What energy storage system is used for electromagnetic catapult

What is an electromagnetic catapult?
An electromagnetic catapult,also known as the electromagnetic aircraft launch system (EMALS) when specifically referring to the system used by the United States Navy,is a type of aircraft catapult that uses a linear induction motor system,rather than the single-acting pneumatic cylinder (piston) system in conventional steam catapults.

What technologies were developed for the electromagnetic catapult?
Two technologies successfully developed for the electromagnetic catapult were Pulse Power, which controls the electromagnetic catapult's power requirements and ensures precise and dependable launches, and Linear Electric Machine, which produces the electromagnetic force required to launch aircraft.

How do catapults store energy?
Catapults store potential energy by stretching ropes and rubber bands and by bending and flexing a lever arm of wood or plastic. The more energy you pull back,the farther your projectile will go. When the projectile is released it converts the potential elastic energy into kinetic energy due to its motion.

Which aircraft carriers have electromagnetic catapults?
Currently,only the United States and China have successfully developed electromagnetic catapults,which are installed on the Gerald R. Ford -class aircraft carriers(currently only the lead ship CVN-78 being operational),the Type 003 aircraft carrier Fujian and the upcoming Type 076 amphibious assault ship Sichuan (51).

How does the EMALS energy-storage system work?
The EMALS energy-storage system design accommodates this by drawing power from the ship during its 45-second recharge period and storing the energy kinetically using the rotors of four disk alternators; the system then releases that energy (up to 484 MJ) in 2-3 seconds.

Are electromagnetic catapults better than steam?
Electromagnetic catapults have several advantagesover their older,superheated steam -based counterparts.

OverviewDesign and developmentDelivery and deploymentAdvantagesCriticismsOperatorsOther developmentExternal linksDeveloped in the 1950s, steam catapults have proven exceptionally reliable. Carriers equipped with four steam catapults have been able to use at least one of them 99.5% of the time. However, there are a number of drawbacks. One group of Navy engineers wrote: "The foremost deficiency is that the catapult operates without feedback control. With no feedback, there often occurs large transients

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