



Research

Over the years, more drones and robots have been making the news. The uses range from surveillance and reconnaissance to transport and attack. The purpose of the Carbon Dragon project is to build a semi-autonomous flying machine that will be used for research, search, rescue, reconnaissance, and recreation. It will be used to explore the most remote areas of the planet, which cannot be accessed by traditional means. It will then use its instruments to photograph, monitor, and study the environment, ecology, and atmosphere in its immediate area of exploration.

Strategy

My strategy was to combine different components of existing technology, and put them together in way never before seen by human kind. The heart of the dragon is the gears that make the wings flap up and down, which was pioneered by a German engineering company called FESTO. They created a robotic seagull called the “Smartbird”, and our team will scale up this technology in size by a factor of 20-30. The legs of the dragon will be propelled by Boston Dynamics, who pioneered the “Big Dog” robotic legs, which is to be used to carry packs of gear and supplies for Special Forces soldiers.

The development and production of this project is split up into 5 Phases:

Phase I - Cost Report

Phase II- Parts Acquisition

Phase III-Construction

Phase IV-Flight Testing

Phase V- Finalization

Challenges

Challenges arose from a lack of familiarity with digital design programs, such as Adobe Illustrator and Flash. Future challenges will be to acquire funding, however the team will look to corporate sponsorships from companies like Red Bull, BMW, Tesla, Under Armour, and others to assist with funding the project.

Results

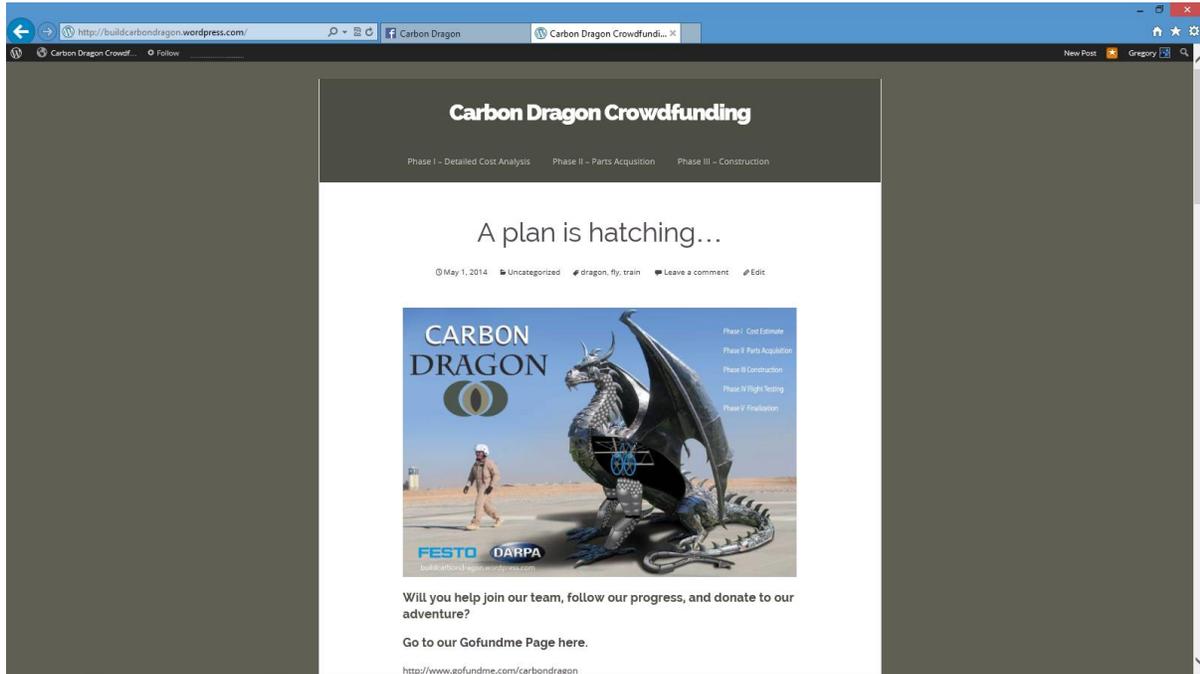
The final result is a poster which instantly captures the imagination and possibilities that are possible when combining new technologies in robotics, computer programming, and tele-manipulation. The Facebook page, WordPress page, and gofundme page are now live and accepting new followers and contributors. We hope for great success, and to eventually share high definition photos and videos taken by the Dragon in the most beautiful and remote locations around the world.

Facebook.com/buildcarboncarbdragon

The screenshot shows the Facebook page for 'Carbon Dragon'. The page features a large background image of a mountain range. In the foreground, there is a smaller image of a person standing next to a large, metallic, mechanical dragon. The text on the page includes the name 'Carbon Dragon', the number of likes (74), and a description: 'Aerospace/Defense Who wants to help me build a rideable, mechanical dragon?'. There are buttons for 'Update Page Info', 'Like', and 'Follow'. The right sidebar shows an advertisement for the page and a 'Recent' section with the year 2014.

Gofundme.com/carbondragon

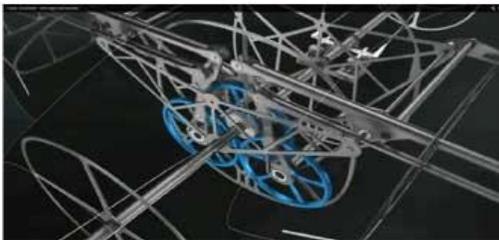
The screenshot shows the Gofundme campaign page for 'Carbon Dragon'. The page has a blue header with the text 'Help Bring This Dragon to Life!'. Below the header is a large image of the mechanical dragon with a person standing next to it. The text 'CARBON DRAGON' is prominently displayed. To the right of the image, there is a list of phases: Phase I Cost Estimate, Phase II Parts Acquisition, Phase III Construction, Phase IV Flight Testing, and Phase V Finalization. Below the image, it says 'Raised: \$25.00' and 'Goal: \$1,000.00'. On the right side, there is a section for the creator, Greg M. Dougall, with 226 friends and a 'DONATE!' button. There is also a 'Share on Facebook' button.



The Carbon Dragon biomechanical vehicle. In association with:



Visit buildcarbdragon.wordpress.com



PHASE I- FUND 5 PAGE COST ANALYSIS

Proposer's reference number: project-2446 prepared 20th March 2014.
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The Carbon Dragon MechAnimal will be able to transport one fully trained rider with the ability to hover, climb, and glide on thermal wind currents. It will have wings that flap as the primary means of locomotion; and legs to navigate rougher terrain when on the ground.

The control interface will be primarily tele-manipulation with inputs from the operator's helmet directly to the vehicle control systems with flight feedback from the vehicle to the helmet's heads up display. There will be secondary manual controls to allow for those times when tele-manipulation is bypassed.

The wings of the Carbon Dragon MechAnimal will be jointed to allow for efficient flight and accurate control of the vehicle. The wings will have three primary positions, folded, half extension, and full extension. The folded position will be for ground travel, mount/dismount, and will be the parked position. The full extension position will be for normal flight operations: take-off, climb to altitude, cruise, normal descent, and landing.

The head and neck of the Dragon BioMechAnimal will function much as they do on a bird; they will help with steering in all three axes and help maintain balance by lengthening or shortening the neck; the head will contain many of the sensors that require outside input. The instruments include: gyroscopic stabilization, micro FLIR, and radar detection including source id, azimuth, and range. There will be GPS, radio transceivers, radar altimeter, and instruments for pressure altitude and airspeed, laser illumination detection.

All flight surfaces will be treated to allow for turbulent flow over the entire surface, and the texture will ensure near silent flight at low energy output levels. They should be covered with radar absorbing material. Cloaking or invisibility technology is recommended.

The legs of the Carbon Dragon will be jointed similar to ostrich legs. They will have the capability to lay the body on the ground, and pick up into a departure stance in a single motion. They will have a large vertical range of motion to accommodate traversing rough terrain.

The materials used to construct the frame will be primarily reinforced carbon fiber.

The Carbon Dragon's power plant will be light weight, quiet, simple-easy to maintain, and have a readily available power source, likely from new energy patents from the Keshe Foundation.

Primary uses of the vehicle include search, rescue, and reconnaissance. There are 5 Phases of production. Together we can explore the world on the wings of the Carbon Dragon. Please help me to fund Phase I if you desire, and I will keep you updated!

To participate or apply to become a sponsor, email dougall2020@gmail.com or call 914-739-8996.