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STATUS 1500

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SORRY!

Sorry the newsletter is even later than ever. Apologies also to all subscribers whose letters remain unanswered, or to whom I owe cassettes, etc. A short bout of ill-health (nothing serious) together with a traumatic change of jobs, have contributed to the delay: but the main cause was that my printer would not print! Everything was thoroughly checked. The printer was tested: there was nothing wrong with it. All connections were scrupulously tested: they were OK. The CE 158 was tested: it functioned perfectly. The PC 1500 functioned perfectly in every respect: and drove the CE 150 without malfunction. Pins loose in sockets? This was not the problem. Another computer was used: no trouble. Meanwhile unfortunately valuable text had been lost. The computer was reset: no cure. Panic set in. As a last desperate resource, new batteries were put into the PC 1500. What good could that do? Answer: cure the trouble completely. With hindsight, it would seem that slightly low batteries in the computer may deliver enough power to drive itself, and other peripherals, but still not quite enough for a printer. We live and learn, but how exhausting the process can be! Parachutists, mountaineers and speleologists have it easy compared with with us computer freaks.

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So rather than delay this issue even more, some interesting programs from contributors have been omitted. I hope that they too will accept my apologies. This issue is a bit scrappy: and this may also apply to the May edition. But we will make every effort to recover the lost ground, and provided that we can survive the next few dozen disasters, you will not lose out in the long run. We hope.

CONTENTS

SIGNALS

IAN TRAYNOR remarks that Lobster Soup was not justified. This is not a sumptuary but a typographic criticism, and refers to the fact that the March editorial is aligned on the left, but not on the right.

Proportionally spaced characters are the cause of this. The width of each character varies according to its size, as in printing, as opposed to the ordinary typewriter which allots the same space to each character. So even if there are the same number of characters in each line, the lines may not be visually the same length. Justification is not theoretically impossible: but it means setting up a table of the width of each character, examining each character of the text individually, and summing their values, before adjusting the line. The sacrifice of time, of speed and of space makes me doubt whether the experiment would be justified.

MIKE O'REGAN, the author of the very popular PICOWRITER (and of the abominable "Twenty Questions") is dismayed by the lack of general support for the PC 1500. He lives between Nottingham and Derby, and would welcome any opportunity to contact other enthusiasts in those areas.

Letters via the editor will be forwarded.

FRANK ODDS has trouble with his CE 150, which will no longer CSAVE or CLOAD. He sent it to SHARP, who kept it for a month, before returning it having adjusted the printer, but having completely ignored the actual fault, despite an explicit covering letter.

This is typical of the complacent futility of SHARP (UK), whose service, by all accounts, has now deteriorated from its previous low.

DAVID RIHOY wonders whether anyone has yet succeeded in disassembling the ROM of the CE 158. His own investigations have merely resulted in a string of Chr$ 125 and 127.

Has any reader had success with this?

RONALD COHEN has had a slight problem with his printer. Under certain rare circumstances, when the printer buffer (2K) is full, it will accept no more characters from the computer until a certain number of characters have been printed out. Meanwhile it is giving the BUSY signal to the computer. But when the CE 158 receives the BUSY signal for more than 10 seconds, it shows ERROR 69.

CHRIS NORTH suggests the following remedy:

```
10: ON ERROR GOTO 999
20: LPRINT A$(n)
::::::::::::::::::::::::::
999: IF ERN =69 BEEP 1: GOTO ERL
```

(Note that the LPRINT statement must be the first statement in that line. Note also that when keying in Line 999 it is essential that the computer be attached to the printer - otherwise the statements ERN and ERL will not take on their "Reserved Word" condition.)

H.H.HEINE is grateful to all those who have offered help with getting his TANDY GP115 printer to work with his PC 1500. Unfortunately, he says that he does not know what his problem really is. Despite having tried everything a hundred times, he still does cannot discover whether the trouble comes from faulty connections, wrong interfacing, a faulty interface, wrong protocols, or what.

This makes it very difficult to help you. If only you would tell us exactly what connections you have made, what protocols you are using, and what happens when you try to print (ERROR 27? ERROR 50? ERROR 69? nothing at all?) it might be possible to try to help you. Otherwise we are even more in the dark than you are.

PEEK POKE & MEMORY - XIII
- variations on a variable theme -

It is a fine spring morning. You have just written a remarkable program, for demodulating infuriants, and intend to send it in for publication. Since you are of an eccentric and kindly nature, you have heeded the editor's anxious requests, and have written your name, and the title, on the back of the program. Never one to do things by halves, you have also written your name, and the title of the program, on the back of your covering letter, the back of the envelope, and even the back of the postage stamp. Just as you are about to toss the missive nonchalantly into the post, however, you realise - with horror - that you have used the variable I: and since your listing is in CSIZE 1, and the pen was almost out of ink, it is possible that a shortsighted and impatient editor may occasionally key in a figure 1 by mistake, and blame you because the program does not run. So you decide to change I to K and, for reasons unknown, also to change A to Z. Your program is 16K in length, and contains many involved multi-statement lines. You do not have the time to make these changes individually. Besides, you might miss one. So you write a short routine, and tag it on the end.

```
60001: FOR F=STATUS 2-STATUS 1 TO STATUS 2
60002: IF PEEK F=73 POKE F, 75
60003: IF PEEK F=65 POKE F, 90
60004: NEXT F
```

and miraculously every A will become Z, and each I will become K. This works - but you are disappointed to find that it has worked too well. Your first line now reads:

```
10: INPUT "KNFURKZNT?";Z
```

How znnoykng!

You had told the routine to change certain variables. You had failed to tell it to change nothing else. You try again. Since characters in strings and INPUT statements are always next to other alphabetic characters (or spaces, or inverted commas,) you add a few IF statements:

```
IF PEEK(F-1)>64 OR PEEK (F+1)>64.....
IF PEEK(F-1)=34.....
IF PEEK (F-1)=32....
```

and all goes well, until you find a line starting I=X:...and for some reason the I has failed to be transformed. Of course! There are exactly 32 bytes in that line: the routine PEEKs the 3rd byte of the line, which carries "number of bytes in line" and applies the IF statement. The routine does not know that this 32 is not a character.

By now your train has departed without you. You phone the office to say that you won't be in today, because you feel unwell. This is not entirely untrue. You then settle down to a hard day's programming. You realise that you can get round this last problem by yet more IF statements: .....IF PEEK(F-4)=13.... will recognise the previous End-of-Line Marker. But it is time perhaps to try another tack. All strings, and all INPUT statements, are enclosed in inverted commas. Precisely, each is enclosed in a PAIR of inverted commas. So you can set a flag. The flag will protect against changes after the 1st inverted comma, and the protection will continue until the next is reached. You will skip over the 1st 3 bytes of each line: you do not wish to tamper with line numbers etc.

```
Q=1
FOR F=STATUS 2-STATUS 1+3 TO STATUS 2
IF PEEK F=13LET F=F+4
IF PEEK F=34 LET Q=-Q
IF Q=1 AND PEEK F=65 POKE F, 90
IF Q=1 AND PEEK F=73 POKE F, 75
NEXT F
```

This ought to work. But - wait a moment! What about REM statements? You can use the opening REM (241 171) to change the flag. But then you have an odd number: how do you change back again? ----- I must leave you to work this out by yourself. I have to phone the office now, to say that I won't be in today.

LETS WRITE A PROGRAM - *III*

So we are *almost* ready to start coding: but first there are still a few questions to settle. Last month we ended with a problem: if we DIMension a separate variable for each bet, too much space would be consumed. Certainly no hope of cramming the program into under 2K. The answer: LET THE RANDOM WINNING NUMBER BE SECRETLY CHOSEN BY THE COMPUTER *BEFORE* BETS ARE PLACED. Thus the effect of each bet on each player can be calculated and stored immediately. So for each player we shall need only 2 variables. e.g. A(1,1) for his capital, as diminished by staking: and A(1,2) for his capital as modified by what he will have won or lost. (N.B. *provision for changing mind, cancelling or altering bet?)*

However this solution may create a problem when we come to the idea of "slowing down the wheel" on approaching the winning number. Probably not insuperable. If necessary, we must abandon this feature.

Two or three other considerations before we start. These are questions of style. It is obviously by no means essential for you to adopt my ideas: but they may be worth considering.

First, labels. Yes, lets start evey section with clear alphabetic labels. If they occupy too much space they have to be deleted, but let us try. REMs? preferably not. We have enough discussion already, and the labels if carefully worded, should take care of the work done by REMs.

Line numbers. Here I intend to adopt a quirk of my own. Professional programs usually proceed in twos, or tens. If you have 64K, and only the same number of line numbers available , you must number your lines fairly tightly. But we have 65000 line numbers possible, and only 8K; with an average length(say) of 20 characters, this gives a maximum of 300 lines. So lets spread them. Lets start each section at a different 1000 level: this helps identify any section one is looking for. What is more, *alternate thousands;* 1000, 3000, etc. This leaves room for interpolated sections starting 2000, 4000, etc.

Multi-statement lines? Yes. Good solid chunks of code. Easier to list, for one thing. But careful not to overdo it. Extra statements can be hard to insert; and we want to avoid mistakes like

```
10: FOR X=1 TO 10: IF X=Y LET N=N+1:  NEXT X
```

Here, if the "IF" statement is not fulfilled, the NEXT X is never reached!

Talking about "IF" statements, are we going to spread the program out, such as

```
10: IF A=1 GOTO 2001
20: IF A=2 GOTO 2002 and so on.
```

or shall we compress things, such as

```
10: GOTO 2000+A
```

Well, I prefer the latter , up to a point. A little more thought is required, and a lot less keying in. But again, not to overdo it. We want to be able to READ and understand the program if we come back to it in the future.

So lets start!!! (Is there anything we have forgotten? Probably. But we *hope* that the outline is sufficiently clear, yet sufficiently flexible, to allow us to deal with problems as we come to them).

And where to start? Obviously not with section a), since we do not yet know what arrays we need to DIMension. And lets not face the difficult bits just yet. Simple and straightforward, we hope , is section b) to b.3a). So lets start coding this - next month.

REM REMOVER

by D.Rihoy

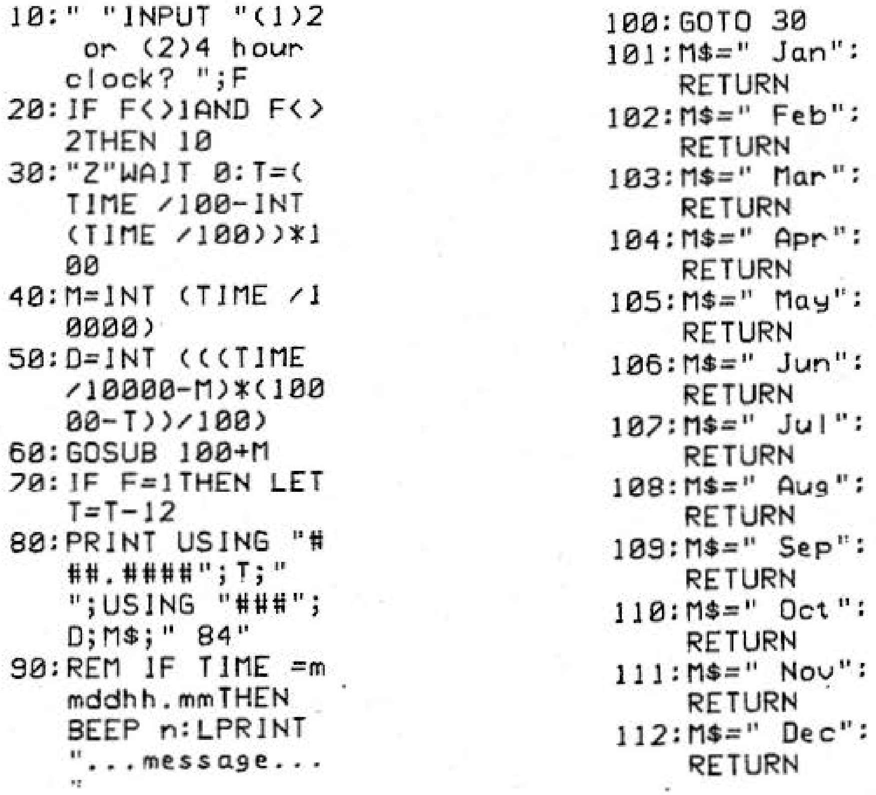
It is often useful when developing a program to include a number of REM statements, which describe the functions of various lines and parts of the program. This can also be helpful to a user who may wish to adapt it to his own special needs. But when actually running the program, these REMs can waste space, and time. So it is not unusual to keep two versions: one, with REMs, for study; and the other, without REMs for everyday use. This utility will strip all REM statements from a program, including those which occupy only the latter part of a line. However if a REM occurs in the FIRST line of a program, this is left untouched, since this may well contain the title, and copyright.

```
10 " "P=STATUS 2+2
20 POKE P,204,101,181,255,7,137,1,154,68,68,69,253,202,253,90,104,13
30 POKE (P+17),181,255,7,137,6,30,253,24,202,103,154,68,68,68,68,5,183,171,137
40 POKE (P+36),26,108,13,139,16,253,136,36,253,200,204,114,253,138
50 POKE (P+50),14,253,10,181,13,81,40,164,247,153,3,158,46,70,70,108,58,139
60 POKE (P+68),8,70,70,245,245,202,114,106,0,245,96,181,58,40,7,155,55,181,13
70 POKE (P+87),40,7,153,14,245,158,77
80 CALL P:END
```

CLOCK & CALENDAR

by Mike O'Regan

The built-in REAL-TIME CLOCK, which is one of the better features of the PC 1500, is not really formatted in a 'user-friendly' way. This CLOCK/CALENDAR/ALARM routine is self-explanatory. Put your own message in line 90. Run the program by DEF [SPACE]. Re-run after a break by DEF Z.



```
10:" "INPUT "(1)2
    or (2)4 hour
   clock? ";F
20:IF F<>1AND F<>
   2THEN 10
30:"Z"WAIT 0:T=(
   TIME /100-INT
   (TIME /100))*1
   00
40:M=INT (TIME /1
   0000)
50:D=INT (((TIME
   /10000-M)*(100
   00-T))/100)
60:GOSUB 100+M
70:IF F=1THEN LET
   T=T-12
80:PRINT USING "#
   ##.####";T;"
   ";USING "###";
   D;M$;" 84"
90:REM IF TIME =m
   mddhh.mmTHEN
   BEEP n:LPRINT
   "...message...
   "
```

```
100:GOTO 30
101:M$=" Jan":
    RETURN
102:M$=" Feb":
    RETURN
103:M$=" Mar":
    RETURN
104:M$=" Apr":
    RETURN
105:M$=" May":
    RETURN
106:M$=" Jun":
    RETURN
107:M$=" Jul":
    RETURN
108:M$=" Aug":
    RETURN
109:M$=" Sep":
    RETURN
110:M$=" Oct":
    RETURN
111:M$=" Nov":
    RETURN
112:M$=" Dec":
    RETURN
```

INTERFACE - 3

by Chris North

Selecting a Printer - Serial or Parallel?

Assuming you are buying a reasonably low-cost dot matrix or daisy-wheel printer (for example: Epson/JUKI, although I will not make any recommendations), it is a good idea to choose a parallel interface in the interests of efficiency and ease of connection. So long as the 'standard Centronics interface' actually works with the CE-158 (demo essential before purchase!) you can drive the printer much faster with no need to include checks in your program for the status of the handshaking lines.

I will give you an example of the potential problem with serial-connected printers. The one I am using now allows serial or parallel connection but the way the micro and printer communicate is very different in each case.

Parallel connection uses a BUSY line to tell the micro to wait before sending the next line of data, but when the printer is free it can receive data at the maximum speed of the interface (I think > 1000 ch/sec). So, the printer is receiving data as fast as possible; the micro will happily accept the brief delays between lines of output; and the maximum print rate and actual throughput of the printer are of little consequence. The micro will only 'time-out' if the printer goes off-line, e.g. due to lack of paper, and it should be reasonably simple to write your programs to deal with this.

Serial connection requires that the baud rates of the micro and printer ends of the cable are set to the same value. So you might set them both to 2400 (which is the maximum for CE-158, while printers often allow higher speeds). The printer (rated at say 160 ch/sec) is probably able to signal that its input buffer is full by dropping the DTR signal or sending XOFF (CHR$(19)) to the micro, which is OK if the micro knows what to do!

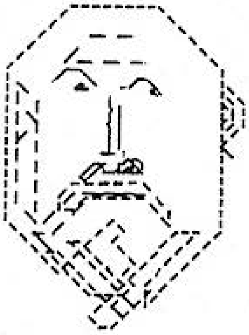
The PC-1500/CE-158 is not too good at handling this type of condition which requires checking of the INSTAT function while printing. One way round this is to set the baud rate to a value somewhat lower than the printer's speed so that it never gets too far behind the micro. Another is to build in a delay between lines of print (a dummy GOSUB). You may, however, be surprised by just how slow this will have to be if you want to use some of the fancy tricks of your new toy and I'll demonstrate on this printer (Terminet 3304):

```
This line is in EDP font, print rate 300 ch/sec
This line is in Draft font, print rate 200 ch/sec
This line is in Near Letter Quality font, 100 ch/sec
Add Bold mode and the speed drops to about 50 ch/sec
Add Underline and the speed drops to about 25 ch/sec
```

As the printed dot density increases, the throughput decreases accordingly. Even worse is the effect of paper movement (line feed and form feed) which is incredibly slow on most low-priced machines. It is quite possible to set the baud rate as low as 300 and still get printer buffer overflow or a time-out at the micro end.

Two other reasons for parallel connection: they are usually cheaper and if you get a modem, so you can call up bulletin boards or other networks using the CE-158's TERMINAL/DTE program, you can connect your printer at the same time (I haven't actually tried it but Sharp say you can in the manual so it must be true(?!)).

MINDBOGGLE CORNER



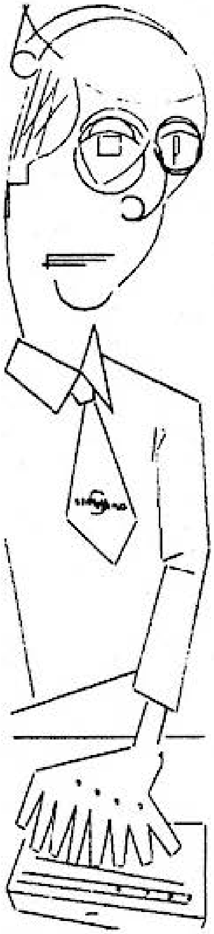
Suddenly, at dead of night, some weeks ago, the readers of this newsletter leaped from their beds, turned on their computers, and keyed :

████=████+1

What? and why? and when? Absolutely no prizes.

Only 2 entries received for the February competition - which is 2 more than I expected. Both have been viciously disqualified. C.P.UNDERWOOD (the portrait on the left) because he was relying not on imagination but memory, and anyway the drawing is without artistic merit. JOHN WARNER provided the drawing on the right. It resembles the editor in not one single particular, shows him with 8 fingers on one hand, and arrived well after the deadline. However both will receive a small consolation prize, carefully selected for cheapness, uselessness, and grotesque design.

C.P.UNDERWOOD's picture was done with SUPERSKETCH (vol.1, page 99), whereas JOHN WARNER used the TANDY program.



Several interesting suggestions with regard to the March MINDBOGGLER. Both IAN TRAYNOR and ALAN GENZEL suggest recording in 2 parts: first a program (or PRINT#) for DIMensioning information, and then the actual DIMensioned data. This is a complication I would rather avoid. DAVID RIHOY suggests putting the information about DIMensioning into variables, and preserving those variables, but I doubt whether this is practicable, since the same program (INDEX, for instance) may be used over a period of time with different DIM values for its different applications. My own idea - which I have not tried out yet - is to POKE the DIM values into the appropriate place, also preserve the values of 30873 and 30874, in such a way that they will be replaced on running the program, and then lift the lot, the whole program area, program and DIMensioned variables and all, by means of CSAVE M, and CLOAD M. I really must try it sometime.

LETTERING

```
 10 INPUT "TITLE=";A$
 20 GRAPH :ROTATE 1
 30 X=90:Y=0:SORGN
 35 FOR P=1TO 3
 40 CSIZE 5:GLCURSOR (X,Y):LPRINT A$
 50 GLCURSOR (X+P,Y):LPRINT A$
 60 GLCURSOR (X,Y+P):LPRINT A$
 70 GLCURSOR (X+P,Y+P):LPRINT A$
 80 NEXT P:ON ERROR GOTO 100
 90 P=6:GOTO 40
100 END
```

STATUS 1500 - VOLUME 1 reviewed by C.P.UNDERWOOD

Bound volumes of magazines are usually disappointing, and this is no exception. What was fresh and exciting when it first appeared seems stale and uninteresting on later perusal. Temporary expedients - utilities for instance - which are replaced a month or two later by a superior version are still useful on their first appearance. But when both versions appear in the same volume, the temporary version does not even have academic interest. So it is with other ephemera. Yesterday's news is neither news nor history: and yesterday's arguments are boring even to the participants. This is not to denigrate the value of the material as it first appeared: merely that the wisdom of amassing it under one cover is questionable. Certainly there is in the volume a lot of useful information. It has to be searched for, but the final indexes make this fairly easy. However I would much have preferred to see a volume of selections: this could indeed have been a handy book of reference. I admit that it might have been tedious to compile, and perhaps uneconomic.

As a volume this is quite nicely produced, and not too uneven for what is after all an amateur production. The variety of typefaces used is not really necessary. The general effect at times is patchy. though the design is a bit more slick than in most comparable "user-group" publications. It is not too hard to read, nor impossible to find one's way around in.

The editor himself must have a few qualms about some of his hastier pronouncements. I do not go all the way with a reader who (I am told) refuses even to glance at the editorial page: but I would agree that the editorials of last year are very definitely not worth reproducing in volume form. This is true of other publications: here it could hardly be more true.

The editor is fortunate in having the support and advice of so many devoted subscribers - devoted, no doubt, to the computer rather than to the newsletter. But to some extent the two go together. STATUS 1500 may not be the best possible back-up for the PC 1500, but it cannot be denied that it is what is available. I could wish that the editor would sometimes think twice before rushing into print: perhaps I am making insufficient allowance for the remorseless advance of time, and looming of deadlines. The editor may imagine himself fortunate that he is answerable to no one but himself and his subscribers. He might be more fortunate if he had less license to be irresponsible.

Remembering that this is a magazine, not a textbook, I must say that on the technical side I cannot make such strictures. While there may occasionally be inaccuracies, the newsletter does make every effort to correct them, and admit them, rather than sweep them under the carpet. In any case, such mistakes are rare: I have only been able to discover 3 or so in the volume: and these not of desperate importance.

This review is critical, and it is the editor's own fault that it is so. By attempting to set an extremely high standard of production and material, despite the comparatively small base on which he has to draw, the volume is necessarily judged by its closeness to that standard. It is always aiming for excellence; it seldom quite reaches it, but the standard is higher than that of the average publication of this type, and so the partial failures of STATUS 1500 compare not unfavorably with the partial successes of others. Whether the volume is good value is hard to say. £8.50 seems a lot to pay for a volume of this type. On the other hand, it must cost at least that much to produce, given the small print-run. However it does contain much essential information which is - as far as I know - available from no other source: and I must therefore reluctantly recommend it as a good buy for newcomers to the newsletter.

THINGS

The original paper rolls for the CE 150 are hard to obtain, and expensive. One can easily roll ones' own, out of till-roll. If one uses th better quality paper, this tends to unroll in the printer, and does not always feed exactly, thus giving rise to "graphic slip". Several readers use whole till-rolls, suspended externally. ARTHUR COX has developed an ingenious contraption from a toilet-roll holder; R.WILLIAMES has removed the plastic window from the printer, and feeds the paper from a wire construction which is attached in its place. However I myself have a less elaborate method, consisting of a roll between two volumes of an encyclopedia. I find it unnecessary to remove the plastic window. When you attach the cover to the printer, if you first fit the front end, the back end will not quite plug into place; and the gap that remains is just right to allow the paper to feed between the cover and the body of the printer.

I also have a more portable fitment which consists simply of the fitting of an old lever-arch file. These systems of mine do nevertheless need a fairly clear and level working surface to ensure even paper-feed.

Reliable cassette-recorders are always of interest. R.WILLIAMES uses a TOSHIBA KT-P22, which he says gives impeccable results, despite rough handling. I have also been sent information by M.GREENING-LEWIS about the OLYMPUS C100, which takes microcassettes, and is specially designated for use with pocket computers. It is sold by DIXONS, at about £50, and has a phase-reversal switch to ensure compatibility. I have not personally tested this machine. The cassettes can hold 30 minutes each side, but are slightly more expensive than ordinary full-size cassettes.