

PHWOAAAR! HOT LIFT-OUT GIRLIE POSTER

A U S T R A L I A N

motor CYCLE

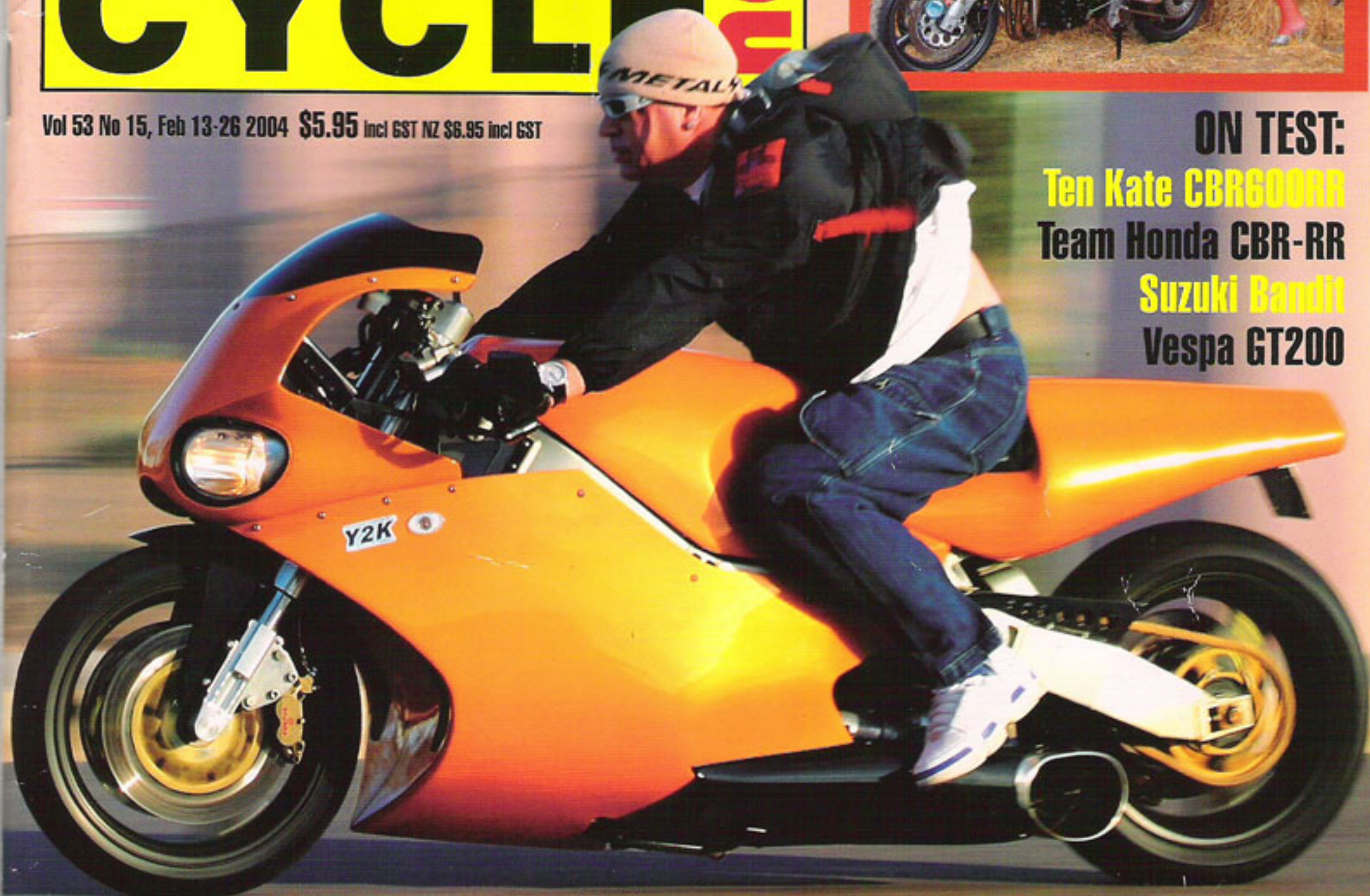
news

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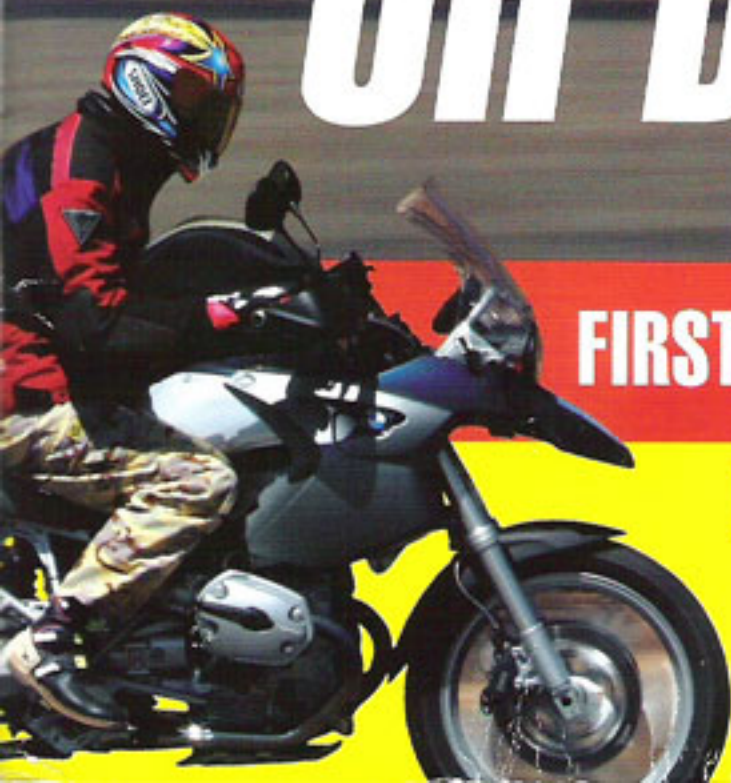
Ten Kate CBR600RR
Team Honda CBR-RR
Suzuki Bandit
Vespa GT200



OH DEAR! 340hp, 402km/h,
and we ride it...

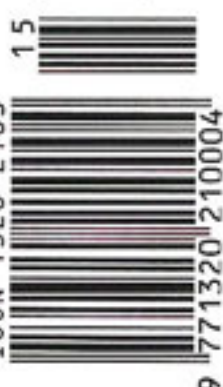
FIRST RIDE: Sensational BMW R1200 GS

PLUS: What's wrong with the ZX-RR?
Randy rates the MotoGP contenders
How To: crack a wheelie



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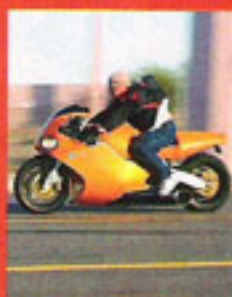


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COVER STORY...



Seeing it is one thing, riding it is something else: MTT's Y2K Superbike is powered by a 350ps Belljet helicopter engine, spins to 56,000rpm and costs a cool \$260,000. Turn to page 20 to find out more...

NEWS

Ducati reveals 2004 MotoGP challenger.....	4
Rossi: "Honda pissed me off".....	6
Speeding into a dead end?.....	7
Ducati meets demand for classics.....	8
Hoons to lose their bikes.....	10
Fantic-astic news for \$215,000.....	12
Harley centenary boosts profits.....	14
Aprilia looks to the East.....	16

FRED GASSIT

Posh Bkie Fred.....	19
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FEATURES

FAST TALK: MV Agusta's Claudio Castiglioni.....	50
RANDY THOUGHTS: Randy Mamola on MotoGP.....	56
LIFT-OUT POSTER: Martek Suzuki GSX-R1100.....	66
HOW TO: Bust a wheelie.....	86

RIDDEN OR TESTED

AFTER BURNER MTT's Y2K jet-powered Superbike.....	20
CHARGE OF THE LIGHT BRIGADE: BMW's R1200 GS.....	30
BIG AIN'T ALWAYS BEST: Kawasaki's MotoGP ZX-RR.....	40
HANGING TEN: Ten Kate's CBR600RR.....	70
LATE SEASON RUSH: Josh Brookes' CBR600RR.....	78
HIGHWAY ROBBERY: Bandit 1200.....	82
SOCIAL CLIMBER: Vespa's GT200L.....	90

COMPETITION

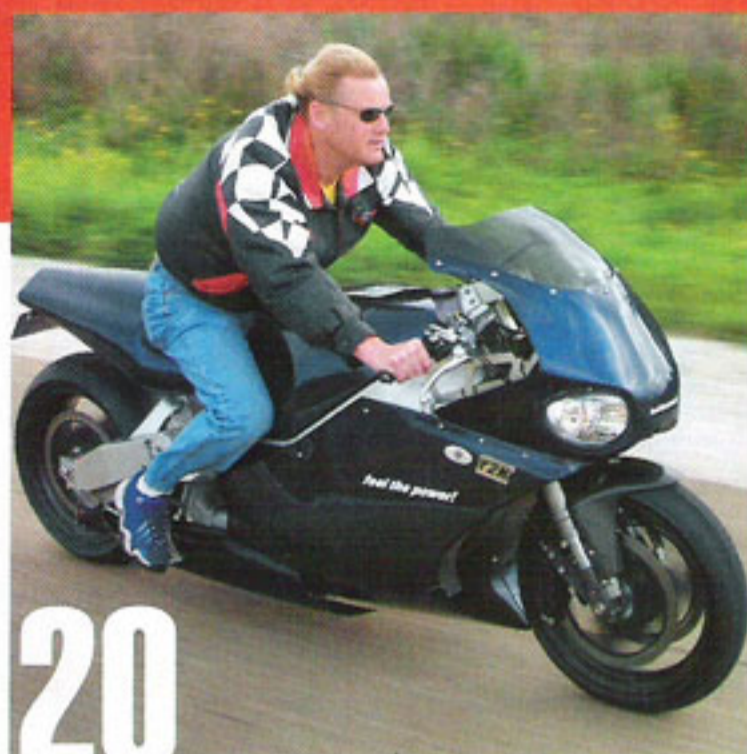
SBK testing: Steve fastest, Chris close.....	116
SX Nats: Marmonts on the double.....	118
MotoGP testing: McWilliams tames Cube.....	120
Andy Caldecott's Dakar Rally.....	122
AMA SX: Reed extends lead.....	124
Gobert signs for Honda.....	126
Raga leaps clear indoors.....	128

READER SERVICES

Top Gear: French connection.....	92
Tried & Tested: Draggin' jeans.....	94
Access: Challenge accepted.....	96
Moto Market.....	108
Rally Calendar.....	111
Wot's On.....	129

COLUMNS

Ed's Desk: So much promise.....	6
Twisty Bits: The World's Best Thing.....	113
In Pit Lane: The Little Yamaha That Could.....	115
Backfire: Just what The Doctor ordered.....	130



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SUBSCRIPTION HOTLINE
Ph: 136 116

GASSIT HEADQUARTERS
GPO Box 4088
Sydney, NSW 2001
Ph: (02) 8268 4699
Fax: (02) 8268 4688
amcn@acp.com.au

Cover image:
John Cantlie

For who's to blame, refer to
page 97...

Privacy Notice page 130



Phillip Island Grand Prix Circuit is
AMCN's preferred testing facility.

Australian Motorcycle News road test photographs are posed for by skilled, professional riders under controlled circumstances. Attempting to imitate their actions may be dangerous. Australian Motorcycle News supports and endorses rider training and wearing protective riding gear, especially when you're riding a Y2K jet turbine bike that has 350 ponies and does 400km/h. Maybe his helmet blew clean off his bonce when the turbine hit 56,000rpm? Crikey, strewth, bejeezus, phaaarrk... Oh Dear!





AFTER *BURNER*

ROAD TEST & PHOTOS
JOHN CANTLIE

Beware the Y2K Superbike, a motorcycle so rare and insane that more people have been in space than have ridden this thing. Oh, and it runs on a 340ps, 56,000rpm Bell helicopter jet turbine engine...



A whole new meaning to turbine-like power delivery...



The turbine engine swallows so much oxygen that you need to get away pretty quick

That's a remarkable statistic: that more people have orbited our planet in capsules than ridden the Marine Turbine Technologies jet-turbine-powered Y2K Superbike.

But it's true, and it makes the owners of these bikes a rather special breed.

There are only nine MTT Y2K 'jetbikes' in existence (all in America) and the bikes are street-legal and capable of 402km/h.

They make the most incredible noise, leave the most incredible smell, and cause utter chaos in traffic when ridden in town — I know because I've been there and ridden it; believe me, this is like nothing

you've ever seen before.

Been where, exactly? Phoenix, Arizona, where a chap called Mark Brooks owns not one, but two MTT jetbikes.

They sit nicely in his garage alongside his Impala lowrider, Bentley Turbo, H2 Hummer with 26-inch rims, 815 horsepower Corvette, and — my personal favourite — a Yamaha Raptor quad-bike with 20-inch chromed wheels.

Other jetbike owners include American talk-show host Jay Leno, and a number of other very rich and extremely mad celebrity types.

Owning a jetbike, you see, is expensive — like around 261,863 Australian dollars expensive — and this makes it the most costly production roadbike in the world.

The jetbike is powered by a C18-250 Rolls Royce Allison jet-turbine engine that makes peak power at 56,000rpm and is normally used in the Bell 206 Jetranger helicopter.

And in this motorcycling application, you're struck by the sheer length of the bike.

With a wheelbase of 1829mm, it's some 400mm longer than a regular sportsbike.

"You can light the back tyre up, no problem; but she won't wheelie," says owner Mark Brooks.

LOSE YOUR LUNCH

The next thing you're struck by is the jetbike's kind of weird styling.

From some angles it looks great — especially from rear three-quarters — while from others, especially from the front, it just looks plain odd.

But then, apart from a familiar-looking alloy beam frame and swingarm and the WP forks and Brembo brakes, there's nothing particularly conventional about this motorcycle.

"This bike is an eccentric toy," Brooks understates massively.

"You could use it to pop down to the shops for a litre of milk, but that's kinda overkill."

How do people react to you at traffic lights? "You get all sorts of freaked out reactions."



Feel the power — never has a decal been so accurate

"Mostly you'll find they look up in the sky because they think a helicopter is landing on top of them.

"But it's the starting procedure and the noise it makes when it first fires that flips everybody when they get near one of these for the first time; it's very noisy, very unique."

I ask Mark how the jetbike differs from a regular sportsbike when you get on to ride it for the first time.

"The way the power feels is completely different to a regular motorcycle.

"I've ridden Ducatis and Suzukis for years, and this thing is on another planet.

"You know how a powerful sportsbike pushes you hard from behind? Well this thing pulls you from in front — you kinda lose your stomach as you accelerate.

"The way the power feels on your body, it wants to pull you off the handlebars; it wants to leave you behind.

"Like when you get on a jumbo jet, and

when it first accelerates it ain't so quick, but by the end of the runway it's just pulling harder and harder."

What do regular riders do when you pull alongside?

"They go apeshit — they can't believe what they're seeing and just want to ride with you.

"I have two 40 gallon (200 litre) drums of JET-A1 fuel in the garage, but when I have to fill up with diesel in the local gas station, they're in shock. I've had an entire parking lot of people empty and swamp the bike and myself, just wanting to see it.

"Trouble is, the turbine engine swallows so much oxygen that you need to get away pretty quick or you can pass out.

"The exhaust from this is very smelly, so it'll burn your eyes, and at 1200 degrees F (648.8 Celsius), it'll also burn your shoes clean off."

LEARNING TO FLY

Some quick figures: A Suzuki GSX1300R

MTT — THE PEOPLE BEHIND THE JETBIKE

"We started this project in 1998, and released the bike in 2000 at Daytona," says MTT's Dena Melancon.

"The boss, Ted McIntyre, started in helicopters and then used his knowledge of jet-turbines on other applications.

"We started putting turbines into powerboats, but anything powered by an internal combustion engine we can convert to turbine power. We've done bikes, boats, cars and trucks, but the core of our business is generators and turbine pumps."

"It takes about three months to build one of our jetbikes, and each one is hand-built to the customer's specifications.

"The C18-250 turbine engine makes 320ps and is intended for the Bell Jetranger helicopter, which weighs nearly two tonnes and carries five adults against the force of gravity, so there's plenty of power there for a 240kg motorcycle.

"The frame is box-section alloy and is welded to aircraft-standards — nothing is slapped together — and oil and engine fluids are routed through the frame.

"We haven't yet found a runway long enough to max the bike out.

"We've had it at 365.3km/h on the strip but we ran out of room and the rider's legs started getting blown off the sides. He couldn't hold on any longer — and he wasn't at 110 percent power when he ran out of space.

"Turbine engines can operate at speeds over 100 percent. We offer a 250mp/h (402.3km/h) money-back guarantee to every customer; and no-one's asked for their money back yet.

"With a turbine engine, the torque ratio is exponential, which means the higher the rpm the higher the torque.

"So basically the jet-turbine engine just gets faster the faster you go.

"But our bike was made as a streetbike, and is designed to be 'user-friendly'. It may be the fastest street-legal bike in the world, but if it's not rideable, what's the point?

"We've patented the Smart Start system so you can't have a hot-start (which would melt the engine) and built in all manner of systems to make the bike useable in the real world.

"The exhaust system was always the biggest problem on the bike.

"It sucks a lot of air, so developing an exhaust system that dealt with flat-out runs and city cruising was tricky. As is, the exhaust generates up to 1300 degrees (704.4 Celsius), so getting rid of that safely and not melting either the rider's feet or neighbouring vehicles was an exercise.

"We've just been asked by one customer if we can convert his logging chainsaw to turbine power. What a beast that'll be when it's done..."



Is it a bird, is it a plane...



Beware: most commuters look up, not sideways, when they hear the Y2K

"If you ever had a catastrophic turbine failure, it would probably kill you"

Hayabusa makes 162ps at 13.57kg-m of torque, weighs 230kg and will do a genuine 299km/h.

The MTT jetbike makes 340ps at 58.86kg-m of torque, weighs 240kg and has a money-back 250mp/h (402.3km/h) guarantee.

Are you getting the picture yet?

Mark runs me through the start-up procedure: "Turn the ignition and main computer on, then give it time to boot-up and check your gas and oil temperatures."

All sorts of orange numbers and figures dance up in front of me, and best of all, is the rear-facing camera that projects on to a TV screen in the middle of the dash.

"Press and hold the starter button, and at 15 percent turbine speed it starts injecting fuel into the engine and you'll hear the igniters clicking.

"Keep the starter down until it reaches 50 percent turbine speed, then it's running and you're ready to go.

"Pull the clutch in, engage first gear and

then you'll be away.

"Up-shifting is taken care of with the toggle switch on the left handlebar — it's only a two-speed so you have to be careful when changing down not to overspeed the turbine.

"If you ever had a catastrophic turbine failure, it would probably kill you.

"So just take your time to get used to the feel of the thing.

"She starts slow, but as soon as you get above 50mp/h (80km/h) and into second gear, for Christ's sake, hold on."

Let me give you the circumstances of my ride. We are in the city depths of Scottsdale, in Phoenix. Over a half-dozen of Mark's bike-riding buddies are watching me as he runs me through the procedures on his (originally priced) \$US185,000 jet-powered motorcycle.

Mark weighs about 114kg, is personal friends with Mike Tyson and has an armed security guard with him at all times.

The fact that he is allowing me to ride his jetbike at all is remarkable enough, but I am fairly sure that if I bin this one I better get used to living without arms — or balls.

I remember riding Mick Doohan's NSR500 about five years ago — the apprehension I felt then was nothing to what I feel now.

Still, a bike's a bike, right? So I hit the starter button — and all f#\$%ing hell breaks loose.

MOST WANTED

There's a high-pitched whine as the compressors start turning, then at 15 percent N1 (turbine speed) there's a throaty howl as fuel is injected into the system and the igniters burst into life.

By 50 percent I can take my right thumb off the starter and the jet-turbine is running.

I watch as the Exhaust Gas Temperature (EGT) climbs to 1000 degrees (537.7 Celsius) and the sound is now deafening.

All conversation with Mark or Simon,

HOW DOES A JET TURBINE WORK?

Like a regular piston engine, the jet-turbine is an internal combustion engine.

In both, air is compressed, fuel added, the mixture ignited, and the rapid expansion of the resultant hot gas produces the power.

THE COMBUSTION SYSTEM

The combustion chamber receives air from the compressor, which mixes with fuel sprayed from nozzles in the front of the chamber. The mixture is burned at temperatures up to 2000 degrees Celsius to generate the maximum possible heat energy. The burning process is initiated by igniter plugs, isolated after start-up, and remains continuous until the fuel supply is shut off.

However, combustion in a piston engine is intermittent and the expanding gas produces shaft power through the piston and crank, whereas in a jet-turbine engine, combustion is continuous and its power results from

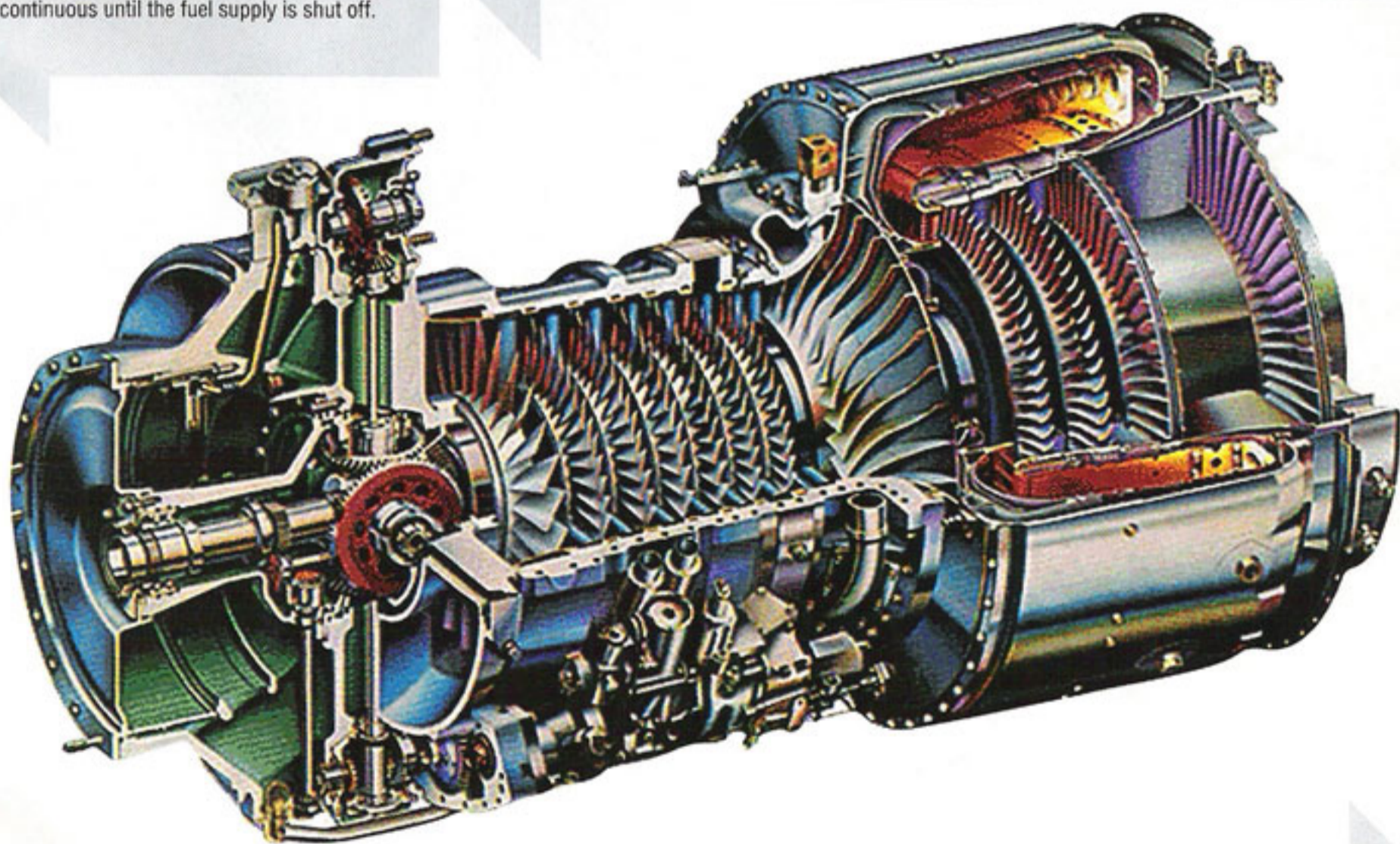
expanding gas being forced out of the rear of the engine and spinning a drive-shaft.

You can break the jet-turbine engine down into three main components, and these are listed below:

THE COMPRESSOR

The compressor draws air into the engine, pressurises it and delivers it to the combustion chamber. It is driven from the turbine by a shaft. Most modern compressors are 'axial flow types', which have several stages of alternate rotating and stationary aerofoil

blades. The rotor blades are mounted on a drum and the stator vanes in the compressor casing. Axial compressors can achieve compression ratios in excess of 40:1. At full power, the blades of the compressors can rotate as fast as 1000mp/h (1609km/h) and take in 1200kg of air per second.



THE TURBINE

Each turbine consists of one or more stages of alternate stationary and rotating aerofoil-section blades. The rotating turbine blades are carried on discs, which are connected by a shaft to the compressor. The stationary blades (nozzle guide vanes) are housed in the turbine casing. The turbine extracts energy from the hot exhaust gases to drive the compressor. The first turbine has to be air-cooled as it operates in a gas stream temperature of around 1500 degrees Celsius — hotter than the melting point of the blade material. The exhaust gases exit at 700mph (1126.5km/h) and are 1200 degrees Celsius.

So a jet-turbine is an engine turned by the force of expanding gas on fan blades, which rotate

centrifugally round a shaft. It's important not to get confused with a pure jet engine, which works off thrust and one of Newton's laws (every action must have an equal reaction). The jet-turbine engine is connected to an output shaft, which is in turn connected to a gearbox and then the drive chain. The main shaft revolves at 56,000rpm and this is called N1 speed, which is down-gearred to the N2 speed for the output shaft at 5000rpm. Are you getting this?

Originally designed for commercial aviation applications, turbines have incredible reliability and life expectancy due to the fact that the ramifications of engine failure in aircraft are so serious. And because all of the moving parts rotate, turbines are well suited to run at high

horsepower and continuous rpm for extended periods without self-destructing.

Internal lubrication is dry-sumped and is never exposed to the combustion chambers, greatly reducing contamination. The highest quality parts and materials are used to build these engines, so that the turbine can run for 900 hours before needing replacement. When not in use, you need to plug your engine into a trickle-charger to keep the twin 24v starter batteries in juice.

The turbine's power-to-weight ratio is without equal. The turbine engine that MTT uses in the Y2K Superbike produces 340ps at 58.86kg-m of torque, yet weighs only 60kg. Wonder if they'd ever allow them in MotoGP?



The freeway empties in front of me and I tweak the throttle up to 80 percent

the cameraman, is now pointless. There is a vibrating throb as I twist the conventional throttle, the rpm spinning up to 75 percent (around 40,000rpm) and settling again.

I hold the clutch in, click the left-hand gear switch into first, and I'm good to go.

I just let the clutch out normally without throttle and — as smooth as you like — we're rolling. I'm riding the streets of Phoenix on a jet-powered superbike. And I have the world's biggest grin plastered across my face.

It's incredibly smooth. And with Mark in tow on a Yamaha R1 we make our way out on to the afternoon freeway and turn east.

The noise is indescribable, the jetbike howling and whining as I feed in the throttle.

Up to 48-50km/h and it's very slow — grabbing full throttle makes no difference.

At these speeds a Gilera 180 scooter would kill it, but as we pass 80km/h, I throttle back and click the left-hand switch into second gear.

There's a marked jump as the transmission comes in and the whole bike leaps forward for a second — it's not a smooth gear change.

Now the jetbike feels alive and dangerously powerful.

The freeway empties in front of me and I tweak the throttle up to 80 percent. There's a

pause as the bike builds thrust, and then in a turbine shriek, I am quite literally catapulted forwards — not shoved from behind, but pulled from the front.

It's quite unbelievable — and utterly intoxicating. I find another empty piece of road and try it again.

"WheeeeSHOOOSH!" It happens again, the digital speedo struggles to keep up as we launch from 100km/h to 210km/h in no distance at all.

It's bloody mad and extremely scary.

I'll tell you what it feels like: it feels like bungee-jumping, except with the bungee pulling you forwards and not upwards.

It doesn't feel entirely dissimilar to skydiving — the sheer sense of uncontrollable acceleration building and the wind noise rushing up to meet you.

GAINING CONFIDENCE

One thing it certainly doesn't feel like is riding any conventional sportsbike — there are no familiar feelings here.

There's no instant hit when you whack the throttle open, instead you're conscious of power building, until boom! You've gone warp.

Mark's words ring in my head: "The scariest

part is the first time you ride one and you're not sure what to expect."

"There's no engine braking, it actually goes faster when you get off the throttle because there's so much hot gas in the turbines."

Each time we approach traffic lights I pop the bike into neutral using the chicken switch on the right 'bar and use the trusted power of Brembo brakes to haul me up.

Then, after staring-down every single person alongside me in their cars, goggle-eyed at the sound and swirling smoke emitting from the turbine exhausts, I launch away in a roar of jet noise.

At one point I filter to the front of the queue (illegal everywhere in the States apart from California) only to come across two traffic cops directing traffic.

They are frozen on the spot, gawping like kids at me and the jetbike. They even stop directing traffic — that's the kind of effect the MTT bike has on everyone around it.

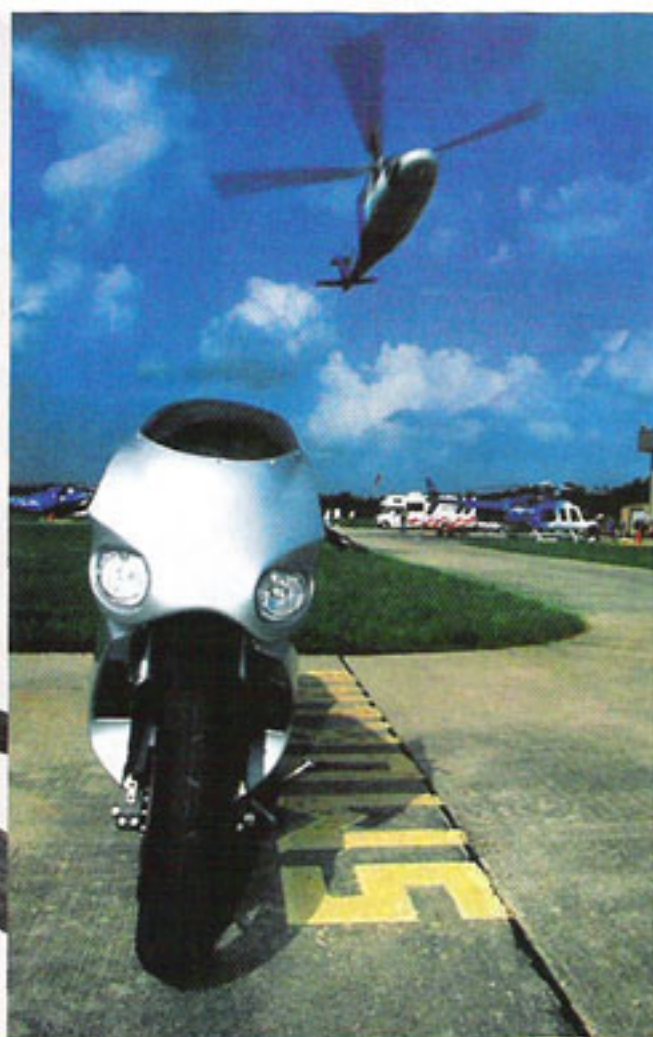
Corners are what you'd expect on a bike this long: slow and sweeping.

The forks and Öhlins shock are sprung pretty soft, and with the exhaust systems slung so low there's definitely a lack of ground clearance.

So you just pitch the jetbike in gently and



Ground control to
Major Tom



With a jet shriek and the stink of aviation fuel, I whip past as the speedo clips 240km/h

drive it 'round. It actually rolls from one side to the other pretty well — although you can feel the weight — and with the way the turbine makes its power you want to make damn sure you're upright before even thinking of opening the throttle again.

After about 20 minutes of riding I'd adjusted my brain to deal with the gearing and braking system, and after that the MTT bike is a doddle to ride. No, really.

You have to be conscious of not down-shifting from second gear to first at, say, 200km/h, because then there would be a huge transmission explosion — and Mark would use a blow torch on your arse — but other than that, it's as rideable as MTT claims.

THE AWFUL TRUTH

After travelling around 15km Mark indicates that it's time to turn around as the fuel will be getting low.

"MTT claims the Y2K bike will do 60 miles (96.5km) between fill-ups, but the reality is more like 20 (32km) around town," he yells at me as we pause at a set of lights.

We race off the lights — Mark on the R1 pulling ahead immediately, but as the turbine kicks in and I stick her into second gear at 95km/h, the jetbike gets nasty; and with a jet shriek and the stink of aviation fuel, I whip past Mark as the speedo clips 240km/h.

"There's a guy in Oregon who got done for 233mp/h (375km/h) in a 45mp/h (72km/h) zone, and that was a \$10,000 ticket," says Brooks, when we get back to the others.

My hands are literally shaking, my senses bombarded with this once-in-a-lifetime experience.

My clothes stink of jet fuel as I click the 'off' switch and, like a Tornado jet bomber, the jetbike spools down and is finally quiet. For once, I am lost for words.

I've ridden everything that walked or crawled at some stage or another, but I've never got on anything like this.

The MTT jetbike works, make no mistake. It's not some bitsa that someone knocked up in a shed, it's an honest-to-God, working, jet-turbine motorcycle that is street-legal.

From 240km/h upwards I have little doubt that the MTT would be the fastest bike I've ever ridden.

In a way, I'm thankful I never got to explore that theory in detail, but on the city streets of Phoenix it made a hole through the traffic like a bore-drill.

It stopped whole queues of people, and cars, dead in their tracks, and was the most thrilling riding experience of my life.

If you're very rich (and very silly?) you should buy and import one now. I promise you won't be disappointed. ■

SPEC CHECK

Y2K JET TURBINE

ENGINE

Engine	Rolls Royce Allison C18-250 Jet-Turbine
Quarter-mile	9.3sec@284.8km/h
Output rpm	56,000rpm
Fuel	Diesel, kerosene, JET-A
Compressor ratio	40
Lubrication system	Dry-sump, 3.5 litres turbine oil
Transmission	2-speed semi-automatic or manual

CHASSIS AND RUNNING GEAR

Frame	Aluminium beam
Rake	27°
Wheelbase	1829mm
Tyres	120/70-17 Pirelli Corsa Evo fr 190/50-17 Pirelli Corsa Evo rr
Wheels	Dymag 17-inch carbon
Suspension	45mm-diam u/d WP forks fr Ohlins monoshock rr
Brakes	3 x 320mm discs, 4-piston Brembo calipers plus N1 shaft disc brake

DIMENSIONS AND CAPACITIES

Dry weight	240kg
Seat height (claimed)	800mm
Fuel capacity	34lt
Fuel consumption	1.27km/lt @ N1 80 percent cruise

HOWZITGO?

Max Power	340ps@56,000rpm
Max Torque	58.86kg-m@54,000rpm
Top Speed	365.3km/h (timed)

WOTZITCOST?

Testbike supplied by	Mark Brooks
Warranty	guaranteed 402.3km/h
Colour options	client choice
Price	SAUD261,863 plus freight; 50 percent deposit starts build
Contact	Marine Turbine Technologies, Louisiana USA, 0011 1 337 924 0298
Website	www.marineturbine.com