The UK Daily Mail:

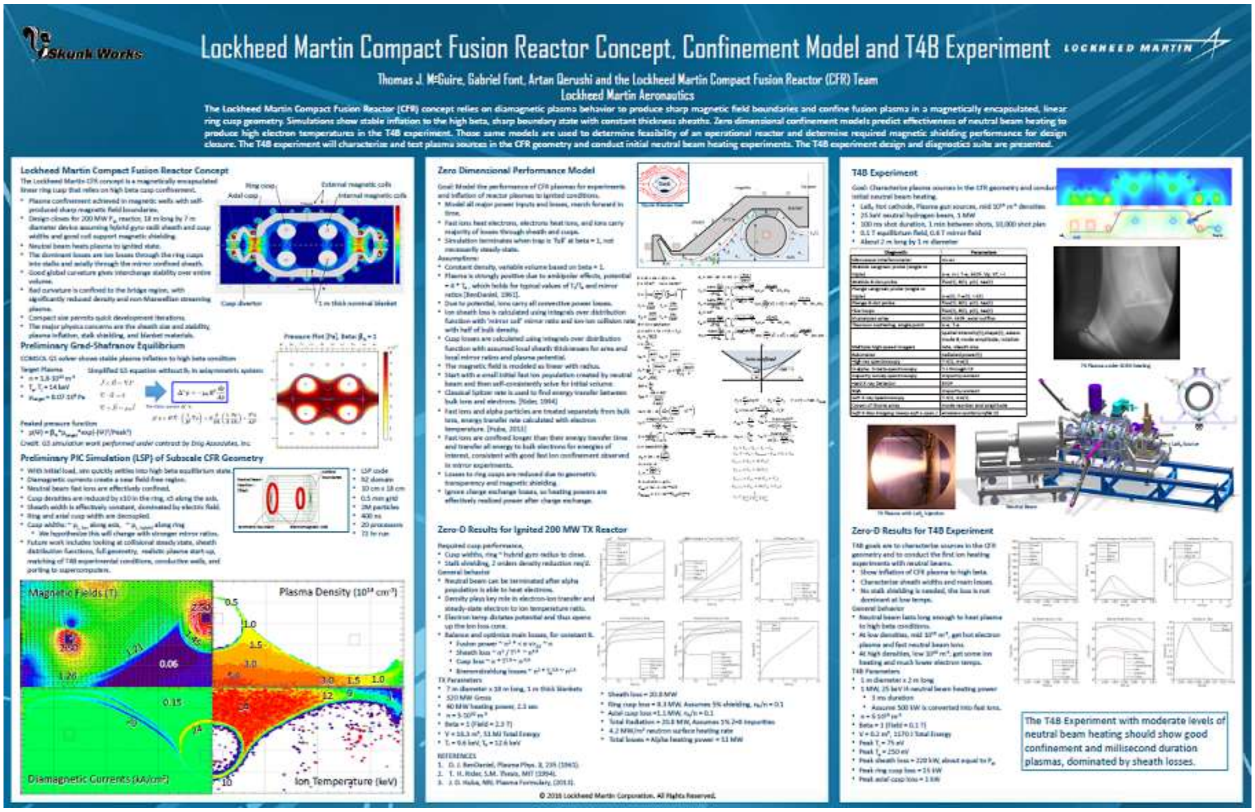
The UK Daily mail is an absolutely awful newspaper. Awful with a capital A. My work is not for cheap thrills. The hatchet job they did on my article "An Analysis of Lockheed-Martins' Fusion Effort" was appalling. They mis represented all of the key facts.

Nuclear fusion research is a nuanced, exacting science. Explaining it – both accurately and clearly – is tough. I try very hard to get the facts correct. To use peer reviewed sources. To break the concepts down. My reputation with fusion researchers to do a fair an accurate job of explaining their work, attests to this.

For the record, no one at the Daily Mail contacting me about this article. If they had, I would have turned them down. My content is not cheap. Below is everything they got wrong.

- Nowhere in my article does it say that this machine would be 2,000 tons.
- Nowhere in my article does it say that this machine is 100 times larger than originally planned.
- Nowhere in my article does it say that Lockheed projected the weight to be 20 tons.
- The line: "When the plasma tries to expand, the magnetic field fights back to contain it. In effect, this means the plasma works to contain itself" is terribly misleading.
- The picture they give is completely inaccurate.

If you really want to know what is really going on with the Lockheed-Martin machine, I recommend you read my original article. I based it – very closely – on the poster the company presented at the 2016 American Physics Society Conference in San Diego, California.



Skunk Works
Lockheed Martin Compact Fusion Reactor Concept, Confinement Model and T4B Experiment
LOCKHEED MARTIN
Thomas J. McGuire, Gabriel Font, Artan Qerushi and the Lockheed Martin Compact Fusion Reactor (CFR) Team
Lockheed Martin Aeronautics
The Lockheed Martin Compact Fusion Reactor (CFR) concept relies on diamagnetic plasma behavior to produce sharp magnetic field boundaries and confine fusion plasma in a magnetically encapsulated, linear ring cusp geometry. Simulations show stable inflation to the high beta, sharp boundary state with constant thickness sheaths. Zero dimensional confinement models predict effectiveness of neutral beam heating to produce high electron temperatures in the T4B experiment. These same models are used to determine feasibility of an operational reactor and determine required magnetic shielding performance for design closure. The T4B experiment will characterize and test plasma sources in the CFR geometry and conduct initial neutral beam heating experiments. The T4B experiment design and diagnostics suite are presented.
Lockheed Martin Compact Fusion Reactor Concept
Preliminary Grad-Shafranov Equilibrium
Preliminary PIC Simulation (LSP) of Subscale CFR Geometry
Magnetic Fields (T)
Plasma Density (10^{14} cm^{-3})
Diamagnetic Currents (kA/cm^2)
Ion Temperature (keV)
Zero Dimensional Performance Model
Zero-D Results for Ignited 200 MW TX Reactor
T4B Experiment
Zero-D Results for T4B Experiment
The T4B Experiment with moderate levels of neutral beam heating should show good confinement and millisecond duration plasmas, dominated by sheath losses.
© 2018 Lockheed Martin Corporation. All Rights Reserved.