

INVESTIGATION REPORT INTO:

FIRES ORIGINATING IN ELECTRICAL INTAKES

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East Sussex Fire & Rescue Service July 2010**

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1. Purpose

This report has been created in order to promote awareness and understanding of the issue of fires caused by localised resistance heating in the electrical intake area of a property.

It is hoped that the release of this report will generate help and assistance with gathering further information on the scale and nature of similar fires and that its findings will highlight the issue to other relevant stakeholders¹ so that subsequent and appropriate actions may be considered.

¹ Other Fire & Rescue Services, Electricity Supply Authorities, Electrical Safety Council, Industry regulators and HSE amongst others.

2. Summary

This report has concentrated on overheated cut out fuses within the service head of a premises' electrical intake, however, the issue of localised resistance heating also affects meters and consumer units, as well as other general electrical connections in an electrical installation².

East Sussex Fire and Rescue Service (ESFRS) has already taken a number of actions to deal with the issue of fires originating in electrical intake equipment. This has included changes to Home Safety Visits, widespread staff training and the sharing of initial findings and concerns with regional and national Chief Fire Officers Association (CFOA) groups, the Electrical Safety Council and EDF Energy.

Section 9, 'Example Cases' details a number of incidents involving cut out fuses that have been attended by ESFRS since a fatal fire in Eastbourne (May 2009). These cases show that the housekeeping in the area of the electrical intake and the time taken to discover the fire affect its subsequent development, severity and spread.

The total number of fires originating in the electrical intake area of a property and attended by ESFRS during May 2009 – May 2010 was thirty-five (35). Whilst given the total number of incidents that ESFRS attends, this is a relatively small figure. However, due to the nature and circumstances of how and when these fires occur (often at night when people are asleep, combined with the typical location of an electrical intake being within the means of escape from a property), a number of these fires have caused real risk to life, with one incident in requiring multiple rescues via an Aerial Ladder Platform. A number of the other incidents have involved occupiers suffering smoke inhalation and one incident involved a fire fighter receiving an electrical shock when applying CO₂ to a service head fire.

² Appendix 2 highlights: Requests for EDF Energy to attend ESFRS incidents involving electrical intake areas.

3. Introduction & Background

This report has been compiled to highlight issues and concerns that I have identified surrounding fires involving electrical supply 'cut out fuses' and associated equipment within the electrical intake of a property. Fig 1 & 2 show a cut out fuse in a typical installation.



Fig 1 Cut out fuse in a typical installation

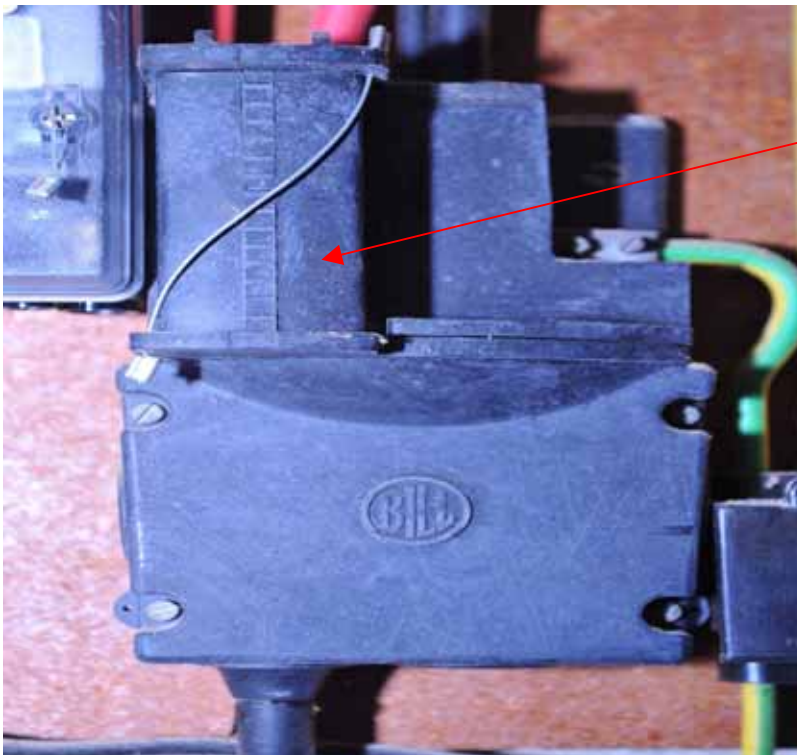


Fig 2 Close up view of cut out fuse

My initial concerns with cut out fuses were raised following a fatal fire that I attended in Eastbourne on Saturday 9 May 2009. I was the Fire Investigation Officer and determined that the most likely cause of fire was electrical, possibly caused by a fault with the electrical supply cut out fuse (**this remains undetermined**³).

In my career with ESFRS I have personally attended a number of fires in electrical installations, which I remember as having involved the cut out fuse.

On consulting with colleagues, I realised that others had also attended similar fires and therefore I became more interested in this issue and ran a report on the ESFRS 'Saffire' fire safety database, for property fires where the source of fire was 'mains before meter' The report was run from 23 June 1996 to 23 June 2009 and showed that ESFRS have attended 191 fires in that reporting period where the source of fire was '**electrical before the meter**'. (Mean average of just over 14/year, or more than one per month).

It is worth considering that the Saffire report from ESFRS does not paint a full picture, since it is likely that a percentage of incidents involving overheated electrical equipment are never reported to the Service and instead are dealt with entirely by the local electrical supply company. Additionally, fires that are attended by ESFRS crews are not always accurately recorded⁴ and a level 2 enhanced Fire Investigation is not generally carried out at these types of fires.

Since running this report, and in the course of my normal duties, I became aware of a number of other fires that were occurring in East Sussex that involved cut out fuses. These cases are highlighted in Section 9 in this report.

I sent out an electronic query to other fire and rescue services (FINDS) in September 2009, requesting information on other fire services' experience with this issue. Returns were generally disappointing, with few being able to quantify the frequency of incidents involving cut out fuses, however, most were able to confirm that it is a 'common occurrence' in their experience.

Since starting my investigation, I have become aware of a phenomenon called 'Localised Resistance Heating'. This occurs when an electrical load passes through a termination or connection, which for some reason is not able to properly conduct the current. The result is a build up of heat beyond the design parameters of the equipment, which is sufficient to cause a fire, particularly if combustible material is stored within close proximity.

³ The inquest into the Eastbourne fire was held on Thursday 6 May 2010, where it was concluded that the death was accidental and that the fire was most probably caused by an electrical fault in the electrical intake area of the property – though where exactly within the electrical intake equipment the fire had started was not determined.

⁴ The current (CLG) Fire & Rescue Service Incident Recording System is not configured to capture specific details of fires originating in electrical equipment.

The amount of current being drawn is an important factor, since the greater the current, the higher the risk of resistance heating in a poor connection.

This relationship is explained in Ohms Law:

$$I = \frac{V}{R}$$

Ohms law explains the relationship between current (I) measured in Amps, pressure (V) measured in Volts and resistance (R) measured in Ohms.

I believe that this is why electrical intakes are more likely to experience a problem with resistance heating; an analogy is that an electrical intake area can be likened to being the 'M1' of the electrical system (particularly the cut out fuse and meter) with the entire traffic or load (Amps) being conducted through their terminal connections, whose integrity directly affects resistance (Ohms).

In my involvement with this issue, I have held a number of meetings with EDF Energy and the Electrical Safety Council, where I have raised the issue and sought clarification, assistance and advice.

- Meeting with EDF 3 December 2009.
- Meeting with the Electrical Safety Council 11 December 2009
- Meeting with EDF and Electrical Safety Council 1 February 2010

Surrey and West Sussex Fire & Rescue Services have recently been involved with helping to gather further information and providing assistance, both also attended the meeting with the Electrical Safety Council.

At the time of writing this report, I am aware that preliminary findings from the Rose Park⁵ fatal fire enquiry in Scotland has indicated that the cause of the fire is most likely believed to be a fault in an electrical consumer unit in a cupboard sited on a means of escape. The cupboard was used to store combustible material that would have been in close proximity to the consumer unit, and which helped fuel the fire.

⁵ Fatal fire in which fourteen elderly residents lost their lives in a care home.

4. Report Findings

It was confirmed at meetings with EDF Energy, that findings from a report by Schlumberger Business Consulting, who carried out a Reliability Centered Maintenance review (RCM review) last year (based on EDF Energy's Airline and the HSE Electricity Incident database), show that the probability of there being an incident involving any service termination (cut out fuse) in any one year was **1 in 30,000**.

According to EDF Energy's regulatory returns, they have 8,279,000 service terminations in their area. Dividing one into the other, for all of EDF Energy networks area they would expect about **275 incidents per annum**. Out of this number approx 80/year are passed on for further investigation and insurance liability issues.

This figure ties in with the number of incidents involving cut out fuses being attended by ESFRS:

Our figures⁶ show a little over 1 incident/month on average. This is based on 191 fires in 13 years = approx 15/year:

There are 526,273 premises in East Sussex; if these are divided by 15 incidents/year = **1 fire in a cut out fuse per 35,084 properties / year**.

This figure tallies closely with EDF Energy's figure of 1 in every 30,000 properties (the small difference is likely to be due to householders not calling ESFRS to all incidents).

Based on the EDF Energy figures, it is possible to calculate an estimate for the likely occurrence of incidents caused by overheated cut out fuses in fire services in the South East region:

Service	No of properties	Incidents involving cut out fuses/year
Hampshire	1,264,415	42
Kent	1,163,864	39
West Sussex	964,008	32
Surrey	929,062	31
Isle of Wight	109,203	4
Buckinghamshire	640,076	21
Oxfordshire	498,041	17
Royal Berkshire	No figures supplied	Estimate 20
East Sussex	526, 273	18
Incidents involving Cut Out Fuses in S.E. fire services		Total = <u>224/year</u>

Appendix 2 indicates that fires occurring in East Sussex caused by other equipment located within the electrical intake area of a property, are responsible for approximately the same number of incidents again, therefore all the above figures could theoretically be doubled, giving the total number of fires originating in the electrical intake and occurring within the South East Region as 448 / year

⁶ Figures taken from ESFRS MIS & EIRS databases.

(Note: Property figures were supplied from “Fire Service Emergency Cover” data provided by each fire service).

At the time of completing this report it has been just over one year since the fatal fire in Eastbourne, and the actual occurrence of fires attended by ESFRS involving cut out fuses has correlated with both EDF Energy and ESFRS calculated frequency rates.

The cause of the fires involving cut out fuses that have been investigated by ESFRS in this period appears to be localised resistance heating.

My findings show that properties drawing high loads, especially those with night storage heaters, were particularly susceptible to resistance heating fires in service intakes.

5. Actions by ESFRS

Since highlighting this issue, articles have been placed in the ESFRS Service Brief and Core Brief (see appendix 3) highlighting general electrical safety advice, and asking that crews notify a Fire Investigation Officer (FIO) of any fires involving cut out fuses (this specific action to notify an FIO in these cases has now ceased).

Community safety visits now include a check of a property's electrical intake, and reporting paperwork (the CS7 form) has been amended to capture that electrical safety checks have been completed⁷ (see appendix 1).

To date, since this action has been implemented, there have been two occasions where home safety visits have highlighted dangerous issues with electrical intakes that required remedial action by the supply authority, and a number of visits have involved advising occupants regarding combustible material storage near intakes.

ESFRS have taken this issue regionally and nationally through the Chief Fire Officers Association (CFOA) for information and action.

⁷ Limited electrical safety check, consisting of a visual inspection for obvious issues and giving advice to occupants not to store combustible material within close proximity of electrical intake equipment.

6. Conclusions

I believe the findings of this report show that there is a significant and consistent occurrence of fires caused by localised resistance heating in the electrical intake of premises, and whilst this report has focused on cut out fuses, the occurrence of fires caused by resistance heating in meters and consumer units is equally prevalent.

Fires occurring in electrical intakes cause a proportionally higher risk to occupants than fires due to other causes, due to a number of factors, including:

- The fires often occur at night when people are asleep (particularly in properties with night storage heaters) where if the property has no smoke detection or the detectors are poorly sited, there is a potential for smoke and toxic gases to affect the occupants before they are aware of any danger.
- Electrical intakes are commonly located within the means of escape from a premises, which creates a hazard that can result in occupants being unable to escape if there are no suitable alternatives (this is a particular problem for elderly people and others with mobility issues).
- The fires produce highly toxic smoke from electrical equipment and insulation.
- There is an added danger of electrical shock.
- Overheated fuses can often smoulder for days without detection and with the power supply being unaffected (this increases the time frame for a fire to break out).
- Occupants often use cupboards where the electrical intakes are located to store combustible household materials, which will increase fire loading and likelihood of fire spread.
- Gas and water pipes are commonly located within the same area as the electrical intake and fires originating in an electrical intake can result in water and gas leaks, which create additional hazards, and in the case of gas, can intensify the fire.
- A fire in a cut out fuse will not necessarily blow the fuse and cut the power supply.

7. Recommendations

Whilst ESFRS has already taken action, in my opinion there are additional reasonably practicable measures which others should consider taking:

- With the national implementation of 'Smart Metering' and the implications for equipment upgrading and the change to associated safety checks during meter readings, opportunities to address the issue of fires caused by localised resistance heating should be considered now by industry regulators.
- Further work should be commissioned to determine the precise cause of localised resistance heating in terminal connections to cut out fuses, meters and consumer units, in order that any potential requirements for design improvements can be highlighted.
- Further work should be commissioned to determine the national frequency of fires occurring in cut out fuses, consumer units and meters and also any correlation with possible factors such as age of installation, time of year and make of fuse etc.
- Data capture and the sharing of the results of fire investigations should be improved to better facilitate accurate interrogation of trends and causes of fire (CLG consideration).
- CFOA should be made aware of this report and liaison should be facilitated between industry regulators. CFOA and other appropriate bodies to ensure that all relevant stakeholders are informed of the issues, to enable them to influence any appropriate future actions.

8. Profile of Author

My name is Mark Hobbs and I have been employed by East Sussex Fire & Rescue Service for 20 years. Throughout this time I have responded to operational incidents and have been required to investigate fires for approximately 16 years.

Following initial training with Lancashire Fire & Rescue Service (14-25 July 2008), and subsequent in house training and mentoring by experienced East Sussex Fire & Rescue Service Fire Investigation Officers, I now undertake an enhanced Fire Investigation role.

I attend continuous professional development in Fire Investigation and I am a member of the International Association of Arson Investigators (UK Chapter). I serve at East Sussex Fire & Rescue Service Headquarters where I am the Technical Fire Safety Policy & Support Manager, in the grade of Group Manager. In this role I also co-ordinate and manage fire investigation for East Sussex Fire & Rescue Service.

9. Example Cases

Eastbourne, East Sussex, May 2009, ESFRS Incident No 37007046 (Fatal fire originating in electrical intake area – exact cause undetermined)



Front elevation

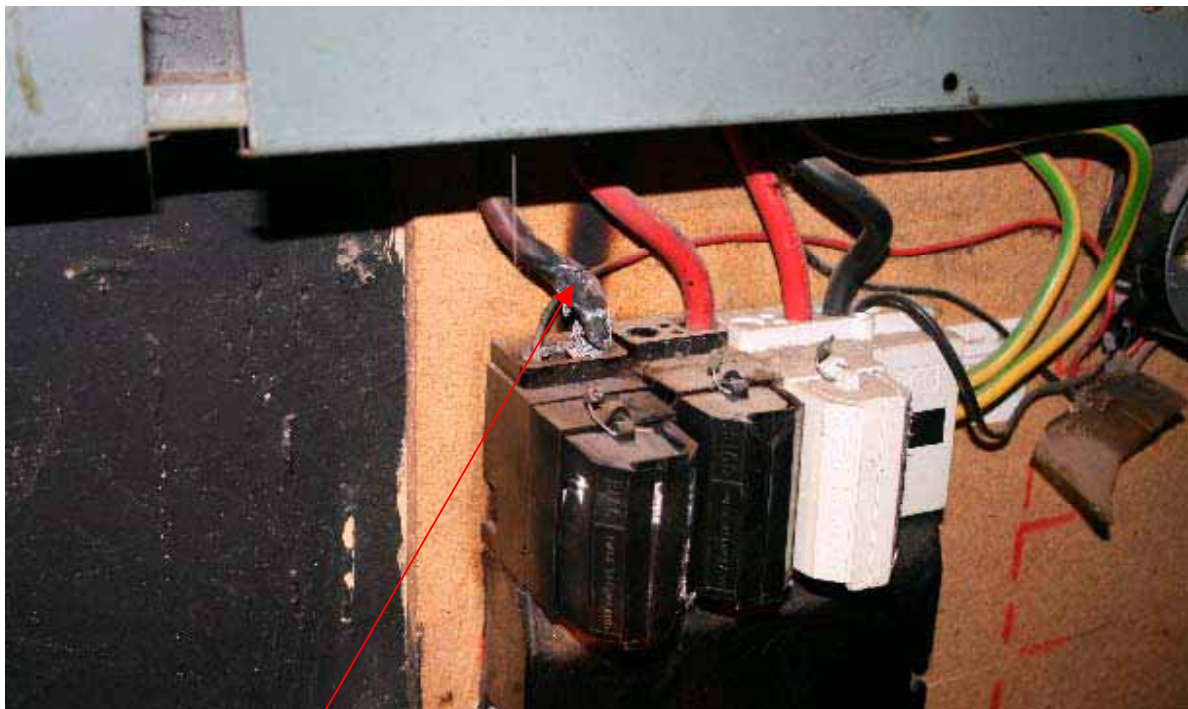


Seat of fire showing damage to electrical equipment in the under stairs cupboard

Brighton, East Sussex, August 2009, ESFRS Incident No 37013678 (Smell of burning)



Cut out fuse showing overheated connection to cable

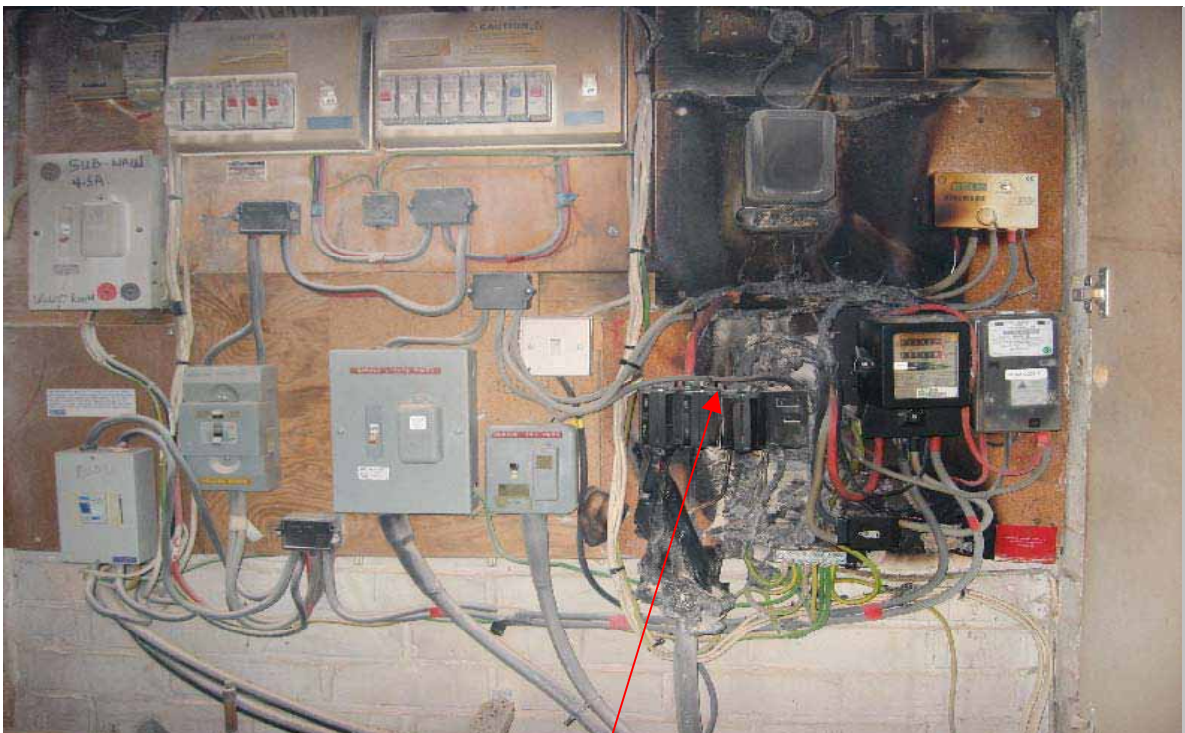


Close up of above photograph

Framfield, East Sussex, September 2009, ESFRS Incident No 37014320 (Damage to electrical installation caused by overheated cut out fuse)



Front elevation



Distribution board showing damage caused by overheated cut out fuse

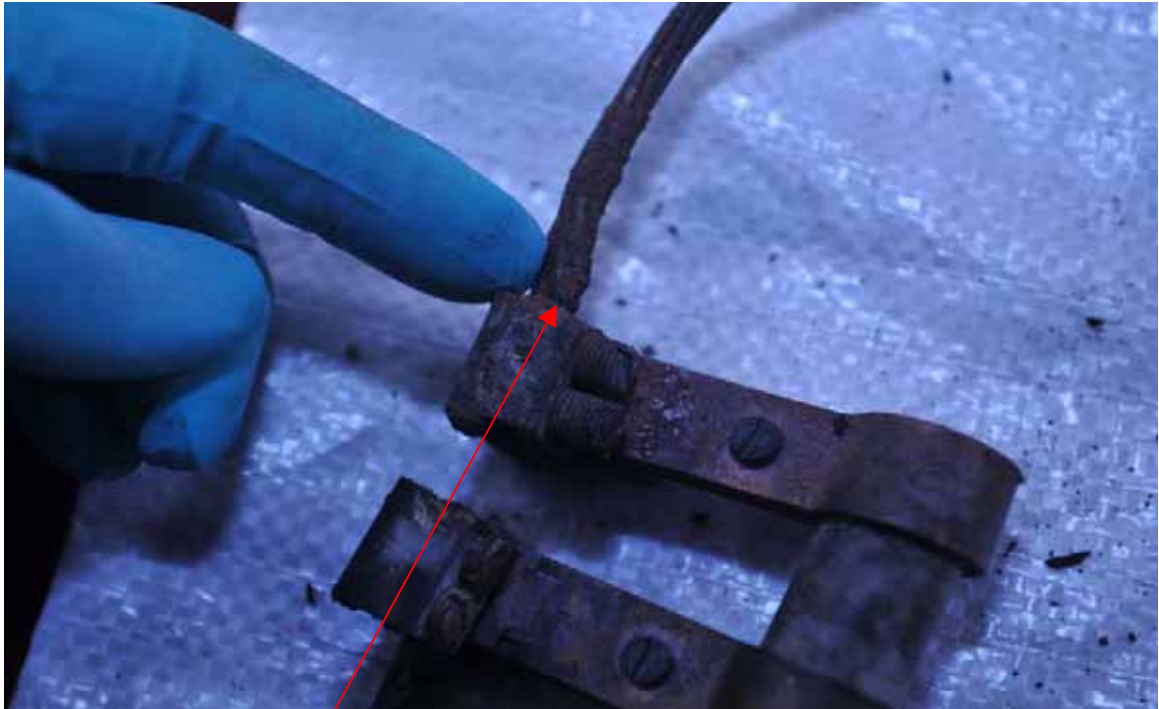
Bexhill, East Sussex, October 2009, ESFRS Incident No 37016931 (Persons reported – multiple rescues from Aerial Ladder Platform, treatment by ambulance)



Front elevation



Damage to intake cupboard in common hallway on 5th floor



Oxidation and welding to cut out connection caused by localised resistance heating



Example of cut out fuse in a similar electrical cupboard elsewhere in block

Hastings, East Sussex, December 2009, ESFRS Incident No: 37019620 (Persons reported – treatment by ambulance)



Front of property (purpose built block of flats, constructed mid 1980's)



Cupboard housing electrical intake in hallway of flat



Damage to service head and cut out fuse



Cut out fuse showing heat damage to pin and holder

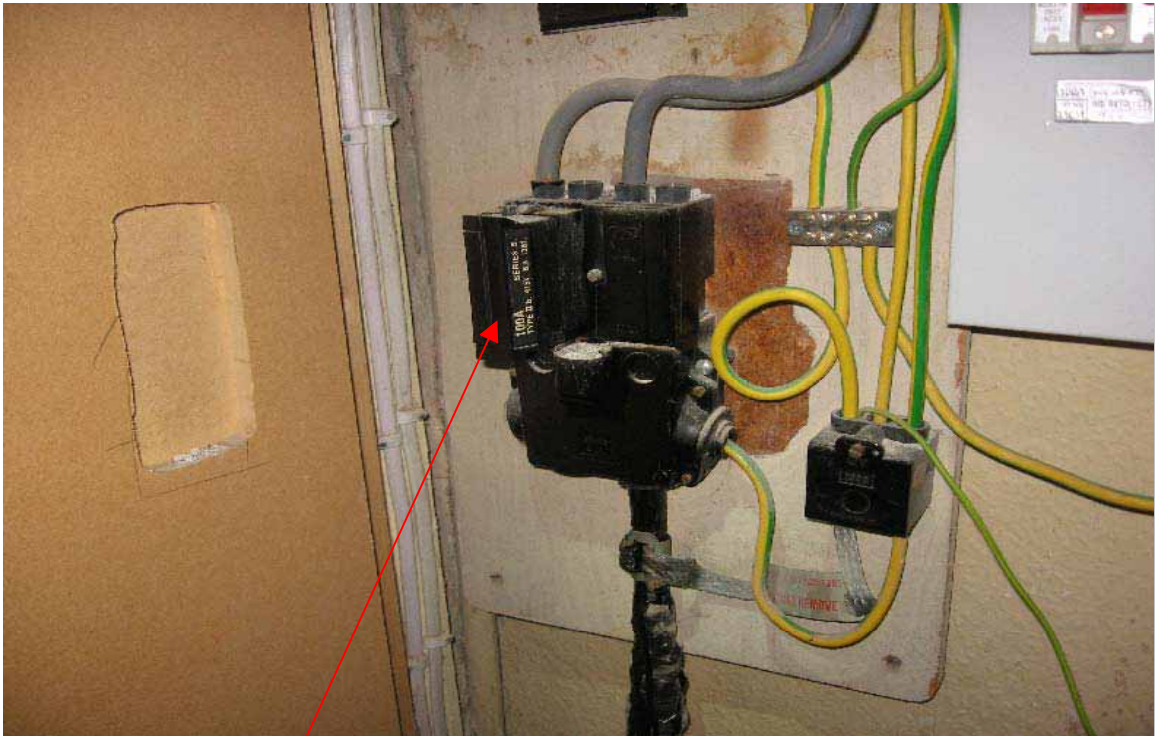


Terminal connection in cut out fuse showing screw not catching core

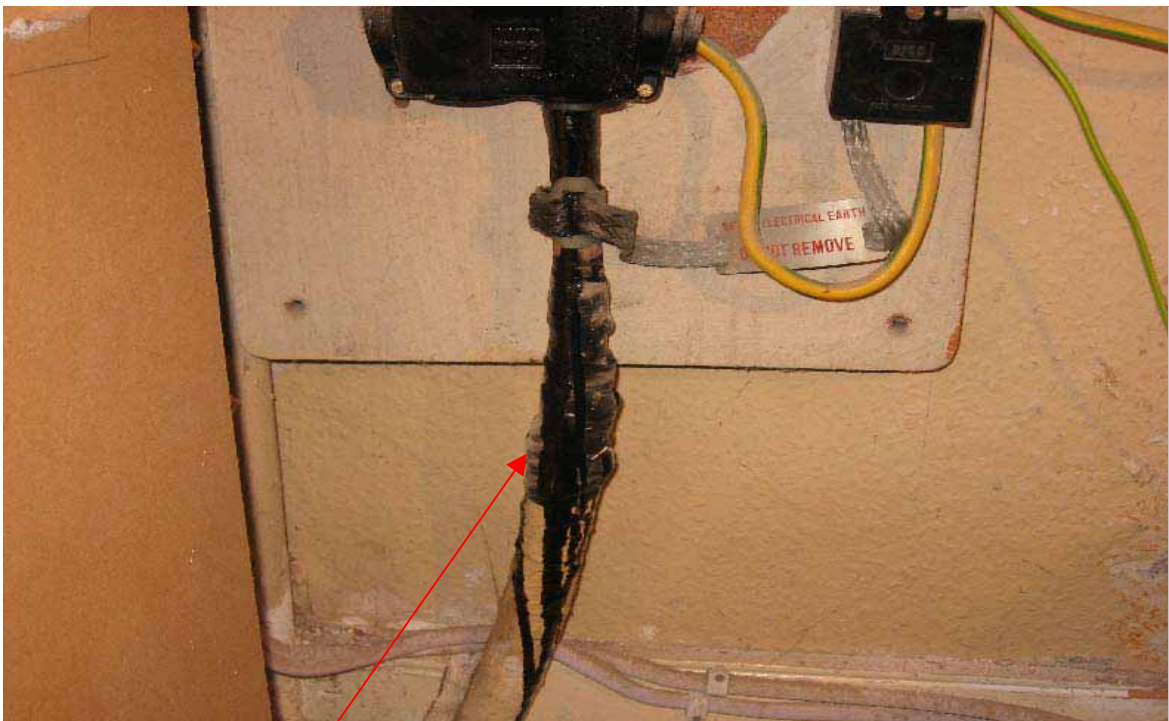


Terminal connection in cut out fuse showing screw not catching core

Eastbourne, East Sussex, December 2009, ESFRS Incident No 37020099 (Smell of burning)



Service head and cut out fuse



Bitumen running down supply cable

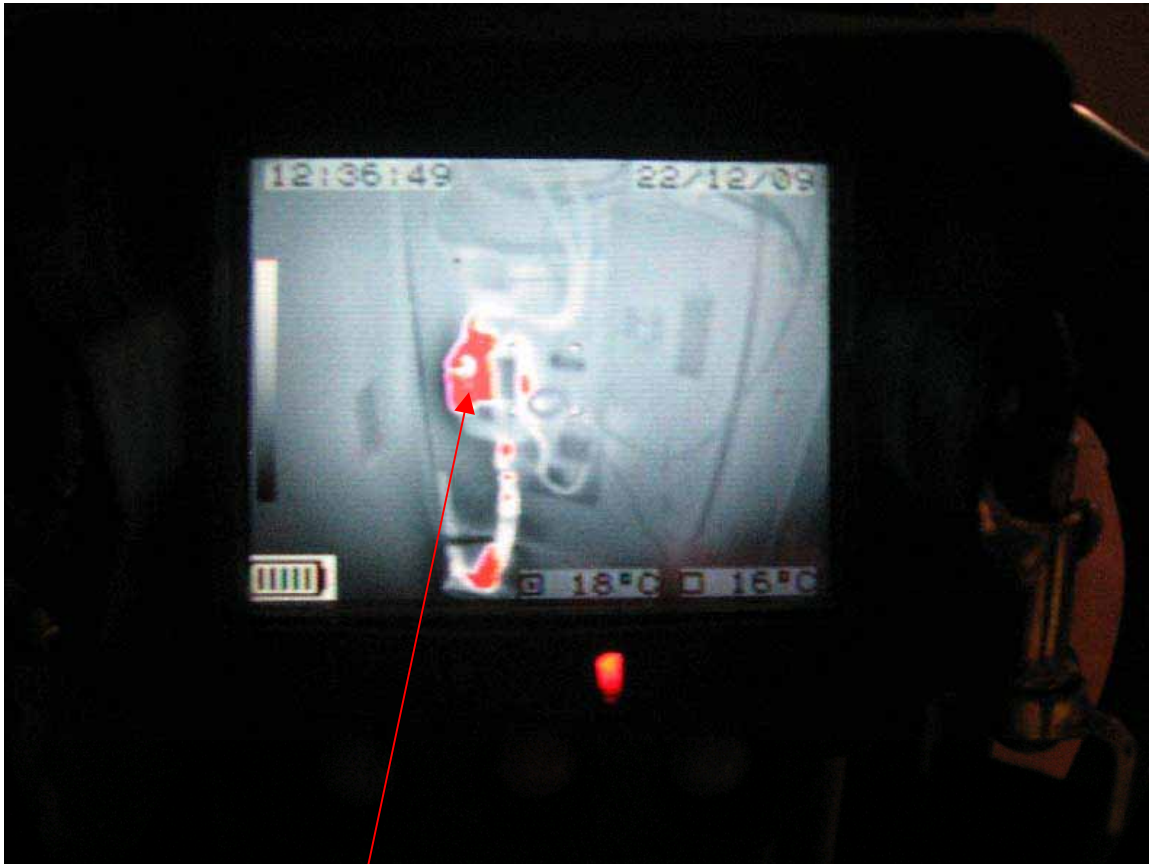
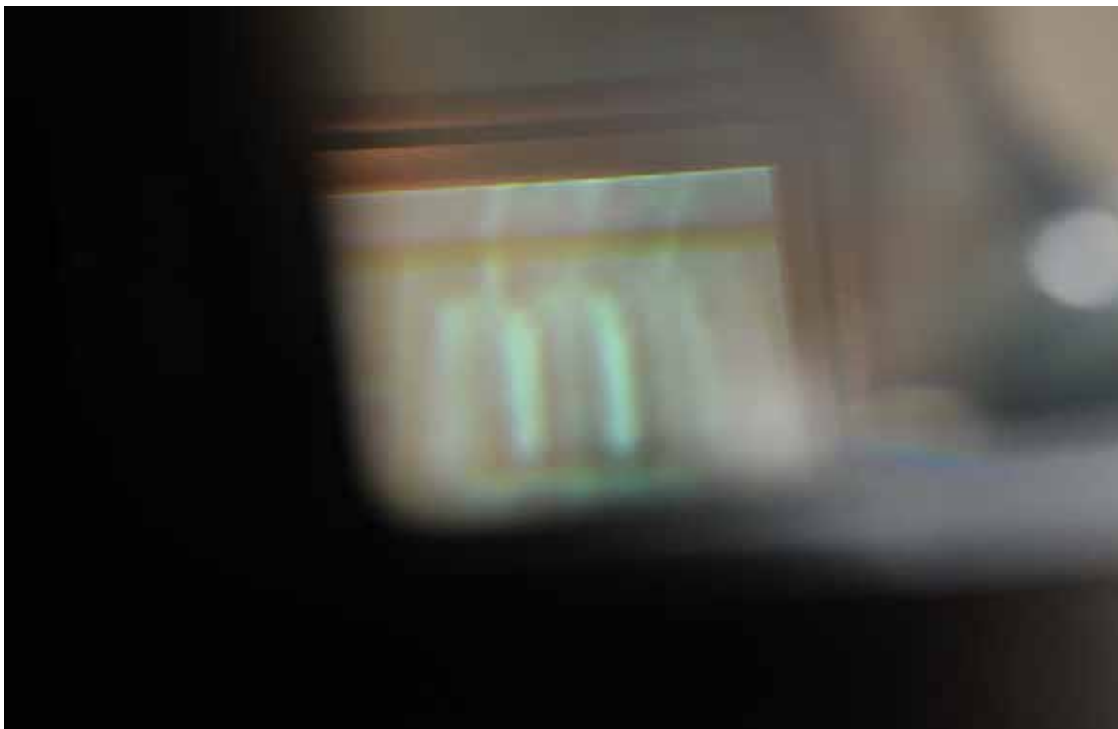


Image taken by thermal imaging camera, showing overheating of cut out fuse with heat conducted down supply cable.

Hove, East Sussex, December 2009, ESFRS Incident No 37020099 (Fire started in electrical heater in a flat; cut out fuse showing early signs of overheating)



Pevensey, East Sussex, January 2010, EFRS Incident No 38001198 (Fire started in cut out fuse, noticed by occupants who called the fire service)



St Leonards, Hastings, East Sussex, January 2010 ESFRS Incident No 38001381 (Smell of burning, source not found for several days)

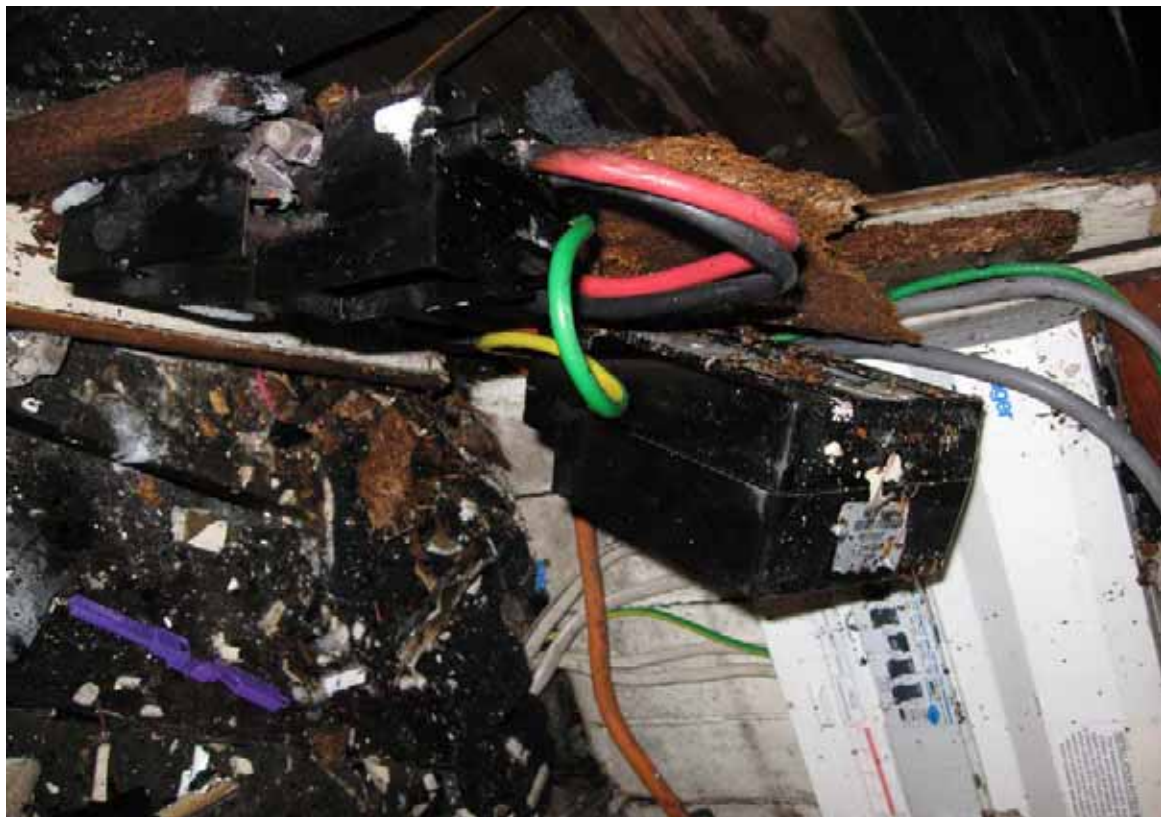


Brighton, East Sussex, February 2010, ESFRS Incident No 38002606





Brighton, East Sussex, March 2010, ESFRS Incident No 38003029 (Persons reported)





Pin on cut out fuse showing oxidation caused by resistance heating

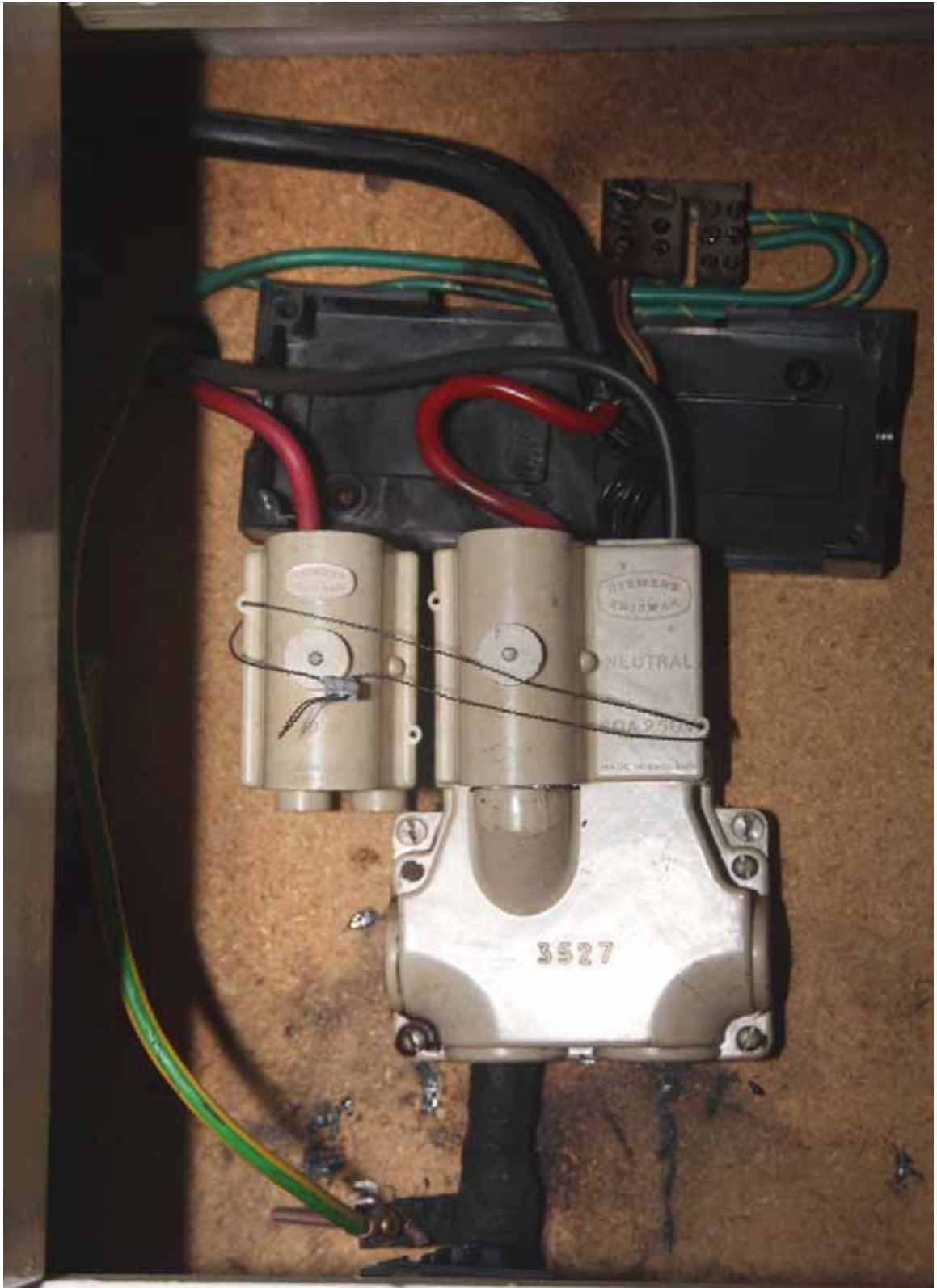


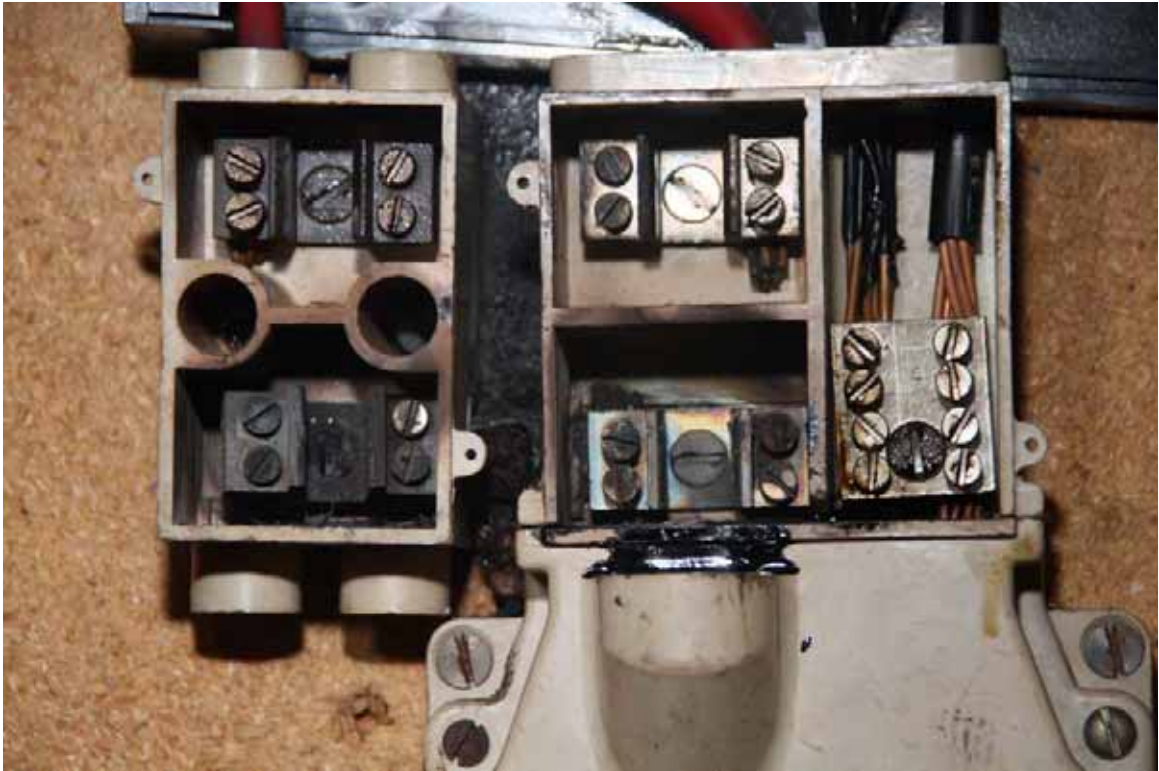


Hove, East Sussex, March 2010, ESFRS Incident No 38003915 (Smell of burning)









Framfield, East Sussex, April 2010, ESFRS Incident No 38004287





Oxidation to terminal caused by localised resistance heating







Oxidation to terminal caused by localised resistance heating

Petworth, West Sussex, November 2009, WSFRS Incident No 13412 (Smell of burning)





Crawley, West Sussex, May 2008



Photo taken by WSFRS showing damage caused by cut out fuse in a cupboard

Other electrical fires not originating in the Cut Out Fuse

Winchelsea Beach, East Sussex, January 2010 ESFRS Incident No 38000109 (Fire originating in consumer unit, persons reported)



General damage to consumer unit



General damage to consumer unit



Image showing that cut out fuse and meter were not involved.

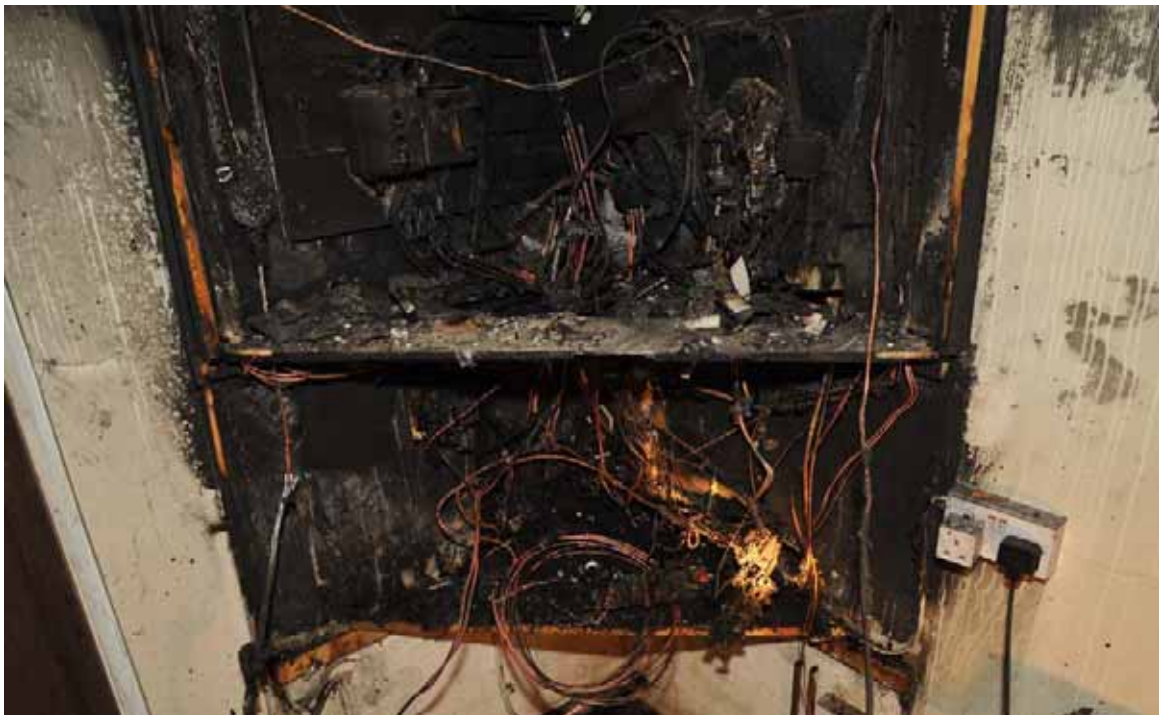


General image of property damage, showing that fire was beginning to spread into other areas of the property.

Sedelscombe, East Sussex, February 2010, ESFRS Incident No 380001607 (Fire originating in electrical intake (not determined in which part of the intake))



General view of property



Widespread damage to electrical intake (note this installation was located in a cupboard of a ground floor bedroom with no smoke detection fitted. Fortunately the fire occurred in the afternoon when no one was in the bedroom).



Widespread damage to electrical intake

Flimwell, East Sussex, January 2010, ESFRS Incident No 38000096 (Fire originating in a consumer unit)



22mm gas pipe running immediately behind distribution board.



Laughton, East Sussex, November 2009, ESFRS Incident No 37018321 (Fire originating in an electrical intake area, not proven in which piece of equipment. Major damage to unoccupied property with majority of roof destroyed)



Roof destroyed and extensive internal damage through fire, heat and smoke spread



Fire originated in electrical distribution area and subsequently spread into roof



General and widespread damage to distribution area

CS7

East Sussex Fire & Rescue Service Home Fire Safety Visit Form

Date:	HSV Declined <small>(Tick)</small>	Saffire File N ^o : <small>(Admin only)</small>
Station/Team:		Saffire Job N ^o : <small>(Admin only)</small>
Appointment Date:		HSV Job N ^o : <small>(Admin only)</small>
Appointment Time:		Job Type: Home Fire Safety Visit (FP3)

Referral Source		Retained Crew		N^o's
Service generated		Ret Watch Manager		
Post incident, please state:		Ret Crew Manager		
Agency referral, please state:		Ret Firefighter		

Visiting Personnel		
Name	Service N ^o	Watch

Occupier Details	
Name:	
Address	Postcode
	Telephone N ^o

Smoke Alarms in Property		Existing Specialist Smoke Alarms	
N ^o of alarms working		Strobe unit for hearing impaired	
N ^o of alarms not working		Care Link smoke alarm unit	
N ^o of alarms fitted		Life Line smoke alarm unit	

Property Details/Home Office Category			
Terraced (H)		House converted to flat up to 2 Floors (G)	
Detached (H)		House converted to flat 3 Floors and over (G)	
Semi-detached (H)		Mobile Home/Caravan	
Purpose Built Flat/Maisonette up to 3 floors (H)		Other, please state:	
Purpose Built Flat/Maisonette, 4 floors and over (D)		HSV larger premises letter given to occupier	

Serial N^o (s) of alarms fitted

HSV Hours			
Activities	Time	Activities	Time
Home Safety Visit <small>(including preparation, travel, report writing)</small>		Fitting Smoke Alarms	

East Sussex Fire & Rescue Service
Community Safety

General Safety and Wellbeing

Date:	Station:
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Occupier Details	
Name:	D.O.B (essential):

Address:	
Postcode:	Tel n ^o :

Reasons for referral	Examples
Trips and falls:	Floor surfaces, hand rails. Suitable mobility aids?
General House Keeping:	Clear exit routes, adequate lighting.
Adequate Heating:	Consider health problems. Is the boiler serviced annually? Carbon Monoxide detector?
Hygiene and Welfare:	Nutrition, does the occupier cook for themselves? If not are they aware of Meals on Wheels? Are pets properly cared for?
Communications:	Working telephone, list of Emergency numbers. A need for further information or support?
Security:	Check doors and windows. Does the occupier ask for ID check on tradesmen? Is a key kept beside door in case of emergency? Are they aware of the password system run by most utility companies? Suggest door signs i.e. no cold calling, junk mail etc.
General Support Needs:	Elderly – Housebound, no family locally (Consider phone call or visit from age concern)

Any Other/Comments:

East Sussex Fire and Rescue Service have identified a potential hazard within my home. They have fully explained their concerns, and I give my permission to forward my details to the appropriate agencies to assist me in resolving the identified problems.

Signed: Date:.....

NB: This referral cannot be referred to the appropriate agencies without a D.O.B and signature from the occupier or carer.

Occupancy		Yes	No	
1.	Is any occupant dependant upon assistance in the event of fire?	<input type="checkbox"/>	<input type="checkbox"/>	Refer to CFS Team if you have put a tick in any grey area of this section.
2.	Are there elderly occupant(s) with reduced mobility?	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Is there anything that would affect the occupant's awareness of a fire? What?	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Is there anything that would impair their reaction to a fire situation? What?	<input type="checkbox"/>	<input type="checkbox"/>	
Kitchen safety		Yes	No	Aide Memoire for advisors.
1.	Do you deep fat/oil fry?	<input type="checkbox"/>	<input type="checkbox"/>	Refer to Kitchen Safety Leaflet. *Maximum 1 third full of oil. *Use only dry chips. *Turn off power, if safe to do so. *Get out and call 999
2.	Do you know how to deal with a hot fat/oil fire?	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Do you leave cooking unattended?	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Do you keep the grill and oven clean?	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Do you leave the cooker on for additional heat?	<input type="checkbox"/>	<input type="checkbox"/>	
Electrical		Yes	No	
1.	Do you use an electric blanket?	<input type="checkbox"/>	<input type="checkbox"/>	Refer to Fire Safety Leaflet. *Test blankets annually. *Check for scorch marks. *Store blankets flat. *Replace scorched adaptors. *Replace damaged leads. *Contact a qualified electrician to arrange a visit to check the installation. *Danger of storing goods too close to Electrical systems.
2.	Is it good condition?	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Have you had it tested recently?	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Are the electric's repaired by a qualified electrician?	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Do you overload sockets?	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Do you run cables under carpets?	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Is the electrical installation (fuse box/consumer board) in good condition?	<input type="checkbox"/>	<input type="checkbox"/>	
8.	Is good housekeeping maintained around the electrical installation (fuse box/consumer board)?	<input type="checkbox"/>	<input type="checkbox"/>	
Fires		Yes	No	
1.	Do you have an open fire?	<input type="checkbox"/>	<input type="checkbox"/>	Refer to Fire Safety Leaflet. *Use fireguard all of the time. *Smell gas call gas board or 999. *Don't store spare cylinder inside. *keep clothes away from fires. *Furniture 1m away from fires.
2.	Do you always use a fireguard?	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Do you have your chimney swept regularly?	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Do you have any portable or gas fires?	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Are they left on over night?	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Do you dry cloths in front of the fires?	<input type="checkbox"/>	<input type="checkbox"/>	
Children		Yes	No	
1.	Are children kept safe from scald risks such as hot water and hot drinks?	<input type="checkbox"/>	<input type="checkbox"/>	Refer to Scald Leaflet. Refer to Firesetter Leaflet. *Leave helpline 08007319119 *Refer details to CFS Team.
2.	Do you keep matches/lighters away from children?	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Do your children know the dangers of fire?	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Do your children play with fire?	<input type="checkbox"/>	<input type="checkbox"/>	
Naked flames		Yes	No	
1.	Do you use candles/incense burners/jossticks?	<input type="checkbox"/>	<input type="checkbox"/>	Refer to Celebrate Safely Leaflet. *Use holders with tea lights. *Alcohol effects judgement.
2.	Do you use holders with the candles?	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Do you keep them away from curtains etc?	<input type="checkbox"/>	<input type="checkbox"/>	
Smokers		Yes	No	
1.	Does anyone in the household smoke?	<input type="checkbox"/>	<input type="checkbox"/>	Refer to Cigarette Fires Leaflet. *Take extra care when drinking. *Put cigarettes out with water. *Consider childproof matches.
2.	Do they smoke in bed?	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Do they ensure proper disposal before going to bed?	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Are matches/lighters kept away from children?	<input type="checkbox"/>	<input type="checkbox"/>	
Detection		Yes	No	
1.	Do you have a smoke alarm?	<input type="checkbox"/>	<input type="checkbox"/>	Refer to Smoke Alarms Leaflet. *A smoke alarm on all floors. *Repeated alarms, reposition it. *Intermittent beeps, new battery. *Vacuum every 6 months.
2.	Do you know how to test the smoke alarm?	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Will you test the smoke alarm weekly?	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Will you clean the smoke alarm twice a year?	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Is the smoke alarm properly positioned?	<input type="checkbox"/>	<input type="checkbox"/>	
Escape plan		Yes	No	
1.	Do you have a fire plan?	<input type="checkbox"/>	<input type="checkbox"/>	Refer to Escape Plan Leaflet. *It is essential to have a plan.
2.	Do you have an alternative escape route?	<input type="checkbox"/>	<input type="checkbox"/>	
Bedtime routine		Yes	No	
1.	Do you shut all doors?	<input type="checkbox"/>	<input type="checkbox"/>	Refer to Fire Safety Leaflet. *A door has 20 mins protection. *Damp down and put up guards. *Turn off, not on stand-by. *Have door keys available. *Check for fire last thing at night.
2.	Do you check the fireguard is in place?	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Do you switch off unnecessary electrical equipment?	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Are keys to any locked windows available?	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Do you extinguish all candles/ smoking materials?	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Are dishwashers/washing machines put on at night?	<input type="checkbox"/>	<input type="checkbox"/>	

More than 14 ticks in the grey areas refer to CFS Team at HQ

Occupier to complete the age and ethnicity sections. This is for data collection only.

Numbers and Age Advised											
	Under 5	5-8	9-13	14-17	18-21	22-31	32-41	42-51	52-64	65 +	80+
N ^o of Males											
N ^o of Females											
White			Asian or Asian British				Chinese or Other Ethnic Group				
British			Indian				Chinese				
Irish			Pakistani				Other				
Other White			Bangladeshi				Not Stated				
			Other Asian								
Mixed			Black or Black British								
White and Black Caribbean			Caribbean								
White and Black African			African								
White and Asian			Black British								
Other Mixed			Other Black								

Comments:

Where Smoke Alarm(s) were fitted, I confirm that the occupier was informed:

1. That the alarm was a gift, and
2. It must remain at the property, and
3. It is the Occupiers responsibility to test & maintain the alarm in accordance with manufacturers instructions

All information entered on this form will be for the sole use of East Sussex Fire & Rescue Service. Information will remain confidential and will not be forwarded to any third parties, unless stated in part 2 - General Safety and Wellbeing

ESFRS will use your personal details only for purpose of data collection. We will keep it only for as long as required.

O/I/C & WatchStation/Team Member.....
 (Station use only)

Station Manager
 Signature.....

Occupier

REQUEST FOR ELECTRICAL SUPPLY AUTHORITY TO ATTEND ESFRS INCIDENTS INVOLVING ELECTRICAL INTAKE AREAS:
01/05/2009 - 30/04/2010

INCIDENT NO	Date	ADDRESS	NARRATIVE LOG
37006799	4-May-09	HOVE	SMALL FIRE IN ELECTRICAL INTAKE CUPBOARD - ATTENDANCE OF EDF INTERNAL URGENT FIRE IN METER EQUIPMENT
37007046	9-May-09	EASTBOURNE	REQUEST TRANSCO AND EDF INTERNAL URGENT - FIRE APPEARS TO HAVE STARTED AROUND THE ELECTRICAL INSTAKE
37007294	12-May-09	BRIGHTON	SMALL FIRE IN FUSE BOX REQUEST ATTENDANCE OF EDF INTERNAL URGENT
37007358	13-May-09	BRIGHTON	SMALL FIRE IN FUSE BOARD - REQUEST ATTENDANCE EDF INTERNAL URGENT
37008900	7-Jun-09	BRIGHTON	SMELL OF BURNING FROM LOCKED ELECTRICAL CUPBOARD AT REAR OF STORE - REQUEST ATTENDANCE OF EDF INTERNAL URGENT
37010082	28-Jun-09	BRIGHTON	SMELL OF BRUNING IN BASEMENT ELECTRICAL CUPBOARD- REQUEST ATTENDANCE OF EDF INTERNAL URGENT - SMALL FIRE IN ELECTRICAL CUPBOARD
37010658	6-Jul-09	BUXTED	SMELL OF BURNING - REQUEST EDF INTERNAL URGENT -3 PHASE ELECTRICAL EQUIPMENT
37011567	21-Jul-09	BECKLEY	FIRE IN DOMESTIC CONSUMER UNIT - REQUEST EDF INTERNAL URGENT
37014320	6-Sep-09	FRAMFIELD	SMALL FIRE IN METER CUPBOARD - REQUEST EDF INTERNAL URGENT
37014962	18-Sep-09	EASTBOURNE	OVERHEATED FUSE BOARD - REQUEST ATTENDANCE OF EDF INTERNAL URGENT
37015612	28-Sep-09	HASTINGS	SMALL FIRE IN AIR CONDITIONING ELECTRICAL INTAKE BOX - REQUEST EDF INTERNAL URGENT
37015758	30-Sep-09	HASTINGS	FAULT IN ELECTRICAL SUPPLY REQUEST ATTENDANCE OF EDF INTERNAL URGENT - POWERISOLATED FROM FUSE BOARD, THE ONLY SWITCH ISOLATED HERE WAS THE BOTTOM ROW AS THIS SHOWED SIGNS OF FIRE DAMAGE

INCIDENT NO	Date	ADDRESS	NARRATIVE LOG
37016931	19-Oct-09	BEXHILL	FIRE IN CUT OUT FUSE - REQUEST ATTENDANCE OF EDF INTERNAL URGENT
37018377	13-Nov-09	BRIGHTON	SMALL FIRE IN ELECTRICAL INTAKE - REQUEST EDF INTERNAL URGENT
37018869	22-Nov-09	BRIGHTON	POSSIBLE FIRE IN ELECTRICAL INTAKE - REQUEST ATTENDANCE EDF INTERNAL URGENT
37019089	27-Nov-09	BEXHILL	SMALL FIRE IN ELECTRICAL INTAKE - REQUEST ATTENDANCE OF EDF INTERNAL
37019620	7-Dec-09	HASTINGS	FIRE - LOCALISED RESISTANCE - HEATER AT CUT OUT FUSE - REQUEST ATTENDANCE OF EDF INTERNAL URGENT
37020209	19-Dec-09	HOVE	SMOKE - ELECTRIC METER - REQUEST EDF INTERNAL URGENT- FIRE IN ELECTRICAL INTAKE BOX
37020326	22-Dec-09	EASTBOURNE	SMELL OF BURNING FROM MAIN ELECTRICAL INTAKE BEFORE FUSE BOARD - REQUEST EDF INTERNAL URGENT - FIRE IN CONSUMER UNIT
38000096	2-Jan-10	FLIMWELL	SMALL FIRE IN ELECTRICAL INTAKE BOX LOCATED IN KITCHEN - REQUEST EDF INTERNAL URGENT
38000109	3-Jan-10	PETT	FIRE INVOLVING ELECTRICAL POWER SUPPLY BEFORE THE METER - REQUEST EDF INTERNAL URGENT
38000143	3-Jan-10	HASTINGS	SMOKING FUSE BOX - BELIEVED TO BE AFTER THE METER - REQUEST EDF INTERNAL URGENT
38000780	17-Jan-10	EASTBOURNE	SPARKS SEEN FROM INTAKE BOARD - ELECTRIC BOX - REQUEST ATTENDANCE OF EDF INTERNAL URGENT
38000792	17-Jan-10	HOVE	FIRE IN BASEMENT FLAT ELECTRICAL INTAKE -REQUEST ATTENDANCE OF EDF INTERNAL
38001198	26-Jan-10	PEVENSEY BA	SMALL FIRE IN ELECTRICAL CUPBOARD - FIRE IS BETWEEN MAIN METER AND FUSE BOX - REQ EDF INTERNAL URGENT
38001390	30-Jan-10	HOVE	SMALL FIRE IN MAIN ELECTRICAL BOX - REQUEST EDF INTERNAL URGENT
38001567	3-Feb-10	BEXHILL	OVERHEATED ELECTRICAL INTAKE - REQUEST EDF INTERNAL

INCIDENT NO	Date	ADDRESS	NARRATIVE LOG
38001607	4-Feb-10	SEDLSCOMBE	FIRE -ELECTRICAL INTAKE - OVERHEATED SUPPLY WITH A TRANSFORMER SITUATED ON AN ADJACENT POLE - REQUEST EDF INTERNAL URGENT; 1354 AFH
38001782	8-Feb-10	HASTINGS	SMALL FIRE IN ELECTRICAL FUSEBOX - REQUEST ATTENDANCE OF EDF INTERNAL URGENT
38002606	25-Feb-10	BRIGHTON	SMALL FIRE IN ELECTRICAL CONSUMER UNIT - REQUEST EDF INTERNAL URGENT
38002982	5-Mar-10	HASTINGS	SMOKE FROM CUPBOARD - REQUEST EDF INTERNAL URGENT - SMALL FIRE IN ELECTRICAL CUPBOARD
38003683	18-Mar-10	BRIGHTON	FAULTY FUEL SUPPLY - ELECTRICITY - REQUEST EDF INTERNAL URGENT
38003987	25-Mar-10	RINGMER	SMELL OF BURNING - REQUEST EDF INTERNAL URGENT - FIRE IN ELECTRICAL INTAKE CUPBOARD
38004286	1-Apr-10	EASTBOURNE	FIRE INVOLVING MAIN INTAKE FUSE BOX - REQUEST EDF INTERNAL URGENT
38005010	14-Apr-10	HOVE	SMELL OF BURNING - REQUEST ATTENDANCE OF EDF INTERNAL - URGENT



East Sussex Fire & Rescue Service Core Brief - (11/09) November 2009

Highlighted passages in the Core Brief must be read out word for word by the Core Briefer giving particular note to items in **bold**.

Item 2:	<u>Electrical Causes Of Fire</u>
<u>Originator:</u> Group Manager, Technical Fire Safety, Policy and Support	
Main points and Additional/Notes:	Item for all staff about the fire risk in the electrical intake area of a property
<p>Following a number of recent investigations into fires caused by electrical supply cut-out fuses - as highlighted in Service Brief 38-09 WC 21 September 2009. The following information and advice should be brought to the attention of all personnel:</p> <p>Electrical sources of ignition are the second largest cause of fire in East Sussex - after fires originating in kitchens (this is reflected in national fire statistics). Over the past six months, ESFRS have attended over 160 fires reported as electrical faults - one of which was a fatal fire that is believed to have been the result of an electrical fault, possibly originating in a supply cut-out fuse.</p> <p>Ignition from an electrical source due to overheating or short circuiting, may be caused by a range of factors including (but not limited to): misuse, faulty equipment, poor workmanship, mechanical damage, poor design, overloading, wear and tear and lightning strikes.</p> <p>Personnel carrying out home safety visits are to ensure that in addition to the general advice that they already give in relation to electrical safety, they now carry out a visual¹ check on the electrical intake within the property and specifically: the service cut-out fuse, meter and consumer unit (usually these items are located together on a common backing board²</p> <p>This visual check is to ensure that the householder is not storing combustible material within the immediate proximity of the electrical intake. This is particularly important if the electrical installation is situated within a means of escape – e.g. within an under-stair cupboard off a hallway.</p> <p>If poor housekeeping is found, personnel should notify the occupier of the dangers associated with household items being stored in close proximity to electrical installations and advise them that they should consider moving the items away.</p> <p>If you suspect the cut-out fuse, meter or consumer unit are particularly old or in a poor condition³ or the householder tells you that they have experienced unusual smells or problems with their electrics, then you should suggest that the occupier</p>	

has it checked by their electricity supplier.

You should inform the occupier that the cut-out fuse and meter would be the responsibility of their electricity supplier, and any part of the installation beyond this point within the property would be the occupiers responsibility - and they should call in a qualified electrician to deal with any problem.

If an electrical intake is situated within the common parts of a block of flats, it should be enclosed in a suitable fire resisting enclosure⁴. If it is not, then the local Borough Fire Safety office should be notified so that they can inform the Local Authority Housing Department.

Both Protection & Prevention are working together to further understand particular causes of electrical fires (esp. those caused by cut-out fuses) and are working with other agencies and interested parties to determine possible solutions. As such, further guidance may be issued in due course.

¹ The apparatus must not be touched or interfered with in any way
² See attached photo showing a typical electrical intake
³ Obviously old or in poor condition – please use judgement
⁴ Non-combustible and at least ½ hour fire resisting – please use judgement

Any problems identified **must** be recorded in the comments box of the CS7 form and returned to Community Safety at HQ for filing and audit.

If any further guidance or assistance is required – please contact Community Safety at Service HQ.

Typical Electrical Intake

