MAGNETIC STRIPES:

decoding their data for your gift, loyalty and membership cards

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IF YOU ARE YOUNGER THAN

50 years old, you probably don't remember a life before magnetic stripes on cards – they have just always been there. We use them every day to make our purchases, retrieve money from ATMS, and gain access to our workplace – a simple convenience that we take for granted. But what exactly is inside that mag stripe and how does it work?

Forrest Parry

Back in the 1960s, IBM engineer Forrest Parry borrowed the technology that was used for audio recording (yes, just like in cassette tapes) and developed a way to secure magnetic stripes (which recorded personal and financial information) to plastic cards. Adhering it to the card was a challenge until Parry's wife suggested he use an iron to melt the tape onto the card – and voila, the mag stripe card was born. Fifty years later, mag stripe cards are used by 80% of people around the world. Even with the rise of EMV and computer chips on cards, the mag stripe card is a more cost effective solution that is accepted by the majority of retail POS systems. This investment in the current infrastructure will extend its stay for the distant future.

HOW TO CHOOSE THE RIGHT MAG STRIPE FOR YOUR CARDS

Today, ISO standards dictate the application of mag stripes to ensure that the card can be read by any card reader in the US. When it comes to your card, the type of mag stripe you need will be dictated by the POS system, however, there are some things you should know before producing your next gift, loyalty or membership card…and some decisions you'll need to make.

HiCo or LoCo?

You may have heard someone refer to a mag stripe as either HiCo or Loco. What does this mean? Coercivity is the amount of energy that is required to encode or erase a magnetic stripe. Mag stripes come in two varieties – HiCo (high coercivity) and LoCo (low coercivity) – and which type you use can mean the difference between a happy customer and one that cannot get their card to work properly! A HiCo mag stripe is most often used for cards that are going to be used frequently and over a long period of time (think bank cards, ID cards, etc.). Since it is more difficult to encode a HiCo mag stripe, it is also more difficult to corrupt or erase it, for example, with a purse magnet. On the flip side are the LoCo mag stripes. These are widely used on one time or limited use cards, like gift cards. They have a shorter lifespan and are less expensive to produce. So when producing your cards, the first thing you need to determine is HiCo or LoCo?

HiCo = High Coercivity = Long Lifespan

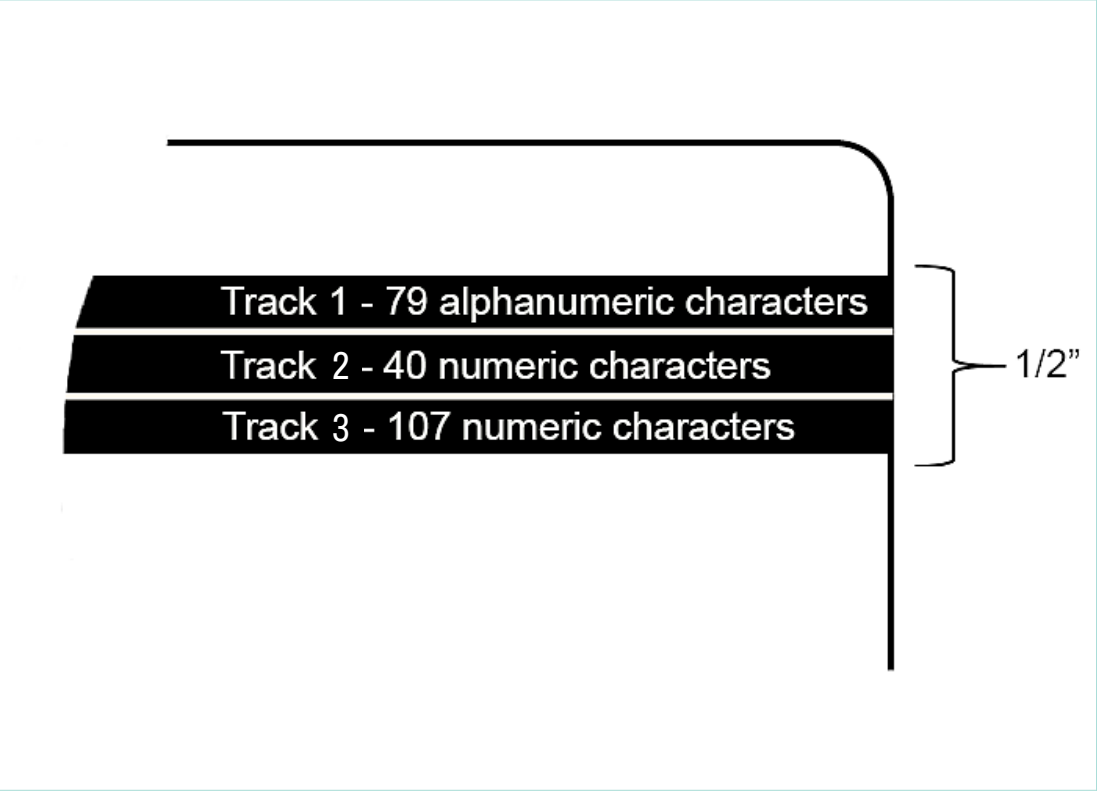
LoCo = Low Coercivity = Short Lifespan

HiCo vs. LoCo

	HiCo (High Coercivity)	LoCo (Low Coercivity)
Amount of magnetic energy needed to encode	High	Low
Card use	Used best on cards that will be used frequently; best chance for first time read	Used best on cards with infrequent use or one time use
Lifespan	Long	Short
Ease of erasure	Harder to erase; resistant to corruption from normal use; holds up against magnets & cell phones	Easier to erase; more susceptible to accidental erasure
Color of stripe	Black	Brown
Cost	More expensive	Less expensive
Typical uses	Bank cards, ID badges, drivers licenses	Gift cards, hotel keys, memberhip cards, loyalty cards, transit cards

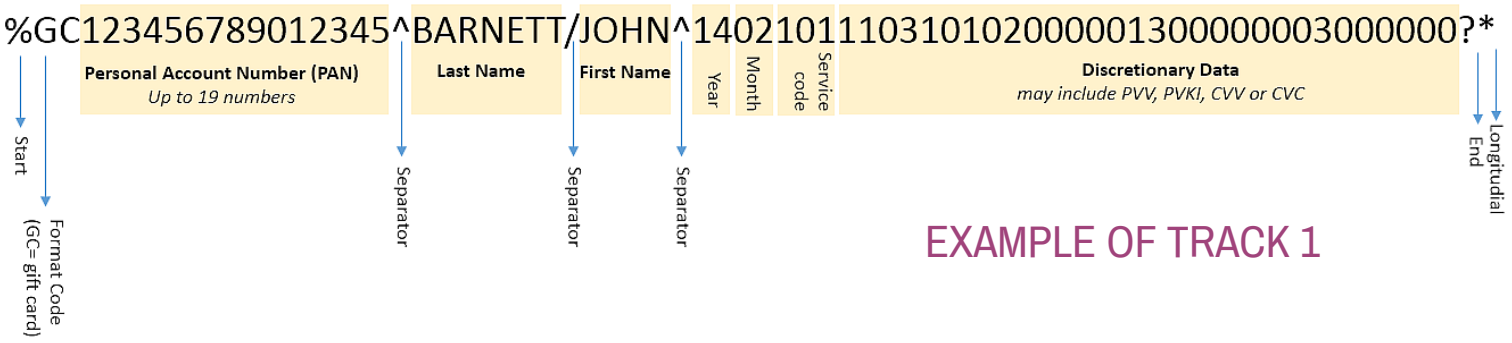
The Tracks

Within that black or brown magnetic stripe lies three tracks which all store different information. The number of tracks and which ones you use will depend upon your needs. Track 1 and 2 are most often used, as they hold essential account information. Track 3 is optional and rarely used.



TRACK 1

is the top track on the card and since it is the only track to hold alphanumeric characters, it is the only one that stores the cardholder’s name. It also holds the cardholder’s account number (or PAN – personal account number), expiration date and other discretionary info, such as the card’s CVC code. This track also contains service codes that provide more detailed information, such as if a pin is required or if the cardholder can make international purchases. This track holds 79 characters of info.



EXAMPLE OF TRACK 1

TRACK 2

is the middle track that consists of numeric characters only. It holds much of the same information as track 1, except for the cardholder's name. Track 2 is most often read by ATMs and credit card swipe readers. This track holds 40 characters of info.

TRACK 3

is no longer used for it's original financial purposes. It is rarely used now except for custom applications. Track 3 hosts 107 characters of information.

A Final Feature to Consider

As we noted above, there are distinct advantages to using a HiCo mag stripe vs. a LoCo mag stripe. This can also be true of embedded vs. roll-on mag stripes. Roll-on stripes are prone to chipping and take more time to apply, thus increasing the length of production time. They are mainly used on cards that will see limited or short-term use. When you can, embedded mag stripes are the application of choice since they encounter less issues.

One final tip – the information that is embedded in the mag stripe is vital to your program's success. You'll want to use a card vendor that not only is very experienced at encoding mag stripes, but also has an excellent track record with handling data and uses a quality control system that will eliminate the opportunity for errors.

For more information about magnetic stripes and gift, loyalty or membership card programs, contact us at 610.231.1860 or find us at www.cpscards.com

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