

SURVEY CONCERNING INTERNATIONAL COMPUTER FILES OF ROAD ACCIDENTS

MICHAEL SIVAK and JAMES O'DAY

The University of Michigan Transportation Research Institute, Ann Arbor, MI 48109-2150,
U.S.A.

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Abstract—A survey concerning international harmonization of accident reporting was distributed to 80 experts in accident reporting and analysis. Completed surveys were received from 50 persons in 13 countries; 74% of the respondents had more than 10 years of experience in the field of traffic safety. The main findings of this survey are: (1) 86% of the respondents think that an international computer file of disaggregated fatal-accident data would contribute to understanding of traffic safety, and 84% would use such a file. (2) An international non-fatal-accident file was considered to be of value in research on human factors and accident causation (60%), and in determining black spots in the road network (57%). (3) Police was the most frequently mentioned source of data for both the fatal and non-fatal international data files. Nevertheless, fewer than one-quarter of respondents considered police as the suitable exclusive source of either data. (4) The majority view was that the data for both types of files should come from more than one agency. (5) In the case of the fatal-accident file, 78% of the respondents considered it important that the data be cross-checked with the public health records. (6) The 10 most useful variables for a fatal-accident file were traffic unit type (e.g. car), accident type (e.g. angle), road class, driver age, date/time of day, age of person killed, number of killed persons, number of injured persons, drinking or drug use, and restraint usage of person killed. (7) The analogous 10 variables for a non-fatal-accident file were accident type, traffic unit type, driver age, date/time of day, road class, extent of injury, number of injured persons, age of involved persons, number of involved persons, and seat location.

INTRODUCTION

This study is a continuation of a project on accident data standardization that was initiated in 1985. In the first phase of this research project (O'Day and Waissi 1986), personal discussions were held with many active researchers in this field. The principal findings from that study are as follows: (1) There are many inconsistencies among nations in both the threshold for accident reporting and in the detailed definition of variables, which make international comparisons difficult. (2) For fatal accidents these differences are less severe, and the set of fatal accidents should permit useful international comparison for some variables. (3) Definition of variables (particularly injury and vehicle damage scales) for in-depth accident investigations is reasonably consistent across national boundaries, and data files based upon these investigations may be useful in studies of such international topics as vehicle standards. Differences in coverage for in-depth studies make it difficult to compare accident frequencies among nations.

The present study consisted of a structured survey concerning desirable aspects of standardized accident reporting. Towards this goal, responses were sought from 80 researchers and experts in North America, Europe, Japan, and Australia.

QUESTIONNAIRE

The items in the questionnaire belonged to four categories: background of the respondent, fatal-accident files, non-fatal-accident files, and in-depth accident files.

RESPONDENTS

A written questionnaire was sent to 80 researchers and experts in accident reporting and analysis. A total of 50 persons completed the questionnaire, a response rate of 63%. Table 1 presents a tabulation by country of distributed and completed questionnaires.

Table 1. Tabulation of distributed and completed questionnaires by country

Country	Distributed	Completed
U.S.A.	10	7
United Kingdom	7	6
Sweden	7	5
Switzerland	6	5
Canada	8	4
West Germany	7	4
Australia	6	4
Japan	6	4
Finland	5	4
The Netherlands	5	3
France	4	2
Italy	4	1
Spain	3	1
Belgium	2	0
Total	80	50

Table 2. Respondents' background

Aspect	Percentage of Responses
Affiliation	
Academia	40
Government	30
Industry	12
Age	
> 30 years	100
> 50 years	22
Years of traffic-safety experience	
> 10 years	74
> 20 years	16
Familiarity with the fatal traffic-accident file for one's own country	
Have used it	80
Familiarity with a fatal traffic-accident file for a country other than one's own	
Have used it	36
Familiarity with a non-fatal traffic accident file	
Have used it	88
Familiarity with the U.S. National Accident Sampling System	
Familiar with it	58
Extent of international research-related experience	
Have used data from more than one country	86
Restricting the availability of accident data to particular users or groups of users	
In favor	21

Table 3. Summary of responses concerning an international fatal-accident file

Aspect	Percentage of Responses
An international computer file of fatal traffic accidents would help the understanding of traffic accidents	86
Would use such a file	84
Data for such a file should come from	
Police	24
Insurance companies	2
Medical community	0
More than one agency	55
Importance of cross-checking such data with data from public health (vital statistics) records	
Useful or necessary	78
Most useful variables in such a file [the respondents were asked to check the 10 most useful variables—the list below was derived by tabulating the 20 most frequently cited responses]	
Traffic unit type (car, truck, motorcycle, pedestrian)	85
Accident type (angle, rear-end, pedestrian)	78
Road class (divided, two-lane)	59
Driver (or pedestrian/cyclist) age	59
Date/time of day	57
Age of person killed	43
Number of persons killed in accident	41
Number of persons injured (but not killed) in accident	39
Drinking or drug use in accident	37
Restraint usage of person killed	37
Weather condition	35
Seat location of person killed	33
Number of persons involved	30
Driver drinking or using drugs	28
Make and model of vehicle	28
Driver sex	26
Extent of injury	26
Light condition	24
Medical cause of death	24
Extent of injury to driver	22
Tolerable production delay for the availability of data	
≤ 1 year	12
1–3 years	40
Preferred definition of fatality in terms of delay between the accident and death	
30 day standard with analytical adjustment as required	67
Accidents of foreign nationals should be transferred (for statistical purposes) to the country of normal residence	4
Might actively support (by lobbying) the establishment of such a file	64
Might actively contribute towards the establishment of such a file	46

RESULTS

The main results of the survey are presented in Table 2 (respondents' background), Table 3 (international fatal-accident file), Table 4 (international nonfatal-accident file), and Table 5 (international in-depth accident file). The information in Tables 2 through 5 is based on 46 to 50 responses per item. [Additional, secondary findings of this survey are included in a technical report (Sivak and O'Day 1987).]

CONCLUDING COMMENTS

The results of this international survey of researchers and experts support the value of an international fatal-accident file as a means of advancing our understanding of

Table 4. Summary of responses concerning an international nonfatal-accident file

Aspect	Percentage of Responses
In relation to a fatal accident file, benefits of a larger sample in a non-fatal accident file outweigh the disadvantages of poorer reliability	
In research on human factors and accident causation	60
In determining black spots in the highway network	57
In evaluating the effectiveness of restraint system usage	34
Data for such a file should come from	
Police	35
Insurance companies	4
Medical community	0
More than one agency	51
Most useful variables in such a file [the respondents were asked to check the 10 most useful variables—the list below was derived by tabulating the 20 most frequently cited responses]	
Accident type (angle, rear-end, pedestrian)	88
Traffic unit type (car, truck, motorcycle, pedestrian)	77
Driver (or pedestrian/cyclist) age	70
Date/time of day	63
Road class (divided, two-lane)	55
Extent of injury (perhaps on a 3-level scale)	53
Number of persons injured in accident	50
Age (of persons involved in accident)	46
Number of persons involved in the accident	39
Seat location (of persons involved in accident)	39
Driver sex	37
Drinking or drug use in accident	33
Driver drinking or using drugs	33
Extent of injury to driver	33
Make and model of vehicle	33
Weather condition	33
Light condition	30
Restraint usage of involved persons	30
Extent of vehicle damage	28
Sex of involved persons	28

Table 5. Possible value of an international in-depth accident file (the possible aspects were provided in the questionnaire)

Aspect	Percentage of Respondents
Traffic accident causative factors	67
Effectiveness of restraint system usage	46
Incidence of driving under the influence of alcohol	46
Effectiveness of periodic motor vehicle inspections	33
Effectiveness of various types of windshields	31

traffic-safety issues. Furthermore, the majority of respondents would use such a file, and would actively support its establishment. The specific information obtained in this survey, concerning the desirable sources and content of such a file, could provide the foundations for a more concrete dialogue among the countries interested in establishing such a data bank.

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