

# Dividing the Time of Day by Decimals

One of the features of the Paris exposition, reports the Chicago Tribune, will be an international congress of scientists to consider the decimal division of time and the circle. The division of time alone may be considered here, because if the congress should arrive at some tangible result—as is not at all unlikely—it will be of more far-reaching popular effect than any abstract mathematical proposition. Moreover, scientists have long since pointed out that the present division of time has its shortcomings.

Prof. Paul Crueger, a German scientist of note, has pointed out in the "Prometheus," a German weekly devoted to progress in trade, industry and science, the disadvantage of the present system of dividing time and so far as the popular side of this question applies to American customs—the scientific side being, of course, of international character—his deductions will be read with interest even by lay readers.

One of the popular objections to the proposed change is the assertion, which appears natural and almost a matter of course, that the great mass of the people has become so accustomed to the 60x60x12x2 division of the day that it will be exceedingly difficult to introduce the decimal system, and that, therefore, it would be almost a barbarism to abolish the usage, with which people have become familiar for centuries, for the sole purpose of giving a scientific character to one of the most important, though scarcely ever thought of functions of daily life—namely: The measurement of time.

### People Like Decimals.

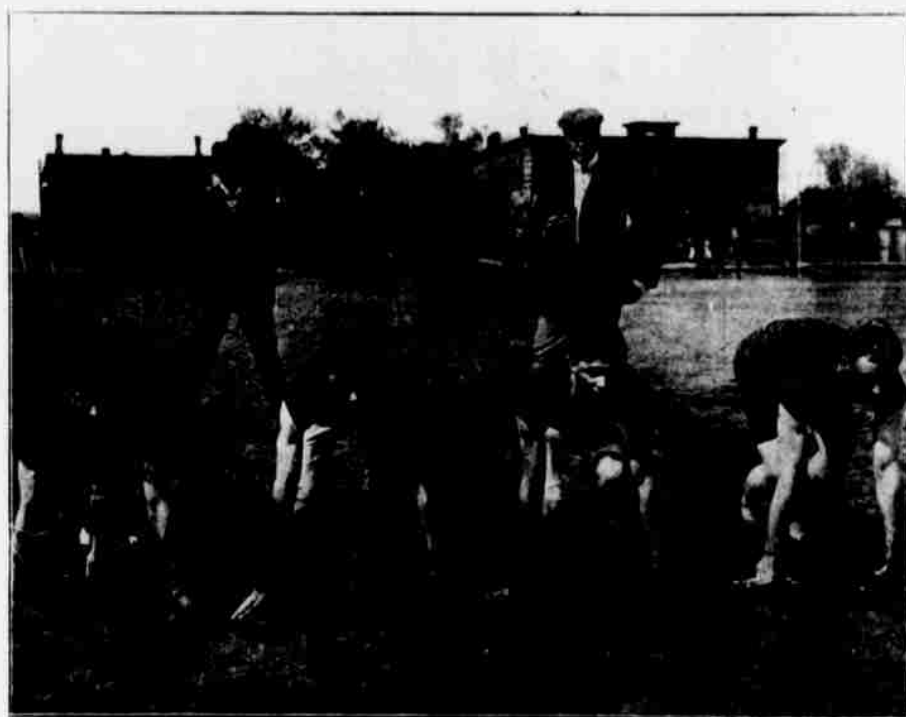
The people may think differently about this matter, for the people at large are not sentimental. The descendants of the Pilgrim fathers, of the hirelings of the Landgrave of Hesse, and of the numerous nations which came later quickly accustomed themselves to the abolition of pounds, shillings and pence; of thaler, silbergroschen and pfennige; of gulden and kreutzer; of kronen and heller; and to the adoption of the decimal dollar and its 100 cents. In fact, so far as time is concerned, the great mass of common people do not adhere at all to the actual division of 60 plus 60 plus 12 plus 2, but will say, for instance, "It is nearly half past 1 o'clock," or "It is a quarter to 2," or "It is a few minutes after half-past 3." Of course, those for whom accurate division of time is of moment—railroad and business men, bankers, racing and sporting men—will figure differently and will probably speak of 1:29, or 1:45, or 2:27, but these do not form the bulk of the people.

Thus it appears that the great mass of people do not adhere to the division of hours into 60 minutes, but count by quarter or half hours, so that the popular day has not 2 plus 12 hours, but 2 plus 12 plus 4, equaling 96 quarter hours, for the quarters are all the units of time in the popular mind and not the minutes. The people do not like to count odd minutes, but speak of 5 or 10 minutes, and seconds are not popular at all, except with people whose business or predilection compels them to reckon with the subdivision of the minute. Of course every child knows that a minute has 60 seconds, but the second is hardly ever considered.

Hence, all advocates of the decimal division of time maintain that the people are

not so much attached to the time-honored division, because they do not use the hour as a unit of time; do not count with 60 minutes, and do not use the seconds. The people count by quarter hours and figure the minutes from the quarter. But such a designation has all the shortcomings which a correct measurement of time should not have.

Two causes may be cited why the mass of the people do not reckon by the hour, with its division of 60 minutes. The space of an hour is apparently too large and the 60-division is not comprehensive because it does not correspond with the decimal division of the dollar. Every child knows how much 47 cents is, but even the adult does not know without thinking what space of time is expressed in 47 minutes. He or she must first think that 60 minutes form the unit of the hour, and then calculate that 47 is a little more than three-quarters of the unit. This is in accord with a common law, which applies to all times and all peoples. Any arbitrary division



LINE-UP FOR 100 YARDS' DASH—NEBRASKA UNIVERSITY FIELD DAY—Photo by Louis R. Bostwick.

which does not correspond to the ruling system of counting lacks the quality of being perceived intuitively. Any other than the decimal division conflicts with the decimal units, 10, 100, 1,000, etc., which every child knows. An accountant may get along swimmingly with other systems, but the people want units, which they may comprehend without thinking.

### New Division.

Hence a new division of time which is to become popular must be based upon the following principles:

1. It must be decimal.
  2. The time unit must not differ materially from the present quarter hour.
  3. This time unit must not be longer than ten minutes.
- All these principles can be happily



FEIKIAH III.—MASCOT OF THE NEBRASKA UNIVERSITY—Photo by Louis R. Bostwick.

24 cogs would need replacement by a hand wheel of 49 cogs.

The dial of the new clock or watch would have but one hand which courses around the circle divided into 100 marks and 10 runs in one-tenth of a day, equaling 1 decarun or derun. Hence only the mark and the unit of the runs will be shown. The decems of the run, decarun or derun will be recognized without thinking, for an error of 1 decarun, equaling 10 plus 14.4, equaling 144 minutes, or 2 hours 24 minutes, will hardly be made. Consequently, one hand would be sufficient, though a second one could readily be provided for, and the simpler method of an additional dial would be better. This second dial, turning beneath an opening in the main dial, would show ten figures, from 0 to 9, and would be advanced with each revolution of the hand by one figure.

The second question, that of the decimal division of the circle or angle, is a matter of indifference for the great mass of people. It cannot be said that the present division in 360 parts of the circumference of a circle or in 24 hours of a day has any advantage over the decimal division. These old divisions simply retard the progress toward a universal decimal system.

### Short and to the Point

"Are you one of the officers of the Treasury department?" asked the man with the bloodshot eyes, relates the Chicago Tribune. "I am assistant secretary of the treasury," was the reply. "What can I do for you?"

"Well, it's rather a confidential business, and I don't want it to go any farther, but I've come to pay the government some money that I guess I owe it fairly. I came back from Europe about a month ago with some dutiable goods concealed about me and got past the revenue officers with them. I figure that I beat the government out of about \$6 and I've come to square up and get the matter off my mind."

"Well," responded the assistant secretary, "we have what we call a conscience fund, and as this seems to be a case of conscience—"

"I don't know that it's my conscience that troubles me," said the visitor, "but I do know there's a big bullfrog that stays in a pond near where I live, and he keeps me

awake night after night, with his infernal 'cough up! cough up!' and I've got tired of it."

A hostess of the West End, New York, who proposed giving a dinner to some of the doctors visiting in town, said to the caterer when she had finished with her order:

"Now, Mr. X, I trust you will make this dinner as fine as possible, for my guests come from all over the country and I want them to see how well we do things."

"Is it the doctors you're going to entertain, then?" asked the caterer.

"Yes," responded the hostess. "I have invited a number of the doctors."

"Give me my list, then," said the caterer, and he forthwith proceeded to increase the quantity of everything upon the menu and to nearly double the amount of wine.

"What do you mean by that?" asked the patron. "Why have you increased the quantity of everything so materially?"

"I was all right at first for the ordinary guest, madam," said the caterer with an ex cathedra air, "but them sawbones does eat and does drink—they does eat and drink. Their trade seems to give 'em an appetite."

The poet Walt Whitman was, as is well known, dependent during most of his life upon the kindness of his friends and admirers for support. A few years before his death one of these friends called upon him in his little house in Camden, a suburban town of Philadelphia.

"Well, Walt," he said, "how goes it this winter? Any subscriptions needed for Christmas?"

"No," said Whitman; "no, I'm at work now. I'm in the employ of George Childs. He pays me \$50 a month."

"You at work! May I ask what is your occupation?"

"Why, I ride in the street cars, I fall into talk with the drivers and conductors and find out which of them have no overcoats and guess at their size and notify Childs and then he sends the overcoats. It's not hard work," said the poet, thoughtfully. "And then, you know, it helps Childs along."

One of the applicants at the Federal building in New York, recently, for citizenship papers was a handsome, picturesque and muscular young fellow, wearing big gold rings in his ears.

"How long have you been in the United States?" asked the clerk.

"Five minutes," said Cubello.

"How did you get in here so quick?"

"I came from Naples," said Cubello, promptly. "When I get off the ship I get on the automobile, and I come here so quick," and he pointed out the window at a Broadway cab that was passing. He was given his preliminary papers and went away delighted.

"Now I can go to work on the big tunnel," said he. "Which way is it to it?"

### Reason for Parsimony

Chicago Post: "You have repeatedly told me," she said with some show of indignation, "that I am all in the world to you."

"Quite true, my dear," he replied.

"Well, you have a mighty strange way of demonstrating it," she asserted.

"How so?" he asked.

"Well, you're stingy," she answered; "that's what you are—just stingy. You keep your money hoarded up like a miser."

He looked at her in surprise.

"But, my dear," he mildly expostulated, "why should I go about investing in other things when I already have what's all in the world to me? You really ought to take a reasonable view of these matters."



POLE VAULT, NINE FEET—NEBRASKA UNIVERSITY FIELD DAY—Photo by Louis R. Bostwick.



HURDLE RACE—NEBRASKA UNIVERSITY FIELD DAY—Photo by Louis R. Bostwick.

observed by the division of the day into 100 units, each of which may be termed a "run." The run again is divided into 10 decarun, or "mar." Then the day would have 100 runs instead of the present 24 quarter-hours and 1,000 mar instead of the present 1,440 minutes.

One mar would be  $\frac{1.440}{10} = 1.44$  minutes.  
1,000

One run equaling 10 mar would equal 14.4 minutes.

One run would be 15 less 14.4 equaling 0.6 minutes equaling 0.6 plus 60 less 36 seconds shorter than the present quarter hour. It will be seen that the new time unit, the run, would differ immaterially from the present unit, the quarter hour. The mar, equaling 1.44 minutes, differs from 1 1/2 minutes only by 1.50 less 1.44 equaling 0.06 minutes, or 0.96 plus 60 equaling 3.6 seconds. There could be, to facilitate all popular introduction of decimal time measurement, the run substituted for the quarter hour and 4 runs for 1 hour. Perhaps it might be more advantageous to replace the hour by 5 runs, which would be exactly 1 hour and 12 minutes.

For scientific purposes, which require more accurate measurements of time, the mar can be divided into 100 milliruns or "set." Then the day will have 100 plus 10 equaling 100,000 set, instead of 24 plus 60 plus 60 equaling 86,400 seconds, consequently 1,000 set are 864 seconds and 1 set are 0.864 seconds. Another, and probably more pronounced advantage of the set over the second will be that the set pendulum will be shorter than the present second pendulum. Hence the new set pendulum will be found more frequently in clocks and will make it possible for the layman to make scientific observations.

The laborer, the official and the child have to care, as a rule, only for the beginning of their work, or school time. Now, whether this beginning is now 8 o'clock, or 8:10, or in future 34 run, makes no difference so far as the recollection is concerned. Even a child will readily understand the value of a run as to the course of the sun or the different appointments of the day. Twenty-five run would be exactly 6 a. m.; 50 run, 12 meridian; 75 run, 6 p. m.; 0 run, 12 midnight. From 25-75 run is daytime; all runs under 50 are forenoon, over 50 are afternoon. For instance, 11 a. m. is 46 runs, 11 p. m. is 96 runs, 1 p. m. is 54 runs, 1 o'clock at night is 4 runs. Hence all appointments can be made by complete runs, where at present quarter and half-hours are required.

### Mechanical Difficulty.

Watches and clocks, of course, would require structural changes, but these changes are not so difficult nor so material as would appear at first glance. In regard to the ordinary clock, for instance, the change-wheel of 36 cogs would have to be replaced by one of 25 cogs, and the minute wheel of