Power for the Pignic!

David Rippner, Susan Root, Wes Edwards, and Michael Potts

Sound check: a first nasty buzz from the speakers, so we hid and waited hopefully. Soon the soundman found the source of the buzz on the analog side, corrected it, and music from the CD player boomed out across the valley. "WOW! Great power: so clean and quiet," the soundman observed. True techies, we nodded knowingly, trying not to show any emotion.

Providing electricity for the remote stage at the Hog Farm's Labor Day Pignic is just part of our job. During most of the year, the Hog Farm at Black Oak Ranch is an intentional community for Merry Pranksters and other '60s activists, and the summertime venue for Camp Winnarainbow, a rural performing arts summer camp. But for a few days every September this gathering site near Laytonville in northern California hosts our favorite late-summer party. In its fourth year, the Pignic is now so successful you'll have to get your tickets from BASS or Ticketron!

Since Laytonville is just a short roll down Highway 101 from our homebase in Redway, Alternative Energy Engineering (AEE) and its volunteer crew have powered the event since its inception. It takes a day to load three trucks full of voodoo electricity, drive an hour, and then a few intense hours to unload and set up our power system. Afterwards, except for routine tweaking, we are rewarded with two days and nights of dancing, camping, playing and pignicking. We are old enough to appreciate this chance to rejoin a thriving subculture that came of age with us during the '60s. Thanks to clear skies, abundant sunlight, and state-of-the-heart solar power technology, we knew it would be easy to supply ac power for the event's sound and lighting.

Above: Davy, David, Wavy, and Joe

David's Plan

Following AEE founder David Katz's plan, our 24 Solec S53s and 24 British Petroleum BP75 photovoltaic modules fed a 14,000 Ampere-hour Chloride Industrial battery courtesy of Batteries Inc. and Joseph Marino. The battery powered a stack of four Trace 4024 sine wave inverters to produce 240 vac stepped down to 120 vac with a pair of eight kilowatt transformers. Safety first: an 8 foot ground rod driven into the soft earth, all equipment grounds coupled, neutral wires bonded at the transformer output. The 4/0 cables between batteries and inverters had 400 Ampere, class T fuses installed in-line. Because this was a very temporary system, our disconnect consisted of two Anderson 350 Ampere connectors. Not quite up to code, but at least we were not hard-wired to the batteries.

"Wonderful and Amazing"
—Ken Kesey, on solar power

Sound tests began just before twilight Friday. The quiescent power draw from the PA was about 2,500 watts. Cranked all the way up, the draw was 5 kW. What a stereo! The light man's power check was next, swinging 6 kilowatts around with his small board for fades, cascading, and other effects. He ran through all his functions and enthused, "This is

Left: And the crowd goes WILD to the sound of bands amplified by the power of the sun.

Above: The Alternative Energy Engineering crew setting up the PV system.

so cool!". Altogether our system would provide as much power in one hour as a normal American house consumes in a day.

Saturday

Saturday, the first day of the Pignic, dawned damp, foggy, and cold. By nine a.m. we had wiped the dust and dew off the banks of modules and the first band was setting up. Experience has shaken most of the bugs out of our portable system, and we have learned how to balance our loads to optimize system performance. While the stage is running, the techs need to check the meters occasionally, but we had plenty of time to walk around and renew old

"Wow, great power, so clean & quiet!"
—The Sound Guy

acquaintances. Wearing our "Power To The People" clenched-fist T-shirts, the AEE contingent is a noticeable presence. Performers and musicians come and go in the wooded campground behind the stage and the air is filled with the evocative aromas of an era: patchouli, coffee, and fragrant smoke. Comfortable camping arrangements, great food, and hot showers attract a satisfied crowd of volunteers, performers, and their families.

At 10 am an audience of all ages started pouring in, covering the field with blankets and picnic baskets. A horseshoe of vendors ringed the crowd. From the roof of Further, the red-painted bus that carried the Pranksters and some of the brightest lights of the psychedelic era on zany jaunts across the USA, master of ceremonies Wavy Gravy, San Francisco author, poet and philanthropic clown known for his work with terminally-ill children and SEVA foundation, announced the

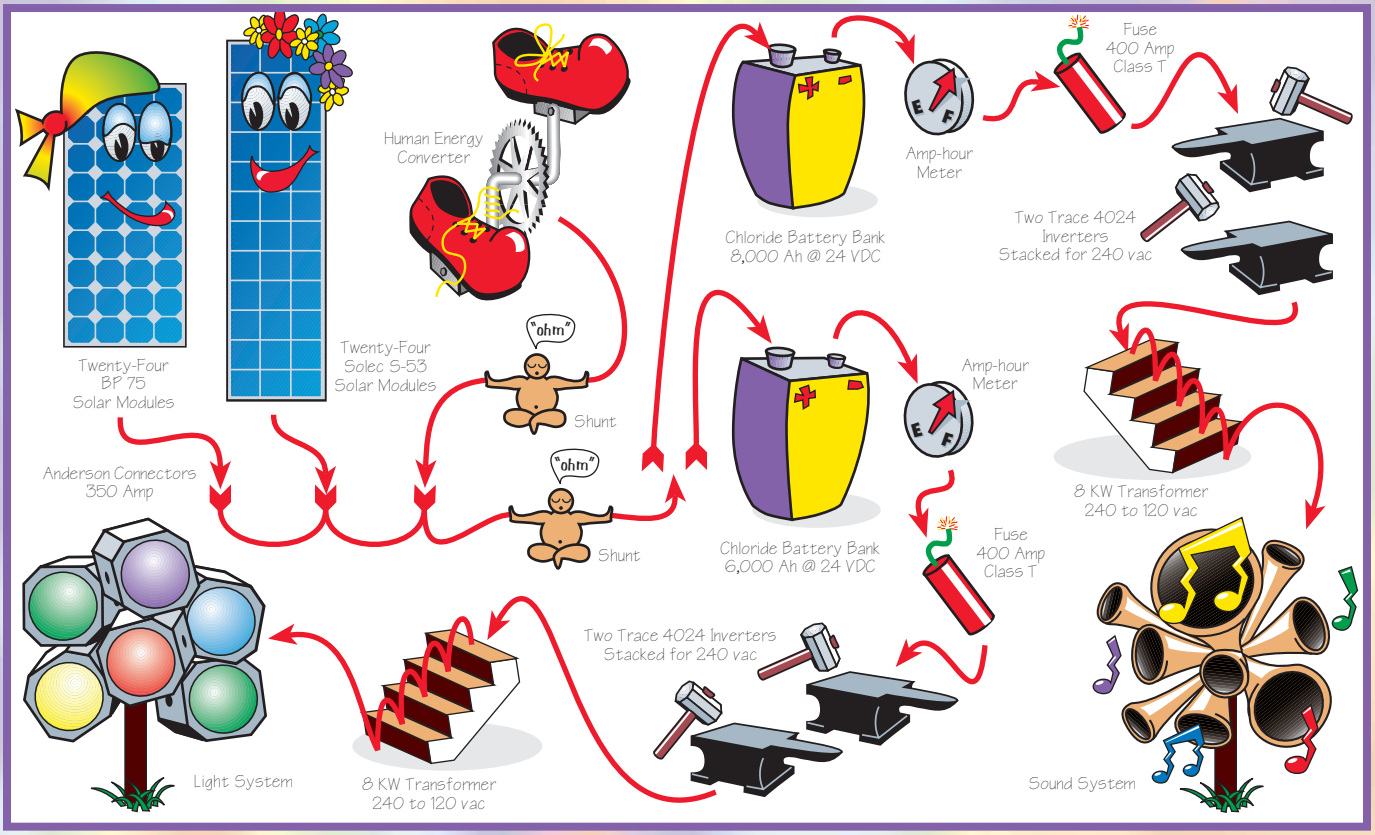
"Up the Sun!"
—Timothy Leary

day's special events: an unscheduled memorial tribute to Jerry Garcia, lead guitarist of the Grateful Dead, followed by the "Canonization" of psychedelic / educator / mystic Timothy Leary. For this climactic ceremony, Ken Kesey stuffed a small iron canon with black powder and "heaven balls" and fired above the heads of the reverent throng. Tim was then robed and given a tall wizard's hat and scepter, with which he blessed the crowd.

Powering the Music

When the first bands began playing we checked power consumption and estimated that we had enough storage for the entire 10 am to 11 pm, two-day show. Our battery and inverter truck was east of the stage beside the 80 Ampere, 2 kW array stretched out in three Zomeworks ground mounts and a large pole mount. Using a Fluke 87 connected to a 500 Ampere 50 mV shunt, chief installer Wes Edwards assured us that we did indeed have adequate storage. We started out

Above: Human Energy Converter (HEC) getting the crowd powered up about powering up.



with an 14,000 Ampere-hours in the battery bank and the solar array pumping out 80 Amperes. When the bands were playing the peak consumption was around 125 Amperes. We connected Ampere-hour meters to each pair of inverters. During the last set the sound man asked if everything was going OK, because the base guitar sound was distorted. The volt meter indicated 22.5 volts under load. The inverters handled the loads well, and not everyone noticed it, but during high peaks there was some clipping. This is the nature of the Trace inverter: peak RMS output power is a product of battery voltage.

> "With the electric companies, the people have the power but The Man has the switch. With solar power, the people have the power AND the switch!"
>
> —Wavy Gravy

Bart Orlando parked his human-powered generator (see photo) on the audience side of the fence, close enough to feed power into our setup, and gave those who wanted to peddle a chance to help power the show. This simple direct demonstration of renewably-produced power always draws a crowd. It's clear from the looks on the peddler's faces that they feel they are playing their part to deliver the music. The hotter the band, the more sweat flies.

Taj Mahal played a long set far into Saturday night. When he finally lost his rich, sonorous voice and the stage powered down after a day without a hitch, we turned off the four Trace 4024 inverters, covered them with tarps to keep out the heavy dew, and headed backstage across the black-lighted bridge for the circle of tall tepees, light shows, music and dancers. Late into the night a crowd circled an enchanted bonfire while pickup groups of spirited musicians, from bluegrass to a didgeridoo quintet, serenaded us.

At sunrise Sunday we were fortunate to observe Wavy Gravy's tribute to the rising sun. We came upon him and the lead singer from one of the bands greeting that revered source of all earthly energy, their pants around their ankles, bare behinds saluting the first rays. Asked if it helped, Wavy cheerily replied, "It can't hurt!"

A Ride on Furthur

Sunday afternoon, after the Prankster's bus, Further, led a parade around the site, we went looking for interviews with the Pignic's luminaries, Kesey, Leary and Wavy Gravy. Kesey asked where we wanted to talk. We suggested somewhere out of the sun, and he said "How about on the bus?" The Bus! Awed, we climbed aboard Further as he directed the tricky extraction of a full-size school bus from a chaotic thicket of dancing and cheering celebrants. In ten minutes we

"This is So Cool!"
—The Light Guy

witnessed enough zaniness and divine confusion to render your correspondents teary-eyed and tongue-tied. Using closed-circuit TV, headset and boom microphone, to the tune of "She Wore An Itsy-Bitsy-Teeny-Weenie-Yellow-Polka-Dot-Bikini", Kesey directed the delicate procedure. Laughing weirdos hung off the fenders and ran around on the top, adding to the confusion, as the bus threaded its way to a shady backstage area. Asked his view on the solar-powered event, Kesey deemed solar alternative "wonderful and amazing". Rendered giddy by the crazed scene, we ran out of questions, so we bade him and the Pranksters a fond farewell.

Timothy Leary's cheery assessment of solar power was, "Up the Sun!"

We couldn't keep up with the frenetic Wavy Gravy or get him away from the adoring crowd long enough to ask him serious questions, but he let us know he was pleased to have the sun powering the lights and sound. After the dust settled, he told us "With the electric companies, the people have the power but The Man has the switch. With solar power, the people have the power *and* the switch!"

Another fine Pignic came to a close Sunday evening. We raced the dusk dismantling the panels and racks. They and the Trace inverters sold quickly at reduced prices. We're keeping the BP modules that Wavy Gravy autographed.

"Remember the feeling as a child, when you awoke and the morning smiled, it's time for you to feel that way again…."—Taj Mahal

Access

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