

ACCIDENT RESEARCH INSTITUTE (ARI), BUET

The Accident Research Institute (ARI), Bangladesh University of Engineering and Technology, (BUET) is the only scientific accident research institute in Bangladesh. It has been established to identify the latest local, national and international findings and practices in transport safety. Research, consultancy and training activities of this institute are committed to ensure safety across all modes of transport in Bangladesh. Previously it was known as Accident Research Centre (ARC).

ESTABLISHMENT OF ACCIDENT RESEARCH INSTITUTE (ARI), BUET

The Accident Research Institute (previously known as Accident Research Centre) was financially sanctioned by the GoB for the period of 01.01.2002 to 31.12.2005 and later extended up to 30.06.2007. Consorting with University Grants Commission (UGC), ARI was embraced as an institute of BUET with BUET syndicate's decision on 18.06.2007 and transferred to Government Budget from 01.07.2007. Afterwards in 2010 new workforce for ARI was recruited. Now ARI is continuing its Education, Training, Research and Investigation activities from the University's budget allocation.

ACCIDENT DATA COLLECTION, SCRUTINIZATION AND MAINTENANCE OF ROAD ACCIDENT DATABASE BY ARI

ARI with its own efforts is collecting Accident Report Forms (ARFs) from four metropolitan offices and six ranges of Bangladesh Police regularly and is maintaining a Microcomputer Accident Analysis Package (MAAP) based database which is substantially important for ARI's research, training and national road traffic accident statistics.

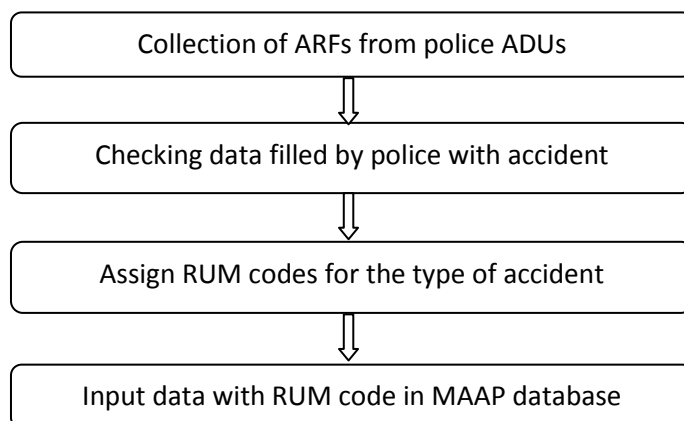
It is to be noted that while collecting data from police offices ARI provides necessary supports regarding the software and training for accident data recording and reporting to concerned police personnel.

Accident data collection system in Bangladesh

In Bangladesh, Police is the core organization for road accident data collection and storage. Accident data collected by police provide basic information about the scale of accident problem in the country. For each accident the ARF is completed by a sub-inspector of police after visiting the accident spot. The ARF is then dispatched to the respective Accident Data Units (ADU) where the information from ARF and location of the accident is incorporated into MAAP. Ten regional ADUs were established during early 1998. These units are responsible for processing and analysis of accident data of their jurisdiction. Additionally, an ADU was established at police Headquarters' (HQ) to assemble the national accident database and to analyze accident data at national level. Data is sent from the regional ADUs to the police HQ in soft form. The MAAP system is used to analyze accident database and provide the pattern of accidents in the country.

The Accident Research Institute (ARI) of BUET essentially uses the MAAP database. This database was transferred to the institute with institutional collaboration of the Road Safety Cell (RSC) of BRTA and the Police department. The current road safety research and investigation works are based on this database. In order to strengthen the database information, it is important to add new variables and validate other variables as extracted from the ARFs. For the purpose of analysis and computerization it is required to store accident data in coded form. Structured coding is an essential requirement for

accident research and investigation purpose. Such coding can be done either at the time of filling the forms or during data entry process. Precise knowledge regarding coding is key to traffic safety database development process. Road User Movement (RUM) codes, if applied carefully, may be helpful in overcoming the problems associated with accident type coding. In this regard, ARI is collecting ARFs from all ADUs to develop a rich accident database system by checking the ARFs and fill them with RUM codes including additional data which are missing in police filled ARFs.



The Accident Research Institute (ARI) stores and maintains accident database and use it for research, implementation of safety interventions and other road safety related purposes. Few analyzed tables of road accident and injury characteristics of Bangladesh has been documented and outlined in the following section.

TABLE 1: NUMBER OF ACCIDENT BY ACCIDENT SEVERITY

Year	Number of Accidents				
	Fatal	Grievous	Simple	Collision	TOTAL
1998	2000	1137	193	203	3533
1999	2437	986	305	220	3948
2000	2523	1029	209	209	3970
2001	2029	642	137	117	2925
2002	2599	904	200	238	3941
2003	2752	921	239	202	4114
2004	2509	683	216	158	3566
2005	2424	631	142	125	3322
2006	2695	602	124	145	3566
2007	2923	705	166	160	3954
2008	2842	676	154	128	3800
2009	2161	474	71	109	2815
2010	1911	387	62	77	2437
2011	1566	313	80	58	2017
2012	1515	284	86	54	1939
2013	1421	232	74	28	1755
2014	1274	218	66	31	1589
Total	37581	10824	2524	2262	53191

TABLE 2: NUMBER OF CASUALTIES BY CASUALTY INJURY

Number of Casualty				
Year	Fatal	Grievous	Simple	Total
1998	2358	2313	984	5655
1999	2893	2168	1301	6362
2000	3058	2270	1215	6543
2001	2388	1661	904	4953
2002	3053	2155	1130	6338
2003	3334	2421	1319	7074
2004	3150	2027	999	6176
2005	2960	1830	740	5530
2006	3250	1705	707	5662
2007	3341	1783	648	5772
2008	3570	1752	664	5986
2009	2703	1438	308	4449
2010	2443	1271	435	4149
2011	2072	1071	377	3520
2012	1953	850	492	3295
2013	1782	631	297	2710
2014	1632	585	214	2431
Total	45940	27931	12734	86605

TABLE 3: NUMBER OF ACCIDENTS BY COLLISION TYPE

Year	Collision Type											TOTAL
	Head On	Rear End	Right Angle	Side Swipe	Overturn	Hit Object in Road	Hit Object off Road	Hit Parked Vehicle	Hit Pedestrian	Hit Animal	Other	
1998	467	624	64	272	282	38	74	57	1509	3	130	3520
1999	514	669	25	272	369	31	130	67	1729	1	139	3946
2000	538	684	59	196	356	32	118	76	1740	3	167	3969
2001	390	460	44	135	297	25	83	82	1283	1	124	2924
2002	481	595	60	251	399	34	106	99	1775	1	139	3940
2003	595	636	43	236	400	27	113	138	1757	3	158	4106
2004	553	517	30	224	279	30	75	77	1614	1	159	3559
2005	504	404	43	198	253	52	111	66	1543	2	134	3310
2006	538	453	41	190	290	34	70	69	1787	1	90	3563
2007	603	506	29	240	314	42	72	72	1931	5	138	3952
2008	609	547	30	233	277	36	72	113	1749	1	130	3797
2009	480	448	24	154	203	24	53	82	1245	3	92	2808
2010	448	384	15	114	168	12	45	50	1126	2	73	2437
2011	399	337	18	118	114	25	35	41	840	0	89	2016
2012	424	290	13	162	108	15	30	63	727	6	92	1930
2013	341	202	11	109	77	19	34	54	835	2	70	1754
2014	357	172	10	98	82	13	35	45	720	2	54	1588
Total	8241	7958	559	3202	4268	489	1256	1251	23910	37	1978	53119

TABLE 4: NUMBER OF CASUALTIES BY COLLISION TYPE

Year	Collision Type											TOTAL
	Head On	Rear End	Right Angle	Side Swipe	Overturn	Hit Object in Road	Hit Object off Road	Hit Parked Vehicle	Hit Pedestrian	Hit Animal	Other	
1998	1158	985	97	397	763	49	195	120	1697	0	171	5632
1999	1304	1028	55	444	974	43	262	109	1933	7	202	6361
2000	1448	1037	99	362	984	39	252	136	1950	3	232	6542
2001	1056	717	59	271	885	40	205	149	1430	1	139	4952
2002	1287	842	62	431	1217	43	223	121	1949	1	160	6336
2003	1648	986	64	424	1361	46	216	223	1896	6	193	7063
2004	1563	842	47	406	962	69	143	159	1730	0	241	6162
2005	1326	676	49	342	750	85	274	101	1694	6	215	5518
2006	1337	681	66	368	803	51	137	131	1971	1	112	5658
2007	1349	753	47	332	711	62	134	133	2058	6	184	5769
2008	1473	795	31	362	768	73	138	234	1933	1	175	5983
2009	1195	668	38	250	521	49	113	143	1345	8	113	4443
2010	1172	624	43	192	528	24	135	100	1227	3	101	4149
2011	1003	586	23	250	417	44	68	67	939	0	117	3517
2012	1073	462	18	244	349	29	44	120	799	12	128	3278
2013	815	374	19	172	143	25	43	102	918	2	95	2708
2014	782	263	13	146	188	24	84	65	787	7	69	2428
Total	20489	12319	230	5393	12324	795	2666	2213	26256	64	2647	86499

TABLE 5: NUMBER OF DRIVER, PASSENGER AND PEDESTRIAN CASUALTIES BY YEAR

Year	Driver Casualty				Passenger Casualty				Pedestrian Casualty			
	Fatal	Grievous	Simple	TOTAL	Fatal	Grievous	Simple	TOTAL	Fatal	Grievous	Simple	TOTAL
1998	315	537	263	1115	848	1204	645	2697	1195	572	76	1843
1999	397	401	304	1102	1079	1266	863	3208	1417	501	134	2052
2000	414	432	287	1133	1212	1341	826	3379	1432	497	102	2031
2001	344	298	185	827	859	1016	659	2534	1185	347	60	1592
2002	421	391	239	1051	1059	1272	821	3152	1573	492	70	2135
2003	499	455	267	1221	1243	1525	980	3748	1592	441	72	2105
2004	443	322	249	1014	1168	1338	676	3182	1539	367	74	1980
2005	392	311	161	864	1077	1126	501	2704	1491	393	78	1962
2006	482	286	160	928	1121	1056	486	2663	1647	363	61	2071
2007	477	310	166	953	1001	1101	405	2507	1863	372	77	2312
2008	557	321	224	1102	1308	1084	360	2752	1705	347	80	2132
2009	487	278	109	874	1019	891	163	2073	1197	269	36	1502
2010	392	234	108	734	964	820	300	2084	1087	217	27	1331
2011	349	215	105	669	837	651	236	1724	886	205	36	1127
2012	326	179	160	665	785	500	292	1577	842	171	40	1053
2013	308	124	111	543	641	352	158	1151	833	155	28	1016
2014	278	105	80	463	597	368	108	1073	757	112	26	895
Total	6881	5199	3178	15258	16818	16911	8479	42208	22241	5821	1077	29139