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Subjects 681 (1610)
(In reply, refer to Subject 681)

1655 Scott Blvd.
Santa Clara, CA 95050
May 16, 1996

TO: Burglary Protection Council of Underwriters Laboratories Inc.,
Subscribers to UL's Standards Services for:
Installation and Classification of Burglar and Holdup Alarm Services, and
Central-Station Burglar-Alarm Units.

SUBJECT: Request for Comments on Proposed Requirements for the Twelfth Edition of the
Standard for Installation and Classification of Burglar and Holdup Alarm Systems,
UL 681; and the Second Edition of the Standard for Central-Station Burglar-Alarm Units,
UL 1610; PROPOSED EFFECTIVE DATES

SUMMARY OF TOPICS

This bulletin proposes to revise requirements pertaining to Limited Mercantile alarm system protection. This form of protection is restricted to central station alarm systems. Since there is a need for a minimum level of protection for other applicable types of alarm systems, UL plans to propose a replacement system, entitled "Extent Number 4," that will remove the current restrictions of the limited mercantile systems currently specified in UL 681 and UL 1610. UL plans to propose that Extent Number 4 be applicable to any certificated burglar alarm system.

This bulletin also proposes the addition of another level of protection to National Industrial Security Systems. This level, if adopted, would be known as "Extent Number 5."

Additionally, UL proposes the following:

- The deletion of all related references to "limited mercantile" systems and UL 609, the Standard for Local Burglar Alarm Units and Systems;
- Revising "Defense Industrial Security Systems" to "National Industrial Security Systems;"
- The deletion of reference to grades of burglar alarm service in the text of UL 681 and on the new Burglar Alarm Modular Certificate;
- Adding requirements for the protection of antennas and antenna cable;

Continued

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SUMMARY OF TOPICS (Cont'd)

- Revising applicable requirements relating to power supplies;
- The deletion of references to Limited Mercantile systems in UL 1610, the Standard for Central-Station Burglar-Alarm System Units.

COMMENTS DUE: JULY 11, 1996

Attached as Appendices A and B for your review and comment are proposed requirements for UL 681 and UL 1610 respectively. Questions regarding interpretation of requirements should be directed to the responsible UL staff. Please see Appendix C of this bulletin regarding designated responsibility for the subject categories.

Please note that proposed requirements are of a tentative and early nature and are for review and comment only. Current requirements are to be used to judge burglar and holdup alarm systems and central-station burglar alarm units until these requirements are published in final form.

PROPOSED EFFECTIVE DATES

With the exception of the proposed requirements for the protection of antennas and antenna cables, the proposed requirements will not necessitate a review of current burglar alarm systems or services. Therefore, UL proposes that these requirements become effective upon publication.

UL proposes that the requirements in proposed Section 27 (see item 5 regarding antenna and antenna cable) become effective on January 1, 1999.

REQUEST FOR COMMENTS ON PROPOSALS

Please provide the following:

1. Your comments concerning the proposed requirements; and
2. Your comments concerning the proposed effective dates, should the proposals be adopted.

Written comments should be sent to the attention of Paul Lloret at UL's Santa Clara office, 1655 Scott Blvd., Santa Clara, CA 95050-4169. Comments may be sent by mail or faxed to (408) 556-6045. Please reference all correspondence to Subject 681.

All comments should be sent by July 11, 1996.

Subjects 681 (1610)

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May 16, 1996

Unless specifically requested to do otherwise, UL will not acknowledge comments indicating concurrence with these proposals.

UNDERWRITERS LABORATORIES INC.

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PROPOSED REQUIREMENTS ARE OF A TENTATIVE AND EARLY NATURE AND ARE FOR REVIEW AND COMMENT ONLY. CURRENT REQUIREMENTS ARE TO BE USED TO JUDGE A PRODUCT UNTIL THESE REQUIREMENTS ARE PUBLISHED IN FINAL FORM.

APPENDIX A

PROPOSED REQUIREMENTS AND PROPOSED EFFECTIVE DATES FOR THE TWELFTH EDITION OF THE STANDARD FOR INSTALLATION AND CLASSIFICATION OF BURGLAR AND HOLDUP ALARM SYSTEMS, UL 681

1. REPLACEMENT OF LIMITED MERCANTILE REQUIREMENTS WITH NEW "EXTENT NUMBER 4" REQUIREMENTS

For your convenience in review, proposed additions to existing requirements are shown underlined and proposed deletions are shown ~~lined-out~~. Proposed new requirements are identified by (NEW). In the case of extensively revised paragraphs, the original text is identified by (CURRENT) and is ~~lined-out~~, followed by the proposed text identified by (PROPOSED). A paragraph that is proposed to be deleted is identified by (DELETED) and is shown ~~lined-out~~.

RATIONALE

Underwriters Laboratories Inc. introduced the Limited Mercantile extent of protection several years ago to define a minimum level of protection. The Limited Mercantile extent applies only to central station systems and provides for opening and closing supervision and optional alarm investigation response.

In addition, a Limited Mercantile Certificated alarm system also requires a maintenance and service contract or agreement to exist between the alarm service company and the alarm system user. This requirement applies to any certificated burglar alarm system.

However, because the Limited Mercantile extent applies only to central station systems, it does not address police station connect, local, and proprietary alarm systems. Based upon input from alarm service companies, it is recognized that there is a need for a minimum level of protection for police station connect, local, and proprietary alarm systems as well. Therefore, UL proposes to revise the Standard for Installation and Classification of Burglar and Holdup Alarm Systems, UL 681, to change the Limited Mercantile designation to Extent Number 4, and to remove the restriction that it only apply to central station alarm systems.

UL proposes to revise paragraph 4.1.1.1 of UL 681 by adding a reference to Extent Number 4. In addition, "Extent Limited Mercantile" would be replaced by "Extent Number 4" in the title of Section 4.2, and in paragraph 4.2.2.

To also make Extent Number 4 applicable to all commercial alarm systems, UL proposes to delete paragraph 4.2.1 which restricts this extent of protection only to central station alarm systems.

IMPACT

These revisions will not require changes in presently Certificated Burglar Alarm Systems and will allow alarm service companies other than central stations to issue Extent Number 4 alarm system certificates. Presently issued certificates showing a Limited Mercantile extent of protection need not be changed until they are reissued due to expiration or cancellation of the current certificate. Therefore, UL proposes that these revisions become effective upon the date of publication.

PROPOSALS

4.1 Central station, ~~local, police station connect~~ mercantile, and proprietary systems

4.1 revised date of publication

4.1.1 Details

4.1.1.1 An individual alarm system protecting a premises, stockroom, or stock cabinet shall provide a level of protection designated as Extent Number 1, as specified in 4.1.2.1; Extent Number 2, as specified in 4.1.3.1 and 4.3.2; ~~or~~ Extent Number 3, as specified in 4.1.4.1 – 4.1.4.3; or Extent Number 4 as specified in 4.2.2 and 4.2.3.

4.1.1.1 revised date of publication

4.2 Extent ~~limited mercantile~~ Number 4

4.2 revised date of publication

(DELETED)

~~4.2.1 The level of protection designated as Extent Limited Mercantile applies to a central station alarm only.~~

4.2.1 deleted date of publication

4.2.2 Extent ~~Limited Mercantile~~ Number 4 shall consist of any of the following:

- a) Partial protection on accessible doors and on two or more interior doors. See 4.2.3.
- b) Partial protection on accessible doors and motion or sound detection in one or more selected areas.
- c) Partial protection on accessible doors and one or more channels of radiation to limit movement within the premises.

4.2.2 revised date of publication

4.2.3 If the premises has only one interior door or no interior door, 4.2.2(a) shall not be used. The requirement in 4.2.2 (b) or (c) can shall be used. Protection of a door to an area such as a washroom, furnace room, clothes closet, utility closet, or janitor's closet, ~~and the like, is not acceptable to~~ will not meet the requirement of 4.2.2(a).

4.2.3 revised date of publication

2. ADDITION OF "EXTENT NUMBER 5" TO NATIONAL INDUSTRIAL SECURITY SYSTEMS

RATIONALE

The National Industrial Security Program, formerly known as the Defense Industrial Security Program, recognizes the use of layers and complementary security controls that deter and detect unauthorized entry and movement within facilities operated by contractors of agencies of the US Government that are in possession of classified material. Such facilities viewed as having these types of layers and security controls are considered as having Security in Depth (SID).

UL proposes to add an Extent Number 5 level of protection that may be used in a facility recognized as having SID and which also includes the use of security personnel patrolling the facility at regular intervals. This level of protection will relieve the need to provide protection for plate glass window panels and other openings that are visible to patrolling security personnel. These are panels and openings that are fixed in place so as to deny access unless broken or removed through disassembly. It is recognized that patrolling security personnel would see the evidence of disassembly or breakage or would discover it in progress because of the time-consuming nature of such action.

UL therefore proposes to revise paragraphs 4.3.1.1 and 4.3.1.2, and to add Section 4.3.3 and paragraph 4.3.3.1, to address the addition of Extent Number 5.

In addition, the term "strongroom" is no longer being used. Therefore, UL proposes to delete this term from paragraph 1.1. UL also proposes to delete the definition of a strongroom in paragraph 3.37 of the Glossary. These proposals are included under topic 4 of this Appendix.

IMPACT

These proposed requirements will not require any action by CRZH Listees to maintain their Listing or current active Certificates. UL will not need to review the protection services provided by current Listees, nor will there be a need for any additional inspections of Certificated installations. Therefore, UL proposes that these requirements become effective on the date of publication.

PROPOSALS

4.3 ~~Defense industry~~ National industrial security systems

4.3.1 Details

(CURRENT)

~~4.3.1.1 An individual defense industry security alarm system protecting a closed area or strongroom shall provide a level of protection designated as Extent Number 3, as specified in 4.3.2.1 - 4.3.2.3.~~

(PROPOSED)

4.3.1.1 An individual alarm system that is installed in a closed area, and which is operated by a contractor providing services to the U.S. government, shall provide a level of protection designated as:

- a) Extent Number 3, as specified in 4.3.2.1 - 4.3.2.3, or

(Paragraph 4.3.1.1 continued)

- b) Extent Number 5 as specified in 4.3.3.1.

4.3.1.1 revised date of publication

(CURRENT)

~~4.3.1.2 A closed area or strongroom with more than one room or area shall be protected by protective wiring applied to all openings or vulnerable surfaces, by the use of an acceptable sensing device including an intrusion detection unit, or by any combination of protective wiring or devices so that the same extent of protection is provided in each room or area as required by the alarm system. Motion detection is not required to be installed in an area such as a washroom, furnace room, clothes closet, utility closet, janitor's closet, and the like, or above a suspended ceiling within the physical boundary of the alarm system. Any opening in such an area that leads outside of the area covered by the alarm system shall be provided with complete protection or the door into the area shall be protected as required by the method used in the alarm system.~~

(PROPOSED)

4.3.1.2 A closed area with more than one room or area shall be protected by:

- a) Protective wiring applied to all openings by the use of an acceptable sensing device including an intrusion detection unit, or
- b) Any combination of protective wiring or devices so that the same extent of protection is provided in each room or area as required by the alarm system.

Motion detection is not required to be installed in an area such as a washroom, furnace room, clothes closet, utility closet, janitor's closet, telephone room, or sprinkler room, or above a suspended ceiling within the physical boundary of the alarm system. Any opening in such an area that leads outside of the area covered by the alarm system shall be provided with complete protection, or the door or suspended ceiling tiles that provide access into the area shall be protected as required by the method used in the alarm system.

4.3.1.2 revised date of publication

(NOTE: Paragraphs 4.3.2.1 — 4.3.2.3 containing requirements for Extent Number 3 are unchanged.)

4.3.3 Extent Number 5

4.3.3.1 To provide Extent Number 5 protection, an alarm system shall include all of the following methods:

- a) Complete protection of all fixed and movable accessible openings that are not visible to patrolling personnel.
- b) Contacts installed on all movable accessible openings that are visible to patrolling personnel.
- c) Electrical supervision in the form of traps on all accessible openings that are visible to patrolling personnel but can be removed and replaced without the disassembly being noticed by the patrol. Examples of openings needing traps are metal grates, removable panels, and wall-mounted air conditioners.

(Paragraph 4.3.3.1 continued)

Exception: Under Extent number 5, protection need not be provided for plate-glass window panels and for other openings if the panels and openings are:

- a) Visible to patrolling personnel,
- b) Fixed in place, and
- c) Deny access unless broken or removed by disassembly.

4.3.3.1 added date of publication

3. DELETION OF GRADES AS A RESULT OF THE BURGLAR ALARM MODULAR CERTIFICATE

RATIONALE

As the industry is aware, UL is introducing the Burglar Alarm Modular Certificate in which the grades of service will not be shown on the certificate. Accordingly, UL proposes that all references to the grades of burglar alarm service be deleted from UL 681; the Procedures for Issuing and Canceling Certificates, Appendix A; and Appendix C.

UL proposes to revise paragraphs 3.3(b), A6.8, A6.11, A6.12, and the Glossary of Appendix C, and to delete paragraphs A6.2, A6.3, A6.4, and A6.9 to eliminate all references to grades of service.

Paragraph 3.3 is also being revised to delete reference to the Standard for Local Burglar Alarm Units and Systems, UL 609. Please refer to the RATIONALE for topic 7 of this Appendix.

Table 21.2 is also being revised to delete references to grades of service. However, because Table 21.2 is also being revised to address the proposals for limited mercantile and National Industrial Security, the proposals for Table 21.2 will be found under Topic 4 of this Appendix.

IMPACT

Certificates presently in effect, which specify the grade of service, may remain in effect until they expire or are canceled. Therefore, the deletion of reference to grade of service may become effective on the date of publication.

PROPOSAL

3.3 ALARM SOUNDING DEVICE HOUSING – A housing, or the equivalent that complies with the applicable requirements ~~for police station connected in the Standard for Mercantile and Bank Burglar Alarm System Units, and systems, UL 365, or in the Standard for Local Burglar Alarm Units and Systems, UL 609.~~ See Alarm Sounding Devices, Section 21.

- a) For MERCANTILE SYSTEMS – (There are no changes related to grades of service for this item, however, please refer to topic 7 for proposals related to the deletion of the Standard for Local Burglar Alarm Units and Systems, UL 609.)

(Paragraph 3.3 continued)

b) For BANK SYSTEMS – A housing, or the equivalent, ~~that is used to provide attack resistance for an alarm sounding device used in a bank alarm system that complies with the requirements for a bank alarm system as specified in UL 365. They are rated Grade A or Grade B:~~

1) ~~Grade A Complies with the requirements of a Grade A bank alarm system as specified in UL 365, or UL 609.~~

2) ~~Grade B Complies with the requirements of a Grade B bank alarm system as specified in UL 365, or UL 609.~~

3.3 revised date of publication

APPENDIX A

PROCEDURES FOR ISSUING AND CANCELING CERTIFICATES

(Heading of Appendix A shown for reference)

(DELETED)

~~A6.2 SYSTEM GRADE Place an "X" by the appropriate grade. The "System Grade" is determined by several factors including type of equipment employed, alarm transmission methods, alarm investigator response time, system supervision, line security presence, local alarm sounding devices, and other items. Refer to the specific Category of Listing and the appropriate UL standards for requirements that determine grade. All equipment must have the same grade, or the lowest grade is used for the alarm system. Where multiple grades of service must be provided at a location, multiple Certificates (one for each grade) may be issued instead.~~

A6.2 deleted date of publication

(DELETED)

~~A6.3 A limited mercantile alarm system, a defense industry security system, and a holdup alarm system do not have a system grade.~~

A6.3 deleted date of publication

(DELETED)

~~A6.4 "CENTRAL STATION BURGLAR ALARM SYSTEMS" have possible System Grades of A, B, C, AA, BB, or CC. "LOCAL BURGLAR ALARM SYSTEMS" have possible System Grades of A or B. "POLICE STATION CONNECTED BURGLAR ALARM SYSTEMS" have possible System Grades of A, B, AA, or BB. "PROPRIETARY BURGLAR ALARM SYSTEMS" have possible System Grade of A, B, AA, or BB. The answer to the question of "Line Security Employed", "Alarm Transmission Method", "Response Time Category", and "Alarm Sounding Devices" may affect the determination of "System Grade".~~

A6.4 deleted date of publication

A6.8 RESPONSE TIME CATEGORY (Central Station and Limited Mercantile Alarm Systems only) – The normal Alarm Investigator Response Time for Grade AA and A systems shall not exceed 15 minutes; for Grade BB or B systems shall not exceed 20 minutes; and for Grade CC and C systems shall not exceed 30 minutes. Place an "X" in the appropriate box Fill in response time that has been established for the system using multiples of 5 minutes. The maximum time shall not exceed 45 minutes for a system with high line security or encrypted line security and shall not exceed 60 minutes for a system with standard line security.

(Paragraph A6.8 continued)

~~Exception: The Alarm Investigator Response Time may be increased to the next longer period of time if the Central Station Burglar Alarm System is a combination system including a local alarm sounding device.~~

A6.8 revised date of publication

(DELETED)

~~A6.9 Alarm Investigator Response for Limited Mercantile Burglar Alarm System is optional, but it shall not exceed 45 minutes if provided.~~

A6.9 deleted date of publication

A6.11 LINE SECURITY EMPLOYED – The alarm system either has standard line security, high line security, or encrypted line security or it does not. The determination is made by referencing the installation instructions for the alarm transmitting circuit. ~~Line security is required for system Grades AA, BB, and CC.~~

A6.11 revised date of publication

A6.12 ALARM TRANSMISSION METHOD – The types of methods of electronic transmission of signals to remote locations are:

- a) Direct Wire – A system that provides for the connection of a single alarm system to the monitoring station by a dedicated wiring system. ~~Suitable for Grade A service or AA with line security.~~
- b) Multiplex – A signaling method that allows multiple alarm systems to share a common communication channel. ~~Suitable for Grade A service or AA with line security.~~
- c) Derived Channel – A multiplex system that allows the standard phone company system to be used. ~~Suitable for Grade A or B service depending on the methods used to install the system. The system grades may be AA or BB if line security is provided.~~
- d) Transmitter (McCulloh) – A system for connecting more than one alarm system to the monitoring station by a dedicated wiring system. The alarm signals are distinguished by a coding system. ~~Suitable for Grade B service. May also be suitable for Grade A if installed as a combination system. Grade AA or BB may be used for polled McCulloh systems if line security is employed. A transmitter does not provide an acknowledgement signal from the central station to the premises. An acknowledgement signal over an alternative signaling path is required.~~
- e) Digital Alarm Communicator – An alarm transmitter that uses the telephone system as the signaling path by dialing a dedicated phone number and transmitting an electronic code indicating which premise is calling and the change of state that has taken place. ~~Suitable for Grade C service. Suitable for Grade B if installed as a combination system.~~
- f) Radio, Two-Way – A system that uses radio frequency carrier (RF) for two-way signaling between the protected premises and the central station. ~~Suitable for Grade A service or Grade AA with line security.~~
- g) Radio, One-Way – Same as a two-way system except that signaling is from the protected premises to the central station only and ring-back an acknowledgement signals from the central station to the premises required over an alternative signaling path is required. ~~Suitable for Grade C service. Suitable for Grade B if it is installed as a combination system. When used with another system, this system may be rated with the grade of the other system.~~

(Paragraph A6.12 continued)

h) ~~Radio, One-Way/Digital Alarm Communicator~~ This combination is suitable for Grade A service.

A6.12 revised date of publication

APPENDIX C

Glossary

(All of the remaining items remain unchanged except for the following:)

(DELETED)

SYSTEM GRADE — The rating assigned to an alarm system which summarizes most operational characteristics including: type of equipment; electrical supervision; the amount of protection against tampering; alarm investigator response; and principles of operation. Refer to the appropriate UL standards for requirements that determine grade.

Appendix C revised date of publication

4. REVISIONS TO REFERENCES RELATING TO LIMITED MERCANTILE, EXTENT NUMBER 5, DEFENSE INDUSTRIAL SYSTEMS, AND STRONGROOMS

RATIONALE

The following proposed revisions are related to the previous discussions for Limited Mercantile, Extent Number 5, defense industrial systems, and strongrooms presented earlier in topics 1 – 3 of this Appendix.

To clarify and update UL 681, UL proposes to delete references to "Limited Mercantile" systems. Where applicable, these references will be replaced with "Extent Number 4." UL, therefore, proposes to revise the following paragraphs: 1.2, 21.1.1., A1.6, A6.6, A6.8, A6.9, and A6.14. (Paragraphs A6.8 and A6.9 are shown under topic 3.). Additionally, the reference will also be revised in Figure A2.1 and Table A6.1.

UL also proposes the addition of a system entitled "Extent Number 5" and the reference change from Defense Industrial Security system to National Industrial Security system, the present terminology. The paragraphs affected would be 1.2, 4.3.1.1 (shown under topic 2), 10.4.9, 20.2 (c) and (e), Exception No. 2 to 21.3.2, 21.3.3, A1.6, A6.3 (shown under topic 3), A6.5, and A6.14 (d). Additionally, Table A6.1 and Figures A2.1 and A2.4 and Appendix B (shown under topic 7) will be affected.

Additionally, in order to clarify its intent, UL proposes to revise paragraph 21.1.1 to delete the current references and replace them with references to mercantile and bank alarm and National Industrial Security systems since a sounding device is required when signal transmissions are used.

UL proposes to add paragraph 21.1.1.1 to indicate that the use of a sounding device with a central station or proprietary system is optional.

UL also proposes the following revisions:

- The deletion of the Limited Mercantile Alarm System Description form illustrated in Figure A2.3;

- Paragraph 22.4.1 and Exception Number 1 to paragraph 21.3.2 refer to conditions that apply to an Extent Number 3 System. A reference to Extent Number 4 systems will be added to these two paragraphs;
- Deletion of the term "strongroom" from paragraph 1.1 and its definition in paragraph 3.37 since the term is no longer used.
- The combination of Tables 21.1 and 21.2 into a revised Table 21.1 that would delete references to grades, limited mercantile, and revise Defense Industrial Security to National Industrial Security.
- The addition of paragraph A7.3.1 to require that if a non-central station system transmits signals to a remote monitoring location, the alarm service company is required to cancel and reissue the certificate if the remote monitoring location changes.

IMPACT

These revisions will not influence certificates that are now in effect. These can remain in effect with present terminology until they expire or are cancelled. Therefore, UL proposes that the changes become effective upon the date of publication.

PROPOSALS

1.1 These requirements provide criteria for the installation of protective wiring and devices for burglar alarm systems covering premises, stockrooms, closed areas, ~~strongrooms~~, safes, vault, night depositories, automated teller machines, and other security containers. The amount of alarm protection installed in a system is designated as extent of protection.

1.1 revised date of publication

1.2 Burglar-alarm systems are classified by type of system. The types of systems covered by these requirements include central station, ~~local, police station connected~~ mercantile, bank, limited mercantile, proprietary, and defense industry national industrial security systems. Requirements for residential burglar systems are covered in the Standard for Installation and Classification of Residential Burglar Alarm Systems, UL 1641.

1.2 revised date of publication

~~3.37 STRONGROOM A room that meets the construction requirements in the "Industrial Security Manual For Safeguarding Classified Information" DoD 5220.22-M.~~

3.37 deleted date of publication

10.4.9 Sound detection ~~is not acceptable for use in~~ shall not be used for a Defense Industry National Industrial Security System.

10.4.9 revised date of publication

21.1.1 An appropriate sounding device shall be installed in a ~~local mercantile, police station connected mercantile, local or bank alarm system, police station connected bank, limited mercantile and in a central station alarm system~~ National Industrial Security System requiring that requires a sounding device. When the alarm sounding device is mounted outside of the protected area or inside where it is visible and within reach of an intruder, an ~~An~~ appropriate alarm housing shall enclose the sounding device. See 3.3 and Table 21.1.

21.1.1 revised date of publication

(CURRENT)

Table 21.1

Summary of alarm sounding device requirements for mercantile systems

Type of mercantile system	Alarm sounding device required	Location of alarm sounding device and housing	Type of alarm sounding device housing
Local (no remote connection)	Yes	Outdoors, visible to street	Outside type
Local (with remote connection) or police station connect	Yes	Outside protected area Within protected area, visible to intruder Within protected area, not visible to, or out of reach of intruder	Outside type Inside/visible type Inside/concealed ^a
Limited Mercantile	Yes	Outside protected area Within protected area, visible to intruder Within protected area, not visible to, or out of reach of intruder	Outside type Inside/visible type Inside/concealed
Central station or proprietary (with sounding device)	Yes	Outside protected area Within protected area, visible to intruder Within protected area, not visible to, or out of reach of intruder	Outside type Inside/visible type Inside/concealed ^a
Defense Industrial (with sounding device)	Yes	Outside protected area Within protected area, visible to intruder Within protected area, not visible to, or out of reach of intruder	Outside type Inside/visible type Inside/concealed ^a

(PROPOSED)
Table 21.1
Summary of alarm sounding device requirements

Type of system	Alarm sounding device required	Location of alarm sounding device and housing	Type of alarm sounding device
Bank (no remote connection)	Yes	Outdoors, visible to street	Bank
Bank (with remote connection)	Yes	Outside protected area or within protected area	Bank
Mercantile (no remote connection)	Yes	Outside, visible to street	Outside type
Mercantile (with remote connection)	Yes	Outside protected area — Within protected area, visible to intruder — Within protected area, not visible to, or out of reach of intruder	Outside type — Inside/visible type — Inside/concealed ^a
Central station or proprietary	Optional	Outside protected area — Within protected area, visible to intruder — Within protected area, not visible to, or out of reach of intruder	Outside type — Inside/visible type — Inside/concealed ^a
National Industrial Security system	Where required	Outside protected area — Within protected area, visible to intruder — Within protected area, not visible to, or out of reach of intruder	Outside type — Inside/visible type — Inside/concealed ^a
^a An inside/concealed type alarm sounding device does not have a housing.			

Table 21.1 revised and combined with Table 21.2 date of publication

(DELETED)

Table 21.2

Summary of alarm sounding device requirements for bank systems

Type of bank system	Alarm sounding device required	Location of alarm sounding device and housing	Type of alarm sounding device
Local (no remote connection)	Yes	Outdoors, visible to street	Grade A or B bank
Local (with remote connection)	Yes	Outside protected area or within protected area	Grade A or B bank
Police station connect	Yes	Outside protected area or within protected area	Grade A or B bank
Central station or proprietary (with sounding device)	Yes	Outside protected area	Grade A or B bank, or mercantile: Outside type
Central station or proprietary (with sounding device)	Yes	Within protected area, visible to and within reach of intruder	Grade A or B bank, or mercantile: Outside, or inside/visible type
Central station or proprietary (with sounding device)	Yes	Within protected area, not visible to or out of reach of intruder	Grade A or B bank, or mercantile: Outside, or inside/visible or inside/concealed type ^a

Table 21.2 combined with Table 21.1 and deleted date of publication

(NEW)

21.1.1.1 An alarm sounding device is optional for a central station or proprietary system. When one is used, it shall comply with 3.3 and Table 21.1.

21.1.1.1 added date of publication

21.1.6 An alarm housing and alarm sounding device used in a bank alarm system shall be suitable for that type of service whether it is mounted outside or inside. See 3.3 and Table 21.1.

21.1.6 revised date of publication

21.3.2 A mercantile alarm sounding device and housing that is located within a building but outside of the protected area, shall be rated for outside service. See 3.3.

Exception No. 1: An inside/visible mercantile alarm sounding device and housing may be located within the building and outside of the protected area if it is located within an Extent Number 3 or 4 system. The Extent Number 3 or 4 system shall be a part of the same alarm system as the alarm sounding device.

Exception No. 2: An inside/concealed alarm sounding device is not acceptable for use shall not be used in a local mercantile alarm system that does not have a remote alarm transmission connection. It is acceptable for use in a local mercantile system with a remote alarm transmission and in a central station, police station connected, proprietary and defense industry, national industrial security system.

21.3.2 revised date of publication

21.3.3 An inside/concealed sounding device shall be mounted where it is not visible to an intruder, or if When visible, it shall be mounted at least 10 feet (3.05 m) above the floor or any fixed construction within the room that the intruder can climb on. If When visible, the alarm sounding device shall also be mounted at least 4 feet (1.2 m) out of reach horizontally from any fixed construction within the room that the intruder can climb on.

Exception: For a ~~defense industry~~ national industrial security system, an inside/concealed sounding device shall be within the protected area. It shall not be mounted above a suspended ceiling where it would be outside the boundary of the protected premises.

21.3.3 revised date of publication

22.4 Wire-mesh screening (Heading shown for reference)

22.4.1 For Extent Numbers 3 and 4 installations, wire-mesh screening is considered a wall and does not require protection if it is constructed of at least 0.053 inch (1.35 mm) minimum thickness expanded sheet steel or No. 10 AWG (0.10 inches diameter) (5.3 mm²) steel wire with openings not greater than 2 inches (51 mm). Protection, such as alarm screens or linings and similar devices, is required for Extent Number 1 and for compliance with 4.1.3.1 (a) or (d) for Extent Number 2 installations.

22.4.1 revised date of publication

APPENDIX A (Heading shown for reference)

A1.6 The following is a list of the Categories, and corresponding types of Certificates, under UL's Certificate Services for which ASCs may obtain Listings. As Listees, ASCs may issue only the Certificate types of each Category in which they are Listed. (ULCVS can be used to verify the Listing categories of the ASC.) The Category name is followed by the Category Control Number (CCN) used to reference the Listings in UL's Product Directories; and the types of Certificates that may be issued by the ASC for each Category.

CENTRAL STATION BURGLAR ALARM SYSTEMS Reference CCNs: CPHZ and CPVX.
Certificate types "CENTRAL STATION BURGLAR ALARM SYSTEM CERTIFICATE."

~~LIMITED MERCANTILE BURGLAR ALARM SYSTEMS Reference CCNs: CPHZ and CQXP.
Certificate type "LIMITED MERCANTILE BURGLAR ALARM SYSTEM CERTIFICATE."~~

DEFENSE NATIONAL INDUSTRIAL SECURITY SYSTEMS Reference CCNs: CPHZ, and CRZH.
Certificate type "DEFENSE NATIONAL INDUSTRIAL SECURITY SYSTEM CERTIFICATE."

~~LOCAL BANK SAFE AND VAULT BURGLAR ALARM SYSTEMS Reference CCNs: CPHZ, CUCR, and CUPZ. Certificate type "LOCAL BANK BURGLAR ALARM SYSTEM CERTIFICATE."~~

~~LOCAL MERCANTILE BURGLAR ALARM SYSTEMS Reference CCNs: CPHZ, CUCR, and GVDX. Certificate type "LOCAL MERCANTILE BURGLAR ALARM SYSTEM CERTIFICATE."~~

POLICE STATION-CONNECTED BANK BURGLAR ALARM SYSTEMS Reference CCNs: CPHZ and CPRH. Certificate type "POLICE STATION-CONNECTED BANK BURGLAR ALARM SYSTEM CERTIFICATE."

(Paragraph A1.6 continued)

~~POLICE STATION CONNECTED~~ MERCANTILE BURGLAR ALARM SYSTEMS Reference CCNs: CPHZ and CVSG. Certificate type "~~POLICE STATION CONNECTED~~ MERCANTILE BURGLAR ALARM SYSTEM CERTIFICATE."

PROPRIETARY BURGLAR ALARM SYSTEMS – Reference CCNs: CPHZ and CVWX. Certificate type "PROPRIETARY BURGLAR ALARM SYSTEM CERTIFICATE."

MANUAL HOLDUP ALARM SYSTEMS – Reference CCNs: MTCV and MTQT. Certificate type "HOLDUP ALARM SYSTEM CERTIFICATE."

SEMI-AUTOMATIC HOLDUP ALARM SYSTEMS – Reference CCNs: MTCV and MUER. Certificate type "HOLDUP ALARM SYSTEM CERTIFICATE."

A1.6 revised date of publication

Figure A2.1
Request for certificate

 Underwriters Laboratories Inc. 333 PRINGSTEN ROAD • NORTHBROOK, ILLINOIS 60062-2096 AN INDEPENDENT, NOT-FOR-PROFIT ORGANIZATION TESTING FOR PUBLIC SAFETY	SN: _____
REQUEST FOR CERTIFICATE	
Upon receipt of the executed Request for Certificate, Underwriters Laboratories Inc. (UL) will provide a Certificate for use by the <i>Alarm Service Company</i> in connection with the <i>Alarm System</i> installed for the <i>Protected Property</i>. The <i>Alarm System</i> will be installed and maintained in accordance with the UL requirements for the Burglar, Holdup or Fire Alarm Certificate marked below:	
BURGLAR ALARM SYSTEMS ☒ CENTRAL STATION ☐ MERCANTILE ☐ PROPRIETARY ☐ BANK ☐ NATIONAL INDUSTRIAL SECURITY ☐ RESIDENTIAL	FIRE ALARM SYSTEMS ☐ CENTRAL STATION (NFPA 71 or 72) ☐ LOCAL (NFPA 72) ☐ AUXILIARY (NFPA 72) ☐ REMOTE STATION (NFPA 72) ☐ PROPRIETARY (NFPA 72) HOLDUP ALARM SYSTEMS ☐ HOLDUP
File Number: <u>S99998</u> Service Center Number: <u>2</u> Issue Date: <u>Aug. 3, 1992</u> Expiration Date: <u>Aug. 3, 1993</u>	
☐ New Certificate ☒ Renewed or Replacement Certificate (Prior Certificate Serial No. <u>FC11111111</u>)	
LIMITATION OF LIABILITY: Underwriters Laboratories Inc. makes no representations or warranties, express or implied, that the Alarm System will prevent any loss by fire, smoke, water damage, burglary, hold-up or otherwise, or that the Alarm System will in all cases provide the protection for which it is installed or intended. UL may at times conduct inspections of the Alarm Service Company including inspections of representative installations made by it. UL does not assume or undertake to discharge any liability of the Alarm Service Company or any other party. UL is not an insurer and assumes no liability which may result directly or indirectly from inspection of the equipment, failure of the equipment, failure to conduct inspections, incorrect certification, nonconformity with requirements, failure to discover nonconformity with requirements, cancellation of the Certificate or withdrawal of the Alarm Service Company from inclusion in UL's Directory prior to the expiration date appearing on this Certificate.	
Protected Property: A WAREHOUSE 1 Industrial Park Palatine, IL 60074	Alarm Service Company An Alarm Co. 333 Pringsten Rd. Northbrook, IL 60062-2096
The undersigned, as an authorized representative of the <i>Protected Property</i> named herein, acknowledges he has read and agrees on behalf of the above named <i>Protected Property</i> to the terms and conditions of this Request for Certificate	
Authorized Representative of <i>Protected Property</i> <u>John Jones</u> Typed Name of Representative Signature of Representative Date <u>July 12</u>, 19<u>92</u>	Authorized Representative of <i>Alarm Service Company</i> <u>John Doe</u> Typed Name of Representative Signature of Representative Date <u>July 12</u>, 19<u>92</u>
UNDERWRITERS LABORATORIES COPY © 1994 CS-R1 REV	

(Figure A2.1 continued)

Figure A2.1 (Cont'd) Request for certificate

DEFINITIONS

Alarm Service Company The Listed company providing, installing and maintaining the alarm system under UL's Certificate Service programs.

Alarm Systems A protective signaling system which is considered to be a combination of interrelated signal initiating devices, signal transmitting devices, signal indicating devices and control equipment and interconnecting wiring installed for a particular application.

Directory A publication issued annually by UL that contains the names of companies having products that comply with UL's requirements.

File Number Alarm Service Company's file number. A number assigned by UL to identify a file for the Listee within a specific product category.

Protected Property The alarm user, business, residence, location, and/or area protected by the alarm system.

Service Center Number This is a number, code or distinctive identification, assigned either by UL or the Listee, which when used in association with a client's file number uniquely defines a central station, service center, satellite station, monitoring station, or other service location of the Listee.

CERTIFICATE TYPES

The Fire Alarm System Certificate types are:

CENTRAL STATION (NFPA 71) - CENTRAL STATION FIRE ALARM SYSTEM CERTIFICATE
LOCAL (NFPA 72) - LOCAL FIRE ALARM SYSTEM CERTIFICATE
AUXILIARY (NFPA 72) - AUXILIARY FIRE ALARM SYSTEM CERTIFICATE
REMOTE STATION (NFPA 72) - REMOTE STATION FIRE ALARM SYSTEM CERTIFICATE
PROPRIETARY (NFPA 72) - PROPRIETARY FIRE ALARM SYSTEM CERTIFICATE

The Burglar Alarm System Certificate types are:

CENTRAL STATION - CENTRAL STATION BURGLAR ALARM SYSTEM CERTIFICATE
~~**LIMITED MERCANTILE (1) - LIMITED MERCANTILE BURGLAR ALARM SYSTEM CERTIFICATE**~~
~~**POLICE STATION CONNECTED MERCANTILE - POLICE STATION CONNECTED MERCANTILE BURGLAR ALARM SYSTEM CERTIFICATE**~~
~~**POLICE STATION CONNECTED BANK - POLICE STATION CONNECTED BANK BURGLAR ALARM SYSTEM CERTIFICATE**~~
~~**LOCAL MERCANTILE - LOCAL MERCANTILE BURGLAR ALARM SYSTEM CERTIFICATE**~~
~~**LOCAL BANK - LOCAL BANK BURGLAR ALARM SYSTEM CERTIFICATE**~~
PROPRIETARY - PROPRIETARY BURGLAR ALARM SYSTEM CERTIFICATE
RESIDENTIAL - RESIDENTIAL BURGLAR ALARM SYSTEM CERTIFICATE
DEFENSE NATIONAL INDUSTRIAL SECURITY - DEFENSE NATIONAL INDUSTRIAL SECURITY SYSTEM CERTIFICATE

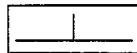
The Holdup Alarm System Certificate types are:

HOLDUP - HOLDUP ALARM SYSTEM CERTIFICATE

(1) The Limited Mercantile Certificate provides for a basic system which can be enhanced as required by the Authority Having Jurisdiction or the Alarm System user. Other types of Certificated systems are available which the alarm user may wish to consider.

Figure A2.1 revised date of publication

(DELETED)
Figure A2.3
Alarm system description for limited mercantile
burglar alarm system certificate



Alarm System Description
For Limited Mercantile
Burglar Alarm System Certificate

PROTECTED PROPERTY			
Name: A Jewelry Store			
Address: 1611 Their St.			
City: Anywhere	State: IL	Zip Code: 12345-6789	

ALARM SERVICE COMPANY			
File No: BP1234	Service Order No: 0123456789		
Name: An Alarm Co., Inc.			
Address: 12 Park Place			
City: Somewhere	State: KS	Zip Code: 98765-4321	
Representative Name & Title: JOHN DOE, MANAGER		Phone Number: (708) 555-4321	

PERIOD OF ISSUANCE			
Issue Date: 9/30/90	Expiration Date: 12/31/91	☒ New	☐ Renewal

COMMENTS AND CLARIFICATIONS			

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Form No. 68-689-02

S3649

SYSTEM DESCRIPTION

Type of System:	☐ Premise	☒ Storefront Qty. 1
Response Time Category: (Alarm Investigator)	☒ 45 minutes	☐ None
Keys to Property:	☒ Yes	☐ No
Alarm Sounding Devices:	☐ Inside	☒ Outside
Line Security Employed:	☐ Yes	☒ No
Alarm Transmission Method:		
☒ Multiplier	☐ Derived Channel	☐ Direct Wire
☐ Radio Two-way	☐ Radio One-way	☐ Transmitter (McQuish)
☐ Digital Alarm Communicator		
Remote Monitoring Locations (if not same as ASC)		
File No: BP1234	Service Center No: 10	
Control and Transmitter Units: (Mfg. & Models)		
ACME MFG MODEL 10		

Figure A2.3 deleted date of publication

Figure A2.4
Alarm system description for defense national industrial security
system certificate

 Underwriters Laboratories Inc. 333 Pfingsten Road Northbrook, IL 60062-2096 an independent, not-for-profit organization testing for public safety					
Alarm System Description For National Industrial Security Alarm System Certificate					
PROTECTED PROPERTY					
Name:					
Address:					
City:				State:	Zip Code:
ALARM SERVICE COMPANY					
File No.			Service Center No.		
Name:					
Address:					
City:				State:	Zip Code:
Representative: (Name & Title)				Phone No. ()	
PERIOD OF ISSUANCE					
Issue Date	Expiration Date	☐ New	☐ Renewal	Original Certificate Serial No.	
COMMENTS AND CLARIFICATIONS					

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Form No. CS-ASD-DG

(Figure A2.4 continued)

Figure A2.4 (Cont'd)
Alarm system description for defense national industrial security
system certificate

SYSTEM DESCRIPTION

Alarmed Area: _____

Type of System (Choose one only)	Quantity	Extent of Protection
☐ Closed Area	n.a.	Extent 3
☐ Alarmed Room	n.a.	Extent 3
☐ Strongroom	n.a.	Extent 3
☐ Locking Bar Container	_____	Complete
☐ GSA Approved Container	_____	Complete
☐ Non-Standard Container	_____	Complete
☐ Vault	_____	Complete

Alarm Sounding Devices: ☐ Inside ☐ Outside ☐ None

Line Security Employed: ☐ Yes ☐ No

Alarm Transmission Method No. 1:

- | | | |
|---|---|------------------------------------|
| ☐ Derived Channel | ☐ Direct Wire | ☐ Multiplex |
| ☐ Private Radio System (Two-way) | ☐ Radio Network/Transport System (Two-way) | |
| ☐ Private Radio System (One-way) | ☐ Radio Network/Transport System (One-way) | |
| ☐ Digital Alarm Communicator | ☐ Transmitter (McCulloh) | |

Alarm Transmission Method No. 2: (Answer only if "Line Security" not employed.)

- | | | |
|---|---|--|
| ☐ Direct Wire | ☐ Digital Alarm Communicator | ☐ Transmitter(McCulloh) |
| ☐ Radio Network/Transport System (One-way) | ☐ Private Radio System (One-way) | |

Monitored Signals:

- ☐ Alarms Only ☐ Alarms, Openings & Closing

SM824B

(Continued)

(Figure A2.4 continued)

Figure A2.4 (Cont'd)
Alarm system description for defense national industrial security
system certificate

Remote Monitoring Location:

☐ Central Station File No: _____	Service Center No: _____
☐ Residential Monitoring Station: File No: _____	Service Center No: _____
☐ Police Station Dispatch Center	☒ Defense Contractor Monitoring Station

Stealth Laser Ltd
(Name)
1 Stealth Pl.
(Address)
Elsewhere, KS 77766-5432
(City, State & Zip Code)

Investigator:

☐ Alarm Service Company	☒ Defense Contractor Investigator
☐ Private Guard Company	☐ Police Department

(Name)

(Address)

(City, State & Zip Code)

Response Time Category:

☒ 15 Min.	☐ 20 Min.	☐ 30 Min.
☐ Police Department Investigator (N.A.)		

Dis Field Office Having Jurisdiction: Wichita, KS

(City & State)

Manufacturers and Model Numbers of all Receiver, Control and Transmitter Units:

Figure A2.4 revised date of publication

A6.5 TYPE OF SYSTEM – The "Type of System" is the terminology used to define the area of the property being protected in a generalized way. An ASC may select as many types as there are on the "Alarm System Description". In addition, except for Defense National Industrial Security Systems, more than one area of each type may be covered on a single Certificate by indicating the quantity of areas in the space provided.

A6.5 revised date of publication

Table A6.1
Extent of protection for burglar alarm systems

Extent of protection	Type of system
Number 1	Premises or Stockroom
Number 2	Premises or Stockroom
Number 3	Premises or Stockroom
Number 4	Premises or Stockroom
Limited Mercantile	Premises or Stockroom
Number 5	
Complete	Closed Area Safe, Vault, Night Depository, or Automated Teller Machine
Partial	Safe, Vault, Night Depository, or Automated Teller Machine

* Extent Numbers 1, 2 and 3 and 4 apply to Central Station; Only Extent Numbers 2, 3 and 4 apply to Police Station Connect, Local Mercantile and Proprietary systems; only Only Extent Numbers 3 and 5 apply to Defense Industry National Industrial Security systems. Extent Limited Mercantile applies to central station only.

Table A6.1 revised date of publication

A6.6 EXTENT OF PROTECTION – Place an "X" in the box for the appropriate Extent. The "Extent of Protection" is the designation used to describe the amount of protection installed. The requirements used to achieve each level of protection are described in UL 681, Standard for Installation and Classification of ~~Mercantile and Bank Burglar Alarm Systems~~, and Holdup Alarm Systems, or UL's Product Directories, for each corresponding "Type of System." ~~Limited Mercantile Alarm Systems have only one level of protection and therefore the "Extent of Protection" is described as "Limited Mercantile".~~ The "Extent of Protection" for each type of system is shown in Table A6.1. The ASC may select only one Extent of Protection for each Type of System selected. If multiple Extent exist for the system, then the ASC shall use the lower Extent or issue a separate Certificate for the Type of System with different Extent.

A6.6 revised date of publication

A6.14 REMOTE MONITORING LOCATION – Some categories of systems allow remote monitoring from different types of monitoring locations. Select the type of monitoring system and fill in the information requested for the selected type. The definitions of the various types of remote monitoring locations are:

- a) **Central Station** – A Listed service center providing alarm monitoring, ~~alarm investigator runner~~ response, and meeting all operational requirements as defined by UL 611, ~~"Central Station Burglar Alarm Systems, UL 827"~~ the Standard for "Central Stations for Watchman, Fire Alarm and Supervisory Alarm Services, UL 827."

For a central station burglar alarm and a limited mercantile burglar alarm certificate, the remote monitoring location must be the same company and file number as the ASC, but may have a different location. The monitoring location must be Listed under ~~UL 611~~ UL 827.

(Paragraph A6.14 continued)

A central station or residential monitoring station Listed under ~~UL 611~~ or UL 827 may monitor ~~police station connected mercantile and bank~~ burglar alarm systems and ~~need not~~ is not required to be the same company as the ASC.

(Paragraph A6.14 continued)

b) Police Dispatch Center – A police station or designated municipal facility whose primary purpose is to dispatch police and other emergency services.

~~c) Residential Monitoring Station – A Listed service center whose primary purpose is to monitor burglar alarm signals from residential alarm systems. It may also monitor signals from police station connected systems.~~

dc) Defense Government Contractor Monitoring Station – A facility operated by a defense contractor of the U.S. government for the purpose of monitoring defense industry national industrial security systems that are installed in areas occupied by that defense contractor and/or by a subcontractor(s) to that defense contractor, with the subcontractor(s) located in facilities owned, operated, or leased by that defense contractor. Defense industry National industrial security systems may also be monitored by (a), or (b), or (e) facilities.

A6.14 revised date of publication

(NEW)

A7.3.1 When a National Industrial Security System, Mercantile, Bank, or Holdup Alarm Company changes the central station, residential monitoring station, or police station to which the alarm system transmits its signals, the current Alarm Certificate shall be canceled. A new Certificate shall be issued that shows the new central, residential monitoring, or police station.

A7.3.1 added date of publication

5. ADDITION OF REQUIREMENTS FOR THE PROTECTION OF ANTENNAS AND ANTENNA CABLES

RATIONALE

UL has Listed one-way, long range radio (RF) transmission equipment and cellular telephone equipment that interfaces with a digital alarm communicator transmitter (DACT). Both are being used by alarm service companies. Since the antenna and antenna cable used with such equipment is vulnerable to attack (resulting in the prevention of an alarm signal transmission) UL has required, when this type of signal transmission is used alone, that the antenna and its cable be protected by the following methods:

- a) The transmitter, antenna, and antenna cable shall be mounted inside of the building where the alarm system is located.
- b) The antenna shall be protected by a UL Listed motion detector whose alarm output is connected to an alarm initiating device circuit of the system with which it is used, and is armed when the alarm system is armed.
- c) If the antenna is connected to the radio transmitter or cellular transceiver by coaxial cable rather than mounted directly to the unit, the cable shall be:
 - 1) In rigid metal conduit or electrical metallic tubing (EMT) if it is exposed, and in flexible metal conduit if it is concealed by the building structure, or
 - 2) Protected by a UL Listed motion detector whose alarm output is connected to an alarm initiating circuit of the system with which it is used, and is armed when the alarm system is armed.

d) The initiating device circuit wiring to the motion detector used in (b) and item (2) of (c) shall be:

- 1) In rigid metal conduit or electrical metallic tubing (EMT) if it is exposed, or
- 2) Concealed by the building structure, or
- 3) Within the detection field of the motion detector.

Such protection is not required if the one-way radio (RF) transmitter is used with another independent signal transmission method or when a two-way radio (RF) system is used. When a one way radio (RF) transmitter is used with another independent signal transmission method, each shall monitor the other and send an alarm or trouble signal if one detects a fault in the other.

Although UL has been applying these requirements, they are currently not contained in UL 681. Therefore, UL proposes to add Radio Antennas, General, Section 27, to UL 681 to specify these requirements.

IMPACT

Although UL has required that the installation instructions for this type of equipment specify these requirements, general requirements for the installation of antennas and antenna cable have not been in UL 681. Therefore, UL proposes that Section 27 become effective on January 1, 1999, to allow time for the modification of systems that do not comply.

PROPOSALS

(NEW SECTION)

RADIO ANTENNA AND ANTENNA CABLE

27 General

27.1 The installation of a one way radio (RF) signal transmitter or of a cellular telephone transceiver shall:

- a) Locate the antenna and antenna cable inside of the building where the alarm system is located,
- b) Protect the antenna with a motion detector that complies with the requirements of intrusion detection units, UL 639, whose alarm output is connected into an alarm initiating device circuit of the system with which it is used, and is armed when the alarm system is armed,
- c) Install the antenna cable:
 - 1) In rigid metal conduit or electrical metallic tubing when it is exposed and in flexible metal conduit when it is concealed by the building structure, or
 - 2) Protect it with a motion detector that complies with UL 639 whose alarm output is connected into an alarm initiating circuit of the system with which it is used, and is armed when the alarm system is armed.
- d) Install the initiating device circuit wiring of the motion detector used for such protection:
 - 1) In rigid metal conduit or electrical metallic tubing when it is exposed, or

(Paragraph 27.1 continued)

- 2) Conceal it within the building structure, or
- 3) Locate it within the detection field of the motion detector.

Exception No. 1: Such protection is not required when a one way radio (RF) transmitter or cellular telephone transceiver is used with another independent signal transmission method, and each monitors the other so that an alarm or trouble signal will be transmitted when one detects a fault in the other.

Exception No. 2: Such protection is not required for a two-way radio (RF) system.

Added 27.1 effective January 1, 1999

27.2 The motion detector shall be adjusted to detect the motion of an intruder within four steps or less.

Added 27.2 effective January 1, 1999

6. POWER SUPPLIES

RATIONALE

The requirement for standby power for a bank vault alarm system when the power supply is inside the vault is 72 hours for *all* types of burglar alarm systems. The requirement currently specifies local and police station connect types of systems only. Therefore, UL proposes to delete the reference to local and police station connect in paragraph 20.2(a).

The requirement for standby power at the protected premises of a national industrial security system is 4 hours, not 24 hours. UL proposes to delete reference to national (defense) industrial security systems in 20.2(c) and move it to 20.2(e).

IMPACT

These are requirements that are presently being applied. Therefore, UL proposes that they become effective on the date of publication.

PROPOSAL

20.2 The requirement specified in 20.1 requires standby power to maintain the system in normal condition automatically in case of interruption of the commercial power source for periods as follows:

- a) Bank Vault Alarm Systems (~~Both Local and Police Station Connected~~) – 72 hours.

Exception: If the standby power source can be accessed while the bank vault is under timelock and the standby power renewed, the standby power requirement is 24 hours.

- b) ~~Local Mercantile, Police Station Connected Mercantile,~~ and Central-Station Mercantile – 4 hours.

- c) ~~Proprietary and Defense Industry Security Systems~~ – 24 hours.

Exception: Standby capacity of less than 24 hours may be provided if a signal indicating that the protected area unit is operating on standby power is transmitted to the central supervising station before the capacity of the standby power has decreased below 4 hours.

- d) Holdup Alarm Systems – 8 hours.

(Paragraph 20.2 continued)

e) National Industrial Security Systems = 4 hours.

Revised 20.2 effective on date of publication

7. DELETION OF REFERENCES TO THE STANDARD FOR LOCAL BURGLAR ALARM UNITS AND SYSTEMS

RATIONALE

UL 365 is being revised to cover both local and police station connect mercantile and bank burglar alarm units. It will be retitled "Mercantile and Bank Burglar Alarm System Units." The parts of UL 365 that apply to systems, such as maintenance and batteries, are being transferred to UL 681 or deleted.

As a result, the Standard for Local Burglar Alarm Units and Systems, UL 609, will eventually be withdrawn, the title of UL 365 will be changed as indicated above, and reference to local mercantile and bank and police station-connected mercantile and bank will be changed to mercantile and bank (with or without a remote connection).

UL proposes to revise paragraphs 1.2 (shown under topic 4), 2.2.4, 3.2, 3.3, 10.1.2, 19.1, 21.2.2, 21.2.3, A10.3, Figures A2.5 and A2.6, and Appendix B, and delete Figures A2.7 and A2.8.

For revisions to paragraphs 1.2, 21.1.1, Exception Number 2 to 21.3.2, A1.6, A6.14, Tables 21.1, A6.1, and Figure A2.1, please refer to the proposals under Revisions to References Relating to Limited Mercantile, Extent Number 5, Defense Industrial Systems, and Strongrooms, topic 4.

For the revision to paragraph 4.1, see Replacement of Limited Mercantile Requirements with New "Extent Number 4" requirements, topic 1. For the revision to paragraph 20.2(b), see Power Supplies, topic 6. For the revision to paragraph A6.4, see the Deletion of Grades as a Result of the Burglar Alarm Modular Certificate, topic 3.

IMPACT

The deletion of the reference to UL 609, the retitling of UL 365, and the change of local and police station connected mercantile and bank to mercantile and bank, in UL 681 will not effect presently certificated burglar alarm systems. Therefore, UL proposes that these revisions become effective on the date of publication.

PROPOSALS

2.2.4 To permit entry into or exit from ~~local and police station connected~~ mercantile systems, a shunting device or timer may be employed. When an external key-activated switch is used, it shall be trapped against removal.

2.2.4 revised date of publication

3.2 ALARM SOUNDING DEVICE – An audible signal appliance (bell, horn, siren, or speaker) that is used to signal unauthorized entry into a protected area and which complies with the requirements for an alarm sounding device ~~for police station connected in the Standard for Mercantile and Bank Burglar Alarm System Units and systems, UL 365, or in the Standard for Local Burglar Alarm Units and Systems, UL 609.~~

3.2 revised date of publication

3.3 ALARM SOUNDING DEVICE HOUSING – A housing, or the equivalent that complies with the applicable requirements for ~~police station connected in the Standard for Mercantile and Bank Burglar Alarm System Units and Systems, UL 365, or in the Standard for Local Burglar Alarm Units and Systems, UL 600.~~ See Alarm Sounding Devices, Section 21.

a) For MERCANTILE SYSTEMS – A housing, or the equivalent, that is used to protect an alarm sounding device ~~used~~ in a mercantile alarm system from being silenced by physical attack. There are three versions:

- 1) Outside – A housing intended to be located outside of the protected area and which complies with the requirements for an Outside alarm sounding device and housing in UL 365 ~~or UL 600.~~
- 2) Inside/Visible – A housing, intended to be located within the protected area where it can be seen by an intruder, ~~and which that~~ complies with the requirements for an Inside/Visible alarm sounding device and housing in UL 365 ~~or UL 600.~~
- 3) Inside/Concealed – An alarm sounding device, without an additional alarm housing, ~~and which~~ is either concealed from being seen by an intruder or is mounted out of reach and ~~which~~ complies with the requirements for an Inside/Concealed alarm sounding device in UL 365.

b) For BANK SYSTEMS – A housing, or the equivalent, that is used to provide attack resistance for an alarm sounding device used in a bank alarm system. It shall comply with the requirements of a bank alarm system as specified in UL 365. They are rated Grade A or Grade B:

- 1) ~~Grade A Complies with the requirements of a Grade A bank alarm system as specified in UL 365, or UL 600.~~
- 2) ~~Grade B Complies with the requirements of a Grade B bank alarm system as specified in UL 365, or UL 600.~~

3.3 revised date of publication

10.1.2 When an intrusion detection unit used in a ~~local or police station connected~~ mercantile system is controlled by a shunt switch, there shall be a positive indication of whether or not the shunt circuit is closed. The indication shall be located at, or be visible outside, the entrance/exit door where the shunt switch is installed.

Exception: Such indication is not required when an exit time-delay shunt is used.

10.1.2 revised date of publication

19.1 Depending on the type of service it is used for, a premises control unit shall comply with the Standards for:

- a) ~~Police Station Connected~~ Mercantile and Bank Burglar Alarm System Units and Systems, UL 365, or
- b) ~~Local Burglar Alarm Units and Systems, UL 600, or~~
- c) Proprietary Burglar-Alarm Units and Systems, UL 1076, or

(Paragraph 19.1 continued)

- ed) Central-Station Burglar-Alarm Units, UL 1610, or
- ed) Digital Alarm Communicator System Units, UL 1635.

19.1 revised date of publication

(CURRENT)

~~21.2.2 The alarm housing for a local bank or mercantile alarm system without a remote alarm transmission connection shall be mounted on the outside of the building, visible from a public street or highway, and accessible for examination and repair. It shall be located not more than four stories above the street level unless: an alarm sounding device and housing rated for Outside service is mounted adjacent to the premises or an alarm sounding device and housing rated for Inside/Visible service is mounted within the premises, in which case the outside alarm sounding device and housing may be mounted as high as the seventh floor.~~

(PROPOSED)

21.2.2 The alarm housing for a bank or mercantile alarm system without a remote alarm transmission connection shall be mounted on the outside of the building, visible from a public street or highway. It shall be accessible for examination and repair. It shall also be located not more than four stories above the street level unless:

- a) An alarm sounding device and housing rated for Outside service is mounted adjacent to the premises, or
- b) An alarm sounding device and housing rated for Inside/Visible service is mounted within the premises.

In either case, the outside alarm sounding device and housing may be mounted as high as the seventh floor.

21.2.2 revised date of publication

21.2.3 ~~If~~ When the alarm housing for a ~~local mercantile or bank~~ alarm system without a remote connection is concealed by an ornamental grille, the words "Burglar Alarm" shall be visibly displayed on the grille covering.

21.2.3 revised date of publication

Figure A2.5
Alarm system description for police station-connected mercantile burglar
alarm system certificate



SYSTEM DESCRIPTION

**Alarm System Description
 For Mercantile
 Burglar Alarm System Certificate**

PROTECTED PROPERTY			
Name: A Jewelry Store			
Address: 1611 Their St.			
City: Anywhere	State: IL	Zip Code: 12345-6789	

ALARM SERVICE COMPANY			
File No.: BP1234	Service Order No.: 0123456789		
Name: An Alarm Co. Inc.			
Address: 12 Park Place			
City: Somewhere	State: KS	Zip Code: 98765-4321	
Representative: JOHN DOE, MANAGER		Phone Number: (708) 555-1212	

PERIOD OF ISSUANCE			
Issue Date: 9/30/90	Expiration Date: 12/31/91	☒ New	☐ Renewal

COMMENTS AND CLARIFICATIONS			

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Type of System	Quantity	Extent of Protection	
☒ Premises	n.o.	☐ 2	☒ 3
☐ Stockroom		☐ 2	☐ 3
☒ Safe	1	☒ Complete	☐ Partial
☐ Vault		☐ Complete	☐ Partial
☐ Night Depository		☐ Complete	☐ Partial
☐ Automated Teller Machine		☐ Complete	☐ Partial

Alarm Sensing Device: ☒ Inside ☐ Outside ☐ None

Use Security Employees: ☐ Yes ☒ No

Alarm Transmission Method:

☐ Multiplex ☐ Derived Channel ☒ Direct Wire

☐ Radio Two-way ☐ Radio One-way ☐ Transmitter (McGulish)

☐ Digital Alarm Communicator

Remote Monitoring Location:

☒ Police Station Dispatch Center: Anywhere, IL (City and State)

☐ Central Station: (Name) (City and State)

File No: Service Center No

☐ Residential Monitoring Station: (Name) (City and State)

File No: Service Center No

Control and Transmitter Unit: (Mfg. & Model)

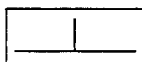
XOX MPG MODEL 10

Figure A2.5 revised date of publication

(DELETED)

Figure A2.7

Alarm system description for local mercantile burglar alarm system certificate



**Alarm System Description
For Local Mercantile
Burglar Alarm System Certificate**

PROTECTED PROPERTY

Name: A Jewelry Store

Address: 1611 Their St.

City: Anywhere State: IL Zip Code: 12345-6789

ALARM SERVICE COMPANY

File No: BP1234 Service Order No: 0123456789

Name: An Alarm Co., Inc.

Address: 12 Park Place

City: Somewhere State: KS Zip Code: 98765-4321

Personnel (Name & Title): JOHN DOE, MANAGER Phone Number: (708) 555-4321

PERIOD OF ISSUANCE

Issue Date: 9/30/90 Expiration Date: 12/31/91 ☒ Year ☐ Month Original Valid To:

COMMENTS AND CLARIFICATIONS

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Form No. 68-100-001

S3648

SYSTEM DESCRIPTION

System Grade:

☒ A ☐ B

Type of System	Quantity	Extent of Protection
☒ Premise	n.a.	☒ 2 ☐ 3
☐ Storeroom		☐ 2 ☐ 3
☒ Safe		☒ Complete ☐ Partial
☐ Vault		☐ Complete ☐ Partial
☐ Night Depository		☐ Complete ☐ Partial
☐ Automated Teller Machine		☐ Complete ☐ Partial

Alarm Sounding Device: ☐ Inside ☒ Outside

Control and Transmitter Units:
(Mfgs. & Models)

ACME MFG MODEL 10

Figure A2.7 deleted date of publication

APPENDIX B**Standards for Components**

Standards under which components of the products covered by this standard are judged include the following:

Title of Standard – UL Standard Designation

~~Burglar Alarm Systems, Central Station – UL 611~~

~~Burglar Alarm System Units, Mercantile and Bank and Systems, Police Station Connected – UL 365~~

~~Burglar Alarm Units and Systems, Local – UL 600~~

Burglar Alarm Units and Systems, Proprietary – UL 1076

Burglar Alarm Units, Central Station – UL 1610

~~Central Stations for Watchman, Fire Alarm and Supervisory Alarm Services – UL 827~~

~~Defense National~~ Industrial Security Systems for the Protection of Classified Material – UL 2050

Digital Alarm Communicator System Units – UL 1635

Holdup Alarm Units and Systems Initiating Devices – UL 636

Appendix B revised date of publication

8. MISCELLANEOUS REVISIONS**RATIONALE**

UL is proposing additional revisions to UL 681 that will clarify requirements. These revisions will not change the overall intent of the requirements. Additionally, many references and paragraphs will be corrected to ensure that all requirements are accurately stated. These revisions are presented under the proposal section. UL is proposing the following significant revisions:

- The addition of "telephone room" and "sprinkler room" to the areas that can be exempt from the use of a motion detector in paragraphs 4.1.1.2 and 4.3.1.2. (Paragraph 4.3.1.2 is shown under the proposals to add Extent Number 5.)
- The addition of "protective screens" to the title of Section 16.2 and paragraph 16.2.1;
- The addition of paragraphs 17.1.1 and 18.1.1 to indicate that sound and vibration detectors shall not be used to protect a night depository or automated teller machine unless designed for such use. These paragraphs shall also indicate that proximity detectors are not suitable for such protection;
- In paragraph 19.6, the addition of a reference to an intrusion detection unit and Extent No. 1 premises. In 19.6(b) the deletion of "or similar" since this paragraph only applies to an interrogate/respond type system;

- The addition of a reference to exception No. 1 of paragraph 19.6 to address the usage of one-way screws (or the equivalent) for securement of conduit or junction boxes to prevent against tampering.
- Present paragraph 19.9 instructs the installer to consult the installation instructions for information about the setting of the entry and exit delay. UL proposes to revise paragraph 19.9 to show the times for which the entry and exit delay can be set. Additionally, paragraph 2.2.5 would be deleted as a result of this revision;
- The addition of a footnote to revised Table 21.1 to indicate that an inside/concealed alarm sounding device does not have a housing (see topic 4 of this appendix for the revisions to this table). Additionally, UL proposes to revise paragraph 21.1.1 (see topic 4) to clarify when the alarm sounding device is required to have a protective housing;
- The revision of paragraphs 21.3.1, 23.1.1, and 23.5.2 to replace the references to "police department" and the present editions of UL 611 and UL 827 with reference to the new edition of Central Station Alarm Services, UL 827, which will cover central stations for burglar alarm, fire alarm and residential monitoring stations;
- The revision of paragraph 21.4.1 to add a reference to the conduit fitting of an inside/concealed alarm sounding device as well as reference to the alarm sounding device housing, which would apply to an outside alarm housing and an inside/visible alarm housing. Also, the deletion of "rigid conduit and electrical metallic tubing" from paragraph 21.4.3, since it is already specified in paragraph 21.4.1;
- The revision of paragraph 21.4.2 to require that unused knockouts be plugged as required in paragraph 19.6;
- The clarification of paragraph 21.4.3 to show that any one of the four options listed are required to supplement the mechanical protection requirements when located outside of the protected area.

IMPACT

UL is already applying the proposed requirements of paragraph 19.9, although the new proposal is less stringent than the current requirements. Therefore, UL proposes that the revisions become effective on the date of publication. The remaining revisions will not require review of existing installations or investigations. Therefore UL proposes that they become effective on the date of publication.

PROPOSALS

~~2.2.5 Programmed entry or exit delays shall not exceed the maximum time limits established for the control as shown in the products installation and operating instructions.~~

2.2.5 deleted date of publication

3.21 OPENING – A point at which entry can be gained through an aperture of manhole size without cutting or tearing down any part of the building structure. An opening can be fixed or movable and may singly or in combination be nailed, bolted, screwed, welded, barred shut, or boarded-over. When secured by screws, the screws shall be nonremovable. See 11.1.2 or 22.1.2.

3.21 revised date of publication

4.1.1.2 A premises with more than one room or area shall be protected by protective wiring applied to all openings or vulnerable surfaces, by the use of an acceptable sensing device including an intrusion detection unit, or by any combination of protective wiring or devices so that the same extent of protection is provided in each room or area as required by the alarm system. Motion detection is not

(Paragraph 4.1.1.2 continued)

required to be installed in an area such as a washroom, furnace room, clothes closet, utility closet, janitor's closet, ~~telephone room or, sprinkler room, and the like~~, or above a suspended ceiling (see 22.3.1) within the physical boundary of the alarm system. Any opening in such an area that leads outside of the area covered by the alarm system shall be provided with complete protection or the door into the area shall be protected as required by the method used in the alarm system.

4.1.1.2 revised date of publication

5.7.2 The system shall test free of grounds with the exception of those circuits that are intended to be connected to the ground side of the protective circuit. Also see 21.4.65.

5.7.2 revised date of publication

6.3.2 Show windows, ~~or transoms, or side panels~~ visible from a public street or highway and constructed of glazing material complying with the requirements in the Standard for Burglary Resistant Glazing Material, UL 972, do not require foil protection for Extent Number 3.

6.3.2 revised date of publication

11.5.7 For Extent Number 3, show windows, ~~or transoms, or side panels~~ visible from a public street or highway and constructed with glazing complying with the requirements in the Standard for Burglary Resistant Glazing Material, UL 972, do not require protection. If a transom is movable, contact protection shall be provided.

11.5.7 revised date of publication

Table 11.1
Summary of protection requirements for doors

Type of door	Extent number 3	Extent number 2
Metal, metal-sheath or solid wood door – visible from public street or highway	(1) Contacts if grade level	(1) Contacts and protective wiring, or (2) Contacts and motion detector or shock sensor
Metal, metal-sheath or solid wood door – not visible from public street or highway	(1) Contacts and protective wiring, or (2) Contacts and motion detector or shock sensor, or (3) Contacts and floor trap or PE beam	(1) Contacts and protective wiring, or (2) Contacts and motion detector or shock sensor
Heat treated, tempered glass door – visible or not visible from public street or highway	(1) Contacts and foil loop, or (2) Contacts and motion detector or shock sensor/glass break detector	(1) Contacts and foil loop, or (2) Contacts and motion detector or shock sensor/glass break detector
Laminated, wired glass or plastic glazed door – visible or not visible from public street or highway	(1) Contacts and foil on 8 inch centers, or (2) Contacts and motion detector or shock sensor/glass break detector	(1) Contacts and foil on 8 inch centers, or (2) Contacts and motion detector or shock sensor/glass break detector
Door of any construction – visible from public street or highway	(1) Contacts and protective wiring, or (2) Contacts and motion detector or shock sensor/glass break detector, <u>or</u> (3) <u>Contacts and A a</u> PE beam	(1) Contact and protective wiring, or (2) Contacts and motion detector or shock sensor/glass break detector
Door of any construction – not visible from public street or highway	(1) Contact and protective wiring, or (2) Contacts and motion detector or shock sensor/glass break detector, <u>or</u> (3) Contacts and two PE beams	(1) Contacts and protective wiring, or (2) Contacts and motion detector or shock sensor/glass break detector
Trap doors	(1) Contact and protective wiring, or (2) Contacts and motion detector or shock sensor, or (3) Contacts and floor trap or PE beam	(1) Contact and protective wiring, or (2) Contacts and motion detector or shock sensor, or (3) Contacts and floor Trap or PE beam

Table 11.1 revised date of publication

11.7.1 For partial protection, a movable jalousie windows shall be provided with a contact on one of the movable panes or on the mechanism used to open and close the window.

11.7.1 revised date of publication

16.2 Foil linings, grooved stripping, protective screens, and embedded cable

16.2 revised date of publication

16.2.1 If ~~When~~ foil linings, grooved stripping, protective screens, or embedded cable are used for vault protection, the protection shall be applied in accordance with the requirements for Lining and Screens for Use With Burglar-Alarm Systems, UL 606.

16.2.1 revised date of publication

17.1 Complete protection shall consist of protection for the outer door and body of the depository chest or vault, the connecting chute, and the outside entrance or head by the methods described in ~~protection for safes and protection for vaults~~, sections 14 – 16 that specify protection for safes and vaults.

17.1 revised date of publication

(NEW)

17.1.1 A sound and vibration detector that is not intended to be used for the protection of night depository shall not be used. A proximity detector shall not be used.

17.1.1 added date of publication

18.1 Complete protection shall consist of protection for the door and body of the security container and the customer access panel by the methods described in ~~protection for safes~~, sections 14 and 15 which specify protection for safes.

18.1 revised date of publication

(NEW)

18.1.1 A sound and vibration detector that is not intended to be used for the protection of an automated teller machine shall not be used. A proximity detector shall not be used.

18.1.1 added date of publication

19.6 Installation wiring from a control unit or intrusion detection unit to a complete safe, complete vault, ~~or~~ Extent Number 1 stockroom, or Extent Number 1 premises, or between complete safes, complete vaults, ~~or~~ Extent Number 1 stockrooms, or Extent Number 1 premises shall be:

- a) Installed in electrically protected cable, or
- b) An interrogate/respond ~~or similar~~ type circuit that will detect tampering with or disconnection of the circuit, or
- c) Installed in rigid metal conduit, or
- d) Installed in electrical metallic tubing, or
- e) Installed in flexible metal conduit which is entirely concealed by the building structure.

Exception No. 1: Conduit boxes or junction boxes may be used if they are electrically tampered or permanently secured with one-way screws or similar type fastening devices. Each unused knockout shall be plugged.

Exception No. 2: These requirements do not apply to a partial safe, partial vault, Extent Number 2 or 3 stockroom, or Extent Number 2 or 3 premises.

Revised 19.6 effective date of publication

(CURRENT)

~~19.9 A control unit that has a programmable entry or exit delay shall have the delay time set within the maximum time limits established for the control unit as shown in the unit's installation and operating instructions.~~

(PROPOSED)

19.9 The maximum time that a control unit shall be programmed to delay the transmission of a signal to a remote monitoring location, or to delay the energizing of a local alarm sounding device to permit the alarm system user to enter and disarm the system, or to arm the system and exit shall not exceed:

- a) 60 seconds for a system with standard line security or encrypted line security,
- b) 120 seconds for a system without standard line security or encrypted line security, or
- c) 120 seconds for a system that does not transmit an alarm signal to a remote monitoring location.

19.9 revised date of publication

21.3.1 An alarm sounding device and housing that is located anywhere within or on the outside of a building is acceptable provided that there is ~~a direct connection to a police department that has at least one attendant on duty at all times at the alarm receiving area. The connection to the police station shall be directly to the police station or through a central station alarm company complying with the requirements in the Standard for Central Station Burglar Alarm Systems, UL 611, or the Standard for Central Stations for Watchman, Fire Alarm and Supervisory Services, UL 827, or an alarm company complying with the requirements for a residential monitoring station~~ an alarm transmission to:

- a) The dispatch location of the law enforcement agency having jurisdiction over the protected property, or
- b) A central station or residential monitoring station complying with the requirements of central station alarm services, UL 827.

21.3.1 revised date of publication

21.4.1 For an alarm system using a local sounding device, the wiring used for the sounding device energy between the premises control unit and the alarm sounding device housing or the conduit fitting of an inside/concealed alarm sounding device shall be in rigid metal conduit or electrical metallic tubing.

Exception No. 1: Flexible metal conduit may be used when it is entirely concealed within the walls or above the ceiling of the premises.

Exception No. 2: If When failure of wiring between the alarm housing and the control unit does not prevent the alarm from sounding, mechanical protection is not required.

21.4.1 revised date of publication

21.4.2 Conduit boxes may be used to route the wiring between the premises control unit and the alarm housing provided that the cover of each box is permanently secured with one-way or comparable screws or is electrically trapped. Each unused knockout shall be plugged.

21.4.2 revised date of publication

21.4.3 ~~In addition to~~ When the mechanical protection in 21.4.1, ~~rigid conduit or electrical metallic tubing~~ enclosing the sounding device energy wiring ~~and is~~ located outside of the protected area, ~~shall have additional protection consisting of one of the of the following shall be provided:~~

- a) Electrically protected cable installed within rigid metal conduit or electrical metallic tubing, ~~or~~
- b) Electrically protected cable installed within flexible metal conduit which is entirely concealed by the building structure, ~~or~~
- c) Installation of the rigid metal conduit or electrical metallic tubing so that it is entirely concealed by the building structure, ~~or~~
- d) Installation of rigid metal conduit or electrical metallic tubing between the alarm sounding device housing and the control unit or power supply enclosure mounted 6 inches (152 mm) or less from each other.

Exception: If When failure of wiring between the alarm housing and the control unit does not prevent the alarm from sounding, mechanical ~~or~~ and electrical protection ~~is~~ are not required.

21.4.3 revised date of publication

21.4.5 For a "normally grounded" protective circuit, the outer enclosure of the alarm housing attached to the building shall be connected to the grounded side of the power supply. All single-circuit foil, protective wiring, and contacts shall be connected to the ungrounded side of the protective circuit. There shall be no protective wiring between the ground and the outer enclosure of the alarm housing.

Revised 21.4.5 effective July 1, 1996

23.1.1 A holdup alarm signal shall be transmitted direct to a constantly manned ~~police department law enforcement agency~~ equipped for broadcasting radio calls to cruising squad cars or to a central station or residential monitoring station with facilities for relaying calls to a ~~police department law enforcement agency~~ with such broadcasting facilities. The central station ~~or residential monitoring station~~ shall comply with the ~~Standard for Central Station Burglar Alarm Systems, UL 611, or the Standard for Central Stations for Watchman, Fire Alarm and Supervisory Services, UL 827. The residential monitoring station shall comply with UL 611, or UL 827, or both~~ Standard for Central Station Alarm Services, UL 827.

23.1.1 revised date of publication

23.5.2 Wires used outside buildings to connect the protected premises with a remote station ~~(see 23.1.1)~~ shall be run underground. The installation of outside wiring shall comply with the requirements for such wiring in ~~the Standard for Central Station Burglar Alarm Systems, UL 611~~ the Standard for Central Station Alarm Services, UL 827.

Exception: If When not permitted by the installation, the wires may be run overhead.

23.5.2 revised date of publication

PROPOSED REQUIREMENTS ARE OF A TENTATIVE AND EARLY NATURE AND ARE FOR REVIEW AND COMMENT ONLY. CURRENT REQUIREMENTS ARE TO BE USED TO JUDGE A PRODUCT UNTIL THESE REQUIREMENTS ARE PUBLISHED IN FINAL FORM.

APPENDIX B

PROPOSED REQUIREMENTS AND PROPOSED EFFECTIVE DATES FOR THE SECOND EDITION OF THE STANDARD FOR CENTRAL-STATION BURGLAR ALARM UNITS, UL 1610

For your convenience in review, proposed deletions are shown ~~lined-out~~.

In addition to the following rationale, see "RATIONALE" in topic 1 of the preceding Appendix A regarding the proposed requirements in this Appendix.

DELETION OF REFERENCE TO LIMITED MERCANTILE SYSTEMS

RATIONALE

Since the Extent Limited Mercantile designation is being deleted, the related requirements in UL 1610 are no longer necessary. UL proposes to delete Limited Mercantile Systems, Section 64A, from UL 1610.

IMPACT

Since equipment has not been Listed for use in Limited Mercantile Systems, UL proposes that the deletion of Section 64A can be effective on the date of publication.

PROPOSAL

(DELETED SECTION)

64A Limited Mercantile Systems

Section 64A deleted date of publication

64A.1 General

~~64A.1.1 — A limited mercantile burglar alarm system is a central station system that provides a limited extent of protection to a premises or stockroom as defined in the Standards for Central Station Burglar Alarm Systems, UL 611, and Installation and Classification of Mercantile and Bank Burglar Alarm Systems.~~

64A.1.1 deleted date of publication

Subjects 681 (1610)

-B2-

May 16, 1996

64A.2 Equipment

~~64A.2.1 A limited mercantile burglar alarm system shall be provided with a local alarm sounding device in an alarm housing and a control unit complying with the requirements in Combination Systems, General, Section 60.~~

64A.2.1 deleted date of publication

APPENDIX C

DESIGNATED RESPONSIBILITY FOR UL PRODUCT CATEGORIES

AMCX, CENTRAL STATION ALARM UNITS
 AMCX2, COMPONENT – CENTRAL STATION ALARM UNITS
 CPVX, BURGLAR ALARM SYSTEMS, CENTRAL STATION
 CQXP, BURGLAR ALARM SYSTEMS (CENTRAL STATION) LIMITED
 MERCANTILE
 CRZH, BURGLAR ALARM SYSTEMS, DEFENSE INDUSTRIAL SECURITY
 SYSTEMS
 CUCR, BURGLAR ALARM SYSTEMS, LOCAL
 CUPZ, BURGLAR ALARM SYSTEMS, (LOCAL) BANK SAFE AND VAULT
 ALARM
 CVDX, BURGLAR ALARM SYSTEMS, LOCAL-MERCANTILE ALARM
 CVTS, BURGLAR ALARM SYSTEMS, POLICE STATION CONNECTED
 CVUZ, BURGLAR ALARM SYSTEMS, POLICE STATION CONNECTED-
 BANK
 CWWW, BURGLAR ALARM SYSTEMS, (POLICE STATION CONNECTED)
 MERCANTILE
 CVWX, BURGLAR ALARM SYSTEMS, PROPRIETARY ALARM SYSTEMS

The individuals shown on the following tables are involved with the investigation of burglar alarm services covered under the subject categories. The Primary Designated Engineer (**shown in UPPERCASE letters**) coordinates the establishment and uniform interpretation of UL requirements applicable to the product categories. The Designated Engineers (**shown in lowercase letters**) work with the Primary Designated Engineer to interpret requirements and maintain standards.

Should you have questions regarding the interpretation of the requirements proposed in this bulletin or any adopted requirements that effect your services, you are encouraged to contact the individual at the office to which you normally submit your requests.

The Industry Advisory Conference Chairman for the subject categories is Isaac Papier at UL's Northbrook office. The IAC Chairman oversees the significant interpretations made by the Primary Designated Engineer and arbitrates any differences regarding interpretation of UL requirements.

CCN	Office/Subsidiary	Responsible Engineer	Extension
CPVX, CQXP, CUCR, CUPZ, CVDX, CVTS, CVUZ, CWWW, CVWX	Melville	PETER TALLMAN	22415
	Northbrook	Richard Marshall	42544
	RTP	Arnold Miesch	1818
	Santa Clara	Don Polzin	32256

CCN	Office/Subsidiary	Responsible Engineer	Extension
CRZH	Melville	PETER TALLMAN	22415
	Northbrook	Richard Marshall	42544
	RTP	Arnold Miesch	1818
	Santa Clara	Larry Gross	32239

CCN	Office/Subsidiary	Responsible Engineer	Extension
AMCX, AMCX2	Melville	Al Gengler	22562
	Northbrook	JIM LESNIAK	42163
	Santa Clara	Tim Dahlgren	32266

BM
BM



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Subjects 205A (365, 609, 1023, 1076, 1610, and 1635)
 (In reply, refer to Subject 205A)

333 Pfingsten Road
 Northbrook, IL 60062
 January 26, 1995

TO: Burglary Council of Underwriters Laboratories Inc.,
 Electrical Council of Underwriters Laboratories Inc.,
 Subscribers to UL's Standards Service for:
 Police Station Connected Burglar Alarm Units and Systems, UL 365;
 Local Burglar Alarm Units and Systems, UL 609;
 Household Burglar-Alarm System Units, UL 1023;
 Proprietary Burglar Alarm Units and Systems, UL 1076;
 Central-Station Burglar-Alarm Units, UL 1610; and
 Digital Alarm Communicator System Units, UL 1635

SUBJECT: Report of the Meeting of the Industry Advisory Conference of UL for Burglary Protection Equipment

SUMMARY OF TOPICS

The following topics were discussed at the meeting:

1. Plain Language (Modular) Certificate Program
2. Reduction of Unwanted Burglar Alarm Systems
3. Proposed Revisions to UL 365, 609, 1023, 1076, 1610, and 1635
4. Control Unit Features for Reduction of Unwanted Alarms
5. Government Standards

COMMENTS DUE: March 9, 1995

A meeting of the Industry Advisory Council of UL for Burglary Protection Equipment was held on November 17, 1994 at UL's Northbrook office. The purpose of the meeting was to discuss the elimination of grade designations for alarm systems and equipment along with the other items noted in the "Summary of Topics."

Attached as Appendix A is a list of those who attended the meeting. Questions regarding interpretation of requirements should be directed to the responsible UL Staff. Please see Appendix B of this bulletin regarding designated responsibility for the subject product categories.

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Documents
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Please note that proposed requirements are of a tentative and early nature and are for review and comment only. Current requirements are to be used to judge a product until these requirements are published in final form.

* * * * *

The following report is not intended to be a verbatim transcript of the discussions at the meeting, but is intended to record the significant features of those discussions.

1. INTRODUCTION

The IAC Committee was welcomed by the IAC Chairman. The IAC Chairman outlined the purposes and goals of the Industry Advisory Council (IAC) as representing an important step in UL's procedure for the development of requirements, test methods, standards, and related product evaluation programs. UL invites the members of the IAC on the basis of their technical expertise and involvement in UL's programs. It is intended that industry representatives, functioning in an advisory role, serve as individual representatives of industry. Therefore, UL calls upon the IAC members for discussion and review of proposals prior to submission for review by all expressing interest in the product category. The representatives of industry are also given an opportunity to present new ideas, modifications of existing ideas or requirements, and suggestions as to how UL may better serve its clients.

2. MODULAR CERTIFICATE PROGRAM

UL stated that it currently assigns Grades of Service for burglar alarm equipment and installations. The grade designation (A, AA, BB, C, CC) for the equipment depends on such factors as construction, alarm reporting time, supervision of initiating device and signaling circuits, central station ringback, and monitoring of the signaling channel against compromise. For the burglar alarm installations to be eligible for a certain grade, the burglar alarm equipment employed needs to be of the same or higher grade. In addition to employing the appropriate burglar alarm equipment, the grades of service designated on a Certificate depend on the timing of the alarm investigators response and on monitoring of openings and closing.

It was brought to UL's attention by the insurance and alarm industries that the packaging of service elements identified by letter codes designating the grades of service poses a barrier to acceptance and growth of standards complying services. In addition, some manufacturers indicated that there are certain systems that may not completely meet the highest grade of requirements but have more features than the lower grade requirements. The manufacturers indicated that the current grade designation format inhibits the marketability of certain systems.

Due to these concerns, UL proposes to develop a Plain Language (Modular) Certificate Service Program with existing categories restructured which will enable the insurance industry, authorities, and alarm system users to accept Certificates based on risk analysis, rather than the general groups of features combined into specific types of certificates. The intent of the revised Modular Certificate Program is to allow the user to understand, in plain language, the type of equipment that is installed and the monitoring service provided.

Elements of Service

The goal of the Modular Certificate Program is to modularize the elements of service so that each can be individually described on a certificate covering an installation. The insurance underwriter can then use the detailed alarm description information on the certificate along with other information such as ratings

of any safes or vaults, the existence of specifically rated doors and locks, and the insurance company's own evaluation of local law enforcement, etc. to develop an overall evaluation of any potential risk to security.

The attached Subject 205 (611, 681, 827) meeting report dated December 12, 1994 discusses each specific element listed below and which UL proposes to place on the installation certificate.

- | | |
|-------------------------------------|---------------------------------|
| a) system grade elimination | h) alarm sounding device |
| b) alarm investigator response time | i) line security |
| c) system description | j) method of alarm transmission |
| d) extent of protection | k) monitoring location |
| e) protected area | l) alarm investigator |
| f) holdup service | m) signal supervised |
| g) keys | n) maintenance agreements |

It should be noted that the more important of the elements and potentially of greater concern for equipment manufacturers are the system grade, alarm sounding device, line security, and method of alarm transmission.

SYSTEM GRADE ELIMINATION – UL proposes to eliminate the use of grades to describe the alarm equipment, response time, method of alarm transmission, and the existence of line security. The alarm equipment, therefore, no longer needs to be designated by a grade.

ALARM SOUNDING DEVICE – The options on the certificate will include inside and/or outside devices. The Standard for Police Station Connected Burglar Alarm Units and Systems, UL 365, and the Standard for Local Burglar-Alarm Units and Systems, UL 609, describe the requirements for the alarm sounding device itself regardless of whether it will be designated outside, inside/visible, or inside/concealed. Only audible alarm sounding devices that meet the outside requirements are Listed at this time for commercial installations.

LINE SECURITY – Line security is currently reflected by the use of the second letter in the grade (AA, BB, or CC). The second letter designates whether the system responds to compromise attempts within 6 minutes if the integrity of system is affected. UL will designate the type of line security on the equipment marking and installation instructions for the equipment. The proposed designations will be:

- a) Standard – Equipment that complies with minimum security requirements.
- b) High – Equipment that complies with the current line security requirements indicated in UL 365, UL 1076, and UL 1610.
- c) Encrypted – Equipment which employs DES (National Institute of Standards and Technology Data Encryption) or equivalent encryption algorithms in signal transmission and reception.

METHOD OF ALARM TRANSMISSION – As is the current practice, the Certificate will display the type and method of alarm transmission. The UL equipment Standards describe the requirements for the different transmission schemes.

Insurance Concerns

An industry member inquired as to how the insurance companies assess the adequate amount of protection.

UL stated that the determination is based in part on the burglar alarm equipment, monitoring and response time provided, line security, and monitoring of opening and closing signals. Other factors include building construction, location, etc. UL noted that at one time, a point system determined the amount of risk depending on the above factors.

Presently, the underwriter uses the Insurance Services Office (ISO) commercial lines manual (CLM) to determine the grades of service which include the factors that determine the rating as being A, AA, B, BB, C, and CC.

UL stated that it received confirmation from an ISO representative that they will revise the commercial lines manual to reflect the change to the plain language certificate. UL has agreed to provide assistance in this matter if requested.

Category Combination

The local mercantile category is one of the oldest in the program. It was originally created to include all non-central-station-type mercantile systems. In the early 1970's, UL established the police station connected category in response to concerns by the insurance industry that an outside sounding device by itself would provide little protection in a rural application where no one, other than the intruder, would be likely to hear the sounding device. The police station connected category was in effect an enhanced local mercantile category.

Over the years, this distinction has become somewhat clouded. Due to the wide use of digital communicators, long range radio transmitters, derived channel systems, and more recently, cellular transmitters, the vast majority of mercantile burglar alarm systems are monitored from a location. Thus, many of the burglar alarm systems that are certified as local mercantile could qualify for police connected certification. Further, the name of the police station connected category implies the systems are always monitored in a police station, when in fact the majority of these certificates are monitored in central stations. Finally, there is a tendency to confuse police connected certificates with central station certificate systems.

In light of the above, UL proposes to combine the local mercantile and police station connected categories. The new category would be known as mercantile burglar alarm systems. As is the case with the central station certificates, the format would be modular. Remote monitoring of such a system would be an optional element, which if employed, would be displayed on the certificate.

UL also proposes to combine the local bank and police station connected bank categories in a similar fashion. The Certificate will indicate if the system is for local mercantile, mercantile safe and vault, or bank safe and vault installation along with any type of line security. UL also contemplates combining UL 365 and UL 609 in the future.

Certificate Count

A representative of industry expressed interest in discovering the number of certificates issued in specific categories as it may be beneficial in understanding what equipment is needed in the marketplace.

UL stated that it will provide present certificate statistics (see Appendix C). UL noted that the Security Industry Association (SIA) may request and publish this information by contacting UL.

3. REDUCTION OF UNWANTED BURGLAR ALARM SIGNALS

The growing burden of false and unwanted alarms has become a major problem for the alarm industry in general and particularly for the alarm service companies that provide burglar alarm service. As discussed during the 205 IAC meeting, methods of reducing unwanted alarms include:

- a) A standardized check for the operation of the system by the installing companies.
- b) Improved record keeping.
- c) Improved user training.
- d) Periodic inspections of the operation of the system.
- e) Alarm verification.

The alarm verification features may have a more direct effect for the equipment manufacturers than the others noted above.

ALARM VERIFICATION

The alarm industry has identified alarm verification as a key component in the reduction of unwanted law enforcement dispatches. The industry noted that reducing unwanted alarms requires a multi-faceted approach. Even after equipment and better training, monitoring, and record keeping processes are in place, alarm verification techniques provide a valuable tool.

The alarm and insurance industries have discussed alarm verification in great length and the following proposals are a result of those discussions.

Central Station Systems, No-Line Security – The central monitoring station may verify all alarm signals by telephoning the protected property. The recipient of an alarm signal initiates the verification process. The monitoring station telephones and makes contact with personnel at the protected property within 1 minute or investigators are dispatched. A verbal pass code or number identifies an authorized user if contact has been made. Failure to obtain a valid pass code or number within 2 minutes results in dispatch of investigators as displayed on the Certificate.

Central Station Systems, Line Security – For systems with line security, verification techniques start with a telephone call to the protected property upon receipt of alarm signals. If telephone contact with the personnel at the protected premise property cannot be made within 1 minute, the monitoring station dispatches the investigators. The combination of a verbal pass code or number along with an electronically transmitted personnel identifier provides two means for the central station to identify the authorized user. The monitoring station dispatches investigators displayed on the Certificate upon failure to obtain both a correct pass code or number and personal identifier within 2 minutes of the contact.

UL proposes that for a period of three years from the date of publication, the electronically transmitted personal identifier could be a numerical code or the equivalent. Some control units to date have the capability of at least transmitting a single digit user code when arming/disarming the system. Following the three year period, the personal identification would need to be a measure of a physical attribute of that person.

UL hopes to develop a proposed Standard for biometric identification equipment in the near future so the equipment can be implemented by the alarm service providers with a target date of 1998.