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## THE TALKMAN™

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The Talkman is a voice-recognition data logger that allows one person to collect data while leaving his/her hands free for other tasks (e.g., to handle measuring equipment such as calipers, prisms, etc.). Following FERIC's preliminary trials of the Talkman in early 1990 (see FERIC's Field Note: General-17), several member companies expressed interest in the potential application of the unit for their data collection needs. In response, FERIC, Fraser Inc. of Edmundston, N.B., Forestry Canada (Maritimes), and the manufacturer, Vocollect Inc. entered into a joint agreement in mid 1991 to conduct an extensive evaluation of the unit in forest operations. Additional funding was provided by the New Brunswick Department of Natural Resources and Energy (Forest Extension Service).

New technology often requires highly-trained specialists to adapt it to a specific user's needs, and in some situations in the past, the adoption of new technology was hampered by resistance at the user level. This study thus evaluated operator acceptance, user learning curves, and the ability to interface with existing systems and application programs. The potential time savings were considered, but only as a secondary observation.

### EQUIPMENT

The Vocollect data collection system consists of three main components: the Talkman terminal or hardware, the Talkman software, and a host computer. The minimum host computer attributes are a PC/AT-type with at least 2mb of RAM and a hard disk configured to run Microsoft Windows (tm) 3.0 (PC/MS-DOS tm) or Presentation Manager (OS/2)™.

The data collector consists of two black boxes each the size of a VHS video cassette, which are worn on a belt and are wired to a small microphone and head set. One black box contains a rechargeable battery pack allowing for up to twelve hours of continuous data collection. The second houses the Talkman's hardware consisting of the memory board, processor, a lithium battery for memory maintenance (when disconnected from the main battery pack) and

a single multi-function push button control. The total weight of the belt-born components is 1.3 kg. A standard Talkman unit is endowed with 1.5 mb of memory, expandable in 1 mb blocks to a maximum of 4.5 mb.

Total cost of one Talkman unit plus software is approximately \$11 500 CAN. A subsequent unit would cost approximately \$2 550 less because of the elimination of software fees. Various options such as radio links, optional headsets, and additional memory result in increased costs.

### DESCRIPTION OF TASKS

Tasks developed for the Talkman during this project included timber cruising, scaling (2.44-m pulpwood, sawlogs and tree lengths), stem analysis, area mapping, and time studies of various machines. All tasks (except for mapping and machine time studies) were developed for application programs proprietary to, or under control of the project participants (i.e. Fraser Inc., Forestry Canada). The mapping task was developed for a program called Itmap (version 2.0) that is popular in the Maritimes and is in the public domain. The tasks ranged in complexity and offered sufficient scope to test all of the Talkman's software features (version 1.24).

The Talkman software utilizes a graphical environment, hence program development does not require a user to write intricate lines of computer code. Tasks are created by drawing a simple flow chart, with circles denoting questions and arrows from one circle to the next designating the sequence in which they are asked. Questions that the Talkman will pose to the operator are typed in common language, as are the acceptable answers. This diagram and its associated questions and answers are then converted by the Talkman software into a computer program. The Talkman terminal conducts text to speech synthesis, thereby offering vocal prompts to the operator for each required data entry. Through the use of logical, comparative and mathematical operators, the Talkman is capable of providing a dynamic branching data collection sequence.

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## RESULTS

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All operators exhibited some level of intimidation towards the Talkman prior to their first session with the unit. However, this was replaced by interest after only a short time of using the unit. All operators expressed a desire to use the unit in their day-to-day work. While some operators expressed some concern with respect to the unit's ability to withstand the rigors of the forest environment, no problems were encountered during the course of this study.

Some difficulties were encountered when developing data collection tasks for existing application programs. Most of these resulted from intrinsic requirements of the original data file, such as the required order in which specific pieces of data were required. In all cases, these constraints were overcome by the creation of intermediate filter - type programs, or by introducing minor modifications to the host application. While bothersome, these constraints did not create major problems, nor was this considered a flaw within the Talkman's technology. This problem would also be encountered with other data recording systems to varying degrees.

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## SUMMARY

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Voice recognition technology as presented by the Talkman offers significant advantages for data collection tasks. Its graphical programming environment, non-dedicated, user-defined text-to-speech synthesis, and verbal data input mode provide for simple operation and early operator acceptance of this technology. The ability to allow bar code entries offers additional potential for organizations employing this technology. Companies or agencies having data collection tasks that require, or that are subject to one or more of the following parameters may benefit from using the Talkman.

- Users required to handle tools to take measurements or handle the subject of data collection.
- Data collection requiring rapid input of several variables.
- Users not prone to accepting new technology, and/or having a low level of computer experience.
- Input requiring the operator to learn a specific vocabulary solely for the purpose of data collection.
- Output required in various file formats that differ from user to user.

During the 1991 field trials, the Talkman performed as per the manufacturer's claims, and we did not receive any negative comments from its users, except for cost. This report is based upon operation of the Talkman utilizing Version 1.24 of the Vocollect support software.

### Information

The information contained in this report is only published to disseminate information to FERIC members. It is not intended as an endorsement or approval by FERIC of any product or service to the exclusion of others that may be suitable.

Further information is available from the Canadian distributor of the Talkman.

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This Field Note is a summary of FERIC Special Report 82 "Evaluation of the Talkman™ Voice Recognition Data Collection Terminal" by Peter S. Hamilton. Copies of SR-82 are available in English or French from:

Forest Extension Service, Department of Natural Resources, Box 6000, Fredericton, N.B. E3B 5H1.

Publications, Department of Forestry, Box 2006, Corner Brook, Nfld. A2H 6J8.

Publications, Department of Natural Resources, Box 698, Halifax, N.S. B3J 2T9.

Publications, Private Woodlands Policy Section, Ont. Ministry of Natural Resources, 70 Foster Drive, Suite 400, Sault Ste Marie, Ont. P6A 6V5.

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