



# OFFICE OF STATE FIRE MARSHAL

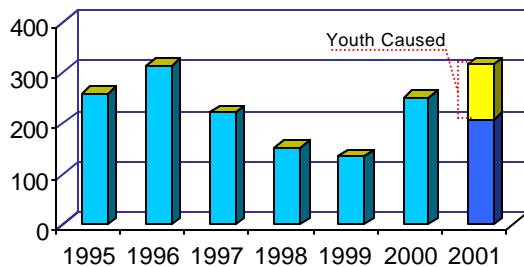
DEPARTMENT OF STATE POLICE

## INTERIM REPORT ON 2001 FIREWORKS FIRES AND INJURIES FROM JANUARY 1 TO AUGUST 31, 2001

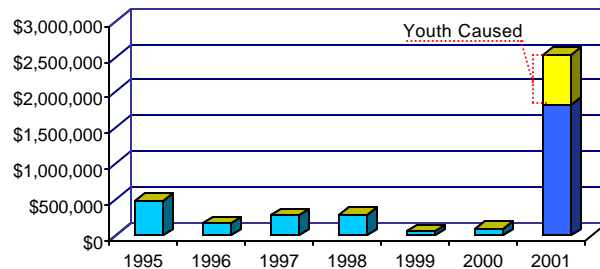
### FIREWORKS-CAUSED FIRES

The number of fireworks-caused fires reported through August 31, 2001, was 25% higher than the number of fires reported for this time period in 2000. There were 316 fireworks-caused fires reported to the State Fire Marshal during the period January 1, 2001, to August 31, 2001. These fireworks fires caused an estimated loss of \$1,821,441, considerably higher than the 2000 estimated dollar loss of \$97,460. Youths, 17 years and younger, caused 109 of the 316 fireworks fires and \$710,025 of the total estimated dollar loss (see Graphs A and B below).

**Graph A: Fireworks Fire Incidents**



**Graph B: Fireworks Fire Loss**



### 2001 DATA THROUGH AUGUST 31

The responding fire departments were able to classify the fireworks as legal or illegal in 19% of the fires reported to date in 2001. Tables 1 and 2 show the number of fires and the estimated dollar loss caused by legal versus illegal fireworks.

**TABLE 1. Number and Type of Fires Caused by Fireworks through August 31, 2001**

Type of Fire	Status of Fireworks Device			Total
	Legal	Illegal	Unidentified	
One - and Two - Family Dwelling (including mobile homes)	2	2	11	15
Apartments	0	0	7	7
Business and Office	0	0	2	2
Other Structures	0	0	4	4
Outside/Structure (with value)	2	2	17	21
Vehicle	1	0	9	10
Grass, Brush, and Crop	31	19	183	233
Trash	1	1	22	24
<b>TOTAL</b>	<b>37</b>	<b>24</b>	<b>255</b>	<b>316</b>

Based on the reports received, illegal fireworks were identified as the cause in 7% of all reported firework fires and resulted in \$325,150 loss or 18% of the estimated total loss from fireworks-caused fires. Legal fireworks were identified in 12% of the reported fires with a loss of \$67,835. In the remaining 81% of the fires, the type of fireworks was not identified by the fire departments.

**TABLE 2. Comparison of Loss of Fireworks Fires through August 31, 2001**

Type of Fire	Status of Fireworks Device			Total
	Legal	Illegal	Unidentified	
One - and Two - Family Dwelling (including mobile homes)	\$25,500	\$325,000	\$ 311,160	<b>\$ 661,660</b>
Apartments	0	0	327,950	<b>327,950</b>
Business and Office	0	0	100	<b>100</b>
Other Structures	0	0	750,775	<b>750,775</b>
Outside/Structure (with value)	0	0	2,701	<b>2,701</b>
Vehicle	42,000	0	25,050	<b>67,050</b>
Grass, Brush and Crop	285	150	9,745	<b>10,180</b>
Trash	50	0	975	<b>1,025</b>
<b>TOTAL</b>	<b>\$67,835</b>	<b>\$325,150</b>	<b>\$1,428,456</b>	<b>\$1,821,441</b>

**ESTIMATED SUPPRESSION COSTS OF FIREWORKS-CAUSED FIRES**

To provide some estimate of the cost of suppressing fireworks fires, the following cost schedule was used.

**Standardized Estimated Cost Schedule**

\$90	For each apparatus per hour (minimum charge - one hour). This calculation is pro-rated on fractional hours after the first hour.
\$20	Per hour (minimum charge - one hour) for each person responding to and performing service at the scene of the fire emergency. This calculation is pro-rated on fractional hours after the first hour.

This schedule is only a representation of standard costs and does not reflect actual statewide costs. By applying these standardized costs to the fireworks-caused fires, we can examine the estimated costs incurred by Oregon's fire service in fighting these fireworks fires.

Table 3 shows the estimated suppression costs associated with fireworks-caused fires reported through August 31, 2001, using this schedule.

**TABLE 3. Estimated Suppression Cost, in Dollars, Assigned to Fireworks-Caused Fires through August 31, 2001**

Type of Fire	Status of Fireworks Device			Total
	Legal	Illegal	Unidentified	
One - and Two - Family Dwelling (including mobile homes)	\$ 1,276	\$ 6,609	\$ 14,602	<b>\$ 22,487</b>
Apartments	0	0	13,321	<b>13,321</b>
Business and Office	0	0	657	<b>657</b>
Other Structures	0	0	49,074	<b>49,074</b>
Outside/Structure (with value)	200	230	7,261	<b>7,691</b>
Vehicle	550	0	4,428	<b>4,978</b>
Grass, Brush and Crop	10,660	9,793	67,881	<b>88,334</b>
Trash	170	150	4,666	<b>4,986</b>
<b>TOTAL</b>	<b>\$12,856</b>	<b>\$16,782</b>	<b>\$161,890</b>	<b>\$191,528</b>

The information in Table 3 shows that the 257 reported grass, brush, crop and trash fires caused a reported dollar loss of \$11,205 and estimated suppression cost of \$93,320. Estimated suppression costs for these fires represent 49% of the total estimated suppression cost associated with all reported fireworks-caused fires.

## FIREWORKS INJURIES REPORTED BY EMERGENCY DEPARTMENTS AND IMMEDIATE-CARE CLINICS

Oregon's hospital emergency departments were surveyed for fireworks-caused injuries for the period from June 1, 2001 to July 20, 2001. A similar period has been used since 1983 in similar surveys. In 1989, the survey was expanded to include immediate-care clinics. The 2001 survey, as in the previous four years, was conducted using a printed form with pictures of various fireworks devices to enable emergency room personnel to identify the type of fireworks involved. As a result, we were able to identify the specific type of fireworks device involved in 51 of the 64 reported injuries or 80% of the incidents.

Table 4 shows the type of fireworks devices that were involved in these incidents. Illegal fireworks were the cause of 23 incidents or 36%, while legal fireworks were responsible for 28 incidents or 44%. The remaining 13 incidents were caused by unidentified fireworks devices.

Of the 28 incidents with legal devices, base fountain fireworks caused 8, or 29%, of the incidents, followed by wood-core sparklers at 25%. While the 2001 survey showed a decrease in the percentage of sparkler related incidents compared to last year, this year's percentage of 15.6 still remains higher than the percentages in 1996 through 1999. In 2001, 15.6% of the total incidents were sparkler related, compared with 17.7% in 2000, .3% in 1999, 13.6 % in 1998, 9.5% in 1997 and 7.5% in 1996.

**TABLE 4. Type of Fireworks Devices Involved in 64 Incidents  
Reported by Emergency Departments and Immediate-Care Clinics**

Status	Classification	Type of Device	# of Incidents
Legal	Unclassified	Party Popper	1
		Smoke Bomb (Not Explosive)	2
		Sparkler (Wire Core)	3
	Class C Retail	Base Fountain	8
		Cone fountain	1
		Ground Bloom Flower	2
		Handle Fountain (Hand Held)	2
		Sparkler (Wood Core)	7
		Wheel	2
		<b>Legal Subtotal</b>	<b>28</b>
Illegal	Class C Limited	Bottle Rocket	2
		Crazy/Jumping Jack	1
		Mortars	3
		Sky Rocket (w/stick)	1
		Small Firecracker	2
		Regular Firecracker	3
	Explosive Devices	Roman Candle (Shoots Balls)	5
		Ash Can, M-80	3
		Explosive Device (Silver Salute, M-100)	3
		<b>Illegal Subtotal</b>	<b>23</b>
Unknown	Not Identified	Unknown: Probably Unclassified	1
		Unknown: Probably Class C Retail	2
		Unknown: Probably Explosives Device	2
		Unknown: Probably Homemade	2
		Unknown: Unreported	6
		<b>Unknown Subtotal</b>	<b>13</b>
		<b>Grand Total</b>	<b>64</b>

As shown in Table 5, the 64 incidents that were reported during the survey period involved 37 single types of injuries, either a 1<sup>st</sup> or 2<sup>nd</sup> degree burn, abrasion, laceration, eye injury, or dismemberment. In addition, 16 people had more than one type of injury. Of these 16 people, 13 had two types of injuries and 3 had three types of injuries. As reported, legal fireworks caused 6% more injuries than illegal fireworks. Injuries to the eyes, fingers and hands accounted for 42% of all injuries as indicated in Table 6. Note in Table 7 that 14 of the 26, or 54%, of the reported injuries from illegal fireworks involved youths, aged 17 years and younger. The number of injuries for these vulnerable age groups is shown.

**TABLE 5. Type of Injury Caused by Fireworks in 64 Incidents  
Reported by Emergency Departments and Immediate-Care Clinics**

Type of Injury	Status of Fireworks			Grand Total
	Legal	Illegal	Unknown	
Burn (1 <sup>st</sup> Degree)	4	3	0	7
Burn (2nd degree)	9	5	3	17
Abrasion	1	0	0	1
Laceration	1	5	0	6
Eye Injury	3	2	0	5
Dismemberment	1	0	0	1
More than one type of injury	7	8	1	16
Unreported	4	3	4	11
<b>Grand Total</b>	<b>30</b>	<b>26</b>	<b>8</b>	<b>64</b>

**TABLE 6. Body Parts Injured by Fireworks in 64 Incidents  
Reported by Emergency Departments and Immediate-Care Clinics**

Body Part	Status of Fireworks			Grand Total
	Legal	Illegal	Unknown	
Arm	0	3	0	3
Ears	0	0	1	1
Eyes	4	2	1	7
Face (except eyes)	1	0	0	1
Fingers	4	2	1	7
Foot	1	0	0	1
Hand (except fingers)	6	6	1	13
Head (except eyes)	0	2	1	3
Leg	2	0	0	2
More than one part injured	11	10	2	23
Unreported	1	1	1	3
<b>Grand Total</b>	<b>30</b>	<b>26</b>	<b>8</b>	<b>64</b>

**TABLE 7. Age of Fireworks-Injured Persons in 64 Incidents  
Reported to Emergency Departments and Immediate-Care Clinics**

Age	Legal	Illegal	Unknown	Grand Total
0-5 years	4	0	1	5
6-9 years	3	2	1	6
10-12 years	6	3	2	11
13-14 years	3	1	1	5
15-17 years	4	8	0	12
18 years and older	8	12	3	23
Unreported	2	0	0	2
<b>Grand Total</b>	<b>30</b>	<b>26</b>	<b>8</b>	<b>64</b>