



Fire Research Note

No.924

ADDENDUM

FIRE RESEARCH IN EUROPE

by

D I LAWSON*

May 1972

*Director of the Fire Research Station, Boreham Wood, England
until 31 December 1971

FIRE
RESEARCH
STATION

F.R. Note No 924

(Addendum)

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KEY WORDS: Fire research; European; laboratory; review

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Name of Laboratory CERCHAR (Laboratoire de Centre d'Etudes et Recherches des Charbonnages de France)

Address: Verneuil-en-Halatte -60-

FRANCE

Field of Activity	Staff		Remarks
	Research	Testing	
1. Fire Statistics			
2. Operational Research			
3. Behaviour of structures in fire			
4. Behaviour of fire (incl. smoke) in buildings			
5. Behaviour of fire in the open	1		
6. Fire Detection			
7. Fire Extinction	1	4	Fire or explosion extinction
8. Fire behaviour of materials (incl. ignition, reaction to fire, smoke & toxic products)	2	4	
9. Fire in transport systems			
10. Explosion Hazards	8	18	
11. Other Technical (please specify)			
12. Management, Admin. and supporting activities	2	4	
Total	14	30	
Grand Total	44		Additional staff from other research groups assist when necessary

EXPERIMENTAL FACILITIES AND AIDS

Facility or Aid		Yes	No	Remarks
1. Conventional Laboratories		*		
2. Indoor burning laboratories		*		
3. Outdoor burning areas		*		
4. Structural Furnaces				
5. Purpose built laboratories for				
	Detectors	*		
	Sprinklers			
	Smoke	*		Analysis of smoke samples
	Explosions	*		
6. Computer (value over £10 000)	Own	*		
	Access to			
7. Other special facilities				
	Aeration simulator			
	Chain chromatography, mass spectrography, calculator			Study of toxic combustion products
	Explosion galleries (2 of 150 m) some shorter			
	5 explosion test ranges			

Name of Laboratory Forschungs-und Materialprüfungsanstalt für das Bauwesen
Otto-Graf-Institut
 Address D 7000 Stuttgart-Vaihingen, Pfaffenwaldring 4
GERMANY

Field of Activity	Staff		Remarks
	Research	Testing	
1. Fire Statistics			
2. Operational Research			
3. Behaviour of structures in fire		5	Department F ("Behaviour of Structures in Fire") will start work late in 1972 when new lab. will presumably be completed.
4. Behaviour of fire (incl. smoke) in buildings			
5. Behaviour of fire in the open			
6. Fire Detection			
7. Fire Extinction			
8. Fire behaviour of materials (incl. ignition, reaction to fire, smoke and toxic products)		6	
9. Fire in transport systems			
10. Explosion Hazards			
11. Other Technical (please specify)	abt. 150		(Institute activities cover all fields of material research and testing concerned with the building field. Departments are for environmental conditions; concrete, binders, bricks etc.; reinforced and prestressed concrete; steel and other metallic construction, asphaltic and bituminous materials; paints, coats and anticorrosion procedures; timber, glass, textiles for floor covering, curtains etc; plastics; foundation of structures; fire research and testing (as listed above).
12. Management, Admin. and supporting activities	abt. 30		
Total	abt. 200		
Grand Total			

EXPERIMENTAL FACILITIES AND AIDS

Facility or Aid		Yes	No	Remarks
1.	Conventional Laboratories	*		
2.	Indoor burning laboratories	*		
3.	Outdoor burning areas		*	
4.	Structural Furnaces	*		Column (vertical load + moment); wall (vertical load); Beam and One-Way-Slabs (vertical and horizontal loads, furnace erected on strong floor); Chimneys. All oil fired.
5.	Purpose built laboratories for			
	Detectors		*	
	Sprinklers		*	
	Smoke		*	
	Explosions		*	
6.	Computer (value over £10 000)			
	Own	*		
	Access to	*		
7.	Other special facilities			
	Compression testing machines up to 1500 Mp capacity	*		eg. for testing of prefabricated chimney units (flue blocks)

Name of Laboratory Hauptstelle für das Grubenrettungswesen
des Steinkohlenbergbauvereins

Address 43 Essen - Kray, Schönscheidtstrasse 28
Bundesrepublik Deutschland

Field of Activity	Staff		Remarks
	Research	Testing	
1. Fire Statistics	1		Concerned solely with mine fires through propagation and self-ignition.
2. Operational Research			
3. Behaviour of structures in fire			
4. Behaviour of fire (incl. smoke) in buildings			
5. Behaviour of fire in the open			
6. Fire Detection	$\frac{1}{2}$	$\frac{1}{2}$	Detection of mine fires.
7. Fire Extinction	1	1	Extinction equipment and installations for active fire protection.
8. Fire behaviour of materials (incl. ignition, reaction to fire, smoke and toxic products)		1	Influence of products of combustion on effectiveness of protective filters.
9. Fire in transport systems	$\frac{1}{2}$		
10. Explosion Hazards			
11. Other Technical (please specify)	$\frac{1}{2}$	1	Flameproof clothing
12. Management, Admin. and supporting activities	1	1	
Total	$4\frac{1}{2}$	$4\frac{1}{2}$	
Grand Total	9		

EXPERIMENTAL FACILITIES & AIDS : Conventional Laboratories only

Name of Laboratory Laboratorien des Verbandes der Sachversicherer e.V.

Address 5 Köln 30, Glasstrasse 45-49

GERMANY

Field of Activity	Staff		Remarks
	Research	Testing	
1. Fire Statistics	2		Collaborator with the Head Office of the Verbandes der Sachversicherer.
2. Operational Research	-	-	
3. Behaviour of structures in fire	-	-	
4. Behaviour of fire (incl. smoke) in buildings.	-	-	
5. Behaviour of fire in the open	-	-	
6. Fire Detection	-	3	
7. Fire Extinction	-	5	
8. Fire behaviour of materials (incl. ignition, reaction to fire, smoke and toxic products)	-	(2)	Fire retardants of electrical and installation material; Co-operator (see item 11).
9. Fire in transport systems	-	-	
10. Explosion Hazards	-	-	
11. Other Technical (please specify)	-	2	For investigation of electrical fire hazards.
12. Management, admin. and supporting activities	-	6	
Total	2	16	
Grand total	18		

EXPERIMENTAL FACILITIES AND AIDS

Facility or Aid		Yes	No	Remarks
1. Conventional Laboratories		*		
2. Indoor burning laboratories			*	
3. Outdoor burning areas			*	
4. Structural Furnaces			*	
5. Purpose built laboratories for				
	Detectors	*		Including fire chamber
	Sprinklers	*		Including a chamber for wet experiments
	Smoke		*	
	Explosions		*	
	Electricity	*		
6. Computer (value over £10 000)	Own		*	(The computer is located at the Head Office of the Verbandes.
	Access to	*		
7. Other special facilities		*		Laboratory for burglar alarm systems.

Name of Laboratory Versuchsanstalt für Stahl, Holz und Steine

Address Universität (TH) Karlsruhe

75 Karlsruhe, Kaiserstrasse 12

GERMANY

Field of Activity	Staff		Remarks
	Research	Testing	
1. Fire Statistics	-	-	
2. Operational Research	-	-	
3. Behaviour of structures in fire	-	-	
4. Behaviour of fire (incl. smoke) in buildings	-	-	
5. Behaviour of fire in the open	-	-	
6. Fire Detection	-	-	
7. Fire Extinction	-	-	
8. Fire behaviour of materials (incl. ignition, reaction to fire, smoke and toxic products)	$\frac{1}{2}$	1	Fire behaviour of chimneys
9. Fire in transport systems	-	-	
10. Explosion Hazards	-	-	
11. Other Technical (please specify)	$7\frac{1}{2}$	5	Steel and wood structures
12. Management, Admin. and supporting activities	-	-	
Total	8	6	
Grand Total	14		

EXPERIMENTAL FACILITIES & AIDS: No information given

Name of Laboratory Safety in Mines Research Establishment
 Address Harpur Hill
Buxton, Derbyshire.

Field of Activity	Staff		Remarks
	Research	Testing	
Fire Statistics			
Operational Research			
Behaviour of structures in fire.			This item is included with 6, 7, 8 and 9
Behaviour of fire (incl. smoke) in buildings			
Behaviour of fire in the open			
Fire Detection			
Fire Extinction			
Fire behaviour of materials (incl. ignition, reaction to fire, smoke and toxic products)	9		Includes 2 industrials
Fire in transport systems			
Explosion Hazards	41½	13	Includes 8½ industrials
Other technical (please specify)	1 4 14	2 3	Investigations of fires and explosions Breathing apparatus Gas detection
Management, Admin. and supporting activities			
Total	69½	18	Includes 41 graduates
Grand Total	87½		

EXPERIMENTAL FACILITIES AND AIDS

Facility or Aid		Yes	No	Remarks
1. Conventional Laboratories		*		
2. Indoor burning laboratories		*		Model-scale flame galleries. Flameproof testing: cubicles & pit.
3. Outdoor burning areas		*		5-ft dia. explosion gallery
4. Structural Furnaces			*	
5. Purpose built laboratories for				
	Detectors		*	
	Sprinklers		*	
	Smoke		*	
	Explosions	*		
	Breathing apparatus	*		For Research, Devel. & testing. Includes a climatic chamber.
6. Computer (value over £10 000)	Own		*	
	Access to	*		
7. Other special facilities				
	Gas analysis equipment	*		
	Mass spectrometer	*		} Together with all appropriate equipment and expertise for analysing gas mixtures and cali- bration of instruments for
	Gas dilution equipment	*		
	Access to stereoscan E.M.	*		
	Equipped for testing & cali- bration of gas monitoring eqpt.	*		} measuring specific gas (with particular reference to combustible gases and products of combustion).
	Instrumented underground roadway	*		For large-scale fire tests. Temperatures, gas concentrations, etc. can be measured
	50 MVA short-circuit testing plant	*		For flameproof electrical equipment.

FIRE RESEARCH IN EUROPE

Distribution of interest by subject: FIRE STATISTICS

Laboratory	Staff	
	Research	Testing
Laboratorien des Verbandes der Sachversicherer e.V. 5 Köln 30, Glasstrasse 45-49 GERMANY	2	-
Hauptstelle für das Grubenrettungswesen des Steinkohlenbergbauvereins 43 Essen - Kray Schönscheidtstrasse 28 GERMANY	1	-
<u>BEHAVIOUR OF STRUCTURES IN FIRE</u>		
Forschungs-und Materialprüfungsanstalt für das Bauwesen Otto-Graf-Institut D 7000 Stuttgart-Vaihingen Pfaffenwaldring 4 GERMANY	2	5
Safety in Mines Research Establishment Harpur Hill BUXTON Derbyshire UNITED KINGDOM	(some research)	
<u>BEHAVIOUR OF FIRE IN THE OPEN</u>		
CERCHAR (Laboratoire du CENTRE D'ETUDES ET RECHERCHES DES CHARBONNAGES DE FRANCE) Verneuil-en-Halatte -60- FRANCE	1	-

(cont'd)

Distribution of interest by subject: FIRE DETECTION

Laboratory	Staff	
	Research	Testing
<p>Laboratorien des Verbandes der Sachversicherer e.V. 5 Köln 30 Glasstrasse 45-49 GERMANY</p>	-	3
<p>Hauptstelle für das Grubenrettungswesen des Steinkohlenbergbauvereins 43 Essen - Kray Schönscheidtstrasse 28 GERMANY</p>	$\frac{1}{2}$ (fires in mines)	$\frac{1}{2}$
<p>Safety in Mines Research Establishment Harpur Hill BUXTON Derbyshire GREAT BRITAIN</p>	(some research)	
<u>FIRE EXTINGUISHMENT</u>		
<p>CERCHAR (Laboratoire du CENTRE D'ETUDES ET RECHERCHES DES CHARBONNAGES DE FRANCE) Verneuil-en-Halatte -60- FRANCE</p>	1	4
<p>Laboratorien des Verbandes der Sachversicherer e.V. 5 Köln 30 Glasstrasse 45-49 GERMANY</p>	-	5
<p>Hauptstelle für das Grubenrettungswesen des Steinkohlenbergbauvereins 43 Essen - Kray Schönscheidtstrasse 28 GERMANY</p>	1	1
<p>Safety in Mines Research Establishment Harpur Hill, Buxton Derbyshire UNITED KINGDOM</p>	(some research)	

Distribution of interest by subject:

FIRE BEHAVIOUR OF MATERIALS (including
ignition, reaction to fire, smoke and
toxic products).

Laboratory	Staff	
	Research	Testing
CERCHAR (Laboratoire du CENTRE D'ETUDES ET RECHERCHES DES CHARBONNAGES DE FRANCE) Verneuil-en-Halatte -60- FRANCE	2	4
Forschungs- und Materialprüfungsanstalt für das Bauwesen Otto-Graf-Institut D 7000 Stuttgart-Vaihingen Pfaffenwaldring 4 GERMANY	-	6
Laboratorien des Verbandes der Sachversicherer e.V. 5 Köln 30 Glasstrasse 45-49 GERMANY	(electrical material)	2
Hauptstelle für das Grubenrettungswesen des Steinkohlenbergbauvereins 43 Essen - Kray Schönscheidtstrasse 28 GERMANY	(extinction equipt.)	1
Versuchsanstalt für Stahl, Holz und Steine Universität (TH) Karlsruhe 75 Karlsruhe Kaiserstrasse 12 GERMANY	$\frac{1}{2}$	1
Safety in Mines Research Establishment Harpur Hill BUXTON Derbyshire UNITED KINGDOM	9	-

Distribution of interest by subject:

FIRE IN TRANSPORT SYSTEMS

Laboratory	Staff	
	Research	Testing
Hauptstelle für das Grubenrettungswesen des Steinkohlenbergbauvereins 43 Essen - Kray Schönscheidtstrasse 28 GERMANY	$\frac{1}{2}$	-
Safety in Mines Research Establishment Harpur Hill BUXTON Derbyshire UNITED KINGDOM	(some research)	
<u>EXPLOSION HAZARDS</u>		
Cerchar (Laboratoire du CENTRE D'ETUDES ET RECHERCHES DES CHARBONNAGES DE FRANCE Verneuil-en-Halatte -60- FRANCE	8	18
Safety in Mines Research Establishment Harpur Hill BUXTON Derbyshire UNITED KINGDOM	$4\frac{1}{2}$	13

Distribution of interest by subject:

Other technical activities

Laboratory	Staff	
	Research	Testing
Forschungs-und Materialprüfungsanstalt für das Bauwesen Otto-Graf-Institut D 7000 Stuttgart-Vaihingen Pfaffenwaldring 4 GERMANY	150 approx.	-
Hauptstelle für das Grubenrettungswesen des Steinkohlenbergbauvereins 43 Essen - Kray Schönscheidtstrasse 28 GERMANY	$\frac{1}{2}$	1
Laboratorien des Verbandes der Sachversicherer e.V. 5 Köln 30 Glasstrasse 45-49 GERMANY		2
Versuchsanstalt für Stahl, Holz und Steine Universität (TH) Karlsruhe 75 Karlsruhe, Kaiserstrasse 12 GERMANY	$7\frac{1}{2}$	5
Safety in Mines Research Establishment Harpur Hill BUXTON Derbyshire UNITED KINGDOM	1 4 14 (see item 11 on form)	2 3

Distribution of interest by subject:

Management, Admin. and supporting activities

Laboratory	Staff	
	Research	Testing
CERCHAR (Laboratoire de CENTRE D'ETUDES ET RECHERCHES DES CHARBONNAGES DE FRANCE) Verneuil-en-Halatte -60- FRANCE	2	4
Forschungs- und Materialprüfungsanstalt für das Bauwesen Otto-Graf-Institut D 7000 Stuttgart-Vaihingen Pfaffenwaldring 4 GERMANY	30 approx.	-
Hauptstelle für das Grubenrettungswesen des Steinkohlenbergbauvereins 43 Essen - Kray Schönscheidtstrasse 28 GERMANY	1	1
Laboratorien des Verbandes der Sachversicherer e.V. 5 Köln 30 Glasstrasse 45-49 GERMANY	-	6

