

Safe combination lock manipulation competition LC24

20240921 V1.0

The safe manipulation competition is open from **Friday till Sunday (see the schedule)**. This competition is different from the lockpicking competition, as the competition is open for several days during the event. You can join this competition whenever there is time in the schedule.

For this competition we have a matched set (same production date) of S&G 6730 locks of which you can attempt to find the combination through manual manipulation. Manual manipulation of the lock can include dialing combinations and graphing the contact points on paper. No spiders, encoders, lasers, magnets, Xrays, or other electronic tools like audio amplifiers are allowed to be used on the competition locks. Disassembling, hitting the dial with a hammer, or other ways of decoding are is not in the spirit of this competition.

To enter the competition you must be able to demonstrate you are able to open a S&G 6730 combination lock with a known combination within about a minute. This shouldn't be the challenge, but is there just a measure to demonstrate to us that you know how these locks operate.

The steps after qualifying are:

1. You'll receive an S&G 6730 combination lock of which the combination is not provided.
 1. Four locks are available at the time.
 2. If you have not made any progress with the lock within two hours, you can consider returning the lock and have a second attempt on another lock. The total time is the combined opening time.
2. Through manual manipulation you will learn the combination and open the lock.
3. The opened lock is returned to the jury, and the return time is recorded.
 1. Please keep the combination a secret until the end of the competition.
 2. The created graphs are turned in if there are any.
4. The jury verifies the lock still functions, and closes the lock by spinning the dial CCW four times before giving the lock to the next participant.

The jury may ask what strategy was used, and how you found the combination. If the explanation is unsatisfactory, you may be disqualified.

There will also be some locks available to play and practice with. Handle these locks with care as we want to use them for future events as well. We recommend reviewing the slides from Jan-Willem <https://blackbag.toool.nl/?p=4593>, read 'Safecracking for Everyone!' or download Sophie's safe cracker simulator <https://blackbag.toool.nl/?p=3529>.

On Sunday there will be a finals between the best safecrackers. This final will take at most an hour. To limit the time, the Jury will share the scheme is used to set up the combination locks.

- All wheels are set to a multiple of five, every wheel is at least 10 a part from the previous value. In this scenario 20-30-20 is a valid combination, and 25-30-50 is not a valid combination.

- The combination is a date. This can be YYMMDD, DDMMYY, or MMDDYY.

- The sequence is incremental. If the combination is AABCC then $AA < BB < CC$. Combination 10-20-30 is a valid solution to fit this scheme.

As this is a game of skill, and not so much a puzzle, all safe combinations used in the combination will be valid and non-interesting combinations. E.g. within the tolerances of the lock it's possible to have combinations you can't dial with the normal sequence, or have combinations which are considered unreliable and thus called 'illegal'. The jury has chosen sane combinations. For reference, please see the 'ComboGenerator' by The Safe House:

https://safehouse.gridscout.net/combo_generator.htm

Settings: 0, 99, 3, Spring, RH, True, 5, 15, 5, 10

