Laptop HDD Repair

By G8MNY (New Feb 07)

I have an old 12V DEL black & white laptop ideal for /P packet work, as it has the same socket connections as the TNC & Rig. But over the last few years it has been more & more difficult to boot up from cold. I say cold as if you leave it to warmup, or apply a lot of heat (hair dryer) to the drive, you hear a click & it works 100% with no errors at all.

As this is not a practical solution & compatible replacements are unavailable (a memory stick & adaptor was my next port of call). Not to be out done & having a background in real engineering (PRESTEL) on old exchangeable drives, I decided to strip down the tiny HDD, to see what was wrong! Opening a sealed drive not in a clean room, I thought would nearly always result in a damaged head crashed drive, but I was wrong & have got away with it!

INSIDE THE HDD

Inside the drive you see this sort to layout.

The tiny heads are on the end of an pivoted arm which also has the head head moving bare actuator coil inside a powerful magnet.

Under the iron oxide covered recording platters is the brushless platter motor, axle & main bearing.

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| /            \   ┌/      |
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||           \\   | ||park  |   o=Arm Pivot
 |   Axle()  arm\ | ||Arm
||              \ \_||       |
 |               \ o ===\\
| \  Platters  / \_//    \\|
 \_         _/   ||coil//
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HEAD PARKING

As this is a laptop drive head parking (put heads on an inside track for landing & have less vibration during transport) is important, & this is where my trouble is.

A steel park arm limiting the head travel normally sticks the park magnet at power off. But when cold the actuator coil has not enough force to unstick this, but when hot this is not quite so powerful, & you can hear a click as the actuator frees the arm from the magnet. At the end of the arm is a tiny sliver of something to give a magnetic residue gap to limit the magnet pull. I now suspect this has worn down a few microns increasing the park magnets holding power.

MY SOLUTION

This was really an old dodge for sticky relays etc, I applied a sliver of sticky tape about 2x 3mm to the face the park magnet. This will undoubtedly wear through in a few 1000 parks but it certainly works! Care was taken not to "touch" or "breath" on anything in the drive especially the patters, & to refit the cover as soon as I had finished, each time I looked etc.

TESTING

I have the old Norton DT (DistTest) utility that runs under DOS, that can quickly test the whole drive, & also scandisk etc, so far it says no errors, & it has always booted up from cold OK.

Why Don't U send an interesting bul?
73 De John, G8MNY @ GB7CIP