

## THE USE OF ELECTRONIC SENSORS AND SMART CARDS TO OPEN HOTEL DOORS ON SHABBAT

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In the journal "תחומין" published by the Tzomet institute of Gush Etzion, was published a shortened version of the Halachik decision by HaRav Nachum Eliezer Rabinowitz, past rosh yeshiva of Maaleh Adumim. HaRav Rabinowitz is an important halachik expert of the religious Zionist movement. His opinion focused on authorizing the use of electronic sensors and smart cards in opening hotel doors on Shabbat. This article was a shortened version of the more extensive article that appeared in "אמונת עיתך" published by his Talmid HaRav Eli Reif.

### No circuit closure.

There is no question that the closing of an electronic circuit such as by switching on a bulb or sparking of a benzene motor is forbidden, according to the Torah, on Shabbat because it transgresses one of the 39 forbidden melachot.

The question arises as to what is the law about an activity of closing an electronic circuit that does not result in a forbidden activity such as a fan, or computer, an elevator or air-conditioner. These activities, too, have been forbidden by the halachik scholars although there is much argument as to the reason for forbidding these activities.

The Chazon Ish maintains that circuit closure amounts to "בונה"building, while haRav Asher Weiss and others explain it on the basis of "מכה בפטיש" the completion by an artisan of a product. Hence, the closing of a circuit transforms a 'dead' device into a 'live ' or active device capable of performing a function.

HaRav Yitzchak Shmalkish claims that closing a circuit is not forbidden by the Torah, but only according to the rabbanim on the basis of "מוליד" the creation of something new.

HaRav Shlomo Zalman claims that there is no basis for the claims of "מכה בפטיש" "בונה" or even "מוליד" but argues that the electronic equipment should not be operated on Shabbat.

HaRav Nachum Rabinowitz argues that electrical equipment that doesn't result in a forbidden activity, should not be used on Shabbat on the basis of "עובדן דחול", to prevent the Shabbat resembling weekdays.

According to HaRav Rabinowitz, however, the forgoing arguments and dissents reflect the activities of past electrical equipment which were based on closing of a circuit by means of a physical activity by the equipment. He claims that today, many electronic devices do not result in the closure of a circuit or creation of a new flow of electricity and the circuits are based on miniature , automatic semi-conductors, in which the current is virtually undetectable.

### Smart Cards.

We are familiar with electronic sensors which are now being employed in many applications. The most popular are in electric doors operated by mobility sensors and door locks that open by means of a smart card.

Here we are referring to a system comprising 2 central components:-

1. A card incorporating a chip or film held by the person wanting to enter and,
2. A card reader that identifies the card without the need of any contact between them.

In the card reader, flows a constant current, and it has an antenna that transmits an electromagnetic radio signal. In the smart card there is an RFID chip that contains an antenna that receives the radio signal and converts it to energy and then sends a specific signal, specific to the smart card, to the card reader. Once this signal is received by the card reader it is transmitted to a computerized data base and if the signal matches the door lock it will allow the door to open. Opening and closing of the door lock is dependent on a magnetic field which is either interrupted allowing the lock to open or not in which case the lock remains closed.

The technique is similar in most doors. In the door frame is located a strong magnet that generates a strong magnetic field not dependent on the flow of electricity. In contrast the magnet located in the door is an electromagnet that is current activated. When the card reader identifies the correct RFID sensor signal, it sends a signal that interrupts the flow of current in the electromagnet for a few seconds to allow the door to open. Opening the door from within interrupts the current and allows the door to open. The current flow is renewed automatically after a few seconds.

In some of the systems there are 2 natural non-electromagnets, one in the door and the other in the door-frame, that are independent of any current flow. When the card reader identifies the signal from the smart card, it activates a current that results in an opposite electric field that cancels the magnetic field of the natural magnets allowing the lock to open. In this model too, after a few seconds, the electric current is cancelled automatically, re-activating the magnetic forces of the magnets. Between the magnets there is no mechanical component only magnetic

force. Once cancelled, the door can then be opened by the door handle.

What is important to state is that the smart card doesn't generate any current. No electrical circuits are opened or closed and the electrical force (without current) resulting from the use of the smart card is so small that it cannot be humanly detected.

In some of the sensors there is an LED indicator but the technology of LED is such that there is no ignition/kindling, there is no change from a body that does not illuminate to one that does. With LED there is only a discharge of light from a body that continues to remain dark. There is no prohibition of "נוליד" in this technology according to Rabbi Dror Fixler.

Smart card technology is on the rise, and in many hotels the elevator doors will open when the smart card approaches the permanent sensor on the elevator door. The doors will open and the elevator will automatically go to the required floor without the need to press a button. HaRav Rabinowitz claims that not only does smart card technology not break any of the 39 forbidden Shabbat activities, it does not open or close any electrical circuits nor is there any current generation, only force generation. In addition he discounts the claim of "מכה בפטיש" because there is no permanent transformation of metal to a permanent magnet only a transient change to an existing magnetic force. The claim of "נוליד" is also not relevant claims HaRav Rabinowiz because any hanges are only transient which does not qualify for the prohibition of "נוליד". In support of his opinion HaRav Rabinowitz brings the opinions of poskim that allow one to walk along streets where security cameras are functioning, on the basis that here too, the

signal is transient and does not generate a new circuit but only causes a transient and minimal change in force in existing circuits.

This led HaRav Rabinowitz to his innovation. He states that 2 conditions are necessary for the term "WORK" (מלאכה) to apply to an activity.

1. It should be seen to be an actual observable recognizable action carried out by a person.
2. It should have a determinable definite result.

If, however, there is no actual action and directly related result, then it is not forbidden. If a person walks near a door, walking is not one of the 39 melachot, and he has no intention of doing a forbidden activity, even if he wants to enter the door, even if there is no alternative way of entering, it is permitted to enter because when opening a door there is no forbidden activity or appearance of activity.

Furthermore claims HaRav Rabinowitz, there is an additional reason for permitting the use of sensors and smart cards and that is the issue of שבת עונג.