Re: Ether Steam Engine ???

Source: http://sci.tech−archive.net/Archive/sci.physics/2007−03/msg01376.html

- *From*: The Ghost In The Machine <ewill@xxxxxxxxxxxxxxxxxxxxxxx>
- *Date*: Mon, 12 Mar 2007 23:33:21 −0700

In sci.physics, jimp@xxxxxxxxxxxxxxxxxxx
<jimp@xxxxxxxxxxxxxxxxxxx>
wrote
on Tue, 13 Mar 2007 04:35:02 GMT
<k8mhc4−8ep.ln1@xxxxxxxxxxxxxxxx>:

> The Ghost In The Machine <ewill@xxxxxxxxxxxxxxxxxxxxxxx> wrote:
>
> > In sci.physics, jimp@xxxxxxxxxxxxxxxxxxx
> > <jimp@xxxxxxxxxxxxxxxxxxx>
> > wrote
> > on Tue, 13 Mar 2007 00:45:03 GMT
> > <jm8hc4−eki.ln1@xxxxxxxxxxxxxxxx>:
> >
> > > The Ghost In The Machine
> > > <ewill@xxxxxxxxxxxxxxxxxxxxxxx> wrote:
> > >
> > > > In sci.physics,
> > > > jimp@xxxxxxxxxxxxxxxxxxx
> > > > <jimp@xxxxxxxxxxxxxxxxxxx>
> > > > wrote
> > > > on Mon, 12 Mar 2007 23:15:02 GMT
> > > > <p23hc4−4o1.ln1@xxxxxxxxxxxxxxxx>:
> > > >
> > > > > The Ghost In The Machine
> > > > > <ewill@xxxxxxxxxxxxxxxxxxxxxxx>
> > > > > wrote:
> > > > >
> > > > > > In
> > > > > > sci.physics,
> > > > > > jimp@xxxxxxxxxxxxxxxxxxx
> > > > > > <jimp@xxxxxxxxxxxxxxxxxxx>
> > > > > > wrote
> > > > > > on Mon, 12
> > > > > > Mar 2007
> > > > > > 21:25:02
> > > > > > GMT
> > > > > > <tpsgc4−90g.ln1@xxxxxxxxxxxxxxxx>:

G=EMC^2
Glazier
<herbertglazier@xxxxxxxxx>
wrote:

> Ether
> boils
> at
> 96F
> Either
> is
> very
> explosive.
> Good
> engineering
> could
> come
> up
> with
> a
> clean
> combustible
> engine.
> I
> have
> an
> idea
> mixed
> with
> water
> gas(steam)
> and
> you
> would
> end
> up
> with
> lots
> of
> energy.
> Bert

Engines
where
the
fuel
detonates
are
soon
called

junk.

Pedant
point:
Diesel and
Gasoline
engines fall
into this
category.
:−)

Or did you
mean
"detonates
in the fuel
tank"? :−)

It is relatively easy to keep
gas under control.

It is rather hard to keep
ether from detonation and
pre−ignition.

http://www.streetrodstuff.com/Articles/Engine/Detonation/

Also, the smog components
of engine exhaust are not a
factor of the
fuel. The come from using
air which contains nitrogen
as the oxidizer.

The higher the combustion
temperature, the more smog
components you
get.

I'm assuming you are
talking about orinary ether
as used as an engine
starting aid.

> I'm not the one that brought up ether (presumably, that's
> Glazier's idea), which is actually a class of organic
> compounds (presumably, the "ether" he's mentioning is
> diethyl−ether, C2H5OH5C2). I'll admit I know little about
> engine starting aids, beyond the existence of such things
> as glow plugs in diesel systems, and nitrous oxide used
> as a power boost in racing engines.

Ether has been used as an engine starting aid in sub−zero weather for
about a hundred years.

Since it vaporizes so easily while gasoline doesn't at low temps, you
squirt a bit of ether into the air intake to get the engine going.

Once it starts up, the internal engine temp is sufficient to keep running
on gasoline.

Many an engine has been broken by use of too much ether.

> Interesting. I'll admit I've been spoiled out here in the Left Coast;
> we might get an occasional snowflake. :−) We certainly don't have to
> worry about block heaters and ether.

I didn't either until I spent two winters on an extended camping trip
in Korea courtesy of Uncle Sam.

> I also know predetonation −− usually
> because of too low
> an octane, fouled plugs, and/or mistuning an engine −−
> does nasty things. :−)

Two differnt things.

> Pre−ignition is when the fuel starts burning before it is supposed to.
>
> Detonation is essentially a high pressure spike after normal ignition.

Ah.

> > I frankly don't know why an ether−steam combo would be
> > any better from an emissions standpoint than our current
> > ICE, a H2−based ICE (which isn't all that good an idea),
> > or a H2−powered fuel cell. (Assuming the H2 can be
> > gotten from an absolutely clean power source, and that's
> > a very big question mark; the best I can do is PV cells
> > and there are many issues in the manufacture thereof.)
> > Also, wouldn't there be a risk of the steam hydrolyzing
> > the ether, yielding just plain old alcohol? If so, why
> > not just use alcohol? Butyl alcohol is occasionally touted
> > as an interesting renewable power source. (I don't know
> > how good it is compared to biodiesel or battery power.)
>
> The idea of injecting steam into an engine is stupid from the start.
>
> If you inject water, it quickly turns to steam in the engine.

Only after the engine's been running sufficiently long.
I agree that there are better things one can inject in
one's engine fuel−wise; water can effectively be construed
as a heat load (heat of vaporization and all that),

> reducing efficiency.

> Once a cylinder fires the internal temperature is well above 212 F.

Ah, of course ... though it also depends on whether we're talking a spritz, a cupful, a gallon, or the content of Lake Erie being dumped in there per second. (The last would probably only occur during very high storms, and only if one is near Lake Erie...) :−)

> > Water injection has been used for at least 80 years to control the
> > internal temperature of high performance engines, i.e. to get maximum
> > power out without destroying the engine from pre−ignition and detonation.

> A useful compromise.

> Especially if you were a F4U Corsair pilot about to take on a flight of Zeros.

"Oops...oh shit, the engine's gone and a Zero's on my tail. I'm toast." :−)

Could be a problem from what little I know about modern aviation warfare.

> > Neglecting the CO2, the "bad" emmisions from an internal compustion
> > engine are almost entirely oxides of nitrogen.
> >
> > They come from using air as an oxidizer.
> >
> > Subject oxygen and nitrogen, i.e. air, to high temperatures and
> > you get oxides of nitrogen.

> The higher the temperature, the more nasty stuff you get;
> chemistry 101.
>
> The only way to make a "clean" hydrogen engine is to use
> the hydrogen
> in a fuel cell to power an electric engine.

> And that's assuming the hydrogen comes from a "clean" source. The
> hydrogen, after all, cannot be harvested from nature. (Neither can
> gasoline, but far less energy is required to refine crude oil into
> gasoline than to electrolyze water, per usable joule of mechanical
> energy fuel−equivalent produced.)

Picky, picky. You can't have everything, now can you?

Darn. :−)

Mind you, if there is an oil peak and we're running low on the stuff,
a substitute energy source is going to have to be found at some point,
presumably to be subbed in when the substitute's cost becomes lower
than the oil extraction costs.

And if not, there's the issue of global warming, which is not
directly reflected in oil price. I frankly don't know how to
work around that issue except by either putting a tax on oil,
or by educating the public that oil heats the atmosphere through
the CO2 "blanket".

> In any event, good engineering includes
> knowing what to
> avoid in the making of an engine −− unless
> one really
> does want to make a drivable bomb, in
> which case one
> wants the engine to work and the bomb not
> to go off
> prematurely... :−)

> Yep, and the basics of engine engineering were pretty much
> solved by

> the end of WWII.
>
> > With an interesting detour, the Wankel. I'm not entirely sure if
> > it's still around, as it had the bad tendency to self−destruct
> > at very high RPMs. :−)
>
> The Wankel engine was invented in the 20's, well before WWII.
>
> There are some intrinsic problems with the Wankel engine.
>
> The first is the end seals for the rotors.
>
> Post WWII modern materials pretty much solved that.
>
> The other is that for a usefull life, you have to have really good
> control on the parallelism of the end plates.
>
> Mazda didn't figure that one out until they were up to their ass in
> broken engines and the public's perception was that a Wankel was a piece
> of crap to be avoided.
>
> The last problem is that although they have a great horsepower to
> weight ratio, their fuel efficiency and pollution characteristics
> leave a lot to be desired.
>
> This could be solved with modern control systems, but no one is going
> to do that until the memory of the Mazda fiasco fades.

We shall see. :−) I'll admit I'm not a market person, and there's a lot of issues here, some of which you've illustrated above. The Edsel was a highly overmarketed piece of junk for example but is now a collector's item −− mostly because of its rarity (since many of them were, um, junked). Presumably the same could be said for the Trabant, and at some point even the old VW Beetle (not the Beetle II).

Of course one big problem with the Wankel is that its torque rose with its RPMS (piston engines eventually get into an area called "valve float", reducing torque at high RPMs), which eventually leads to self−destruct if one doesn't have something like a governor or (more likely nowadays) ignition/throttle/control systems that keep it from going too fast.

At least, such is my understanding. Of course if one doesn't have good seals, well... :−)

> Almost all the advances since then have been in the area of materials
> and controls to fine tune various characteristics.

> --
> #191, ewill3@xxxxxxxxxxxxx
> Windows Vista. It'll Fix Everything(tm).

> --
> Posted via a free Usenet account from http://www.teranews.com

--
#191, ewill3@xxxxxxxxxxxxx
Useless C++ Programming Idea #8830129:
std::set<...> v; for(..:iterator i = v.begin(); i != v.end(); i++)
if(*i == thing) {...}

--
Posted via a free Usenet account from http://www.teranews.com

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