Landnote

Department of Conservation & Land Management

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THE HUSKY HUNTER - A PORTABLE COMPUTER

FOR RECORDING DATA IN THE FIELD

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Introduction

The practicality of using portable computers for recording data in the field has attracted interest in Australia since the early 1980's. W.D. Incoll in Victoria, and R.M. Donovan in New South Wales investigated their application in the collection of forestry data, and reported their findings to a Research Working Group meeting in 1984.

In January 1985 this Department purchased two 80 K-byte Husky Hunters for assessment and testing in the field.

The Husky Hunter was reported as the best machine available at the 1984 Research Working Group meeting. Subsequent testing in Western Australia confirmed that it suited Departmental requirements with respect to weight, robustness and memory size. The outcome of these tests is shown in Table 1.

Selection of a Suitable Model

The Husky Hunter is available in models ranging from 80 to 496 K-byte capacity.

Before selecting a model for a particular purpose, it is essential to obtain a memory map and to study carefully the operating system and your application requirements. This will ensure that the model chosen will have the capacity for your particular application.

Larger capacity models have already been purchased by the Wildlife Research Centre (496 K-byte) and Inventory Branch (353 K-byte); both machines will be installed with dBASE II for future applications development.

Table 1

DEPARTMENTAL REQUIREMENTS AS FULFILLED BY THE HUSKY HUNTER

Requirement Type	Capabilities Description	Score % of Req't
1. Sturdiness	Shock: It can function after dropping from a car at 50 kph onto the road	100
	Heat: It can function at 50°C	100
	Humidity: It can function in water	100
2. Screen size	40 x 8 characters	80
3. Minimum memory	It was available in 4 different sizes: 80, 144, 208, 352, 496 K-bytes and was the largest available at January 1985	100
4. Lightness	2.7 kg	80
5. User friendliness	Its operating system is CP/M compatible, being able to run existing packages such as Wordstar dBASE II and Supercalc.

Its own Hunter BASIC is also available. User friendliness will depend on programming effort invested. | 80 |
| 6. Communication efficiency | Its communication capability was as good as any available at that time. | 80 |

Transferring Data

1. From the Husky Hunter to the Perkin Elmer.

    Large data bases are stored in the Department's Perkin Elmer
    computer. To add to them from data collected by the Husky
    Hunter requires the capacity for communication between the
    two machines.

    An initial communication program was developed by I. Riley
    in Hunter BASIC. It could transmit data from the Husky to
    the Perkin Elmer and vice-versa. However, it used an
    inefficient 'time-out' technique that was extremely slow.

    To guarantee the readiness of the Perkin Elmer to receive,
    we changed the program to detect the prompt signs "" or "*"
    from the Perkin Elmer after transmission of each data
    record. This adjustment to the program reduced the time for
    transmitting 6.4 K-bytes of data from 50 minutes to 11
    minutes.

    We recommend not using the 'time-out' technique except for
    logging-in when prompt characters cannot be distinguished.

2. From the Husky Hunter to an Olivetti Personal Computer.

    P. Walsh of Research Branch has written a BASIC program to
    transmit data files from the Husky Hunter to an Olivetti
    Personal Computer. Another program with the same function
    is available from the suppliers of Husky to transfer data to
    an IBM PC. This is in use at the Woodvale Wildlife Research
    Centre.

    T. Westcott of the Computer Services Branch has also
    produced a program in PC-MACRO to transmit data from an
    Olivetti Personal Computer to the Perkin Elmer.

    This combination permits the transfer of data from the Husky
    Hunter to an Olivetti Personal Computer, either for storage
    and processing in the personal computer, or for further
    transmission to the Perkin Elmer.

    In future we would like to use a Husky Oracle disc drive for
    temporarily storing data at remote locations. When
    circumstances permit, the data can be retrieved from the
    Oracle disc drive by the Husky Hunter, and then transmitted
    to an Olivetti Personal Computer.

Developing an Application

In order to assess the user-friendliness of the Husky operating
system we developed a data capture program for an existing system
of data collection.

The Pine Operations Thinning Schedule System, operated by the Inventory Branch, was selected as a test case. A program was developed which was a straightforward automation of the previous hand written collection of data. Information about pine thinning plots and the measurements of the trees in them were keyed directly into the Husky. Some writing was still necessary to show plot location and to make some notes. Trying to automate this did not seem to be worth the effort - even if there was room in the machine for the necessary code. At the end of each day data was transmitted to the Perkin Elmer.

User acceptance of the system was found to be reasonably good. However, it was also established that considerably more memory than that available in the 80 K-byte model is needed if application programs are to be user friendly and maintainable.