(2) display driver; and

(3) time-zone calculation.

In addition, the on-chip timer interrupt is heavily used to time various operations such as key debounce, segment flashing and display rotation rate.

The program sequence is traced by a MODE variable which ranges from 0 to 9 as follows:

MODE 0 - all previous data cleared, enter departure time;

MODE 1 - enter flight time;

MODE 2 - enter arrival time;

MODE 3 - enter EAST/WEST;

MODE 4 - calculate segment moves;

MODE 5 - launch 7 light segments;

MODE 6 - rotate 7 light segments;

MODE 7 - launch 6 dark segments;

MODE 8 - rotate 6 dark segments; and

MODE 9 - continue to display the light and dark segments and wait for RESET.

The transitions between the early MODES occur when the ENTER key is pressed, and the subsequent MODE changes occur automatically upon completion of the current task. The device ends up in MODE 9 awaiting a RESET.

The keyswitch handler has a software debounce time of 40 ms. If the MINS or HOURS key is held down for longer than 1.5 seconds, the MINS or HOURS display digits increment at about 8 per second.

The display driver has to generate by software the serial signals to drive the I-C bus. The communications are in 8 bit sections, the first 4 being control bytes and the remaining 13 are data bytes. For every display update, no matter how little is being changed,t he complete message of 17 bytes is sent.

Because the segment layout for the radial segments is not homogeneous, rotating this zone of the display is not as simple as it might have been. Instead of one subroutine to shift the 3 LCD segments driven by each 8576 segment pin, there are several to cope with the different ordering of the LCD segments on the segment lines.

The time-zone calculation calculates as follows:

(1) Time-zones equals departure hours plus flight hours minus arrival hours (refined to take account of minutes (departure minutes plus flight minutes minus arrival minutes) and rounded to nearest hour).

(2) Time zones should be positive for WEST and negative for EAST; make so by adding or subtracting 24, to take care of passing through 0.00 o'clock.

(3) If EAST check for 12 or more time zones.

(4) Calculate segment rotations to take up correct position on LCD.

(5) Add one extra revolution to give extra "life" to the display.

The display is then produced by:

(1) feeding in 7 light segments at the midnight position;

(2) further rotation of these 7 segments by more than one complete revolution till they take up their final position;

(3) feeding in 6 dark segments at the midnight position; and

(4) further rotation of these 6 segments by more than one complete revolution till they take up their final position.

The device then pauses, displaying the 24-hour clock segments, until the user resets the device by holding down the hours and minutes key.

Having described the prototype circuit of FIG. **8**, FIG. **9** shows a similar electronic circuit which performs the same general functions, but is more specifically adapted to use on a large scale (i.e. mass-production) and is constructed accordingly.

Modifications and variations other than those described above can be adopted without departing from the scope of the invention.

We claim:

1. A device for aiding resynchronization of a personal body clock of a traveller, said device comprising a first data series representing the personal body time of the traveller and a second data series representing local time at the destination of the traveller, both said data series having representations of twenty-four hours and being displaceable with respect to each other, the mutual displacement of the data series being carried out with reference to the time of the departure of the traveller and the duration of the journey of the traveller, a readable display for indicating a procedure to resynchronise the personal body clock of the traveller upon said mutual displacement, said procedure comprising controlling exposure of the body of the traveller to daylight.

2. A device as claimed in claim **1** wherein each said data series is cyclic, and the displacement of one data series with respect to the other data series is accomplished by relative phase displacement.

3. A device as claimed in claim **1** wherein the device is electronic, and is in the form of a program for a calculator.

4. A device as claimed in claim **3** wherein the program is incorporated in a calculator, and said calculator is embodied as a wrist-mounted instrumentality.

5. A device as claimed in claim **1**, wherein the representation of twenty-four hours on each data series is in the form of a respective 24-hour clock on each data series.

6. A device as claimed in claim **5** including aligning means for aligning the representations of the 24-hour clocks of the first data series and of the second data series.

7. A device as claimed in claim **6** wherein the data series representing the personal body time of the traveller comprises representation of behavioural actions associated with the twenty-four hour representations.

8. A device as claimed in claim **6** wherein the device includes aligning means for aligning the representations of the first and second data series and is realised by means of electronic circuitry, said association is retained in a program and the mutual displacement and aligning is effected by said program and circuitry with the readable display as a visible digital display.

9. A device as claimed in claim **8** wherein said visible digital display is a liquid crystal digital display.

10. A device as claimed in claim **1** wherein the device is a manually operable form of device,t he data series each being in the form of a relatively slidable scale, the displacement of the scales being effected by moving one scale relative to the second scale, the scales being associated in the form of two mutually rotatable concentric discs of different diameters.

11. A device as claimed in claim **10** wherein the device includes aligning means comprising a pointer independently rotatable over said concentric discs.