Inertial Propulsion in Russia

Dr. Gennady Shipov on Torsion Physics & Inertial Propulsion

By Tim Ventura & Dr. Gennady Shipov, April 18th, 2006

Last month, Dr. Gennady Shipov unveiled a new inertial propulsion drive developed by Russian inventor Vladimir Tolchin, adding to a growing body of Inertial Propulsion & Torsion-Physics research revisiting the basics of mechanical off-center rotators. He joins us to talk about several of the leading contenders in Russian inertial-drive technology, including a device by Valery Menshikov scheduled for testing this year by the Russian Space Agency...

AAG: Let's start out with the big news for 2006 -- last month you unveiled a new inertial-propulsion device created by Vladimir Tolchin that uses an off-center rotator design to demonstrate forward thrust on a low-friction surface. I'm wondering if Tolchin's device is derived from your theoretical research in Torsion Physics, or if it's simply a serendipitous find based on principles similar to those in your research?

Dr. Gennady Shipov: World-renowned theoretical physicist.

Shipov: Well, my theoretical research in Torsion-Physics has really developed irrespective of Tolchin's invention. For me, the Torsion-Physics research has really involved continuing and expanding research into Einstein's Unified Field Theory, and it's led me to the realization that it's possible to derive an additional, fourth-generalization of Newtonian mechanics, which I've dubbed "Descartesian mechanics".

In the Descartesian mechanics model, any movement is considered rotation - even linear motion, because it occurs in curved space. This is obviously the case in cosmology, where a planet's linear motion in the curved space of the sun's gravity-well forms a stable circular orbit. This principle provides us with the opportunity generate net propulsive force with innovative mechanical systems. The invention we demonstrated by Tolchin is such a system...

AAG: We received several questions about the recent videos asking whether the devices being demonstrated are comparable to the classic "Dean-Drive" off-center rotator technology, and whether it might compare at all to the more recent ExB Mach-Lorentz Thruster technology being developed by James Woodward's group?

Shipov: For a device like this, the inventor needs to start by asking a very fundamental question -- "what is the force creating this movement?" In the case of the "Dean-Drive" the motive force is a combination of friction and inertia. Thus, if we remove the friction, the device will not move.

Unfortunately, I'm not familiar with the details of Dr. Woodward's experimentation. However, the question above mentions that Lorentz's electromagnetic force plays a role, presumably making external electromagnetic fields a design requirement. My question then is whether device move in space if it generates its own external fields...

The propulsive force in the Tolchin device originates from inertial force, which in Descartesian mechanics are generated by Ricci torsion fields (four types of inertial forces are now known). It's well known that inertial forces don't obey Newton's third law of motion -- therefore these forces operate inside of an isolated mechanical system to move the center of mass. Even to this day, many scientists trained in the traditional laws of Newtonian mechanics have difficulty accepting this fact.

AAG: One of the skeptic's claims about mechanical reactionless drives like Tolchin's is that they only run when one axis of motion is constrained -- such as being placed on a flat surface, even if the surface has no friction. Do you believe that his device will work given unconstrained 3-dimensional motion, such as in a free-fall or space environment?

Inertial Propulsion: Forward motion on a low-friction surface built by Vladimir Tolchin.

Shipov: Well, it's more than just a belief – I know without a doubt that the Tolchin device's propulsive force isn't simply dependent on constrained rotary motion. I'm fully confident that it will move in space more effectively than it already does in air, on water, or on the Earth's surface.

AAG: As I understand things, Torsion theory was very big during the days of the Soviet Union, but that it was suppressed by the Russian scientific establishment to gain favor with western scientists during the 1990's. This led to what seemed to be an unfounded negative reputation perception for Torsion-field research, as well as skeptical articles about "Torsion fraud". Given recent announcements about BPP technologies from Russia, do you think that the attitudes are beginning to change back in favor of this research?

Shipov: Torsion Physics began in Russia in 1980 with the creation of devices aptly named "torsion generators". These devices didn't originate from within the official scientific community, and thus weren't accepted or recognized by that community – a prejudicial bias that still continues to this day. Historically speaking, this kind of long-term opposition between old & new ideas used to be a rarity, but it's all too common these days both in Russia as well as the United States.

The acceptance of torsion physics will win not come simply from recognition by the scientific community, but instead from the widespread social & economic needs that drive commercial adoption of these torsion-based technologies. Issues like energy & transportation have become universal problems and if they're left unsolved we're facing a potential apocalypse.

AAG: Nearly one year ago, Novosti published an article about a reactionless drive being developed for testing in space by Dr. Valery Menshikov -- he claimed that it generated nearly 28-grams of thrust for satellite stationkeeping through the action of an internal rotating liquid. Have you heard of this story, and do you believe that it may be a torsion-effect, given Menshikov's claim of "not knowing the means of propulsion"?

Shipov: Menshikov is the director of the "Scientific Research Institute for Space Systems" (SRISS). I know him personally, and in fact I've even written a scientific report on inertial

propulsion for him. One week ago a demonstration of Menshikov's reactionless-drive was broadcast on Central Russian Television – this is the same reactionless drive being developed for space-duty at SRISS. Menshikov and others has published a book on the topic, and half the material in it was dedicated to my earlier research... my newer work has diverged from his research efforts, however.

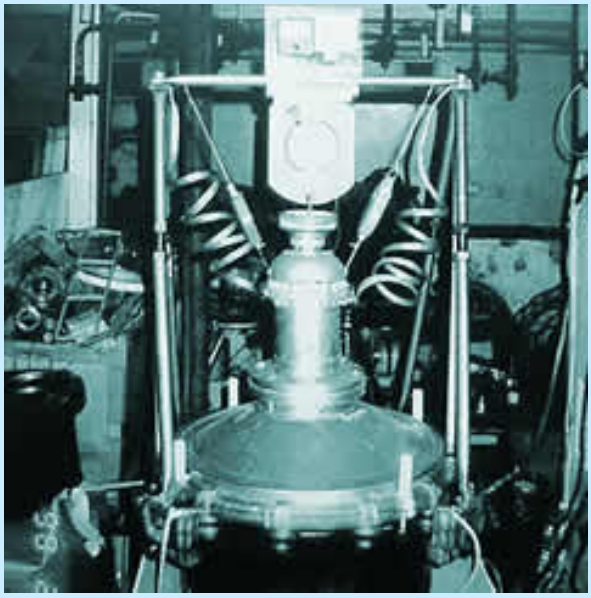
AAG: To follow up on the earlier question, I interviewed Alex Frolov last year, who claimed that the device Menshikov was preparing to test was actually invented by Dr. Spartak Poliakov. I'm wondering if you might be familiar with this story at all, and have any comments on independent or open-source BPP research in Russia?

Shipov: Yes, the device was in fact originally invented by Poliakov, who based it on ideas and schematics of Austrian inventor Victor Shauberger. Unfortunately, Poliakov didn't have good legal protection, so Menshikov simply took away his invention. After all, Menshikov is a government official.

This unfair situation was the reason for creation of the private research centers in Russia which are engaged new torsion physics and torsion technologies.

AAG: Do you know if the Russian scientific establishment is putting any resources into developing Breakthrough Propulsion Technologies of any sort? It seems that NASA is refocusing on Apollo-era rockets, and I'm hoping this news about both the Tolchin device and Menshikov's test are indicators that Russia is making real progress in this area. Do you know if BPP is becoming a funded endeavor in Russia, and what direction Russia's space-program is headed technologically?

Shipov: As I've said before, in Russia there's a struggle between the old state science establishment and the emerging field of torsion physics. The government officials responsible for maintaining the entrenched views of the establishment will stop at nothing



The Poliakov Vortex-Drive: In April 2005, the Russian State-News Agency Novosti ran an article stating that Dr. Valery Menshikov of Moscow's *R&D Institute of Space Systems* intended to test an 'inertialess drive' to provide long-term space propulsion. A liquid or solid-state propulsive mass moves along a preset tornado-shaped trajectory inside this engine, thereby ensuring sustainable propulsion.

The device being tested is a variation on the "Vortex-Drive" – an inertialess propulsion system developed by Dr. Spartak M. Poliakov, a Graduate of Kishinev State University, and an experimental physicist with over 47 years in the electronics industry. He has authored over 50 scientific papers, and a recent book entitled "Introduction to Experimental Gravitonics". The photo above was taken by Alexander Frolov during a 1998 visit to Poliakov's laboratory.

Vortex-Drive: Alex Frolov's enhanced drive system based on Poliakov's original design.

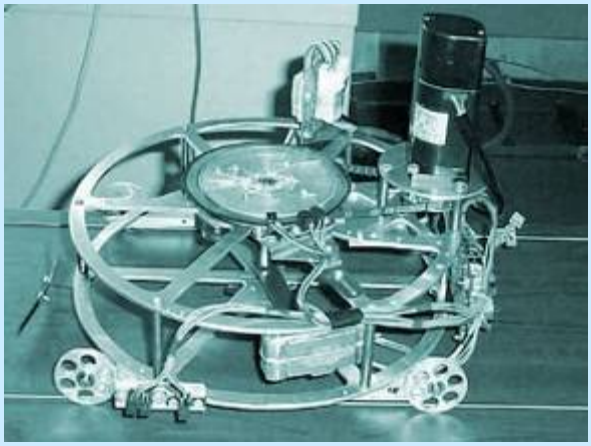
to do so: they garble the facts, level all sorts of accusations against myself and other scientists investigating torsion phenomena, and publish slanderous warnings about "Torsion fraud" to scare the public.

As a result of these entrenched interests, I spent considerable time in Thailand conducting my research simply to avoid the Russian political environment. Those attitudes are beginning to change, however -- private capital has become interested in torsion science and this research is once again moving forward through private sector funding. This renewed interest in Torsion physics wasn't lost on the government bureaucrats, though – while they still speak negatively about Torsion Physics research, they're also simultaneously developing it for Breakthrough Propulsion applications with projects like the one involving Valery Menshikov. Thus, that puts long-term research efforts like mine into competition with the Russian government, which is a commercial challenge that I welcome.

AAG: After the end of the Cold-War, I think that most Americans assumed that we'd be the solid leader in the space-industry, but I'm wondering how our space-program looks from the Russian perspective. After all, America seems to have largely turned its back on basic research into breakthrough propulsion physics, and Russia seems to working towards revitalizing its space program. Do you think we'll see Russia overtake the USA in space research & technology in the near future?

Shipov: I think that the time has come for both the United States and Russia to set competition aside and focus on collaborative & cooperative endeavors to overcome the challenges that face all of us in the 21st century. Today's social & scientific challenges have a global impact, and the solutions of tomorrow will benefit the whole of humanity as a result.

Russia easily outstrips the USA in the development of torsion technologies – our technology is at least 15 years ahead of similar efforts in the United States. This is the result

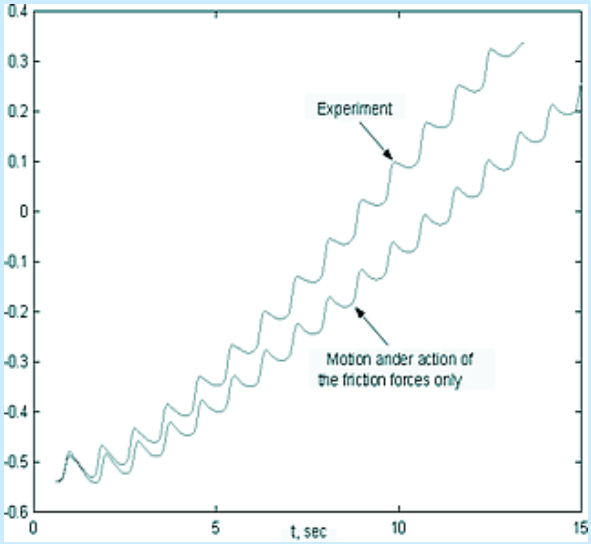


The 4-D Gyroscope: This reactionless inertial propulsion device was constructed & rigorously tested by Dr. Gennady Shipov as a conceptual proof for applied Descartesian Mechanics theory.

The 4-D Gyroscope uses a special device called a motor-break to convert momentum from a spinning rotor inside the device into forward thrust through a series of internal-impacts.

Shipov's experimentation involved operating the device both with and without the brake to plot true inertial propulsion versus unwanted acceleration from friction in wheels, bearings, etc

Powered by only a small electric motor to spin the rotors, Shipov's experimental results indicated a net average velocity about 10 centimeters per second. Additionally, during each cycle the body retreats 2 cm backwards and moves 12 cm forward, as show below.



Experimental Data: A comparison of inertial versus frictional acceleration for the gyroscope.

of a new scientific paradigm emerging from research into the "Theory of Physical Vacuum" – and while it still isn't recognized as official science within Russia, it's making more of an impact here than in the West, where it remains completely unknown.

Thornson Drive: This drive shown moving a canoo on still water at 1mph in 1990.

Accepting this new scientific paradigm won't be easy: it requires more than the sheer intelligence of figures like Roger Penrose. To fully appreciate the meaning & implications of this new paradigm, it requires that special brand of intuitive insight embodied by visionary thinkers like Einstein. In other words, it requires a higher level of consciousness & awareness, which becomes more than just a philosophical argument or scientific model – it will be a transformative process allowing us to reach the full potential of civilization in the 21st century.

AAG: Ok, any quick tests that garage-tinkerers can do to demonstrate Torsion Theory physics? I've read that Torsion fields are supposed to conditionally change the resistance of some wire-junctions, and of course your reactionless thruster, but anything simple to get the public excited?

Shipov: Unfortunately, the days of garage-tinkerers achieving breakthroughs in Torsion Physics are long gone – today's Torsion technologies are highly complex devices demanding proper safety precautions and precision measurements in the laboratory.

The mainstream media has saturated the public with so many fictional stories about breakthrough technologies that it's becoming difficult to build interest in real-life breakthrough research, but those breakthroughs are nonetheless out there being achieved every day.

One simple experiment that I've found exciting is a change in the molecular structure of metals after exposure to Torsion radiation, which was conducted by Dr. Rustum Roy at Pennsylvania State University. I was certainly surprised when I first heard about this experiment, but in another sense it's one of many surprising developments to come out of Torsion Physics research.

You know, given the solid experimental results that Torsion research produces, what I really find surprising & puzzling is the cultural resistance in the scientific community to this research, given that our research in Russia has been producing results & technologies for over 20 years.


Thornson Drive: Inventor Brandson Thornson shown opening the drive apparatus

AAG: Have you ever considered using a purely electromagnetic system to generate reactionless torsion-based thrust? What attracts you to the mechanical means of testing this theory?

Shipov: The problem with using an electromagnetic system is that the underlying physical principles behind all physics – and all real breakthroughs in physics – always begin with the mechanics of a physical system, as shown in both the Special and General Theory of Relativity as well as in Quantum Mechanics.

Therefore, my research began at the most fundamental and consequently most difficult level – with a basis in physical mechanics. Generally speaking, if a new discovery is made in mechanics, then it will have consequences in all aspects of physics, including electrodynamics. I believe that it's important to introduce a new principle into physical mechanics first, and then to build more elaborate models on top of that foundation, which is what I've done with Descartesian mechanics. Certainly one of our future goals is to construct a reactionless drive system based on electromagnetic fields, but it is necessary to begin with a strong foundation in physical mechanics first.

Tolchin Drive: Testing in water produces a forward thrust in a low-friction medium.

AAG: Building off the question about the implementation of your research, I'm wondering how many potential paths there might be to create reactionless thrust of one type or another using Torsion-physics as a foundation?

Shipov: I think that there are many potential avenues to explore with future research. We can draw from a number of inventions in this area developed by inventors working outside of the scientific establishment, such as Cook, Tolchin, Thornson, and others. The fact that they're doing this work outside of the mainstream is an sign of the times, and it should provide scientists with the inspiration to provide a scientific foundation for their innovations. Since it's impossible to explain these inventions on the basis of contemporary scientific doctrine, it becomes necessary to involve a new Scientific Paradigm - the Theory of Physical Vacuum (Descartesian's mechanics) -- in which Torsion Fields play the basic role.

AAG: In essence, most of the definitions that I've seen for a Torsion-field also call it a "spin-field", and it seems to be associated with all sorts of rotation that we see throughout nature. Is there a difference between torsion and simple angular momentum, and if not, does that mean we can expect to find Torsion Effects in all rotating systems?

Shipov: You're absolutely right. From my point of view, Torsion Fields truly are the Unifying Field that Einstein said would unite all of the other fields and interactions in physics. In the science of mechanics, Torsion Fields prove through fields of inertia that the phenomenon of inertia is more fundamental than even the gravitational phenomena. In quantum mechanics, inertial fields define the wave functions that describe physical phenomenon in a truly universal way. Thus, in The Theory of Physical Vacuum, we can reduce all physical motion to rotation – and thus we can realize vision of Descartesian Mechanics.

Pendulum Test: In this experiment, the drive still produces net forward thrust.

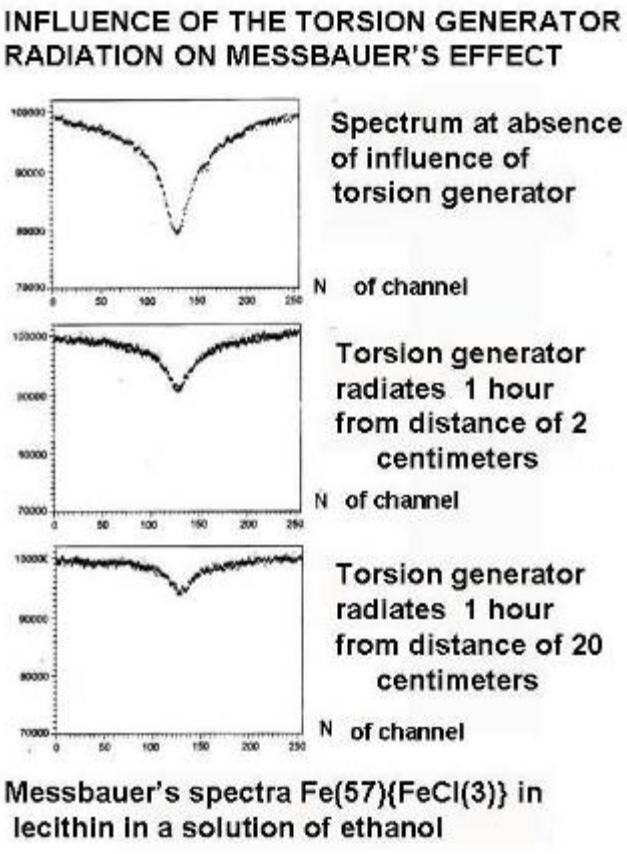
AAG: Have you ever considered working with spin on a molecular or atomic level? I've heard rumors about experiments being proposed using a "nuclear magnetic resonance" technique that involves aligning the atomic spin throughout a bulk-sample of a material, and tne using magnetic or electrical forces to create a reactionless

propulsion much like a form of mini gyroscopic precession. Do you think this approach might merit further investigation?

Shipov: We conducted research at Moscow State University's Department of Physics on the influence of torsion radiations on Messbauer effect. I've provided a graphic showing the results of this research, which as you can see were quite interesting.

Our experiment clearly demonstrated that nuclear magnetic resonance feels the influence of torsion-field radiation. We plan on returning to this process to create controlled fields of inertia (or torsion), by aligning and controlling atomic nuclear spin using NMR. It is very fruitful idea.

AAG: I'm not sure if you've heard the recent ESA announcement, but Dr. Martin Tajmar appears to have found a "self-spin" effect in rotating superconductors comparable to the Lense-Thirring frame-dragging effect under investigation by Gravity Probe-B. While relativity theory seems to support this as an angular-vector for an otherwise well-explained effect, I'm wondering if Torsion physics might offer some insight into how to capitalize on this effect?



Nuclear Magnetic Resonance: Testing the effects of torsion fields at Moscow State University

Shipov: The rotation of physical objects is described by Descartesian mechanics, in which any rotation is connected with torsion field. Therefore, the effects that you're describing can be described in detail using Torsion field theory.

AAG: Let's talk experimentalists: this self-spin idea has been a part of several reported independent projects, such as the controversial "Searl Effect Generator" for over 60 years. Both Searl in Great Britain and Godin & Roschin in Russia claimed to have seen this effect in spinning Neodymium magnet systems and I'm wondering if you have any thoughts on whether this is a gravitational, torsion, or frame-dragging effect?

Shipov: It's well known that the bulk magnetic properties of various materials are substantially defined by spin of electrons. In turn, the spin of those electrons is connected with a mechanical rotation that generates a torsion field. Therefore, in magnetic materials where the electron spins are mostly aligned, the magnetic field emanating from the material always has accompanying it torsion field. This phenomenon is deeply rooted in the theory of torsion fields and can only be understood in view of this theory.

AAG: Have you ever spoken with Sergei Godin or Vladimir Roschin? I'm wondering if you have any opinions about their research or credibility -- either from personal experience or professional opinion?

Shipov: Several years ago I met with Godin and Roschin, but I didn't get to see their invention in operation. They have only heuristic reasons how it is possible to create antigravitational propulsion, but they don't currently have a working device.

AAG: Back to business -- its' been four months since our last interview, and I'm wondering how your business is going? I took the experimental videos from last month to be an indicator that you were making real scientific progress, and hoping that general interest in this area has been growing for you. Are things progressing as you'd hoped on the business front?

Shipov: Let's talk about that at a later time when our project has progressed further.

Godin & Roschin: A Homopolar Motor in New Energy Technologies Magazine.

AAG: Let's close out with what's next: will you be releasing new papers, video-clips, or experimental results this year, and if so, what might we look forward to seeing?

Shipov: The results of fundamental physics research belong to all humanity – I plan on publishing the results of future research as we conduct it. I think that in the near future we'll be doing another experimental video demonstrating a reactionless propulsion device climbing up an inclined plane in defiance of gravity.

Dr. Gennady Shipov is a world-renowned theoretical physicist living in Moscow, Russia. His education includes both an M.A. and PhD in Theoretical Physics, and his research includes 54 scientific papers, 7 monographs, and numerous prestigious scientific and directorial roles within the Russian scientific establishment. He is also a founding member of the Russian Association of Gravitational Sciences, and currently serves as the Director of the Science Center of Physics of Vacuum in Moscow. You can visit his website online at: http://www.shipov.com