In this contribution we study the influence of the subdaily model for Earth rotation parameters (ERPs) on the GPS (Global Positioning System) solution and the dynamical reference frame realized by the GPS orbits. As input data we use a long term time series of daily normal equation systems (NEQ) obtained from GPS observations from 1994 till 2007 where ERPs are set up with 1-h resolution. The subdaily ERP model which was used in the processing in general cannot be replaced on the NEQ-level by another model as long as it is not present in the NEQ explicitly as a set of parameters. In our case the high temporal resolution of the ERPs allows the transformation of the ERPs into tidal terms which then can be kept fixed to new a priori values. To study the influence of individual tidal terms on the solution we change successively a priori values for one tidal term in polar motion and compare the resulting solutions for GPS orbits, station coordinates and ERPs. We show that changes in a priori subdaily polar motion lead to a common rotation of the whole GPS constellation with periods defined by the respective tidal frequencies. Time series of all the estimated parameters also show variations with respective periods.