United States
CONSUMER PRODUCT SAFETY COMMISSION
Washington, D.C. 20207

MEMORANDUM

DATE: AUG 11 1998

TO : The Commission
Sadye E. Dunn, Secretary

Through : Jeffrey Bromme, General Counsel
Pamela Gilbert, Executive Director

FROM : Ronald L. Medford, Assistant Executive Director RLM
Hazard Identification and Reduction
Susan Ahmed, Director, Hazard Analysis Division (EHHA) DKT for SA
Directorate for Epidemiology and Health Sciences

SUBJECT: Update of All-Terrain Vehicle Deaths and Injuries.

The Consent Decrees require periodic updates of data on all-terrain vehicle deaths and injuries. In response to this requirement, attached is the most recent update, using data available as of March 31, 1998. This report is the final quarterly update since the consent decrees expired April 28, 1998. The Commission will continue to gather, review and analyze the injury and death data on ATVs. A report of the resulting analysis of these data will be published annually.

Attachment

NOTE: This document has not been reviewed or accepted by the Commission.
Initial ____ Date 8/11/98

CPSA 6 (b)(1) Cleared
8/11/98
No Mfrs/PrvtLblrs
Products Identified
___Excepted by_____
___Firms Notified,
Comments Processed.

United States
CONSUMER PRODUCT SAFETY COMMISSION
Washington, D.C. 20207

MEMORANDUM

DATE: June 15, 1998

TO : Susan Ahmed, Director, EHHA

FROM : Jo-Annette David, EHHA

SUBJECT : Update of ATV Deaths and Injuries

DEATHS REPORTED TO THE COMMISSION

In March 31, 1998, the Commission had reports of 3,252 ATV-related deaths that occurred since 1982 (Table 1). The reported deaths increased by 137 since the September 30, 1997 tabulation for the last update memorandum dated January 14, 1998.

Table I
Reported ATV-Related Deaths by Year
(January 1982 - March 1998)

Year	Number of Deaths	Difference Since Last Update (09/30/97)
Total	3,252	+137
1998	06	+ 06
1997	175	+ 84
1996	245	+ 46
1995	196	+ 01
1994	198	0
1993	183	0
1992	221	0
1991	230	0
1990	234	0
1989	230	0
1988	250	0
1987	264	0
1986	299	0
1985	251	0
1984	156	0
1983	85	0
1982	29	0

Source: U.S. Consumer Product Safety Commission (CPSC), Directorate for Epidemiology and Health Sciences, Division of Hazard Analysis (EHHA)

Table 2 is a listing of ATV-related deaths by state. The highest numbers of incidents were reported for California (222), Pennsylvania (188), New York (163), Michigan (161), and Texas (150).

Table 2

DEATHS ASSOCIATED WITH 3 AND 4-WHEEL ALL TERRAIN VEHICLES
REPORTED FOR THE PERIOD JAN 1, 1982 THROUGH MARCH 31, 1998

STATE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
CALIFORNIA	222	6.8	222	6.8
PENNSYLVANIA	188	5.8	410	12.6
NEW YORK	163	5.0	573	17.6
MICHIGAN	161	5.0	734	22.6
TEXAS	150	4.6	884	27.2
FLORIDA	119	3.7	1003	30.8
TENNESSEE	116	3.6	1119	34.4
WEST VIRGINIA	113	3.5	1232	37.9
WISCONSIN	105	3.2	1337	41.1
ARKANSAS	102	3.1	1439	44.2
NORTH CAROLINA	97	3.0	1536	47.2
KENTUCKY	95	2.9	1631	50.2
MINNESOTA	93	2.9	1724	53.0
MISSISSIPPI	93	2.9	1817	55.9
MISSOURI	89	2.7	1906	58.6
OHIO	84	2.6	1990	61.2
ARIZONA	82	2.5	2072	63.7
ALABAMA	78	2.4	2150	66.1
ALASKA	74	2.3	2224	68.4
GEORGIA	73	2.2	2297	70.6
LOUISIANA	71	2.2	2368	72.8
ILLINOIS	65	2.0	2433	74.8
UTAH	62	1.9	2495	76.7
VIRGINIA	57	1.8	2552	78.5
INDIANA	55	1.7	2607	80.2
OREGON	54	1.7	2661	81.8
MAINE	49	1.5	2710	83.3
IOWA	45	1.4	2755	84.7
KANSAS	44	1.4	2799	86.1
IDAHO	38	1.2	2837	87.2
OKLAHOMA	37	1.1	2874	88.4
NEW MEXICO	34	1.0	2908	89.4
WASHINGTON	34	1.0	2942	90.5
NEBRASKA	31	1.0	2973	91.4
MASSACHUSETTS	30	0.9	3003	92.3
NEW HAMPSHIRE	30	0.9	3033	93.3
COLORADO	29	0.9	3062	94.2
NEVADA	29	0.9	3091	95.0
NEW JERSEY	24	0.7	3115	95.8
NORTH DAKOTA	24	0.7	3139	96.5
VERMONT	23	0.7	3162	97.2
MONTANA	18	0.6	3180	97.8
SOUTH DAKOTA	17	0.5	3197	98.3
MARYLAND	14	0.4	3211	98.7
SOUTH CAROLINA	14	0.4	3225	99.2
CONNECTICUT	11	0.3	3236	99.5
WYOMING	6	0.2	3242	99.7
DELAWARE	3	0.1	3245	99.8
DISTRICT OF COLUMBIA	2	0.1	3247	99.8
HAWAII	2	0.1	3249	99.9
RHODE ISLAND	2	0.1	3251	100.0
Puerto Rico	1	0.0	3252	100.0

Source: U.S. Consumer Product Safety Commission (CPSC), Directorate for Epidemiology and Health Sciences, Division of Hazard Analysis (EHHA)

Due to rounding, the numbers in the percent column may not add to exactly 100 percent.

Characteristics of ATVs and Fatalities

A review of the fatalities indicated that 1,167 victims (36% of the 3,252 total) were under 16 years of age and 504 victims (16% of the total) were under 12 years of age.

Four-wheel ATVs were involved in about 70 percent of the fatalities reported for 1998, 80 percent for 1997, 1996 and 1995; 70 percent of those reported for 1994, 1993 and 1992; 60 percent for 1991, 1990, and 1989; 53 percent for 1988; 45 percent for 1987; 28 percent for 1986; 19 percent for 1985; and 7 percent or less for prior years.

Estimated ATV-Related Deaths from 1985 to 1997

The deaths reported to the Commission represent a minimum count of ATV-related deaths. To account for deaths not reported to the Commission, estimates of the annual deaths were calculated for 1985 through 1997 using a statistical approximation method. Table 3 shows the risk of death (per 10,000 4-wheel ATVs in use) by year from 1985 to 1997.

Table 3
Annual Estimates of 3-and 4-Wheel ATV-Related Deaths and Risk of Death for 4-Wheel ATVs (As of March 31, 1998)

	Number of Deaths			Risk of Death
Year	Total Reported	Total Estimated[1]	Estimates for 4-wheel ATV's[2]	(per 10,000 4-wheel ATVs in use)[3]
1997[4]	175	238	199	0.8
1996[4]	245	263	204	0.9
1995	196	281	217	1.0
1994	198	244	168	0.8
1993	183	211	144	0.7
1992	221	241	158	0.8
1991	230	255	152	0.8
1990	234	250	151	0.9
1989	230	258	153	0.9
1988	250	286	152	1.1
1987	264	282	126	1.1
1986	299	347	95	1.3
1985	251	295	55	1.5

Source: U.S. Consumer Product Safety Commission (CPSC), Directorate for Epidemiology and Health Sciences, Division of Hazard Analysis (EHHA)

[1] The procedure for estimating ATV-related deaths has two parts. For public road fatalities, the count was the number of reports received. For incidents occurring on terrain other than public roads, the Capture-Recapture Method was used to estimate deaths by matching and determining the overlap between the CPSC Death Certificate and Injury or Potential Injury Incident Data Bases (reports from newspapers, consumers, lawyers, etc.). The two parts were combined for the annual estimate of deaths. Estimates may change as additional reports are received.

[2] The estimated number of deaths associated with four-wheel ATVs was obtained by first dividing the reported number of deaths for four-wheel ATVs by the combined reported number of deaths for three- and four-wheel ATVs, then multiplying this quotient by the estimated number of deaths for all ATVs (three wheels, four wheels, and unknown number of wheels).

[3] The number of ATVs in use is based on ATV sales and operability rates data provided by industry. Because reliable operability rates data are not available for three-wheel ATVs, risk of death is shown only for four-wheel ATVs.

[4] Reporting may not be complete.

Estimated Hospital Emergency Room-Treated Injuries

Table 4 shows estimates of 3- and 4- wheel ATV-related injuries treated in hospital emergency rooms nationwide between January 1, 1982 and March 31, 1998 Children under age 16 years accounted for about 40 percent of the total of estimated injuries from January 1, 1985 through March 31, 1998.

Table 4
Annual Estimates of ATV Hospital Emergency Room-Treated Injuries
All Ages and Ages Less Than 16 years
(January 1982-March 1998)

	Adjusted Annual Injury Estimates [1]	
Year	**All Ages**	**Age <16 Years**
1998[2] (through 3/31)	10,400	3,900
1997[2/3]	54,600	21,300
1996[2]	53,800	20,200
1995[2]	52,200	19,300
1994[2]	50,800	21,500
1993[2]	49,700	17,900
1992[2]	58,200	22,000
1991[2]	58,100	22,500
1990[2]	59,500	22,400
1989[3]	70,300	25,700
1988[2]	74,600	28,500
1987[2]	93,600	38,600
1986[2]	106,000	47,600
1985[2/4]	105,700	42,700
1984[4]	77,900	[5]
1983[4]	32,100	[5]
1982[4]	10,100	[5]

Source: U.S. Consumer Product Safety Commission, (CPSC)
Directorate for Epidemiology and Health Sciences, Division of Hazard Analysis (EHHA)

[1] Estimates for years 1986-1996 have been adjusted retrospectively to account for the 1997 NEISS sampling frame update.
[2] Estimates adjusted by factors to account for out of scope (non-ATV) cases based on injury surveys in 1985, 1989, and 1997. The adjustment factors were 0.93 for 1985-1988 and 0.95 for 1990-96, 0.935 for 1997 onward.
[3] Annual estimates for 1989 and 1997 are based on injury surveys.
[4] Estimates adjusted due to revisions in the NEISS Coding Manual in March 1985. Estimates for 1982 through 1985 were adjusted based on a review of NEISS comments to exclude dune buggies and identify ATVs classified as minibikes or trail bikes.
[5] Adjusted estimates for children under 16 years old were not computed prior to 1985.

Table 5 shows four-wheel ATV-related injury and risk of injury estimates for January 1, 1985 through December 31, 1997.

Table 5
Annual Injury and Risk of Injury Estimates
Associated With 4-Wheel ATVs
January 1985-December 1997

Year	Injury Estimate[2/3/]	Risk Estimate[4/]
1997[1/5/]	41,000	171.1
1996[6/]	40,700	181.7
1995[6/]	36,200	172.0
1994[6/]	33,300	165.7
1993[6/]	32,000	164.7
1992[6/]	33,000	175.2
1991[6/]	34,400	188.1
1990[6/]	30,800	175.1
1989[5/6/]	35,700	217.7
1988[6/]	39,400	275.8
1987[6/]	33,900	306.1
1986[6/]	23,400	319.2
1985[5/]	14,700	391.1

Source: U.S. Consumer Product Safety Commission (CPSC), Directorate for Epidemiology and Health Sciences, Division of Hazard Analysis (EHHA), National Electronic Injury Surveillance System (NEISS), and the Directorate for Economic Analysis (EC), Washington, DC (January 1, 1985 through December 31, 1997).

1/Reporting for this year is incomplete.
2/Annual Estimates are adjusted by factors to account for out of scope cases. Adjustment factors are .93 for 1985 through 1988, and .95 from 1990 through 1996 and .935 for 1997 onward.
3/Occupation-related cases are not included.
4/Risk calculations are per 10,000 ATVs in use. Calculations are based on January 1997 (revised June 1998) ATV use tables developed by CPSC's Directorate for Economic Analysis, from sales and operability rates data provided by industry. Because reliable operability rates data are not available for three-wheel ATVs, risk of injury is given for four-wheel ATVs only.
5/Estimates for 1985, 1989 and 1997 are based on CPSC Injury Surveys.
6/Estimates for years 1986-1996 have been adjusted retrospectively to account for the 1997 NEISS sampling frame update.