

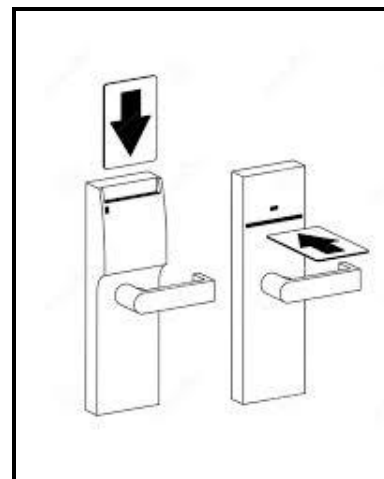
# The African Telatelist

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## Door Key Cards (W.Stobrawe)

A keycard lock is a lock operated by a keycard, a flat, rectangular plastic card

Keycards are frequently used in hotels as an alternative to mechanical keys.



with identical dimensions to that of a credit card or American and EU driver's license which stores a physical or digital signature which the door mechanism accepts before disengaging the lock.



There are several popular type of keycards in use including the mechanical holecard, bar code, magnetic stripe, Wiegand wire embedded cards, smart card (embedded with a read/write electronic microchip), and RFID proximity cards.

The first commercial use of key cards was at automated parking lots to raise and lower the gate where users paid a monthly fee.

Keycard systems operate by physically moving detainers in the locking mechanism with the insertion of the card, by shining LEDs through a pattern of holes in the card and detecting the result, by swiping or inserting a mag stripe card, or in the case of RFID cards, merely being brought into close proximity to a sensor. Keycards may also serve as ID cards.

Many electronic access control locks use a Wiegand interface to connect the card swipe mechanism to the rest of the electronic entry system.

Newer keycard systems use radio-frequency identification (RFID) technology such as the TLJ infinity

Electronic Lock with Keycard System, ANSI

### Types

Mechanical keycard locks employ detainers which must be arranged in pre-selected

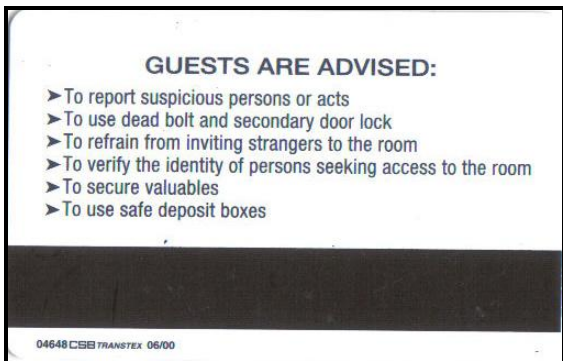
positions by the key before the bolt will move. This principle was the base for the first known mechanical holecard operated lock, the VingCard, invented by Tor Sørnes.



This was a mechanical type of lock operated by a plastic key card with a pattern of holes. There were 32 positions for possible hole locations, giving up to  $2^{32}$  \approx 4.3 \times 10^9 different keys. The key could easily be changed for each new guest by inserting a new key template in the lock that matched the new key.

In the early 1980s the key card lock was electrified with LEDs that detected the holes.

Magnetic strip (sometimes "stripe") based keycard locks function by running the magnetic strip over a sensor that reads the contents of the strip.

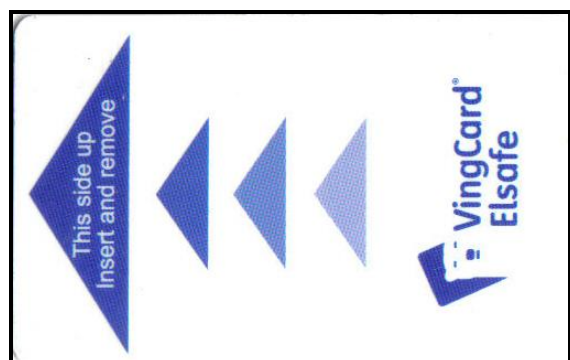


Above: Typical obverse image with magnetic strip.

The strip's contents are compared to those either stored locally in the lock or those of a central system. Some centralized systems operate using hardwired connections to central

controllers while others use various frequencies of radio waves to communicate with the central controllers. Some have the feature of a mechanical (traditional key) bypass in case of loss of power.

Some models of card locks found in hotels use batteries. When the batteries fail the lock will fail safe, meaning that the lock stays open and therefore the door can be opened without the keycard. It is also possible to design the lock to fail secure, causing the door to stay locked when power is lost.



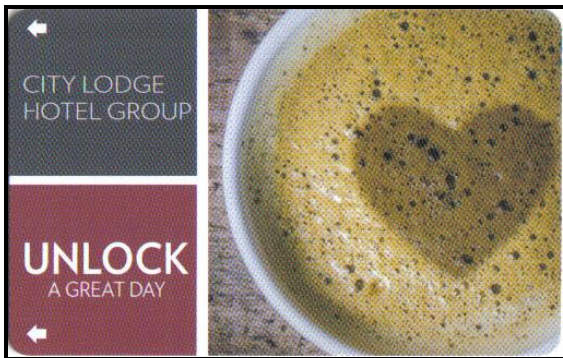
Above: A few typical front image of a generic VingCard door key cards

**Privacy**

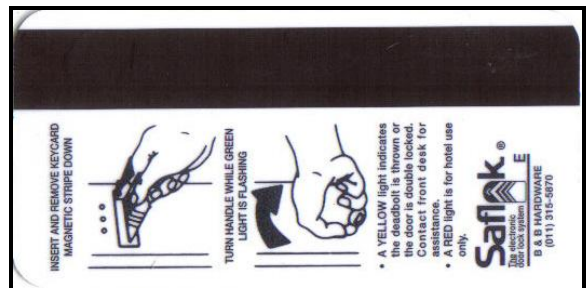
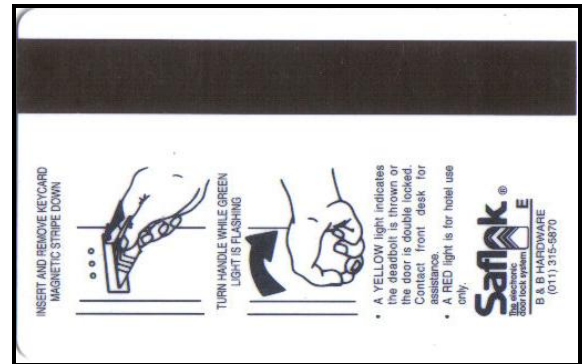
Computerized authentication systems, such as key cards, raise privacy concerns, since they enable computer surveillance of each entry. Currently RFID cards and key fobs are becoming more and more popular due to their ease of use. Many modern households have installed digital locks that make use of key cards, in combination with biometric fingerprint and keypad PIN options.

Bar code technology is not a secure form of a key, as the bar code can be copied in a photocopier and often read by the optical reader.

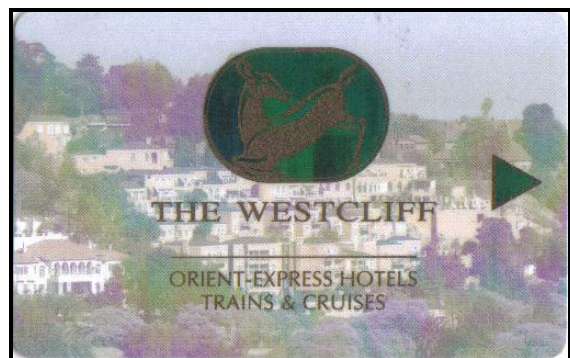
Some images of South African related Door Key Cards are depicted below:-

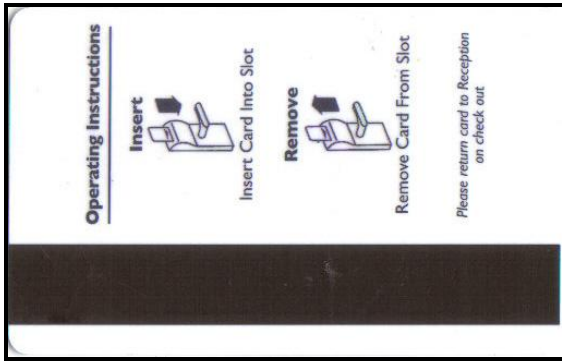


Above: Three door key cards from the City Lodge Hotel group.

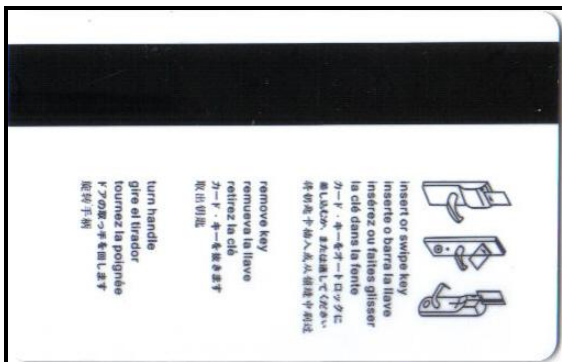
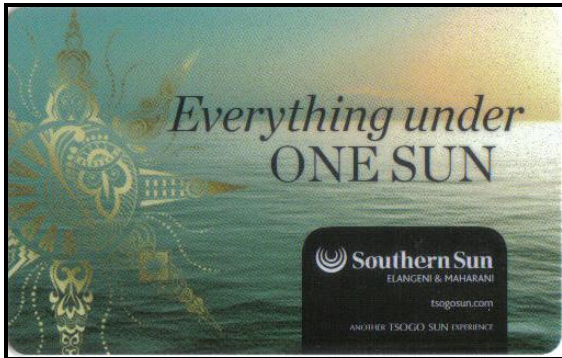


Above: Two door key cards from the Holiday Inn hotels.

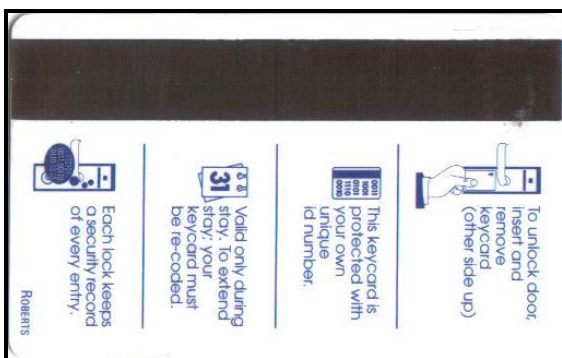




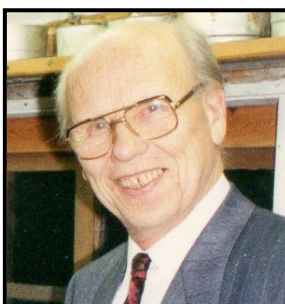
Above: The Westcliff Hotel door key card



Above: Typical Southern Sun Hotel door key card



Above: Typical Hilton Hotel (obverse) door key card



**INFORMATION ABOUT TOR SORNES**

Tor Sørnes (born 11

November 1925 in Sola) is a Norwegian author, politician, engineer and the designer and inventor of the VingCard, the first recodable keycard lock and the magnetic stripe keycard lock.

Tor Sørnes was born in Sola, Rogaland county, Norway as a son of inventor, radio technician and clock maker Rasmus Sørnes. Being the son of an inventor, Tor Sørnes occupied himself with technical matters already as a child. In 1950 he was employed a production planner at steel and ironware factory Christiania Staal & Jernvarefabrikk in Moss, Norway. The factory made locks and ice skates under the brand Ving. In 1955 he became the factory's machine constructor and when the factory in 1960 as one of the first in the country established a department of research and development, he was its director.

In 1975 he launched the holecard based recodable keycard lock, where each new hotel guest could have his/her own unique key formed by a pattern of 32 holes in a plastic card. The invention is still in worldwide hotel security use under the brand VingCard. The 32 holes in the key gave 4.2 billion combinations, the precise same number as the population of the earth at the time. This lock system was patented in 29 countries. In 1975 Tor Sørnes launched the first recodable cardkey lock, the VingCard, which used a holecard plastic key. He then led the development of and patented the electronic keycard lock, based on the magnetic stripe key.

Export of the system was initiated in 1978 when it was installed in Peachtree Plaza Hotel in Atlanta, Georgia, at the time the world's tallest hotel. The hotel had been troubled by burglaries and was eager to test new security innovations.

In 1992-93 the electronic magnetic stripe card lock was launched and became a worldwide success. Tor Sørnes continued as a vice president and director of R&D at VingCard until retirement in 1992. Following the merger in November 1994 between VingCard's former owners, Abloy Security, and the Swedish Securitas AB, VingCard is now part of Assa Abloy, a Swedish lock manufacturer.

Tor Sørnes is a retired member of Moss City council, and lives in Jeløy. He is the father of author Torgrim Sørnes.