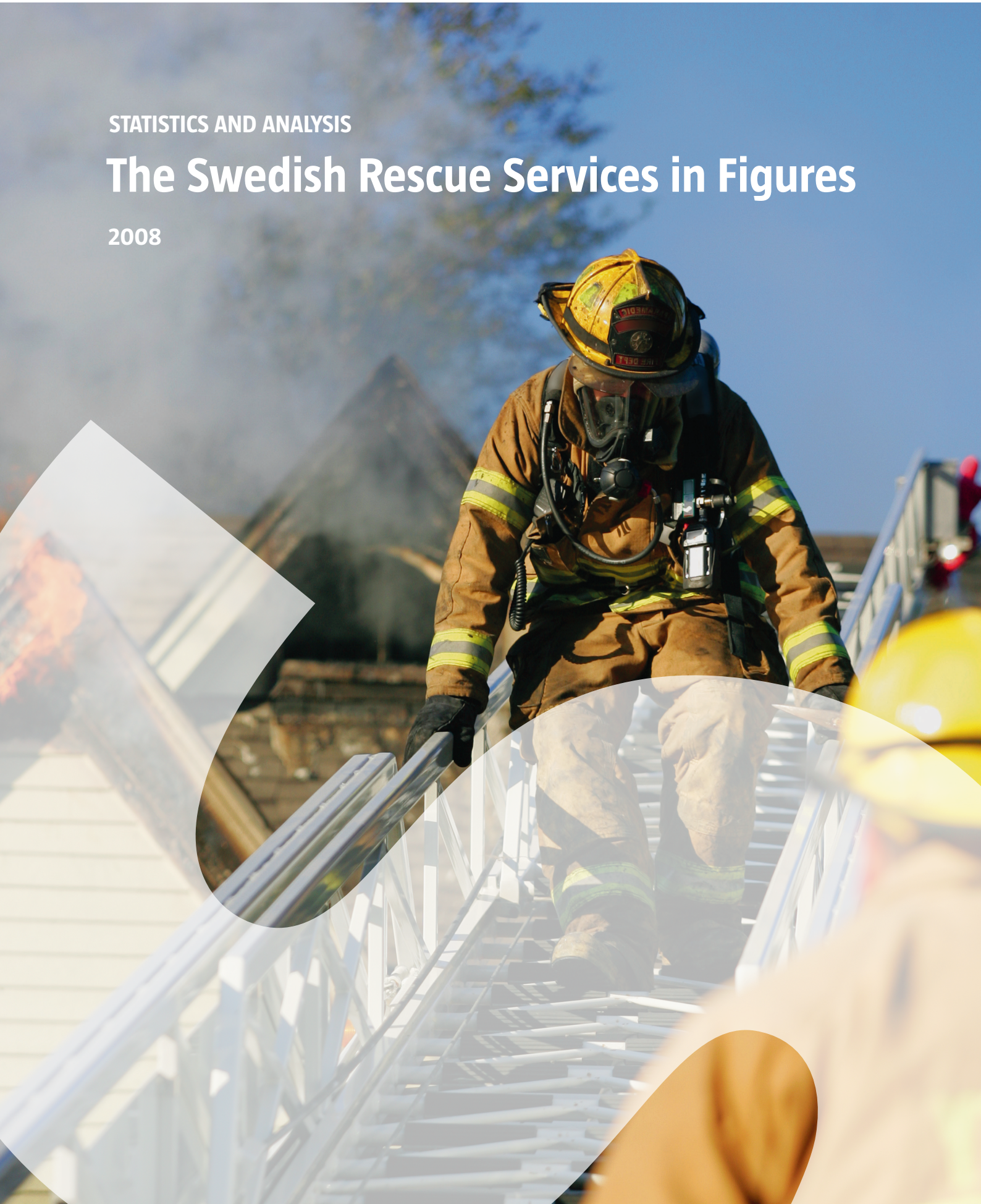
Swedish Civil Contingencies Agency

STATISTICS AND ANALYSIS

The Swedish Rescue Services in Figures

2008



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Foreword

This yearbook is a report with descriptive statistics on the organisation and emergency responses of the Swedish rescue services. The statistics are based on material that the National Centre for Learning from Accidents (NCO) at the Swedish Rescue Services Agency collated from 1996 to 2008. On 31st December 2008 the Swedish Rescue Services Agency closed down and a new, consolidated authority was formed, namely, the Swedish Civil Contingencies Agency (MSB). The production of statistics continues as before in the section for Lessons Learned at the MSB.

From 1st January 2009 the MSB has taken over the work of the Swedish Rescue Services Agency, the Swedish Emergency Management Agency and the Swedish National Board of Psychological Defence. The MSB is responsible for matters related to civil protection, emergency management, and civil defence. The MSB works for strong civil protection and good emergency preparedness in which everyone shares responsibility. The MSB works in close cooperation with other societal stakeholders and encompasses the entire scale of threats and risks – from everyday traffic accidents up to major disasters.

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Summary

This yearbook is a report with descriptive statistics on the organisation and emergency responses of the Swedish rescue services. The statistics are based on material that the Swedish Rescue Services Agency collated from 1996 to 2008 from the municipal fire (and rescue) brigades and national authorities. The production of rescue service statistics now takes place in the section for Lessons Learned at the Swedish Civil Contingencies Agency (MSB).

For fires and most sorts of accidents it is the municipality that is responsible for the rescue service response. National authorities are responsible for mountain, air and sea search and rescue, searching for missing people, maritime environmental protection and emissions of radioactive substances from a nuclear energy establishment.

In total the municipal fire brigades carried out approximately 92 400 emergency responses in 2008. This was an increase of about 4% from 2007. More than four out of ten emergency responses proved to be unnecessary. False calls from automatic fire alarms stood for 80% of these unnecessary responses. Most of the remainder were false calls with good intent, less than 2% being judged as malicious false calls. The total number of unnecessary calls was about the same as in 2007.

In 2008 fire brigades attended close to 10 900 building fires. This is reduction of about 2% from 2007. Fires in homes accounted for 55% of all building fires, while 21% were in public buildings and 11% in industrial buildings. The most common cause of fires in public buildings was arson, which was the cause of nearly 2950 building fires in 2008. School buildings are especially targeted and last year arson was assessed to have caused 270 fires, which represents more then half of all fires in school buildings. The trend of fires in school buildings caused by arson is increasing, and last year's figure is the highest since the incident report system was introduced in 1996.

There was a substantial increase in the number of emergency responses to non-building fires attended in 2008 when compared with 2007. In 2008 the fire brigades attended 17 800 non-building fires, which is an increase of nearly 11%. Nearly one third of all non-building fires are either forest or grass fires, which are very dependent on weather conditions. The weather varies considerably from year to year, making it difficult to observe underlying changes in the fire risk over the years.

At traffic accidents firefighers play an important role when freeing victims from the wreckage and making the scene of the accident safe. They often also provide first-aid. The number of traffic accidents attended has nearly doubled over thirteen years, increasing from 7 500 in 1996 to 14 400 in 2008. A substantial part of this increase is due to changed routines in the municipal fire brigades for responding to emergency calls from road accidents. In 2008 the number of emergency responses rose by 3.5% compared with the previous year.

The fire brigades were called out to nearly 2 500 incidents with dangerous substances in 2008. Only 4% of these incidents involve dangerous goods (dangerous substances being transported). The most common type of hazardous material incident is cleaning up after a limited quantity of petrol, diesel or motor oil has leaked from a vehicle.

The fire brigades were called to 369 drowning incidents in 2008. This was a reduction of 4% when compared with 2007. However the number of fatalities in connection with these incidents increased from 89 to 93.

In addition to emergency responses in accordance with the Civil Protection Act, Swedish fire brigades provide assistance in various circumstances. In 2008 the fire brigades were involved in over 18600 assistance tasks, more than half being medical assistance while waiting for ambulance.

In 2008 police authorities carried out 227 mountain rescue operations and 240 searches for missing persons in other locations. There were 798 alarms for air search and rescue, including 57 incidents/accidents. The Swedish Maritime Administration reported 1037 maritime search and rescue operations and the Swedish Coast Guard confirmed 315 emissions of oil or other harmful substances in 2008

Sources of statistics

Statistics from supervision of the Civil Protection Act

County Administrative Boards are responsible for the supervision of the municipalities' obligations according to the Civil Protection Act. For the last twelve years the County Administrative Boards have helped the Swedish Rescue Services Agency to collate statistics on safety work in the municipalities based on the Civil Protection Act.

Incident Reports from Municipal Fire Brigades

From 1988 to 1995 the Swedish Rescue Services Agency had to base its incident statistics on questionnaires sent out annually to the municipal fire brigades. The greatest problem for reliable statistics at that time was a lack of common reporting procedures and definitions of the terms involved. It was decided that the Swedish Association of Fire Officers, Swedish Association of Local Authorities and Swedish Rescue Services Agency should develop a national incident report together with definitions of the terms used and education material for incident commanders.

The municipal fire brigades record information about incidents in incident reports, a common format being agreed upon in 1996. At that time several brigades used paper reports but gradually the whole country has gone over to using computer-based systems for recording incidents and the emergency response. At present there are three broadly similar systems on the market and all three systems generate data files which can be read into the national incident report database now maintained at the Swedish Civil Contingencies Agency (MSB).

Every month fire brigades generate a data file containing information from all new or altered incident reports. The national database is then updated with the new data file and quality checks are carried out. Any suspected errors are notified to the brigade. In February every year the previous year's data is checked again and if necessary corrected by the brigade or in certain circumstances the MSB. In March statistical tables are produced and after that the previous year's data is usually left unchanged even if a brigade should decide to update a particular report in the local system.

The legal basis for the work of the fire and rescue services is found in the Civil Protection Act. This act was revised in 2004 and it therefore became necessary to revise some aspects of the incident report form. A new version of the incident report was introduced on 1st January 2005. Care should be taken when comparing data from before and after the revision since some differences could arise from the new contents and improved procedures for data collection in the fire brigades.

It should be noted that there has been a very small degree of under-reporting in incident statistics for the last five years. In 2003 it was decided that it had become too costly to process the small number of incident reports received as paper copies rather than data files. Three small municipalities are not covered in the figures for 2008. They represent 0.2% of the Swedish population and do not influence any conclusions drawn in this report.

National Rescue Services

The emergency response at most accidents is a municipal responsibility. However in certain circumstances the Civil Protection Act stipulates that national authorities must take responsibility. The authorities have provided the MSB with annual statistics on their emergency responses

The Civil Protection Act in the Municipalities

Cooperation

Sweden's 290 municipalities have a number of responsibilities which are regulated in the Civil Protection Act. In the year 2008, 127 of these municipalities chose to fulfil these obligations in cooperation with their neighbours, giving a total of 198 separate fire brigades.

Fire and Accident Prevention

Supervision of fire protection in buildings

Prior to 2004 there was detailed regulation of where and when fire inspections should take place. The Civil Protection Act no longer regulates the supervision of fire protection in detail and since 2004 the municipalities have a large degree of freedom when forming their supervision. Municipalities can now take account of local conditions and decide for themselves when it is appropriate for inspections to take place.

Diagram 1 shows the number of fire inspections carried out by the municipalities from 1996 to 2008. The number nearly halved when the Civil Protection Act was introduced

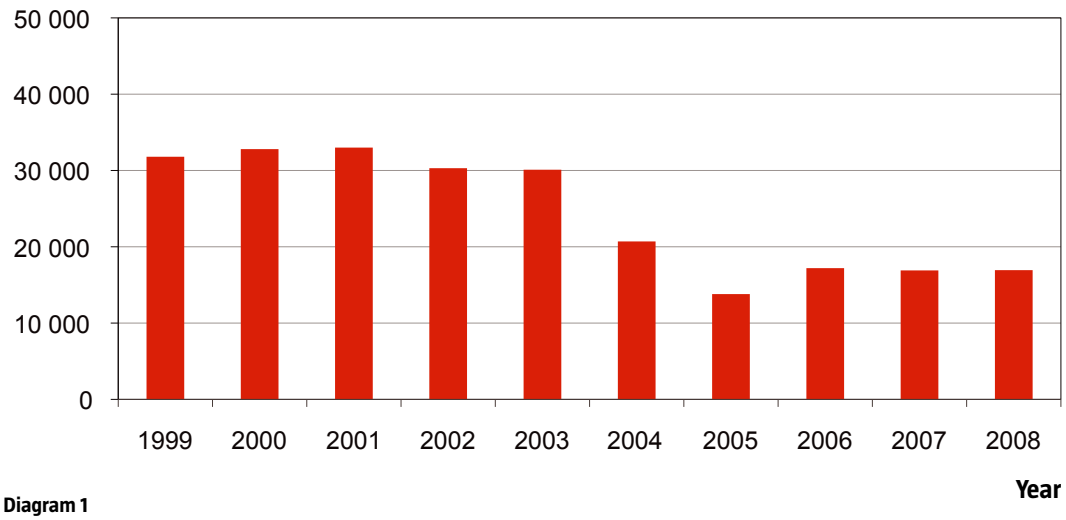

Diagram 1
Number of fire inspections in buildings, 1999-2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

Inspection of combustion-based heating sources and chimneys

Municipalities are responsible for checking the fire safety of combustion-based heating sources, chimneys, roofs and adjacent parts of the building. How often these inspections should take place is regulated in an ordnance from the MSB. As in previous years, the municipalities have faced difficulties living up to this obligation in 2008, due in part to a lack of qualified inspectors.

Supervision of Major Hazards

The Civil Protection Act includes obligations on operators and the municipalities regarding installations which pose a hazard which could cause serious harm to people or the environment. There are about 650 such installations in Sweden. The municipalities carried out inspections at 215 of these installations in 2008.

Emergency response

Preparedness

The Civil Protection Act requires that emergency response cover shall be planned and organised so that an effective response can be provided within an acceptable time. It is up to every municipality to form an organisation capable of living up to this goal, taking into account local conditions. Every fire brigade defines its preparedness in a programme document.

Personnel

The Civil Protection Act requires that personnel involved in the emergency response must have the necessary education and experience. Incident commanders must have the obligatory qualification. In 2008 the municipalities had approximately 5100 full time employees working as firefighters or incident commanders, 75 of which were women. In addition there were about 10700 part time/retained firefighters, 350 of which were women. The number of firefighters on duty has decreased by approximately 10% in the last eight years.

Costs

In 2008 the net cost of the municipal fire brigades was estimated to be 5 863 million SEK. This was an increase of 6% compared with 2007. The gross cost, including incomes from various additional tasks was 6 630 million SEK. Much of this income was for ambulance cover which a number of municipalities provide to the regional health authorities.

Incidents and accidents attended by municipal fire brigades

The municipal fire brigades carried out approximately 92000 emergency responses in 2008. This was about 4% more than the previous year and higher than the average of 88500 for the twelve years that figures have been recorded, as shown in diagram 2

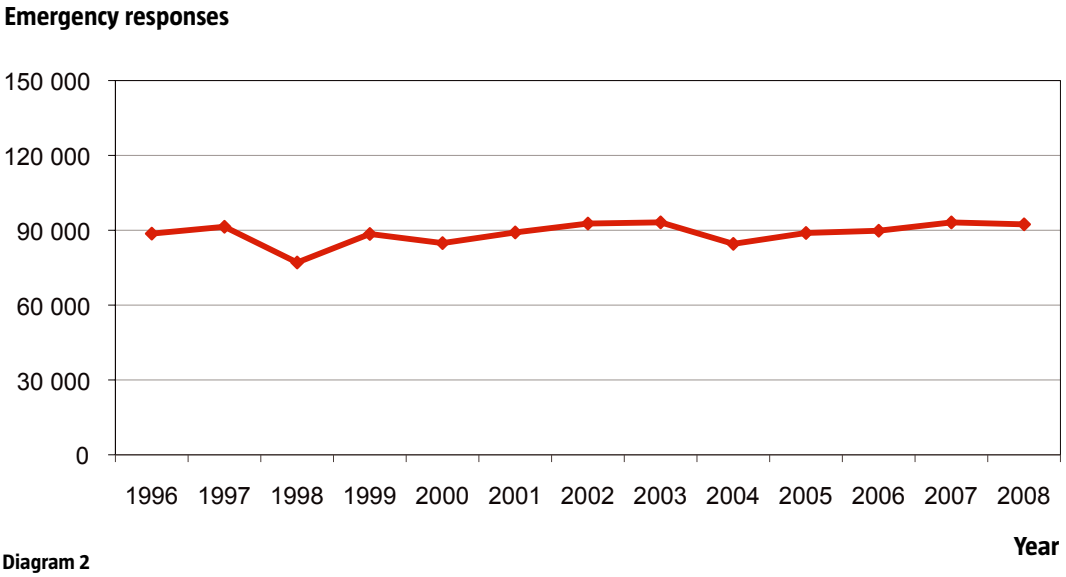

Diagram 2
Total number of emergency responses by municipal fire brigades, 1996-2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

Which kinds of incidents do municipal fire brigades respond to?

The municipal authorities are only obliged to respond to emergencies if a swift response is needed, something of value is threatened, the cost of the emergency response is in proportion to the potential losses faced and no other factors make a response inappropriate. County councils provide health care, including the provision of ambulance cover. The assistance of municipal fire brigades to the ambulance service and other tasks not related to emergency responses required by the Civil Protection Act are described separately (see page 39).

Diagram 3 shows the different kinds of incidents attended during 2008. One in three emergency responses were to unnecessary automatic fire alarms, while false fire calls for other reasons accounted for around 7% of all emergency responses. The second most common type of incident was a non-building fire, which accounted for one in five emergency responses. Traffic accidents caused 16% of all emergency responses and building fires 12%.

Incident type

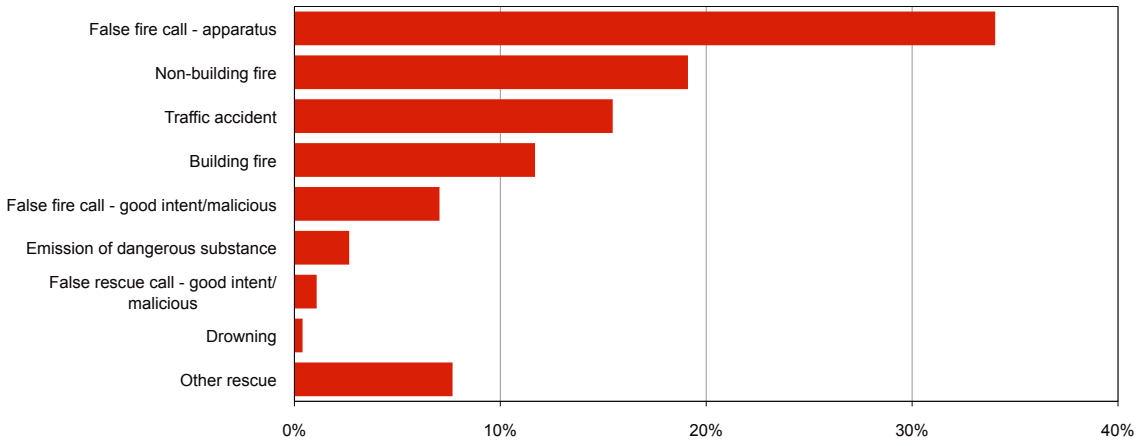

Diagram 3
Proportion of emergency responses per incident type, 2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

When do the incidents occur?

Incident rates vary over the year. Diagram 4 shows the number of emergency responses for the most common incident types per month in 2008. Unnecessary automatic fire alarms have a clear peak in the month of August. Non-building fires are most frequent from April to July with a peak in June. Building fires are most common in the winter months, which is largely explained by the rise in the number of chimney fires when cold weather is experienced.

Emergency responses

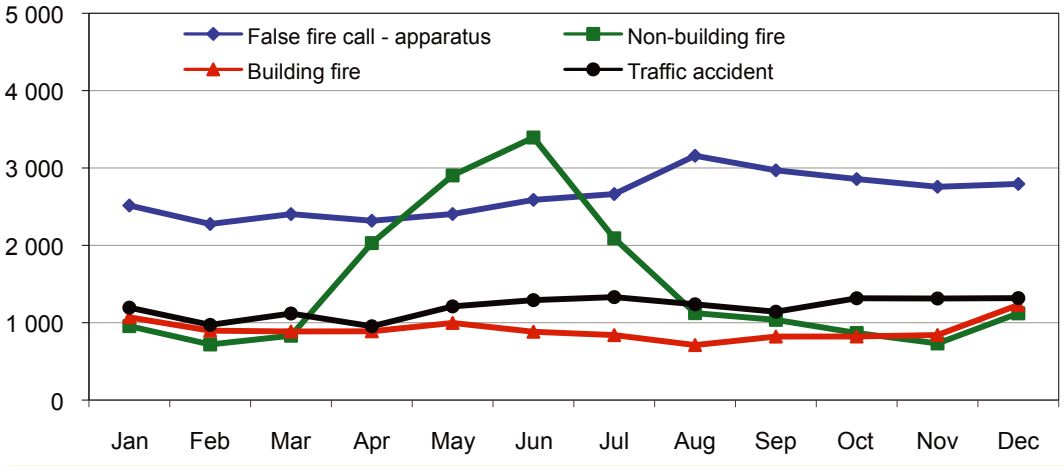

Diagram 4
Number of emergency responses by incident type and month, 2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

The number of emergency responses also varies at different times of day, as shown in diagram 5. Fewest incidents occur in the early morning. Incident rates rise to a peak between 16.00 and 17.00 hours.

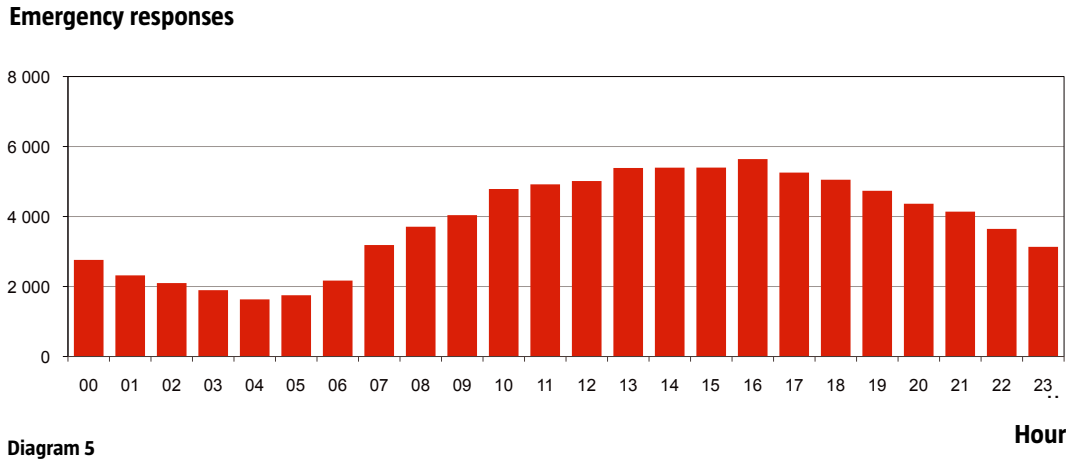

Diagram 5
Number of emergency responses per hour, 2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

The picture is not quite so clear cut when observing the different kinds of incident individually, though most incident types have their lowest rates in the early morning. Unnecessary automatic fire alarms are most common between 10.00 and 11.00, while traffic accidents have their highest rate between 16.00 and 17.00. Building fires peak in the early evening.

For more information on the number of incidents per hour, day of the week and month see tables 1.03h – 1.05h in the appendix.

Medical Assistance Administered by Firefighters

During emergency responses the fire brigade must often take immediate action to prevent or limit injuries to victims. Such first aid includes the prevention of trauma shock, resuscitation and the fixing of neck/spine or broken limbs. Some brigades have also been given the authority to administer oxygen or half-automatic defibrillation by ambulance doctors. In total 13000 people were given acute first aid by firefighters during 2008, a reduction of 1% from 2007.

Nearly half of all first aid concerned the fixing of neck/spine. The next most common action was comforting, the prevention of trauma shock and administering oxygen. Table 1.09h in the appendix gives a full description of first aid by firefighters at emergency responses.

Estimates of Deaths and Injuries

Incident commanders record the number of people who were killed or injured at the incident. Observe that incident commanders do not receive definitive information on this from the health authorities so incident statistics are based entirely on commanders' assessments of the likely consequences for the victims. Incident commanders only record someone as killed if they are sure that this was the case. This results in an underestimation of deaths and a corresponding overestimation of injuries.

In diagram 6 the number of deaths is shown for the most dangerous incident types attended by municipal fire brigades from 1996 to 2008. In total 633 deaths were recorded at such incidents in 2008, a reduction of more than 10% from 2007 when 707 people died.

The incident type where most lives were lost was traffic accidents, which account for 45% of the total. The number of deaths fell by 35% from 429 in 2007 to 287 in 2008. The number of fire deaths recorded by incident commanders rose by nearly 20% from 83 in 2007 to 99 in 2008, marginally lower than the average over the thirteen year period covered by the statistics. The number of people who drowned rose by over 4% from 89 in 2007 to 93 in 2008.

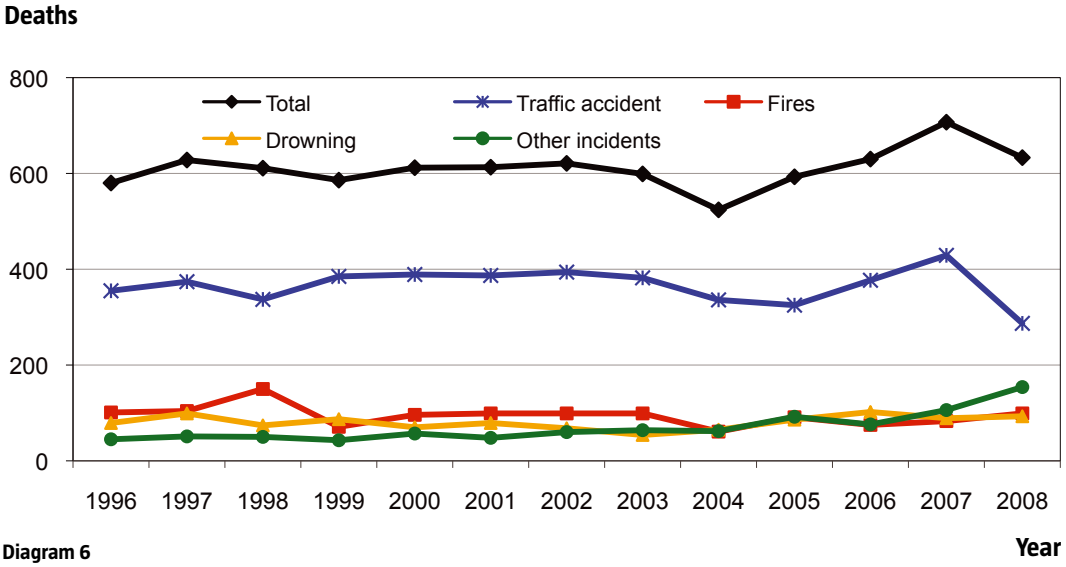

Diagram 6
Number of deaths per incident type, 1996-2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

Of all the accidents attended by fire brigades, traffic accidents caused the most injuries, 3098 people receiving injuries assessed to require in-patient hospital care and 13816 requiring treatment as out-patients. For more details of the number of incidents attended, deaths and injuries, see table 1.01 in the appendix.

Building Fires

Municipal fire brigades attended just under 10900 building fires in 2008, a figure somewhat lower than the average for the period 1996-2008. Building fires include fires in homes, public and industrial buildings as well as other structures such as multi-storey car parks, tunnels and buildings under construction.

Diagram 7 shows the total number of building fires attended by fire brigades together with the subtotals for homes, public and industrial buildings.

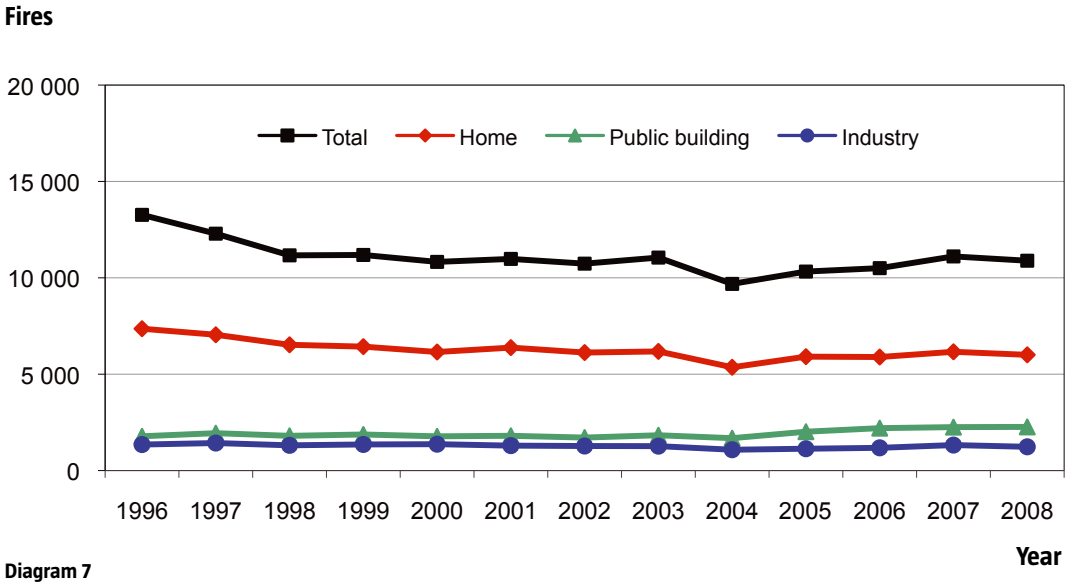

Diagram 7
Number of building fires attended per building category, 1996-2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

The number of fires in public buildings rose slightly in 2008. In the other categories numbers fell giving a total reduction of 2%.

Home fires

Fire brigades attended about 81500 home fires in the period 1996-2008. More than half of all building fires involve homes. In 2008 there were 6000 home fires, a reduction of nearly 3% from 2007. The number of home fires has been quite stable in recent years.

Diagram 8 shows the number of fires in the different kinds of homes for the years 1996-2008. At first the greatest number of fires were in blocks of flats while fires in detached houses steadily decreased. However in 2001 the number of fires in detached houses rose to just over that of blocks of flats. Since then both categories have varied between 2500 and 3000. In 2008 there were 160 more fires in blocks of flats than detached houses.

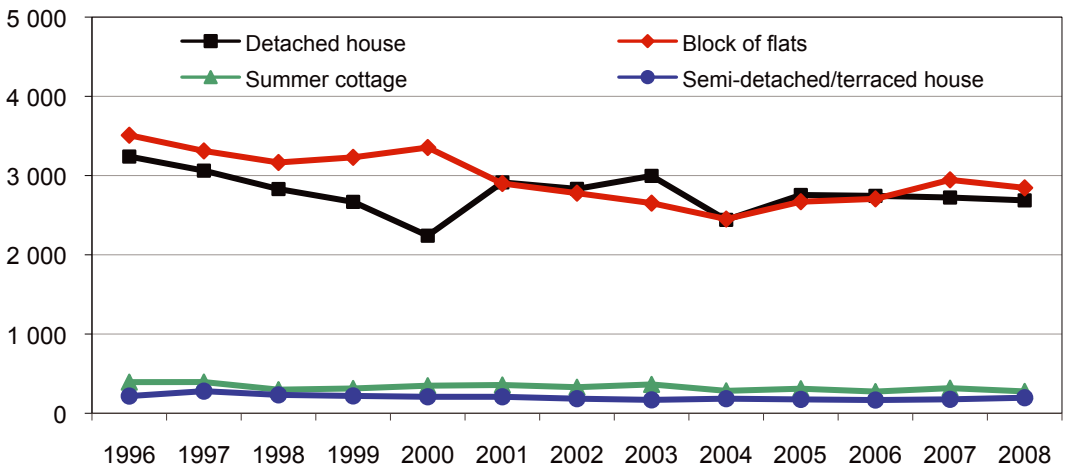

Diagram 8
Number of home fires attended per home category, 1996-2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

Diagram 9 shows the annual rate of fires in detached, semi-detached and terraced houses compared with blocks of flats according to estimates of the number of homes from Statistics Sweden.

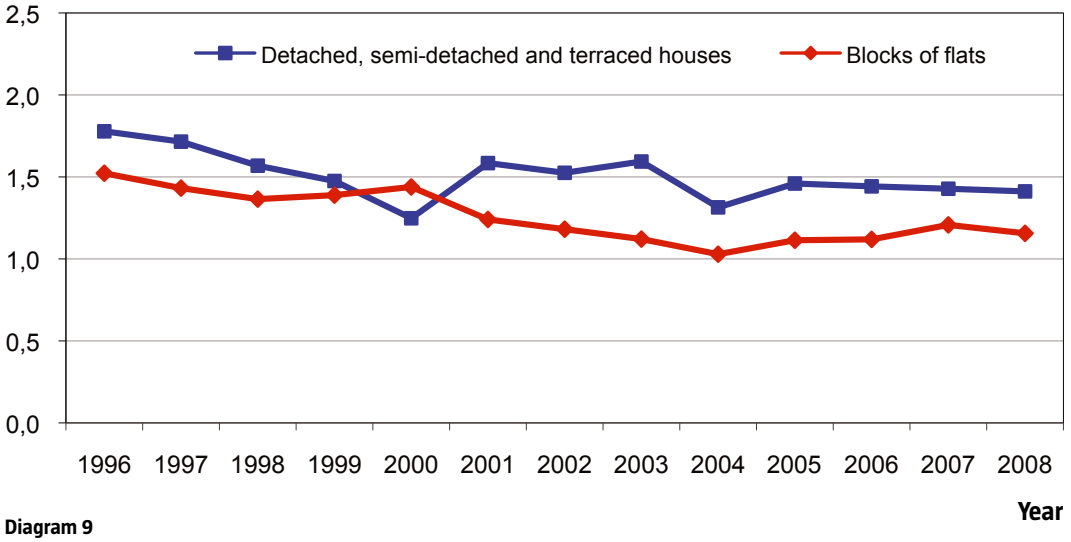

Diagram 9
Annual fire rate for home fires, 1996-2008
Source: Swedish Civil Contingencies Agency and estimates from Statistics Sweden

Direct fire causes are defined as the action or chemical/physical process which lead to the fire starting. Incident statistics are based on the opinion of the incident commander on return to the fire station and fire causes here are not as reliable as the results of more thorough investigations occasionally carried out by the fire brigade or police. At one in five fires incident commanders are unable to decide upon a fire cause.

Fire risks are different for detached houses and blocks of flats. Diagram 10 shows the percentage of home fires per cause in 2008 for these two kinds of homes. The proportions for the different causes have been quite stable over the years.

For more detail see table 2.05 in the appendix. Chimney fires are a dominant cause in detached houses and rare in blocks of flats. Cooking appliance left on is much more common in blocks of flats, as is arson. It is also important to understand that causes vary by geographical location. Arson is a much more common cause in the major cities while chimney fires dominate in the countryside where many homes are heated by burning wood. (Observe that chimney fires rarely spread to other parts of the building and in several European countries are not considered as serious fires. Observe also that scientists may not approve of "chimney fire" being used as a fire cause. However it was considered too difficult for incident commanders to ascertain why the soot in a chimney started to burn and the category is satisfactory for a general picture of the fire problem in incident statistics.)

Direct fire cause

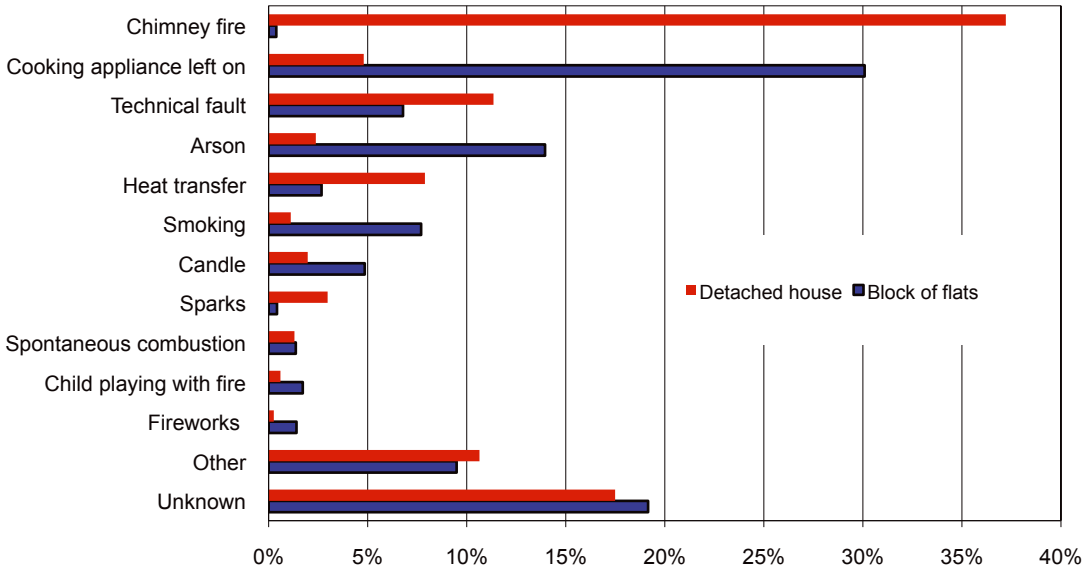

Diagram 10
Proportion of fires per direct fire cause for detached houses and blocks of flats, 2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

Fires in public buildings

The number of fires attended in public buildings was relatively constant until 2004. Since then the number has risen for three consecutive years to nearly 2300 in 2008. A small part of this rise can be attributed to changes in the coding of "other building" which was introduced in 2005. (From 2005 "other building" is coded as "other public building", "other industrial building" or "other building (miscellaneous)".) Diagram 11 shows the number of fires in public buildings for the years 1996 to 2008.

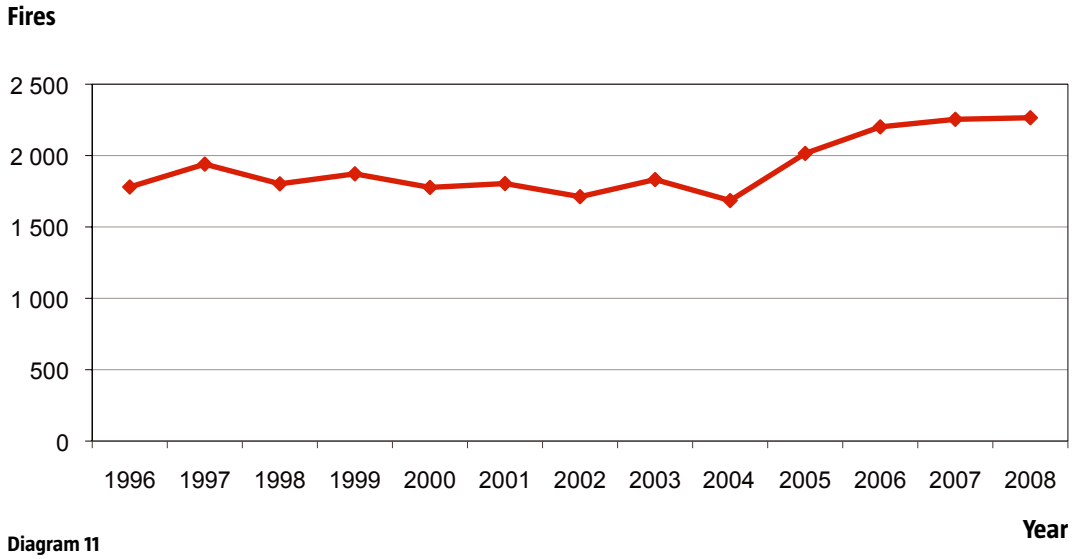

Diagram 11
Number of fires attended in public buildings, 1996-2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

The three most common categories of public buildings affected by fires are schools, care of the elderly and retail. Diagram 12 shows how the number of these fires has varied over the years 1996-2008. The number of fires in schools rose sharply in 2005 and again in 2006. There was a reduction to 439 in 2007, however the figure rose again to 512 in 2008.

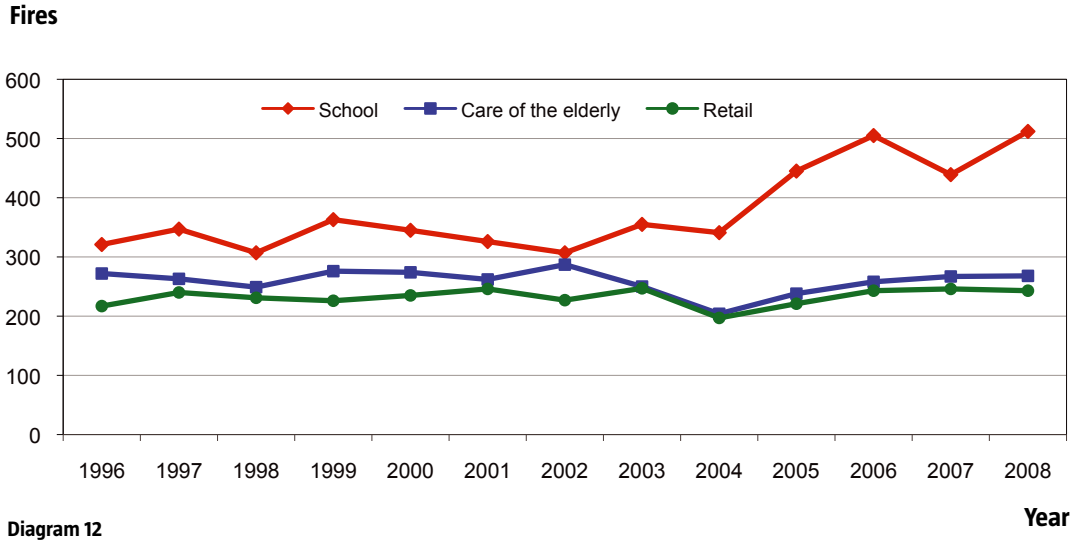

Diagram 12
Number of fires attended in three most common categories of public buildings, 1996-2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

Fire causes in public buildings differ somewhat to those in home fires. One in four fires are assessed to be the result of arson.

About half of all school fires are caused by arson. The variation in the number of school fires for the last three years is largely attributable to this cause.

Only 4% of all fires in care for the elderly are caused by arson. The dominant cause here is cooking appliance left on, which stood for 35%.

In retail buildings technical faults are the most common cause at 27% in 2008. One fifth of the fires were judged to be arson. Fire officers were unable to identify the cause at a further fifth of the fires in retail buildings.

Fires in industrial buildings

The fire brigades have attended about 16600 fires in industrial building over the last thirteen years. This corresponds to an average of just under 1300 fires per year or between three and four fires per day. The total for 2008 was just over 1200, reduction of 7% from 2007. Diagram 13 shows the number of fires in industrial buildings for the years 1996 to 2008.

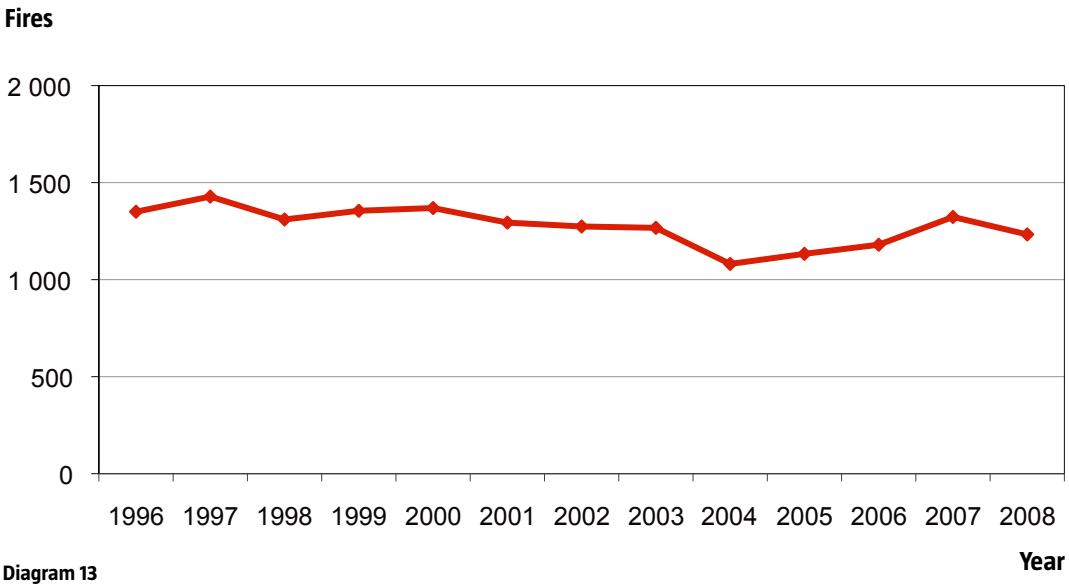

Diagram 13
Number of fires attended in industrial buildings, 1996-2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

A rough fire risk for the different categories of industrial buildings can be obtained by relating the number of fires to the number of relevant objects in the property tax register. Table 1 shows the number of fires per 1000 property tax objects for the years 1996 to 2008.

Table 1
Number of fires attended per 1000 tax objects for various industries, 1998-2008
Source: Swedish Civil Contingencies Agency

Industrial category	Number of tax objects	Number of fires/1000 tax objects										
	2008	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Industrial building with various occupants	1153	45,8	37,9	54,9	43,9	46,4	44,6	33,4	46,4	48,7	48,7	59,8
Chemical industry	634	158,8	172,3	171,3	169,3	140,0	135,8	116,1	115,0	142,6	163,8	170,3
Food industry	1451	58,6	50,4	65,2	62,3	54,2	46,1	55,4	54,8	52,7	54,5	62,7
Engineering industry	6572	52,0	53,1	55,7	52,8	49,4	53,8	44,5	42,5	45,4	52,9	48,5
Textile/clothing industry	558	42,6	36,9	22,2	24,0	15,9	19,3	11,5	9,9	26,7	23,0	9,0
Timber industry	3569	73,5	73,5	63,0	63,8	69,0	62,7	58,5	60,3	58,0	65,6	48,0
Other production industry	10319	26,4	28,0	31,5	30,8	30,8	29,0	22,4	21,9	21,2	24,4	25,8
Repair workshop	6351	12,6	12,8	12,3	9,9	11,8	11,9	10,0	8,8	9,0	10,1	8,5
Warehouse	11228	4,7	7,4	9,7	6,9	6,8	8,2	6,7	6,7	7,7	7,9	6,7

Direct fire causes for fires in industrial buildings in 2008 are shown in diagram 14. More than one in five fires were caused by technical faults and heat conduction stood for 15%. The cause was unknown for 17% of industrial fires. The three categories friction, sparks and other known causes all caused about 10% of the total in 2008. The proportion of deliberate fires is lower in industrial buildings than other buildings, incident commanders assessing only 3% to be due to arson.

Direct fire cause

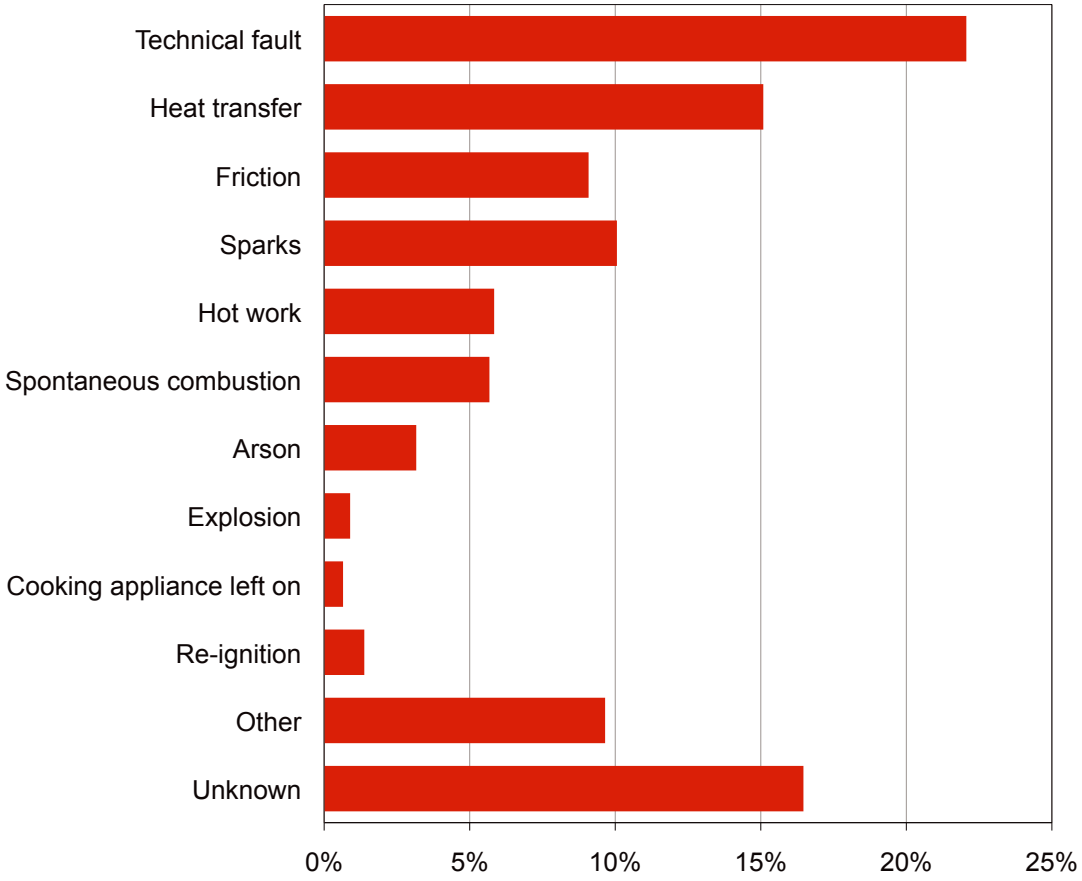

Diagram 14
Proportion of fires attended in industrial buildings per direct fire cause, 2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

Emergency Response at Building Fires

The most common actions by brigades were venting, extinguishing inside the building and inspection with infra-red camera. Venting was carried out at four of ten building fires. Interior extinguishing took place at one in three fires, as did inspection with infra-red camera. Breathing apparatus was required for saving property at more than 20% of fires and for life saving at 5%. One in four fires did not need any actions from the fire brigade. Brigade actions are presented in more detail in table 2.10 in the appendix.

Automatic Fire Alarms

In 2008 the fire brigades were called out to over 31700 unnecessary automatic fire alarms, a figure which is marginally lower than the average since 1996. Compared to 2007 there was a reduction of nearly 3%. In 2008 there were also more than 2100 cases when automatic fire alarms were activated due to actual fires. For every automatic fire alarm that was caused by an actual fire there were 15 alarms that proved unnecessary.

Table 2 shows how many automatic fire alarms were caused by fires and the percentage for different building categories. The proportion of automatic alarms caused by actual fires has increased since 1996 and now corresponds to 6% of all alarms. The two building categories with the highest proportion are psychiatric care and engineering industry.

Table 2
Number of automatic fire alarm calls activated by fire compared with unnecessary alarms, 1996-2008
Source: Swedish Civil Contingencies Agency

	Number of incidents				
Building type	Fire 2008	No fire 2008	Total 2008	Proportion fire 2008	Proportion fire 1996-2008
Total all buildings	**2 000**	**29 454**	**31 454**	**6,4%**	**4,4%**
Total public building	**1 305**	**22 018**	**23 323**	**5,6%**	**3,9%**
Shop	84	2 112	2 196	3,8%	3,0%
Hospital	74	1 240	1 314	5,6%	4,2%
Care of the elderly	242	3 205	3 447	7,0%	4,6%
Psychiatric care	74	478	552	13,4%	9,0%
Prison	14	169	183	7,7%	8,4%
Other care centre	181	2 318	2 499	7,2%	5,2%
Theatre/cinema/museum/library	18	542	560	3,2%	2,0%
Church etc	10	429	439	2,3%	1,8%
Restaurant/nightclub	29	601	630	4,6%	3,0%
Hotel/guest house	66	1 875	1 941	3,4%	2,8%
Military building	5	117	122	4,1%	2,1%
School	335	4 601	4 936	6,8%	4,4%
Youth club	6	125	131	4,6%	3,2%
Nursery school	28	696	724	3,9%	2,7%
Student hall	13	278	291	4,5%	3,5%
Sport facility	27	752	779	3,5%	2,9%
Transport/communications building	6	261	267	2,2%	2,3%
Office	60	1 662	1 722	3,5%	2,3%
Other public building	33	557	590	5,6%	5,3%
Total industry	**516**	**5 228**	**5 744**	**9,0%**	**5,3%**
Industrial building with various occupants	17	440	457	3,7%	2,8%
Chemical industry	73	906	979	7,5%	4,1%
Food industry	49	905	954	5,1%	3,3%
Engineering industry	206	1 648	1 854	11,1%	6,3%
Textile/clothing industry	4	94	98	4,1%	4,8%
Timber industry	64	721	785	8,2%	7,2%
Other production industry	180	1 514	1 694	10,6%	6,8%
Repair workshop	7	178	185	3,8%	3,0%
Warehouse	23	774	797	2,9%	1,8%
Other industrial building	32	299	331	9,7%	10,3%
Other buildings	**179**	**2 208**	**2 387**	**7,5%**	**5,8%**

Table 3 shows the number and proportion of fires where the automatic fire alarm functioned properly. Overall, automatic alarms activated at one fifth of all building fires, a higher proportion than the average since 1996. The proportions vary greatly from one building category to another. Automatic alarms functioned at more than half of all fires in public and industrial buildings, a marked increase over the average. Psychiatric care, care of the elderly and hospitals stood for the greatest proportion of fires with functioning alarms.

Table 3
Automatic fire alarms at building fires, 1996-2008
Source: Swedish Civil Contingencies Agency

	Building fires			
Building type	Number of fires 2008	Number of fires with functioning automatic fire alarm 2008	Proportion of fires with functioning automatic fire alarm 2008	Proportion of fires with functioning automatic fire alarm 1996-2008
Total all buildings	**10 887**	**2 139**	**20%**	13%
Total public building	**2 265**	**1 305**	**58%**	44%
Shop	243	84	35%	24%
Hospital	84	74	88%	66%
Care of the elderly	268	242	90%	67%
Psychiatric care	77	74	96%	69%
Prison	19	14	74%	62%
Other care centre	218	181	83%	67%
Theatre/cinema/museum/library	31	18	58%	36%
Church etc	26	10	38%	25%
Restaurant/nightclub	158	29	18%	12%
Hotel/guest house	93	66	71%	54%
Military building	7	5	71%	36%
School	512	335	65%	47%
Youth club	20	6	30%	11%
Nursery school	70	28	40%	16%
Student hall	28	13	46%	43%
Sport facility	86	27	31%	24%
Transport/communications building	21	6	29%	28%
Office	116	60	52%	37%
Other public building	188	33	18%	15%
Total industry	**1 233**	**655**	**53%**	**38%**
Industrial building with various occupants	69	17	25%	22%
Chemical industry	108	73	68%	49%
Food industry	91	49	54%	39%
Engineering industry	319	206	65%	45%
Textile/clothing industry	5	4	80%	39%
Timber industry	171	64	37%	28%
Other production industry	266	180	68%	50%
Repair workshop	54	7	13%	7%
Warehouse	75	23	31%	22%
Other industrial building	75	32	43%	41%
Other buildings	**7 389**	**179**	**2%**	**2%**

Non-building fires

Non-building fires include forest and other terrain fires as well as fires in road vehicles and rubbish containers. During the period from 1996 to 2008 fire brigades have been called to 206000 such fires, corresponding to over 40 non-building fires per day. In 2008 they attended 17800 non-building fires which is somewhat more than in an average year.

Diagram 15 shows the total number of non-building fires together with numbers for the three most common subcategories – terrain, road vehicles and rubbish containers.

Most of the variation in the total number of non-building fires is caused by the variation in terrain fires. These fires are greatly affected by weather conditions, making it difficult to identify changes in underlying fire risk over the years.

Non-building fires rose by 10% from 2007 to 2008. Terrain fires increased by 40% and road vehicle fires rose by 25%. The number of rubbish container fires rose by 1%.

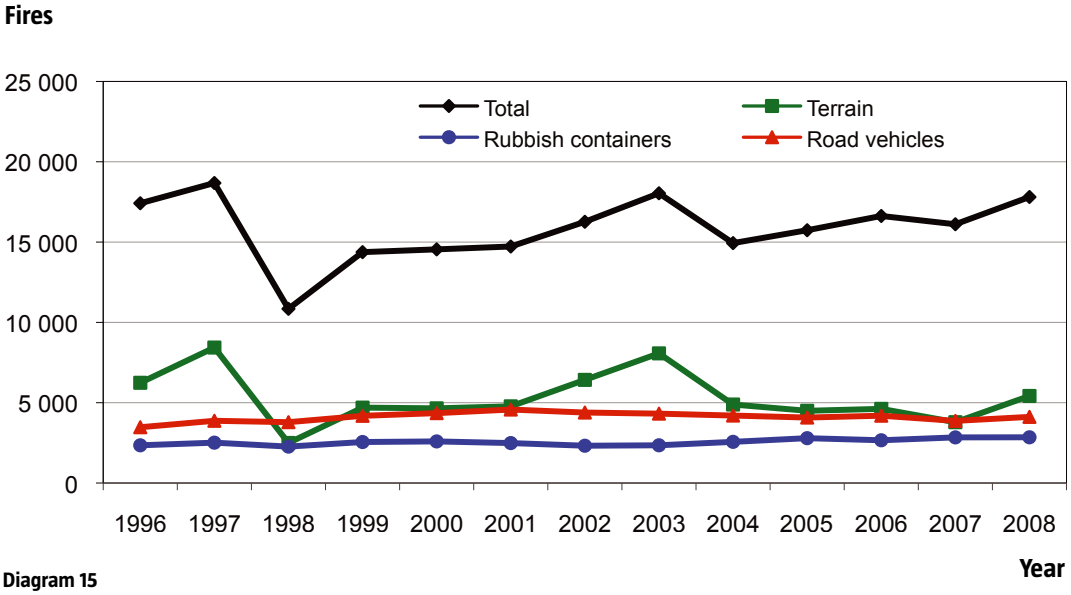

Diagram 15
Number of fires attended in terrain, road vehicles and rubbish containers, 1996-2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

Approximately one third of all vehicle fires are assessed by the incident commander to be the result of arson and one fifth are caused by technical faults. The fire cause was unknown at 40% of all road vehicle fires.

More than 42% of all fires in rubbish containers (litter bins, rubbish bins and skips) were caused by arson. A similar proportion of rubbish container fires had unknown causes.

Terrain fires

Three of ten non-building fires involved vegetation. These vary widely in number mainly due to weather conditions. Diagram 16 shows the number of fires in the categories forest, other wooded land and non-wooded land for the period 1996 – 2008. All three categories rose sharply in 2008. Nearly half of all terrain fires occur in the category non-wooded land and only a relatively small number in forest.

Fires

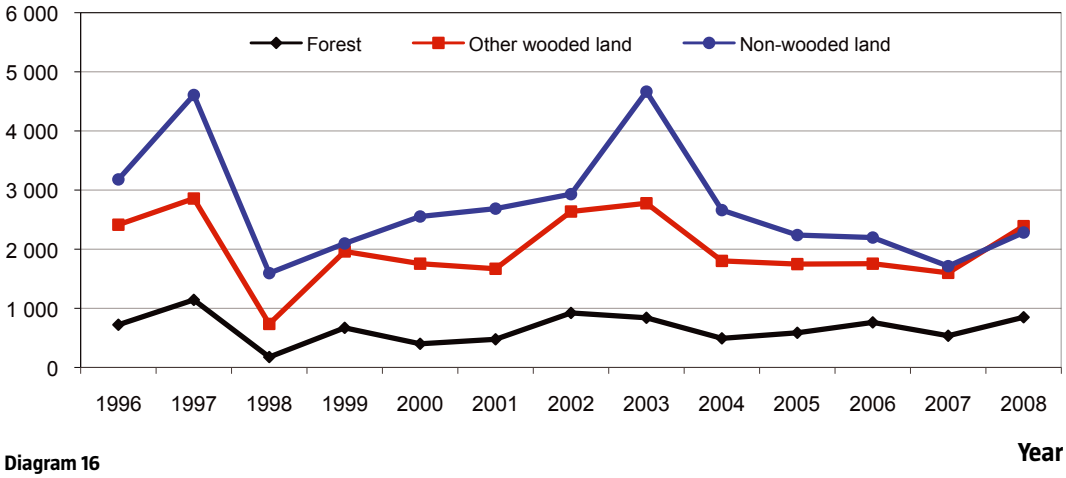

Diagram 16
Number of fires attended in terrain, 1996-2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

It is somewhat misleading when describing terrain fires to only consider their numbers. It is also important to study the areas affected. Incident reports include a rough estimate of affected areas. Forest is only involved in a relatively small proportion of all terrain fires but most years similar areas are burned for all three land categories, as shown in diagram 17. In 1997, 2006 and 2008 periods of drought and high temperatures led to several extreme forest fires where large forested areas burned.

Burned area (hectare)

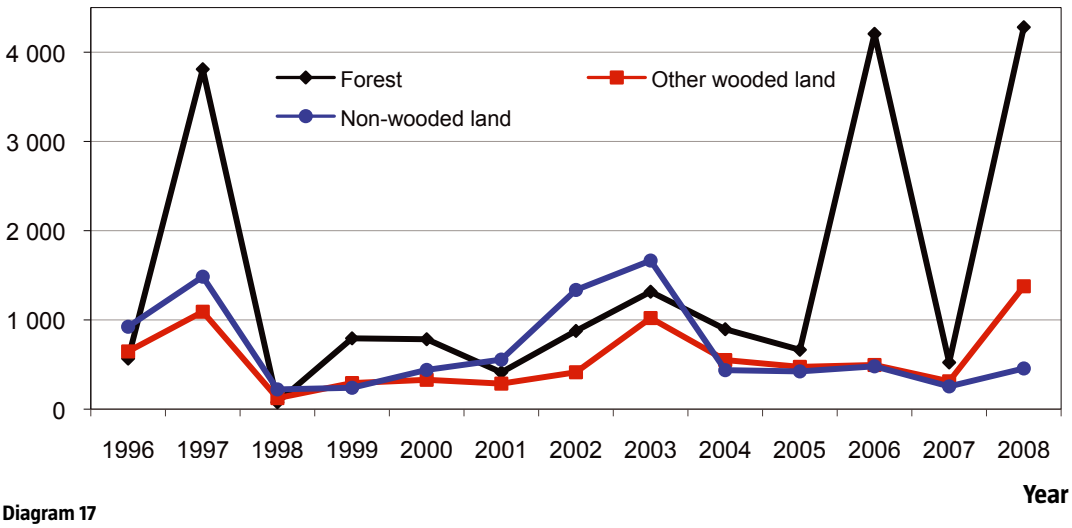

Diagram 17
Estimate of total burned area (ha) for terrain fires, 1996-2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

The direct cause of more than a third of all terrain fires is unknown. The most common identified causes in 2008 were arson and camp fire/grill, both at about 10%. Child playing with fire was identified as the cause at 7% of terrain fires.

The Consequences of Fire in Sweden

Incident statistics from the fire brigades do not give a comprehensive picture of the fire problem in Sweden. Brigades are not called to all fires, and statistics based on estimates in the incident report should be compared with other sources.

Fire Deaths

In 1999 the Swedish Rescue Services Agency started to collect information from fire brigades, police and coroners concerning fatal fires and their victims. Less reliable data was obtained for 1988 to 1998.

Up to the year 2004, between 100 and 150 people died in fires every year, with the exception of 1998. In that year 63 people, mostly teenagers, died at a party in Gothenburg. The number of deaths fell unexpectedly to 65 in 2004. Less than 100 deaths were also recorded in 2006 and 2007. The number of fires and fatalities for the period 1988 to 2008 is presented in diagram 18.

Fatal fires, fire deaths

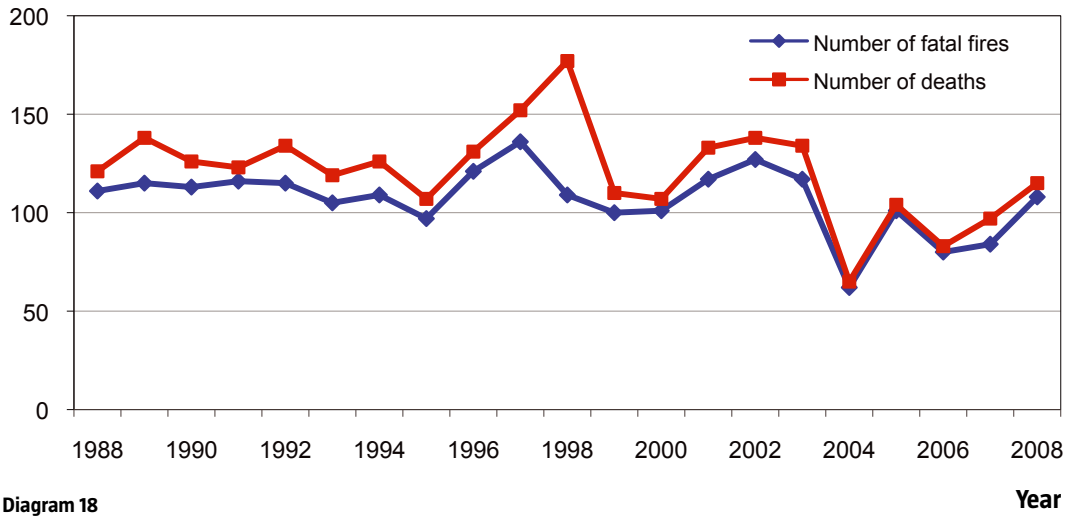

Diagram 18
Number of fatal fires and fire deaths, 1988-2008
Source: Fire Deaths Statistics, Swedish Civil Contingencies Agency

Most fatal fires occur in some kind of home. In 2008 home fires accounted for 86 deaths. Thirteen deaths occurred in other buildings. Sixteen deaths occurred in non-building fires, most often in vehicles.

Investigations by the fire brigades and police show that the most common known cause of fatal fires is carelessness when smoking. In 2008 25 people died in such fires. It should be noted that it is often difficult to ascertain the cause of a fatal fire despite careful investigation. In 2008 47 people died in fires where the authorities were unable to identify a cause.

It is substantially easier to identify the room of origin than the cause. Most fire victims died in fires which started in living rooms, bedrooms and kitchens.

It is interesting to compare the information on fire victims from the Swedish Rescue Services Agency's collection of information from fire brigades, police and coroners with the assessments recorded in incident report forms by fire officers immediately after the fire. Incident commanders noted 99 fire deaths in 2008, which is 16 less than the total in the Agency's data. It should be noted that incident commanders should only record deaths in the incident report form if they are sure of the outcome. This is not always the case. In addition some deaths occur in hospital several days or weeks after the fire, and occasionally a fatal fire can take place without the fire brigade being called to the scene.

Non-fatal Fire Injuries

Major injuries

The Centre for Epidemiology (EpC) at the Swedish Board of Health and Welfare maintain a comprehensive hospital discharge register based on information collected from the county councils. A patient must be treated as an inpatient in the hospital for at least 24 hours to be included in the register. This source shows that every year about 700 people receive major injuries caused by fire. This would appear to differ greatly from the figure of 157 for 2008 from the estimates made by incident commanders in the fire brigades. However it should be remembered that fire brigades are not called to all fires and even relatively small fires can cause injuries.

Minor Injuries

Minor injuries from fire can also be estimated with the help of statistics from the health authorities. Figures from the European Home and Leisure Accident Surveillance (EHLASS) system indicate that every year about 700 people receive minor injuries from fires. It is interesting to note that concerning minor injuries, incident commanders in the fire brigades come up with a higher estimate: 1001 people in 2008.

Economic losses

The Swedish Insurance Federation produce statistics on claims and payments for fires, based on data supplied by member companies. The fires on which claims are based were not necessarily attended by the fire brigade.

The total amount of payments for fire damage do not reflect the full cost of fires. Some people do not take out insurance on their property. Central government and some large companies organise insurance cover in other ways than through traditional insurance companies. A few companies active in the Swedish market do not provide data to the insurance federation. Insurance federation statistics of fire payments do not include the portion of the damage cost for which the policy holder is not compensated.

The insurance federation publish two figures for the total cost of payments for fire losses. A preliminary estimate is published within six months of the end of the year. A more accurate assessment is made somewhat later, though this does not include the costs for fires in boat, travel and special insurance policies. Diagram 19 shows these two fire loss estimates for the years 1985 to 2007 (in fixed prices for the year 2007).

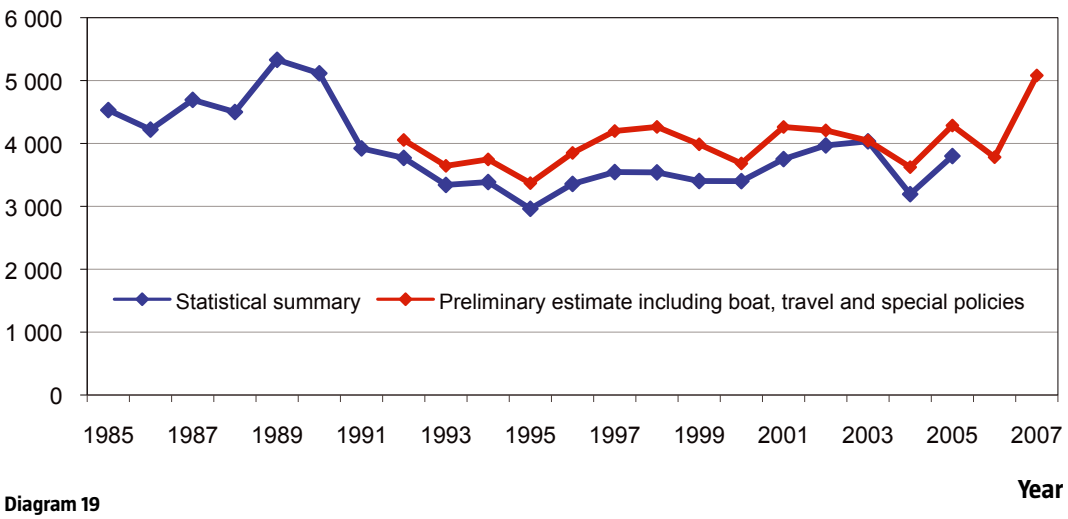

Diagram 19
Payments for fire damage, in fixed prices (2007), 1985-2007
Source: Swedish Insurance Federation, "Översiktsstatistiken" and "Brandskadekostnader"

Traffic accidents

Fire brigades have attended nearly 143000 traffic accidents during the period 1996 to 2008. In 2008 the fire brigades attended 14400 traffic accidents – substantially more than the 7500 incidents recorded in 1996. The number rose by nearly 4% from 2007 to 2008. The trend is upward, though in the last six years the rate of increase has not been as high as it was previously. Diagram 20 shows how many traffic accidents fire brigades have attended from 1996 to 2008.

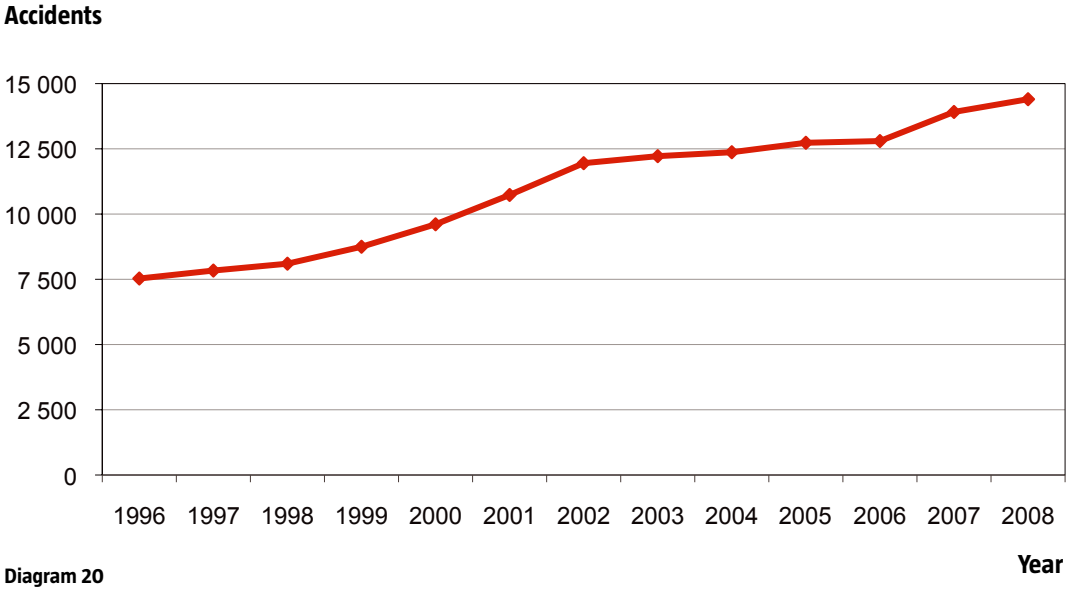

Diagram 20
Number of traffic accidents attended, 1996-2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

Nearly 98% of all the traffic accidents attended by fire brigades in 2008 were road accidents. At least one car was involved in more than 80% of these incidents. In nearly 20% only cars were involved. Mopeds or motorcycles were involved in 14% of all traffic accidents.

Of the accidents attended by fire brigades where cars were involved, more than 30% took place on roads with a speed limit of 50 km/h, 29% with a speed limit of 70 km/h and 23% with a speed limit of 90 km/h. Motorways with a speed limit of 110 km/h stood for 10% and 30 km/h 8%.

Lorries were involved in one in ten accidents. Only one in twenty of these accidents involved a lorry or tanker marked with dangerous goods plates.

Wild animals were involved in 4% of all traffic accidents.

Emergency Response

Perhaps the most common life-saving action performed by firefighters is the extrication of trapped people from crashed vehicles. Ambulance personnel are unable to give adequate medical treatment until the fire brigade have freed accident victims from the wreckage. Extrication took place at more than 2100 accidents in 2008, which corresponds to 15% of all traffic accidents attended by brigades.

At six of ten traffic accidents the fire brigade take actions to making the accident scene safe. This often includes actions to prevent fire.

There are three times as many fire stations as ambulance stations in Sweden as a whole, so fire stations are more evenly distributed across the country. This means that fire brigades often arrive at traffic accidents well before ambulance personnel. People needed medical assistance from firefighters at 45% of the traffic accidents attended. In 2008 11500 traffic accident victims received medical assistance from firefighters. Traffic accidents are the dominant incident category where medical assistance must be given, standing for 90% of the total for all emergency responses.

Consequences of road accidents attended by fire brigades

In 2008 fire brigades reported that 287 people were killed at the road accidents which they attended and just under 3100 people received major injuries requiring in-patient hospital care. This can be compared with the official statistics on road accidents based on police reporting. The police reported 397 deaths and nearly 3700 major injuries. The number of deaths is the lowest recorded by the police since 1945. Differences between police and fire brigade figures are largely due to fire brigades only recording deaths if they are sure of the outcome when filling in the incident report and the fact that fire brigades are not always called out to road accidents. Diagram 21 shows the number of deaths at road accidents reported by the police and fire brigades for the years 1996 to 2008.

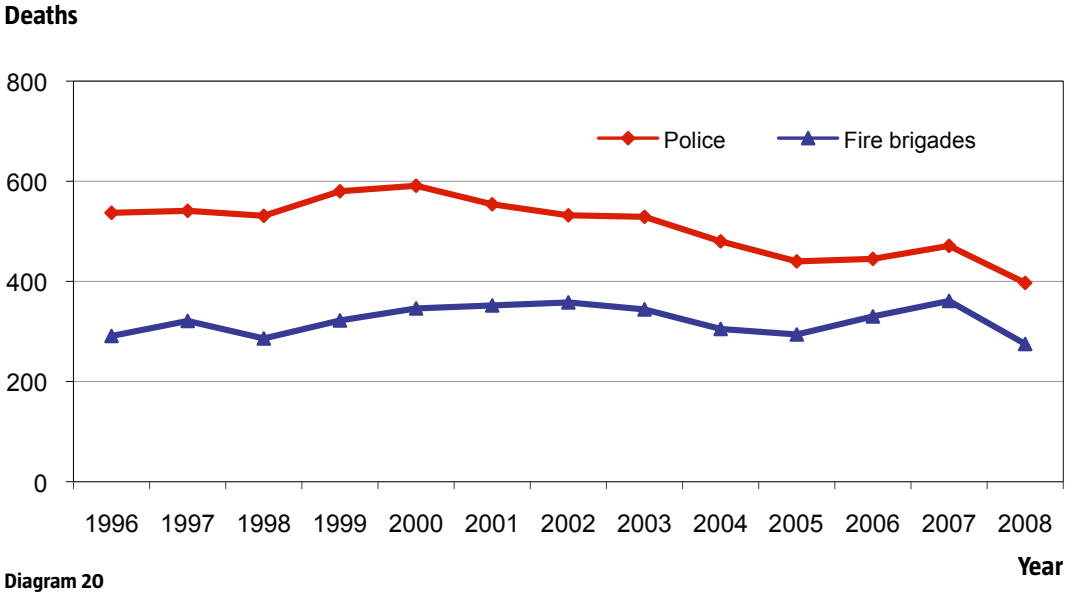

Diagram 20
Number of people killed at road accidents as reported by police and fire brigades, 1996-2008
Source: Swedish Road Administration and Swedish Civil Contingencies Agency

Drowning

In 2008 fire brigades responded to nearly 400 drowning incidents in which a total of 93 people were reported to have died. The number of responses was 20% lower than the average figure of 500 for the twelve year period covered by national statistics.

In 2008 lake/reservoir/pond was the most common location for drowning incidents to which fire brigades were called, followed by river. Together these categories accounted for more than half the total in 2008. Diagram 22 shows how many drownings were attended at the different location categories in 2008. The number of fatalities at the different location categories follows a similar distribution.

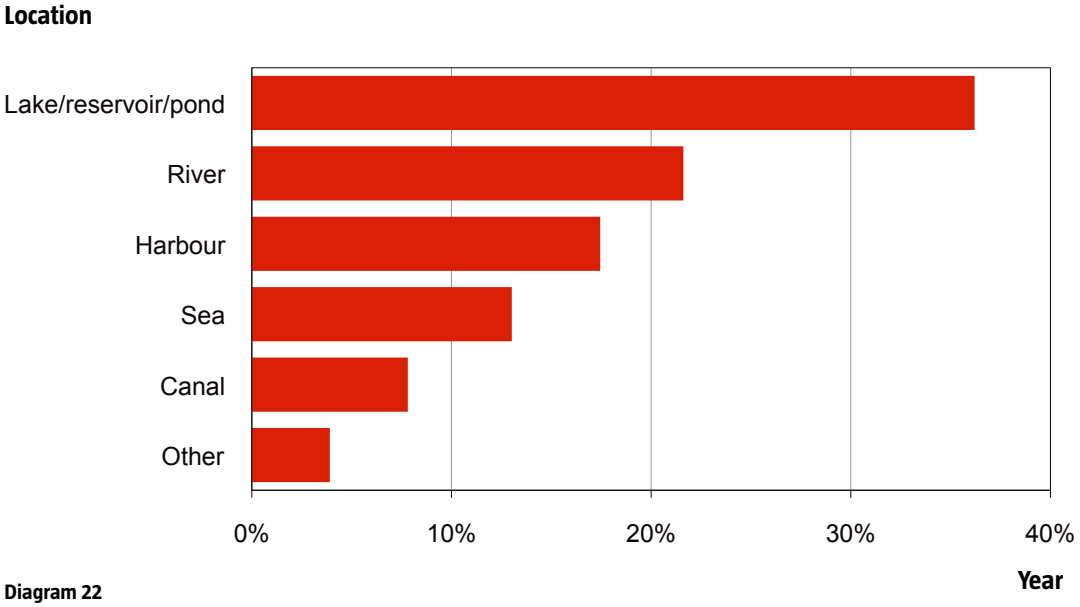

Diagram 22
Proportion of drowning incidents attended per location, 2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

Diagram 23 shows the number of drowning incidents per month in 2008. More than half the number of incidents occur during the period May to August, with most in June (22% of the total).

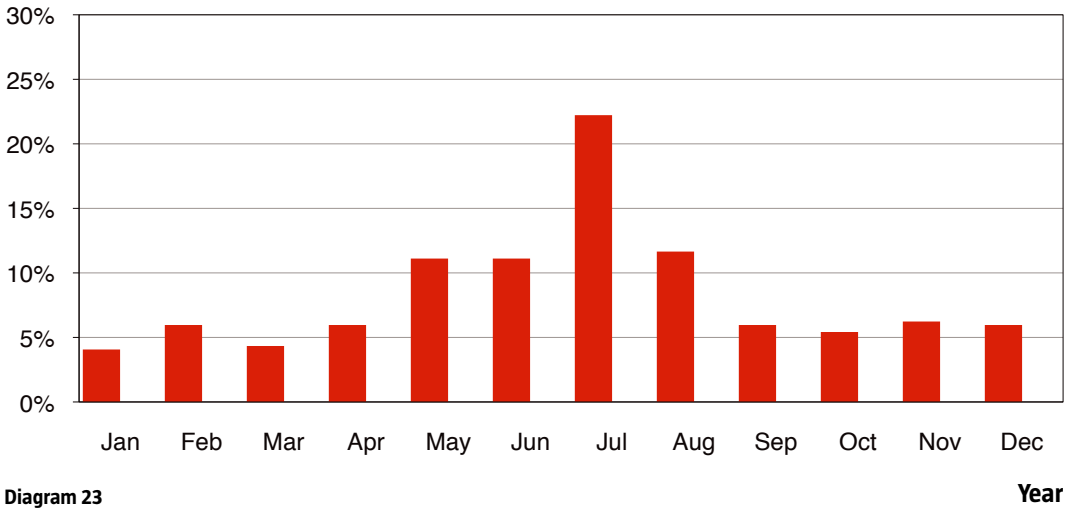

Diagram 23
Proportion of drowning incidents per month, 2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

Emergency response

Fire brigades report giving medical assistance to 135 people at drowning incidents in 2008. The most common forms of assistance were comforting, resuscitation and the prevention of trauma shock.

Scuba diving was carried out at 29 incidents and free-diving without compressed air at 22 incidents. At 140 incidents firefighters wore survival suits. Boats were used at 115 incidents and helicopters at 14. Table 5.02 in the appendix gives a more detailed description of actions taken at drowning incidents.

Comparison with drowning statistics from life saving society

Fire brigades are not called to all drowning incidents. The Swedish Life Saving Society (SLS) follow up all drownings in Sweden which are reported in the media. Diagram 24 shows the number of incidents attended by fire brigades together with the number of deaths reported by fire brigades and the SLS.

Incidents, deaths

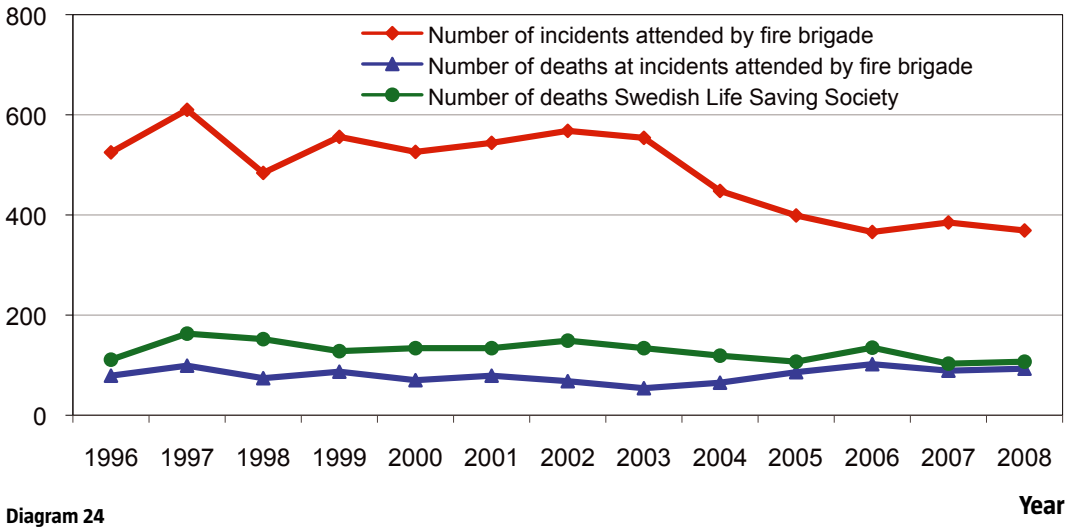

Diagram 24
Number of drowning incidents and drowned persons, 1996-2008
Source: Swedish Civil Contingencies Agency and Swedish Life Saving Society

The number of responses decreased by 4% from 2007 to 2008. However the number of people reported to have died increased by 4%.

The SLS also show an increase in the number of drowning deaths for the same period. In their statistics 107 people drowned in 2008, four more than the previous year. The SLS also follow up the activities when the drownings occurred. Of the 107 deaths, 30 were from boats, 25 when bathing, 11 going through ice and the remaining 41 in connection with a variety of other activities. 90% of all victims were men, the proportion being unchanged in recent years.

Emission of dangerous substance

In 2008 fire brigades attended just under 2500 incidents where dangerous substances were released or a release was threatened. This was somewhat higher than the average for the period 1996-2008, as shown in diagram 25. The figure for 2008 was an increase of 5% from 2007.

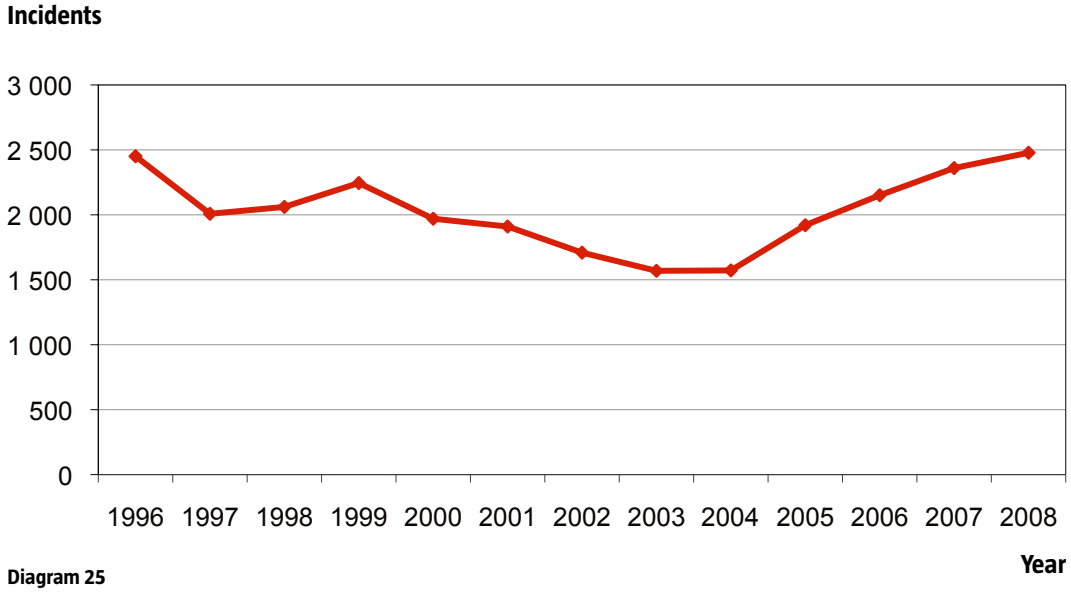

Diagram 25
Number of dangerous substance incidents attended, 1996-2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

The incident report form has a number of emission categories. The proportion of incidents attended per emission type is shown in diagram 26. Only a small proportion of all incidents concerned the release of dangerous goods, that is dangerous substances in transport. The vast majority were limited quantities of petrol, diesel, motor oil or hydraulic oil from vehicles.

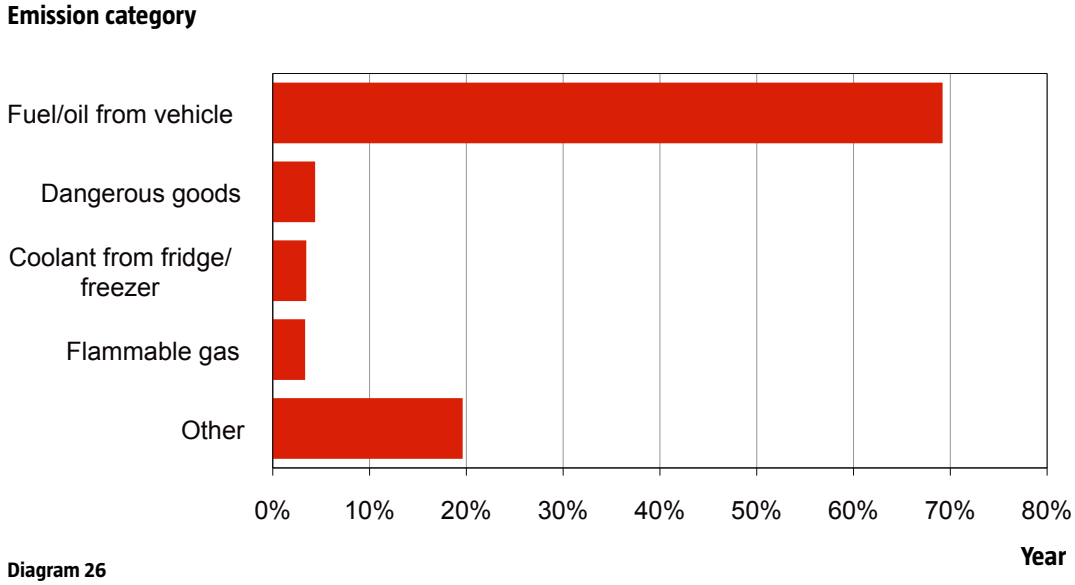

Diagram 26
Proportion of dangerous substance incidents attended by emission category, 2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

More than half of all dangerous substance incidents attended by fire brigades involve petrol or diesel. Diagram 27 shows the proportion of incidents per group as follows:

Diesel	e.g. diesel fuel, heating oil, jet fuel
Petrol	e.g. petrol fuel and aviation fuel
Other petroleum products	e.g. hydraulic oil, motor oil, lubricating oil
Other flammable liquids	e.g. paint, methanol
Poisonous gases	e.g. ammonia, chlorine
Flammable gases	e.g. propane, hydrogen
Other gases	e.g. freon, argon, helium, carbon dioxide, oxygen
Corrosives	e.g. acids, alkali, iron trichloride, sodium hydroxide

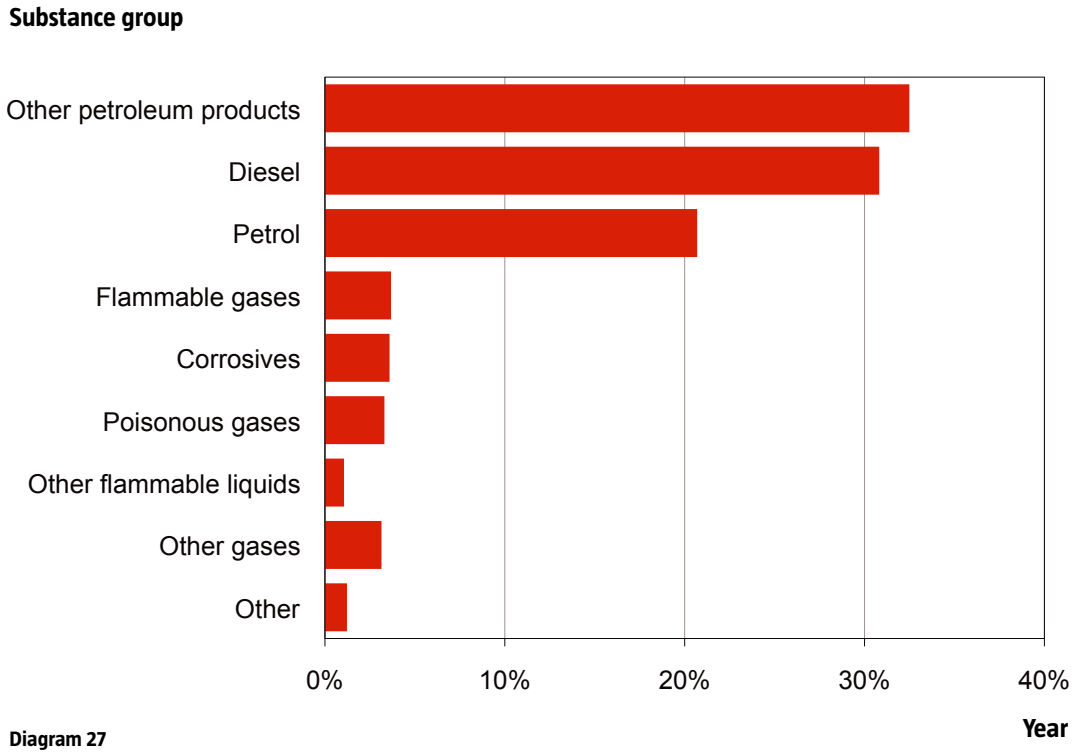

Diagram 27
Proportion of dangerous substance incidents attended by substance group, 2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

Emergency response

Fire brigades used various materials to absorb the released substance at six of ten dangerous substance incidents in 2008. This method is most common at small releases of liquids. At larger releases the substance is collected in a new container, as done in 12% of all dangerous substance incidents.

In unfavourable conditions the fire brigade may be forced to dilute the released substance instead of collecting it. This is seen as a last resort due to environmental concerns and took place 44 times in 2008. Another response which is used sparingly due to environmental concerns is the laying of expanding foam to prevent fire.

This was done 19 times in 2008. See table 6.03 in the appendix for more detailed information on actions taken by fire brigades at dangerous substance incidents.

Incidents involving dangerous goods

Fire brigades record the activity which was involved for the 4% of all emission incidents concerning the release or threatened release of dangerous goods (dangerous substances in transport). Nearly half of all dangerous goods incidents took place when loading or unloading and a quarter when in transport by road vehicle. Diagram 28 shows the proportion of dangerous goods incidents per activity in 2008.

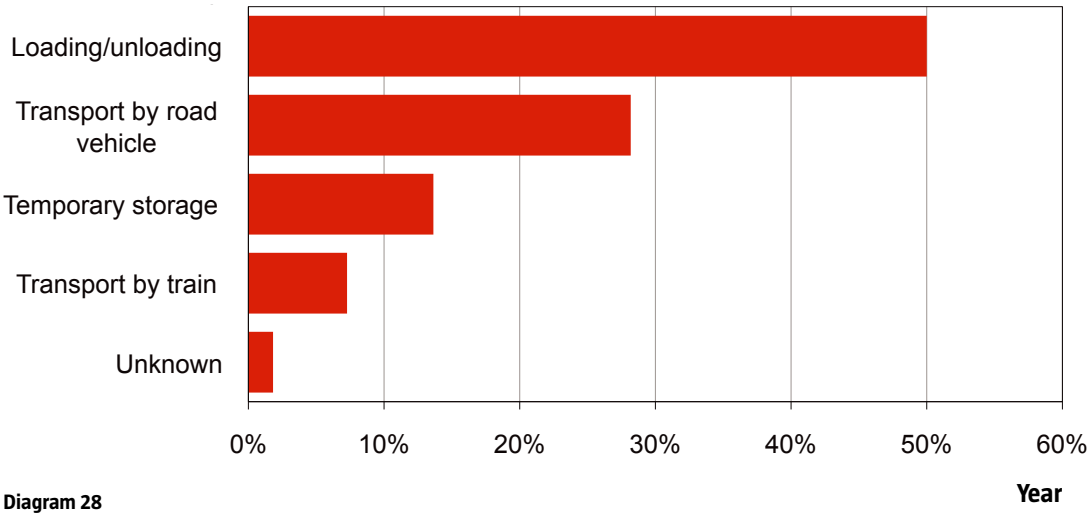

Diagram 28
Proportion of dangerous goods incidents per activity, 2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

Assistance by the Municipal Fire Brigades

Municipal fire brigades carry out a large number of tasks over and above emergency responses required by the Civil Protection Act. Such assistance can be documented in the ordinary incident report but it is important to separate the incident statistics presented in previous chapters from assistance as described in this chapter. It is unclear how comprehensively the different fire brigades document assistance in incident reports. In particular fire brigades have a separate documentation to the health authorities when assisting the ambulance service, so some brigades may refrain from also recording these actions in incident reports collated by the MSB.

A wide range of assistance tasks are carried out by fire brigades. The one thing they have in common is that the Civil Protection Act does not demand an emergency response by the municipality. Fire brigades provide assistance to the ambulance or police services, and are also called out to burglar and care alarms as well as faults in automatic fire alarms or elevators. Over 18600 assistance tasks were reported by fire brigades in 2008. Diagram 29 shows the number of different kinds of assistance performed. The most common task is assistance while waiting for ambulance, which stood for half of all assistance. The next most common task was burglar alarm at 11% and other help to ambulance at 8%. For more detail see table 1.01 in the appendix.

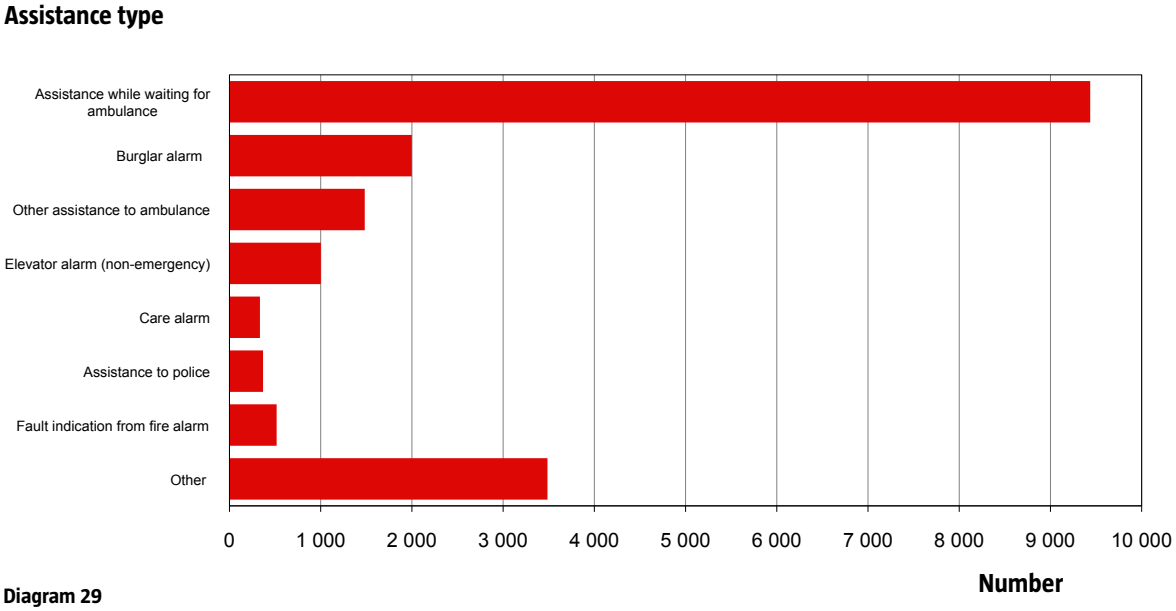

Diagram 29
Number of assistance tasks performed by municipal fire brigades, 2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

Table 4 shows the number of people given various forms of medical attention by firefighters at the various assistance tasks in 2008. It should be noted that defibrillation and oxygen are considered medical care and are carried out under the responsibility of the health authority while other forms of assistance are considered as first aid.

Table 4
Number of people receiving medical attention from firefighters at various assistance tasks, 2008
Source: Incident Statistics, Swedish Civil Contingencies Agency

Attention type	Number of people
Oxygen	4100
Comforting	2047
Free airway	1610
Resuscitation	899
Stabilising neck/spine	428
Prevention of trauma shock	421
Defibrillation	400
Placing in recovery position	312
Stopping bleeding	248
Stabilising broken limb	165
Cooling of burns	17
Decontamination	13
Other first-aid	554

National Rescue Services

The emergency response at most accidents is a municipal responsibility. However in certain circumstances the Civil Protection Act stipulates that national authorities must take responsibility. There are six national rescue services: mountain rescue, air search and rescue, maritime search and rescue, search for missing people on land/inland waters, maritime environmental protection and emission of radioactive substances from nuclear energy establishments.

Mountain Rescue

The police are responsible for search and rescue operations in mountainous areas when someone is missing and their life is at risk or health seriously threatened. The police are also responsible for rescuing accident victims or people who need immediate medical treatment or other help. The organisation for mountain rescue depends to a large extent on volunteers who are trained and equipped by the police.

Four county police authorities are responsible for mountain rescue: Dalarna, Jämtland, Västerbotten and Norrbotten. In 2008 227 mountain rescue operations were mounted. No statistics are available for 2007, but in 2006 182 operations took place. Diagram 30 shows the number of mountain rescue operations for the years 1996-2008, on average 240 operations per year. Two thirds of these operations were for illness or accidents, and one third searching for missing people.

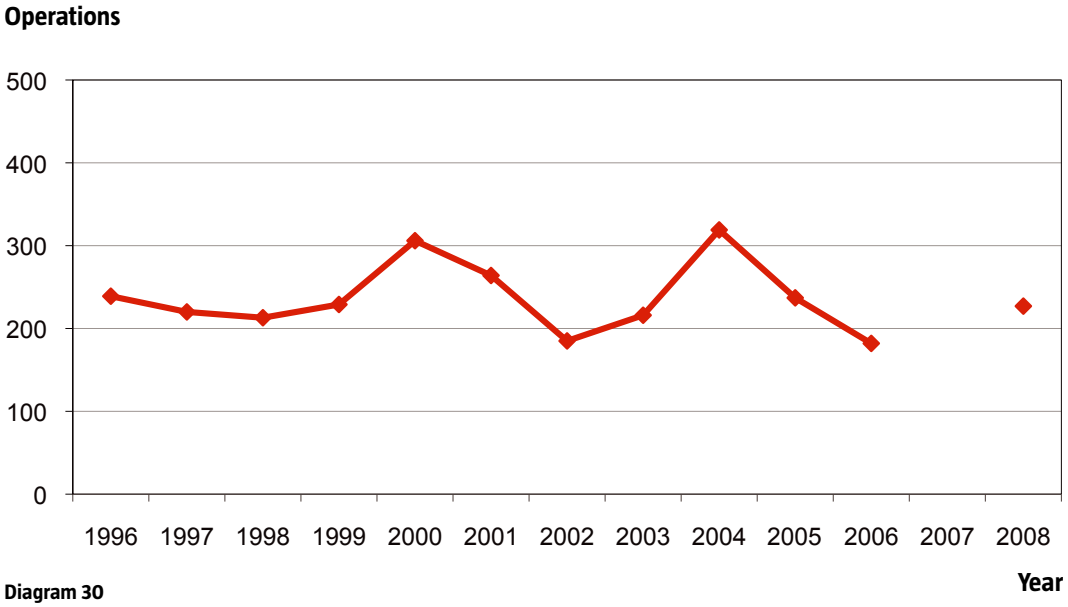

Diagram 30
Number of mountain rescue operations, 1996-2008
Source: Swedish National Police Board

Air Search and Rescue

In 2008 the Swedish Civil Aviation Administration was responsible for searching for missing aircraft and rescuing people in the event of aircraft crashes in Swedish territorial waters, in Sweden's economic zone or in one of the three largest lakes - Vänern, Vättern and Mälaren. The responsibility covers both civil and military aircraft. The Civil Aviation

Administration was also responsible for those operations required to prevent injury and damage when an aircraft is in distress or when a hazard threatens air traffic. (In 2009 responsibility for air search and rescue was transferred to the Swedish Maritime Administration.)

Once a crashed aircraft is located on land or inland waters other than the three largest lakes then the municipal fire brigade or mountain rescue take responsibility for the emergency response. When municipal fire brigades respond the accident they classify the incident as a traffic accident in their statistics. In 2008 municipal fire brigades reported that nine planes were involved in accidents that they attended. For more details see table 4.01 in the appendix.

In 2008 798 alarms were recorded by the Aeronautical Rescue Coordination Centre, ARCC. This was a reduction of 320 from 2007, as shown in diagram 31.

Alarms

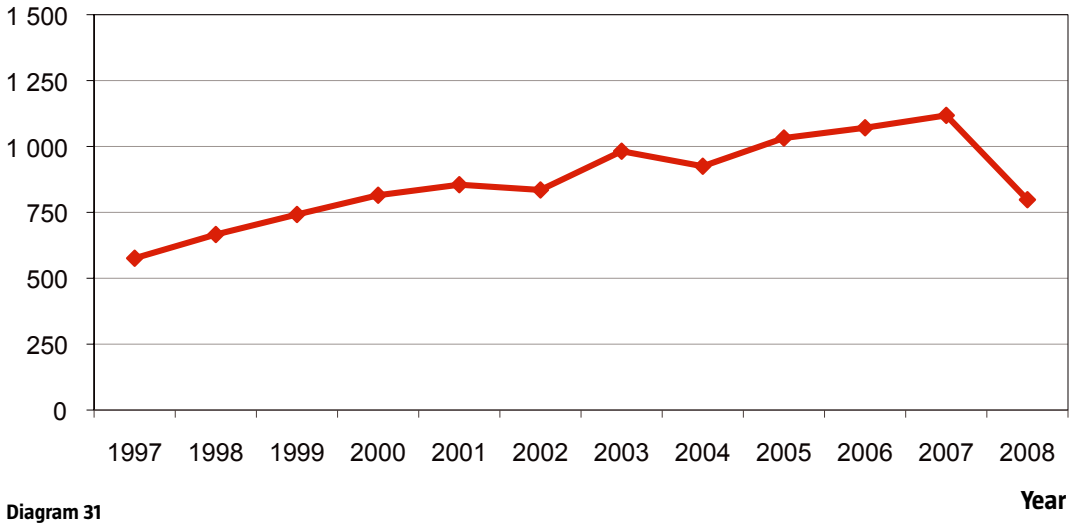

Diagram 31
Number of air search and rescue alarms, 1997-2008
Source: Swedish Civil Aviation Administration

Only a small proportion of all alarms were due to incidents and even fewer due to accidents. Table 5 shows the number of different kinds of alarms for the period 2001 to 2008.

Table 5
Number of air search and rescue alarms, 2001-2008
Source: Swedish Civil Aviation Administration

	Year							
Alarm type	2001	2002	2003	2004	2005	2006	2007	2008
Total	**855**	**835**	**982**	**925**	**1 032**	**1 071**	**1 118**	**798**
Incident/accident	56	45	40	55	52	54	62	57
False indication from warning lamp	304	312	296	315	295	299	287	213
Failure to notify arrival	193	226	237	228	234	242	253	285
False distress signal	231	201	338	300	354	439	458	181
Other	71	51	71	27	97	37	58	62

Table 6 shows the number of alarms, flights and flying hours per month in 2008. Most alarms came in during the months of May, June and July. A total of 176 flight operations took place.

Table 6
Number of air search and rescue alarms, flights and flying hours per month, 2008
Source: Swedish Civil Aviation Administration

Month	Number of alarms	Number of flights	Flying hours
Total	**798**	**176**	**25:12**
January	48	18	00.52
February	56	16	01.41
March	45	12	01.22
April	94	19	04.19
May	108	23	05.56
June	100	13	00.17
July	115	4	02.12
August	73	18	06.05
September	46	19	01.30
October	47	12	00.21
November	38	14	00.37
December	28	8	00.00

Maritime Search and Rescue

The Swedish Maritime Administration is responsible for the emergency response when someone is in distress or feared to be in distress in Swedish territorial waters, the Swedish economic zone or one of the three largest lakes - Vänern, Vättern and Mälaren. The Administration is also responsible for emergency medical transport from vessels in these waters.

In addition to its own vessels, the Swedish Maritime Administration can also use resources from other authorities and from voluntary organisations such as the Swedish Society for the Saving of Shipwrecked Persons.

The Swedish Maritime Administration is responsible for a national helicopter service with rescue helicopters available at 15 minute's notice round the clock from five locations round the coast. They also have contracts with six municipal fire brigades for personnel to mount emergency responses at sea.

In 2008 there were 1037 maritime search and rescue emergency responses, a reduction of about 20% from 2007. A total of 29 people died in accidents within the Swedish Maritime Administration's area of responsibility and nine are still recorded as missing. Only three of the total of 38 people were female. Many of the deaths occurred from leisure boats, and more such deaths took place in waters where municipalities are responsible. Diagram 32 shows the number of maritime search and rescue emergency responses per year from 1996 to 2008.

Incidents

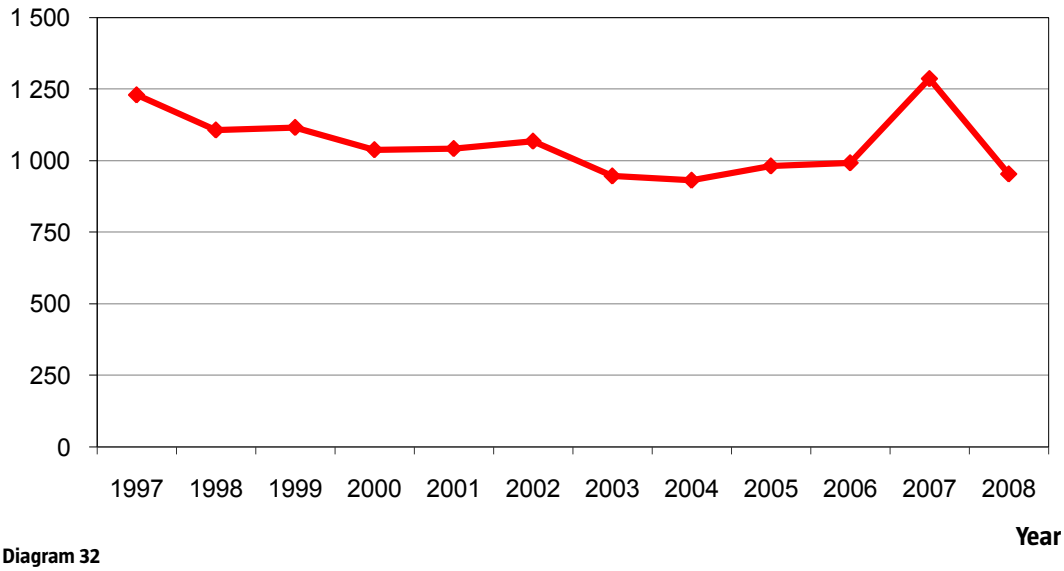

Diagram 32
Number of maritime search and rescue incidents, 1996-2008
Source: Swedish Maritime Administration

Diagram 33 shows the proportion of different kinds of maritime search and rescue alarms for 2008. Leisure boats were involved in over 70% of all alarms, while merchant vessels stood for 12%. People not in vessels accounted for 5%, a similar proportion as in the previous year.

Object

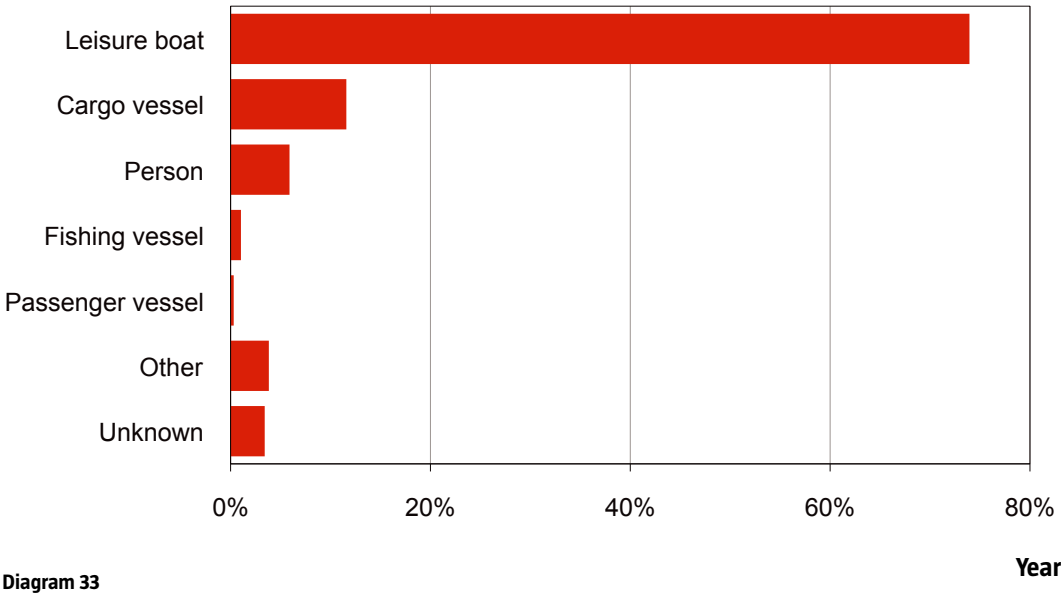

Diagram 33
Proportion of maritime search and rescue incidents per object, 2008
Swedish Maritime Administration

More than four of ten incidents with leisure boats were due to running aground or machinery failure. Three quarters of the operations to merchant vessels were for emergency medical transport.

Search for missing people on land/inland waters

When someone is missing but it is not a question of mountain rescue, air search and rescue or maritime search and rescue, then the police are responsible for the emergency response. In 2008 the police undertook 240 such operations.

Maritime Environmental Protection

The Swedish Coast Guard is responsible for the emergency response when there has been an emission of oil or other harmful substances or when there is imminent danger of such an emission in Swedish territorial waters, the Swedish economic zone or one of the three largest lakes - Vänern, Vättern and Mälaren. Emissions of harmful substances into watercourses, canals, harbours and other lakes are the responsibility of the municipal fire brigades. The Swedish Coast Guard also participate when necessary in air and maritime search and rescue operations.

In 2008 the Swedish Coast Guard confirmed 315 emissions, ten fewer than in 2007. The number of confirmed emissions has risen since 2001. The Swedish Coast Guard see several possible causes of this increase. Improved reporting routines by the Coast Guard, better monitoring from air and satellites as well as an increased reporting by the public have led to an increasing proportion of all emissions being discovered by the authorities. Now even very small releases are recorded and investigated. Since the middle of the 1990s the estimated volumes of releases have decreased dramatically and the vast majority are now insignificant. Other causes can also be technical improvements on ships and an increased awareness of the problems caused by oil emissions. Diagram 34 shows the number of confirmed oil emissions for the period 1988 to 2008.

The Swedish Coast Guard were unable to confirm one in four reported oil emissions. This can be due to the oil dispersing before Coast Guard personnel can get to the scene, or to something else such as algae being mistaken as an oil emission.

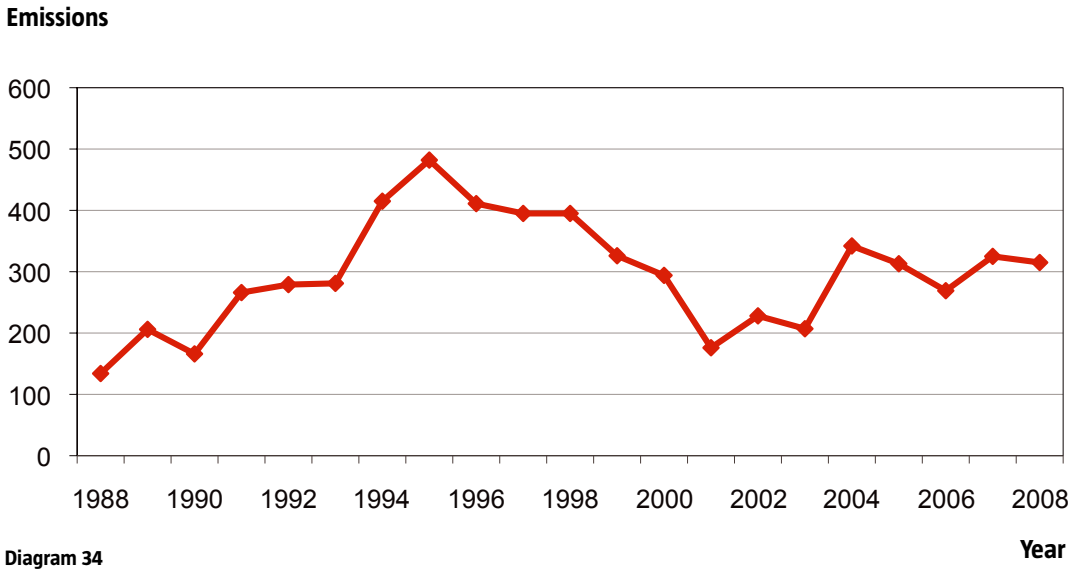

Diagram 34
Number of confirmed oil emissions, 1988-2008
Source: Swedish Coast Guard

Emission of radioactive substances from nuclear energy establishments

County administrative boards are responsible for the emergency response in the event of an emission of radioactive substances from a nuclear energy establishment or when there is imminent danger of such an emission. The county administrative board is also responsible for decontamination after such an emission. Fortunately no such event has affected Sweden since the Chernobyl accident in 1986.

Appendix - Statistical tables
Incident statistics for municipal fire brigades, 2008

Statistical tables - Contents

Table 1.00

Emergency responses by municipal fire brigades, 1996-2008

The table shows the number of municipal emergency responses per incident type from 1996 to 2008.
Figures from 1996 to 2004 are based on the incident report from 1996. Figures from 2005 are based on the revised incident report from 2005.

Incident type[1]	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Emergency/potential emergency													
Building fire	13 255	12 290	11 166	11 186	10 826	10 981	10 735	11 050	9 719	10 324	10 502	11 110	10 887
Non-building fire	17 417	18 677	10 844	14 374	14 546	14 724	16 263	18 038	15 022	15 726	16 604	16 092	17 806
Traffic accident	7 530	7 835	8 098	8 747	9 608	10 732	11 950	12 220	12 420	12 724	12 781	13 913	14 401
Emission of dangerous substance	2 451	2 008	2 061	2 245	1 970	1 910	1 709	1 569	1 578	1 920	2 151	2 360	2 478
Drowning	525	610	484	556	526	544	568	554	451	399	366	385	369
Storm damage	477	1 256	551	3 579	728	685	977	1 104	450	3 050	311	1 710	858
Person in danger										858	973	1 188	1 144
Animal in danger	1 028	1 012	935	967	834	931	927	808	663	597	610	657	586
Building collapse, other collapse	47	82	56	64	94	97	76	79	58	33	55	42	61
Falling rocks/Landslide[2]										10	11	17	17
Water damage	2 000	2 394	1 528	2 129	1 851	1 782	2 067	1 700	1 385	1 497	2 093	1 884	1 024
Flooding of watercourse[3]										209	578	390	182
Other emergency	3 163	3 431	2 909	2 992	2 299	2 461	2 659	2 490	2 295	3 568	3 519	3 617	3282
False alarm													
Fire/gas, apparatus[4]	30 924	32 036	29 248	31 656	31 913	33 736	34 101	33 077	31 433	30 279	32 106	32 552	31 705
Fire, good intent	7 322	8 158	7 565	8 271	7 778	8 583	8 888	8 633	7 795	6 030	5 705	5 662	5871
Fire, malicious	384	391	442	457	445	427	358	365	321	557	546	668	693
Rescue good intent	1 052	899	910	1 011	1 202	1 218	1 174	1 246	1 071	840	779	783	858
Rescue, malicious	67	75	79	71	76	87	70	79	82	104	122	118	149
Incident type not specified	815	51	39	17	1		1			187			
Total number of emergency responses	**88 457**	**91 205**	**76 915**	**88 322**	**84 697**	**88 898**	**92 523**	**93 011**	**84 743**	**88 912**	**89 812**	**93 148**	**92 371**

1) An incident can relate to several incident types. In this table every incident is shown in only one incident type. Incident types are given priority according to their order in the table. Incidents are only included in these statistics if a fire brigade attended the incident.
2) Falling rocks/landslide separated from collapse from 2005.
3) Flooding of watercourse separated from water damage from 2005.
4) False automatic fire/gas alarm includes gas alarms from 2005.

Table 1.01

Number of incidents per incident type, 2008

The table shows the number of incidents requiring an emergency response by the municipal fire brigades together with the number of people injured per incident type.

Incident type[1]	Incidents[2]		Number of injuries[3]		
	Number	Percent	Fatalities	Major injuries	Minor injuries
Emergency/potential emergency					
Building fire	10 887	11,8%	88	132	915
Non-building fire	17 806	19,3%	11	25	86
Traffic accident	14 401	15,6%	287	3 098	13 816
Emission of dangerous substance	2 478	2,7%	2	8	62
Drowning	369	0,4%	93	28	94
Person in danger	1 144	1,2%	42	133	297
Animal in danger	586	0,6%		1	4
Storm damage	858	0,9%			1
Falling rocks/Landslide	17	0,0%	1	1	2
Building collapse, other collapse	61	0,1%	3	12	15
Flooding of watercourse	182	0,2%			
Water damage	1 024	1,1%		1	2
Other emergency	3 282	3,6%	104	39	108
False alarm					
Fire/gas, apparatus	31 705	34,3%		2	8
Fire, good intent	5 871	6,4%	2	5	37
Fire, malicious	693	0,8%			
Rescue good intent	858	0,9%		6	44
Rescue, malicious	149	0,2%			2
Total emergency responses	**92 371**	**100,0%**	**633**	**3 491**	**15 493**
Other assistance					
Assistance while waiting for ambulance	9 436	50,7%	869	1 796	2 883
Other assistance to ambulance	1 483	8,0%	97	274	412
Assistance to police	368	2,0%	47	7	10
Fault indication from fire alarm	517	2,8%			
Water transport	323	1,7%			
Diving	21	0,1%	3		2
Safety guard	44	0,2%			
Care alarm	334	1,8%	1	1	6
Break in alarm	1 999	10,7%			2
Elevator alarm (non-emergency)	1 002	5,4%	1		
Other	3 098	16,6%	15	12	60
Total other assistance	**18 625**	**100,0%**	**1 033**	**2 090**	**3 375**

1) An incident can relate to several incident types. In this table every incident is shown in only one incident type. Incident types are given priority according to their order in the table.
2) Incidents are only included in these statistics if a fire brigade attended the incident..
3) Incident commander's assessment when documenting response in incident report.
4) Some brigades do not record other assistance in incident reports so these statistics are probably not comprehensive.

Table 1.03h
Number of incidents per hour, 2008
The table shows how the rates of different kinds of incidents vary over the day.

Sweden

Incident type[1, 2]	Hour[3]																							
	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Total
Emergency/ potential emergency																									
Building fire	430	354	315	302	230	250	254	279	279	393	489	486	523	512	533	567	647	574	641	649	618	591	528	443	10 887
Non-building fire	818	721	644	537	462	369	348	376	356	410	493	609	721	834	959	978	1 043	1 015	1 035	1 042	1 026	1 094	989	927	17 806
Traffic accident	287	234	206	186	179	244	473	641	615	558	599	677	805	887	1 007	1 055	1 301	1 065	806	666	621	502	422	365	14 401
Emission of danger-ous substance	35	20	26	24	15	24	54	103	169	172	190	188	165	172	153	159	145	144	119	107	104	84	58	48	2 478
Drowning	10	12	17	17		5	3	6	4	7	14	18	21	25	19	23	26	28	20	25	23	14	18	14	369
Person in danger	39	32	26	17	14	16	16	25	35	41	49	74	64	72	67	78	84	67	82	78	54	44	41	29	1 144
Animal in danger	4	1	1	1		10	10	20	29	35	44	37	44	55	43	31	42	36	43	35	28	13	15	9	586
Storm damage	23	16	6	8	6	7	13	19	18	33	33	38	32	48	43	43	52	65	87	71	70	54	48	25	858
Falling rocks/ Landslide		2							1	1	1	1		4	3			1	1		1	1			17
Building collapse/ other collapse	1	1	2	2			1		2	6	3	4	2	5	3	2	7	5	4	1	2	3	5		61
Flooding of watercourse	8	5	1	3	4	5	4	3	9	7	8	15	10	10	11	9	11	13	8	12	8	5	7	6	182
Water damage	30	28	22	21	29	16	21	37	46	46	51	50	54	50	38	36	51	72	60	69	63	54	54	26	1 024
Other emergency	114	85	66	57	39	55	63	84	108	149	145	172	170	188	175	199	191	199	191	197	187	169	166	113	3 282
False alarm																									
Fire/gas, apparatus	696	616	612	588	558	619	794	1 406	1 829	1 934	2 422	2 227	2 056	2 185	1 970	1 810	1 568	1 502	1 413	1 278	1 051	970	835	766	31 705
Fire, good intent	200	138	109	103	70	97	93	141	165	182	175	233	253	275	288	296	359	373	413	413	400	430	372	293	5 871
Fire, malicious	29	33	29	12	14	5	3	14	9	18	20	26	26	21	32	38	43	39	56	45	51	55	42	33	693
Rescue good intent	28	15	13	13	10	20	13	25	30	44	40	48	60	34	46	62	54	49	59	39	47	45	37	27	858
Rescue, malicious	6	3	1	2		6	4	4	2	1	8	14	6	8	4	10	15	6	11	6	9	9	7	7	149
Total	**2 758**	**2 316**	**2 096**	**1 893**	**1 630**	**1 748**	**2 167**	**3 183**	**3 706**	**4 037**	**4 784**	**4 917**	**5 012**	**5 385**	**5 394**	**5 396**	**5 639**	**5 253**	**5 049**	**4 733**	**4 363**	**4 137**	**3 644**	**3 131**	**92 371**
Percent	3,0%	2,5%	2,3%	2,0%	1,8%	1,9%	2,3%	3,4%	4,0%	4,4%	5,2%	5,3%	5,4%	5,8%	5,8%	5,8%	6,1%	5,7%	5,5%	5,1%	4,7%	4,5%	3,9%	3,4%	100,0%

1) An incident can relate to several incident types. In this table every incident is shown in only one incident type. Incident types are given priority according to their order in the table.
2) Incidents are only included in these statistics if a fire brigade attended the incident.
3) 00 - 01 = 00.00.00 - 00.59.59, etc.

Table 1.04h
Number of incidents per day of the week, 2008
The table shows how the rates of different kinds of incidents vary over the week.

Sweden

Incident type[1, 2]	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
Emergency/potential emergency								
Building fire	1 479	1 585	1 472	1 529	1 568	1 672	1 582	10 887
Non-building fire	2 298	2 550	2 374	2 362	2 421	2 994	2 807	17 806
Traffic accident	2 104	2 011	1 929	2 136	2 323	2 094	1 804	14 401
Emission of dangerous substance	360	394	357	399	421	276	271	2 478
Drowning	36	39	44	45	63	72	70	369
Person in danger	158	152	141	158	176	201	158	1 144
Animal in danger	84	93	76	72	73	90	98	586
Storm damage	109	82	32	97	225	230	83	858
Falling rocks/Landslide	5	1		1	1	3	6	17
Building collapse, other collapse	13	9	9	4	11	8	7	61
Flooding of watercourse	31	20	15	18	29	29	40	182
Water damage	176	103	100	97	154	194	200	1 024
Other emergency	446	480	444	424	517	513	458	3 282
False alarm								
False fire call - apparatus	4 972	4 994	5 289	4 969	4 806	3 493	3 182	31 705
False fire call - good intent	784	805	855	780	849	982	816	5 871
False fire call - malicious	105	83	90	96	90	107	122	693
False rescue call - good intent	117	153	100	105	126	135	122	858
False rescue call - malicious	24	17	23	30	22	16	17	149
Total	**13 301**	**13 571**	**13 350**	**13 322**	**13 875**	**13 109**	**11 843**	**92 371**
Percent	14,4%	14,7%	14,5%	14,4%	15,0%	14,2%	12,8%	100,0%

1) An incident can relate to several incident types. In this table every incident is shown in only one incident type. Incident types are given priority according to their order in the table.
2) Incidents are only included in these statistics if a fire brigade attended the incident.

Table 1.05h
Number of incidents per month, 2008
The table shows how the rates of different kinds of incidents vary over the year.

Sweden

Incident type[1, 2]	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Emergency/potential emergency													
Building fire	1 070	897	887	889	997	883	840	711	821	822	841	1 229	10 887
Non-building fire	956	719	832	2 029	2 904	3 394	2 091	1 124	1 037	867	732	1 121	17 806
Traffic accident	1 195	972	1 119	954	1 211	1 292	1 331	1 238	1 142	1 316	1 313	1 318	14 401
Emission of dangerous substance	125	147	164	204	255	257	280	237	249	243	166	151	2 478
Drowning	15	22	16	22	41	41	82	43	22	20	23	22	369
Person in danger	58	85	80	93	100	103	135	113	102	107	86	82	1 144
Animal in danger	41	39	43	43	58	64	86	51	38	42	42	39	586
Storm damage	234	266	26	3	4	51	7	142	15	38	51	21	858
Falling rocks/Landslide	1	3	1	2			1	2		3	2	2	17
Building collapse, other collapse	3	4	4	3	5	9	6	9	4	7	2	5	61
Flooding of watercourse	13	14	10	2	13	7	12	34	15	35	8	19	182
Water damage	85	58	84	46	65	63	145	146	87	95	62	88	1 024
Other emergency	244	231	243	217	314	373	332	303	266	256	242	261	3 282
False alarm													
False fire call - apparatus	2 515	2 276	2 404	2 318	2 405	2 588	2 663	3 158	2 970	2 857	2 757	2 794	31 705
False fire call - good intent	405	396	427	489	595	772	582	428	429	424	423	501	5 871
False fire call - malicious	48	36	47	85	60	87	48	52	44	60	58	68	693
False rescue call - good intent	65	52	51	61	87	97	94	84	63	74	67	63	858
False rescue call - malicious	9	7	11	5	12	18	18	16	14	13	16	10	149
Total	**7 082**	**6 224**	**6 449**	**7 465**	**9 126**	**10 099**	**8 753**	**7 891**	**7 318**	**7 279**	**6 891**	**7 794**	**92 371**
Percent	7,7%	6,7%	7,0%	8,1%	9,9%	10,9%	9,5%	8,5%	7,9%	7,9%	7,5%	8,4%	100,0%

1) An incident can relate to several incident types. In this table every incident is shown in only one incident type. Incident types are given priority according to their order in the table.
2) Incidents are only included in these statistics if a fire brigade attended the incident.

Table 1.06h

Number of incidents and man-hours per incident type, 2008

The table shows the number of incidents and man-hours for the emergecy response by incident type.

Sweden

Incident type[1, 2]	Number of incidents	Man-hours Emergency response			Man-hours Emergency response, stand-by, command support and equipment care after response		
		Full time	Part time	Volunteer	Full time	Part time	Volunteer
Emergency/potential emergency							
Building fire	10 887	85 770	75 583	3 799	88 744	82 495	3 855
Non-building fire	17 806	71 098	80 371	8 859	73 721	85 457	8 942
Traffic accident	14 401	45 920	42 379	1 501	47 471	45 091	1 527
Emission of dangerous substance	2 478	9 014	5 200	156	9 277	5 493	165
Drowning	369	2 009	1 318	47	2 069	1 548	47
Person in danger	1 144	2 904	1 912	107	3 035	2 065	107
Animal in danger	586	1 687	2 175	93	1 798	2 335	95
Storm damage	858	1 680	1 224	85	1 746	1 290	85
Falling rocks/Landslide	17	121	41	24	125	92	24
Building collapse, other collapse	61	277	88	3	288	93	3
Flooding of watercourse	182	565	677	71	590	687	71
Water damage	1 024	3 455	1 838	43	3 607	1 946	43
Other emergency	3 282	9 937	5 286	182	10 432	5 796	182
False alarm							
False fire call - apparatus	31 705	70 306	41 053	470	72 036	42 197	475
False fire call - good intent	5 871	13 742	5 521	170	14 052	5 757	170
False fire call - malicious	693	1 247	493	5	1 265	535	5
False rescue call - good intent	858	2 099	741	13	2 154	787	13
False rescue call - malicious	149	426	81	6	447	94	6
Total	**92 371**	**322 257**	**265 981**	**15 634**	**332 857**	**283 758**	**15 815**

1) An incident can relate to several incident types. In this table every incident is shown in only one incident type. Incident types are given priority according to their order in the table.
2) Incidents are only included in these statistics if a fire brigade attended the incident.

Table 1.09h
Number of people receiving medical assistance from firefighters at emergency responses, 2008
The table shows how many people received medical attention from firefighters at emergency responses and the kinds of first aid they were given.

Sweden	
First aid	Number of people[1]
Stabilising neck/spine	6 001
Comforting	4 809
Prevention of trauma shock	2 815
Oxygen[2]	1 212
Free airway	942
Stopping bleeding	544
Stabilising broken limb	443
Placing in recovery position	291
Resuscitation	150
Cooling of burns	84
Defibrillation[2]	34
Decontamination	30
Other first-aid	560
Total number of people receiving first aid: 12 993	

1) A person can receive several forms of first aid.
2) Medical treatment under the authority of ambulance doctor..

Table 1.11
Equipment faults at emergency responses, 2008
The table shows how often the fire brigades noted equipment faults during emergency responses and the kind of equipment that was faulty.

Sweden	
Equipment fault	Number of incidents[1]
Radio for use with breathing apparatus	204
Hose leak between pump and nozzle	141
Pump on fire appliance	111
Tool/machine	90
Other hose leak	77
Breathing apparatus	72
Free standing fire pump	64
Fire hydrant	43
Nozzle	34
Aerial vehicle	31
Other fault	1 171
Ej angiven	1 571
Number of incident reports where no faults were noted: 92 496 of 95 930 in total.	

1) An emergency response can have faults in several kinds of equipment.

Table 1.12
Delayed emergency responses, 2008
The table shows how often the fire brigades noted delays during emergency responses and their causes..

Sweden	
Cause of delay	Number of incidents[1]
Wrong address	1 197
Misleading information on arrival	349
Blocked access for fire vehicles	164
Door	163
Lack of equipment/training	102
Gas cylinder	65
Long distance from point of entry	54
Other	2 394
Number of incident reports where no delays were noted: 89 761 of 95 930 in total.	

1) An emergency response can be delayed for several reasons.

Table 2.02
Number of building fires and injuries per building type, 2008
The table shows the number of fires attended by fire brigades per building type and how many people were injured or killed at these fires.

Sweden

Building category Building type	Fires		Number of injuries[1]		
	Number	Percent	Fatalities	Major injuries	Minor injuries
Public building					
Shop	243	2,2%			4
Hospital	84	0,8%			1
Care of the elderly	268	2,5%		4	18
Psychiatric care	77	0,7%		2	1
Prison	19	0,2%		2	3
Other care centre	218	2,0%	2	5	26
Theatre/cinema/museum/library	31	0,3%			1
Church etc	26	0,2%			1
Restaurant/nightclub	158	1,5%			13
Hotel/guest house	93	0,9%	3	1	5
Military building	7	0,1%			
School	512	4,7%			4
Youth club	20	0,2%			
Nursery school	70	0,6%			2
Student hall	28	0,3%		2	3
Sport facility	86	0,8%			3
Transport/communication	21	0,2%			
Office	116	1,1%			9
Other public building	188	1,7%	3	2	6
Total Public building	**2 265**	**20,8%**	**8**	**18**	**100**
Home					
Detached house	2 687	24,7%	34	29	227
Semi-detached/terraced house	196	1,8%	7	6	27
Block of flats	2 845	26,1%	33	70	483
Summer cottage	276	2,5%	3	1	14
Total Home	**6 004**	**55,1%**	**77**	**106**	**751**
Industrial building					
Various occupants	69	0,6%			1
Chemical industry	108	1,0%			1
Food industry	91	0,8%		1	6
Engineering industry	319	2,9%			2
Textile/clothing industry	5	0,0%			
Timber industry	171	1,6%		1	3
Other production industry	266	2,4%		1	5
Repair workshop	54	0,5%		1	4
Warehouse	75	0,7%			
Other industrial building	75	0,7%			2
Total Industrial building	**1 233**	**11,3%**	**0**	**4**	**24**

1) Incident commander's assessment when documenting response in incident report.

Tabell 2.02 (forts.)

Building category Building type	Fires		Number of injuries[1]		
	Number	Percent	Fatalities	Major injuries	Minor injuries
Other building					
Petrol station	12	0,1%			1
Agriculture (not farmhouse)	199	1,8%			5
Power station/district heating	100	0,9%		1	
Refuse/sewage/water purification	122	1,1%			
Multi-storey car park	57	0,5%			4
Building site	15	0,1%			
Demolition site	64	0,6%			
Tunnel/underground building	7	0,1%			
Other building - miscellaneous	551	5,1%	2		10
Total Other building	**1 127**	**10,4%**	**2**	**1**	**20**
Not specified	258	2,4%		1	1
Total all buildings	**10 887**	**100,0%**	**87**	**130**	**896**

1) Avser räddningsledarens bedömning i samband med insatsen.

Table 2.03

Number of building fires per room of origin, 2008

The table shows how many fires were attended by fire brigades per room of origin for the different building categories.

Sweden

Room of origin[1]	Public building	Home	Industrial building	Other building	Not specified	Total	
						Number	Percent[2]
Kitchen	542	1 655	22	15	33	2 267	20,8%
Chimney	12	1 098	15	22	8	1 155	10,6%
Outside building	192	224	68	79	20	583	5,4%
Freestanding storehouse	105	114	21	256	38	534	4,9%
Production area	6	2	464	19	8	499	4,6%
Living room	60	426	2	2	7	497	4,6%
Boiler room	38	265	39	73	5	420	3,9%
Rubbish room/rubbish chute	33	196	2	113	17	361	3,3%
Bedroom/dormitory	92	255		1	11	359	3,3%
Cellar	30	227	11	6		274	2,5%
Stairwell	43	214		4	3	264	2,4%
Balcony/patio	22	233		1	6	262	2,4%
Laundry room	38	143	2	4	1	188	1,7%
Bathroom/toilet	97	70	2	3	3	175	1,6%
Corridor	145	17	4	3	1	170	1,6%
Freestanding garage	7	69	8	57	7	148	1,4%
Workshop	12	3	103	21	6	145	1,3%
Landing	26	110	5	2	1	144	1,3%
Garage (inbuilt)	15	77	3	35	2	132	1,2%
Assembly hall	111	4	1	4	2	122	1,1%
Attic	17	96	2	2	1	118	1,1%
Ventilation room	31	12	66	3	1	113	1,0%
Sauna	25	49	3	29	4	110	1,0%
Sales area	93	4	4	6	2	109	1,0%
Storage area	22	2	69	11	2	106	1,0%
Storeroom	25	70	2	2	2	101	0,9%
Electricity distribution	28	3	42	18	4	95	0,9%
Personnel area	57	3	12	4	3	79	0,7%
Office	40	8	17	3	3	71	0,7%
Barn/hay store		4		60	4	68	0,6%
Silo	2	4	30	10	3	49	0,5%
Garage (row)		12		12	1	25	0,2%
Animal stall/stable		1		22		23	0,2%
Storage yard	1	1	7	11	2	22	0,2%
Computer hall	10		5			15	0,1%
Loading bay	8	1	2	1	1	13	0,1%
Cistern/tank			9	1		10	0,1%
Outside walkway	2					2	0,0%
Other	329	290	211	197	49	1 076	9,9%
Unknown	45	250	30	80	9	414	3,8%
Total number of fires	**2 265**	**6 004**	**1 233**	**1 127**	**258**	**10 887**	

1) A fire can have several rooms of origin.

2) Percentages are based on the total number of fires.

Table 2.04
Number of building fires per object of origin, 2008
The table shows how many fires were attended by fire brigades per object of origin for the different building categories.

Sweden

Object of origin[1]	Public building	Home	Industrial building	Other building	Not specified	Total	
						Number	Percent[2]
Cooker	318	1 074	14	7	26	1 439	13,2%
Smoke duct	9	990	18	32	9	1 058	9,7%
Paper/cardboard	241	233	38	56	16	584	5,4%
Facade	161	208	42	98	23	532	4,9%
Fire place	22	385	9	45	4	465	4,3%
Other loose fittings	115	280	18	34	11	458	4,2%
Heating appliance	48	149	48	43	3	291	2,7%
Other electrical installation	66	116	63	21	5	271	2,5%
Machine	5	8	218	14	3	248	2,3%
Rubbish	36	87	19	92	14	248	2,3%
Fan/ventilation	38	50	96	7	5	196	1,8%
Strip light	83	45	26	10	1	165	1,5%
Fuse box/panel	44	48	38	20	7	157	1,4%
Bed	28	108	1	3	5	145	1,3%
Sofa/armchair	15	106	3	8	1	133	1,2%
Car	11	48	22	36	10	127	1,2%
Clothing	35	74	1	5	3	118	1,1%
Flammable liquid	39	42	20	14	2	117	1,1%
Washing machine	12	72	2	1	2	89	0,8%
Lamp bulb	20	45	1	4	3	73	0,7%
Tumble drier	15	52	3	3		73	0,7%
TV	9	60	1	1	2	73	0,7%
Fridge/freezer	21	39	3	6		69	0,6%
Sauna appliance	17	30	3	13		63	0,6%
Dishwasher	18	29	3	1		51	0,5%
Curtains	20	30				50	0,5%
Transformer	8	10	12	15	1	46	0,4%
Coffee maker	16	7	4	1		28	0,3%
Computer	7	15	6			28	0,3%
Drying cupboard	5	10	1	3		19	0,2%
Other road vehicle	3	7	5	4		19	0,2%
Flammable gas	3	8	4	2		17	0,2%
Explosive	8	6				14	0,1%
Iron	5	5	1			11	0,1%
Stereo/video/DVD	3	6	1			10	0,1%
Other	692	1 182	417	260	72	2 623	24,1%
Unknown	187	644	103	317	44	1 295	11,9%
Total number of fires	**2 265**	**6 004**	**1 233**	**1 127**	**258**	**10 887**	

1) A fire can have several objects of origin.
2) Percentages are based on the total number of fires.

Table 2.05

Number of building fires per direct fire cause, 2008

The table shows how many fires were attended by fire brigades per direct fire cause for the different building categories.

Sweden

Direct fire cause	Public building	Home	Industrial building	Other building	Not specified	Total	
						Number	Percent
Arson	610	517	39	249	56	1 471	13,5%
Technical fault	326	554	272	121	22	1 295	11,9%
Cooking appliance left on	281	1 023	8	6	18	1 336	12,3%
Chimney fire	8	1 028	6	10	9	1 061	9,7%
Heat transfer	120	340	186	82	11	739	6,8%
Smoking	90	254	6	11	10	371	3,4%
Sparks	14	104	124	36	6	284	2,6%
Candle	77	207	1	4	1	290	2,7%
Spontaneous combustion	46	84	70	19	4	223	2,0%
Hot work	21	30	72	20	8	151	1,4%
Child playing with fire	48	72	1	26	3	150	1,4%
Friction	15	5	112	8	1	141	1,3%
Fireworks	44	49	2	4	2	101	0,9%
Re-ignition	5	48	17	23	4	97	0,9%
Lightning	5	55	3	19		82	0,8%
Explosion	2	10	11	2		25	0,2%
Other	222	468	100	95	28	913	8,4%
Unknown	331	1 156	203	392	75	2 157	19,8%
Total	**2 265**	**6 004**	**1 233**	**1 127**	**258**	**10 887**	**100,0%**

Table 2.06
Building fires by fire size on arrival, 2008
The table shows the fire size on arrival of the fire brigade for fires in the different building categories.

Sweden

Fire size on arrival	Public building	Home	Industrial building	Other building	Not specified	Total	
						Number	Percent
Fire extinguished/gone out	1 051	1 769	460	129	58	3 467	31,8%
Only smoke	474	1 343	271	138	47	2 273	20,9%
Fire in object of origin	394	1 327	270	359	75	2 425	22,3%
Fire in room of origin	272	1 027	182	387	55	1 923	17,7%
Fire in several rooms in same fire cell	57	429	33	73	16	608	5,6%
Fire in several fire cells	16	105	15	41	4	181	1,7%
Not specified	1	4	2		3	10	0,1%
Total	**2 265**	**6 004**	**1 233**	**1 127**	**258**	**10 887**	**100,0%**

Table 2.07
Building fires by fire spread, 2008
The table shows how far fires attended by fire brigades spread before being put out or going out.
Fire spread is shown for the different building categories.

Sweden

Fire contained in:	Public building	Home	Industrial building	Other building	Not specified	Total	
						Number	Percent
Object of origin	1 558	3 360	815	421	146	6 300	57,9%
Room of origin	426	1 461	243	328	59	2 517	23,1%
Fire cell of origin	103	421	61	41	9	635	5,8%
Building of origin	159	684	95	285	40	1 263	11,6%
Fire spread to other buildings	17	74	17	52	2	162	1,5%
Not specified	2	4	2		2	10	0,1%
Total	**2 265**	**6 004**	**1 233**	**1 127**	**258**	**10 887**	**100,0%**

Table 2.10
Emergency response at building fires, 2008
The table shows the actions taken by fire brigades in the emergency reponse to fires in the different building categories.

Sweden

Action[1]	Public building	Home	Industrial building	Other building	Not specified	Total	
						Number	Percent[2]
Venting smoke to prevent fire spread	1 007	2 724	470	339	78	4 618	42,4%
Inspection with infra-red camera, not while fire fighting using breathing apparatus	509	2 016	394	278	55	3 252	29,9%
Interior extinguishing	458	1 811	388	383	63	3 103	28,5%
Breathing apparatus, other than life-saving	381	1 476	301	293	54	2 505	23,0%
External extinguishing from groud	347	942	222	597	97	2 205	20,3%
Door breaking	182	688	58	114	26	1 068	9,8%
Infra-red camera when fire fighting using breathing apparatus	141	633	109	82	21	986	9,1%
Preventing swelling soot from blocking smoke duct	5	877	5	6	7	900	8,3%
Breathing apparatus, life-saving	64	417	17	27	4	529	4,9%
Extinguishing from aerial vehicle	62	189	84	48	14	397	3,6%
Protection of nearby buildings	41	195	44	103	6	389	3,6%
Shutting off electricity/gas	59	223	52	39	9	382	3,5%
Shooting of gas cylinder	1	4	5	4		14	0,1%
Other actions	251	516	103	42	20	932	8,6%
No actions taken	1 022	1 277	417	154	63	2 933	26,9%
Total	**2 265**	**6 004**	**1 233**	**1 127**	**258**	**10 887**	

1) The emergency response at a fire can involve several actions.
2) Percentages are based on the total number of fires.

Table 3.01
Number of non-building fires per object, 2008
The table shows how many non-building fires that the fire brigades attend for the different categories of objects.

Sweden

Object	Fires		Burned area in hectares	
	Number[1]	Percent[2]	Area	Percent
Terrain[3]	5 420	30,4%	6 113	100,0%
Forest (including felled areas)	849	4,8%	4 280	70,0%
Other wooded land	2 390	13,4%	1 377	22,5%
Non-wooded land	2 282	12,8%	456	7,5%
Litter bin	531	3,0%		
Rubbish bin	625	3,5%		
Rubbish skip	1 691	9,5%		
Rubbish tip	305	1,7%		
Car	3 376	18,9%		
Bus/coach	139	0,8%		
Lorry	293	1,6%		
Caravan/motor caravan	165	0,9%		
Other road vehicle	144	0,8%		
Ship/boat	60	0,3%		
Forestry machine	23	0,1%		
Agricultural machine	77	0,4%		
Other machine	109	0,6%		
Rail vehicle	34	0,2%		
Tent	11	0,1%		
Other	5 519	31,0%		
Not specified	21	0,1%		
Total number of non-building fires[4]:	**17 821**			

1) A non-building fire can involve several objects.
2) Percentages are based on the total number of non-building fires.
3) A terrain fire involves one or more of the categories Forest, Other wooded land and Non-wooded land.
4) The total is for all non-building fires and includes some fires which also affected buildings. The total can therefore be slightly higher than the corresponding figure in table 1.01.

Table 3.02
Number of terrain fires per direct fire cause, 2008
The table shows how many fires are attended by fire brigades per direct fire causes in the different terrain types.

Sweden

Direct fire cause	Forest, incl. felled areas	Other wooded land	Non-wooded land	Terrain[1]	
				Number	Percent
Arson	55	296	210	553	10,2%
Camp fire/grill	66	279	175	517	9,5%
Child playing with fire	25	183	190	394	7,3%
Fire spread when burning other things than grass	31	97	237	356	6,6%
Lightning	179	103	37	311	5,7%
Fire spread when burning grass	12	44	161	198	3,7%
Re-ignition	37	96	58	187	3,5%
Other sparks	60	43	71	170	3,1%
Sparks from train brakes	11	17	90	112	2,1%
Smoking	13	35	62	107	2,0%
Fireworks	4	22	35	60	1,1%
Spontaneous combustion	6	14	22	39	0,7%
Heat transfer	5	9	7	21	0,4%
Friction	11	2	8	20	0,4%
Technical fault		6	13	19	0,4%
Hot work	1	3	4	7	0,1%
Explosion		3	4	7	0,1%
Transport accident		1	1	2	0,0%
Other	77	92	108	272	5,0%
Unknown	256	1 045	789	2 068	38,2%
Total	**849**	**2 390**	**2 282**	**5 420**	100,0%

1) Fires sometimes affect more than one kind of terrain. The figure for Terrain can therefore be slightly lower than the sum of the figures for the different terrain types.

Table 3.03
Number of non-building fires (except terrain fires) per direct fire cause, 2008
The table shows how many fires are attended by fire brigades per direct fire causes in the different object categories.

Sweden

Direct fire cause	Object[1]				
	Road vehicle[2]	Rubbish container	Rubbish tip	Machine[4]	Rail, water and air traffic[5]
Arson	1 145	1 172	52	10	6
Technical fault	811	2		76	25
Heat transfer	102	18	4	19	10
Spontaneous combustion	63	35	48	10	2
Friction	50		2	7	2
Transport accident	24			1	
Re-ignition	10	36	18	2	
Other sparks	10	3	3	7	1
Child playing with fire	10	117	6		1
Explosion	9		1	1	4
Hot work	8	5	2		2
Fireworks	7	118	2		
Fire spread when burning other than grass	4	63	49	1	1
Smoking	3	27			
Camp fire/grill	1	67	1		1
Fire spread when burning grass		1	1		
Sparks from train brakes					12
Lightning			1		1
Other	180	95	12	14	3
Unknown	1 680	1 088	103	61	23
Totalt	**3 869**	**2 841**	**301**	**229**	**104**

1) Fires sometimes affect more than one kind of object. The figures for the various groups can therefore be slightly lower than the sum for the individual elements of the group. The categories Tent, Other and Not specified are not included.
2) The group Road vehicle includes Car, Bus/coach, Lorry, Caravan/motor caravan and Other road vehicle.
3) The group Rubbish container includes Litter bin, Rubbish bin and rubbish skip.
4) The group Machine includes Agricultural machine, Forestry machine and Other machine.
5) The group Rail, water and air traffic includes Rail vehicle, Ship/boat and Plane/helicopter.

Table 4.01

Number of traffic accidents per element, 2008

The table shows how many traffic accidents are attended by the fire brigades and the traffic elements involved in these accidents.

Sweden

Elements involved in accidents	Number[1]	Percent
Car	12 145	87,2%
Lorry not marked with dangerous goods plates	1 192	8,6%
Moped	1 107	7,9%
Motorbike	866	6,2%
Animal	521	3,7%
Bicycle	468	3,4%
Pedestrian	313	2,2%
Bus/coach	308	2,2%
Machine/slow-moving vehicle	128	0,9%
Rail vehicle	80	0,6%
Snow scooter	39	0,3%
Tanker/tank-container lorry marked with dangerous goods plates	39	0,3%
Other lorry marked with dangerous goods plates	23	0,2%
Plane/helicopter	9	0,1%
Ship/boat	3	0,0%
Other	381	2,7%
Not specified	33	0,2%
Total number of traffic accidents[2]: 14 421		

1) Traffic accidents sometimes involve more than one kind of element. The total number of accidents can therefore be slightly lower than the sum of the number of accidents for the different elements.
2) The total is for all traffic accidents, including those that were caused or followed by a fire. The total can therefore be slightly higher than the corresponding figure in table 1.01.

Table 4.02

Emergency response at traffic accidents, 2008

The table shows the actions taken by fire brigades in their emergency responses to traffic accidents.

Sweden

Actions	Number[1]	Percent
Extrication from vehicles		
Manually	1 039	7,5%
With machines	1 022	7,3%
With lifting cushions	20	0,1%
Other methods	213	1,5%
Making the accident scene safe		
Preparation for fire fighting with fire extinguisher	6 414	46,0%
Disconnecting battery	5 253	37,7%
Stabilising vehicles	833	6,0%
Fire prevention by laying expanding foam	256	1,8%
Order to stop all rail traffic	48	0,3%
Order to disconnect power supply to traffic	20	0,1%
Earthing of train power supply	15	0,1%
Other safety measures	208	1,5%
Other actions		
Directing traffic (normally a police duty)	6 222	44,7%
Removing debris from road (glass and other small items)	6 068	43,5%
Cleaning up fuel/oil from road	1 412	10,1%
Ordering salvage vehicle	1 394	10,0%
Removing vehicles to roadside	957	6,9%
Other	398	2,9%
No actions taken	3 120	22,4%
Total number of traffic accidents[2]: 14 421		

1) A traffic accident can require several kinds of actions.
2) The total is for all traffic accidents, including those that were caused or followed by a fire. The total can therefore be slightly higher than the corresponding figure in table 1.01.

Table 5.01
Number of drownings per location, 2008
The table shows how many drowning incidents the fire brigades attend for different kinds of location and the ice conditions at the time.

Sweden

Location[1]	Ice conditions				Total
	Open water	Thin ice	Thick ice	Not specified	
Lake/reservoir/pond	114	12	11	2	139
River	76	7			83
Harbour	65	1	1		67
Sea	49	1			50
Canal	29	1			30
Swimming pool	2				2
Other	13				13
Total number of drowning incidents[2]:	**370**				

1) A drowning incident can take place at more than one location.
2) The total is for all drowning incidents, including those occuring in connection with a fire or traffic accident. The total can therefore be slightly higher than the corresponding figure in table 1.01.

Table 5.02
Emergency response at drownings, 2008
The table shows the resources used in the emergency response at drowning incidents attended by fire brigades.

Sweden

Resource	Number of incidents[1]
Survival suit	140
Boat	115
Rescue board	49
Scuba diving	29
Free-diving without compressed air	22
Helicopter	14
Other	72
No actions taken	124
Total number of drowning incidents[2]:	**370**

1) A drowning incident can require several kinds of actions.
2) The total is for all drowning incidents, including those occuring in connection with a fire or traffic accident. The total can therefore be slightly higher than the corresponding figure in table 1.01.

Table 6.01
Number of emissions of dangerous substances per emission type, 2008
The table shows how many dangerous substance incidents the fire brigades attended for the different kinds of emission.

Sweden

Emission type	Number
Fuel/oil from vehicle	1 739
Dangerous goods	110
Coolant from fridge/freezer	87
Flammable gas	84
Other	493
Total dangerous substance incidents[1]: 2 513	

1) The total is for all dangerous substance incidents, including those occuring in connection with a fire or traffic accident. The total can therefore be slightly higher than the corresponding figure in table 1.01.

Table 6.02
Number of emissions of dangerous goods per activity, 2008
The table shows the activity being carried out when emissions of dangerous goods took place or were in danger of taking place.

Sweden

Activity	Number
Loading/unloading	55
Transport by road vehicle	31
Temporary storage	15
Transport by train	8
Not specified	1
Total dangerous goods incidents: 110	

Table 6.03
Emergency response at emissions of dangerous substances, 2008
The table shows the actions taken by fire brigades in their emergency responses to dangerous substance incidents.

Sweden

Action[1]	Number	Percent
Absorbtion	1 440	60,1%
Collection in new container under leak	296	12,4%
Walling in	230	9,6%
Laying booms	152	6,3%
Sealing leak	141	5,9%
Detection	127	5,3%
Ventilation	119	5,0%
Sealing drain	107	4,5%
Pumping to new container	63	2,6%
Removal of contaminated soil	62	2,6%
Dilution	44	1,8%
Pumping up from gound	23	1,0%
Neutralisation	21	0,9%
Fire prevention by laying foam	19	0,8%
Measures to prevent ignition by static electricity	8	0,3%
Other	208	8,7%
No actions taken	394	16,4%
Total number of dangerous substance incidents[2]: 2 513		

1) A dangerous substance incident can require several kinds of actions.
2) The total is for all dangerous substance incidents, including those occuring in connection with a fire or traffic accident. The total can therefore be slightly higher than the corresponding figure in table 1.01.

Table 7.01

Number of false automatic fire/gas alarms per cause, 2008

The table shows how many false automatic fire alarms were attended by fire brigades and their causes for the different building categories.

Sweden

Cause	Public building	Home	Industrial building	Other building	Not specified	Total	
						Number	Percent
Cooking	4 847	239	157	51	47	5 341	16,8%
Smoke from workplace process	1 319	10	898	167	29	2 423	7,6%
Steam	1 148	23	686	94	8	1 959	6,2%
Condensation/damp/water	550	15	304	68	8	945	3,0%
Alarm raised maliciously	864	11	21	9	9	914	2,9%
Mistake by maintenance personnel	507	13	223	47	14	804	2,5%
Unintentional damage	489	9	248	33	7	786	2,5%
Smoking	507	20	21	7	8	563	1,8%
Dust/dirt	313	4	215	20	6	558	1,8%
Candle/sparkler	480	7	16	4	0	507	1,6%
Pressure change in sprinkler	170	10	283	28	11	502	1,6%
Hot work	250	1	167	26	2	446	1,4%
Other heat source	227	4	150	17	3	401	1,3%
Smoke machine	343	2	16	9	4	374	1,2%
Fault in power supply	194	6	108	20	5	333	1,1%
Fault in alarm transfer	156	3	67	12	6	244	0,8%
Heating boiler/fire place	111	4	30	92	3	240	0,8%
Vehicle	44		102	22	3	171	0,5%
Mistake at alarm centre	109	1	37	7	4	158	0,5%
Lightning	77		31	4	1	113	0,4%
Rodent/bird/insect	37		15		1	53	0,2%
Alarm raised with good intent	16	1	12	2	1	32	0,1%
Frozen sprinkler	4		23		0	27	0,1%
Other	3 198	45	1 354	211	68	4 876	15,4%
Unknown	6 058	90	2 295	330	162	8 935	28,2%
Total	**22 018**	**518**	**7 479**	**1 280**	**410**	**31 705**	
Percent	69,4%	1,6%	23,6%	4,0%	1,3%	100,0%	

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