Re: Mobile S−Rotor!

Source: http://sci.tech−archive.net/Archive/sci.energy/2005−12/msg00085.html

- *From*: "K. Jones" <shadetree1999@xxxxxxxxxxxxxxxxxxxx>
- *Date*: Wed, 7 Dec 2005 19:04:14 −0500

"TomGee" <lvlus@xxxxxxxxxxx> wrote in message
news:1133992847.677395.71000@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> K. Jones wrote:
> > "TomGee" <lvlus@xxxxxxxxxxx> wrote in message

<snip>

> > > There is of course a net loss of energy. Adding drag does that. The
> > > question is, how much energy is used by the engine to push the box
> > > through the air compared to how much energy the engine uses to turn
its
> > > alternator. If my device uses 2 hp from the vehicle engine to power
my
> > > rotor, but it uses 4 hp to power its alternator, that is 50% net
> > > savings in hp.
> >
> > Couple of points.
> >
> > 1. Car alternators don't use nearly as much horsepower as you think, and
the
> > belt−pully power transmission is far more efficient than any wind
turbine.
> > Most cars have between a 35 amp to 65 amp alternator.....12 volts * 65
amps
> > = 780 watts 1 HP = 746 watts. Even a heavy−duty 100amp alternator is
less
> > than 2HP, and that's at full draw.
> >
> >
> I don't know where you're getting your information, but the hp
> requirements from the vehicle engine to turn the alternator have always
> been set at 15 hp and above.

http://www.alternatorparts.com/gm_alt_repair_upgrade_kits.htm

GM ALTERNATOR REPAIR KIT
*Fits Delco−Remy's 10−DN External Regulator alt. from 35 to 65 amps., single
or double pulleys used on GM cars, light trucks, marine, industrial and

other applications
*Fits Delco−Remy 10 & 12−SI Internal Regulator Alt. from 35 to 65 amps., single or double pulleys on GM cars, light trucks, marine, industrial and other applications
*GM LARGE CASE ALTERNATOR REPAIR KIT Fits 27−SI Series alternators using 80−100 amps.
*GMC Jimmy Bosch (OEM) Alternator part# F4000−36490, Alternator 85 Amp
CHRYSLER ALTERNATOR 80 AMP UPGRADE KIT (Round Back alt)
Fits the old style (round back) Chrysler alt. with soldered in stator and pressed in diodes, from 35−65 amps., single and double pulleys, used on Chrysler cars, light trucks, marine, industrial and other applications
CHRYSLER ALTERNATOR 105−AMP UPGRADE KIT (Round Back alt)
Fits the old style (round back) Chrysler alt. with soldered in stator and pressed in diodes, from 35−65 amps., single and double pulleys, used on Chrysler cars, light trucks, marine, industrial and other applications

Ok, that takes car of "puny" car and light truck alternators, how about a MACK Truck?
http://www.landlinemag.com/Archives/2001/Nov2001/Your_Equipment/electrical_revolution.html
A few years ago at a TMC (Technology and Maintenance Council) meeting, Mark Kachmarsky, chief cab engineer for Mack Trucks, reminded us that until recently trucks had mechanical engines, one location for electrical distribution, 85 amp alternators feeding 32 circuits (16 from the battery and 16 through the ignition switch). Today, Mark says, we have at least two distribution circuits, multiple electronic modules, no less than 64 circuits fed by 135 amp (minimum) alternators
Hmmm, 85 amps until recently, now 135 amp or so.

Unable to find a single OEM 250 amp alternator for land−based vehicles.

Soo, say we're talking about a 100 amp alternator. Volts * amps = watts 12V * 100 amps = 1,200 watts. Factor in alternator efficiency, and belt transmission efficiency, and you're looking at no more than 1,700 watts. 746 watts per HP 1,700 / 746 = 2.3 HP. That's maximum load.....you can safely assume the alternator usually runs at under 50% load, for about one HP or so.

> The smallest estimate I could find was 4 hp.
> Most large vehicles don't use the puny car units, they use up to
> 250 amp alternators. My device uses belts and pulleys too so how could
> it be any less efficient?

The smallest alternator (4HP) you could find was 250Amps?
Your "requirements have always been set at 15HP" is a 900Amp alternator. I don't think so.

Because of the wind turbine. How efficient is the turbine driving the unit?

> >
> > Vehicle alternators run at much less
> > than max capacity most of the time. Even if it could work (it can't),

who
> > is going to put a light−bar sized box on the roof of thier car for about
1
> > HP difference? You'd never be able to tell the difference.
> >
> >
> I wouldn't and neither would you. It is true that alternators run at
> much less than max capacity most of the time, that's why the actual
> average hp usage to turn the alternator is hard to pin down on any
> vehicle.

>Transportation industry vehicles are more likely to run their
> alts at higher than average automobile capacity.
Why? Not much different. Same electrical load for engine, little bigger wipers, maybe blower fan, a few extra marker lights? That's about it.
See quote for Mack truck alternators.

>It is more
> cost−efficient to use an alt that loafs along most of the time and only
> occasionally achieves max power. That's not the point. If my rotor
> saves gas − which I at first hoped would amount to about 1.5 to 2.0%
> fuel usage, has only one moving part, and has a ROI of within a year,
> the transportation industry should quickly see they all must use it to
> remain competitive, and as a taxpayer, I would insist that all govmint
> vehicles use it.
> >
> >
> > 2. There is no "energy" from the wind flowing over the car, unless the
car
> > is not moving (parked). You have to imagine the car moving through
> > essentially stationary air, like a boat travelling through stationary
water.
> >
> >
> I know it sounds counter−intuitive, but it works both ways. We can say
> that the car moves through the wind at 60 mph or that the wind moves
> around the car at 60 mph.

No, "we" can't. You're burning fuel to push your rotor through the wind at 60MPH.
That is not the same as a car sitting stationary (burning no fuel) with a 60mph wind flowing past it.
You are assuming the scenerio that the wind is "free power". If the car is moving, it is not.
It costs you fuel to push the wind rotor/turbine forward at 60MPH. As your wind rotor is not 100% efficient, it can only
return some percentage LESS energy. If the rotor is 50% efficient, it can only return 1/2 power required to push it through the wind.
This is very, very, basic physics. You're either a troll, or you really don't get the concept. I'm beginning to think you are just a troll.

>I thought the same thing at first, so my
> first test of my first model was to see if there really was power in
> the wind created by a moving vehicle. Holding the rotor out the window
> while my van was driven from a stop to 55 mph, its rpm increased
> proportional to the van's increase in speed. At 55 mph, it was turning
> at 70 rpm, and that sure surprised me! Your no. 2 is wrong as my test
> shows that there is indeed energy in the wind created by a moving
> vehicle.
Well Duh. You burned more fuel, drove faster, and the rotor turned faster....this surprised you?
This does not refute "my #2". You simply burned more fuel to turn the rotor.
Now I'm certain you are trolling.

> Your analogy of a boat moving through water is appropriate, however, in
> that my wind rotor is like the paddle wheel on an old river boat. The
> paddles on the wheel pushed directly against the dense water and that
> caused an equal reaction of momentum that was transferred into moving
> the boat. In my case, the wind strikes the rotor "paddles" directly
> and causes an equal reactions of momentum that is transferred into
> turning the rotor.
No. You burned fuel to push the rotor through the wind. The rotor captured some percentage less than 100, of that fuel burnt. It consumed energy.

> The air moves around a car at the same speed as the car moves through
> it, and water does the same with a boat. Water is much denser than
> air, however, so it quickly slows. Basic physics, Newton's 3rd law of
> motion.
> >
> >
> > Energy has to be expended to push the vehicle through the air, to push the
> > turbine through the air. As the turbine is less than 100% efficient, it
> > will always take more HP to push the turbine through the air, than can be
> > extracted from the turbine.
> >
> >
> That's fine so long as the hp required is still less than the vehicle
> engines requires to turn it own alternator. My calculations show that
> it takes about 1 to 2 hp for the vehicle engine to push my rotor box
> than it takes for it to turn its own alternator, which is from 4 to 30
> hp.
Your HP figures are way off.

> >
> > It will be net consumer of energy. It's like
> > dragging a turbine behind a boat to produce power. As the turbine is less
> > than 100% efficient, the energy used to pull the turbine along will exceed

> > the energy delivered. By at least 50%. If your wind turbine produced 5 HP,
> > it would require at least 10HP more output from the engine.
> >
> >
> You are forgetting about the energy in the wind. The faster the wind
> speed, the smaller the device required to produce a given amount of
> power. Also, when you double the wind speed, you increase its energy
> eightfold!
Yes, and when you double your vehicles speed, the HP requirements to overcome the drag go up in the same porportion.
However, the required electrical energy from the alternator to fire the plugs in the engine does not.
The faster you go, the more fuel would be wasted, exponetially, by your device.

>When you downsize the device, you are free to decrease its
> aerodynamic drag while still producing at 60 mph what a 4−story high
> monstous S−rotor can produce at ordinary daily wind speeds. It must
> consume energy, of course, but the amount will be less than that
> consumed by the engine to rotate its own alternator.
> >
> >
> > Using your theory of operation, why not just put a big enough turbine on the
> > car to provide *all* the energy required? Why stop at a couple of HP?
> >
> >
> Because the aerodynamic drag would be so high as to use up more fuel to
> push it at 60 mph than the fuel the engine uses to rotate its
> alternator.
Ha ha! Wouldn't a bigger turbine be MORE efficient at capturing the wind energy?
Again, using your scenerio, if I have an electric car, I could put enough turbines on it to run the car forever.
Which would again, be a perpetual motion machine.

> >
> >
> > You are trying to build a perpetual motion machine.
> >
> >
> I have learned that it apparently appears that way.

Then this exercise hasn't been a waste of time.

K. Jones

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- ***Follow−Ups***:
  - ***Re: Mobile S−Rotor!***
    - ◊ *From:* TomGee

- ***References***:
  - ***Mobile S−Rotor!***
    - ◊ *From:* TomGee
  - ***Re: Mobile S−Rotor!***
    - ◊ *From:* liberti
  - ***Re: Mobile S−Rotor!***
    - ◊ *From:* TomGee
  - ***Re: Mobile S−Rotor!***
    - ◊ *From:* K. Jones
  - ***Re: Mobile S−Rotor!***
    - ◊ *From:* Chris Torek
  - ***Re: Mobile S−Rotor!***
    - ◊ *From:* TomGee
  - ***Re: Mobile S−Rotor!***
    - ◊ *From:* daestrom
  - ***Re: Mobile S−Rotor!***
    - ◊ *From:* TomGee
  - ***Re: Mobile S−Rotor!***
    - ◊ *From:* K. Jones
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    - ◊ *From:* TomGee

- Prev by Date: ***Re: Mobile S−Rotor!***
- Next by Date: ***Re: Mobile S−Rotor!***
- Previous by thread: ***Re: Qu***
- Next by thread: ***Re: Mobile S−Rotor!***
- Index(es):
  - ***Date***
  - ***Thread***