

FEG. How to catch the effect when tuning by Sergey Alekseev – transcript rev.2
<https://www.youtube.com/watch?v=s1ves5ukyVI>

link contains several unrelated videos linked together

photos at the beginning

- Tesla HVcoil inductance 292mH (?)
- Antenna coil to gradient coil capacitance 40-43pF (?)

transcript is for first fragment 0 - 4:10

00:15 Hello Nail, want to show specifically
00:20 a certain thing that you catch the effect
00:24 at once, well, push pull with
00:27 controlled kacher and voltage regulator
00:31 here inside is done, but for now it's in
00:36 so far, it is not tuned yet
00:39 like this, closer-further adjustment to do
00:45 that's it
00:47 this is how wire will be 1.2mm
00:50 diameter wire, aluminum
00:53 this is copper, this is also copper everything well this is
00:58 completely all copper, this HV coil
01:01 aluminum, with copper doesn't work well
01:06 I want to show one important point and so
01:09 there is a blue trace here we have it
01:12 it is a collector
01:19 to K2611 with other transistors is bad
01:21 it turns out or K1358
01:24 it practically does not heat up especially, power
01:29 it is on the kacher that the
01:32 the effect turned out right here in the coil
01:34 the effect of amplification has occurred in general
01:40 it is necessary to tune the voltage and
01:44 I put the
01:47 LM2577 and will it be such a regulator
01:50 it will be clear exactly what the effect will be
01:55 you tune frequency
01:58 about 1.2 from 1.1 to 1.4 and
02:08 so we look at power supply 26
02:11 volt it can be 22 volts depending on
02:13 what kind of transistor and now
02:15 come on like this
02:16 we will squeeze it all when this is such garbage
02:20 is and not now we will reduce
02:24 voltage
02:31 but there are no special ones
02:34 we raise it above the norm, well, now it's not particularly
02:40 apparently I have already set it up here because it
02:43 it's very hard to knock down
02:44 there is no jumping, it means we have to
02:47 lower now lower it smoothly so here

02:52 only in this position
02:54 the effect will manifest itself in other words
02:56 this is a very narrow moment in frequency and
03:00 voltage and duty cycle
03:02 if these are not respected means
03:05 will not work, just about 24
03:13 volt nothing about
03:15 25.7
03:23 30 volts no effect
03:27 this is 26-27 volts for power supply now we
03:31 we will appear directly check on kacher
03:42 ok sorry one hand is not comfortable so
03:48 here are 25.11 volts well, put it on
03:52 the other transistor will be the voltage will be
03:54 other
03:55 put other transistor
03:57 it will be different again
03:59 everything will depend on Tesla itself
04:02 important Tesla is the most important part in
04:06 FEG is Tesla
04:10 well in two words so
<cut>
04:15
06:04 I have to ground wire ...
<cut>
06:05 (some audio book playing on background)
07:10 oh I have to expand capacitor
<cut>
07:33 Hi, Cyril
07:35 look what I found, here we have 15
07:38 kilohertz coil, a regular one
07:42 standard and look at
07:46 spectrum analyzer here 15 khz and here
07:51 I counted
07:51 if the harmonic is even, let us divide by
07:56 32
07:57 then our power will turn out somewhere in
07:59 coil about 2 kilowatts if we
08:02 do odd
08:04 for example, we set the peak so the right peak
08:10 now we will get to that for example
08:17 let it be this peak 465, means 400...
08:27 465 divided by 15 kilohertz equals 31
08:34 that's why it turns out in one case 4
08:38 kilowatt otherwise 2 kilowatts
08:42 so here is the harmonic
08:45 must be odd, so the counters
08:49 must be done for an odd harmonic
08:54 this is how we get a coil but
08:59 the inductor does not need to do half of it
09:01 half or 1/4 all one quarter
09:04 doing it means the frequencies will be

09:06 multiples of 1/4 by 2 we must be doing one
09:09 third
09:10 inductor means 37 and a half and this is 12.6
09:14 should be like this and like this power
09:17 it turns out more
09:19 I came to this conclusion
<cut>
photo of spectrum analyzer
text: point 4 Tesla coil frequency 450khz
push pull frequency 18khz point 1
duty factor should be 15-18%
on ferrite transformer coil 4 turns
adjust capacitor to resonate at 90khz point 3
<cut>
09:49 so hello Cyril, here you are
09:52 plug and what I want to show I want to show
09:56 that's 37.5 meters, you see that
10:00 there is a half and a wire that your
10:02 wire, you know which wire you sent
10:04 is also 37m and a half meters here
10:09 yellow here he goes walking and here he is
10:13 goes over heater element here on this one
10:16 over heater element and here we have it kacher with
10:23 voltage regulator
10:25 push-pull from the duty cycle, that's it
10:28 nothing elsr, yoke and capacitor for
10:31 resonance, want to show the effect here
10:34 look now turn on the yellow beam this
10:40 our exit, blue, this is here it lies near
10:46 in short in antenna whine inspect I want to show
10:51 effect how to turn off kacher now
10:54 emitter base I just short-circuit, silence
10:56 closing
10:57 look at this, boom, everything
11:02 died, nothing going to heater element
11:08 there is something there you can say nothing
11:10 goes here
11:13 please, such an effect
11:32 turned off kacher, turned on
11:36 and look
11:44 it works more or less somehow steadily
11:47 I adjusted, duty cycle, here duty cycle
11:49 about
11:50 on push-pull 15 percent 15-18
11:55 so somewhere
12:08 here you detune multiplicity and everything went
12:20 that's great
12:40 from
12:46 Well, here's the effect, the result is obvious
12:52 boom oh
13:01 it's grenade squeak, not yoke
<cut>

13:15 June 2015 here I come to what
13:27 here heater connected so is connected
13:31 here is the resonant circuit, here it is, this here
13:40 goes this one, here goes serial
13:46 resonance capacitor and here
13:48 resonance capacitor, nothing more here
13:49 the yoke is like everyone else and this scheme is the one that
13:55 leaked by accident and we all got it
13:59 let's turn on
14:05 now it turned on the amplitude is low
14:09 there almost nothing
14:13 turn on the kacher here's the power
14:19 I need to adjust a little, it squeaks
14:31 so now this
14:41 blue probe this is this Tesla
14:43 one megahertz, look a
14:47 this 3.4 and
14:49 2.4 megahertz, somewhere like that
15:05 let's do it like this, it's better, I short
15:11 emitter and base on transistor
15:13 one time and look what kacher is doing
15:18 oh
15:41 works – switched off
15:50 well, like that