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ROAD SAFETY IN ISRAEL

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1. INTRODUCTION

This article gives a brief description of the road safety situation in Israel over the past years. It presents casualty and fatality figures that give a perspective of Israel's situation relative to that of other motorized countries. It also includes a concise description of the National Road Safety Program introduced in 1999.

2. HISTORICAL PERSPECTIVE AND AN INTERNATIONAL COMPARISON

A historical overview shows that in 1951 in Israel there were 34,100 vehicles, 2,122 kilometres of roads, some 1,600,000 inhabitants and some 3,700 accidents occurred in which 211 people were killed (13.4 per 100,000 inhabitants). Since then, a linear rate of population growth can be noted, which increased by a factor of 3.7 by 1997 as opposed to 1951, whereas the concurrent increase in the general fleet of motor vehicles was by a factor of 47.4 and of private vehicles - 128. The corresponding increase in road network length was much smaller - by a factor of 7.3. This means that traffic density in Israel is permanently increasing. Over the same period, the number of injury accidents rose by a factor of 6.8 whereas the increase in the number of fatalities was by a factor of 2.5, less than any of the indices shown above. This stemmed from significant improvements in vehicle safety (including the introduction of protective devices such as safety belts, helmets and air bags), improvements in road infrastructure and in driving performance, which characterised the development of many motorized

countries over the last forty years.

Consideration of the changes in the Israeli vehicle fleet, population size and number of fatalities during the last 10 years demonstrates a slightly increasing trend in the number of fatalities since the end of the eighties, accompanied by a stable level of the fatality rate per population and a decreasing trend in the fatality rates per registered vehicles and vehicle-kilometers traveled (Table 1).

From the viewpoint of economic development, e.g., in terms of gross national product (a GDP of \$17,000 per capita), Israel is comparable to Italy, the United Kingdom, and Australia; this value is also higher than in Greece, Portugal, Spain and Ireland. At the same time, due to high vehicle taxation and other constraints, the Israeli level of motorization is lower than in many developed countries (Figure 1). This means that with the further enhancement of economic development, the motorization level is expected to continue to grow rapidly which could manifest itself in a general increase in injuries and fatalities. Besides, Israel does not have an extensive railway network for carrying passengers and freight, which extends its dependency on motor vehicle traffic. The international comparison demonstrates (Figure 1) that presently Israel is situated in an intermediate position, among the motorized countries. However, one can see that in countries with a much higher level of motorization, like the United Kingdom, the Netherlands, Norway or Sweden, i.e., with a higher injury exposure, the fatality rate per population is much lower than in Israel. Hence, in Israel still a lot should be done in order to reduce the road accident toll.

Table 1 Road accident fatalities in Israel: 1988-1997

Year	Fatalities	Fatalities per 100,000 inhabitants	Fatalities per 1,000 registered vehicles	Fatalities per 100 million vehicle-km travelled
1988	511	11.41	0.54	3.00
1989	475	10.42	0.48	2.63
1990	427	8.86	0.42	2.29
1991	444	8.78	0.41	2.22
1992	507	9.76	0.43	2.22
1993	505	9.48	0.40	2.04
1994	539	9.85	0.39	1.96
1995	550	9.79	0.38	1.80
1996	517	8.98	0.34	1.63
1997	530	9.18	0.33	1.58

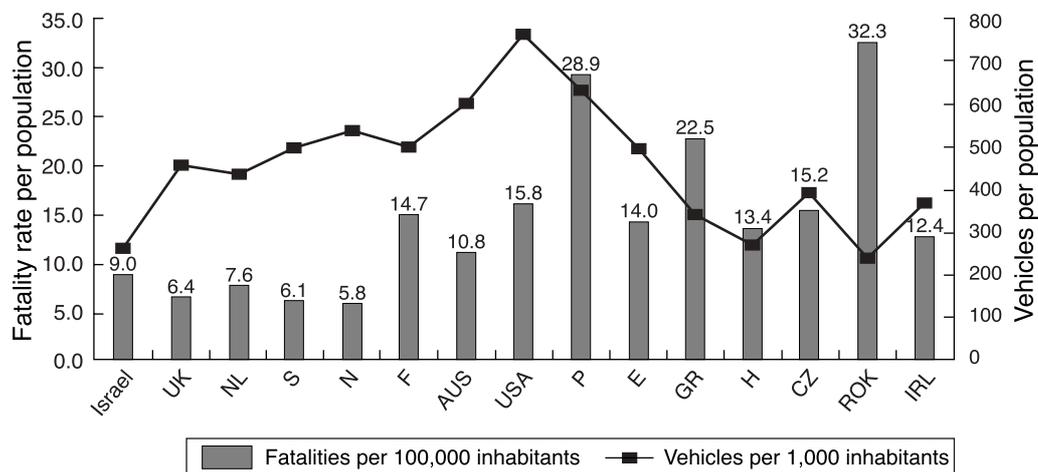


Fig. 1 Fatalities per 100,000 population and motorization rate - vehicles per 1,000 population, in selected countries, 1996

(Source: IRTAD - International Road Traffic and Accident Database, BASt, Germany)

3. THE NATIONAL ROAD SAFETY PROGRAM OF 1999

In 1997 the Israeli Parliament approved a law which determined road safety as a nationally important task. The same law empowered the National Road Safety Authority with a control position as to the “safety budgets” of all the Ministries, and obliged it to develop a National Road Safety Program with the purpose of enhancing road safety. The Program was developed for the years 1999-2001 and was adopted by the Israeli government at the end of 1998.

The Program was elaborated by a team of experts led by the Transportation Research Institute at the Technion. The Program assigned a quantitative target - a 15-25% reduction in severe injuries (fatalities and serious injuries) during a 5-year period from the Program’s beginning, and defined a “TOP-TEN” - ten leading fields of activity in five safety areas (Table 2). The ways and sites of treatment were selected, having checked economic benefits associated with the resource allocation, whereas the benefits were expressed in fatalities and injuries saved due to a specific treatment.

As baseline data for the Program served the average annual numbers of injuries and characteristics of accidents that occurred during 1995-1997; the “baseline casualties” included 532 fatalities, 3,662 serious injuries

and 39,975 slight injuries. The whole Program comprised the allocation of more than 1.2 billion NIS (US \$300 million), during a three-year period starting with 1999, whereas the emphases were put on road infrastructure improvements and on automatic police enforcement.

Table 2 TOP TEN - Leading issues of the Israeli Safety Program

Area	TOP TEN	Activity Field
A. Road Infrastructure	1	Rural area: creating forgiving road conditions
	2	Black spot treatment
	3	Urban traffic restraining (residential areas, pedestrian facilities)
B. Vehicles	4	Vehicle types - safety improvements (heavy vehicles, public transport)
C. Road users	5	Enforcement (automatic speed enforcement, flexible modes)
	6	Drivers, passengers and pedestrians (young driver - training and imparting skills, pedestrians - publicity and education for risk groups, training and promotion of professional driver)
	7	Improvement of rescue services
	8	Occupant protection features - improvement of functioning (children protection systems, headrests, safety belts, crash helmets, daytime running lights)
D. Publicity	9	Publicity, advertising and media activities
E. Legislation	10	Legislation, regulating and judgment

4. THE CURRENT SITUATION

A progress report on the Program has not been published yet. However, the Central Bureau of Statistics periodical reports indicate a decreasing trend in both road accident numbers and casualties in 1999-2000. In 1999, 476 people were killed and 3,114 were seriously injured in road accidents in Israel which corresponds to 10.5 and 15 percent reductions with regards to the Program "baseline casualties". The number of slight injuries observed in the same year is 41,913 and is higher than the "baseline"; however, a direct comparison of these figures is questionable due to administrative changes in the police regulations on the registration of road accidents which were introduced in December 1995 and were followed by evident fluctuations in the total accident/injury figures in the

country. Table 3 details some changes observed in 1999 in the main accident and casualty types.

In 1999, Israel had a population of 6.1 million and 1.7 million registered motor vehicles; the rate of fatalities per 100,000 residents decreased this year to 7.8 and the rate of fatalities per 1,000 vehicles - to 0.28. A recent study performed by the Technion found that in 1999, as opposed to the previous years, a significant reduction was observed in most accident/casualty types such as accidents on urban road sections and intersections; pedestrian accidents on urban streets; single-vehicle accidents in rural areas; urban multiple-vehicle collisions and heavy vehicle accidents. Still problematic areas, which need further safety activities, are: pedestrian accidents at urban intersections; multiple vehicle accidents in rural areas; public transport accidents; speeding and aggressive driving behaviour.

Table 3 Changes in accidents and fatalities by type of road and casualty: 1999 as opposed to the "baseline" - an average of 1995-1997

Type of road	Injury accidents 1999	Change 1999/ "baseline"	Fatalities 1999	Change 1999/ "baseline"
Urban road:				
at intersection	8,470 (37.2%)	-7%	75 (15.8%)	+5%
not at intersection	8,566 (37.6%)	-15%	135 (28.4%)	-16%
Non-urban road:				
at intersection	2,173 (9.5%)	+26%	44 (9.2%)	-6%
not at intersection	3,589 (15.7%)	+6%	222 (46.6%)	-12%
Total	22,798 (100.0%)	-6%	476 (100.0%)	-11%
Type of casualty	All casualties 1999	Change 1999/ " baseline "	Fatalities 1999	Change 1999/ " baseline "
Pedestrians	3,803 (8.4%)	-19%	167 (35.1%)	-6%
Vehicle drivers	19,822 (43.6%)	+7%	122 (25.6%)	-28%
Passengers	17,827 (39.2%)	+9%	132 (27.7%)	+1%
Motorcycle drivers	3,413 (7.5%)	-11%	23 (4.8%)	-19%
Total (incl. others)	45,503 (100.0%)	+3%	476 (100.0%)	-11%