


Organization: Team "Fun42—Racing"
Vehicle/Series: IDM Sidecar Series
Motor: Yamaha 1000cc 4S (factory race)
Horsepower: 190 BHP
Weight: 650 lbs
Fuel Delivery: Injection
Fuel Capacity: 14 Liter
Coolant Capacity: 8 Liters

Driver/Mechanic: Christian Ruppert
Rider/Mechanic: Sammy Nicholas
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Date/Time: 26-29 Mar 2012 (0815-1400)
Location: Circuit Du Val De Vienne, France
Conditions: 17-22 C with sunny skies and fast track
Duration: Approx 8-15 laps per day over 4 hours on-track time mostly at full race speed
AQQA used: 50 ml per day initially, but topped off as needed with AQQA to maintain max fluid level—100ml total

Timing Offset:	Yamaha Factory setting of "0"
Fuel Feed Rate/Pressure:	Not checked
Coolant Temperature at Idle Before Test without AQQA:	72 C (after 2 minutes)
Coolant Temperature at Idle Before Test with AQQA:	72 C (after 3 minutes)
Coolant Temperature Max without AQQA:	90-96 C
Coolant Temperature Max with AQQA:	79-84 C
Max Oil Temperature after warm-up without AQQA:	No data
Max Oil Temperature after warm-up with AQQA:	No data
Max Oil Pressure after warm-up without AQQA:	No data
Max Oil Pressure after warm-up with AQQA:	No data
Maximum Horsepower Achieved:	No data (during DYNO run same week had 191 HP)
Exhaust Gas Emission Ratio:	No data

COMMENTS: They trained for 4 days until the bike gave out. It appears the motor had rings go out and then it spew oil. Hopefully the repair will only involve rings, pistons, and bearings. Still haven't got the mechanic's verdict. The motor is one they used in the second half of last season and then ran real hard during trials with the new bike set up this year. So it wasn't unexpected. They have 2 new motors. In no way do they feel AQQA had any responsibility.

Outside temperature for all 4 days started with about 17 C in the morning with 22 C by the afternoon. Most high power testing was done in the afternoon with the morning used for mostly low speed runs to make adjustments and burn in several sets of brake pads for future use. The bike was actually running on the track about 4 hours each day.

The first day they ran with only water and experienced bike temperatures in the low to mid 90s C.

The second-fourth day they used 50 ml of AQQA each day, topping off the radiator with more AQQA as the water level dropped. They did not drain the bike at night. When they saw how much temperature drop (11-12 C) they were getting they tried running the bike as hard as possible, even keeping it in lower gears longer with high rpm, but the temperature always stayed low--usually around 80 C. When the bike temperature would rise a few degrees they would come in and top off the radiator with AQQA.

A friend from England at the track, with a different class bike, was experiencing repeated severe overheating with boil over. They finally put 50 ml into his bike and the problem was solved. Needless to say he was happy.

While in France they put the bike on a DYNO with AQQA. The tests were done in the morning each day after the first few runs, with the first day without AQQA. Their timing is controlled by a black box. It has several settings, but Yamaha assures them that the "0" setting of the box is optimal. They tried adjusting the timing to several settings but never got more than 1-3 horsepower and 1-2 temperature change. Also, as they do not drain the bike I don't know how much residual AQQA was in it for each DYNO test. But that small amount of performance improvement could have been circumstantial. The test sheds some light on AQQA performance in a static state, but it is still unclear. In the end they agreed that the Yamaha suggested setting was what they would keep. A Dutch team, who had the same engine, said they tried adjusting their timing on a dyno (without AQQA) and found the Yamaha setting was the best.

When changing the spark plugs on the bike they normally see a lot of black carbon. Each time they checked the plugs with AQQA it was snow white, indicating an efficient and clean burning engine.