



## A Pedal Generator

by Peter Pedals

Humans everywhere consume enormous amounts of energy and think nothing of it. The energy that we consume is taken very much for granted as we drive our cars and turn on our various home appliances.

When we learn that an appliance is rated at say 1500 watts when it is turned on, most people have no comprehension of what this really means. This is where a pedal powered electric generator can give you the direct experience of generating electrical power.

When I built a range of pedal appliances 20 to 30 years ago, I concentrated on building pedal machines that would drive appliances mechanically through appropriate gears and shafts rather than generating electricity first and then using that electricity to drive motorised appliances, and with very good reason. Every energy conversion wastes energy in the conversion process. If I were to pedal an electric centrifugal type juicer I would expect to have to pedal for twice as long as the time that the juicer is turned on and to save this energy in a battery because I would not be able to produce enough power to both run the juicer and generate enough power to overcome the losses of conversion, first from mechanical into electrical power and then again to convert the electrical power back into mechanical power.

I did dabble in pedal powered electrical generators back then, but was never satisfied with the results. I avoided V-belts because of the enormous power loss in pulling a V-belt in and out of the V-notch pulleys. Bicycle chains and sprockets are much more efficient and easy to procure. In fact, there are more bicycles manufactured around the world than cars (and so there ought to be). For stationary use I prefer to use the exercise bike for the obvious reasons that it comes with a stand. To generate power I would then need to attach some kind of generator.

Car generators and alternators have the shortcoming of some of your effort being used to create a magnetic field which is required to generate an electric current. The standard car alternator has the major disadvantage of being an all-or-nothing device. That is to say, once you pedal it fast enough it tries to produce all the electricity that it can to charge the battery, and will certainly try to pump out more power and create more magnetic resistance than I am capable of pedalling against. It is like applying the brakes until the magnetic excitation is lost and you can start pedalling again until you build up enough speed and again you hit that impenetrable wall.

It is only recently that I came across a 250 watt permanent magnet motor with a built-in 10 to 1 gear box and a bicycle sprocket fitted. I immediately saw the absolute simplicity of basing a pedal generator on this bicycle motor.

Since I first conceived of the idea of the new generation pedal generator I have built two versions. One was based on a very ordinary exercise bike and the other on a very much more fancy exercise bike, the Repco Bionic Ergonometer. A Bionic Ergonometer to a pedal power enthusiast is like a V12 engine E-type Jaguar is to a veteran sports car enthusiast. I was checking out the tip shop the other day, and lo and behold, there was a Bionic Ergonometer in working order and the asking price was just \$5. A few days later I had the bicycle motor bolted to it, utilising the primary drive chain which I lengthened to accommodate the addition of the motor. Three 6 amp diodes in parallel between the motor and the battery to be charged ensures that the motor cannot take power from the battery but only send power to it when it is being pedalled fast enough.

I found that the output from the a standard exercise bike was rather variable, getting up to maybe 12 amps on the downstroke of the pedals and then dropping back to 8 amps when the pedals reach the top and bottom of the stroke. The Bionic Ergonometer utilises both arm and leg movement, the arm movement translating back to the cranks but offset at 90 degrees such that the arms do most of the work when the legs are able to do the least. The Bionic Ergonometer also has a two-stage transmission, where the pedals drive an intermediate shaft by stepping down from the 48-tooth chainwheel to a 1-tooth sprocket. The intermediate shaft then has another 48-tooth chainwheel driving a 14-tooth sprocket on the wheel. This makes the wheel turn and quite high speeds and makes it a very effective flywheel. Both these features mean that the output is very steady.

The Bionic Ergonometer was developed after its predecessor, the Mark 1 Ergonometer upon which I based my multi-purpose multi-speed pedal machine, which ended up in the Australian National Museum in Canberra for 6 years. The Bionic Ergonometer is more sturdily built than its predecessor and incorporates both arm and leg movement. Like its predecessor, it has a high-speed bicycle wheel with wind vanes connected to the wheel rim and 6 of the spokes, to act as a resistance to pedal against. I could not manage more than 8 amps with the 6 wind vanes intact, but could get 8 to 10 amps with 3 wind vanes removed, and more than 10 amps when all the wind vanes were removed. These measurements are with the pedal machine connected to a 12 volt battery and with diodes in place.

I found that maintaining 10 amps for 1 minute is presently about the limit of my endurance, needing a good long rest before I do it again. 10 amps at 12 volts equates to 120 watts. Those 1500 watt appliances I spoke about will each need 10 fit people (this is taking into account some inverter losses) all pedalling as hard they can for the duration required for the appliance. The fridge might run for say 10 out of 24 hours with the thermostat turning it off as soon as it gets cold enough. If it is a small fridge, this is the equivalent of 1 person pedalling like fury for 10 hours a day.

I am not suggesting that you rush out to get the bits to make a pedal generator, because the amount of pedalling you are likely to do will have little impact on the energy you consume. Even for those living with their own solar power systems, I would not suggest a pedal generator as a primary back-up for those overcast days. But if you are intent on getting more exercise then why not do something useful with it?

You can purchase the 250 watt bicycle motor from Oatley Electronics for \$79 plus postage. (phone (02) 9584-3563, <sales@oatleyelectronics.com> or PO Box 89, Oatley, NSW 2223) If you write to Rainbow Power Company, we can send you some pedal power plans for \$5 incl. postage.

## I Am Born With Aquarius Rising

by David Peace

I write now on behalf of all life remembering life. Inspired as I am by the clarity of Binnah's message as expressed in the recent Nimbin Good Times with his "Clarion Call...from 2012 and beyond" I now contribute my voice in our community. I am David Peace=One Love at service to our oneness in deed.

For long enough I have judged what I have to share, feeling I'm holding back from really going to the heart of the issue and even now is this helping, this judgement? Old moments of perception clouding the potential we share now. Is it even true that this is what has been happening? I certainly have believed I wasn't being accepted, yet this was all my own illusion playing out. And yes it may be true, the light I am, the way I live may be stimulating other aspects of my greater self to be able to accept me, eye n eye, in true wholehearted respect. As I accept me, I feel this receptivity to the magnitude of our grand creation deepening and Immaculate Reception, qualifying us through all that came before us, humbly we evoke our true service in being.

I express diversely, momentarily this is the subject, it's the process of formation yet still the building blocks are dynamically shifting such is the nature of this message of change. There is no one temple that's it, every one is the one together and alone.

Today on this Yellow Overtone Warrior which is the 20th December 2006 I write fuelled with the absolute spirit and accord of this Divine process acknowledging having today attended a beautiful heartfelt funeral celebrating the death of a dear member of our community who died on 7th December, a Blue Overtone Night day being the last one Marek Gold breathed the air we share as a physical human being. Marek's body dying in his own self-built sauna,



his fiery spirit liberating the vastness of a chord in this dream symphony manifesting Heaven on Earth.

What an amazing brother! What a man, what a being that walked this Earth with the courage to live his truth and what a light he inspires in our hearts. And I name Vision who died earlier this year in the drum circle of the Byron Bay markets bringing the community of the Rainbow region together... and I name Atoma Shekinah who died two years ago in Glastonbury proclaiming the rise of the Phoenix from the ashes of our own self forgetfulness, re-membered in the divine life we are NOW, for we are light everchanging consciousness.

I am compelled to look at my own death and this in lak'ech, for each soul eye n eye die every day reborn in the light breath of this higher dream we are being. Truly this is art, architecture of grand design breathing through us as we meet God every day in every way.

I write now these words introducing myself to the play, accepting I am this role on stage, a key like you in this Golden Age, we know as the Aquarian age of light... I introduce to you Knew Eonduction Yoga as more than ever before we are knowing we're standing on the shoulders of our ancestors in the fields of our children making this place we love so dearly an even better place to invite our neighbours and share good times...

I LOVE to invite you all to my 30th birthday on 18th May 2008. I see massive starlight beaming into Earth welcoming us all to harness the essence of cosmic energy forming our true heart's vision. I share this date

as a key for UR calendar for this great purpose we remember our birth being our power as this creator remembering our source: living the essence of this remembrance wholeheartedly in our grander community... that together we speak our dreams truly hearing the uniqueness of our beings and evermoreso prophet in the Divine revelation of this commandment as it is as it is - us sharing Heaven on Earth, here and now...

We are approaching 35 years since the Aquarius festival brought the conscious love vibe to the Rainbow region more than 33 years on...And I mention this now - in sharing this vision, consciously uniting our purpose as a people guided to be here in making the dreams of the free-love era be manifest in a new sustainability, taking the old shoulders of Woodstock and the Aquarius festival making them live and thriving. The festival is here now.

Did you know Paul Joseph and Rusty Harris were born at exactly the same time on opposite sides of this wonderful planet? Clearly these characters are pillars in our community and prophets in the redemption of our Universal Church of Love. It is through our births and this prophecy we share that we are coming to see this practicality really. I look forward to deepening this one journey with you.

The process I serve supporting our Great Work is synthesising <www.OneRainbowBridge.com> and these Adventures In Communication. May peace dwell in our ocean of heart, emanating as the fruit of our labour in love being the forest of life we share.

I love to empower you to truly bring through your true talents and gifts allowing the miracle UR inform this living memory we are being together. Keys unlocking our absolute magnificence. Thank you for being who you truly are.

David Peace=One Love

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