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The Writings of Prof. Bailey
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LETTER 6/17 "The Crushing Weight of Air is Upon Us"

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Excuse the capital letters in the subject. I am trying to make an important point.

Cold air has more weight then hot air.

This weight can be enough to slam our implosion plates together!

Mr.Wizard, a favorite do it yourself experimenter and teacher of mine, called air pressure the "INVISIBLE GIANT".

He would fill a square metal can with steam by boiling water inside. He would then cap the square metal can off and place it under some cold water and it would be "CRUSHED" as if by some giant hand!

The Repulsive is a marvel of air pressure dynamics.

If we examine once more a "PULSE JET ENGINE"., we find it always operates in a "HORIZONTAL" flight attitude.

The Pulse Jet "WILL" take in a large quantity of "COLD AIR".

This cold air "CAN NOT" bring its weight upon the intake valve. The Pulse Jet actually is becoming heavier and lighter as it flies.

This weight change will in no way assist its intake valve opening and closing.

Once a sufficient mass of air and fuel is achieved it explodes.

This explosion shuts off the intake valve and generates a pulse of wind out of its long tail pipe.

The fuel has only one purpose. It "EXPANDS" the cold intake air to generate thrust.

IF INSTEAD, WE GENERATE THRUST BY USING "EXTERNAL HEAT", WE NO LONGER REQUIRE FUEL.

We all ready have the "COLD AIR" by nature of the vacuum induced by the tail pipe suction.

This cold air simply "NEEDS" a source of heat to expand and produce thrust.

WHAT IF WE PLACE A PULSE JET "VERTICALLY"?

The "COLD AIR" now enters our Pulse Jet and should apply its weight on top of the intake valve.

NO! THIS CAN NOT HAPPEN IN THIS WAY, EVEN WITH A VERTICAL PULSE JET ENGINE. THE COLD AIR HAS TOO MUCH LINEAR MOMENTUM AND SIMPLY FIRES OUT OF THE TAIL PIPE.

So, we have a method of using external heat to expand the "COLD" Pulse Jet internal air.

THE PROBLEM IS THAT THE PULSE JET DESIGN IS WRONG!!!

The first step is to "ALLOW" cold air to "BUILD UP" inside our expansion chamber.

There is only "ONE" way to do that. The cold air must "NOT" have linear momentum!!!

The opposite of linear momentum is "ROTATIONAL" momentum.

The cold air is brought in the Pulse jet with a "SWIRLING ACTION".

THIS REQUIRES US TO USE A ROTATING INTAKE VALVE THAT DISCHARGES THE INTAKE AIR AT A PERPENDICULAR ANGLE TO THE INTAKE FLOW OF AN ORDINARY PULSE JET ENGINE!

Now, we have a chamber full of swirling cold air.

We have "NO" fuel to explode the valve closed!

We are using external heat as our power source.

So, how do we close the intake valve?

ATTENTION!!!

The vertical pulse jet chamber is now very cold. Therefore its "EXTERNAL" convection flow is almost stopped!

This is what happens when a "CHIMNEY" cools! Cold ash will blow back into the room!

The vertical pulse jet will begin to exert "MORE AND MORE" weight and pressure on its rotating valve plate.

EVENTUALLY, THIS INTERNAL WEIGHT AND AIR PRESSURE WILL SLAM THE ROTATING VALVE PLATE SHUT!!!

The valve plate "MUST" have a second plate underneath or it would strike the "NON-ROTATING" intake wall of our vertical Pulse Jet.

This second valve plate must rotate at the same speed and have some form of spring or rubber spacer to allow it to close when the air above it is too heavy to support!

THE VALVE PLATES HAVE NOW CLOSED TOGETHER WITH GREAT FORCE!!!

This force can be hundreds of pounds per square foot!

BOTH THE WEIGHT AND PRESSURE OF THE SWIRLING INTERNAL AIR MASS HAS COMBINED TO CLOSE THE INTAKE VALVE.

There is also a contribution from the Bernoulli flow between the two intake valve plates.

OUR ROTATING INTAKE VALVE PLATES ON OUR VERTICAL PULSE JET HAVE NOW COMPRESSED TOGETHER.

This "IS A SOURCE OF HEAT"!

The heat from the compressed rotating valve plates has now radiated into the internal swirling air mass.

The swirling cold air mass begins to "EXPAND".

The cold nucleus of the air mass heats first and expands the swirling mass of cold air into the wall of our vertical Pulse Jet.

KEEP IN MIND NO AIR CAN ESCAPE WHILE THE VALVE PLATE IS CLOSED!

This is the same effect seen when you hold your finger over a soda straw full of water. Until you "RELEASE" the top of the straw with your finger the water will remain "STUCK" inside the soda straw!

The cold swirling internal air mass is now being heated by the compressed rotating intake valve plates and the "WALL" of the vertical Pulse Jet.

EXTERNAL HEAT CAN NOW ENTER OUR VERTICAL PULSE JET ENGINE.

The internal cold air mass is no longer being "COOLED" by intake suction. The valve plates are closed!

The cold swirling air mass "CAN ONLY" leave by expansion.

The cold internal air mass begins to heat and expand. This forces the heated air out of the exhaust hole. The exhaust hole has a small impeller that helps spin the intake valve plates.

The vertical Pulse jet has now thrown all of its internal air mass against the wall of the expansion chamber.

This is like a cutting a string holding a stone that is whirling over your head. The destruction of the core of the swirling air mass has released the air to strike the internal wall.

The vertical Pulse Jet now gets much hotter then the external air as its internal flywheel energy is dissipated as wall friction.

THIS CAUSES A STRONG UPDRAFT TO FORM!

This rapidly "EVACUATES" the vertical Pulse Jet.

Now the weight and pressure on the rotating intake plates is "GONE".

The plates "SPRING OPEN" and a large mass of swirling cold air is brought in.

Soon the internal pressure and weight build and a "NEW" cycle begins.

To maximize the efficiency of our vertical Pulse Jet, we squash it into a mushroom cap shape.

We have "NO NEED" of the tail pipe. It causes too much linear momentum. We want the cold air to swirl and build up internal weight and pressure.

If you examine what we have created here. You will find it is "NOTHING LESS" then the fabled Repulsine!

I believe that the Repulsine was a very serious attempt to build a "NON-FUELED" version of the Pulse Jet, that used external heating and internal cooling to produce power without the need for combustion.

It is logical and historically feasible.

There are other explanations for the Repulsine. I believe this is the one that will prove accurate!

P.S. There are questions that can only be answered by experiment. I am attempting to force those experiments to take place. Only then can we be certain if a fuel-less jet aircraft engine was discovered in Germany during W W 2!!!

END