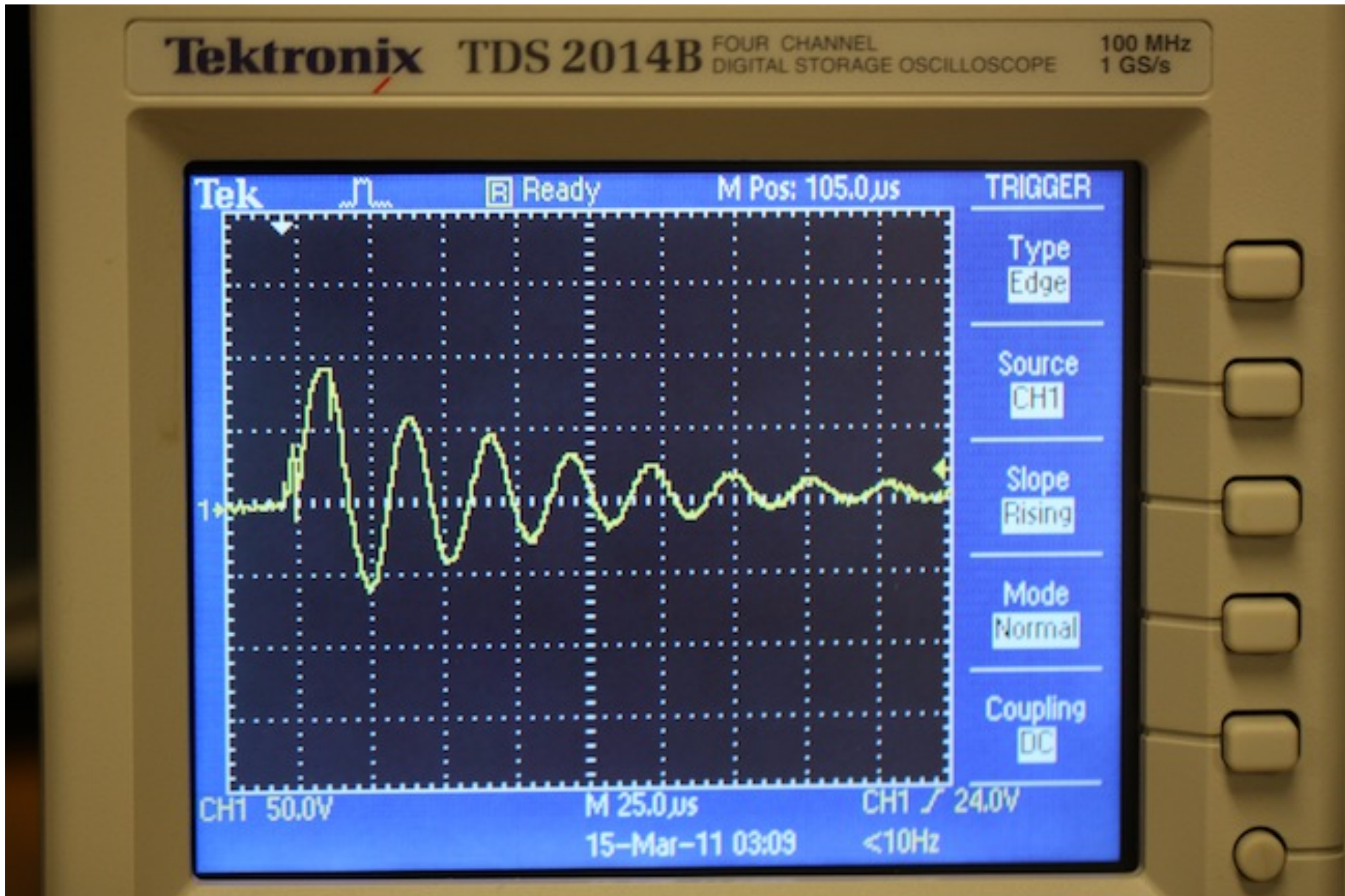


# 63 Tiger Cub Motorcycle

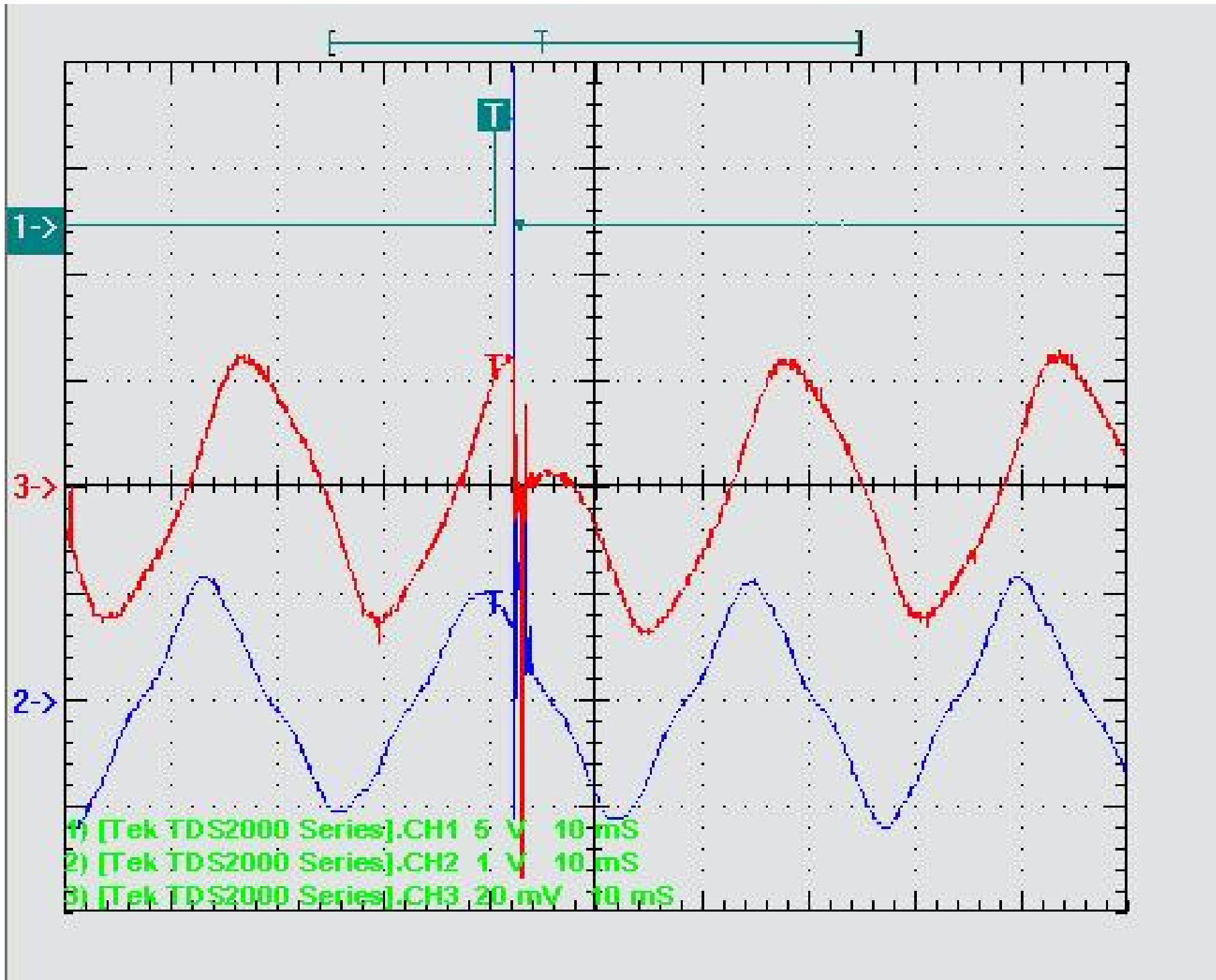
FRS 106, Michael Littman – Spring 2011

## Testing



O-Scope Trace

This waveform was obtained when the points opened. The probe was on the low voltage side — that is across the primary. Measurements were made with C of .1uf, and L (primary of the ignition coil) which is about 5 mH.



waveform was obtained with the tester shown on the main page. Stator voltage is trace 2. Stator current is trace 3. Points opening is trace 1. Points only open once per revolution of the rotor. Trigger condition is the firing of the spark plug. Note that the current peaks after the voltage peaks. The strongest spark is obtained when the points are timed to open when the current is a maximum. This makes sense because the energy stored in the stator is  $0.5 * L * I^2$ , where L is the stator inductance and I is the current.

As the magnetic field collapses with peak energy stored in the inductor, this large change in flux leads to a large back voltage. As this large potential goes across the transformer, it's 'stepped-up' to several thousand volts.

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