

R A Q ' s

Rarely Asked Questions

Strange but true stories from the call logs of Analog Devices

It's easy to drive an EE to drink—but what drives one to poetry?

Q. My SPICE simulation worked perfectly, but now I've a large production batch which doesn't meet its specification.

A. Analog circuit simulation is one of the most valuable tools that has emerged over the last two decades, and my company offers an impressive array of SPICE models to aid circuit designers. But simulation is not real life. SPICE models rarely emulate all the second- and third-order effects which make analog circuit design so challenging.

It is critically important to build, and exhaustively test, hardware versions of your analog designs, not just run interminable simulations.

At high frequency, and with very high precision designs, it is even important to make the prototype as similar to the final production layout as is possible, because parasitic inductance and capacitance from the printed circuit board can have a substantial effect on HF performance and cause big differences between the simulation, the breadboard and the final production version.

Designs in their hundreds at Analog
hang in the air,
Ideas from the Valley, ideas from the
timid or bold,
Designs that are pearls and designs that
are rubbish are there,
And there with the rest are designs that
will never be old.

There's circuits from everywhere that
triple Es may reside,
And many to count are the abstract and
many of use,
And many that seem so attractive they
can't be denied,
But few that perform when you build 'em
and turn on the juice.



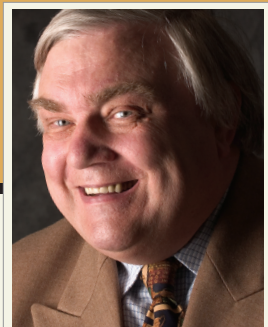
I wish one could know them, I wish there
were tokens to tell
Those fortunate circuits that work when
you turn on the power;
And then one could publish them freely
and not strike a knell
For our firm's reputation for circuit ideas
that inspire.

But now you may stare as you like but
you cannot devise
Infallible ways to ensure that success be
foretold;
They send to the ceiling the smoke of
untimely demise
Designs that will die on their bread-
boards and never be old.

(With apologies to A. E. Houseman)

This is a parody of one of the poems (XXIII)
in Houseman's "A Shropshire Lad."

**To learn more on SPICE
simulation, Go to:
<http://rbi.ims.ca/5696-106>**



Contributing Writer
James Bryant has
been a European
Applications Manager
with Analog Devices
since 1982. He holds a
degree in Physics and
Philosophy from the
University of Leeds. He
is also C.Eng.,
Eur.Eng., MIEE, and an
FBIS. In addition to
his passion for engi-
neering, James is a
radio ham and holds
the call sign G4CLF.

**Have a question
involving a
perplexing or
unusual analog
problem? Submit
your question to:**

raq@reedbusiness.com

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