the three motorcycle icons at the top of the screen move forward or back in relation to each other.

od of determining horsepower. By taking a reading from the rear tire, as opposed to the crankshaft, you can factor in drag in the drive system.

To get the best possible contact patch on the rotating drum, we used GBC Alta Racers road racing slicks at 22 PSI. With this setup we would be getting a better coefficient of friction than even asphalt provides. Douglas provided us with rear wheels.

#### PROCEDURE

Though some manufacturers make different pipes for the Banshee, we asked them for their best woods/motocross setup. The 350cc twin already has great top-end, and most riders like to bring out more of the bottom end and mid, which is what a good woods/MX pipe should do. Through port work, a competent motor builder can enhance the top-end, even with a midrange and low-end pipe. With the exception of a cut airbox lid, our Banshee for the test would be bone-stock. Based on elevation and the type of fuel and oil we would be using, the manufacturers provided us with proper jetting. Although only the main jet really comes into play on a dyno run, we set up the Banshee with the recommended pilot, needle and clip position (see chart). The Dynojet compensates for humidity and air temperature changes, so it isn't important that all pipes be tested in the same conditions, or even on the same day.

First, we would jet the carbs and install each set of pipes/silencers, noting construction and fit. After warming up the motor, each pipe would get three fourth-gear runs. With the engine at a steady 3000 rpm, the throttle would be instantly wicked on. When the power falls off (around 9K) we would back off and bring it back to idle. The Dynojet records all the data automatically and displays it instantly.

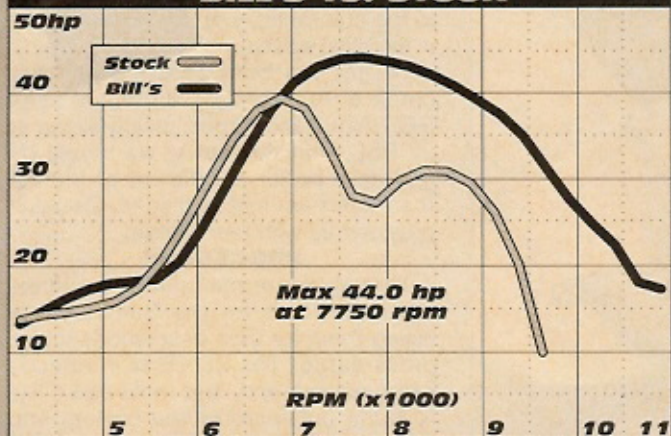
After the three runs, we would record the decibel reading of the pipe at 9000 rpm, one range where the pipe is the loudest. Then we would change jetting for the next pipe, check the tire pressures and begin the next run.

#### THE EXPERTS AT WHITE BROS.

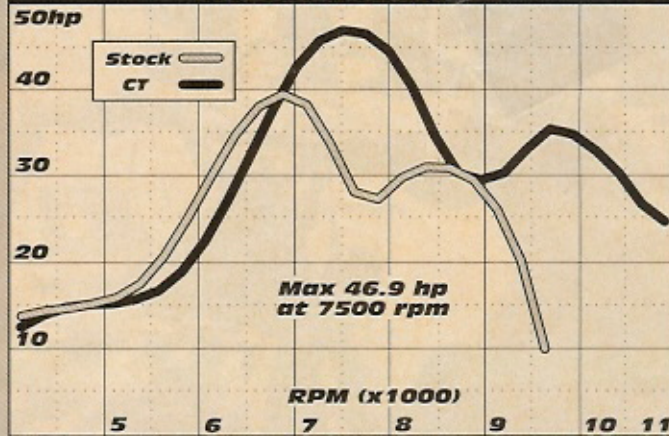
Helping us with the runs and evaluating the dyno charts would be Mike Wymer and Gary Jones from the R&D department at White Bros. It would be tough finding two guys more qualified. Previously, Mike was the R&D manager at SuperTrapp, worked in R&D at Dynojet and has been working with dynos for 14 years. Gary Jones, four-time AMA 250 Pro dirt bike champion, was chief tuner at Noleen Racing before coming to the R&D department at White Brothers.

Both men know racing and motors inside and out. With their help, we dynoed the pipes and evaluated the charts.

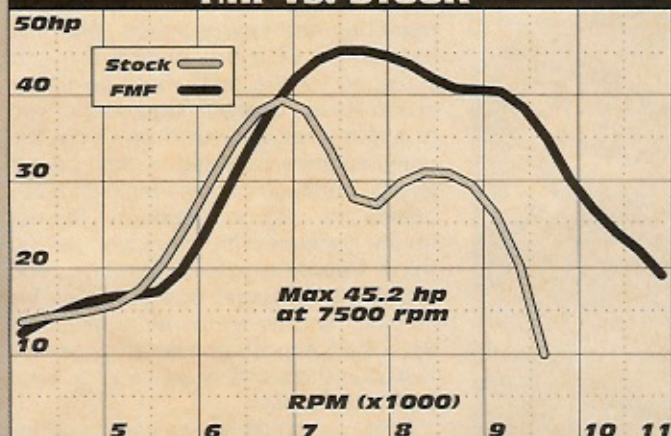
## BILL'S vs. STOCK



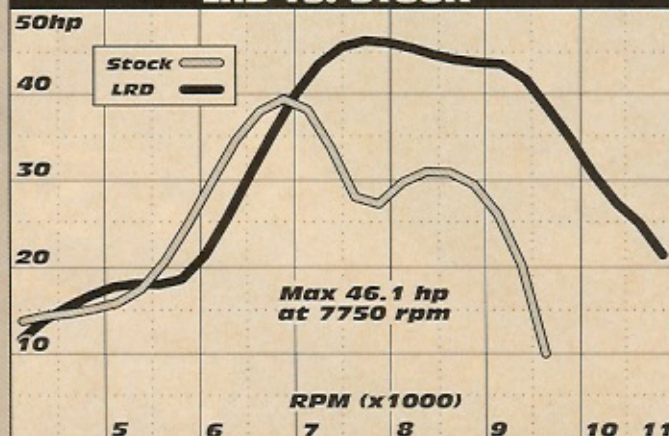
## CT vs. STOCK



## FMF vs. STOCK



## LRD vs. STOCK



## HOW TO READ A DYNO CHART

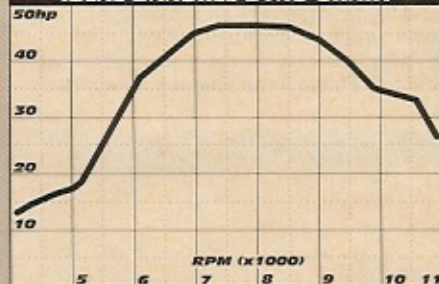
● A typical dyno chart displays horsepower on a vertical plane and rpm on a horizontal plane. The line on the chart moves from left to right as the run progresses and rpm increases. If the line moves up on the chart, horsepower is building. Sounds simple, but to properly interpret a dyno chart, you need to look at more than that.

You need to look at the overall shape of the curve and look for flat spots in the curve. You need to consider the horsepower peak (shown at the very top of the curve). Finally, you need to look at various points along the curve to determine how much power is being made at various rpm, when compared to other charts.

**The ideal bell-shaped curve.** A smooth, bell-shaped curve on the left side of the chart indicates the motor is making smooth power as it accelerates. This would probably be a motor that is easy to ride. The power comes on without an abrupt "hit" that could break the tires loose, causing you to lose traction.

When the line on the chart moves *only* horizontally (to the right but not up) this means that the rpm is increasing but

## IDEAL BANSHEE DYNO CHART



*Pipe dream. If we had the perfect Banshee woods/MX pipe it might look something like this on a dyno. Notice the smooth acceleration with no flat spots (places where the line moves horizontally only). Also notice that the peak horsepower is good and holds on from about 7300 to 8500 rpm before falling off.*

horsepower is not. This would translate into a flat or soft spot in the powerband. Then when the power does come on (the line moving up now) you get an abrupt and sometimes uncontrollable hit.

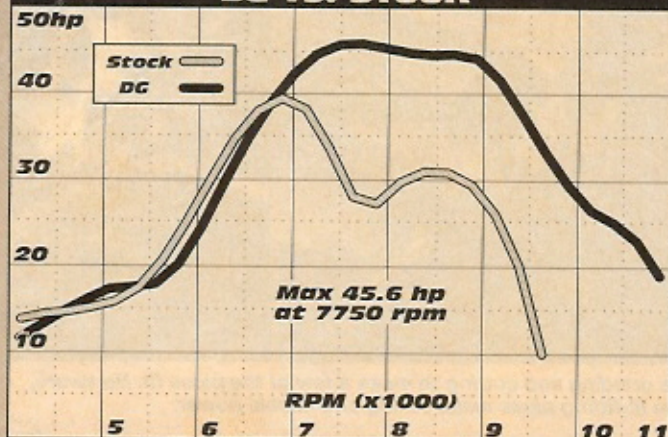
**Peak horsepower.** Along with a smooth curve, you need good peak horsepower. The pipe with the highest peak on the chart makes the most horsepower. If that peak holds on for a while without falling off, then you have some room for error if you shift a little late or accidentally over-rev the motor. For a really good rider, though, what goes on after the motor has made its peak horsepower is not as critical. Even though the power may fall off abruptly after peak horsepower, a good rider has

## JETTING SETUP AS RECOMMENDED FOR DYNO RUN BY MANUFACTURERS\*

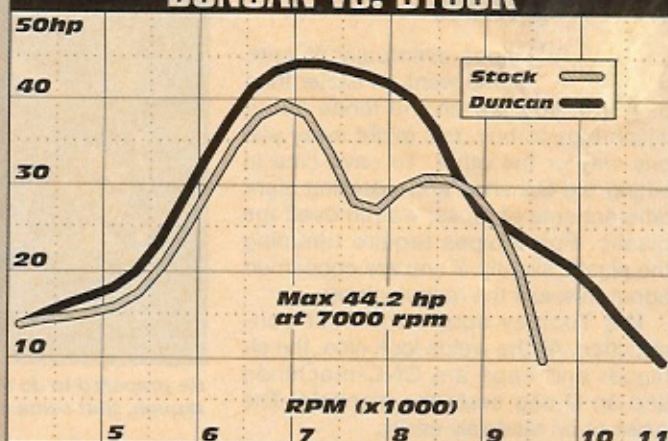
	Main jets	Needles	Clip position	Pilot
Bill's	270	Stock	Middle	Stock
CT	280	Dynojet/CT	Middle	Stock
DG	270	Stock	Middle	Stock
Duncan	270	Stock	Middle	Stock
FMF	260	Stock	Middle	30
LRD	280	LRD	5th frm top	30
Toomey	280	Dynojet (DNO4)	4th frm top	Stock
Trinity	270	Stock	4th frm top	Stock
Stock factory jetting	200	5N7	Middle (3)	25

\*250-ft. elevation above sea level, stock carbs, stock airscrew setting, stock air filter w/ild cut as much as possible, Sports race gas, Yamalube R (synthetic/petroleum blend) @40:1.

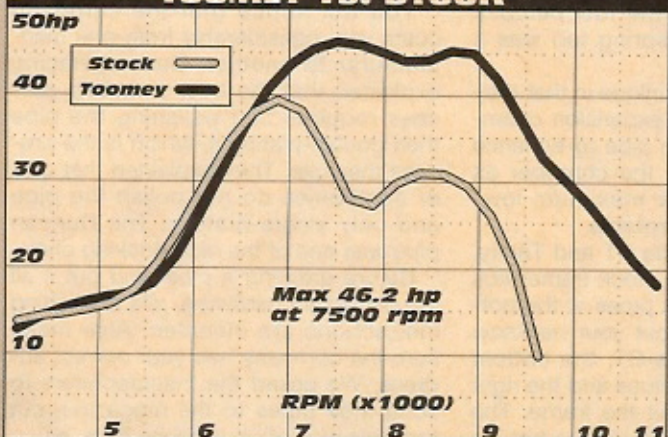
## DG vs. STOCK



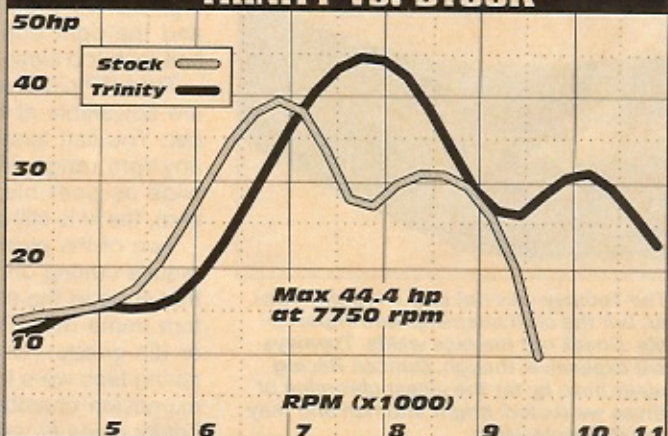
## DUNCAN vs. STOCK



## TOOMEY vs. STOCK



## TRINITY vs. STOCK



already upshifted and is back in the meat of the powerband well before this point.

**Overall horsepower.** Along with a smooth curve and good peak horse-

power, you need to consider overall horsepower. Compare two pipes on the same chart. Which one makes more power at various usable points in the

powerband? For motocross racing, the usable power on a Banshee is from around 6000 to 8500 rpm; for woods and trails, a little lower than 6K. ●

### PIPE SPECIFICATIONS & STATS

Mfr.	Pipe tested	Silencer tested	Pipe/silencer fit	Relative decibels @ 9000 rpm*	Total price/pipes alone/silencers alone	Options	Other Banshee pipes available	Contact
Bill's	(Bill's)	(Bill's)	☆☆☆ 1/2	129	N/A	Chromed pipes add \$35	None	1167 Hamner Ave., Norco, CA 91760; (909) 371-1329
CT	MX National	Oval	☆☆	126	\$349.95/(MX National pipes & silencers not avail. separately	Chromed pipes add \$80	Midrange, high-rev	11805 E. Slauson, Santa FeSprgs., CA 90670; (310) 945-2453
DG	Xtreme Oval	Type II	☆☆	129	\$399.90/\$269.95/\$149.95 (pr.)	Nickel-plated pipes add \$40	None	1230 La Loma Cir., Anaheim, CA 92806; (714) 630-5471
Duncan	Midrange	Fat Boy	☆☆☆	123	\$399/\$299/\$139 (pr.)	Chromed pipes add \$150	High-Rev	10734 Kenney St., Ste. A, Santee, CA 92071; (619) 258-6306
FMF	TK Plus (torque)	Power Core	☆☆☆ 1/2	127	\$449.98/\$299.99/\$149.99(pr.)**	Avail. chromed only	Woods	25930 Belle Porte Ave., Harbor City, CA 90710; (310) 539-6884
LRD	LRD Adjustable	LRD Downturned	☆☆☆	125	\$399.99 (pipes & silencers not avail. separately)***	Nickel-plated pipes & silencers add \$100 (call for chrome)	Banshee stroker 500 & 570	200 N.E. Victory, Unit A, Gresham, OR 97030; (503) 661-6700
Toomey	T5	Round	☆☆☆☆	129	\$409.95 (pipes & silencers not avail. separately)***	Chromed pipes add \$80 (polished silencers are standard)	None	3044 Propeller Dr., Paso Robles, CA 93446; (805) 239-8870
Trinity	Torque	Oval	☆☆☆	128	\$359.99/\$259.99/\$49.99 (ea.)	Chromed pipes & polished silencer add \$190	Rev, High-Rev	2238 W. Sequoia, Anaheim, CA 92801; (714) 778-5123

\*Read at 20" behind silencers, inside small enclosed dyno room. Stock pipes and silencers: 120 dB. \*\* Available chromed only. \*\*\*\$459.95 w/jetting kit, air filter and airbox vents. \*\*\*\*Includes jetting kit.

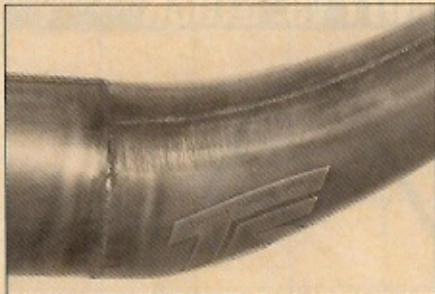


## FIT & FINISH

● Though all pipes eventually fit onto the machine, some went on easier than others. If you are on the fence about which pipe to buy, this might sway you one way or the other. To save time in jetting the Banshee and installing eight different sets of pipes, we removed the plastic. Some pipes require trimming the plastic slightly; if you are concerned about this, ask the manufacturer.

The Toomey sports the best construction. All the welds look nice, the silencer end caps are CNC-machined and an O-ring seals the manifold. The pipes fit on relatively easily.

The Duncan pipes also fit well, but one pipe had some leftover flash inside



*The Toomey was not only a top performer, but the craftsmanship was impeccable. Check out the nice welds. Toomeys are expensive, though. Duncan Racing pipes have by far the nicest chroming of those we tested: bright and rich and they resist discoloration.*



*Be prepared to do some grinding and cutting to make a few of the pipes fit. Be aware, though, that some of the ill-fitting pipes make strong and usable power.*

of the collar at the manifold. The DG pipes left something to be desired: Roll cut burrs at the manifold needed grinding, the left pipe hit the fuel petcock and the right upper spring tab was a half-inch too close.

The LRD pipes are unique in that they are adjustable at the expansion chamber. You can tune the pipe to enhance any rpm range. With the chamber as wide as possible (for maximum low-end), the fit is still acceptable.

Two of the pipes, the CT and Trinity, require cutting off the stock frame tabs that support the stock pipes at the bottom frame rails. Pull out your hacksaw or die grinder. On the CT, the bottom spring tabs were too close and the right expansion chamber hit the frame. The Trinity pipes fit well, but require turning

around the bolts at the rear of the upper A-arms. The FMF silencers hit the sub-frame on both sides.

You will notice that the chroming costs vary considerably from one manufacturer to another. Duncan Racing explained that the best chroming process requires first polishing the pipe then double-plating it, which is the process they use. They explained that other companies do not polish the pipe and only single-plate it. The Duncan pipe was one of the nicer-looking ones.

Before ordering a pipe, find out if all the necessary hardware, jets and jetting instructions are included. Also make sure the company has your correct address. We asked the manufacturers to send their pipes to the magazine, but two sets wound up at White Bros. ●

### OUR PICKS

For woods/motocross riding, everyone agreed that the Duncan and Toomey pipes would probably work best and produce the most bottom-end. The Toomey was a surprise, since it is generally thought of as a top-end pipe. The Duncan, though, has the most grunt, no question. At 6K rpm (the typical bottom-end of a Banshee) it produces more torque and at least seven more horsepower than any of the others. This would be really useful in tight woods and the pipe will pull a higher gear.

In addition, the acceleration curve on the Duncan is the smoothest, which means the machine should be more rideable. Peak horsepower is slightly less than some of the others, but by short-shifting, the pipe should do well, even in a sand drag. Keep in mind that our test Banshee was stock, and radical porting could bring out the top-end without sacrificing bottom-end gained from the Duncan pipe.

Both the Duncan and Toomey have a usable and broad power spread at the top-end, with the Toomey just a little broader. With either pipe you won't be fanning the clutch as much and will have some power on tap if you are in the wrong gear. In addition to a smooth

acceleration curve, the Toomey has good peak horsepower—second only to the CT. At 6K rpm, the Toomey was second only to the Duncan and at 7800 it was within one horsepower of the others. Only the best riders can feel differences of less than three horsepower and when it gets down to differences these slight, rider skill is everything.

Though the CT pipe doesn't have quite as smooth acceleration as the Toomey or Duncan, it does produce acceptable bottom-end and slightly more horsepower than all the others. At 7800 rpm the CT cranks out 47 horsepower. However, the power falls off quickly after reaching its peak, and the pipe requires a rider who knows exactly when to shift. If you happen to overrev at the end of a straightaway, you might be out of luck.

The DG is another pipe that puts out good top-end and acceptable bottom-end, but the pipe fit poorly on the machine (see sidebar). For the motocross rider, the CT, Toomey and DG are good choices for MX. Keep in mind that, just as you could port a motor running the Duncan pipe for more top-end, you could widen the exhaust ports to bring out the low-end and midrange when running the CT or other pipes. As a mat-

ter of fact, porting throws a whole new twist in the equation. Each pipe will work even better with a motor ported specifically for it.

Why didn't we dyno test with ported Banshees? First of all, it would be impossible to come up with eight *identical* Banshees to let the motor builders grind on and port. In dyno testing, it's important to keep all factors constant, so this shootout reflects pipe performance only. We picked a few of our favorites here, but you know what? All these pipes are pretty close to each other. Read our sidebar, "How to Read a Dyno Chart," study the charts and you will see that for yourself. You will also notice that *all* the aftermarket pipes produce way more power than stock pipes. Also, you will be trimming about 14 pounds of excess weight when you make the switch. It has been our experience that dyno tests, when performed and interpreted carefully, do a pretty good job of predicting what kind of results you can expect on the track and trails. However, the dyno is a starting point. In a future issue we will be comparing Banshee woods/MX pipes in the real world. We will see how what we have learned at White Bros. translates when the dirt starts flying. □