Essex County
Fire & Rescue Service

Data Analysis Report

Analysis into the Increase of Special Service Incidents Observed during 2022

About

This provides analysis in Special Service incidents. This has been commissioned by the Performance and Analytics department, Essex County Fire and Rescue Service.

This document should be used as a reference should the analysis be used for further work within Essex Fire

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Background

It has been observed that the number of Special Service Incidents appear to be increasing during 2022. This paper will analyse the types of incidents responded by Essex County Fire and Rescue Service (ECFRS) during 2022 and compare these to a five-year average, providing an analysis into why the numbers of Special Service Incidents appear to be increasing.

Data used

Data was extracted on the 20/02/2023 at 09:00am. At the time of extraction, 100% of the incidents for 2022 had been quality assured.

Data was extracted from the NeRF* database using view vw_01_incidents and viw_02_ for all incidents between '2018-01-01 and '2022-12-31'

Executive Summary

In 2022, ECFRS attended many special service incidents linked to extreme weather, including Storm Eunice, a heatwave period in July/August, and extreme cold and wet weather in December. The impact of Storm Eunice was significant and removing it from the analysis still resulted in an increase in special service incidents.

The percentage of special incidents as a proportion of total incidents remained relatively constant, suggesting that the increase in special incidents is in line with the overall increase in incidents attended.

There has also been an increase in incidents originating from the ambulance service, and more information is needed to fully understand the nature of the incidents and to understand the procedures in place for requesting assistance from ECFRS.

Findings

Total Incidents

During the period 2018-2022, ECFRS has responded to an increasing number of incidents. The table below summarises the total number of incidents responded to by ECFRS per year. The table shows a decrease in the number of incidents during 2019-2020, however this could likely be linked to the covid period (March 2020 – Feb 2021) with associated lockdowns and less traffic on the roads.[1] There is a notable increase in the total number of incidents from 2021 onwards.

Year	Incidents	Percent Change Previous year
2018	15,778	-
2019	15,259	-3.3%
2020	14,543	-4.7%
2021	14,768	+1.5%
2022	17,770	+20.3%

[1] https://gds.blog.gov.uk/2022/07/25/2-years-of-covid-19-on-gov-uk/

Special Service Incidents

The total number of Special Service incidents has also shown an increase over the past two years, showing a +15.9% increase in 2021 compared to the previous year and a +15.1% increase in 2022, although the increase is not as high as for the total number of incidents.

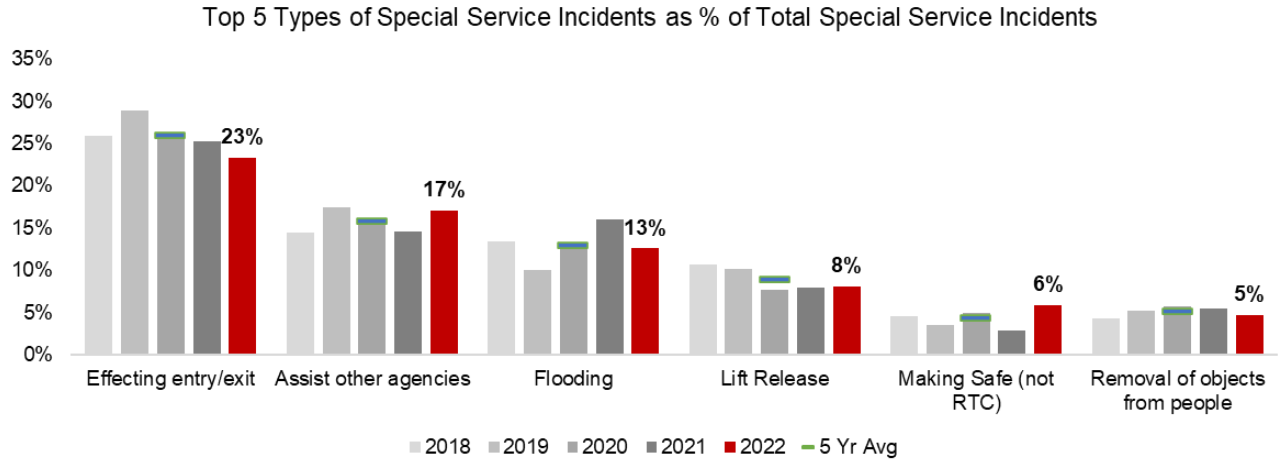
Both 2021 and 2022 show a slightly greater share of total incidents (25%, and 24%) when compared to previous years.

Please note, the number of Special Service incidents exclude the total number of RTC's to bring these values in line with the values reported on the PFCC dashboard where Special Services and RTCs are separated.

Year	Special Service Incidents	Percent Change Previous year	% of Total incidents
2018	3,245	-	21%
2019	3,304	+1.8%	22%
2020	3,224	-2.4%	22%
2021	3,736	+15.9%	25%
2022	4,299	+15.1%	24%

Types of Special Services

The chart below highlights the top 5 types of special service incidents as a % of the total special service incidents per year, along with the five-year average for each year. As can be seen by the chart, there does not appear to be any major shifts in the type of special service incidents, and the types of incidents appear consistent per year. 2022 appears to show a slightly greater concentration in the Make Safe (not RTC Category) of 6% which is higher than the five-year average of 4%.

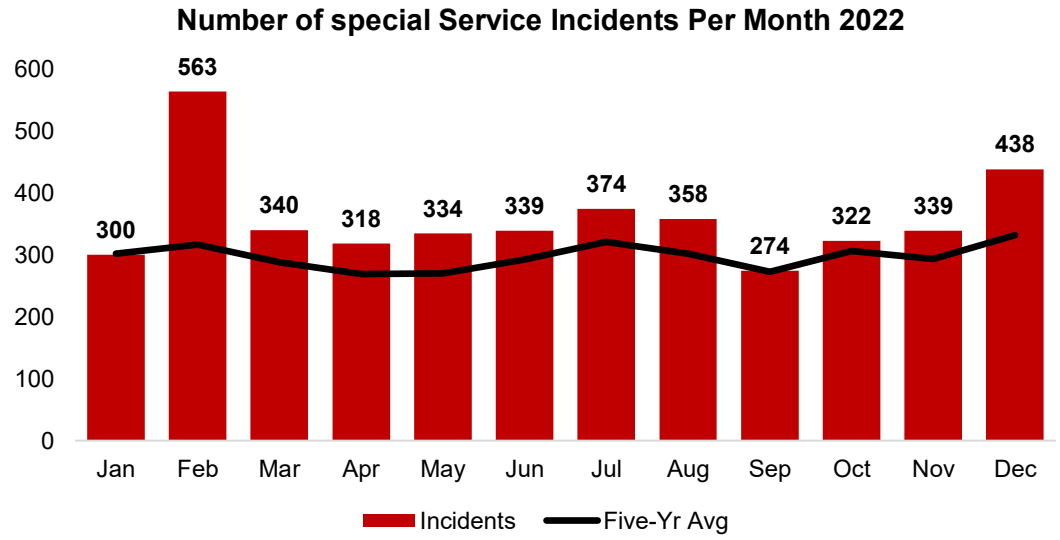


Looking at the actual number of incidents, it can be seen that the following special service categories are higher than the previous year and have increased at a higher than the overall increase of 15.1% vs 2021. To understand this further, the paper will consider the number of incidents per month.

Type	Number of incidents	% Change vs 2021
Making Safe (Not RTC)	253	+134%
Advice Only	100	+104%
No Action (Not False Alarm)	237	+53%
Medical Incident – First Responder	45	+50%
Assist Other Agencies	732	+35%

Special Services per Month

The chart below shows the number of Special Service incidents per month compared to the five-year average. As shown by the chart, February and December are showing much higher values when compared to the rest of the months, and all months are tracking higher than the five-year average.

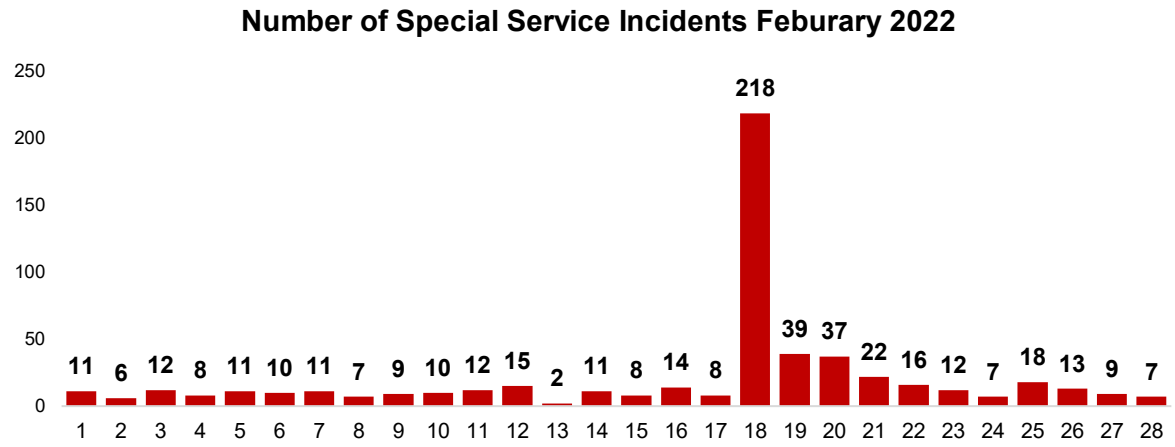


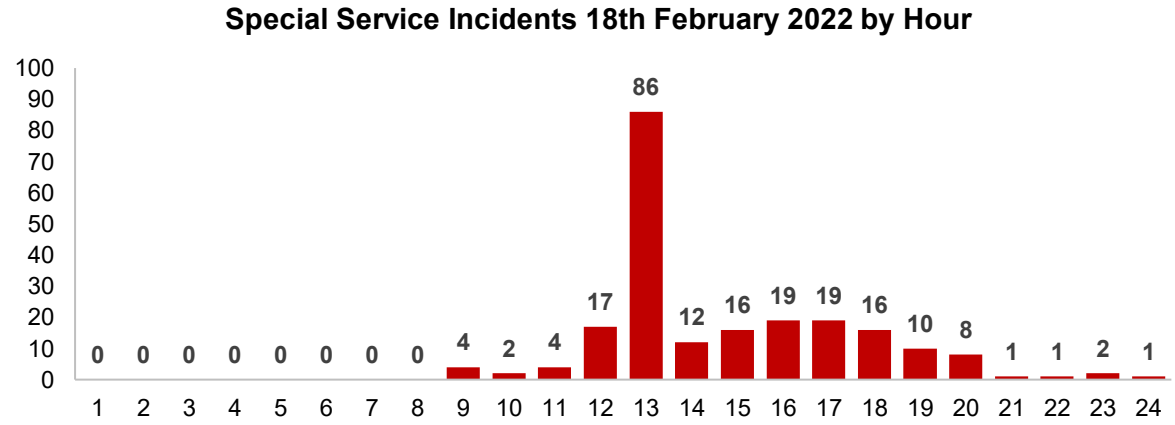
February 2022

Looking at the number of incidents per day in February, it can clearly be seen that the 18th February is a significant day, with a high number of incidents than the rest of the month. A red weather warning was issued on the 18th February 2022 with regard to Storm Eunice[2], which struck London, the South East and East of England during the late morning and afternoon of the 18th February. The storm was responsible for large amounts of damage across the UK and could account for the higher-than-average number of Make safe incidents that were noted above.

[2] Storm Eunice - Wikipedia

The second chart details the number of special service incidents received per hour during the 18th February 2022. As can be seen, there are a significant number of incidents during 13:00 hours to 14:00 hours, which corresponds to the time when the increased wind speeds and gusts of wind were experienced across the county.





On 18th February 2022, the three main types of special service incidents shown below, were significantly higher than the five-year average, and were in line with the categories expected for calls associated with high winds and damage. This further suggests that the increased number of special service incidents that day were likely due to Storm Eunice.

Special Service incident Type	% of Total Special Service Incidents	Five Year Average
Making Safe (not RTC)	43%	4%
No action (not false alarm)	34%	4%
Advice Only	11%	1%

December 2022

As discussed previously, December 2022 experienced higher than average special service incidents. The table below summarises the top 3 special service incidents in terms of the percentage of total special service incidents in December 2022 and the corresponding five-year average. As can be seen, the percentage of flooding incidents are higher than the five-year average. December saw several amber warnings being issued for cold weather and rainfall [3] which are likely to be contributing factors to the higher-than-normal flooding incidents.

Special Service incident Type	% of Total Special Service Incidents	Five Year Average (December)
Flooding	28%	17%
Effecting entry/exit	19%	25%
Assist other agencies	15%	15%

[3] https://www.metoffice.gov.uk/about-us/press-office/news/weather-and-climate/2022/amber-warning-issued-amid-cold-weather

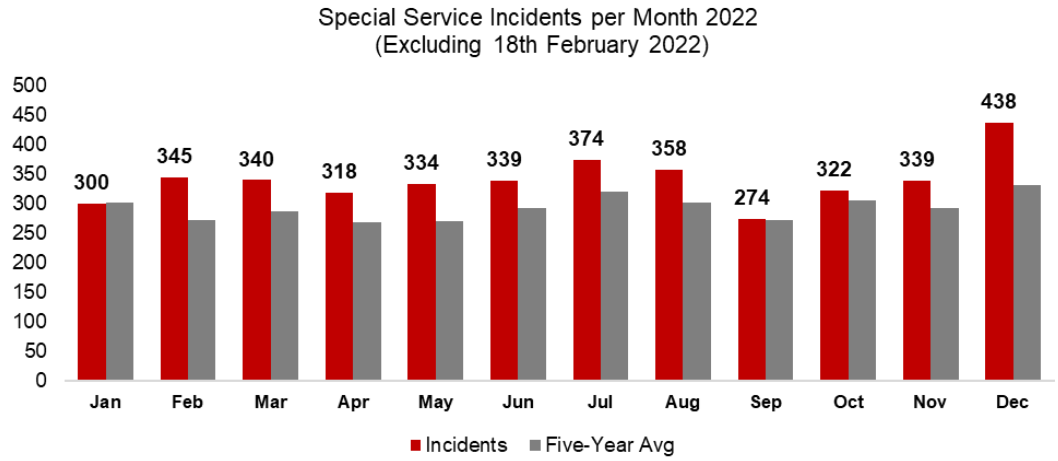
Trends if 18th February 2022 is removed.

As previous discussed, 18th February is an exceptional day, with a significant number of calls above averages, potentially skewing the data for the remainder of the year. The table below shows how the percentage increases in the number of special service incidents are affected when 18th February is removed from the data.

2022	Total Incidents (% Change from Previous year)	Special Service Incidents (% Change from Previous year)
Including 18th February 2022	17,770 **(+20.3%)**	4,299 **(+15.1%)**
Removing 18th February 2022	17,497 **(+18.7%)**	4,081 **(+9.5%)**

Looking at the number of incidents per month vs the five-year average, the number of special incidents are still tracking above the five year average, even with the 18th February removed. Across the whole of 2022, special service incidents are 19% above the five-year average, which suggests that the numbers of special service incidents are still higher than normally observed.

February is still tracking higher that the five-year average. The wind speed remained high for the remainder of the week once the main storm had passed which is a likely reason for the higher-than-average storm damage incidents in February, even with the 18th February being removed from the data.



The following table highlights the type of special service incident for each month in 2022, excluding 18th February as previously discussed. As can been seen by the table, there are several months where the 'Assist other Agencies' type of incident are much higher than the five year average. The type of incident 'Effecting entry/exit' also appears to exceed the five-year average in certain months as well. This is analysed in the section below.

Percentage of special Service incidents per Month 2022

Special Service Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	5 Yr Average
Advice Only	1%	6%	2%	1%	2%	1%	1%	2%	1%	2%	2%	1%	**1%**
Animal assistance incidents	7%	4%	3%	5%	4%	7%	5%	5%	6%	4%	3%	3%	**4%**
Assist other agencies	20%	15%	23%	20%	20%	20%	17%	15%	22%	17%	13%	15%	**16%**
Effecting entry/exit	23%	17%	29%	24%	30%	25%	25%	22%	24%	24%	34%	19%	**26%**
Evacuation (no fire)	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	2%	**1%**
Flooding	10%	10%	8%	8%	8%	10%	12%	20%	10%	14%	14%	28%	**13%**
Hazardous Materials incident	2%	2%	2%	3%	2%	1%	2%	1%	2%	2%	2%	3%	**2%**
Lift Release	8%	8%	8%	9%	8%	9%	11%	9%	10%	8%	6%	9%	**9%**
Making Safe (not RTC)	2%	17%	1%	3%	2%	3%	2%	2%	1%	5%	3%	4%	**4%**
Medical Incident - Co-responder	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	**0%**
Medical Incident - First responder	1%	0%	2%	1%	1%	1%	2%	1%	1%	1%	1%	1%	**1%**
No action (not false alarm)	4%	6%	3%	5%	3%	4%	3%	5%	4%	4%	3%	3%	**3%**
Other rescue/release of persons	2%	5%	3%	4%	4%	3%	4%	5%	3%	4%	5%	1%	**4%**
Other Transport incident	0%	1%	1%	1%	1%	1%	2%	1%	1%	1%	1%	1%	**1%**
Removal of objects from people	7%	4%	6%	5%	7%	7%	4%	6%	4%	4%	3%	3%	**5%**
Removal of people from objects	1%	2%	2%	3%	1%	3%	3%	1%	3%	2%	3%	1%	**2%**
Rescue or evacuation from water	2%	1%	1%	0%	1%	0%	1%	1%	1%	0%	2%	1%	**1%**
RTC	1%	0%	1%	1%	0%	0%	0%	0%	0%	1%	0%	1%	**0%**
Spills and Leaks (not RTC)	3%	1%	4%	3%	3%	3%	3%	3%	3%	2%	2%	3%	**3%**
Stand By	1%	0%	0%	1%	0%	0%	0%	1%	1%	2%	1%	0%	**1%**
Suicide/attempts	4%	2%	0%	3%	2%	1%	2%	1%	1%	1%	1%	2%	**1%**
Water provision	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	**0%**

The tables below breakdown the special service incident types highlighted above into the origin of the incident, with the corresponding five-year average for the specific incident type and for all special service incident types.

Looking at the first table, it appears that incidents originating from Ambulance far outweigh the five year average, both for the incident type and across all special incident types. Incidents originating from Police remain within the averages and incidents originating from Person (Mobile) are very low compared to the average.

The incident type 'Effecting entry/exit' shows a higher-than-average call origin from Ambulance, and this is also reflected in the five-year average for this type of incident. This suggests that there is no significant increase in 2022 for incidents originating from Ambulance.

Assisting Other Agencies

Origin of Call	2022	Five-Year Avg (Specific type)	Five-Year Avg (All Types)
Ambulance	73%	64%	26%
Police	5%	5%	4%
Person (Mobile)	6%	5%	25%
Other	16%	26%	45%

Effecting entry/exit

Origin of Call	2022	Five-Year Avg (Specific type)	Five-Year Avg (All Types)
Ambulance	37%	35%	26%
Police	2%	2%	4%
Person (Mobile)	43%	25%	25%
Other	18%	38%	45%

Conclusion

Storm Eunice in February 2022, the heatwave period in July/August 2022 and amber weather warnings for extreme cold and wet weather in December all significantly contributed to the increase in the number of special service incidents attended to by ECFRS in 2022.

This is highlighted by the impact of one significant day and the number of incidents that were attributed to Storm Eunice. As shown in the analysis, removing that day lessened the increase in the overall number of special service incidents, however an increase was still noted. The percentage of special incidents as a percentage of total incidents does not display a significant variance which does suggest that while the numbers of special service incidents are increasing, they are increasing in line with the total number of incidents.

Another point to note is the increasing number of incidents originating from the Ambulance Service. The data as to exactly what the incident comprises of is not easily obtainable from the system as it stands. This will likely require liaison with the ambulance service to fully understand the nature of the incidents they are requesting ECFRS and any procedure they have in place for requesting assistance.

Future Analysis/Recommendations

Recommendations following this analysis are:

- Include a flag on the IRS reporting for incidents related to weather/environmental concerns. This would aid in future reporting/analysis and provide the opportunity to continually monitor incidents and assess the impact of the environment, both on the number of incidents ECFRS are attending, and to potentially provide analysis on placement of resources when weather warnings are received.
- Liaise with the Ambulance Service to understand the natures of the incidents for which they require assistance from ECFRS. This would also provide the opportunity to increase future collaborative working.