

## The Core of Relativity - by Glenn A. Baxter, P.E. - Copyright © 15 March 2012

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### ABSTRACT

We show the core and central issue where Relativity and the speed of light are so commonly misunderstood by virtually every 21<sup>st</sup> century physicist, engineer, university professor, high school teacher, physics book author, and encyclopedia author. The problem stems from Dr. Einstein's famous 1905 paper and the resulting over complication of the relativity principle, which got thoroughly "masked" by some unfortunate higher math, which is totally inappropriate to describe what is a principle that even an 8<sup>th</sup> grader can understand, and a physics PhD cannot. Very few scientists really understand Dr. Einstein's 1905 paper, which has never been properly subjected to detailed analysis by a professional engineer, with said proper engineering analysis being accepted by the traditional physics peer reviewed community.

### ARGUMENT

The first four pages of the author's paper at [www.k1man.com/c1](http://www.k1man.com/c1) assumes that Dr. Einstein's Special Relativity is correct, and, using this assumption, the author derives Dr. Einstein's famous "time slowing down" formula:

$$t = t' (1 - \sqrt{1 - v^2/c^2})$$

Then, using the same analysis, assuming Dr. Einstein's famous postulate that the speed of light is constant relative to any observer, your author can get the same clock on the same train to slow down, speed up, and in an infinite number of degrees; thus the disproof of Special Relativity by contradiction.

Your author further shows in [www.k1man.com/c1](http://www.k1man.com/c1) how Dr. Einstein's analysis leads directly to  $E = MC^2$ , FOR ALL MATTER, and all the rest of Dr. Einstein's incorrect derivations.

Then, in the same paper, using Fizeau's experiments, your author shows how light speed cannot possibly be constant relative to any observer.

### THE SPEED OF LIGHT

Here is a clearer explanation:

First, based on the above algebraic analysis in the first four pages of [www.k1man.com/c1](http://www.k1man.com/c1) and Fizeau analysis later in that paper, your author postulates that light speed IS NOT constant, relative to any observer. Be very careful what we mean by light speed.

Your author will now define a light source and a "dotted" light source. The light source itself is where the light was at  $t = 0$ , and the "dotted" light source the new location of the actual physical "flashlight" light source at time  $t$ . The light source is where the flashlight was at the time of the flash at  $t = 0$ . The location of the "dotted" light source is defined as at  $c$  times  $t$ , or the distance light would have traveled during time  $t$ .

Also, based on the above, your author postulates that five clocks can all be set to  $t = 0$  and then be moved and/or accelerated and returned to be side by side, and that they will all then read the same time, such as  $t = Y$  later on.

Your author defines time  $t$  as the elapsed time on any of the five clocks when a flash from the middle center line of a railroad train car reaches the front of the non accelerating car.

Your author postulates that sitting on the train car, we can measure the time light takes to go to the front of the car by flashing the light at  $t = 0$  on clock 1 and recording the time on clock 3 at the front of the train when the light flash arrives.

Your author postulates that any uniform motion of the train will not affect the value  $t$  on clock 3 at the front of the car (it is the front car).

Clock 4 is on the train platform, and clock 5 is on the overpass ahead of the train.

Now we flash a light across the train car (toward the train platform) from clock 1 to clock 2. The guy on sees the light travel along the hypotenuse of the triangle created by the slight forward movement of the train car during time  $t$ . Using light  $c$  as being constant for both the guy on the train car and the other guy on the train platform, and the Pythagorean theorem for this triangle, you come up with Dr. Einstein's formula where he calculates that time must slow down (because of the postulated constant speed of light). This is Dr. Einstein's fatal error. The high school algebra for this is all in the first four pages of [www.k1man.com/c1](http://www.k1man.com/c1) Your author concludes from this straight forward analysis that it is not time that slows, as incorrectly concluded by Dr. Einstein in his famous 1905 paper [1]:

".....Thence we conclude that a balance clock at the equator must go more slowly, by a very small amount, than a precisely similar clock at one of the poles under otherwise identical conditions."

Now flash a light forward toward the overpass arranged so the light arrives at the front of the train and clock 3 exactly when the front of the train car reaches the overpass where we also have clock 5. The guy on the train platform sees the light go further after time  $t$  than the guy on the train car, due to the velocity of the train. So, since time does not slow down as claimed by Dr. Einstein, light must have been going "faster" according to Mr. Baxter, your author!

No! Not exactly. This is a misleading statement! The light source on the train car can also be considered to be "fixed," and the overpass can be considered as moving toward the train, giving an apparent RELATIVE velocity is  $c + v$  to the guy on the platform, where  $v$  is the velocity of the train. The velocity of light relative to the source at the original source location is still  $c$ .

The guy on the train platform then flashes his light toward the overpass, just as the guy on the train flashes his light toward the overpass. They both agree ahead of time when to flash their lights, according to a prearranged time their own clocks. But the guy on the train platform and the guy on the overpass are not in relative motion, so the speed of the flash between them is  $c$ . Thus, the light from the train gets to the overpass first, and  $c$  is therefore "measured" as faster. But the speed of light is not "faster;" it is the "apparent speed", since the extra  $v$  is the overpass as being considered to move toward the train and thus meet the light from the train car "part way."

But for the guy on the platform, he notices (by inspecting clock records later) that the train light flash got to the overpass first and is therefore "faster." Did the light "take on" the velocity of the train? This, as with quantum physics, is somewhat misleading and confusing. So far, it sure looks like it did!

The light does not "take on" anything and "could care less." The light is just going along at velocity  $c$  relative to the original instantaneous light source location and is "not concerned" with what other people think or measure. If the overpass "wants" to meet the light part way, fine.

This is a pseudo "dual nature" of light. Light speed, relative to the source, is always constant. By beating the flash to the overpass when actually the overpass met the light part way, which was not the case relative to the guy on the train platform, our human "pea" brains "insist" that the light goes faster, or  $c + v$ , for the guy on the train platform. It doesn't. But it gets there faster, so it does! Welcome to "quantum type" weirdness!

## This lies at the core of relativity.

Next we have another train coming the opposite direction, at the same velocity,  $v$ , heading for a huge collision with our first train. Is the light in the first train now  $= c + v + v$ ? No! The light from the train car is not about to "take on" anything and go  $c + v + v$  or any other speed. The light is always  $c$  relative to its source's original location, as defined above, and what we MEASURE depends on something quite independent of the light flash which is moving on its own, as a Doppler measurable wave, without any medium to travel in other than "modulating"  $U_0$  and  $E_0$  somehow while travelling through empty space or even glass or even other "solids."

The speed of light is constant, but not relative to ANY observer. Dr. Einstein's postulate that light speed is constant, relative to any observer, is thus proved wrong by contradiction, and therefore disproves all his wrong conclusions therefrom.

The crux of this whole thing is in the first four pages of [www.k1man.com/c1](http://www.k1man.com/c1). Not very many scientists or "normal" people understand this, or care to understand this fairly simple 8<sup>th</sup> grade analysis. It gets very human and very emotional very fast. That is exactly why Dr. Einstein's blunder persists. Your author thinks that Scientific American tried to steal Dr. Einstein's mathematically exposed blunder from your author in a devious manner right after pages 1 through 4 of [www.k1man.com/c1](http://www.k1man.com/c1) were sent to them by Certified mail in December, 2008. See [www.k1man.com/b](http://www.k1man.com/b)

[1] ON THE ELECTRODYNAMICS OF MOVING BODIES

by A. Einstein, "Zur Elektrodynamik      Bewegter Körper," Annalen der Physik, 17, 1905.