

MENTIRA

MECHANICAL INVENTIONS & NEWS AROUND THE WORLD

A TECHNICAL NEWSLETTER

VOLUME 4 ISSUE 2 2017

DEPARTMENT OF MECHANICAL ENGINEERING

R.M.K COLLEGE OF ENGINEERING AND TECHNOLOGY



Piaggio Fast Forward Gita - Robot Carry Your Cargo

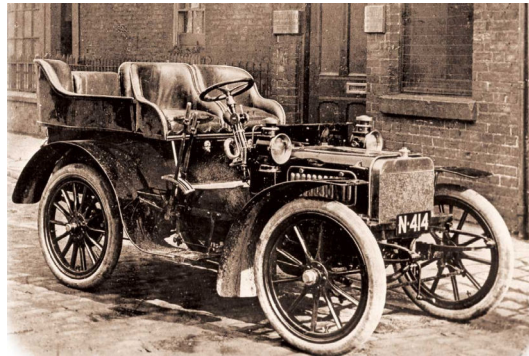


The Piaggio Fast Forward Gita measures 22 inches in diameter, with wheels on either side and a large main compartment between them. It has a fully-enclosed compartment, with a locking lid, so you never have to worry about anyone stealing your stuff while you're not looking, with the robot able to support loads of up to 40 pounds. Do note, the user will need to wear a special belt, which connects to the robot via Wi-Fi, in order to have it follow

them around. Need Gita to do deliveries on its own? Not a problem, as it comes with an autonomous mode that can map out an area and travel it on its own. And, yes, they can travel as a convoy, so you can have an army of cargo robots rolling right behind you. No pricing or release date have been announced yet for the Piaggio Fast Forward Gita.



15.92% of all new sold cars in Brazil use ethanol as fuel, which is produced from sugar cane.



The 1st Rolls-Royce was made of 10 Hp.

Top Speed
63km/hr.

First Rolls Royce
was made in 1904.

Iota - The Solowheel's Personal Vehicle

Created by Inventist, the new ride takes the same central-wheel design with footpads on either side, allowing you to move in a front-facing stance while taking up minimal footprint. As such, you get the same safer riding setup compared to hoverboards and wide-profile transporters, all while coming in a much more compact package. The Solowheel Iota combines a pair of 8-inch wheels that run side-by-side in the middle with folding footpads, allowing it to collapse into a size that's both unobtrusive to carry by hand and small enough to fit inside backpacks. Despite the compact size, it can support weights of up to 250 pounds, all while letting you travel distances of up to eight miles in a single charge. There are no details on top speed, but it does



power using a 1000-watt motor, so this thing should bring some decent muscle to your last mile commute. Aside from being smaller, it's also lighter than the original Solowheel, tipping the scales at just eight pounds – a mere 40 percent of the original heft. It requires just 40 minutes to charge, too, so don't have to plug in long to get back up to full running power. A Kickstarter campaign is currently running for the Solowheel Iota. You can reserve a unit for pledges starting at \$395.

(www.vehicles.com)

Solarwave 64 Uses A Solar Roof For Quiet, Fumes-Free Operation



A solar-powered 64-foot yacht, it relies exclusively on self-generated power for both the propulsion and the electrical system for all the amenities onboard. As such, it operates with barely a whimper, ensuring you can enjoy a serene day on the water with neither engine noise nor exhaust fumes. The Solarwave 64 has a re-



tractable roof covered entirely in a 15kW photovoltaic array that's hooked up to a series of 100kWh batteries. There are no exact figures for the amount of power it can generate, but the outfit claims the solar panels alone can keep the boat running all day, provided the sun is out, with the system drawing on battery reserves during evenings and periods of bad weather. It does have a conventional gas engine on standby, which it uses as a range extender for those times when you've managed to exhaust the reserves while you're still in the water. As for accommodations, the yacht has a 21-foot tender garage for your jet skis and submersibles, a well-equipped interior with a full kitchen and lounge, up to five VIP cabins (you can choose the layout), sun decks both front and rear, and an outdoor dining space. While designed as an electric watercraft, it can also be equipped as a hybrid for more powerful propulsion. (www.coolthings.com)

While in orbit, the space shuttle travels around Earth at a speed of about 28,000 km/hr. At this speed, the crew can see a sunrise or sunset every 45 minutes.



The heaviest space shuttle orbiter, Columbia, weighed 178,000 pounds (80,700 kg), roughly the weight of 13 African Elephants.

Arduino-powered robot arm

An Arduino-powered robot arm, the rig boasts four-degrees of articulation for executing complex movements, with a joint that moves using a customized gearbox and stepper motor module. A parallel mechanism structure allows it to weigh a light 4.9 pounds, too, ensuring you can move around the house without any issues. The u Arm Swift Pro comes with a suction cup, a gripper, a universal holder, a 3D printing finishing kit (yep, it will finish your 3D objects for you), and a laser engraving kit, each of which can be attached to the head to accomplish any desired tasks.



For control, it can be manually operated either via mouse-and-keyboard or a companion mobile app, as well as programmed using a graphical interface based on Blockly. It can also learn movements by physically moving the arm, as it can remember motion sequences and repeat it when triggered. Do note, it handles maximum payloads of just 1.1 pounds, so while it can carry a brush and paint your walls, you won't be able to use it to hold your power tools in the workshop. (www.coolthings.com)

Tyer Wind Converter

Wind turbines are great for generating clean power. Problem is, the noise and unwieldy size of those spinning rotors are likely to make them a nuisance when installed in residential areas. The Tyer Wind Converter redesigns the wind turbine to get rid of those giant rotors, relying on flapping wings instead to harness the wind's kinetic energy. Using a design based on the graceful motions of the hummingbird, it replaces the wind turbine's traditional rotational motions with a linear one. This allows it to take up a much smaller footprint, all while generating less noise and minimizing the threat to birds (because dead birds scattered all around your neighborhood is probably not a good thing).



The Tyer Wind Converter uses two 5.25-foot long wings that flap in a back and forth figure-eight motion. Because it requires converting linear motion into a rotational one, the turbine doesn't generate energy as efficiently as traditional rotor-based designs (rated power

output is only 1Kw), although the less visually obtrusive should make them a lot more palatable for use around residential neighborhoods and other densely populated areas. (www.windco.com)

Diamonds form about 100 miles below ground and have been carried to the earth's surface by deep volcanic eruptions.



To produce a single one-carat diamond, 250 tons of earth will be mined. The largest diamond ever found was the Cullinan at 3106 carats

Transit Elevated Bus Drives

Transit Elevated Bus as a double-decker electric bus without the lower deck. That's because the



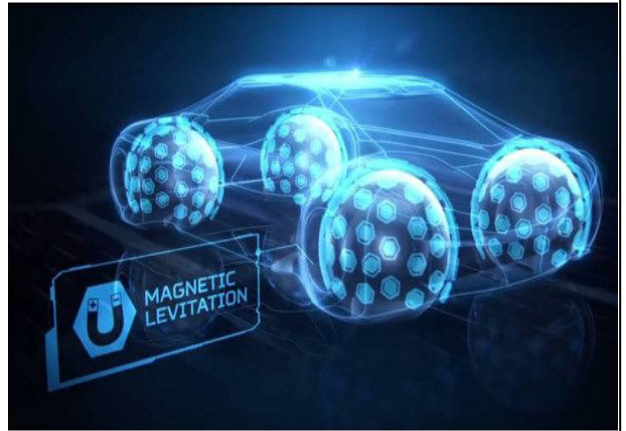
lower section serves as a moving tunnel that will allow other cars to pass through, while also giving it the ability to drive over cars without running them over. It measures 72 x 25 x 16 feet (length x width x height), with room inside to



transport up to 300 passengers at a time, all while traveling at speeds of up to 37 mph. As you can imagine, you can't simply let a thing this big loose around the city for the sheer amount of chaos it will create. As such, it appears they'll have it running on fixed rails installed along ordinary roads, essentially driving over two car lanes while taking up no more road than the barriers on either side. The Transit Elevated Bus is currently undergoing its inaugural test run in the Qinhuangdao, Hebei province of China. (www.coolthings.com)

Tires That Spin In Every Direction

As companies race to develop self-driving cars, Goodyear is reinventing their wheels. Its spherical concept tire, which debuted in March, allows cars to move in many new -directions, including sideways into a parallel parking space and at specific angles and speeds to counteract slippery surfaces. The key, says Sebastien Fontaine, an industrial designer at Goodyear, is magnetic levitation: whereas traditional tires are bolted to cars, the Eagle 360s hover beneath them, free from “the limits of [traditional] steering.” To be sure, these tires won’t hit pavement anytime soon: they’re meant for self-driving cars that are likely at least five years away. In order to shift the status quo, says Fontaine, “we need different companies working with us, together.”



(www.coolthings.com)

NASA has discovered a “waterworld” planet about 40 light-years away from earth that might contain exotic materials such as “hot ice” and “superfluid water.”



It takes NASA and Voyager approximately 32 hours to communicate with each other, with a bandwidth of 115.2 kilobits per second.

Google X’s Energy Kites Redesign The Wind Turbine As A Flying Power Generator

Designed by California wind energy company Makani Power, it ditches the tall towers where wind turbines are traditionally installed. Instead, it puts the turbines on plane-like kites that can be launched at heights way further than most towers go, harvesting power from the stronger gusts of wind that exist at those higher altitudes.

Each Energy Kite consists of three main parts: the kite, the tether, and the ground station. The kite is launched to a height of 1,500 feet using integrated rotors, which act like helicopter propellers to get it off the ground. Once it reaches the summit, the kite is designed to move in a circular direction, which turns the kite’s integrated propellers, causing the internal turbines to spin and generate power. All produced electricity is sent back to the ground station via the tether, which is made up of conductive wires surrounding a high-strength core. Why go this route? According to Google, the system is considerably cheaper and easier to build than traditional towers, making them a major resource-saving alternative. On top of that, its ability to harvest power at 1,500 feet above-ground allows the kites to capture as much as 50 percent more energy than traditional ground turbines, making them an overall more efficient solution.



(www.coolthings.com)

Graphene - New Solar Panel Generate Power From Raindrops

Solar panels are great, allowing you to generate electricity just by keeping it out in the sun. Problem is, the sun isn't always out, with clouds and rain replacing it for a good part of each year. A new Graphene-Coated Solar Panel overcomes this limitation by using raindrops that come in contact with its surface to generate electricity. Developed by a team of scientists from Qingdao, China, the new solar cell prototype will generate power from sunlight like the panels we see in wide use today. Unlike them, it has a single, atom-thick layer of graphene across its surface, which allows it to harness raindrops into



usable power.

The Graphene-Coated Solar Panel uses conventional solar cell technology when producing energy using sunlight, so it works much like the solar panels laid out across roofs in many homes and industrial facilities. With the sun tucked away behind the clouds on rainy days, however, the graphene coating goes to work, separating the ammonium, calcium, and sodium ions in the rain from the water. These ions cling to the electrons in the graphene, forming a dual-layer pseudo-capacitor system that produces electricity from

the difference in potential between each layer.

The sound of an eruption volcano can be quiet and hissing or explosive and booming. The loud cracks travel hundreds of miles and do the most damage, including hearing loss and broken glass.



If you could measure Mauna Kea volcano from the base of the ocean to its peak, you'd get a true height of 10,203 meters (and that's bigger than Mount Everest).

X9 Follow Golf Trolley

Like other robot caddies, you can have the X9 Follow Golf Trolley carry your golf clubs as you make your way around the course, controlling its movement via a remote. Unlike them, it can function without the remote, autonomously trailing its player, wherever the human overlord decides to go next. Made by Stewart Golf, the automaton will keep your golf clubs within easy reach without you ever having to pay it any mind, so you can focus all your attention on the game at hand. The X9 Follow Golf Trolley is able to follow its assigned overlord by way of the remote, which it pairs with over Bluetooth then decides



where to go, depending on the direction the remote is headed. That means, if you drop the remote or throw it away in a fit of rage after missing a putt, your robot stops following you. So don't do either. You will have to press the "follow" button every time you want it to trail you, though, since you could be one of those people who just like to pace up and down while someone else is teeing and it's not good for robots to walk around aimlessly (that's when they get bored and begin to revolt). Since there will be times you'll want the robot at a certain distance, you can also control it manually. The remote is good for up to 50 meters, so you can send it far off if you suspect that the droid is the cause of your recent spate of bad luck. Features include downhill braking (it will pace itself going downhill when it notices you're doing the same), an integrated stabilizer, and high-grip V3 wheels.



Slated to ship in June, the X9 Follow Golf Trolley is available for preorder now with a £100 deposit. Price is £1499 (www.coolthings.com)

Gimball Is The World's First Collision-Proof Drone

Made by Flyability, it's a search and rescue drone that's equipped to be unaffected by the kind of collisions that would normally ground similar aerial crafts. It doesn't matter whether it gets hit head on, from the top, or any other angle – the "collision-proof drone" will shrug off all contact without taking any damage. Gimball is a small two-rotor drone with the actual flight mechanism housed inside an orb-shaped carbon fiber cage.



The impact of any collision will be absorbed by the cage alone, with an onboard electronic stabilizing mechanism automatically leveling the assembly, so it can quickly continue flying even after running into an obstacle. That way, the remote pilot doesn't have to bother maneuvering carefully when flying the machine indoors, allowing them to survey the area at a much quicker pace. And when it comes to search and rescue, a drone that can fly through the tightest hallways, the narrowest stairways, and other erstwhile obstacle-packed situations can prove downright indispensable. (www.coolthings.com)

Bandra Worli Sealink in India has steel wires equal to the Earth's circumference. It took a total of 2,57,00,000 man hours for completion and also weighs as much as 50,000 African elephants. A true engineering and architectural marvel.



The length of the bridge is 63 times the height of the Qutub Minar in Delhi. Each cable can take a weight of 900 tons. The height of the cable-stayed tower is 126m, which is equal to a 43-storey tower.

Electric Tug Lets You Pull A 20-Ton Cargo Trailer

Made by Verhagen Leiden, the manually-operated electric tug isn't designed to give you super strength. However, when used to pull a heavy cargo trailer, the darn thing will provide all the needed power, allowing you to move cargo around the lot with the same ease as a heavy piece of furniture on a rolling trolley. The Verhagen Leiden V-Move Trailer Mover XXL pairs a 4kW electric motor with a 36-volt 245Ah battery pack to provide the necessary pulling power, with Continental tires delivering the necessary traction. That combo gives it enough drive to let you haul a whopping 20 tons of cargo at a time, giving your erstwhile puny muscles a Superman-like ability, while the swiveling front tire lets you steer it with precision for squeezing into tight openings. Of course, it comes loaded with



safety features, including an emergency stop, a loud horn, and an anti-tipping facility, so there's little chance your cargo will end up falling on its side. There's no brakes, so you'll have to be careful towing it down inclines, although a compressed air brake is available as an added option. (www.coolthings.com)

INDIA

- ◆ Around a 100 million years ago, India was an island.
- ◆ The world's largest producer of milk
- ◆ The first country to consume sugar
- ◆ The highest cricket ground in the world
- ◆ Shampooing is an Indian concept
- ◆ The Indian national Kabaddi team has won all World Cups
- ◆ Water on the moon was discovered by India's ISRO Chandrayaan- 1
- ◆ Science day in Switzerland is dedicated to Ex-Indian President, APJ Abdul Kalam
- ◆ India is the world's second-largest English speaking country
- ◆ Largest number of vegetarians in the world are Indians.
- ◆ Diamonds were first mined in India
- ◆ India has the world's third largest active army, after China and USA.
- ◆ Tirupati Balaji temple and Kashi Vishwanath Temple both, receive more visitors than the Vatican City and Mecca combined.

EDITORIAL COMMITTEE

Faculty Committee

Dr.P.K.Devan . Professor
Mr.T.G.Loganathan. Associate Professor
Mr.A.Senthil Kannan. Assistant Professor
Mr.V.Dilli Babu. Assistant Professor



Students committee

Hariharan, Nagarajan / Final Year
Manivannan, Srivathsan / Third Year
Barath , Syed Sulthan / Second Year

VISION

To empower the field of Mechanical Engineering to contribute to the development of industrial economy and welfare of humanity.

MISSION

- ◆ To achieve quality education by means of state-of-the-art infrastructure
- ◆ To establish industry-institute interaction to widen the scope for research and development
- ◆ To promote self employment through entrepreneurship and leadership qualities
- ◆ To develop team spirit and values for social well being

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1: Graduates will excel in professional career and compete globally to pursue higher education in the field of Mechanical Engineering

PEO2: Graduates will demonstrate core competency in solving complex Mechanical Engineering problems

PEO3: Graduates will engage in continuous professional development through constantly evolving technology for the industrial needs

PEO4: Graduates will emerge as successful entrepreneurs through innovations upholding the ethical values of society



கண்ணுடையர் என்பவர் கற்றோர் முகத்திரண்டு
புண்ணுடையர் கல்லா தவர்.

