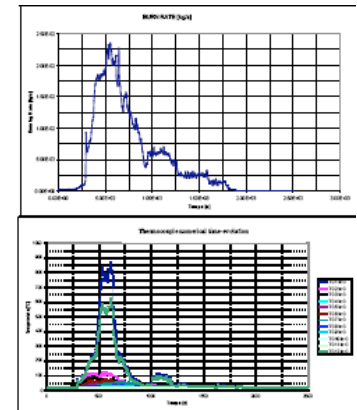
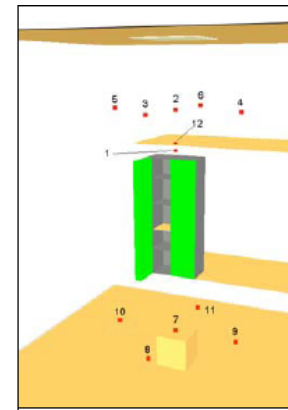


Fire Investigation by Fire Safety Engineering tools:

- simulation of several fire scenarios;
- deep study of fire and arson scene investigation;
- people - movement and egress modeling, and means of escape;
- investigations should be performed not only looking for causes but also researching the possible failures in construction system or in the usage of materials that allowed the spread of fire (prevention regulations).



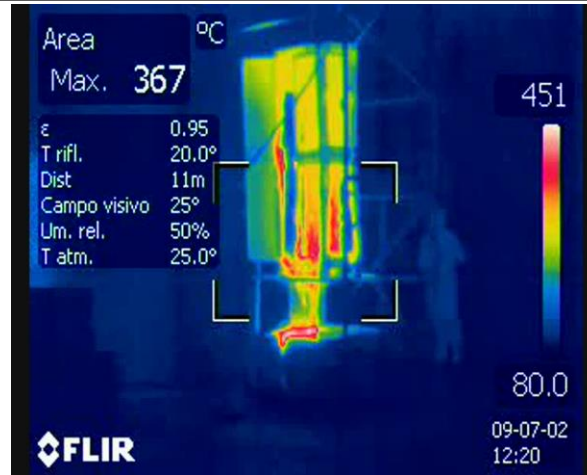
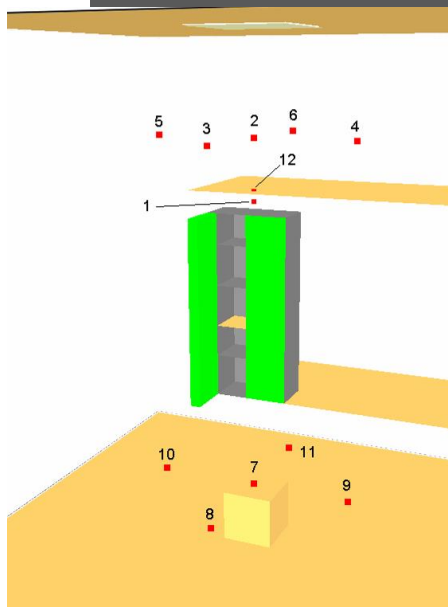
Fire investigation: a superstore arson



Accelerant traces have been found in proximity of a plastic closet.

The scope of the analysis was to study the closet combustion and the fire propagation

Fire investigation: a superstore arson

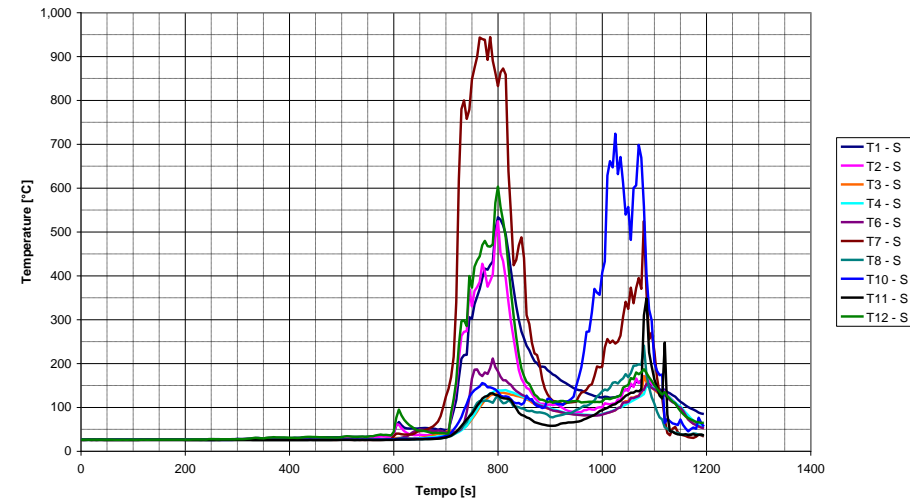
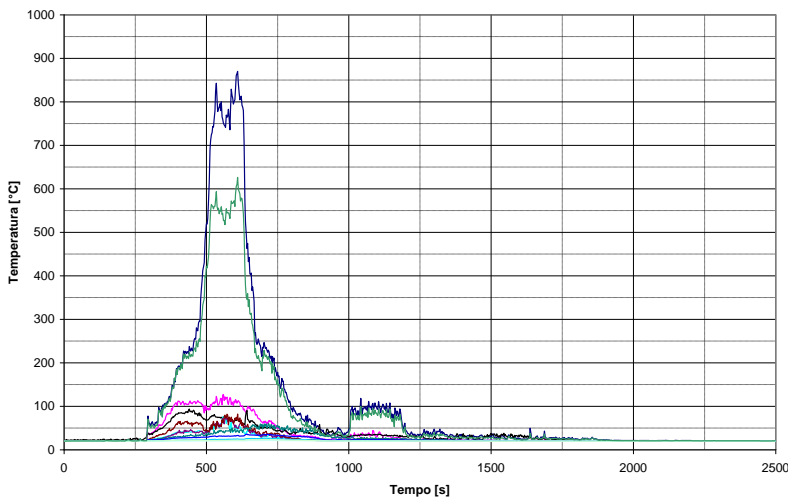


Simulation: FDS



simulation test with software

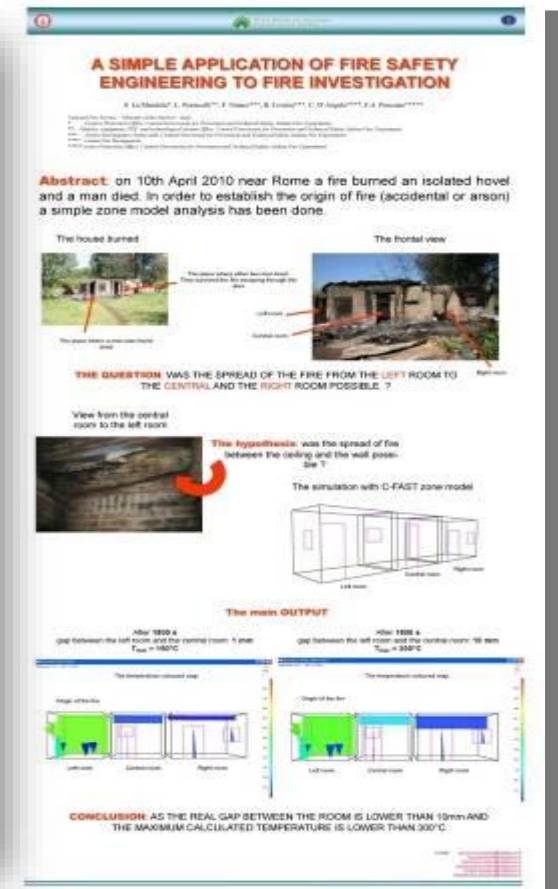
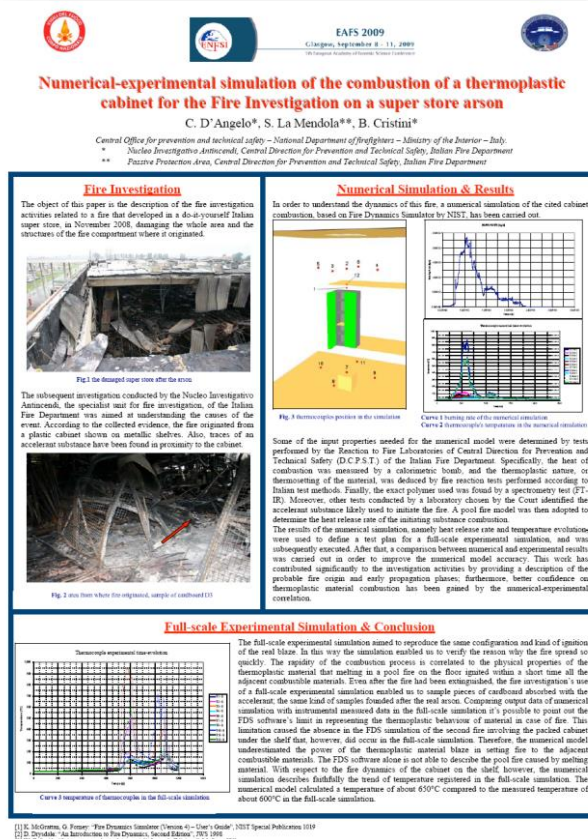
experimental test



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preve

N.I.A. Duties

Participation in national and international forensic science conferences and collaborations with research institutions.





INVESTIGATING THE CAUSES OF FIRE

2ND INTERNATIONAL WORKSHOP

TUESDAY, 7 MAY 2013 · 8.30-18.00

ISTITUTO SUPERIORE ANTINCENDI · Via del Commercio, 13 · 00154 Roma

• SCHEDULE

- 8.30/ 9.30 REGISTRATION OF THE PARTICIPANTS
 9.30/ 9.45 WORKSHOP OPENING AND WELCOME - (Alfio Pini, Head of the National Fire Services, Italy)
 9.45/10.00 OPEN SPEECH *An overview of the Arson phenomena in Italian Malls and Stores*
 (Maurizio D'Addato, Fire Manager, National Fire Services, Italy)
- SESSION 1 (Chaired by Francesco Notaro, Chief of Fire Investigation Office, National Fire Services, Italy)
- 10.00/10.30 *The role of the statistics in the fire investigation*
 (Esa Kokki, Research Director, Emergency Services College, Finland)
 10.30/11.00 *The new investigating paradigm on the scene of the crime*
 (Luigi Saravo, Lieutenant Colonel, Carabinieri, Italy)
 11.00/11.30 *The importance of the certification of testing laboratories that perform technical assessments for the investigation (ISO 17025)* - (Giuseppe Peluso, Lieutenant Colonel, Carabinieri, Italy)
 11.30/12.00 - COFFEE BREAK
- SESSION 2 (Chaired by Cristina D'Angelo, Chief of Latina, National Fire Services, Italy)
- 12.00/12.30 *The evidence on the scene of an arson: Italian and International legislation*
 (Donatella Curtotti, Professor, University of Foggia, Italy)
 12.30/13.00 *European Cooperation and Collaboration to support Fire Investigation: the roles of the*
 (Robert Stacey, Project Officer, Fire Support Services, Northumberland Fire and Rescue Service)
 13.00/13.30 *Fire Ignition Analysis on Photovoltaic Roof and Related buildings*
 (Vincenzo Puccia and Piergiacomo Cancelliere, Fire Officers, National Fire Services, Italy)
 13.30/15.00 - LUNCH
- SESSION 3 (Chaired by Fabio Dattilo, Head of the Directorate for Fire Safety and Technical Prevention, National Fire Services, Italy)
- 15.00/15.30 *Can computer models be used in fire investigation?*
 (Dougal Drysdale, Professor Emeritus, University of Edinburgh, UK)
 15.30/16.00 *An LPG explosion scenario reconstruction based on CFD simulation*
 (Armando De Rosa, Fire Officers, National Fire Services, Italy)
 16.00/16.30 *The Italian investigating approach in forest fires*
 (Marco Di Fonzo, Chief of NIAB, Corps of Forest Rangers, Italy)
 16.30/17.00 - COFFEE BREAK
 17.00/17.30 *Industrial accidents and fires involving chemical reactors: some experiences*
 (Angelo Lunghi, INNOVA, National Fire Services, Italy)
 17.30/18.00 *Causes and dynamics of the multiple explosion occurred in the*
 (Luca Marmo, Professor, University of Turin, Italy - Loris Munari, National Fire Services, Italy)
 18.00/18.30 DISCUSSION, CONCLUSION AND REMARKS
 (Fabio Dattilo, Head of the Directorate for Fire Safety and Technical Prevention, National Fire Services, Italy)

A POSTER SESSION will be arranged from 13.30 to 17.00

Modelling issues in backdraft incident fire reconstruction
 F. Ponziani, A. Tinaburni.

Fire testing of photovoltaic modules and subsequent analysis
 S. Fontana, F. Notaro, L. Podestà,
 G. Longobardo, A. De Rosa, P. Cancelliere

Aging tests on photovoltaic systems components
 F. Cristini, F. Notaro, L. Podestà, P. Cancelliere

The use of experimental test in mitigation of damages due to explosions
 A. Fidelibus, A. Romano, G. Romano.

Interagency cooperation experience between the carabinieri and firefighters: investigating a fire scene in a disco
 B. Cristini, L. Saravo.

Incident Caused By Runaway Reaction At a Chemical-Pharmaceutical Company
 L. Tomiato, D. De Dominicis, P. Degan, V. Restaino, F. Dattilo, G. Vassallo, G. Fiocca.

The connection of conventional Scene Investigation methods and Chemical Tests in the case of an arson Fire of a textile manufacture building in Prato (IT)
 V. Bernardo, L. Capobianco.

Investigation of two real flash over incidente fire in the hotel
 C. D'Angelo, B. Lanzillotta, G. Longobardo.

Investigation a Car park fire
 C. D'Angelo, F. Ponziani, A. Tinaburni.

LPG toxicity in confined room: experimental and numerical analysis
 E. Salzano, F. Cammarota, A. Di Benedetto, A. De Rosa, G. Longobardo, F. Notaro.

Development and testing of Blender FDS
 E. Gissi, F. Notaro, G. Longobardo.

Testing numerical and experimental simulation methods in the fire investigation on a super store arson
 B. Cristini, S. La Mendola.

A probabilistic approach to transformer explosion risk analysis
 F. Chilli, A. Fracchia.

Toxic gas dispersion simulation with flacs
 P. Middha, F. Gavelli.

Fire investigation and modeling of an explosion and fire due to an arsonist in an Italian restaurant
 C. D'Angelo, F. A. Ponziani, A. Tinaburni.



N.I.A. Duties

Since a fire or explosion investigation is a complex **activity**, the basic methodology of the fire investigation should rely on the use of a systematic approach and attention to all relevant details.




N.I.A. Duties

NIA carries out **instruction and training programs** for fire officers and fire-fighters that at regional and provincial level are (or will be) involved in fire investigation activities.

NIA develops standard procedures for fire fighters and fire officers operating at Regional and provincial Head Stations level



Circular 10539 of 3th September 2009: Fire Investigation Guidelines


Ministero dell'Interno
DIPARTIMENTO DEI VIGILI DEL FUOCO, DEL SOCCORSO PUBBLICO E DELLA DIFESA CIVILE
DIREZIONE CENTRALE PER LA PREVENZIONE E LA SICUREZZA TECNICA
AREA VIII - NUCLEO INVESTIGATIVO ANTINCENDI
Dipartimento dei Vigili del Fuoco del
Soccorso Pubblico e della Difesa Civile
DCPREV
Via ... 00185 Roma
Tel. ... 06/4980200

Lettera-circolare

AI SIGG. DIRETTORI REGIONALI DEI VIGILI DEL FUOCO

LORO SEDI

AI SIGG. COMANDANTI PROVINCIALI DEI VIGILI DEL FUOCO

LORO SEDI

E, p.c. AI SIGG. DIRETTORI CENTRALI DEI VIGILI DEL FUOCO

LORO SEDI

OGGETTO: Linea guida per il sopralluogo giudiziario ai fini dell'investigazione antincendio.

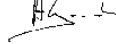
In relazione alla lettera-circolare prot. n. 8683 del 28.07.2009 "Modulistica di polizia giudiziaria", che ha inteso introdurre una prima standardizzazione delle procedure attinenti alle attività di polizia giudiziaria, uniformandone la modulistica adottata, con il fine di unificare sul territorio nazionale le procedure del sopralluogo, si è ritenuto necessario procedere alla emanazione di una linea guida generale che sia di ausilio per l'effettuazione di un corretto ed efficace sopralluogo giudiziario, nel caso in cui la fase d'intervento sia seguita dall'attività investigativa antincendio.

Per quanto sopra esposto, si trasmette, allegata alla presente lettera-circolare, con il fine di adottarne i contenuti, la "Linea guida per il sopralluogo giudiziario ai fini dell'investigazione antincendio".

IL CAPO DEL CORPO NAZIONALE V.V.F.

VICE CAPO DIPARTIMENTO VICARIO

(Gambardella)



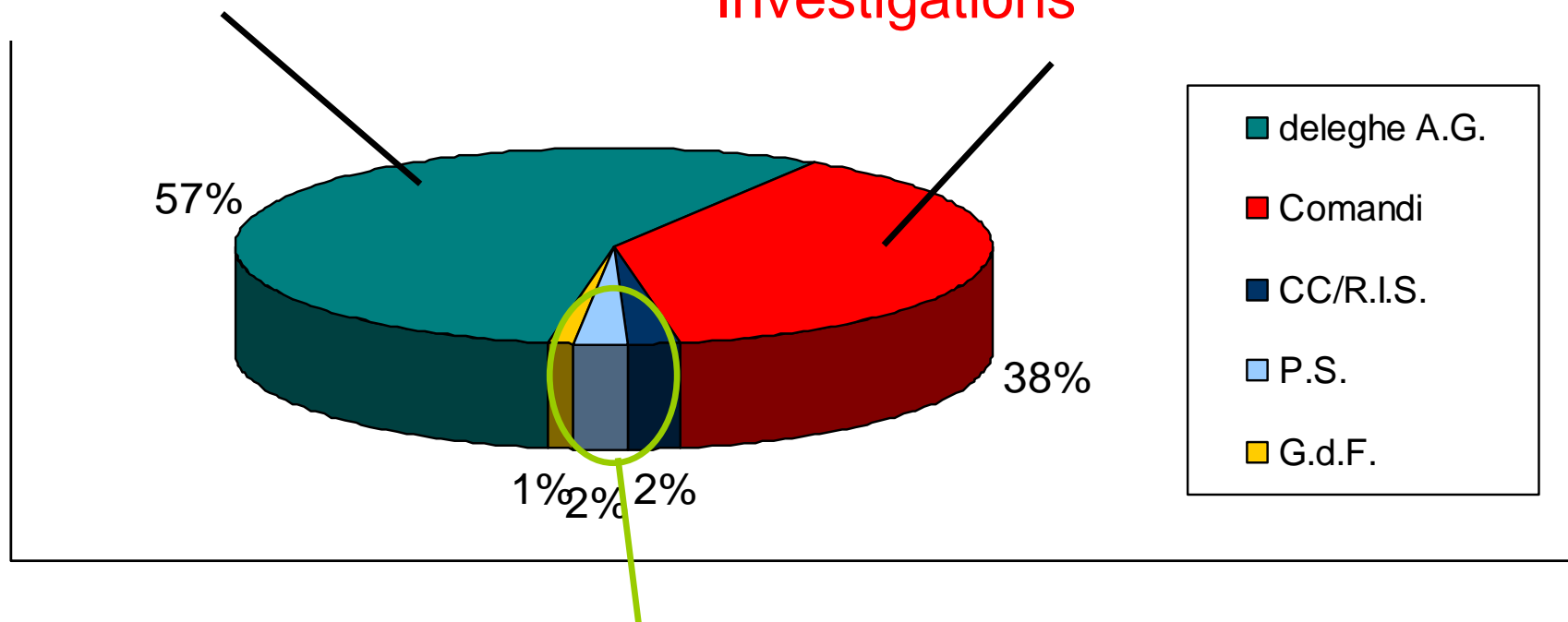




Fire Investigation Statistics

Prosecutors' fire
Investigations

Provincial Head Stations'
Investigations





Fire Investigation Statistics

Fires

Accident typologies

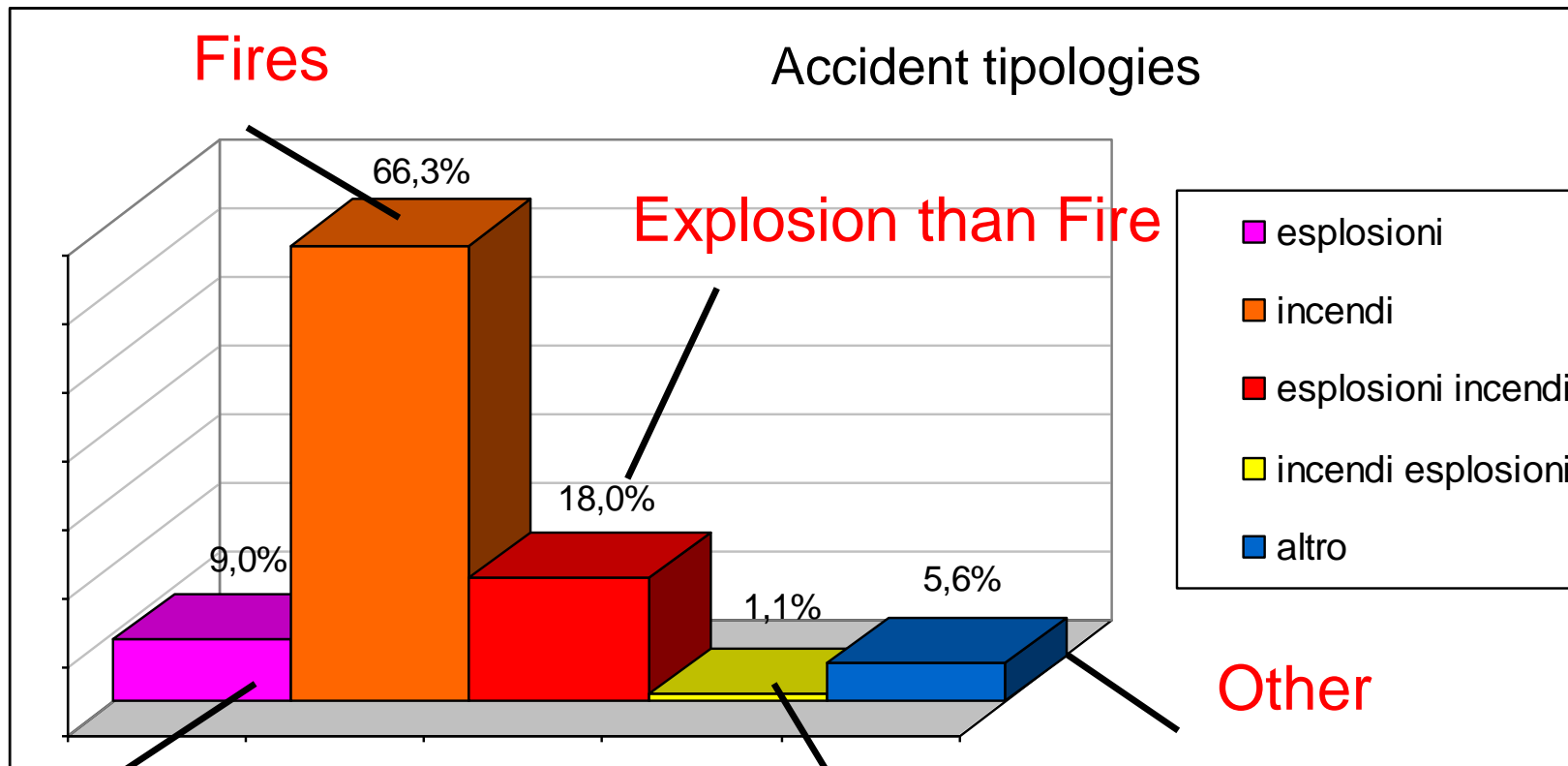
Explosion than Fire

- esplosioni
- incendi
- esplosioni incendi
- incendi esplosioni
- altro

Other

Explosions

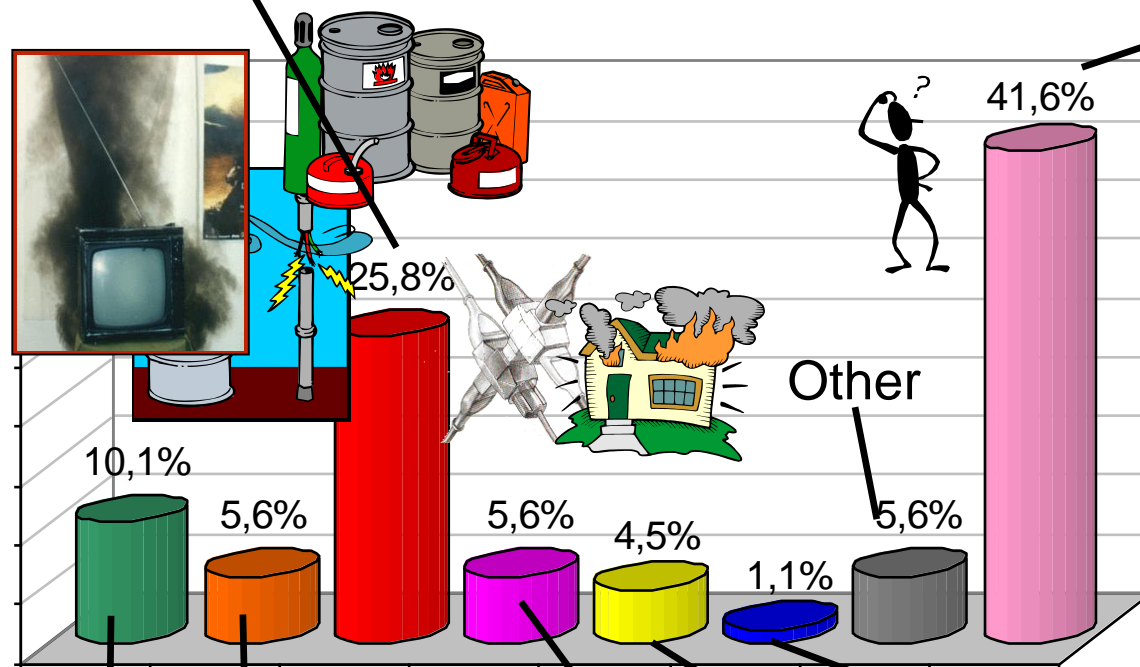
Fire than Explosion



ARSON

Still under
– investigation

MAIN CAUSES



- accidentali
- colpose
- dolose
- elettriche
- gas
- impianti in pressione
- altro
- in via di accertamento

Negligence/Careless

Gas release

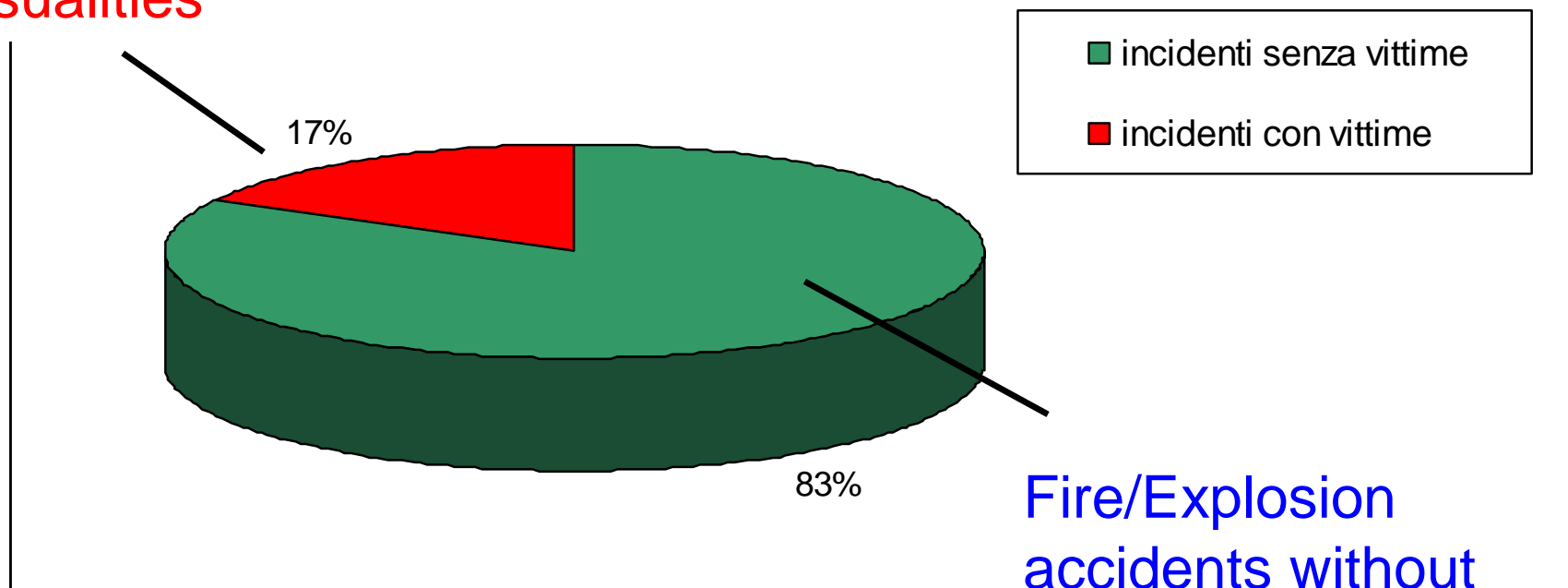
Overpressure
device/plant

Electrical

Accidental

Fire/Explosion
accidents with
casualties

incidenti mortali



Fire/Explosion
accidents without
casualties

Thank you for your
kind attention!



michele.mazzaro@vigilfuoco.it