TAPE TANGL

Steve Hooper has a few ideas for problem tapes that anyone can try. If you have problems with tapes, try these ideas before binning them or sending them back to where they came from

Anyone who has ever owned a cassette data recorder (and who hasn't?) will, no doubt, have experienced problems at some time or another with this temperamental piece of hardware. Although arguably 95% reliable, your recorder can, sometimes, stoop to the same efficiency level as an XC10 joystick after a light grilling with Warhawk.

The cassette recorder forces you to think ahead. You have to adapt some of your life to it. You have to take into account its capabilities as a peripheral. You have to make decisions. You have to think 'I want to play Gauntlet shortly (in an hour/not at all), so if I start the load procedure now (8 hours ago/never), the probability of it actually loading will be 5% (75%/0%), after I have had three pints of tea and watched the worst hits of Eldorado.'

Even thought the Compact Cassette can be, at its best, extremely reliable (surely beating the floppy disk hands down as a reliable recording medium), we still end up with *LOAD ERRORS* occasionally. The error isn't exactly reported in the most graphic detail possible when booting games from coldstart - a *LOAD ERROR* is flagged to the unsuspecting user, and the tape stops (if you're lucky). I'm not on my soap box, but why can't an error number be displayed? Sometimes the problem is about as obvious as why Atari decided to stop manufacturing anything and everything associated with the combined words 'Atari' and 'eight-bit'. Unfortunately, the recorder is not very helpful at giving excuses, whereas Atari Corp. (UK) are really rather good at giving excuses ... er, I mean, reasons.

What do you do, then, should you be unfortunate enough to encounter a *LOAD ERROR*?

BLAME THE CASSETTE

If your new piece of software doesn't load first time but old favourites do, the Finger of Suspicion must surely point to the actual cassette itself or, specifically, the physical tape held within it. The recorder can't be expected to read data from a tacky cassette!

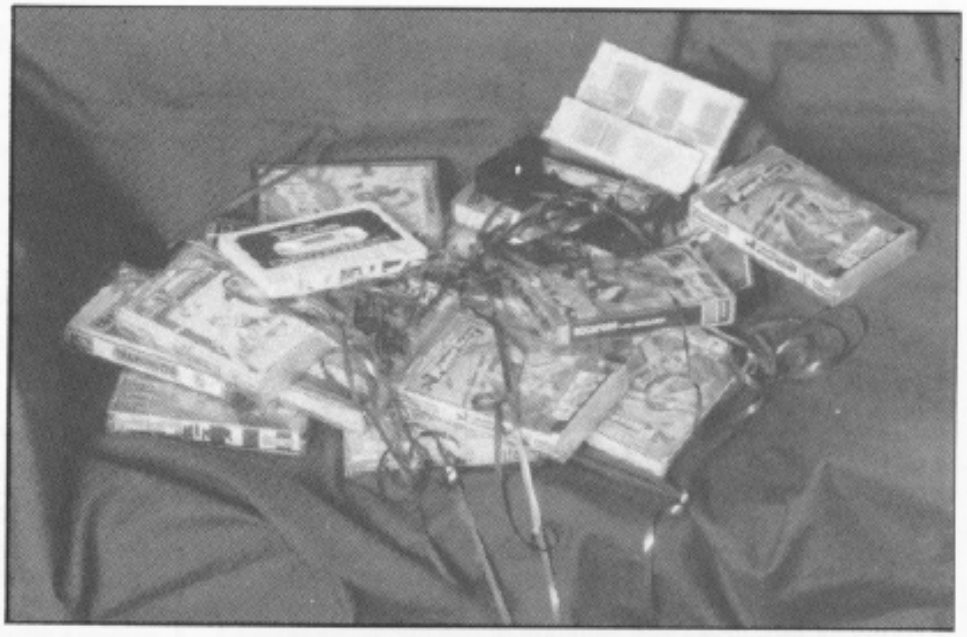
The tape inside the cassette can become too tightly wound on the spool with the result that, when you attempt to load the program, the tape moves too slowly across the read head, or fluctuates in speed (this is technically known as Wow and Flutter). If the tape is tightly wound, the recorder's relatively fragile motor struggles to play the tape at the near constant speed that the Operating System requires for correct data transfer to the computer, resulting in a LOAD ERROR. The O.S. is quite clever in this respect, because it works out the speed of data transfer (the Baud) at the start of each record using marker characters on the tape. The input rate is assumed to be a nominal 600 baud (600 bits of data per second), but is adjusted by the O.S. to account for drive motor variations (that is, different speeds) and stretched tape. Theoretically, baud rates in the range 318 to 1407 baud could be handled but, on a practical level, this is probably not the case. The trouble is, if a significant speed change occurs in the middle of a record, it is unlikely that the Operating System could compensate and you would be on the receiving end of a load error! In particular, poor quality cassettes can also cause load errors if the tape snags against the inside of the cassette shell or on the guide wheels. For this reason avoid cheap and nasty '20p market stall' cassettes for your own recordings if possible and write to your MP if you find that commercial offerings are not up to scratch (see what kind of response you get!).

WHAT CAN YOU DO?

I have explained the main problem with cassettes, but what can you do about it?

If the cassette *is* tightly wound then try repeatedly forward winding the tape on the spools. Check the results by winding one of the spools in the correct direction using a pencil - if it seems difficult to turn try this idea a few more times. Afterwards, not only will you be very fed-up, but you might also have a cassette which will now load first time, and on subsequent occasions. Note that this method is more useful for long

ES?



tapes, as they tend to get more tightly wound.

Do this with all blank cassettes and new software you buy as well, because when a tape leaves the factory, the spools might be packed too loosely or too tightly. Repacking, using the method described, evens the tapes out and makes for better tape alignment and loading or recordings.

GIVE IT A CLOUT!

So, what else can you do? Hit the cassette against a table a couple of times! Although this sounds ridiculous, by doing this you will feel much better (unless you have a hangover). You will probably also find that the tape 'sits' properly inside the cassette shell, reducing the likelihood of the tape snagging. Don't be too enthusiastic, otherwise you may find that the cassette will have dissociated itself into many differently shaped pieces which cannot be reassembled.

A permanent solution to these problems is to make a backup copy of all software that you use regularly (as I' sure many readers do). Many older games (I say games because there is little serious software available to cassette users - no Superscript, News Station, Page Marshal, News Room, Print Shop etc.) are impossible to replace new.

Blank cassettes are usually well made and, if a good copy is produced, your program will load perfectly many times over, which has got to be good news for your sanity! Two or three 15 minute plus loaders can be fitted on one side of a D90. Of course, if commercial tapes were a bit more reliable, you probably wouldn't need to copy them to make them load in the first place.

I recall having to move tape from an original cassette shell to one belonging to a blank cassette, just to get a game to load (there's that word again!). The game was Loco (by Alligata) and had been stored by a friend in his loft for many years, after his 800XL gave up the ghost and kept diving into Self-Test. The cassette had got a bit damp and buckled but, fortunately, it was held together by screws as opposed to being of the moulded type. The transplant was effective. If you buy (or inherit?) any software like this, why not give this idea a try? *As a last resort though.* Just remember to rewind the tape to the beginning and only handle the plastic tape leader. Lift the two spools off the opened, flat shell and carefully place them into the new shell. Make sure the leader is directed around the guide wheels and through the plastic runners, otherwise the tape could get damaged and tangled. Then simply screw on the other half of the new cassette shell, fairly loosely but so that the spools don't fall out of place (why does it sound so simple?). You will have to repack the spools which is the reason for not tightening the shell tightly, otherwise the tape might get jammed. When you are satisfied everything is working as it should and is visibly okay, tighten the screws.

COULD IT BE YOU?

Other points to consider include checking that you are following the loading instructions properly (then who doesn't?). Does the OPTION key really need to be held down as well? Some games would have you believe they need BASIC to run, when they don't. Correct me if I am wrong, but I think some of the Mastertronic range suffer from incorrect printed loading instructions. Certainly, Crystal Raider and L.A. Swat are two examples which require both START and OPTION to load.

Always wind the tape off the leader to the start of the continuous tone - the computer doesn't then get confused with random garbage noises that come before.

Get to know the Noisy I/O feature. This is provided so that the success of reading the tape can be determined - this is really only available with CLOAD. We've all heard those weird noises through the TV loudspeaker before (and we've turned the volume down before the neighbours start complaining, eh! - echoes of the 65XE Using Manual coming in there, sorry).

LET'S BLAME THE RECORDER

So what of the recorder itself? Keeping the erase and read heads clean of magnetic particles is a necessary entry on the 'must do after 20 hours use' list. Large amounts of magnetic particles left on the heads can scrape away the tape on other

cassettes with the result that, in extreme circumstances, bits of data can be lost. You'd be forgiven for wondering what this is all about, as this subject isn't even mentioned, for example, in the XC12 owner's manual. Head cleaning is not a luxury - it's certainly not expensive. Ear cleaning sticks are available from your local chemist, as is isopropanol alcohol - a cleaning solution. Cassette retailers probably sell the all-in-one kits from Allsop and ON (at a price these handle the cleaning process automatically). You will, of course, need to clean all parts of the mechanism in contact with the tape - this includes the pinch roller and capstan as well. Press PLAY on the recorder, type POKE 54018,52 and press RETURN to get the roller and capstan spinning so that they can be cleaned easily. Press RESET when you have finished.

USE ANOTHER RECORDER?

If you are absolutely fed up with your recorder, there's no reason why you could not use an external tape recorder or deck to make better, more reliable, recordings at least. You' still have to use your Atari recorder for loading purposes as the interface is required for this process. If you have a tape recorder (or tape deck) with standard phono line-in sockets, details of how to make the appropriate connecting lead and other valuable info can be found in John S Davison's Sound Recording article on pages 34 and 35 of Issue 34 of Page 6/NAU.

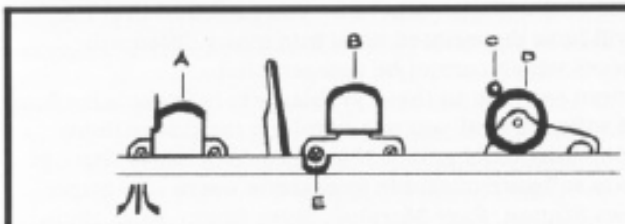
On the subject of cables, if you are continually getting load errors, check that the serial cable is pushed home correctly and that all metal lugs in the serial cable connector are clean of corrosion and locked into position correctly. If one or more lugs are corroded, it is useful to remove them for cleaning purposes. The lugs are made of springy metal and can be removed with the plastic 'triangle' cover off. By pressing on the notch on the top of a lug with the end of a small screwdriver, the lug can be unlocked and removed. It will relock when pushed back into position from the other direction.

NOT THE TRACKING!

I should mention tracking (Azimuth). The tracking screw allows minor adjustments to the position of the read head so that information is read at an optimum from the tape, the optimum position for the read head being perpendicular to the tape path. Tracking affects the clarity of signals being read off the tape, however, small variations in correct tracking do-not matter when reading just two different signal frequencies (5327 Hz for a 1-bit and 3995 Hz for a 0-bit with the Atari system), however if the tracking is way off line then load errors may occur. Ideal tracking becomes important when using Rambit Turboload tapes, where there is little room for error during the fast data transfer. Beware, though, because any recordings made with the tracking in its original position may fail to load after the tracking has been re-aligned, particularly if it was far off line in the first place. Having said that, I haven't experienced any problems with this.

If you think the tracking in your recorder may need altering, and aren't sure how you should go about it, here's how! Alter it at your own risk!

Firstly, you will require a small Philips type screwdriver. Type POKE 54018,52 to turn on the cassette motor and open the



A - ERASE HEAD
B - READ/RECORD HEAD
C - CAPSTAN
D - PINCH ROLLER
E - TRACKING ADJUST SCREW

Figure 1
View of tape mechanism with play depressed

I/O audio channel. Listen to a cassette with data on it or, alternatively, an old music cassette which you wouldn't dare listen to in public any more. EJECT the tape and press PLAY once more. Fractionally turn the adjust screw in one direction (the adjust screw is directly below the notch in the case, to the left of the read head). Listen to the tape again. If the sound has become more dull, turn the screw in the opposite direction and listen again. As you make these fine adjustments, a point should be reached where the sound is at its brightest and cleanest to the human ear. The tracking is now set properly.

That's it - some ideas which may go some way to ensuring your cassette recorder behaves itself. If you have a spot of bother, try them (the spot will clear up immediately).