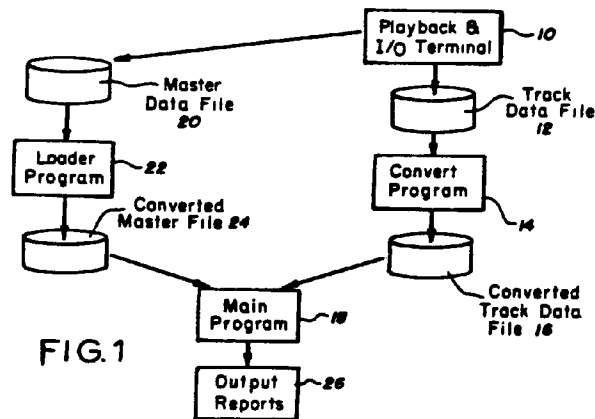


COMMISSIONER'S DECISION

NON-STATUTORY; S.2: The system to record vehicle performance during operation was found to lay in a patentable area. Certain claims to the structure were acceptable in the absence of cited art; other claims were considered to present no more than extraction of information and were found rejectable in view of Schlumberger. Rejection modified.

This decision deals with Applicant's request for review by the Commissioner of Patents of the Final Action on application 281,169 Class (354-23) assigned to Vapor Canada Ltd. entitled METHOD FOR AUTOMATED ANALYSIS OF VEHICLE PERFORMANCE. The inventor is John P. Schlutz. The Examiner in charge issued a Final Action refusing to allow the application. A Hearing was held at which Applicant was represented by his Patent Agent Mr. Harold C. Baker.

The application relates to obtaining operational data of a travelling vehicle and comparing it with stored data of a preferred kind of operation. A cartridge is placed on board the vehicle to record data of speed and distance traveled, and of other events, such as brake and throttle operations. On completion of the trip the cartridge is removed and placed in a terminal for transmission of data to a computer. Figure 1, reproduced below, shows how the comparison is made. The cartridge is inserted at 10 and its data converted and passed to file 16 where a comparison is made with the master file 24 by main program 18. The results, in plot or report form, are output at 26.



In the Final Action the Examiner rejected the application and the claims as not patentable and contrary to Sections 2 and 28(3) of the Patent Act. In his view the apparatus disclosed in figure 1 is not novel and he referred to certain pages of the application as listing known apparatus.

He commented:

...

If the applicant is to overcome the rejection he is required to point out where novel computing apparatus is disclosed. Failing that the application is not allowable in that it does not disclose or claim statutory subject matter. Claims 12 and 21 for example, are directed to a computer program per se and are not allowable as set out in guideline 1 on page 6 of applicant's letter of January 15, 1981.

...

The Applicant argued in his response of June 22, 1982 that his methods and apparatus are related to analyzing the performance data of the operation of rapid transit vehicles. He pointed out his arrangement, comprising disc files, a terminal and a computer is not inherently unpatentable since Schlumberger Canada Ltd. v The Commissioner of Patents 56 CPR 2nd. p. 204, "...did not specify that inventions in the field of computers were not patentable subject matter."

The issue before the Patent Appeal Board is whether or not the application and the claims contain patentable subject matter under Sections 2 and 28(3) of the Patent Act.

In discussing the apparatus of figure 1, the Examiner said that the parts were known and there was no description or showing of any novel apparatus. In his view of certain guidelines published in the Patent Office Record on August 1, 1978, there must be a patentable advance in the apparatus itself for claims directed to a computing apparatus to be allowable. Mr. Baker, however, says there is a description of a novel combination of known elements coacting together to produce a unitary result. He argues that a combination of old integers may be considered to be an invention. He points out that the majority of patented combinations fall into this category and that there are few instances where new integers were used to form a combination. He

notes the Applicant's combination of apparatus produces useful results and he comments that it is difficult to deal with an objection involving a question of novelty when no prior art was cited. Analysing the kind of subject matter the Applicant's claims are directed to, he groups the claims as follows:

- 1 to 6 method of analysing performance data - (process steps)
- 7,8 data processing system - (means plus function)
- 9 method of printing - (process steps)
- 10 computer system plotting data - (means plus function)
- 11 program - (process steps)
- 12 program to update information
- 13-19 method of analysing data - (process steps)
- 20 method of plotting - (process steps)
- 21 method of analysing - (process steps)
- 22-27 apparatus generating a performance record - (means plus function)

As Applicant has quoted from the Schlumberger decision, supra, in commenting on inventions for computer related subject matter, we believe it would be beneficial in resolving the issue before us to refer to two additional passages from that decision, as follows:

In order to determine whether the application discloses a patentable invention, it is first necessary to determine what, according to the application, has been discovered.

and

I am of the opinion that the fact a computer is or should be used to implement discovery does not change the nature of that discovery. What the appellant claims as an invention here is merely the discovery that by making certain calculations according to certain formulae, useful information could be extracted from certain measurements. This is not, in my view, an invention within the meaning of section 2.

We look first to the kind of subject matter disclosed in the application. Mr. Baker maintains the application describes a system residing in an acceptable field of invention. In tracing the developments in Applicant's field of technology, he noted the first generation used an endless tape to record vehicle performance data during operation, removed it at the end of a certain trip and then inserted it into an appropriate terminal whereby data was transmitted for development of useful information. The second generation used a chip memory instead of a tape. From page 2 line 23 to page 4 line 28 of the application we learn that Applicant's present system uses a cartridge tape (instead of strip chart rolls) plugged into an electronic monitoring and recording unit to record various events. After recording, the cartridge is removed and coupled with a computer or a terminal to send the information to storage and/or processing at a central computer to obtain an analysis and record of trip events.

In the application, applicant refers to three United States patents; two to Vapor Corporation, one to Sperry Rand. The first Vapor patent, U.S. 3,864,731 dated February 4, 1975 (more than two years prior to Applicant's filing date) discloses a vehicle data recording system using a magnetic tape. This Vapor patent states other prior vehicular data recording systems had used the concept of tape recording performance data on-board a locomotive, using an on-board mini-computer for editing and analysing data, but comments that the system was costly. The invention in this Vapor patent was said to be in contrast to the then known systems because it incorporated a tape recorder module and, after the recording, it was plugged into a unit which transmits the data through a terminal to a data processing center for analysing and formatting into report form. The second Vapor patent, U.S. 3,938,092, issued February 10, 1976 (less than two years of the filing of this application)

also described an on-board tape recorder for vehicle operation data and removal and placement into a ground station terminal linked by telecommunication with a remote data processor. Seven of the nine claims in the first Vapor patent correspond to the seven claims in Vapor's Canadian patent 1,030,632, May 2, 1978, and the other two correspond to the two claims in Vapor's Canadian patent 1,059,619, July 31, 1979. We note the Sperry Rand patent, U.S. 3,158,426, issued November 24, 1964 described a data recording apparatus for recording flight data, and is similar to the Vapor patents in that apparatus is described for recording significant vehicle events during a trip. These existing patents show that the art area described in this application has been considered acceptable in the past under Section 2. We do not support the rejection of the entire application for lack of any patentable subject matter.

We will now deal with the rejection of the claims, bearing in mind that combinations of process steps or apparatus may be considered acceptable subject matter. It is useful to compare the claims of this application to the claimed subject matter found not patentable in Schlumberger supra, in conjunction with statement of invention in the application, drawn to our attention by the agent.

We look first at claim 1 which reads:

A method of analyzing performance data recorded on board a vehicle, the method comprising the steps:

- communicating the recorded performance data to a storage medium remote from the vehicle;
- converting the data in the storage medium to a pre-selected format;
- loading the formatted data into a computer;
- loading master data, representing a known performance profile into the computer; and
- comparing the performance data with master data in the computer, under the control of a program for deriving analytical results regarding performance.

In our view, although the preamble of the claim attempts to set the subject matter in the same art area as the Vapor and Sperry patents the subsequent steps relate merely to a conventional routine for obtaining and analysing information to determine trip events. Claim 2 uses the word "transmitting" instead of "communicating" but is otherwise similar to claim 1. Since claims 1 and 2 are directed to no more than the extraction of information from recorded data we do not consider them to be directed to an invention within the meaning of Section 2 in view of Schlumberger.

Claims 3 and 4 differ from one another in the last step, i.e. analysing the recorded data when compared with master data in claim 3 and tabulating the recording data for data examination in claim 4. Each claim includes the steps of subjecting recorded data along with master data to a comparison within the computer and selecting an appropriate decision branch for analysing the recorded data. We find the claims as a whole relate to no more than determining useful information from recorded data. We note the last step of claim 4 pertains to and approximates the function found in the Vapor patents, determining useful information. We do not consider it acts with the other steps of claim 4 to produce anything more than useful information. We believe therefore claims 3 and 4 are not directed to patentable subject matter.

We now turn to claims 5 and 6 to determine whether merely a purpose has been defined, or whether acceptable method claims are set forth. Claim 5 reads:

A method for the analysis of a track data file for mass transit vehicle operation in comparison with master profile data, including a sequence for plotting analysis results on an output display device using data processing means, comprising the steps of:

- entering the mileposts defining the beginning and end of a vehicle run to be plotted into the data processing means;
- entering a resolution parameter indicative of a number of lines to be plotted for each mile of the run;
- calculating in the data processing means the total number of lines to be plotted with respect to the mileposts;
- comparing in the data processing means the result of the calculation with a preselected reference value stored in the data processing means to inhibit continuation of the sequence if the calculated value exceeds the reference value;

updating a master data file stored in the data processing means relative to mileposts, the master data file including preselected events and operation characteristics to which the track data file is compared;

storing preselected master file characteristics, for a given milepost, in a buffer for the plotting thereof by milepost;

updating the track data file relative to the same mileposts of the updated master file;

storing preselected track data file characteristics in the data processing means, corresponding to a current milepost of the updated master file, in the buffer for the plotting thereof by milepost;

transmitting the buffer contents to the output device for display; and

detecting the completion of the plot.

In the preamble of claim 5, reference is made to analyzing the track data and to including a sequence for plotting analysis results. The second last step transmits the contents from a buffer storing certain characteristics to a device for display, and the last step detects the completion of the plot. The other steps are related to analyzing and storing data in the buffer. We are persuaded the last two steps add something more to the claim than merely a method of analysis and storage of data. In view of the combination of steps in claim 5, and also claim 6, we cannot say that the subject matter of these claims pertains merely to making calculations and so we think claims 5 and 6 should be patentable subject matter.

Claim 7 reads:

A data processing system operating in accordance with a program for analyzing recorded track data from a vehicle run and printing out the results thereof, the system comprising:

a digital computer;
means for entering milepost data, from the vehicle run, into the computer;
means for entering speed limit data between mileposts into the computer;
means for entering recorded track data between mileposts into the computer;
means associated with the computer for calculating the extent of speed violations between sequential mileposts;
means associated with the computer for detecting the maximum speed between sequential mileposts; and
means responsive to the computer for printing the recorded speed, the speed limit and the extent of speed violations keyed to respective sequential mileposts.

In claim 7 we find a system comprising several means for recording track data during a vehicle run combined with a computer, which calculates results and detects variances, and a printer to record the results. In our view the subject matter of claim 7 is concerned with arranging apparatus, and is directed more to a discovery that certain known apparatus may be combined to interact. We are not persuaded by the Examiner's argument that the invention represented by claim 7 does not come within the meaning of Section 2. We find, therefore, the rejection of claim 7 in view of Section 28(3) should not be supported. This conclusion also applies to claims 8, 10, and 22 to 27. We see no reason in view of Schlumberger to reject claims 7, 8, 10, and 22 to 27, under Sections 2 and 28(3).

We have a different view of the apparatus claims from that of the Examiner. He dismisses the parts of the apparatus identified in the application for being known. We believe however the inclusion of these descriptive parts is intended to provide an acceptable disclosure of examples of how to arrange the combination that the Applicant envisages as the invention. We agree with the agent when he says that combinations of old parts may, in proper circumstances, be patentable. To maintain a rejection of the combination claims there should be either a conclusion from the wording that only a computer program has been defined or, alternatively, reasons supported by prior art showing that the combination is not patentable. In the absence of cited prior art to show that the apparatus is not novel we are not persuaded that the combinations claimed in claims 5 to 11, 20, and 22 to 27 are known and we do not support the rejection of these claims on being directed to old and known subject matter.


Claim 9 sets out various steps for printing out the results of an analysis of track data from a vehicle run. We find it is directed to more than making calculations to obtain useful information and, in view of Schlumberger,

should be allowable. Although claim 11 includes the words "computer program", in our view the substance of this claim is directed to plotting various features of the events recorded. Claims 9 and 11 should be acceptable under Section 2.

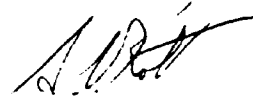
The Examiner rejected claim 12 for being directed to a computer program. While acknowledging the term computer program is used, the agent views the claim as consisting of an allowable series of process steps. The preamble of claim 12 relates to a computer program having a routine for updating the information about vehicle operation and refers to incrementing a data line counter to a current line, determining whether the incremented count lies within the recorded data, determining the actual vehicle speed at a current line, and determining whether excessive power was applied during the current line. Thereafter the program provides two paths of determination, including consideration of reverse travel, regular and dynamic braking and checking a master file, before finally storing the data. We believe that claim 12 relates to no more than the operation, within a computer, of storing certain information. For the same reasons we think claims 13 to 19 and 21 are not directed to patentable subject matter in view of Schlumberger. We view claims 12, 13 to 19 and 21 as describing a computer performing the kind of steps for which computers were invented and so these claims should not be allowable.

In summary we find claims 1 to 4, 12 to 19, and 21 are directed to subject matter which is not patentable under Section 2 in view of Schlumberger. We are satisfied claims 5 to 11, 20 and 22 to 27 are directed to combinations of apparatus and we see no direction in Schlumberger to reject this kind of combination.

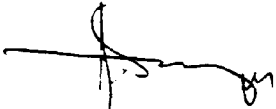
We recommend that the rejection of the application as a whole and of claims 5 to 11, 20, and 22 to 27 for being directed to non patentable subject matter be withdrawn. We recommend however, that the rejection of claims 1 to 4, 12 to 19, and 21 for being directed to non-patentable subject matter be affirmed.


A. McDonough
Chairman
Patent Appeal Board


M.G. Brown
Assistant Chairman


S.D. Kot
Member

I concur with the findings and the recommendations of the Patent Appeal Board. Accordingly, I withdraw the rejection of the application and claims 5 to 11, 20, and 22 to 27, and I refuse to grant a patent on claims 1 to 4, 12 to 19, and 21. The Applicant has 6 months within which to appeal this decision under the provisions of Section 44 of the Patent Act.



J.H.A. Gariépy
Commissioner of Patents

Dated at Hull, Quebec

this 6th. day of May, 1985

Agent for Applicant

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