

# Re: Bowden's BCD clock circuit

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*Source:* <http://sci.tech--archive.net/Archive/sci.electronics.basics/2007-04/msg00511.html>

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- *From:* "Lord Garth" <[LGarth@xxxxxxxxxxxxx](mailto:LGarth@xxxxxxxxxxxxx)>
  - *Date:* Thu, 12 Apr 2007 03:06:07 GMT
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"John Popelish" <[jpopelish@xxxxxxxx](mailto:jpopelish@xxxxxxxx)> wrote in message  
[news:KqCdnXBm7YKkPYDbnZ2dnUVZ\\_vrinZ2d@xxxxxxxxxxxxxxxx](news:KqCdnXBm7YKkPYDbnZ2dnUVZ_vrinZ2d@xxxxxxxxxxxxxxxx)

Lord Garth wrote:

"John Popelish" <[jpopelish@xxxxxxxx](mailto:jpopelish@xxxxxxxx)> wrote in message  
[news:xeadncEygpZ\\_AYDbnZ2dnUVZ\\_o3inZ2d@xxxxxxxxxxxxxxxx](news:xeadncEygpZ_AYDbnZ2dnUVZ_o3inZ2d@xxxxxxxxxxxxxxxx)

Lord Garth wrote:

"Greg" <[ask@xxxxxxxxxxxxxxxx](mailto:ask@xxxxxxxxxxxxxxxx)> wrote in  
message  
<news:q54r139a01qg4vln9of4us0cgcfg8k4spc@xxxxxxxx>

I've decided to build a BCD  
clock and after searching for  
a circuit  
I've decided on Bill  
Bowden's circuit.

[http://ourworld.compuserve.com/homepages/Bill\\_Bowden/clock.htm](http://ourworld.compuserve.com/homepages/Bill_Bowden/clock.htm)

After examining the circuit,  
though, I'm curious about  
the circuit  
giving a pulse every second.  
There are two NAND gates  
attached to the  
4040 binary counter which  
then feed into an OR gate.  
Am I correct in  
assuming that they should  
be feeding into AND gate to  
get a pulse  
every second? As the circuit  
stands, I would think it's  
going to give  
a pulse on 0.8 sec and on 0.2

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sec, or two pulses per second.

I'm fairly weak on logic circuits so forgive the stupid question.

View in fixed width font.

```
4040
+----V-----+
1 -|Q11 Vdd|- 16
2 -|Q5 Q10|- 15
3 -|Q4 Q9|- 14
4 -|Q6 Q7|- 13
5 -|Q3 Q8|- 12
6 -|Q2 R|- 11
7 -|Q1 /CP|- 10
8 -|Vss Q0|- 9
+-----+
```

Pin 6, 5, 3, 2 are  $8+16+32+64$  which equals 120 as the divisor so you'll get 1 pulse per second due to the full wave rectifier at the power supply.

What you call Q0 (and my data sheet calls Q1) is the 1 bit of the count. So pins 6,5,3,2 are the count bits representing 4,8,16 and 32. The counter is fed with AC upstream of the rectifier.

Now THAT I didn't notice. Does your data sheet top out at Q12?

The one I posted a link to, has all Q values 1 higher than this lovely picture.

The lovely picture is because we're in a non-binaries group. Did you view with Courier?

That is strange that they didn't begin with Q0 as is the norm. can you post the link again?