POC #5 -- the FAPAzine of A.Young...being hurriedly composed on stencil in the middle of April and similar months...gads, there are a lot of things I want to comment on and these 1260 stencils seem to be cutting very unevenly...I guess I'd best start off with the item that jolted me into whipping out this stencil and bashing away at it: namely, the statement by Ted White in his postmailed Null-F that I "rank with Grennell as one of the few real BNF's of 7th Fandom." MY GOD!! I was struck mentally speechless when I read that sentence. I feel as if the Queen of England had just stepped in the door and said "Winston Churchil owes his fame to you for ghost-writing his speeches." In the first place, I can hardly be considered a BNF by even the most undiscriminating standards. Likewise, I scarcely rank with Grennell in any respect. And to clinch the matter, I had nothing ot (blast! a typo already!) to do with 7th Fandom. Jack Harness inveigled us into fandom as a whole and FAPA in particular in the fall of 1954, when 7th fandom was pretty well collapsed. SURELY you are thinking of five or six other guys?

Surely.

And now that the wild rumors have been quenched, on to what I would ordinarily have started off with, namely two new and interesting additions to our household. One is a tape recorder of involved ancestry and uncertain worth. It purports to record and play tapes at 3 3/4 & 7 1/2 ips but experience indicates these speeds are correct within only ten percent. It doesn't suffer from "wow" but just a gradual and odd drift in its rate of tape movement. Speech is intelligible but one's voice may appear to range from basso to soprano, depending on the whim of the machine. If anyone dares trade tapes with us, we'd be glad to try.

The second addition is more recent; we now have an infant daughter named Susan who seems likely to consume time that would have been spent on crifanac. However, if Grennell can do it....

While I was on the subject of Ted Withe a bit back up there, I should have complained that his articles (which are supposedly polished) have about as many misspellings and lapses of grammar as his on-stencil mailing comments. I find this distressing. Another person guilty of misspellings and incoherent prose is Ray Schaffer, who certainly ought to be better at it than he is -- since he's a schoolteacher. His defense of modern education looks pretty ludicrous, being immersed in such a semi-literate matrix. I find this distressing both because these two FAPAns commented considerably on POO and because the mistakes themselves are irritating. It's always hard to strike at the zine that feeds you egoboo, but I do wish to register my complaint. And these aren't the only ones who are guilty. (Furthermore, I wouldn't mind it so much if these two didn't have such interesting things to say, even though they say them badly.) If I were dictator of FAPA I'd be tempted to throw such people out; these, I think, are the sort LeeH was refer-ring to when she mentioned that some of the most regular contributors to the bundles turn out crud. "Crud" here means not so much stupid ideas as just bad writing. As Boggs said to us in a recent letter, "Anybody who's at all sensitive to words and what they can do is sensitive, too, to the same quality in others..., and feels the lack of the same quality in a person like" (and here he names an appropriate example from FAPA). If I were dictator of FAPA I'd quickly evict all those inept writers. Fortunately, most of the active FAPAns are good enough writers to have this feel for words: the WO3W, Bloch, Tucker, LeeH, Charles Wells, McCain, Martinez, Danner, Warner, Speer, and many others -- even GMCarr, much as I dislike what she usually has to say.

Well, having insulted part of the membership, I will proceed to irritate GMCarr. I must admit I was attracted by her gambit with the yellow paper (though I felt the implied accusation was unjust) and I actually read every page of Gemzine. I found parts of it dull, a very small amount interesting, some of it irritating, and might almost have consented to read future issues if it had not been for the pages that were wasted on Wetzel. He is an odd case; I don't think he's a bona fide fugghead, but rather he seems to be the sort of crackpot that writes letters to famous scientists telling them how mistaken they are and that space travel is impossible because of the Z-layer that is perfectly impervious and lies at a height of three hundred and seventytwo miles, or that the Deros (or God) will do us in for our meddling with Atomic Energy or some other branch of Forbidden Knowledge. In Wetzel's case, it appears that the great fixation is that he is really a very kind, considerate, inoffensive individual and other people are deliberately and maliciously being nasty to him. I get this impression less from the content of his writing than from the strange style, which seems to be typical of these strange people.

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Well, I seem to have strayed from my point, which is simply that I shall continue not-reading Gemzine.

I guess while I'm complaining and tearing people to shreds I may as well rip into another gripe. By now, many of you will have read the "article" in IF about the satellite. I had a look at the thing on the newsstand recently; the "article" is (according to IF) by two eminent men of science (actually two engineers nobody ever heard of) and the first thing I noticed was an illustration of a long, thin rocket and a caption which said "Basketball-shape myth is exploded as impractical". Right there I hurled the rag back into the rack. Obviously these guys have not even troubled themselves to look up the information which has been made public about the satellite. (This is typical of engineers.) The official announcements all along have stated that the thing would be spherical, and the reason has also been public information for many a moon: the most important function of the satellite is not just to Put Something Out There In Space, as these engineers seem to think, but to obtain useful scientific information. It is quite obvious that a sphere is a very ineffective shape for the thing, but the most important facts we hope to get out of the satellite program, at least at first, are the aerodymanic properties of the upper atmosphere -- density, pressure, and so forth. And with such unconventional conditions of very high speed and very low air density, the only shape for which we can compute the coefficient of drag is a sphere. Knowing only the initial orbit and how 16ng the thing stays up, we could get a lot of important data about the upper atmosphere, supposing the foefficient of drag to be known. This sort of jabbering before one thinks is the hallmark of the fugghead. --As a minor point, I notice that IF stated that the first stage would have a thrust in the hundreds of thousands of pounds, while I have twice heard Whipple, who is intimately connected with the project, say it would have a thrust of 27,000 pounds. IF is going to look pretty silly when the satellite is actually built, I think.

ATTENTION WILLIAM ROTSLER: A Name for the Growing List Department -- a local Mobilgas station is run by Stanley Vroom.

Filler item: I hear that the Navy needs a billion dollars' worth more munitions to carry on a full-scale war but is gambling instead on new weapons like guided missles---remember A.C.Clarke's story <u>Superior</u>ity? Even though I have no time for reviewing the entire mailing, I feel that I must comment on a few outstanding items:

LIGHT 63 is notable for the most enduring bit of humor in the mailing: "I tightened all the little screws in the tops of those square tubes." Inasmuch as this is far too improbable a comment to have been contrived, what did you reply to it? In fact, the whole series of comments from the public are crogglingly funny as only the ignorant public can be--I have visions of the situation associated with "I put china cement in the knob so it would stay on"...which also reminds me of a dirty limerick....ah well. Not long ago we went to hear Whipple and Menzel talk on space travel, and the very first question from the audience afterwards was "What causes the meteorite to sail through the air?" Another wanted to know "how far out the gravitational force of the earth extends, and what happens to an object in this area."

Thanks to William M. Danner for bringing us Knight's Mare. It was one of the most interesting items we've had in a long time. Needless to say, FANHISTORY is one of the best things I've ever

seen in fandom. LeeH, we like your serious work.

GRUE will soon be one of the Fallen Mighty if it continues without The Fickle Finger, Miscellania, Gnurrsery Rhymes, and the Rear Visiplate. I'd druther see one, good, old-fashioned GRUE a year than four like this one.

TYKE MAG: Jack, your ideas are getting more and more at variance with mine but I'm glad that you're getting them over more clearly. Who knows but what I might have argued more with you earlier had I been able to understand you?

LARK: Ah, so that's what the deal was on the Tucker car. As for TV, we have none nor would we have time to wash our brains in its eerie glow if we did. Also, I must grant that the resistor that made such a stink was not quite blown out; it cracked open slowly and peeled off the pigtails. On tape recorders, we now have one, though it's not very good--sort of like the mimeo, of which the man said "it'll print", the taper will record and play back...after a fashion. By the way, our apt. also looks like a second-hand book store--someday I'll send you a picture--so I can certify that there are wives who don't force you to clean things up and give up fanac/electronics/you name it. By the way, an interesting sidelight on the discussion of Catholics is this: when Jean was working as a computer at the Observatory, she was asked if she was a Catholic; it seems that they've found that the Catholics are so used to believing everything they're told that they cannot be trusted to correct mistakes in someone else's work--especially if the someone-else is their direct superior on the job.

BIRDSMITH: On the subject of the Immortal Flatworm, when you give it a thought, any flatworm is almost that; and the ameba is darn near immortal. - I disagree strongly that the ability of a person to go on the TAFF-trip is unimportant in considering him as a candidate. After all, the whole idea is to actually send someone, not to take a popularity poll of fandom. Granted, though, that the nominations were clumsily handled. - I can't seem to find all the things I was going to

take issue with, somehow.... HORIZONS: I once had a "color-dream" like yours; mine involved a color TV set and I recall that the colors were very vivid and in contrast to my usual sort of grayish-pastel dream colors.

ATTENTION CHARLES BURBEE: A local radio station has a program on player pianos once a week-it's run by a guy name of Tucker, oddly enough-and if you want, we'll tape it and send you the tapes. FIENDETTA: No, I'm not disturbed when you say that "Matter/energy is all the same age." But Fred Hoyle and others would be, - Yes, one of the basic assumptions of classical mechanics is that the initial state of a system can (indeed, must) be known exactly. By "initial state" we mean the state at some given time, not THE initial state that you'd (presumably) come to if you followed a chain of events back in time. The idea of classical mechanics was that you could, by perfecting your experimental apparatus, know the initial state as exactly as you want. The quantized nature of the universe makes it impossible to know the initial state any more accurately than Planck's constant, so to speak, no matter how precise the apparatus. For in many experiments today we have a means of determining initial states with a precision greater than Planck's constant, but the quantized nature of the subject-matter renders such measurements meaningless -except as individual instances of a statistical phenomenon. The point is, if we cannot experimentally demonstrate determinism, or unique causation, is it meaningful to talk about it? The two viewpoints (that causation does hold but is meaningless, or that it does not hold) are equivalent, just as the wave and particle pictures are equivalent, So if you hold one, you sort of hold the other, too. If you want to fix your attention on one rather than on the other, is is just a matter of personal preference. I sort of half-hold each point of view. - The reason so many asteriods and an occasional satellite get mislaid is not that the astronomers are absent-minded, it's that they are too busy to keep track of them. - The note for Tucker was referring to the number of faneds who have a lengthy assortment of categories explaining why you are getting this ish and then never check any of the blanks, so you still don't know why you get the darn thing. - I'm glad you liked that big POO "3 best; it was meant to be so. - The reference to "fliegenden Obertassen" was a sort of pun; the correct term for "flying saucers' is "fliegenden Untertassen" or liter ally "flying under-cups." I was amused and tried a switch

LITTLE NOTES ON ASTRONOMY DEPARTMENT: For those of you who want to see Venus in the daytime, now is an excellent time to do it. Just look to the west any evening before 9 pm and the brightest object by far is Venus. Find a handy place to stand where you can see it through wires or next to a chimney or other reference point. Next evening, go out ten minutes or so earlier, notice how far it's moved, and repeat the process seeing it earlier every day. Until you backtrack it into fairly bright sky, you can move a half hour at a time and go faster. It's sort of like lifting a calf every day and....

A further note on astronomy: ATTENTION REDD BCGGS: You recently quoted the World Almanac's erroneous statement that Alpha Herculis is 200,000 times the diameter of the sun. I recall that someone also made mention of A.J.Deutsch's story "A Subway Named Mobius" that was based on the Boston subway system (and, I am sure, inspired by the four-level Harvard station where unseen trains seem to rumble by directly in front of you). Now notice how these two things are subtly related. The astronomer who recently studied Alpha Herculis is that same A.J.Deutsch who wrote the sf story as a grad student here. In brief, his result is that the Alpha Herculis system is a remarkable binary system embedded in a cloud of gas. The cloud has a diameter of 200,000 solar diameters and in it appear small opaque condensations, probably composed of soot. By the way, I hear that Deutsch wanted to appear under a pseudonym but ASF goofed and used his real name; that's why he never wrote again.

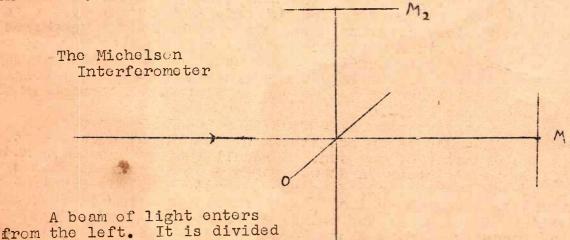
Astronomers are a strange lot.

Ron Ellik has asked that I explain why things can't go faster than the speed of light, and it looks as if we'll have a big empty discussion of special relativity unless I try to clear the matter up. If anyone is really curious, most libraries contain a simple book on the subject. The important thing to remember is that you need not be a mathematical genius to understand the stuff. If you can handle the most elementary algebra and understand the difference between weight and mass, you should have no trouble with special relativity. Keep in mind that the odd results that turn up are not noticeable under ordinary conditions, but show up only at high speeds. You should not expect relativistic mechanics to fit in with common sense, simply because you learn common sense under one set of conditions and relativistic mechanics applies to very unusual conditions.

The crux of the matter is that it is improper to ask "Why can't a spaceship go faster than the speed of light?"--at least, it is improper to ask it of a scientist. It is a simple fact that things don't go faster than the speed of light, just as it is a fact that an unsupported object falls to the ground (if it is initially "at rest").

It used to be supposed that light and other electromagnetic waves were propagated in a mysterious medium called "the luminiferous æther", because the wave properties of light had been clearly demonstrated, and no one was willing to imagine a wave without something to wave in. If you have sound waves in air or water or solids and water waves in liquids you expect to have light and radio waves in something, too. So the idea of the ether got built up. Electromagnetic fields were pictured as "strains" in the ether, and somebody calculated its mechanical properties; for waves to travel so fast in it, it would have to be more rigid than steel, yet it exerted no drag on the planets flying through it. The stuff was quite intangible, and the only reason anyone thought it existed was that they wanted something for their waves to wave in.

A good deal of thought went into ideas for actually demonstrating the existence of the ether, and finally Michelson and Morley came up with an experiment for measuring the velocity of the earth relative to the ether.



into two beams by the halfsilvered mirror O, and the two beams are reflected from the mirrors M1 and M2. Half of the beam from the second mirror comes straight through C and half of the beam from the first mirror is reflected at C, and this is what you see when you look into the apparatus from down here at the bottom of the page. The two beams are thus mixed with a constant phase difference which depends on the distances OM1 and OM2. If one of the mirrors is slightly tilted, there is a slowly changing difference in the two paths across the field of view, so you see a row of light and dark bands. Where the two beams are in phase, you see a bright band, and where they are 180° out of phase, you see a dark band.

Now suppose the earth is moving relative to the ether; suppose we have put the interferometer so that the ether appears (to us) to be moving from left to right. Then the beam to and from M_1 is moving with the ether from 0 to M_1 and against it on the way back, and the beam to Mo is moving perpendicular to the ether stream. If you assume that the light travels with a speed c with respect to the ether, you find that the beam to the first mirror is delayed more in going upstream than it is speeded up going downstream, so it takes longer to get back to O than it would if the apparatus were standing still with respect to the ether, The beam to the second mirror is delayed a little, too, because it really goes slightly diagonally to the ether rather than exactly perpendicular to it, but the dolay is much smaller than for the first beam. The calculations are simple and can be found in most books on relativity; you can work them out for yourself. It may be helpful to think of two rowboats, one crossing a river a mile wide and returning and the other going downstream a mile and then back; each one rows at a speed c relative to the water, and the river is flowing with a speed v, relative to the point on the bank from which they start and to which they return. If the trip could be made in a time T in still water, the boat that goes across the stream gets back Tv2/2c2 before the boat that went with and against the current, if v is small compared with c. In the case of the interferometer, this time lag in the transit time of the two beams means a shift in their relative phases when they recombine, so you would see a shift in the pattern of fringes. By reflecting the beams back and forth several times, the effect can be magnified,

The procedure in measuring the speed of the earth relative to the ether is this: you set up the interferometer and note the position of the interference fringes. Then you retate the equipment. Then you are lined up with CM₁ along the direction of motion of the ether, you see one arrangement of the bands; as you retate 90° so that OM₂ lies along the direction of motion, the fringes shift. Cr at least, they ought to if the theory is correct. But actually, no shift was ever observed, even with apparatus capable of detecting a motion of one kilometer per second (the earth's orbital velocity is about thirty kilometers/sec.)

It was suggested by G.F.FitzGorald (and later by H.A.Lorentz) that the negative result of the experiment might arise from a contraction of the arm of the interferometer which lay along the direction of motion. (This provided the seed for the limerick

There once was a fencer named Fisk Whose thrusts were remarkably brisk. So fast was his action The FitzGerald Contraction Reduced his rapier to a disk!

--probably after the Contraction had been discarded.) Lorentz gave reasons for supposing the contraction to be a universal property of matter, Various experiments were then contrived to measure the contrastion. All of them depended on detecting a change in the results of the experiment when the apparatus was changed in orientation, the idea being to find some "preferred direction" in space--the direction of motion of the ether. Rayleigh tried to find a photoelastic effect resulting from the contraction, and later looked for a variation in the birefringence of a quartz crystal. Nordmeyer placed two balanced radiation detectors on opposite sides of a light source, the idea being that the "downstream" detector would receive more energy than the "upstream"one. Many electri cal experiments were tried; they were of high sensitivity. All gave a negative result; the supposed motion of the other could not be shown. While it might be possible to explain each failure by a compensating offect like the FitzGerald Contraction, it would be ridiculous to have a whole set of such special compensations. That would be like the old systems of epicycles and epi-epicycles and epi-epi-epicycles and so on that were used to patch up the old notion that the circle was the only perfect figure, so the planets must move in circular orbits.

So Einstein did the appropriate thing--he constructed a theory of mechanics which assumed that all experiments to measure the velocity of light would give the same answer. He also assumed that the laws of physics are independent of the system of co-ordinates to which they are referred. As justification for these assumptions, it might be said that all our experimental observations support them and no experimental evidence to the contrary exists; and the purpose of the theory is to connect all our experimental results in an organized way, so that we may see the relationships which exist in the physical world.

Now suppose that we have two systems of co-ordinates, say S and S¹, and that they are moving (relative to one another) with a velocity v. Let us suppose that their x-axes coincide and lie along the direction of relative motion, and that the y-and z-axes are parallel. And let us suppose that the origins in time and space coincide, so that t=0 corresponds to t¹=0 and at this time (x=0,y=0,z=0) coincides with (x¹=0,y¹=0, z¹=0). Then suppose that at time 0 a flash of light is emitted from the common origin. At some later time, the light signal will have spread out on the surface of a sphere. In the system S the equation of the sphere is $x^2+y^2+z^2=c^2t^2$, and in the primed system, the corresponding sphere is $x^{12}+y^{12}+z^{12}=c^2t^{12}$; and if the units of length and time are defined the same way in both systems, we have

 $x^{2}+y^{2}+z^{2}-c^{2}t^{2} = x^{t^{2}}+y^{t^{2}}+z^{t^{2}}-c^{2}t^{t^{2}}$

In fact, it can be shown that this equation is generally true if the x, y, z, and t and the corresponding primed quantities are the differences (separations) in the space and time co-ordinates of two events; here, the events are the emission of a light flash at x=y=z=t=0 and the arrival of the signal at the point (x,y,z,t), and similarly in the primed Then if we regard x, y, z, and it as the coordinates of a space system. of four dimensions, a transformation from one system to another is mathematically equivalent to a rotation of axes in this four-dimensional space (i is the square root of minus one). NOTICE THAT THE COMMON STATEMENT THAT TIME IS THE FOURTH DIMENSION IS INCORRECT! It is more accurate to say that a pure imaginary quantity proportional to time is mathematically equivalent to the usual three dimensions. Just because it is mathematically convenient to describe relativistic mechanics in terms of four dimensions, we are not allowed to say that the universe is four-dimensional. In statistical mechanics, we find it convenient to describe a piece of gas in terms of six times as many dimensions as the number of molecules it contains; in quantum mechanics, it is handy to describe an atom in terms of a space of an infinite number of dimonsions; but these dimensions are not all real, spatial dimensions, even though they may be related to them.

At any rate, the invariant quantity $x^2+y^2+z^2-c^2t^2$ is called the space-time separation of two events, and it is evident that if one observer measures the separation mostly in time, another might measure it mostly in space, depending on their relative velocities. Because the time term has a minus sign, the relative motion affects measurements of space and time in opposite ways. Thus, one second in the primed system appears to be longer than one second in the unprimed system; but one inch in the primed system appears to be shorter than one inch to an observer in the other system.

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Now at last we get around to measurements of mass. A measurement of mass always requires an acceleration, so that strictly we should use general relativity in our calculations. However, it is possible to come up with the right answer from an argument based on the special theory of relativity. A very loose argument which gives a sort of intuitive picture of the increase of mass with speed is this: suppose we consider a clock of any sort. The frequency of oscillation of its governor depends on the mass of the governor; for an ordinary clock, it is the mass of the balance wheel, and for a crystal clock or an atomic clock, it is the mass of the vibrating atoms. If the clock is moving it appears to run more slowly than when at rest with respect to the observer. We may interpret this as an increase in the apparent mass of the clock. (A rigorous argument can, of course, be given.)

Now let us get around to studying spaceships. At rest, a spaceship has some mass. When we accelerate the ship (e.g., with a rocket) we are, in effect, measuring its mass. We give it some momentum and observe an increase in its velocity; the ratio of the increase in momentum to the increase in velocity is the mass of the object. Now the theory predicts--and it has been thoroughly verified--that as the ship goes faster and faster, it becomes more and more massive. Hence, each time We increase its momentum by one unit, the corresponding increase in velocity becomes smaller and smaller. As a result, the speed of the ship approaches the speed of light. But as the speed approaches the speed of light, the mass increases without limit, so it is impossible to get the thing going faster than (or even as fast as) the speed of light.

Now let me stress one point: all this can be proved if you accept the basic assumptions that underlie the theory. And there are no valid reasons for rejecting the assumptions. Furthermore, if you find reasons for discarding the theory, you must produce an even better theory to explain the new results and account for all the old facts as well. The theory of relativity gives the same answers as classical theory for low speeds, and includes high-speed phenomena as well. So if you reject the theory of relativity, I ask: how do you account for the observed behavior of matter at high speeds? If you can explain all the facts the relativistic mechanics explains with a better theory, I will gladly adopt the new theory.

So let's have none of this "why can't a spaceship exceed the speed of light?" stuff. Let's face up to the fact that this is just one of the properties of the universe. You might as well ask "Why isn't gravitational force a repulsion instead of an attraction?"

But you needn't be too discouraged about interstellar travel. If you accelerate with a constant acceleration of one gravity, you get up into relativistic velocities in about a year. If you keep on accelerating, you can get as close to the speed of light as you wish. And at such high speeds, the dilation of time and contraction of space are on your side, so to speak. From Earth, everything on the ship seems to slow down, so that the passengers do not appear to age as much as they would on Earth; from the ship, interstellar distances seem to shrink, so that the trip seems shorter. So you might be able to make a trip of a hundred light years in twenty or thirty years, because most of the time you'd be traveling just under the speed of light. If you could stand a higher acceleration, you could do it faster, but I'd hate to spend years under an acceleration much greater than normal gravity. Of course, you could send out unmanned rockets at higher accelerations and thus save on battory life and wear of the equipment, but a round trip to a star a hundred light years away would take just over two hundred years, because you'd be sitting on Earth waiting for its return all the while.

Well. So much for relativity. Go read a book.

I'm typing with a Siamese cat on my shoulder. Not our cat. Not even a full-grown cat. We're boarding the Siamese kitten of Dr. Gerald H awkins for a few days. And Jean is highly allergic to cats. Why a person so deadly sensitive to cats would volunteer to keep one is beyond me.

This stencil, so far, and the last, have been typed with film. I wonder if it will do any good. Probably it will keep the caps from cutting.

Now I will give my side of The Football Situation in Stark County, Ohio. Ray Schaffer, beware. Up until I went to college, I had lived all my life in Stark County -- in Massillon, to be exact. The interest in football is fanatical. Massillon has a football stadium far finer than those of the three colleges I attended as an undergraduate. The stadium holds something like 20,000 people; the population of Massillon is 29,594 (1950 census) and was about 26,000 when the stadium was built. Some ex-residents of the region come from California every year to see the Massillon-McKinley game. Tickets for the game sell out months in advance and scalpers are commonly reported to have gotten as much as \$50 for tickets. Riots are not uncommon at games, especially if Massillon loses, and people have been killed in them. Considerable politicking goes on to get potential football players into the high school even if they live outside the school district; I have heard that players have been payed \$500 to play for Massillon, but this may be an exaggeration. The local booster club seems to have no trouble getting money for new football equipment or to send the band to the Rose Bowl, but the populace has consistently voted down money for teachers' salaries; it seems likely that school will have to run half-time next year, as it did when I was in the fourth grade. Not that anyone will notice the difference; school is only about half time as it is, because school time is taken up with rallies to stir the maddened crowd on to greater madness. These rallies are required, by the way; you can't sneak off to study during them. And spontaneous rallies often delay the start of classes at noon; after one noontime rally, about half the student body left to march on Canton with blood in their eyes and it took most of the police force and the school officials to bring them back. (Canton is about nine miles away.)

And having seen a few of Massillon's games, and having been forced to play football in grade school, I think I have a legitimate dislike for the game. In Massillon, at least, there seems to be an implied emphasis on deliberate cruelty, since there is so much pressure to win by any means available. You don't have to watch many of Massillon's games to confirm this. Opposing players are continually being carried off the field, sometimes with broken bones and sometimes after merely being kneed in the groin by the mad dogs.

The same sort of attitude seems to pervade the whole town. There was once a family on our block in which the children were taught to lie, cheat, and steal as much as possible; another fellow who lived on our block is now in jail for burglary. And then there was the case, just this year, where a drunk blew off a bartender's head with a shotgun after the bartender refused to give him another drink, and I recall the time two infants were murdered in the City Hospital (still unsolved after many years), and the time a member of the police force went berserk and shot up the police station before he was finally shot down.... I think Stark County would be a fine place for an H-bomb test.

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Well, of course I have presented a very one-sided picture of Stark County; still, I've had enough direct experience with the place to have a strong dislike for it.

I think I forgot to praise SAMBO back a ways, Liked t. SaM need not feel that my discussion of relativity here is a rebuke.

All that's said in the postmailed SAMBO #13 about light appearing to travel at a slightly different velocity as seen from a moving body is quite correct, on the old picture of the ether. It was just this change in the apparent speed of light that the Michelson-Morely experiment set out to measure. The fact that no such change could be found was what made the theory of relativity necessary. Light travels at a constant speed with respect to the observer, not with respect to the ether. Since the only real property of the ether was that it was what light traveled with a constant velocity in, and light does not possess the property of traveling with a fixed velocity relative to any particular system, the ether does not exist. Like the unicorn, you know, - It might also help if I mention that analogies between light and sound are no good; from a purely classical view, light is a vector wave and sound is a scalar wave. - But if you examine the assumptions of relativistic mechanics, it all boils down to the assumption (based on experiment) that nothing (strictly, no matter/energy; no information) goes faster than the speed of light. It is actually assumed that nothing does go faster than light, hence an argument(based on relativity to "prove" that nothing goes faster than light)is circular. You may, of course, object and say "but suppose something could go faster than light and we don't know about it yet?" Well, if anything went faster than light, you could use this thing in place of the light beams in the arguments of relativity and the speed of the thing would replace the speed of light in the equations. If you imagine something traveling at an infinite speed, then the low-speed equations of mechanics would hold exactly. Then you would be stuck with having to explain the observed fact that the equa- . tions of relativistic mechanics give us the right answers when we plug in the observed velocity of light. To assume that a signal can be sent faster than light implies, by the same logical chain that underlies the theory of relativity, that we would get answers which we know to be the wrong answers to high-speed dynamical problems. Hence, to avoid a contradiction, we must assume that nothing goes faster than the speed of light.

Of course, I should know better than to try to convince any nonscientist that he's wrong. I bet the only person in FAPA who gets any information from all I've said is Charles Wells. I should have saved my broath stencils.

What this kid needs is an infinite baffle.

what this kid heeds is an inititio ballic.