

## Report of the Committee on

### Fire Safety Symbols

**Thomas R. Wood**, *Chair*

Boca Raton Fire Rescue Services, FL [E]

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**Randall S. Chaney**, LMG Property Engineering, CA [I]

Rep. Alliance of American Insurers

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**David C. Cox**, Fire Safety Displays Company, MI [M]

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**William P. MacDonald**, New York Power Authority, NY [U]

**James M. Mundy, Jr.**, Siemens Cerberus Division, NY [IM]

Rep. Automatic Fire Alarm Association, Inc.

**Edward P. Quinn, Jr.**, General Accident Insurance, NY [I]

**George R. Riggs**, Engineered Fire Systems, Inc., AK [IM]

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**Brad Schiffer**, Brad Schiffer/Taxis, Inc., FL [SE]

**John Stofa**, Simplex Time Recorder Co., VT [IM]

**James J. Vorce**, Johnson Controls Inc., M14, WI [IM]

**Harry J. Walsh**, Pennsylvania Lumbermens Mutual Insurance Co., PA [I]

**Don N. Whittaker**, Bechtel BWXT Idaho, LLC (BBWI), ID [U]

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## Alternates

**David Johnson**, Randal Brown & Associates Limited, Canada [SE]  
(Alt. to R. G. Brown)

**Kenneth Saks**, American Fire Sprinkler Association, Inc., TX [IM]  
(Alt. to P. A. Brown)

Staff Liaison: **David R. Hague**

**Committee Scope:** This Committee shall have primary responsibility for documents on fire safety symbols including those for building design plans, investigation diagrams, maps, and for public fire safety. It shall coordinate its work with NFPA technical committees and other groups dealing with subjects to which fire safety symbols apply.

*This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the front of this book.*

The Report of the Technical Committee on **Fire Safety Symbols** is presented for adoption.

This Report was prepared by the **Technical Committee on Fire Safety Symbols** and proposes for adoption, amendments to NFPA 170-1999, **Standard for Fire Safety Symbols**, 1999 edition. NFPA 170-1999 is published in Volume 6 of the 2001 National Fire Codes and in separate pamphlet form.

This Report has been submitted to letter ballot of the **Technical Committee on Fire Safety Symbols**, which consists of 17 voting members. The results of the balloting, after circulation of any negative votes, can be found in the report.

(Log #CP1)

170- 1 - (Entire Document): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Restructure entire document to comply with the NFPA Manual of Style as follows:

1. Chapter 1 to contain administrative text only.
2. Chapter 2 to contain only referenced publications cited in the mandatory portions of the document.
3. Chapter 3 to contain only definitions.
4. All mandatory sections of the document must be evaluated for usability, adoptability, and enforceability language. Generate necessary committee proposals.
5. All units of measure in document are converted to SI units with inch/pound units in parentheses.
6. Appendices restructured and renamed as "Annexes."

**SUBSTANTIATION:** Editorial restructuring, to conform with the 2000 edition of the NFPA Manual of Style.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #12)

170- 2 - (Entire Document): Accept in Principle in Part

**SUBMITTER:** Ron H. Minter, Thomas & Betts Corp.

**RECOMMENDATION:** Add the exit — "Running Man" symbols from IEC.

**SUBSTANTIATION:** (1) Current symbols are all square and will not fit the standard exit sign used in North America.

(2) Make the pictogram for exit truly international.

(3) The 2001 edition of NFPA 101 will accept pictograms in lieu of the word "EXIT" and references NFPA 170 as the source.

**COMMITTEE ACTION:** Accept in Principle in Part.

The proposed symbols from the IEC are not accepted as they were not included in the proposal.

Add new symbol to indicate exit with arrows as shown below:

3-2.1(b)

Painted Version

Background color shall be White

Arrows shall be either Red or Black

Backlit Version

Doorway and Arrows to be Green or Red



**COMMITTEE STATEMENT:** To be consistent with NFPA 101 and NFPA 101B.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #1)

170- 3 - (3-2 (New) ): Reject

**SUBMITTER:** Southern Regional Fire Code Dev. Committee

**RECOMMENDATION:** Add a new 3-2.x to read:

3-2.x Free clear areas of fire and smoke doors.

**SUBSTANTIATION:** We have proposed that smoke and fire doors be required to have signs affixed to them showing the area that needs to be kept clear for proper operation.

**COMMITTEE ACTION:** Reject.

**COMMITTEE STATEMENT:** The proposal does not contain any symbol and is not germane to this committee.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

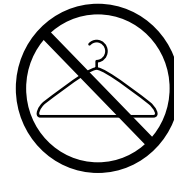
NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP9)

170- 4 - (3-2.x): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Add "no hanger" symbol to section 3-2.x with red over black color.



**SUBSTANTIATION:** This symbol is used to prohibit hanging clothes or other items from sprinklers.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

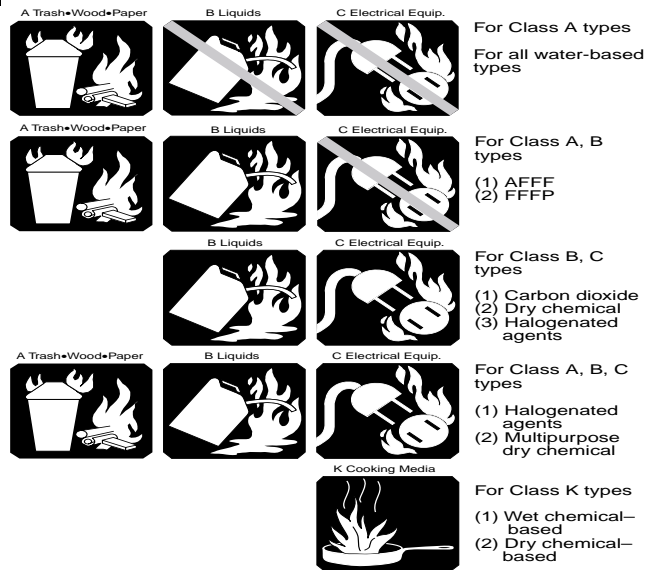
NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP4)

170- 5 - (3-2.14 (New) ): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Extract class of fire symbols from NFPA 10, Appendix B into new section 3-2.14 as follows:







Note: Recommended colors, per PMS (Pantone Matching System) include the following:

BLUE — 299

RED — Warm Red

Figure B.2.1

(Log #CP17)

<p>Ordinary  Combustibles</p>	<p>Extinguishers suitable for Class A fires should be identified by a triangle containing the letter "A." If colored, the triangle is colored green.*</p>
<p>Flammable  Liquid</p>	<p>Extinguishers suitable for Class B fires should be identified by a square containing the letter "B." If colored, the square is colored red.*</p>
<p>Electrical  Equipment</p>	<p>Extinguishers suitable for Class C fires should be identified by a circle containing the letter "C." If colored, the circle is colored blue.*</p>
<p>Combustible  Metals</p>	<p>Extinguishers suitable for fires involving metals should be identified by a five-pointed star containing the letter "D." If colored, the star is colored yellow.*</p>

\* Recommended colors, per PMS (Pantone Matching System) include the following:  
 GREEN — Basic Green  
 RED — 192 Red  
 BLUE — Process Blue  
 YELLOW — Basic Yellow

**Figure B.2.2**

**SUBSTANTIATION:** Fire Classification symbology should also be referenced in this standard.  
**COMMITTEE ACTION:** Accept.  
**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17  
**VOTE ON COMMITTEE ACTION:**  
 AFFIRMATIVE: 13  
 NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

170-6 - (4-2): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols  
**RECOMMENDATION:** Add new symbol for emergency telephone background red with white phone (pictogram of 5-7.1.1.1).



**SUBSTANTIATION:** Pictogram is needed for this device.  
**COMMITTEE ACTION:** Accept.  
**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17  
**VOTE ON COMMITTEE ACTION:**  
 AFFIRMATIVE: 13  
 NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #6)

170-7 - (5-2.9): Reject

**SUBMITTER:** Jeffrey Ferguson, Best Automatic Sprinkler Corp  
**RECOMMENDATION:** Include symbol for north arrow:



**SUBSTANTIATION:** The proposed symbols more accurately represent the symbols typically used on engineering and architectural drawings.  
**COMMITTEE ACTION:** Reject.  
**COMMITTEE STATEMENT:** Standardization of a north arrow is not necessary.  
**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17  
**VOTE ON COMMITTEE ACTION:**  
 AFFIRMATIVE: 13  
 NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #9)

170-8 - (5-4): Reject

**SUBMITTER:** Jeffrey Ferguson, Best Automatic Sprinkler Corp  
**RECOMMENDATION:** Revise valve symbols as shown on the following page:

(Log #2)

SYMBOLS FOR PRELIMINARY AND WORKING PLANS		
Item	Information Required on Plan	Plan Symbol
<b>VALVES</b>		
5-4.2.4 (a) OS & Y Gate	1 - Flanged joint 2 - Mechanical or lead joint 3 - Screwed 4 - Size 5 - Tap size and location, if required 6 - Stem Position designation V = Vertical H = Horizontal 45° = Angle	
5-4.2.13 (c) Globe	Size	
5-4.2.2 (d) PIV	1 - Flanged joint 2 - Mechanical or lead joint 3 - With or w/o Monitor Switch 4 - Depth of trench 5 - Left or right to open (Std = Left) 6 - Oper Nut (Std = 1 1/4" Sq)	
5-4.2.3 (e) Non-Indicating Gate Valve with Roadway Box and Key (Note on plan)	1 - Depth of trench 2 - Left or right to open (Std = Left) 3 - Oper Nut (Std = 2" Sq)	
5-4.2.7 (f) Check Valve	1 - Flanged joint 2 - Mechanical or lead joint 3 - Screwed 4 - Size 5 - Metal or Rubber Disc 6 - If tap required show size and whether on inlet or discharge side of clapper	

**SUBSTANTIATION:** The proposed symbols more accurately represent the symbols typically used on engineering and architectural drawings.

**COMMITTEE ACTION:** Reject.

**COMMITTEE STATEMENT:** All the valves shown can be portrayed by the existing standard and there is no need to illustrate the pipe joint methods.

The globe valve symbol is already in the standard under the non-indicating (non-rising) stem symbol.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17  
**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP28)

170- 9 - (5-5): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Add a new symbol for remote microphone for voice evacuation system.



Remote MIC for Voice Evaluation System

**SUBSTANTIATION:** A symbol for this device is needed.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17  
**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

170- 10 - (5-5.1): Accept in Principle

**SUBMITTER:** Joshua W. Elvove, U.S. Dept. of Veterans Affairs

**RECOMMENDATION:** Change the current acronym/symbol for Fire Alarm Control Panel from "FCP" to "FACP". Delete the acronym/symbol for the Halon Control Panel (HCP) and substitute in its place a new symbol/acronym for Fire Suppression Control Panel (FSCP).

**SUBSTANTIATION:** Fire alarm systems are typically abbreviated using the letters "FA". Therefore, it would make sense that these same letters be used to identify a fire alarm control panel. Since Halon is being used very infrequently, it need not be singularly identified. Instead, a generic symbol/acronym for all fire suppression system control panels should be created (FSCP) which would represent panels that control the discharge of dry chemical, wet chemical, carbon dioxide, foam, water mist and clean agents. As an alternative, individual designations could be developed for each fire suppression system being controlled, be a release/control panel as follows: dry chemical (DC), wet chemical (WC), carbon dioxide (CO2), foam (F), water mist (WM) and clean agent (CA).

**COMMITTEE ACTION:** Accept in Principle.

Accept the proposal in its entirety but include subscripts for each type of FSCP as in Section 5-7.1.1. The "pre" for pre-action system subscript is to avoid confusion with public address systems.

**COMMITTEE STATEMENT:** This will eliminate any confusion regarding the type of Fire Suppression Control Panel since many projects will have more than one system installed.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP13)

170- 11 - (5-5.1): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Add "HOA" designation to symbol in section 5-11.1.1.1 (new symbol) Add after the word "Hand" and in parenthesis the word "Manual".

5.11.1.1.1 Hand (Manual)/Off-Automatic:



**SUBSTANTIATION:** Reference to hand/off/automatic selector switch is needed.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17  
**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP20)

170- 12 - (5-5.1): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Extract NECA 100 symbol 7.008 Voice Evacuation Panel.



Voice evacuation panel.

**SUBSTANTIATION:** A symbol for this panel is needed.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP21)

170-13 - (5-5.1): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Extract NECA 100 symbol 7.009 Fire Alarm Terminal Cabinet and 7.010 Battery Pack and Charger 7.011 Air Sampling control/detector panel into Section 5-5.1.

FATC

Fire alarm terminal cabinet.

**SUBSTANTIATION:** Symbols for these devices are needed.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP19)

170-14 - (5-5.1(2)): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Extract NECA 100 symbol 7.006 into existing section 5-5.1(2).

FAA

Annunciator panel.

**SUBSTANTIATION:** This symbol better illustrates a fire alarm annunciator panel.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #11)

170-15 - (5-5.1, 5-7.1 through 5-7.1.1.1 and 5-7.1.2 through 5-7.3.1 and 5-7.1.1.2): Accept in Principle in Part

**SUBMITTER:** James M. Mundy, Jr., Siemens Cerberus Division/Rep. Automatic Fire Alarm Association

**RECOMMENDATION:** Remove all text in 5-5.1 (1) through (6), 5-7.1 through 5-7.1.1.1 and 5-7.1.2 through 5-7.3.1.

Revise Section 5-7.1.1.2 to place subscripts into body (square) of symbols under 5-5.

Replace removed text as follows:

**LEGEND**

SYMBOL	DESCRIPTION
	HORN
	HORN/STROBE
	SPEAKER
	SPEAKER/STROBE
	VIBRATING BELL
	VIBRATING BELL/STROBE
	SINGLE STROKE GONG
	SINGLE STROKE GONG/STROBE
	TROUBLE BELL
	STROBE LIGHT
	REMOTE LIGHT
	MAGNETIC DOOR HOLDER
	SOLENOID VALVE
	MOTORIZED FIRE/SMOKE DAMPER
	OUTPUT RELAY
	SMOKE DETECTOR -IONIZATION TYPE
	SMOKE DETECTOR -PHOTOELECTRIC TYPE
	SMOKE DUCT DETECTOR - SUPPLY SIDE
	SMOKE DUCT DETECTOR-RETURN SIDE
	PHOTOELECTRIC SMOKE DUCT DETECTOR SUPPLY SIDE
	PHOTOELECTRIC SMOKE DUCT DETECTOR RETURN SIDE

	PURGE PANEL
	RELAY - FAN SHUT DOWN
	HEAT DETECTOR -FIXED TEMP.
	HEAT DETECTOR -RATE OF RISE
	FLAME DETECTOR -INFRARED
	FLAME DETECTOR -ULTRAVIOLET
	SMOKE DETECTOR -PHOTOELECTRIC-BEAM-RECEIVER
	SMOKE DETECTOR -PHOTOELECTRIC-TRANSMITTER
	SMOKE/HEAT DETECTOR
	AIR PRESSURE SWITCH - H - HIGH, L - LOW
	WATER FLOW SWITCH
	VALVE SUPERVISORY
	TEMPERATURE SWITCH (FREEZE-STAT)
	HIGH\LOW AIR LEVEL SWITCH
	HIGH\LOW WATER LEVEL SWITCH
	INCIPIENT DETECTOR
	FIRE COMMAND STATION
	FIRE ALARM CONTROL PANEL
	SPRINKLER ALARM PANEL
	RELAY ALARM PANEL
	DATA GATHERING PANEL (MULTIPLEX SYSTEMS)
	AMPLIFIER RACK

SCP	SMOKE CONTROL PANEL
DP	SPRINKLER DELUGE PANEL
SP	STROBE PANEL
PA	PUBLIC ADDRESS PANEL
RA	REMOTE ANNUNCIATOR
GA	GRAPHIC ANNUNCIATOR
J	JUNCTION BOX
FCO	FUSE CUT OUT
HCP	HALON CONTROL PANEL
WS	WARDEN STATION
WJ	WARDEN JACK
WS <sub>P</sub>	WARDEN STATION IN PUMP ROOM
WS <sub>S</sub>	WARDEN STATION IN FIRE SAFETY DIRECTOR'S OFFICE
F	MANUAL FIRE ALARM BOX
AR	ABORT SWITCH
MR	AGENT MAIN /RESERVE SWITCH
SI <sub>E</sub>	SMOKE DETECTOR — ELEVATOR LOBBY
R <sub>E</sub>	ELEVATOR RECALL RELAY
SV	PUMP RUNNING STATUS
ATS	AUTOMATIC TRANSFER SWITCH
GEN	EMERGENCY GENERATOR

	T — Test Switch	FSD — Fan Shut-Down
	E — Elevator Recall	96 — 96" Above Finished Floor
	C — Ceiling Mounted	S — Stair Speaker
	W — Wall Mounted	

NOTE: Symbol orientation does not denote direction of device propagation.

	Subscripts - Mounting Method	
S	Surface	1—2—4 - Individual cord for Pull Station (indicate code for ind. coded system)
SF	Semi Flush	
F	Flush	

	Subscripts — Location of Device	
E	Elevator Detector	P — In Plenum
DS	Duct - Supply Side	SS — Single Stage (Smoke Detector)
DR	Duct - Return Side	
UF	Under the raised floor	

Number new sections, paragraphs and subparagraphs to provide consecutive and appropriate delineation.

**SUBSTANTIATION:** Combining Standards 171, 172, 174 and 178 has made working with the material significantly more convenient. However simplified is this new standard not enough acceptance of the symbols portrayed has occurred by the Fire Alarm systems design and contracting communities. The flow symbols are difficult to use and when they are in use make recognition by those dealing with both design and shop drawings difficult. Further consideration is given to zooming in or out on these symbols using CAD programs. The changes in size, especially when reduced, make readability difficult. This leads to delays and mistakes and in project implementation.

Most of the symbols proposed have been approved for use by the Fire Prevention Division of the Fire Department of the City of New York for both design, shop and record drawing. Such approval was given largely because of the simplicity of use and ease of recognition of the material particularly by AHJ plan examiners and field inspectors. The symbols submitted have been in use since 1988 and have become widely accepted. Additionally, nomenclature requires

correction to be consistent with NFPA 72, 1999 edition, National Fire Alarm Code.

**COMMITTEE ACTION:** Accept in Principle in Part.

Each symbol was reviewed as follows:

- Horn - not accepted
- Horn/strobe - not accepted
- Speaker - not accepted
- Bell - accepted in principle, insert bell symbol in section 5-7.2.3 and use subscripts for each of the following: V - vibrating bell, VS - vibrating bell/strobe, S - single stroke gong, SG - single stroke gong/strobe, T - trouble bell, C - chime.
- Strobe light - not accepted
- Remote light - not accepted
- Magnetic door holder - not accepted
- Solenoid valve - not accepted
- Motorized fire/smoke damper - not accepted
- Output relay - accept in principle by using solid circle with subscript "R"
- Smoke detector - ionization type - not accepted
- Smoke detector-photoelectric type - not accepted
- Smoke duct detector - supply side - not accepted
- Smoke duct detector - return side -not accepted
- Photoelectric smoke duct detector-supply side - not accepted
- Photoelectric smoke duct detector-return side - not accepted
- Relay - fan shut down - not accepted
- Heat Detector - fixed temperature - not accepted
- Heat Detector - rate of rise - not accepted
- Flame detector - accept in principle by expanding existing section 5-7.1.2.5 to include the current symbol for flame detector in NFPA 170 with the following subscripts: "F" - flame, "UV" - ultra-violet, "IR" - infra-red, "UN/IR" - combination ultra-violet/infra-red, "VR" - visible radiation.
- Smoke detector – photoelectric-beam-receiver – not accepted
- Smoke detector – photoelectric-transmitter – not accepted
- Smoke/heat detector – accept in principle use existing smoke and heat detector symbols from section 5-7.1.2.1 and 5-7.1.2.2 as shown below



- Air pressure switch – not accepted
- Water flow switch – not accepted
- Valve supervisory – not accepted
- Temperature switch – accept in principle use the following

symbology:

ht - Temperature switch (high temperature)

symbology:

lt – Temperature switch (low Temperature)

- High/low air level switch – not accepted
- High/low water level switch – not accepted
- Incipient detector – not accepted
- Fire Command Station – accepted

FCS

- Fire Alarm Control Panel – accepted

(Log #CP11)

FACP

- Sprinkler Alarm Panel - accepted

SAP

- Relay Alarm Panel - accepted

RP

- Data Gathering Panel (multiplex systems)- accepted

DGP

- Amplifier Rack - accepted

AMP

- Purge Panel - accepted

PP

Subscripts for mounting methods and location – not accepted.

**COMMITTEE STATEMENT:** The symbols that were not accepted are currently contained in NFPA 170. It is the committee's intent to suggest the use of symbols already contained in NFPA 170.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

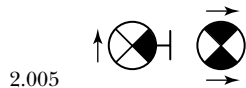
NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP10)

170- 16 - (5-6.5): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Extract new symbol for exit lighting from NECA 100-1999, symbol 2.005 into section 5-6.5.



2.005

Exit lighting fixture, arrows and exit face as indicated on DWGS (mounting heights to be determined by job specifications).

**SUBSTANTIATION:** Includes a wall mounted exit light fixture.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

**COMMENT ON AFFIRMATIVE:**

SCHIFFER: The wall mounted symbol shows the should be:



170- 17 - (5-6.5): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Extract NECA Symbol 2.300 to reference luminaire providing emergency illumination (filled in).



2.300

Luminaire providing emergency illumination. (Filled in.)

**SUBSTANTIATION:** Includes emergency lighting not previously addressed in NFPA 170.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #7)

170- 18 - (5-7): Reject

**SUBMITTER:** Jeffrey Ferguson, Best Automatic Sprinkler Corp

**RECOMMENDATION:** Revise symbol and commentary for flow switch, water motor gong and electric alarm as follows:

5-7.1.2.6 (a) Flow Indicator	1 - Horizontal or Vertical pipe 2 - Voltage - AC or DC 3 - Normal operating pressure	
5-7.2.3 (b) Water Motor Gong		
5-7.2.2 (c) Electric Alarm Gong	1 - Standard 2 - Weatherproof 3 - Explosion proof 4 - Voltage 5. Size	

**SUBSTANTIATION:** The proposed symbols more accurately represent the symbols typically used on engineering and architectural drawings.

**COMMITTEE ACTION:** Reject.

**COMMITTEE STATEMENT:** The existing symbols more accurately represent those used in the industry.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP16)

170- 19 - (5-7.1.1): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Add symbol for fire alarm master box showing square with "MB" subscript.

10. Fire Alarm Master Box:



**SUBSTANTIATION:** A symbol for fire alarm master box is needed.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP18)

170- 20 - (5-7.1.1): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Add new manual station for drill key with subscript of "DK" outside of box.

11. Drill Key:



**SUBSTANTIATION:** A symbol for this device is needed.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP2)

170- 21 - (5-7.1.1, 5-7.1.1.2): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Add abort switch to section 5-7.1.1.2 for pre-action system with subscript to read as follows: "PRE"

Add manual station in section 5-7.1.1 for pre-action system with subscript to read as follows: "PRE".

**SUBSTANTIATION:** Designations for pre-action systems are needed for manual stations and abort switches.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP12)

170- 22 - (5-7.1.1.2): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Add new switch with designation of EPO "Emergency Power Off".

9. Emergency Power Off:



**SUBSTANTIATION:** This reference addresses the power shut off for power shunt trip requirements.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

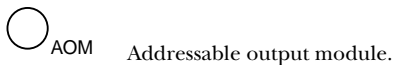
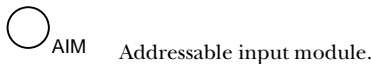
NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP22)

170- 23 - (5-7.1.2): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Add new symbols for Addressable input module and Addressable output module (AIM and AOM) with open circles.



**SUBSTANTIATION:** Symbols for these devices are needed.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP24)

170- 24 - (5-7.2.5): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Add new symbol in Section 5-7.2.5 to indicate a rotating beacon to indicate emergency response points.



**SUBSTANTIATION:** A symbol for this device is needed.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP25)

170- 25 - (5-7.2.5): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Add new symbol for a "Remote alarm indicating and test switch".



RTS Remote test switch.

**SUBSTANTIATION:** A symbol for this device is needed.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #8)

170- 26 - (5-8.1): Reject

**SUBMITTER:** Jeffrey Ferguson, Best Automatic Sprinkler Corp

**RECOMMENDATION:** Revise valve symbols for alarm, dry pipe, pre-action and deluge valves as follows:

SYMBOLS FOR PRELIMINARY AND WORKING PLANS		
Item	Information Required on Plan	Plan Symbol
SPRINKLER VALVES		
5-8.1.1.1 (a) Alarm Valve	1 - Number of sprinklers 2 - Model 3 - Vertical or Horizontal 4 - With or w/o circuit closer 5 - With or w/o retard chamber	
5-8.1.1.2 (b) Dry Pipe Valve	1 - Number of sprinklers 2 - Capacity of system in gallons 3 - With or w/o escalator 4 - With or w/o circuit closer 5 - Air supply - automatic or manual	
(c) Suprotex-Deluge Valve	1 - Number of Sprinklers 2 - Model 3 - With or w/o weight switch 4 - Air Line Restriction No. _____ 5 - With or w/o red light 6 - Voltage _____, Cycles _____ 7 - Brick or frame wall (for air pump mounting) 8 - Bill of material 9 - With or w/o reservoir 10 - With or w/o explosion proof devices 11 - With or w/o break glass box for manual pull	
(d) Suprotex Valve	See Suprotex-Deluge Valve (New Suprotex = Model 142) (Existing Suprotex with check valve = Model C)	
5-8.1.1.3 (e) Deluge or Pre-Action Valve	1 - Number of Sprinklers 2 - Model	

5-8.2 SYMBOLS FOR FIRE SPRINKLERS		
Item	Information Required on Plan	Plan Symbol
(a) Upright on branch line		
(b) Upright sprig on Branch Line		
(c) Upright on top of riser nipple		
(d) Upright on riser nipple with sprig		
(e) Open on branch line		
(f) Open on branch line with sprig		
(g) Sidewall on branch line		
(h) Sidewall on sprig		
(j) Window Sprinklers		
(k) High degree		
(l) Upright sprig on branch line with high degree		
(m) High degree sidewall		
(n) Pendent on branch line No drop nipple		
(p) Pendent goose-neck		
(q) Dry pendent		
(r) Pendent open on branch line		
(s) Fog Nozzle straight down		
(t) Fog Nozzle straight out		
(u) Foam-Water upright		
(v) Foam-Water pendent		
(w) Pendent with straight line		

**SUBSTANTIATION:** The proposed symbols more accurately represent the symbols typically used on engineering and architectural drawings.

**COMMITTEE ACTION:** Reject.

**COMMITTEE STATEMENT:** Symbols in Section 5-9 already address the submitter's intent.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #4)

170-27 - (5-8.2): Accept in Principle in Part

**SUBMITTER:** Jeffrey Ferguson, Best Automatic Sprinkler Corp

**RECOMMENDATION:** Include sprinkler symbols as indicated:

**SUBSTANTIATION:** The proposed symbols more accurately represent the symbols typically used on engineering and architectural drawings.

**COMMITTEE ACTION:** Accept in Principle in Part.

Items a, b and g are accepted since they are identical to the symbols presently used in the standard.

Items c, d, e, f, and j are accepted as proposed.

Item t is accepted in principle by changing the description to water spray nozzle.

The balance of the symbols are rejected.

**COMMITTEE STATEMENT:** The proposed symbols for high temperature and pendent sprinklers are not consistent with the present symbology in the standard. A symbol for foam water upright and pendent sprinklers is not needed. Changing the description of the water spray nozzle more accurately reflects current terminology.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

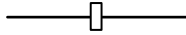
AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #10)

170- 28 - (5-8.3): Accept in Part

**SUBMITTER:** Jeffrey Ferguson, Best Automatic Sprinkler Corp  
**RECOMMENDATION:** Add pipe symbols to existing Section 5-8.3 as follows:



**SUBSTANTIATION:** The proposed symbols more accurately represent the symbols typically used on engineering and architectural drawings.

**COMMITTEE ACTION:** Accept in Part.  
 Insert the symbol for mechanical coupling in a new section 5-8.3.1.3.



The balance of the proposal is rejected.

**COMMITTEE STATEMENT:** A symbol for mechanical couplings is needed. The balance of the proposal is considered to be drawing practice and not symbology.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP15)

170- 29 - (5-8.3.1): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols  
**RECOMMENDATION:** Extract symbol 5.106 from NECA 100 to Section 5-8.3.1.

5.106  Pipe trace heater.

**SUBSTANTIATION:** Symbol for heat tracing is needed.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

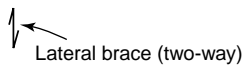
AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

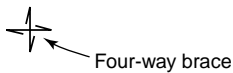
(Log #CP3)

170- 30 - (5-8.3.2.1): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols  
**RECOMMENDATION:** Include symbols for 2-way and 4-way sway bracing from NFPA 13.



Lateral brace (two-way)



Four-way brace

**SUBSTANTIATION:** Presently no symbols are referenced except in NFPA 13.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**



AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #5)

170- 31 - (5-10): Reject

**SUBMITTER:** Jeffrey Ferguson, Best Automatic Sprinkler Corp  
**RECOMMENDATION:** Revise symbol and add commentary for hose rack and hose reel as shown:

SYMBOLS FOR PRELIMINARY AND WORKING PLANS		
Item	Information Required on Plan	Plan Symbol
HOSE RACKS - REELS		
5-10.5 (a) Hose Rack (WET OR DRY)	1 - Feet of Hose 2 - Size 3 - Type 4 - Threading & finish of coupling 5 - Type of Nozzle & finish	 PLAN ELEV.
5-10.6 (b) Hose Reel (WET OR DRY)	1 - Feet of Hose 2 - Size 3 - Type 4 - Threading 5 - Type of Nozzle	 PLAN ELEV.
PIPE CENTERLINE SYMBOLS		

**SUBSTANTIATION:** The proposed symbols more accurately represent the symbols typically used on engineering and architectural drawings.

**COMMITTEE ACTION:** Reject.

**COMMITTEE STATEMENT:** Symbols presently exist for these items.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

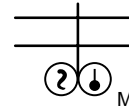
AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP14)

170- 32 - (5-11.3): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols  
**RECOMMENDATION:** Add symbol to indicate motorized and non-motorized smoke dampers. Subscript symbol to indicate motorized when present.



**SUBSTANTIATION:** Symbols for motorized and non-motorized dampers are needed.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #3)

170- 33 - (5-12): Accept

**SUBMITTER:** Joshua W. Elvove, U.S. Dept. of Veterans Affairs  
**RECOMMENDATION:** Change the symbol/acronym for clean agent storage container from "CL" to "CA".  
 Add a new symbol for wet chemical storage containers (WC).

**SUBSTANTIATION:** To be consistent with symbols/acronyms used in other places throughout the document.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP26)

170-34 - (5-12): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Extract NECA 100 Symbol for End of Line Resistor.



End of line device.

**SUBSTANTIATION:** A symbol for this device is needed.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP27)

170-35 - (5-12): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Add new symbol for transfer switch, indicate ATS for automatic and MTS for manual.



ATS ATS for automatic with handle.



MTS MTS for manual with handle.

**SUBSTANTIATION:** A symbol for these devices is needed.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP6)

170-36 - (6-4): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Add new symbol for sectional control valve with designation of "SCV".



Sectional control valve.

**SUBSTANTIATION:** Adds nomenclature for a sectional control valve.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP23)

170-37 - (A-5-7): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Add note to read as follows:

A-5-7 Additional subscript identifiers can be included with a slash after the primary subscript to indicate such things as WP for Weather Proof or EP for Expulsion Proof or others.

**SUBSTANTIATION:** A notation for additional subscripts is necessary.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

(Log #CP5)

170-38 - (B-5-2.5): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Add the symbol from Section 5-3.3.1(6) to the general referent table for a one hour fire rating.



**SUBSTANTIATION:** Reference to this rating in the table is necessary.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

AFFIRMATIVE: 13

NOT RETURNED: 4 Mundy, Riggs, Vorce, Walsh

**COMMENT ON AFFIRMATIVE:**

SCHIFFER: No line should be shown for this is the use of the symbol to give a wall rating. The solid diamond alone is to establish it as a general referent in Table B-5.2.5 to mean one hour of protection.

(Log #CP8)

170-39 - (Appendix E): Accept

**SUBMITTER:** Technical Committee on Fire Safety Symbols

**RECOMMENDATION:** Update referenced publications as follows:

**E.1** This appendix lists publications that are for informational purposes only.

**E.1.1 NFPA Publications.** National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

*Fire Protection Handbook*, 18th edition, 1997.

*Inspection Manual*, 7th edition, 1997.

*National Fire Codes®*, 2000.

**E.1.2 ANSI Publications.** American National Standards Institute, Inc., 11 West 42nd Street, 13th floor, New York, NY 10036.

ANSI Z535.1, *Safety Color Code*, 1998.

ANSI Z535.3, *Criteria for Safety Symbols*, 1998.

ANSI Z535.4, *Production Safety Signs and Labels*, 1998.

**E.1.3 FMRC Publications.** Factory Mutual Research Corporation, 1151 Boston-Providence Turnpike, Norwood, MA 02061.

Factory Mutual Engineering Association, "Insurance Plan Manual," 1978.

Factory Mutual Insurance Co., "Graphic Symbols."

**E.1.3 IEC Publication.** International Electrotechnical Commission, 3 rue de Varembé, CH-1211 Geneva 20, Switzerland.

IEC, Pub. 117-3, *Graphical Symbols*, 1977.

**E.1.5 IRI Information Publication.** Industrial Risk Insurers, 85 Woodland Street, Hartford, CT 06102.

"The Insurance Plan," 1968.

**E.1.6 ISO Publications.** International Organization for Standardization, 1 rue de Varembé, Case Postale 56, CH-1211 Geneva 20, Switzerland.

ISO 3461-1976(E), *General Principles for the Creation of Graphical Symbols*, 1988.

ISO/TC21/SC1/N18, *Working Draft — Graphical Symbols for Fire Protection Plans*.

ISO/TC21/SC1-30E, *Proposal for Graphic Symbols*.

ISO/TC21/SC1/WG1-N27, *Graphical Symbols for Components of Automatic Fire Detection Systems*.

ISO 3864-1984, *Safety Colors & Safety Signs*

ISO 6309-1987, *Fire Protection — Safety Signs*

ISO 6790-1986, *Equipment for Fire Protection & Fire Fighting Graphical Symbols for Fire Protection Plans – Specification.*

**E-1.7 NEMA Publication.** National Electrical Manufacturers Association, 1300 N. 17th Street, Suite 1847, Rosslyn, VA 22209.  
NEMA Standard Pub. No. SB 1.1, *Symbols for Signaling, Protection and Communications Equipment*, 1969.

**E-1.8 Additional Publications:**

Aetna Casualty and Life Company, Plan Symbols, Hartford, CT, 1969.  
American Institute of Architects, "A J Working Drawings Handbook — Technical Study 9," *The Architects' Journal*, May, 1977.

American National Standards Institute (ANSI Y32.2-1975);  
Canadian Standards Association (CSA Z99-1975);

Institute of Electrical and Electronic Engineers (IEEE 315-1975);  
Graphic Symbols for Electrical and Electronics Diagrams (adopted for mandatory use October 31, 1975 by Department of Defense, United States of America);

American Telephone and Telegraph Company, "Firesafety Symbols," Basking Ridge, NJ.

American Telephone and Telegraph Company, Proposed Bell System Practice 760 220 152, "Building Planning," Basking Ridge, NJ, 1977.

Atwell, Vogel & Sterling, Inc., "NFPA Diagram Symbols" (Template), 1976.

Baltimore Fire Department Manual of Procedure, "Prefire Planning Sketches," Baltimore, MD, 1974.

Brand-Verhütungs-Dienst, "Symbols for Fire Protection Plans," Zurich, Switzerland, 1976.

British Standards Institute, "Graphic Symbols and Abbreviations for Fire Protection Drawings," B. S. 1635, London, England, 1970.

Brown & Root, Inc., "Firesafety Symbols," Houston, TX, 1978.

Canadian Standards Association, Building Drawings, First Draft C.S.A. B78.3-M, Rexdale, Ontario, Canada, 1977.

Collins, B. L., The Development and Evaluation of Effective Symbol Signs, National Bureau of Standards, Building Science Series, BSS 141, May 1982.

Collins, B. L., Use of Hazard Pictorials/Symbols in the Minerals Industry, National Bureau of Standards, NBSIR 83-2732, March 1983.

Collins, B. L. and Lerner, N. D., An Evaluation of Exit Symbol Visibility, National Bureau of Standards, NBSIR 83-2675, March 1983.

Collins, B. L. and Lerner, N. D., "Assessment of Fire Safety Symbols," *Human Factors*, 1982, Vol. 24, pp. 75-84.

Collins, B. L. and Pierman, P. C., Evaluation of Safety Symbols, NBSIR 79-1760, U.S. Department of Commerce, 1979.

Collins, B. L., Lerner, N. D., and Pierman, B. C., Symbols for Industrial Safety, National Bureau of Standards, NBSIR 82-2485, April 1982.

Construction Publishing Co., Inc., "Electrical Estimating Handbook," 1975.

Dreyfuss, H., "Case Study: Symbols for Industrial Use" in G. Kepes (ed.) *Sign, Image and Symbol*, New York: George Braziller, 1966, pp. 126-133.

Dreyfuss, H., *Symbol Sourcebook, An Authoritative Guide to International Graphic Symbols*, McGraw Hill, New York, 1972.

Dutch Standard N.E.N. 1413, the Netherlands, "Symbols for Protection Against Fire on Building Drawings," Antwerp, Belgium, 1974.

Easterby, R. S. and Swaga, H. I. G., Evaluation of Public Information Symbols, ISO Tests: 1975 Series, AP Report 60, March 1976.

Fred S. James & Co., "Map Symbols," Chicago, IL.

Freedman, M. and Berkowitz, M. S., Preliminary Report on Laboratory and Pilot Field Testing: Testing Criteria and Techniques of Evaluation for Passenger/Pedestrian Oriented Symbols for Use in Transportation Related Facilities, DOT-OS 60071, FRL No. C4448, January 1977.

Fremont, California Fire Department, "Fire Marshal's Office Standard Plan Symbols," Fremont, California.

Grinnell Fire Protection Systems Company, Inc., "Graphical Standards."

Illinois Bell Telephone, "Fire Safety Symbols," Chicago, IL.

Improved Risk Mutuals, "Firemen's Manual," White Plains, NY.

Improved Risk Mutuals, "Protection Symbols."

Improved Risk Mutuals, "Standard Abbreviations, Symbols, and Colors for Use on Insurance Plans," White Plains, NY.

Insurance Services Office, "Standard Plan Symbols," Chicago, IL, 1956.

Insurers' Advisory Organization of Canada, "Standard Key of Signs," Toronto, Ontario, Canada, 1977.

International Fire Service Training Association, "Fire Prevention and Inspection Practices," No. 110, 4th edition, Tulsa, OK.

International Fire Service Training Association, "Fire Problems in High Rise Buildings," Tulsa, OK.

Johnson Controls, Inc., "Abbreviations and Symbols," Milwaukee, WI.

Kolers, P. A., "Some Formal Characteristics of Pictograms," *American Scientist*, Vol. 57, No. 3, 1969, pp. 348-363.

Massachusetts Fire Alarms, "Fire Safety Symbols," Lowell, MA.

Mead, M. and Modley, R., "Communication Among All People, Everywhere," *Natural History*, Vol. 77, No. 7, 1968, pp. 56-63.

Metropolitan Government of Nashville and Davidson County, "Building Symbols," 1978.

Modley, R., "Graphic Symbols for World-Wide Communication," in G. Kepes (ed.) *Sign, Image and Symbol*, New York: George Braziller, 1966, pp. 108-125.

Modley, R. and Myers, W. R., *Handbook of Pictorial Symbols*, New York: Dover Publications, 1976.

Nashville, Tennessee Metropolitan Fire Dept., "Building Symbols," Nashville, TN.

National Automatic Sprinkler and Fire Control Association, Inc., "Symbol Standards."

New Zealand Standard Association, "Building Drawing Practice — Engineering Services Maintenance and Fire Control Drawings" (proposed Part V of N.Z.S. 5902), Wellington, New Zealand.

Oklahoma State University, "OSU Safety Department Fire Alarm Symbols," OK.

Phenix Technology, Inc., "Fire Pre-Planning Symbols."

Pyrotronics, Inc., "Fire Alarm Symbols," Cedar Knolls, NJ.

Salem, Massachusetts Fire Department, "Fire Alarm Symbols," Salem, MA.

Santa Clara County, Procedures Manual, "F.M.O. Standard Plan Symbols," Santa Clara County, CA, 1973.

Signal Communications, Inc., "Fire Alarm Symbols."

Swiss Standard, "Symbols for Fire Protection Plans," November, 1977.

Taft Fire Control District, "Standard Prefire Plan Symbols," Taft, FL.

Texas Eastman Company, "Symbols for Fire Protection Drawings," Longview, TX.

University of Maryland, "Firemen's Training Course," Section II — Advanced, College Park, MD.

**SUBSTANTIATION:** References latest standards.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 17

**VOTE ON COMMITTEE ACTION:**

**AFFIRMATIVE:** 13

**NOT RETURNED:** 4 Mundy, Riggs, Vorce, Walsh