LOG BOOK

Fire Alarm System

Name: ……

Address: ……

……

System Type: ……

Responsible Person: …….. **Date:** ……

…….. ……

…….. ……

…….. ……

Tel. for Service in Business: ……..

Outside Business: ……..

Fire Alarm System
Log Book

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Maintenance Guide BS5839 Part 1: 1988

From the Code and practice for the design, installation and servicing of fire detection and fire alarm panels, BS5839: Pt1: 1988:

GENERAL RESPONSIBILITIES

Supervision

Responsible person. The owner or other person having control of the premises should appoint a responsible person to supervise the system. This person should be given sufficient authority to ensure the carrying out of any necessary work to maintain the system in correct operation, the maintenance of the records listed, and the servicing recommended.

Procedures. Procedures should be laid down for dealing with alarms of fire, fault warnings or taking part or all of the system out of service. These procedures should be approved by the appropriate fire authority before implementation.

Training. The responsible person should ensure that users of the system are instructed in its proper use. Any members of staff who will be concerned with first aid fire-fighting should be instructed in the correct interpretation of the indications given, and their relationship with the building layout. All management, staff and, in most cases, long term occupants, should be instructed and practised in the proper actions to be taken in the event of fire.

Liaison. The responsible person should establish a liaison with those responsible for changes in or maintenance of the building fabric (including redecoration, etc.) to ensure that their work does not cause faults on, or otherwise interfere with the operation of, the fire alarm system. If structural or occupancy changes occur or are planned, then the responsible person should ensure that any necessary changes to the fire alarm system are considered at an early stage.

Freedom from obstruction. The responsible person should ensure that a clear space is preserved in all directions below every detector, and that all manual call points remain unobstructed and conspicuous.

Records

Drawings and instructions. The record drawings and operating instructions supplied should be kept up to date and available for convenient reference, and preferably in the same location as the control and indicating equipment.

Log book. The responsible person should ensure that a log book is kept in which the following should be recorded:

a) The name of the responsible person.
b) Brief details of any servicing arrangements.
c) Dates and times of all alarms (genuine, practice, test or false) together with their causes where known. If alarms have been caused by the operation of a detector or manual call point, then the location of the device should be recorded if known.
d) Dates, times and types of all defects and faults.
e) Dates and types of all tests.
f) Dates and types of all servicing (routine or special).
g) Dates and times of all periods of disconnection or disablement.
h) All alterations to the system.

The log book should be available for inspection by any authorized person.

In some micro-processor or computer based systems, an automatic log may be generated, either locally (e.g. on a printer) or remotely. Such logs can be of great assistance in tracing and correcting system problems.

Prevention of false alarms

General. Many false alarms are caused by operations in the vicinity of detectors, carried out either negligently or in ignorance. The responsible person should ensure that staff and visiting contractors are aware that the building is fitted with an automatic fire detection system.

Notices. Where possible, permanent notices should be displayed at the entrance to all areas in which detectors are sited. A suitable text is:

'This area is protected by automatic fire detectors. Before undertaking any work involving heat, flame, dust or sparks, clearance must be obtained from.....

Tenders and contracts. Tender documents for contract work to be carried out in a protected area should contain a clause making the contractor responsible for informing his staff of the presence and purpose of the automatic detection system, and the precautions to be adopted when working.

Contracts should contain a clause making the contractor responsible for any charges levied following false alarms generated by the actions of his staff.

Precautions against dust and smoke. Where temporary work involving the generation of dust, smoke, paint spray, etc. is to be carried out in an area protected by smoke detectors, precautions should be taken to prevent false alarms or damage to the detectors by contamination. Suitable measures may include the following:

a) Temporary replacement of smoke detectors by heat detectors (not possible with all systems)
b) Provision of a temporary screen between the work area and the detectors;
c) Provision of temporary covers, such as plastic or paper bags, to prevent ingress of contamination.

All of these measures will, to a greater or lesser extent, impair the sensitivity of the system to fire. Experience has shown that the risk of fire is higher during periods of construction or maintenance, and therefore the provision of manual surveillance should be considered while such measures remain in force.

Completion of work. The responsible person should ensure that when the work is completed:

a) Any temporary screening or covering is removed;
b) Any residual dust is removed;
c) Any substituted smoke detectors are replaced;
d) The system is properly reinstated.

After reinstatement, an operational check of the system should be made by a competent person.

SERVICING

General

To give greater assurance of reliability, correct servicing is essential. Normally an agreement should be made with a manufacturer, supplier or other competent contractor for regular servicing. The agreement should specify the method of liaison to provide access to the premises. The name and telephone number of the servicing organization should be prominently displayed at the control and indicating equipment.

For premises in continuous use, e.g. hospitals, hotels and old people's homes, the agreement should preferably include a requirement that an engineer should be on call at all times, both during and outside normal working hours, and that telephoned requests for emergency service should be executed promptly. In any case, agreement should be made that repair services will be available within 24 hours.

A servicing agreement should be made immediately on completion of the installation whether the premises are occupied or not.

If it is not possible to obtain service from engineers on call at all times, or if because of special circumstances no service contract has been arranged, then the responsible person should ensure that at least one person is employed who has had suitable experience of electrical equipment and who has had special training with the manufacturer, supplier or installer to deal with simple servicing. The employee(s) should be instructed not to attempt to exceed the scope of their training.

Routine attention

General. The responsible person should ensure that the routine attention and test procedures supplied are properly followed.

The routine to be adopted in individual premises may vary with the use of the premises; equipment installed in corrosive or dirty conditions will need to be checked more thoroughly and at more frequent intervals than that in clean and dry situations.

In some equipment a proportion of the testing recommended in this clause is carried out automatically. In this type of equipment the manufacturer may specify an increase in the intervals between testing of certain functions, and in such circumstances the manufacturer's specification may be followed.

The responsible person should ensure that all equipment is properly reinstated after testing.

Prevention of false alarms of fire during routine testing. It is important to ensure that operation during testing does not result in a false alarm of fire.

If the fire alarm system is connected to a 999 automatic dialling unit, then transmission should be prevented (for instance by disconnection) before the routine test is carried out, since under normal conditions 999 test calls are not

Permitted. In certain equipment using automatic dialling, it is possible to prevent transmission of signals by lifting a telephone receiver. Use of this function to inhibit transmission is deprecated, but where used the inhibited state should be indicated by the use of a notice on the control equipment.

If transmission of signals to a remote manned centre is prevented during test, a visual indication of this state should be given at the control equipment. If a link to a remote manned centre is to be used during the test, then it is essential to notify the centre before undertaking the test, unless a recognized test procedure is regularly carried out at an agreed time.

The occupants of the premises should be notified of any test of the system that may result in the sounders being operated.

Daily attention by the user. A check should be made every day to ascertain the following:

(a) That either the panel indicates normal operation, or if not, that any fault indicated is recorded in the log book and that the other actions recommended have been taken;

NOTE. In program controlled systems, failure to correctly execute software is indicated either on an event counter, or on an automatic reset indicator.

(b) That any fault warning recorded the previous day has received attention.

If any connection to the public fire brigade or other remote manned centre is not continuously monitored then it should be tested daily in accordance with the supplier's instructions.

NOTE. On 1 day each week the daily test will be incorporated in the weekly test.

Weekly attention by the user. The following tests should be made every week to ensure that the system is capable of operating under alarm conditions:

(a) At least one detector, call point or end of line switch on one circuit should be operated to test the ability of the control and indicating equipment to receive a signal and to sound the alarm and operate any other warning devices. For systems having 13 circuits or less, each circuit should be tested in turn; if there are more than 13 zones then more than one zone may need to be tested in any week so that the interval between tests on one circuit does not exceed 13 weeks. It is preferable that each time a particular circuit is tested a different trigger device is used. An entry should be made in the log book quoting the particular trigger device that has been used to initiate the test.

If operation of the alarm sounders has been prevented by disconnection then a further test should be carried out to prove the final reinstatement of the sounders, and, if permissible, of the alarm transmission circuits.

(b) If the batteries are open or accessible, then a visual examination of the battery and its connections should be made to ensure that they are in good condition. Action should be taken to remedy any defect, including low electrolyte level.

(c) The fuel, oil, and coolant levels of any stand-by generator should be checked and topped up as necessary.

(d) Any printer should be checked to ensure that its reserves of paper, ink or ribbon are adequate for at least 2 weeks' normal usage.

Any defect should be recorded in the log book and reported to the responsible person, and action should be taken to correct it.

Monthly attention by the user. If an automatically started emergency generator is used as part of the stand-by supply, then it should be started up once each month by a simulation of a failure of the normal power supply, and allowed to energize the fire alarm supply for a continuous period of at least 1 hour. The fire alarm system should be monitored to identity any malfunctioning caused by the use of the generator. At the end of the test period the normal supply should be restored and the charging arrangements for the starting battery checked for proper functioning. The fuel tanks should be left filled and the oil and coolant levels topped up as necessary.

NOTE. Frequent starting of the generator followed by a few minutes on load is not recommended. it is important that when the engine is running, the generator is loaded to at least 50% of the engine's capacity to prevent sooting up with resultant loss of performance.

Quarterly inspection and test. The responsible person should ensure that every 3 months the following check is carried out by a competent person:

(a) Entries in the log book should be checked and any necessary action taken.

(b) Batteries and their connections should be examined and tested as specified by the supplier to ensure that they are in good serviceable condition and not likely to fail before the next quarterly inspection.

(c) Where applicable, secondary batteries should be examined to ensure that the specific gravity of electrolyte in each cell is correct. Any necessary remedial action should be taken.

(d) Primary batteries, including reserves, should be tested to verity that they are satisfactory for a further period of use by taking measures that are indicative of the conditions of each cell, e.g. its voltage on a known and very high rate of discharge. The test conditions and the significance of the readings will depend on the type of cell and the use to which it is being put. These should be clearly specified by the supplier or commissioning company and applied with care. Primary batteries should in any case be replaced within the period of shelf life stipulated by the battery manufacturer.

(e) The alarm functions of the control and indicating equipment should be checked by the operation of a detector or call point in each zone. The operation of the alarm sounders and any link to a remote manned centre other than a 999 autodialler should be tested. All ancillary functions of the control panel should also be tested where practicable. All fault indicators and their circuits should be checked, preferably by simulation of

fault conditions. The control and indicating equipment should be visually inspected for signs of moisture ingress and other deterioration.

(f) A visual inspection should be made to check whether structural or occupancy changes have affected the requirements for the siting of manual call points, detectors and sounders. The visual inspection should also confirm that a clear space of at least 75Omm is preserved in all directions below every detector, that the detectors are sited in accordance with clause 12 and/or 13 of BS5839: Pt1: 1988 and that all manual call points remain unobstructed and conspicuous.

(g) All further checks and tests specified by the installer, supplier or manufacturer should be carried out.

NOTE. The recommendations of items (b), (c) and (d) above need not be applied to batteries which power individual items of equipment (such as detectors or sounders) and which have provision for monitoring.

Any defect should be recorded in the log book and reported to the responsible person, and action should be taken to correct it.
On completion of the work, a certificate of testing should be given to the responsible person.

Annual inspection and test. The responsible person should ensure that the following check and test sequence is carried out every year by a competent person:

(a) The inspection and test routines detailed.

(b) Each detector should be checked for correct operation in accordance with the manufacturer's recommendations.
(c) A visual inspection should be made to confirm that all cable fittings and equipment are secure, undamaged and adequately protected.

Any defect should be recorded in the log book and reported to the responsible person, and action should be taken to correct it.
On completion of the work, a certificate of testing should be given to the responsible person.

Wiring check. The responsible person should ensure that every 5 years (or more frequently if the building electrical system is tested at shorter intervals) the installation should be tested in accordance with the testing and inspection requirements of the IEE Wiring Regulations. Any defect should be recorded in the log book and reported to the responsible person, and action should be taken to correct it.

On completion of the work, a certificate of testing should be given to the responsible person.

Special servicing

General. The routine attention described is intended to maintain the system in operation under normal circumstances. There may, however, be special circumstances in which other attention is needed.

Action by the user after any fire (whether detected automatically or not). The responsible person should ensure that the following work is carried out as soon as possible after any fire, and that normal use of the area is not resumed until the work is carried out:

(a) If the system includes detectors containing radioactive material, then any actions required to deal with contamination should be taken.

(b) Each detector or call point which may have been affected by the fire should be tested. This test should preferably be carried out so as to simulate fire conditions: smoke detectors should be tested by the application of smoke or other aerosol to the detector, and resettable heat detectors by the application of warm air or gas. Non-resettable detectors need not be tested by operation, but should be visually inspected for fire damage.

(c) Each fire alarm sounder should be tested.

(d) A visual examination should be made of any other part of the fire alarm system which lies within the fire area or which might have been damaged by the fire. Such parts may included power supplies, control equipment and interconnections.

(e) Any defect found should be recorded in the log book and immediate action taken to correct the defect.

(f) The organization responsible for servicing the system should be informed of the fire and of any defects on the system, and instructed to carry out a check of the system.

The responsible person should also ensure that the following work is carried out, although this may take place after normal use has been resumed:

(1) A check should be made of the state of the battery and charger.

(2) The servicing organization should carry out a further check for damage to the system, particularly any parts in which damage might be hidden, such as buried cables. The extent of a fire may necessitate a more comprehensive check of the system.

(3) If the fire was not detected by the system, or it detection occurred at an unexpectedly late stage of the fire, then the reasons for this should be investigated and, if necessary, consideration be given to system modifications to prevent any repetition.

On completion of the work, a certificate of testing should be given to the responsible person. Where any changes have been made to the system the records should be up-dated.

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Action by the user after any false alarm. False alarms can be a major hazard to any fire alarm system since they lead to a loss of confidence in the system. It is important that any alarm from the system is treated as an alarm of fire until it can be proved to be false, rather than being treated as false until proved to be a fire. Where an alarm has been found to be false the following immediate actions should be taken by the responsible person or a person to whom he has delegated this duty:

(a) Where possible, identify the particular detector or call point which has initiated the alarm. If detectors having individual indicator lamps are in use, any indications will be cancelled by resetting, and hence it is important that the detectors are examined before the system is reset.

(b) Where possible, establish the cause of the false alarm. It is possible that the actual cause of the alarm will have been lost in the operations resulting from the alarm; where this is so a note should be kept of any events or activities near the detector immediately prior to the alarm.

(c) Record the false alarm in the log book and inform the organization responsible for servicing.

If one detector or group of detectors gives repeated false alarms then the organization responsible for servicing should be informed and required to investigate. The average rate of false alarms from an installation should not exceed one false alarm per year for each 1 0 detectors connected to the system. The number of false alarms from an individual detector or detector location should not exceed one false alarm per 2 years. Installations, detectors or detector locations having higher false alarm rates should be subject to special investigation.

Action by the user following a fault. If a fault has been shown to exist, either by the system's own monitoring or by any other method, then the responsible person should ensure that the following actions are taken:

(a) Determine the area affected by the fault and decide whether special action (such as fire patrols) is needed in that area;

(b) If possible, determine the reason for the fault, or note the activities immediately prior to the fault in the area affected;

(c) Record the fault in the log book, inform the organization responsible for servicing and arrange for repair.

Action by the user following a pre-alarm warning. On some systems a pre-alarm warning is given if the output from a detector appears to be drifting towards the alarm level. The main purpose of the pre-alarm warning is to allow faulty detectors to be cleaned or otherwise corrected before a false alarm is given; however, it is possible that the pre-alarm warning is given in response to a slowly growing fire. The responsible person should ensure that the following actions are taken:

(a) Determine the detector and area from which the warning has come;

(b) Inspect the area thoroughly to ensure that there is no fire; if a fire is found, then carry out the pre-planned fire routine;

(c) If no fire is found, record the warning in the log book and inform the organization responsible for servicing.

Prolonged periods of disconnection. Special attention may be needed to prevent damage to batteries from prolonged deep discharge. On reconnection, the system should be subjected to the inspection and test routines described for annual inspection and test.

Other non-routine attention. Other occasions on which attention may be required beyond that of routine servicing include the following:

(a) Extensions or alterations to the premises; -

(b) Changes in occupancy or activities in the area covered by the system;

(c) Changes in the ambient noise level or sound attenuation such as to change the sounder requirements;

(d) Damage to the installation, even though no fault may be immediately apparent;

(e) Any change to ancillary equipment.

Detectors

General. It is essential that routine tests are adequate to ensure that the requisite degree of sensitivity to fire is maintained, and users should satisfy themselves on this point. If it is found that the sensitivity of detectors is adversely affected by the rapid accumulation of dirt, then arrangements should be made to increase the frequency of the inspections. Any detectors which have shown continued signs of instability should be replaced.

Heat detectors. Heat detectors should be visually examined for damage or other conditions, such as any coat of paint, likely to interfere with correct operation. Routine tests of operation should be carried out as recommended by the manufacturer, with at least 20/. of the installed heat detectors operated annually by the application of a heat source as a check on reliability. If possible, different detectors should be tested each year. If any of the tested detectors fails to operate properly, then the cause of the failure should be investigated. If the cause of the fault is likely to have affected other detectors, or if the cause cannot be determined, then a further 2% of the detectors should be tested. If any failures occur in the second set, then further investigations should be made.

Detectors other than host detectors. Detectors other than heat detectors should be checked for correct operation and sensitivity in accordance with the manufacturer's recommendations. If detectors are removed from their mounting for this checking, then a final test should be carried out for operation after remounting.

System disconnection during testing. Care should be taken to minimize disruption of the normal use of a building by alarms sounding during detector testing. It is preferable that during testing of detectors as much as possible of the remainder of the system should continue to function normally. If detectors are removed from the system for testing or servicing, replacement detectors should be immediately provided to keep the system in normal operation, or separate provision should be made for surveillance of the unprotected area.

Systems using addressable detectors. Care should be taken during the maintenance of systems in which the detector is itself coded. False information in respect of the origin of alarm could occur if individually coded detectors were exchanged.

Secondary batteries

The test specified by the manufacturer should be carried out at the intervals specified.

Spare parts

If a service contract is in force, then it is not necessary to carry spares other than fuses and frangible elements for manual call points. There may, however, be advantages if the user agrees with the servicing organization to hold additional spare parts.

Model log book for fire alarm systems

General
The data to be recorded in the log book falls into the following two main categories:

(a) reference data relating to the configuration of the system, responsibilities for the system, requirements for component replacement and any other data which might be required for future reference;

(b) Historical data relating to events which have occurred on the system, including fires, false alarms, testing and servicing.
The two categories of data should be separated in the log book.

Poor investigation purposes it is often necessary to trace the history of some feature of the system; for instance, to trace the interaction of false alarm rates with the period since the last service. Historical data should therefore be recorded in data sequence, irrespective of the type of event. It is, however, permissible to maintain an abbreviated event log in date sequence, with each entry referring to entries in separate log books for different types of event.

Changes

Provision should be made for recording changes in the reference data for the system. In some cases (such as a change in the servicing organization) it may be appropriate for a new log book to be provided, while in others (such as a change of responsible person) it may be appropriate to record the change in the existing log book. Any such change should be dated and should not obliterate the previous entry.

Register of Persons Responsible for Directions of Fire Precautions.

The person named below shall organize and superintend all staff instruction and training, fire drill exercises and equipment tests and inspections and ensure that all stipulations of the Fire Precautions Act 1971 referring to this place are meticulously carried out. The person named will also be responsible for the proper maintenance of entries in the various records in this log book.
A second person shall be named as deputy, to act as assistant or, in the absence of the first person, to take over the first person's duties and responsibilities.

Date Appointed	Person Responsible	Date Appointed	Deputy

Inventory of Fire Alarm System

Date of Commissioning……..

Control Panel…….....….....

Power Supply…….....…….....

Number of Zones.....

Number of Break Glass Points…….

Number of Ionisation Smoke Detectors……...

Number of Optical Smoke Detectors……

Number of Heat Detectors…….

Number and type of sounders……...

Type and size of batteries……..

Number of automatic door releases…….

Remote connection detail……..

Halon/CO_2 Equipment……

……...

Other Detectors……...

……

Visual alarm Indicators……...

……

Additional Information…….

……

……

……

Maintained By……..

Address…….

……

……

Telephone Number……

Dates of routine calls……

……

……

……

……

Inventory of Fire Fighting Equipment

Number and description of hose reels……

……...

……...

Extinguishers

Water, 9 litre…….....….....

Dry powder…….....….....

Carbon dioxide (CO_2).....

B.C.F……..

Fire Blankets……...

Foam, 9 litre……

Other (specify)……

……...

……...

……...

Maintained by…….....

Address…….

Telephone Number……

Date of routine Call…….

Type and uses of fire equipment

Hose Reels……. Class 'A' Fires

9 Ltr Water Extinguishers……... Class 'A' Fires (not to be used on live electrical equipment)

Dry Powder Extinguishers…….. Class 'B' and 'C' Fires

CO_2 Extinguishers……Class 'B' and 'C' Fires

B.C.F. Extinguishers…….. Class 'B' and 'C' Fires with care

Fire Blankets.....Fat fires in cooking for 'smothering' fire

9 Ltr Foam……. Class 'A' or 'B' Fires (not to be used on live electrical equipment)

Note

Class 'A' Fire: Fire which involves carbonatious materials, i.e. wood, paper, textiles.

Class 'B' Fire: Fire involving flammable liquids or liquifiable solids, i.e. fats, spirits, solvents.

Class 'C' Fire: Fire involving gasses which should only be attacked if there is no risk of explosion.

Register of Personnel Receiving Staff Instruction.

Date Issued	Signature Of Recipient	Position	Issued By

Modifications to System.

Date	Zone	Description of Modification	Contractor	Recommissioned

Local Variations.

Any special Conditions on instructions relating to these premises

Weekly Fire Alarm Routine Tests.

Each week the fire alarm is to be set off using a different call point in rotation from week to week. In the case of zonal installations, one break glass call point in each zone should have a weekly test. All call points should be numbered for identification

Staff and guests should have prior warning of fire alarm tests

It is the responsibility of the management to ensure that spare glasses and keys, when necessary, are safely stored in adequate quantity. The location of such spares should be known to those who would have to replace glasses which are broken

Date	Point no.	Result	Action	Signature

Date	Point no.	Result	Action	Signature

Date	Point no.	Result	Action	Signature

Date	Point no.	Result	Action	Signature

Date	Point no.	Result	Action	Signature

Record of Fire Alarm Inspection.

Every Three Months

Date	Result	Action	Signature

Record of Fire Alarm Inspection.

Every Three Months

Date	Result	Action	Signature

Events Log.

Date	Time	Zone	Event	Action Required	Date Comp.	Initials

Events Log.

Date	Time	Zone	Event	Action Required	Date Comp.	Initials