

Product Spotlight >> By Shawn Billings, PS

> HP50g

Hewlett Packard has been developing products for land surveyors and engineers for four decades. In that time they have earned a well deserved reputation for bringing highly functional, quality devices, such as electronic distance meters, personal computers, laptops, palm tops, and plotters, to the practicing land surveyor and survey technician. Arguably their greatest contribution to the surveying industry is their prolific development of scientific calculators. Many models produced twenty or more years ago still fetch hundreds of dollars in the used market, not for antiquity's sake, but because those models have garnered such profound fondness from their users. From the HP-41C, to the HP-11C and 15C, to the HP-48 (SX and GX), HP has created calculators that blur the lines between calculator and computer, while also maintaining a comfortable form factor, simple keyboard layout, intelligent features and (in the case of the 41C and 48SX/GX) expandability to allow for increased storage capacity and program installation. The latest iteration of these powerhouse calculators is the HP-50g. With a large LCD screen capable of displaying seven levels of user entries or results in the "stack" with exceptional clarity both indoors and out, seemingly endless battery life from four AAA batteries, SD card slot for copying files from calculator to calculator or calculator to PC, as well as USB, RS232 and infrared ports, every surveyor's desk and truck would do well to be equipped with one. Considering the surveyor friendly RPN entry or more universal algebraic entry for calculations, 2300 built in functions (such as vector manipulation and units conversion) and



the ease of user programmability, it is difficult to conceive of the problem a knowledgeable professional, armed with this calculator, cannot solve. While some might suggest the days of the calculator are setting over a shiny sea of tablets and smart phones, I would submit three things this electronic workhorse has to suggest otherwise: 1) well spaced tactile keys—my "full figured fingers" struggle with the touch screens of small "smart devices" and are trained by years of use to feel for the positive response of an actual button. This leads to more certain and accurate entry 2) user programming—I can write a few simple lines of code that will quickly reduce slope distances logged in the fieldbook to horizontal distances or another that calculates the ballistic energy of a 158 grain 357 magnum bullet trucking at 1200 feet per second (505 ft*lbs) or get a little more complicated and write a

program that performs a final closure check on my survey plats. 3) Speed—while this may seem counter-intuitive comparing the 75 MHz processor of the HP-50g to a smart phone or tablet possibly pushing 1 GHz, the instant on, immediate two or three button access to most routines means I'm getting answers from the calculator while the other guy is still trying to find the right "app" on his phone. And speaking of "apps", there are numerous free programs available online as well as some quality commercial applications that can transform the 50g from a solid number cruncher to a performance enhanced survey computer. Together with all of that, the price is hard to beat on the 50g, at just a little more than a hundred bucks from many online sources (HP's list price is \$150). I can still recall paying twice that for its much slower, less endowed ancestor, the 48GX, in 1994 (with 1994 dollars). *A*