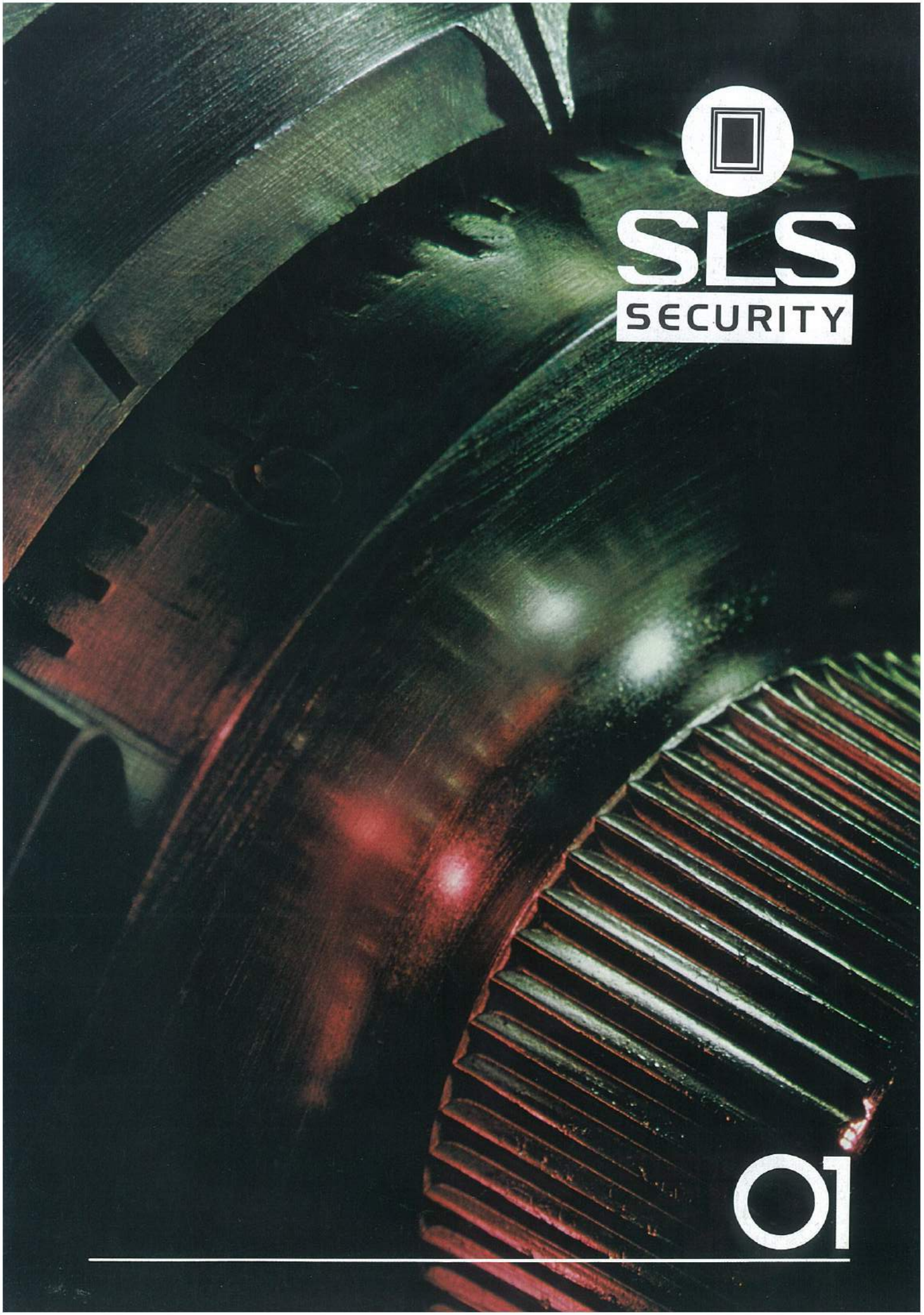
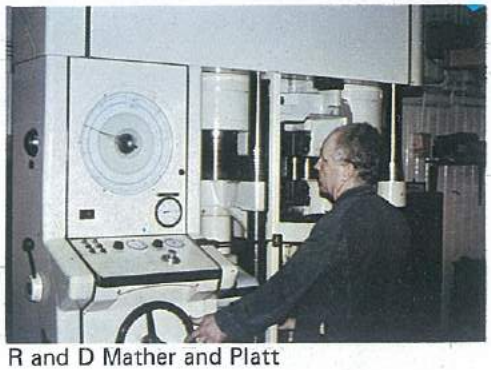

SLS
SECURITY
01

# SLS
## SECURITY

Special Alloys foundry Manchester

Machine shop fabrication

Central Midlands distribution unit

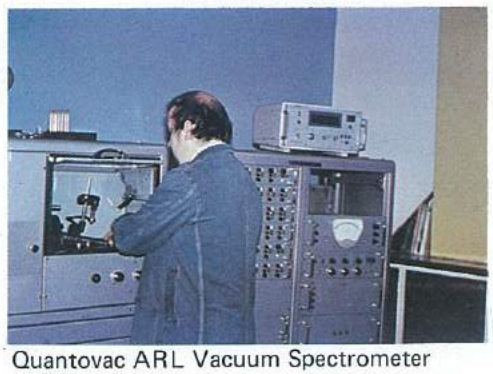


R and D Mather and Platt

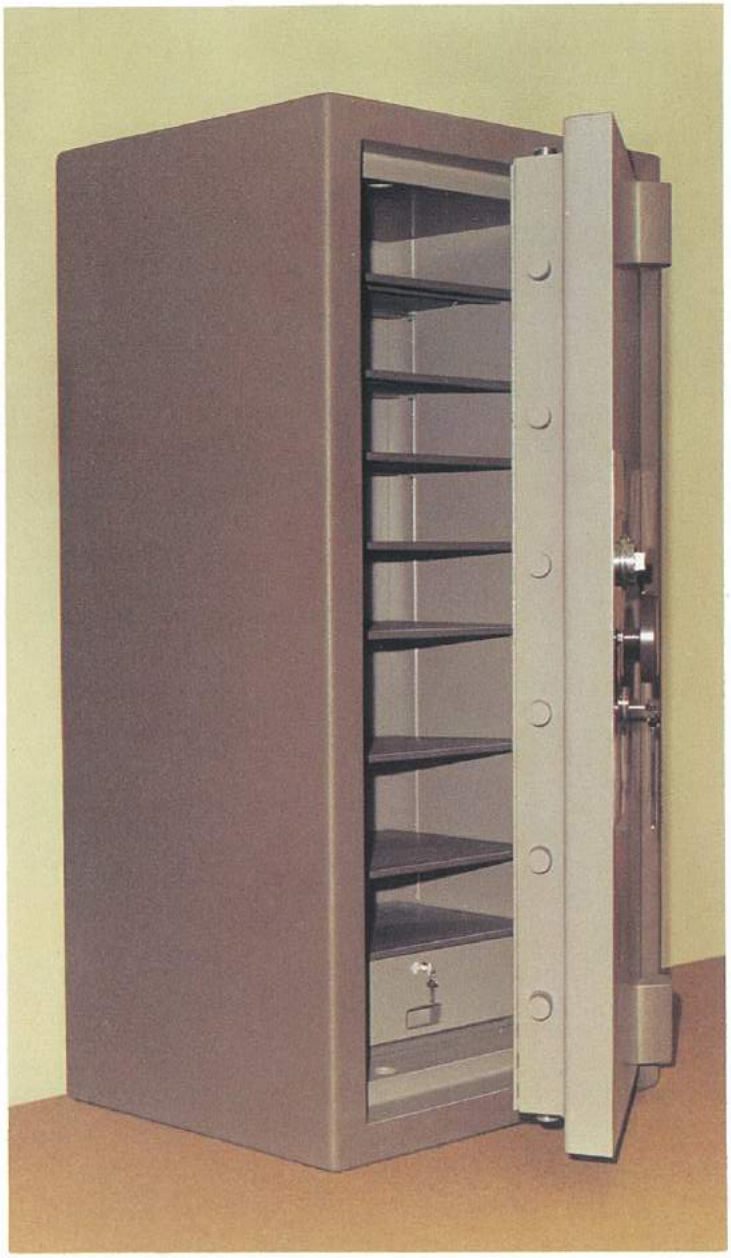
Innovation and fertile thinking stem from a refusal to be satisfied with orthodox improvement. Radar, the jet engine and the hovercraft show that we have in this country a tradition of original thought and the ability to translate this into reality. The SLS design concept and engineering is in this same tradition characterised by an attacking attitude towards the problems of defence.

Upon this philosophy is the company founded.

In 1972, five years after inception, SLS became part of Mather and Platt of Manchester alongside their newly formed Security Division. The resources of the parent company and its 200 years experience in heavy engineering were thus applied to the specific problems of safe manufacture. British engineering is at its best when confronted by challenge. Because the demands of SLS design outranged ordinary metallurgy Mather and Platt produced special alloy castings to meet the stringent performance specification. Again, to exploit the phenomenal toughness of vitrified ceramics, a new barrier matrix was formulated to encapsulate rods and nuggets of this material strategically arranged to afford point penetration and physical resistance hitherto unknown. Thus SLS safes embody ingenuity unfettered by traditionalism drawing on the wealth of experience of Mather and Platt. Their testing and production control facilities are second to none and conform to a programme of rigorous inspection. The strength of this young company comes from original thinking and an aggressive approach. These are its sinews, the muscle being provided by the resources and experience of Mather and Platt. In a mere decade the firm has asserted itself as a leader in the realm of security equipment for Commerce and Banking.



Quantovac ARL Vacuum Spectrometer



# SLS TREASURY TR TL 30X6

The new Treasury TR TL 30X6 stands on the peak of technical excellence in safe manufacture and indeed there are few safes in the world which can compare. It was designed to withstand every conceivable assault: thermic, drilling, impact force and explosive. This safe has successfully resisted all forms of attack by the American Underwriters Laboratory Inc. in Chicago for the new six sided test (TR TL 30X6), also surpassing the earlier Treasury AA in specification and design which held the Premiere rating from the GTA in Paris.

A safe which complies with this exceptional performance specification commends itself to those who, like bankers and jewellers, are faced with exceptional risk.

This model is available in three sizes all of which can accommodate a timelock.

In the discipline of SLS design the body and door must be of commensurate strength so that the safe is effectively of unitary construction.

## Safe Door

The door is designed to prevent intrusion and at the same time protect the mechanisms by which it is held in place. In both body and door the essential features of construction are materials specially developed over the years by SLS. Vital locking areas, the target for drill attack, are protected by Superamics, a new and patented SLS composite. High alumina ceramic rods are anchored into an alloy matrix in a pre-determined geometrical pattern and presented head on to drill bits. The other main material is Zacalloy, a stainless steel cast alloy slab which embodies refractory nuggets of exceptional hardness.

The door is basically a 1.3/4" (45 mm) thick Zacalloy slab within the 3/8" (9 mm) thick inner and outer steel plates, Superamics being strategically positioned against drill attack. A 1/4" (6 mm) thick sheet of copper to give increased resistance to oxy-arc cutters and a smoke generating infill completes the 3" (76 mm) thick solid door composite. The door has an overall thickness of 6½" (165 mm).

## Safe Body

The safe body is constructed in such a way as to afford protection against attack by force, oxygen cutters, drills and explosive, having an outer and inner body fabricated of 1/4" (6 mm) steel. Zacalum, an alloy/ceramic cast slab, is used in 1.1/2" (38 mm) thickness to form the body shell coupled with Superamics to protect both locks from drill attack through the safe body. 1/8" (3 mm) copper plates line the interior of the body shell. The space between the shell and interior casing is completely filled with Wirand/Zacrete, a high density refractory monolith having strengths in excess of 12,000 lbs. p.s.i. giving an overall solid body thickness of 4.3/4" (121 mm).

## Boltwork

Rotating the bolt-operating handle moves the entire boltwork to engage 1.1/2" (38 mm) diameter steel bolts into deep recesses on all four sides thus making the door integral with the body of the safe. On the smaller sizes fixed dog bolts are provided on the hinge side. Operating either of the two locks then completely immobilises the boltwork making it virtually impossible to force open the door. The hinges serve merely to support the door in the open position. Every SLS safe embodies a further device which again jams the boltwork should a torch or tool attack be launched against either of the locks.

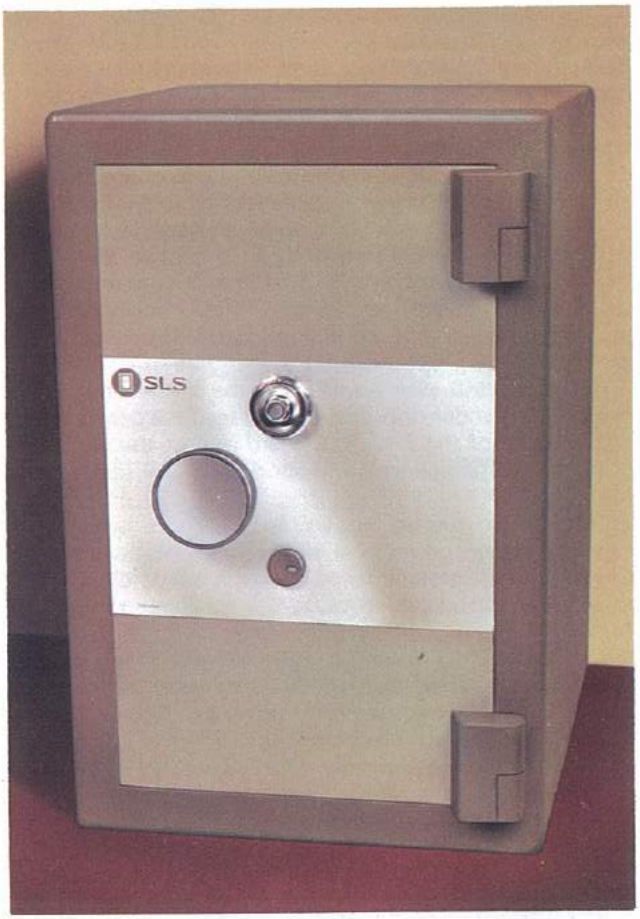
## Locking

Two locks are fitted as standard using a 7-lever SLS patented high security anti-drill keylock in conjunction with a 4-wheel keyless combination lock. For the U S market a 3-wheel manipulation proof lock is offered. Anti-drive collars are fitted to each combination lock spindle and no extra is charged for providing a combination lock. As a further safeguard a timelock can be fitted.

The operation of key, combination or timelock locks the boltwork into a deadlock posture thus maintaining the integrity of the safe since the door cannot be opened. Only when the locks are withdrawn by the correct unlocking procedure, can the boltwork be retracted.

Further re-locking devices are actuated in the event of a thermic or physical attack. Protecting each lock is a sensitive glass plate to which are attached multi-strand stainless steel wires and when the glass is shattered they are released to engage a spring-loaded locking mechanism which automatically jams the boltwork. These connecting wires are housed in steel tubes, the run of which cannot be known from outside since it is varied from one safe to the next.

A timelock, when fitted, will also ensure that the boltwork remains positively locked for a pre-determined period. Whilst on guard, for up to 144 hours, this lock prevents the safe from being opened even if the other locks have been unlocked.



## Fittings

A feature of the SLS safe is the flexibility of internal arrangement made possible by supports on the inside walls. Lockable drawers, adjustable steel shelves and jewellery trays as well as cupboard units and document drawers can be installed as optional extras to the specifications of the client.

It is this freedom of layout which ensures maximum utilisation and convenience for the user. For example with two drawers side by side it is necessary to open the door only 140° to gain access to a drawer in frequent use.

All safes are prepared for floor anchoring which is strongly recommended.

The external styling includes a stainless steel fascia panel complimented by an attractive two-tone paint finish. All heavy-range SLS cash safes have the same external appearance, thus giving a casual observer no indication of the quality of the unit.

# SLS SECURITY

The modern criminal's armoury is formidable. As new materials are developed for industry so are the tools for cutting and drilling. If the various modes of attack can be countered by such a complexity of locking devices and composite materials the most determined attack will be abortive. The criminal is working against the clock. His attack has failed unless he can break the safe before his time runs out.

The magnetic clamp drill in the top picture is fitted with an industrial diamond core drill. To resist such attack SLS employ Superamics, a composite where high alumina ceramic rods are integral with the alloy matrix. By a patented process these rods are set in a precise pattern end-on to the line of drill attack, and with a hardness of 9 on the MOHS scale, they withstand prolonged drilling, absorb heat and afford protection to vital locking parts.

The hand tools from the range of heavy engineering cutting equipment are frequently used in attacks on safes. To defy such onslaughts SLS adopts a composite construction of metals, alloys and high density Zacrete incorporating strands of carbon steel fibres with exceptional bond grip.

If he can drill even a small hole the criminal can insert one of the slender optical probes to scan the construction and content of the safe. SLS guard against this by incorporating vitrified ceramics which deflect and shatter drill head bits.

The lower picture shows an SLS safe which was attacked in the office of a petrol filling station. A prolonged thermic assault failed to cut a hand-hole and the attack was abandoned because the assailants ran out of time.

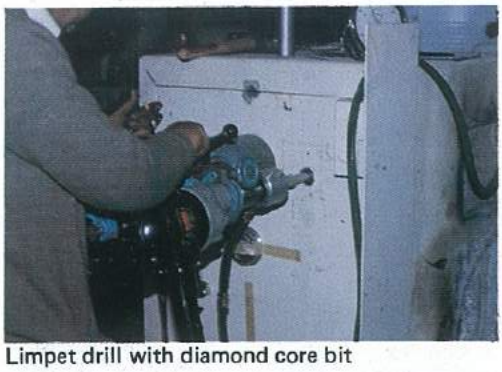
On the basis that testing is more eloquent than talking SLS have submitted their products to many independent authorities for assessment. This test took place in Chicago for the Underwriters Laboratory Inc.

Skilled engineers attack the safe . . . protective clothing shields them from flame . . . extractor fans draw off the fumes . . . the onslaught is fierce . . . it fails.

This test gained for SLS the U.L. Listing for the TR TL 30/6, (six sided attack), the first British-made safe to achieve such recognition. Similarly the G.T.A. Laboratory in Paris awarded SLS safes Premiere rating.

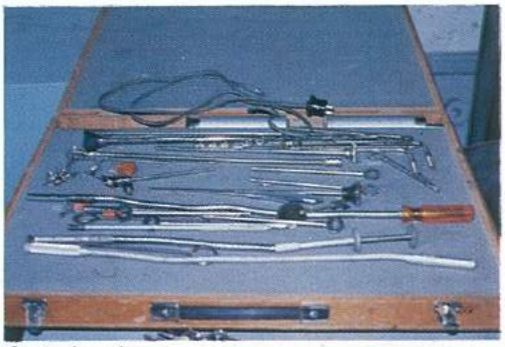
**Warrington Research Centre**

In yet another test by independent government approved test laboratory an SLS Heavy Range safe achieved a 60 minute fire test certificate when subjected to the time/temperature curve as specified in B.S.476 (part 8) 1972.



Limpet drill with diamond core bit

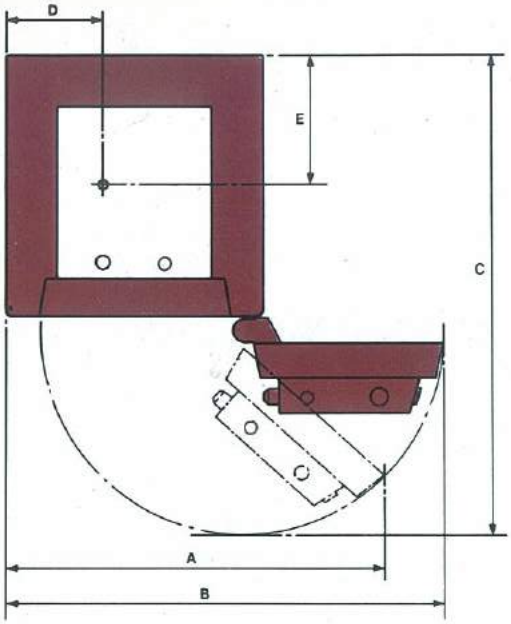
Tools of attack



Optical probes

Unsuccessful burglary using oxy-acetylene cutters

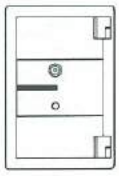
U.L.I. Chicago Laboratory Test




| SIZE | A | B | C | D | E |
|---|---|---|---|---|---|
| 3520 | 1156mm<br>45½" | 1321mm<br>52" | 1435mm<br>56½" | 330mm<br>13" | 457mm<br>18" |
| 5020 | 1156mm<br>45½" | 1321mm<br>52" | 1435mm<br>56½" | 330mm<br>13" | 457mm<br>18" |
| 6325 | 1410mm<br>55½" | 1575mm<br>62" | 1562mm<br>61½" | 394mm<br>15½" | 457mm<br>18½" |

A = Minimum dimension for drawer withdrawal.
B = Overall width with door open at 180°.
C = Overall depth with door open at 90°.
D&E = Position of base fixing hole.

**TREASURY TR TL 30X6**

| | INTERNAL H. | INTERNAL W. | INTERNAL D. | EXTERNAL H. | EXTERNAL W. | EXTERNAL D. | WEIGHTS kgs | WEIGHTS lbs | |
|---|---|---|---|---|---|---|---|---|---|
| 3520 | 890mm<br>35" | 508mm<br>20" | 483mm<br>19" | 1130mm<br>44½" | 750mm<br>29½" | 775mm<br>30½" | 1485 | 3300 | |
| 5020 | 1270mm<br>50" | 508mm<br>20" | 483mm<br>19" | 1510mm<br>59½" | 750mm<br>29½" | 775mm<br>30½" | 2070 | 4600 |  |
| 6325 | 1600mm<br>63" | 635mm<br>25" | 483mm<br>19" | 1841mm<br>72½" | 876mm<br>34½" | 775mm<br>30½" | 2673 | 5940 | |

SLS reserve the right to alter the specification without notice in the interest of improving security.
All dimensions and weights are nominal

As a matter of policy all heavy range safes are of similar external appearance and there is therefore no indication as to the likely value of the contents.