



The

# Broadcasters' Desktop Resource

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... edited by Barry Mishkind – the Eclectic Engineer

## Theory and Practice How Radio Works



**By Ron Nott**

*[Updated July 2013] Ever try to explain to a non-technical person just how radio works? Fortunately, Ron Nott kindly relates how radio technology was explained by some of the greatest brains in history. Maybe this will help you, too!*

### EINSTEIN EXPLAINS RADIO

In the late teens and early 1920s, there were two things occurring. Albert Einstein was becoming famous for his scientific theories and AM radio was coming on strong.

A reporter was interviewing Einstein and asked him to explain radio for his readers. He graciously replied, *“You see, wire telegraph is a kind of very, very long cat. You pull his tail in New York and his head is meowing in Los Angeles. Do you understand this?”*

*“And radio operates exactly the same way: you send signals here, they receive them there. The only difference is that there is no cat.”*

That was so simple that I do not know why we engineers spend so much time studying and acquiring those licenses. After all, who is to question Einstein?

### EINSTEIN EXPLAINS EXAMINATIONS

Speaking of studies, as an acknowledged “genius,” Einstein’s thoughts and comments were often sought out on many topics. On the other hand, his answers were often not exactly what the questioners expected.

For example, while some do know that Einstein did not like formal education, few know that not only did he not graduate at the top of his class but that he actually was next to the bottom of his class.

The individual that prevented him from being dead last was – curiously – the woman who would be his wife. That was because the professors (all of them men) of that time felt that women had no business in science.

Einstein’s main problem was that he hated to take examinations. In fact, he claimed them to be counter-productive. He said, *“One had to cram all this stuff into one’s mind for the examinations, whether one liked it or not. This coercion had such a deterring effect on me that, after I had passed the final examination, I found the consideration of any scientific problems distasteful to me for an entire year.”*

Instead, he averred that *“Imagination is more important than knowledge.”*

You might say that would make sense, coming from Einstein himself; it is hard to argue with that way of thinking.

*Ron Nott has been in the broadcast and electrical industries for decades. After years with Collins Radio, he founded Nott Limited in Farmington, NM with an emphasis on transmission technology. You can contact Ron at: [ron@advantas.net](mailto:ron@advantas.net)*

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