Study on traffic accidents involving ambulances on emergency operation

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The authors have been continuing the study on traffic accidents involving ambulances during emergency operation. In the most recent study, a few cases of in-depth accident data were collected in cooperation with the fire departments and analyzed in addition to the analysis using ITARDA statistical data. The results of the statistical analysis based on road geometry and accident types, as well as the common conditions and factors of in-depth accident data, are introduced.

(1)　ITARDA has carried out in-depth accident study on 5 ambulance accident cases in 2021. These accidents were identified by ITARDA macro database and information on the Internet. Four of these were crossing collisions, and in each case the other vehicle entered the intersection from the left. (Table 1)

Tabel 1 Ambulance accident investigated

NO.	Month, Day of week	Accident type	SIP-Code
1	Mar. Tue. 10AM	Crossing	PCC-CR11-DS4
2	Dec. Mon. 09PM	Crossing	PCC-CR11-DS4
3	Jan. Sun. 01PM	Crossing	PCC-CR11-DS4
4	Mar. Wed. 07AM	against Pedestrian	PCP-PC11-TR3
5	Jun. Thu. 02PM	Crossing	PCC-CR11-DS4

(2)　Each case has a collision scene overview and a picture of an ambulance and the other vehicle. (No.1 case as a sample)

Fig. 1 Collision scene overview

Fig. 2 Defomation of ambulance

Fig. 3 Defomation of the other vehicle

Regarding an ambulance, occupant seat positions, use of seatbelt, age, gender and injuries were summarized. And delayed transport time for the injured occupant due to the accident was also investigated.

(3)　After further analyzing four crossing accidents, it was revealed that age of the other vehicle driver was a major factor of collisions. Because of an age-related hearing loss, all drivers told that they never heard sound of the siren just before they collided against ambulance. Anoter major factor of collisons was the existence of vehicles waiting right turn at the right turn lane in front of the ambulance on the left. These vehicles prevented the ambulance driver from detecting the vehicle coming from the left.

(4)　ITARDA Macro database was also used to analyze ambulance to vehicle accidents at intersection and near intersection. The figure shows distributions of accident types and the other vehicle occupant age groups. Crossing accidents were most often occurred at intersection and near intersection. In addition, elderly drivers often collided against an ambulance. (Fig. 4)
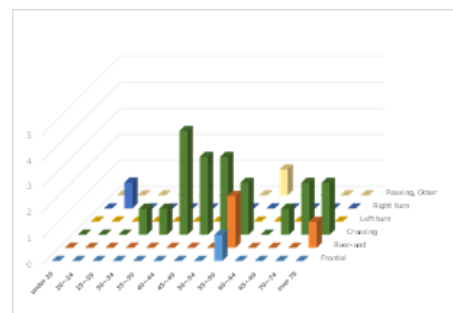

Fig. 4 Ambulance and vehicle accidents at intersection