QTH/QRA Locator Program for the ZX81

by Bob Fuller G8CEZ

If you are going /A or /P on holiday or DXpedition you are able to work out all possible QRA locators, or draw the QRA squares on a map, from the information derived from Program A. The other possibility of course is to take the *ZX81*, a 12 volt television and battery cassette player with you to the /A or /P location. Although the *ZX81* should run on 12 volts I used a simple transistor dropper from 12 to 9 volts to avoid any thermal problems. This arrangement also doubles up on caravan holidays to put invaders and other games on the portable television for wet days. The most significant problem with using the *ZX81* near radio equipment is one of interference. No attempt has been made to reduce the interference level, I simply work out the QRA locator (Program A) first and the distances, etc (Program B) after. No doubt somebody will produce a suppression kit in the future.

The first two attempts at this program proved to be abortive, as 20K+ of RAM would have been needed and a complete rethink was necessary to produce a version in about 8.1K. Machine code was avoided so that each program can be understood and modified to individual requirements (eg. adding a printer to output scores with times and callsigns). Most subroutines are

As a result of producing a QRA program for contest use at my local club I decided to improve it and make it as foolproof as possible. The final program was of interest to other *ZX81* users and the idea of making the program available to other *ZX81* users came about, but the original QRA program was not enough to justify producing tapes. Having seen the difficulties that arise from finding QRA locators it was decided to write a program to cover this problem. How many QSL cards have you received with a QRA locator overprinted?

headed with a REM statement to aid the understanding of the program.

Program A

After loading you are presented with an introductory caption. This clears and you are invited to input your latitude in degrees, minutes and seconds. These are all assumed to be north of the equator. Next you input EAST or WEST and the degrees, minutes and seconds longditude. The best place to find this information is from an Ordnance Survey map, 1 inch to the mile or the later metric series 1:50000. If an Ordnance Survey map is not available, any reasonably scaled map can be used. On completion of your longditude the screen will clear as the *ZX81* goes into FAST mode. A 'noughts and crosses' grid is generated and presented to the screen. By removing the line of code with FAST in it (2150), you can watch the grid being generated, but with the penalty of it taking much linger. The program will work out your QRA locator and write this in the centre square. The relative position is shown with a flashing pixel. If the pixel flashes on an axis you are on a boundary. This now requires very careful checking to see which square you are in. In the unlikely event of being on a boundary you can chose your QRA locator or even have an aerial in each! The program