

TEST 1 —

STANDARD YAMAHA PIPE
N4 Champion plug, stock clean air filter in place.

ENGINE RPM	T	HP
2500	37.5	11.8
3000	38.0	14.3
3500	38.5	16.9
4000	37.8	19.0
4500	37.5	21.1
5000	37.5	23.6
5500	39.5	27.3
6000	38.4	28.9
6500	35.6	29.06
7000	31.0	27.2
7500		

TEST 2 —

Stock pipe with spark arrester removed. No change in jetting. Slight drop in peak power, with more torque and horsepower down low.

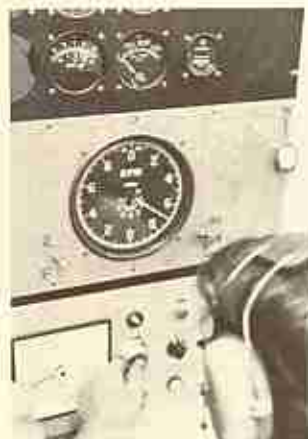
ENGINE RPM	T	HP
2500		
3000	43.0	16.2
3500	42.12	16.5
4000	40.7	20.4
4500	38.8	21.9
5000	37.4	23.5
5500	38.9	26.5
6000	37.5	28.25
6500	34.0	27.8
7000		
7500		

TEST 3 —

PRO-TECH straight pipe. No change in main jet or plug. Slight increase on top and nice increase at mid range. No provision for muffler, as tip exits near rear tire.

ENGINE RPM	T	HP
2500		
3000	37.0	14.0
3500	40.25	17.7
4000	43.0	21.6
4500	45.5	25.7
5000	45.37	28.6
5500	42.3	29.4
6000	37.6	28.4
6500	34.2	28.0
7000		
7500		

Four weeks on the dyno and the TT-500 never even whimpered.



With the tremendous popularity of the 500 four stroke Yamahas, everyone is searching for more and more horse-

TEST 4 —

Stock pipe with muffler off and 10" of twisted tubing on end. No increase, except slight gain at mid-range.

ENGINE RPM	T	HP
2500		
3000	36.2	13.7
3500	41.7	18.4
4000	46.0	23.0
4500	46.8	26.5
5000	45.37	28.6
5500	40.2	27.9
6000	35.5	26.8
6500	32.2	26.4
7000		
7500		

power. Suspension help is easy to come by, but not too much is known about what makes the motor work.

All sorts of rumors about pipes and carbs are flitting about, so we decided to see what actually works.

One thing we wanted to keep in mind: we didn't want to go into the motor and do any expensive cam or valve work. We felt that with a careful selection of pipe and carb, we could get another 10 horsepower out of the already decent motor.

All of our testing was done on a Schenk dyno at Skyway and testing took over four weeks. We made over 45 dyno runs, but the ones we have in this article, are the ones that show what affects the bike the most. Or the least.

So, if anyone tells you that you can bolt on ten easy ponies with their super trick pipe, you might want to show them this collection.

One item of interest: to get the actual crank torque, you can divide the shown dyno torque by 2.48 and apply a correction factor of 1.08 to get it in the ballpark. We took the dyno torque reading for convenience and it does show relative changes.

TEST 5 —

Stock pipe, with muffler and spark arrester removed and 16" megaphone added on back. Nice gain on top and mid range. No jetting changes.

ENGINE RPM	T	HP
2500		
3000	41.2	15.5
3500	40.0	17.6
4000	41.9	21.0
4500	45.4	25.6
5000	45.7	28.8
5500	43.5	30.1
6000	41.0	30.9
6500	37.2	30.4
7000	33.0	29.0
7500		

TEST 6 —

Bassani Pipe. Easily installed and had integral muffler. Picked up nicely down low and at mid-range, but flattened out early at peak revs. Bike seemed to rev quicker with this pipe.

ENGINE RPM	T	HP
2500		
3000	40.2	15.2
3500	42.4	18.6
4000	43.8	21.9
4500	44.0	24.8
5000	42.5	26.7
5500	39.6	27.4
6000	35.8	27.0
6500	33.1	27.0
7000		
7500		

TEST 7 —

Experimental pipe: 1 3/4 inches by 35 inches long. Straight pipe with no silencer. Nice power pickup throughout the range. No re-jetting required.

ENGINE RPM	T	HP
2500		
3000	39.2	14.8
3500	38.4	16.8
4000	40.2	20.2
4500	42.4	23.9
5000	44.3	27.8
5500	43.6	30.2
6000	41.2	31.1
6500	36.9	30.1
7000		
7500		

TEST 8 —

Straight pipe, 1 3/4 inches by 35 inches long, twisted tubing, with experimental Skyway muffler. In general, reduced performance throughout the range.

ENGINE RPM	T	HP
2500		
3000	43.8	16.5
3500	44.6	19.6
4000	44.4	22.2
4500	43.6	24.6
5000	41.5	26.1
5500	38.4	26.5
6000	35.4	26.7
6500	32.1	26.2
7000		
7500		

RIDING THE DYNO

HORSEPOWER FOR THE TT-500

What works and what doesn't.

By Rick Sieman

TEST 9—

Special experimental pipe with 10 inches of twisted tubing in head pipe. Balance of pipe was straight. No gains.

ENGINE RPM	T	HP
2500		
3000	38.8	14.6
3500	41.9	18.4
4000	44.6	22.4
4500	45.3	25.5
5000	43.9	27.6
5500	39.3	27.1
6000	35.2	26.5
6500		
7000		
7500		

TEST 10 —

Same set-up as run No. 9, but two inches cut off end of straight pipe. Total length of pipe, 33 inches. Partial dyno run spot checks showed no gain.

ENGINE RPM	T	HP
2500		
3000		
3500	42.5	18.7
4000		
4500	45.3	25.5
5000		
5500		
6000	35.5	26.8
6500		
7000		
7500		

TEST 11 —

Same as previous run, except that two more inches were cut from end of pipe, to make a total length of 31 inches. Apparently a shorter pipe was not the answer with stock carburetion. No gain.

ENGINE RPM	T	HP
2500		
3000		
3500	42.3	18.5
4000		
4500	44.9	25.1
5000		
5500	36.3	24.9
6000		
6500		
7000		
7500		

TEST 12—

Straight pipe, 1 3/4 inch, with short megaphone. Total length, 35 inches. Meg., 12 inches long. Slightly stronger than stock through entire rpm range. Stock jetting and plug.

ENGINE RPM	T	HP
2500		
3000	38.8	14.6
3500	39.0	17.1
4000	41.1	20.6
4500	44.3	24.9
5000	45.6	28.7
5500	44.0	30.4
6000	41.5	31.3
6500	37.5	30.6
7000	33.5	29.4
7500		

TEST 13 —

Same as run number twelve, except a long (20-inch) megaphone was used. Overall length—same. Slightly better power.

ENGINE RPM	T	HP
2500		
3000	38.8	14.6
3500	40.3	17.7
4000	41.9	21.0
4500	46.0	25.9
5000	46.0	28.9
5500	43.9	30.3
6000	41.3	31.1
6500	37.6	30.7
7000	33.9	29.7
7500		

TEST 14 —

Straight pipe 33 inches long by 1 3/4 inch diameter. No silencer. Slightly better than previous run.

ENGINE RPM	T	HP
2500		
3000	39.0	14.7
3500	39.6	17.4
4000	41.2	20.6
4500	45.5	25.6
5000	46.1	29.0
5500	44.1	30.5
6000	41.5	31.3
6500	38.2	31.2
7000	33.8	29.6
7500		

TEST 15—

33-Inch by 1 3/4 inch head pipe with long megaphone. Stock carb. Slight overall increase over stock.

ENGINE RPM	T	HP
2500		
3000	39.1	14.7
3500	39.6	17.4
4000	41.4	20.7
4500	45.0	25.4
5000	46.3	29.1
5500	44.1	30.5
6000	41.8	31.5
6500	37.5	30.6
7000	34.1	29.9
7500		

TEST 16—

First carb change was to a 36mm Dellorto (with a built in accelerator pump). Same pipe as with run No. 15. Big jump in power all the way through the rpm range.

ENGINE RPM	T	HP
2500		
3000	39.5	14.9
3500	38.6	16.9
4000	41.3	20.7
4500	46.8	26.4
5000	49.1	30.9
5500	48.1	33.3
6000	46.3	34.9
6500	43.0	35.1
7000	38.2	33.5
7500	35.1	33.0

TEST 17—

Dellorto carb. 19 inches of 2-inch twist tubing on end of straight pipe. 1 3/4 inch diameter. Head pipe length: 33 inches. Big drop in power over previous run, but still slightly stronger than stock.

ENGINE RPM	T	HP
2500		
3000	42.0	15.8
3500	46.4	20.4
4000	47.3	23.7
4500	47.4	26.7
5000	46.9	29.5
5500	44.8	30.9
6000	43.1	32.5
6500		
7000		
7500		

When our bike was full of horsepower, we took it out to the local track and pulled a holeshot, then promptly got passed by everyone when we couldn't make the bike turn too well. Next? Maybe some chassis and suspension work.



TEST 18—

Same as run No. 17, except that 17 inches of twisted tubing was on rear of pipe. Same overall length. Same performance.

ENGINE RPM	T	HP
2500		
3000		
3500	45.5	20.0
4000		
4500	47.0	26.5
5000		
5500	45.0	31.1
6000		
6500	39.4	32.1
7000		
7500		



TEST 20—

New custom pipe and megaphone. 33 x 1 1/4 inches, 20-inch long meg., 3 1/4-inch to 2 1/2-inch taper. 148 main jet. Dellorto carb. Good power. Excellent mid-range torque.

ENGINE RPM	T	HP
2500		
3000	39.5	14.9
3500	39.5	17.3
4000	41.5	20.8
4500	46.6	26.2
5000	48.9	30.4
5500	47.5	32.8
6000	45.5	34.2
6500	41.9	34.1
7000	38.0	31.6
7500		

TEST 21 —

Same pipe as test 20, except for 10 inches of 2-inch twisted (3 flute) in head pipe. Dellorto carb with 150 main jet. Less power than run No. 20.

ENGINE RPM	T	HP
2500		
3000	37.0	13.9
3500	38.4	16.8
4000	43.3	21.7
4500	47.9	27.0
5000	48.4	30.4
5500	46.8	32.3
6000	44.4	33.4
6500	40.9	33.3
7000	33.8	29.6
7500		

TEST 22—

Same identical pipe as dyno run No. 20. 33 x 1 1/4 inches. Dellorto carb with 150 main jet. N3 Champ plug. Big drop in power.

ENGINE RPM	T	HP
2500		
3000	40.1	15.0
3500	42.1	18.5
4000	38.8	19.4
4500	35.0	19.7
5000	36.0	22.6
5500	35.3	24.3
6000	33.8	25.4
6500	32.0	26.1
7000		
7500		

TEST 23—

Special pipe. 1 1/4 x 33-inch head pipe with 20-inch meg. 3 1/2- to 2 1/2-inch taper with 20 degree reverse taper end. Still used 36mm Dellorto carb. Excellent power throughout range.

ENGINE RPM	T	HP
2500		
3000	39.6	14.8
3500	38.9	17.0
4000	41.1	20.5
4500	46.3	25.9
5000	49.1	30.8
5500	48.3	33.2
6000	46.2	34.7
6500	43.1	35.1
7000	38.3	33.5
7500	35.3	33.1

TEST 24—

Same pipe as dyno run No. 23, but 36mm Amal Mark II carb instead of Dellorto. Carb also had velocity stack longer than normal. Excellent power and ran out further than Dellorto carb on top.

ENGINE RPM	T	HP
2500		
3000	38.3	14.4
3500	38.1	16.7
4000	41.0	20.5
4500	46.9	26.4
5000	49.0	30.8
5500	48.3	33.3
6000	46.1	34.7
6500	43.3	35.3
7000	39.1	34.3
7500	36.2	34.0

TEST 25—

Mark II 36mm Amal carb with standard stack. Same pipe as in previous run. Best all around power of any combination used.

ENGINE RPM	T	HP
2500		
3000	38.0	14.3
3500	38.0	16.7
4000	40.3	20.2
4500	45.9	25.8
5000	48.6	30.5
5500	47.9	33.0
6000	46.5	35.0
6500	43.5	35.5
7000	40.1	35.2
7500	38.3	36.0

TEST 26—

Same pipe as in test run No. 23, but with 34mm Mikuni carb in place. More power than stock, but nowhere near as much as with the Amal carb.

ENGINE RPM	T	HP
2500		
3000	39.1	14.7
3500	39.6	17.4
4000	41.4	20.7
4500	45.0	25.4
5000	46.3	29.1
5500	44.1	30.5
6000	41.8	31.5
6500	37.5	30.8
7000	34.1	29.9
7500		

TEST 27 —

Same carb as test run No. 25 but with Disco-Jet muffler. 1 1/4 x 33-inch head pipe. D-J actually improved the power slightly over run No. 26.

ENGINE RPM	T	HP
2500		
3000	41.4	15.6
3500	42.4	18.6
4000	44.5	22.3
4500	46.5	26.2
5000	47.3	29.7
5500	46.5	32.1
6000	44.8	33.7
6500	41.5	33.8
7000	37.8	33.1
7500		

TEST 28—

Stock Yamaha pipe with Mark 2 Amal 36mm carb. 310 main jet. Champion N4-plug. Amazingly, the Mark 2 Amal with worth 3 full horsepower on top, while softening the bottom end slightly. Mid-range torque was greatly increased.

ENGINE RPM	T	HP
2500		
3000	36.8	13.9
3500	36.5	18.0
4000	36.4	18.3
4500	36.6	20.7
5000	40.8	25.7
5500	43.0	29.8
6000	42.5	32.1
6500	39.1	32.0
7000	35.8	31.5
7500		

TEST 19—

Same as run No. 17, except for 23-inch piece of 2-inch twisted tubing on end of pipe. Same performance.

ENGINE RPM	T	HP
2500		
3000		
3500	46.6	20.5
4000		
4500	47.3	26.6
5000		
5500	45.0	31.1
6000		
6500	37.3	30.4
7000		
7500		