

The history of Time and how we screwed it up

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Way back in the beginning mankind did not have clocks and the day was scheduled around daylight and the movement of the sun. That was all that mattered... then somebody invented the sundial and found one could make marks and more accurately determine different times of the day. The daylight time was split into 12 periods we call hours. Since the sundial had roughly equal times of darkness and light (with seasonal variations) the night was split into 12 hours also. As clocks were invented that could work at night, all of a sudden we needed a way to indicate which 12 hour period to which we were referring, so AM and PM was added. 12 midnight until until noon is called “AM” and Noon to midnight is called “PM”, and these terms come from Latin (you can look up the meaning if you wish).

That is where we started to go wrong. A day has 24 hours and we do not need any designation to differentiate between day and night. We should just use 24 hour time, but most people will not, simply because it requires a change in thinking. The military uses only 24 hour time so there is never confusion between am and pm. Once you get used to using 24 hour time, it is as easy as 12 hour time, it just requires a bit of practice until the brain forms some new pathways. It is like muscle memory, use it for a while and it becomes automatic.

If you want to convert 24 hour time to 12 hour time, if it is 12 or less, no conversion is required, if it is greater than 12, then just subtract 12 (or the easy way, subtract 10, then another 2, easy to do in your head) 15:00 – 12 is 3 pm.

I will tell you that after using 24 hour time for a bit, one does not have to convert, you learn the clock the same and just know it. I hear 21:00 and I just know it is 9 PM for example. For those of you who cannot do the math, 21:00 on a 12 hour clock is the little hand on the 9, the big hand on the 12, and it is dark outside. Anyhow to convert from 12 to 24 hour time, if past noon add 12, if converting 24 hour time to 12 hour, if it is past noon, subtract 12.

I know the 12 hour clock is so well entrenched that few, if any will change (unless they go into the military), but change is what all ‘should’ do.

Now getting back on track with history, we had to set time zones because the day is different everywhere on the planet. When we were “flat” and had no communications, nobody considered time zones, and none were necessary. The railroads invented the time zone to support schedules. Before time zones every location decided that Noon was when the Sun was directly overhead. Noon in New York is three hours different than Noon in California, and when we start communication globally things became really confusing. It was decided that we need a common time that could be used everywhere. So since the English started this, in 1928 they chose the time in Greenwich England as the anchor point (there has to be some start spot), thus it was called Greenwich Mean Time, or simply GMT. In 1967, it was changed to “Universal Coordinated Time” which is slightly different because UTC adjust for leap seconds where GMT did not. Why it is called UTC has to do with dealing with different languages and each country having different ideas, but UTC was adopted out of many other suggestions.

Now, if we use UTC our time is the same everywhere in the world and every zone has a different offset, plus or minus the English time. For example, I am in the USA in the Mountain time zone, which is an offset of 7 hours. Since we are West of England, their midnight comes 7 hours earlier then mine. Midnight for example is at 5pm (17:00) my local time.



Why mess with this you may ask? If we are going to have a telephone conference that involves people in several time zones, if the time is given in UTC everybody will be on time, no confusion. If a radio net that spans time zones starts at a fixed time, as they all do, then UTC should be used. Using your local time is awful, and it is messed up more by Daylight Savings Time (DST) that is not observed everywhere. The answer is UTC should be used for anything that needs to be coordinated across time zones.

In Amateur Radio UTC should be used exclusively for logs. If I work a station in Russia for example and he wants a QSL card, what does my local time mean to him? If we use UTC then each one of us can convert it to our local time and know what the local time was.

I am saddened by the fact so few Hams seem to have an understanding of UTC yet it is so important. The Ham must first know what time zone he is in. In the USA PST is -8 hours, MST is -7 hours, CST is -6 hours, and EST is -5 hours. There is no daylight savings time with UTC, it never changes (neither does the Sun).

If you want to know UTC in the USA, just add your offset from your local (24 hour) STANDARD time. As I type this I look at the clock and see the local time is 10:30am thus it is 17:30 UTC. If I want to convert UTC to local I subtract the offset. It is pretty easy although slightly complicated by daylight savings time for the majority of you that observe DST (I don't, I am in Arizona which does not observe daylight saving time). I hate DST with a passion. It is an archaic and invalid concept. Farmers work by the Sun, not the clock. Kids wait for the school bus in the dark, But that is a whole new subject.

In conclusion, Every communicator should be comfortable with 24 hour time and Universal Coordinated Time (UTC), and all published times for events that span time zones, should be in UTC, which is in a 24 hour format.

It is made much easier if you simply have two clocks, one in local time, the other in UTC.

Simple conversion table for 24 hour time.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24/00

In 24 hour time, Midnight is a special case, it is 24:00 until you get there, then it becomes 00:00

Things evolve, and the next challenge for Man is how to keep time in Space. Currently we use Earth time, normally the time of the control point of the mission, but this is only useful near Earth.

If we go to the Planet Mars it becomes very interesting and one wonders how it will be handled when (if) there is a population there. The length of a day is, compared to Earth time, 24 hours and 37 minutes and a year is 687 days, or nearly twice as long as an Earth year. Each season (if there are seasons) would be twice as long. So if we still used 12 months in a year each month would have to have 57 days and every third month with 58 days. On Earth months are determined by the moon phases, no help from the moons of Mars, You could not define a month by the Martian moon(s). Simply put, Earth time will not work on Mars.

My whole point is for people living on Mars there would have to be a whole new calendar and clock... a whole new system would have to be invented because Earth time loses meaning on Mars. The people on Mars would simple disassociate themselves with Earth time because Earth time will have no meaning. It is not like Someone on Mars could call Earth on the telephone, the time delay for the radio signal would make real-time voice communication impossible. The travel time for a radio signal from Mars is 100-300 minutes depending on where we are in the orbits. It would be impossible if on opposite sides of the Sun. Communications between planets would have to be digital data (eMail?), but I suspect the people on Mars would quickly lose any need to talk to Earth. Personally I seriously doubt Man will ever colonize Mars. There is nothing there that would make us want to stay. No ocean, no forest, no blue sky, no animals, It's very cold, can't go outside for a walk without wearing a spacesuit, who wants to give up Earth for that kind of life living in a dangerous prison?

Like our Moon, we can get there but why spend the huge amounts of money it takes? The Moon is just a dangerous sterile rock covered with dust. There is nothing of interest there and all you have is what you bring with you. At the very minimum, to survive on the Moon there would have to be found a source of water but maybe there is none, or too little to be used. On Mars, at least water (ice) can (we hope) be mined. Anyplace man wants to go, there must be a source of water as a minimum.

I do see one possible use for the Moon, since one side always faces the Earth one could put a communications system (similar to a satellite in function) as a very physically secure relay, or a store and forward site. It sounds like something the military might want, but oh the cost of a service call! Maybe God made the Moon, just to be the Moon and there is no other use for it? The Moon has two functions. Dim light at night, and gravity that affects the Earth and gives us tides and more.

One last thought about the moon. It is covered with craters over the entire surface. In the history of man studying the Moon, has there ever been the creation of a new crater observed?

I am amused with Science Fiction movies where everywhere in the galaxy there is a standard year and a standard day and hour, and radio communications are instant. Oh, and everybody speaks English which is downright handy.

You might wonder how my "Screwed Up Time" subject evolved into this discussion. All I can say is; "Hey, it's a personal blog".

