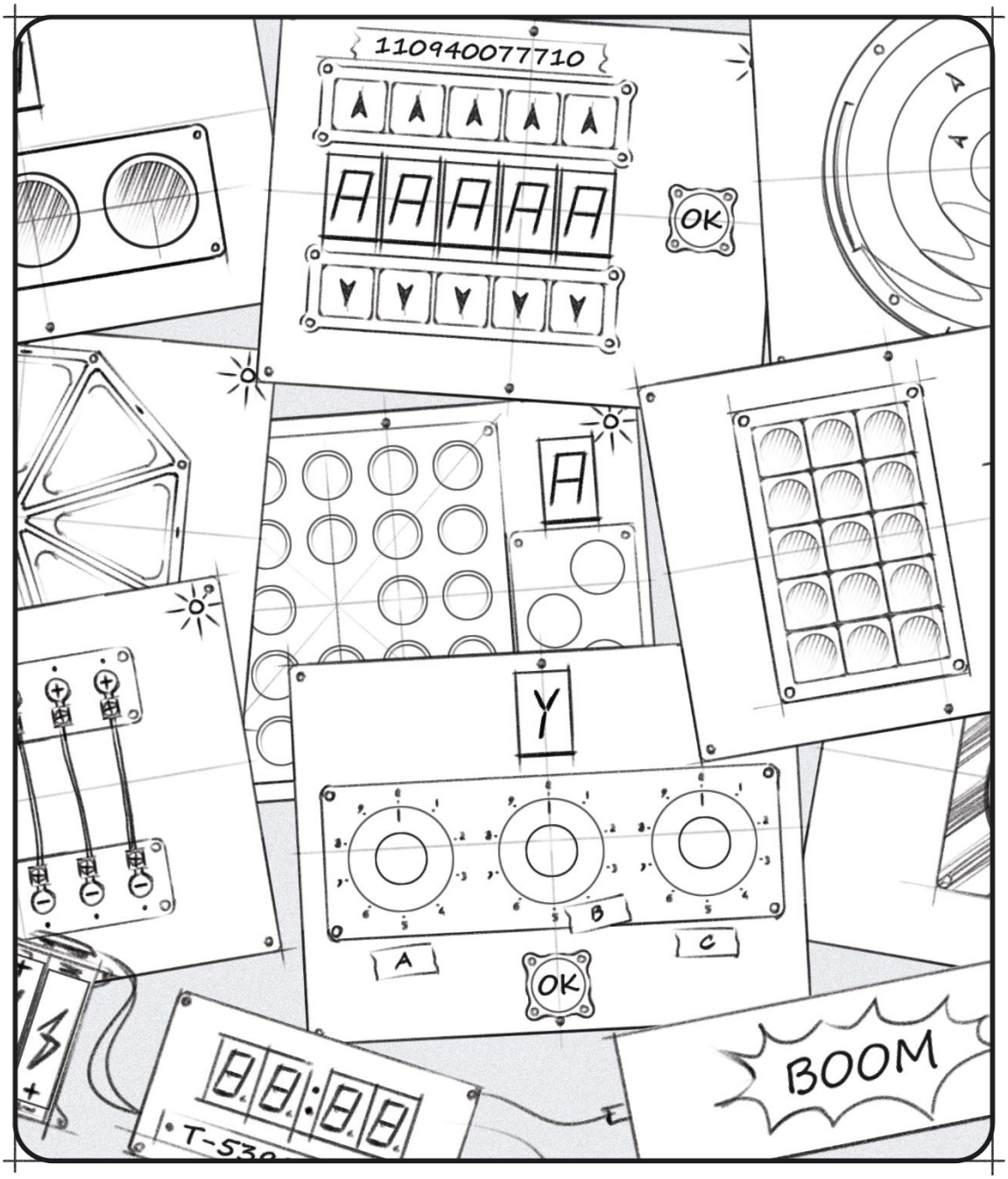
THEM BOMBS

SURE-FIRE BOMB DEFUSAL MANUAL™



English, Tablet & iPad 1.4
(multi-touch)

Them Bombs!

Sure-Fire Defusal Manual

English, Tablet & iPad 1.4
(multi-touch)

IMPORTANT!

This manual is only suitable for the multi-touch versions of *Them Bombs* (**Android Tablet** and **iPad**).
For all other platforms (PC, Mac, Linux, Android Phone, iPhone, Nintendo Switch and Apple TV) please download the appropriate manual from *www.thembombs.com/manual*.

Intro

A crazy scientist called Dr. TiNT plants deadly bombs in various public spaces. Each time, minutes before the explosion, a random person within the blast radius receives a message from him. Only this person - the **Unlikely Hero** - can defuse the bomb… given they get the right help.

Game rules

One of the players is the **Unlikely Hero** who tries to defuse the bomb (within the *Them Bombs!* game). The other players become the **Expert Team** and they have access to this manual. The Experts cannot see what the Hero sees on the screen and the Hero cannot see the contents of the manual.
Players can use verbal communication only, as if the Expert Team and the Hero were talking through a radio.

The keys to success are cold-blooded, **efficient communication** and… **careful reading** of the manual.

Good luck!

> Defusing bombs on a tablet or iPad very often requires the player to use multiple fingers at one time. Be sure to disable any “multitasking” apps or settings on your device.

Dr. TiNT - *modus operandi*

Only one thing is known for sure, Dr. TiNT is a mad man… He seems to enjoy all hell breaking loose.
Dr. TiNT's devices share a common design. There is a small bomb with an initiating explosive, connected to a large container with the main charge. Where he gets his explosives is unknown. How he transports the bombs is also a mystery.

Some things are certain though…
Try to move the container - the bomb will explode!
Try to detach the initiating bomb - the bomb will explode!
Try to remove the timer battery - the bomb will explode!
Try to remove the initiating explosive - the bomb will explode!
These lessons were learned the hard way by many Unlikely Heroes.

The only proven method so far seems to be the deactivation of the bomb's security modules. The modules seem to be elements of Dr. TiNT's sick game…

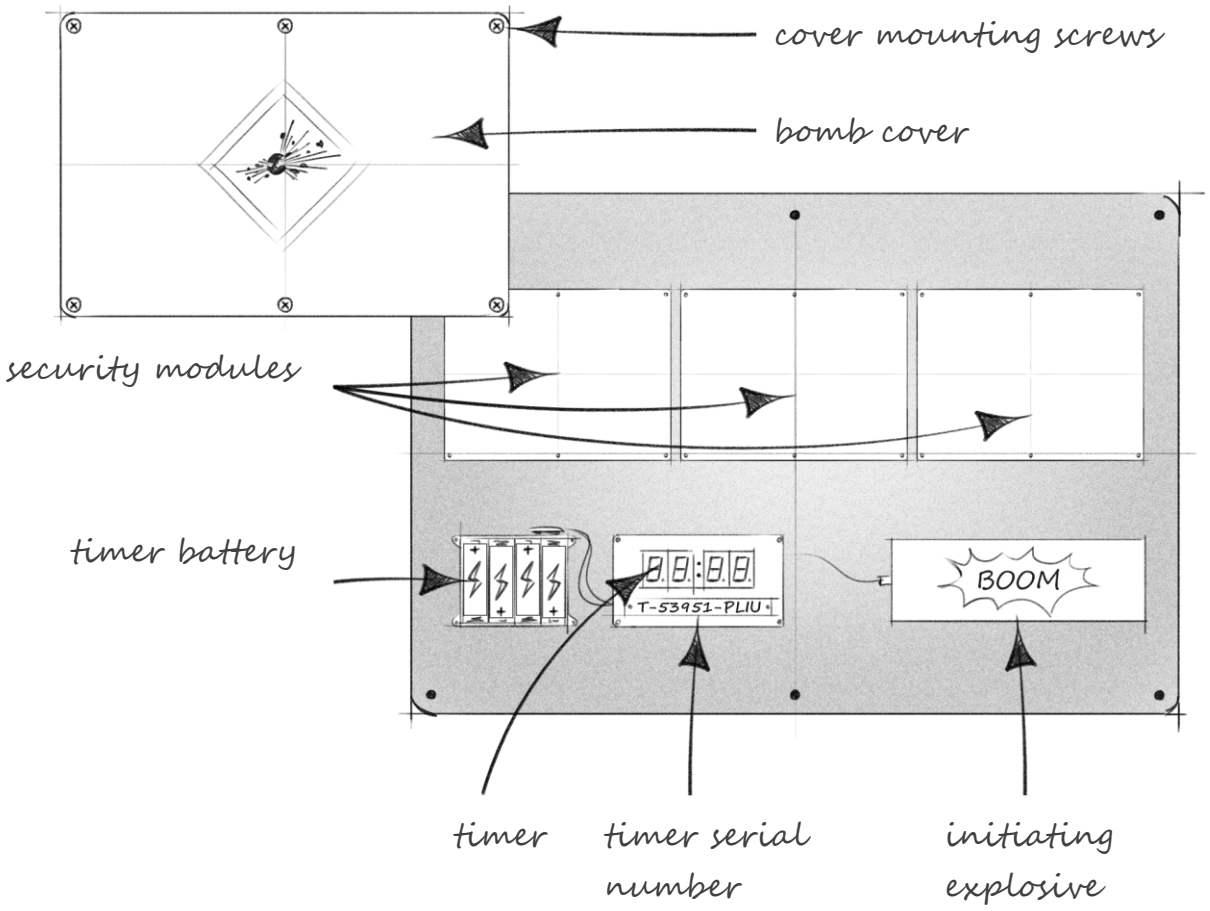
Typically, Dr. TiNT warns one of the potential victims with an untraceable text message. He also leaves some basic necessary tools behind (electric screwdriver, pliers, flashlight, etc.), as if he wanted the Unlikely Hero to succeed and avoid tragedy.

Analysis of previous incidents suggests that Dr. TiNT does not target random people - indeed, his chosen Unlikely Heroes are always uncommonly brave…

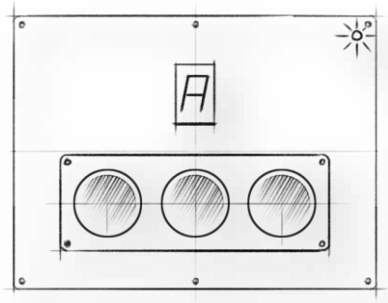
Dr. TiNT's bomb defusal - fundamentals

To disarm a bomb, you need to deactivate all of the bomb's security modules. The instructions for disarming all known types of modules can be found on the following pages of this manual.

First, remove the cover of the bomb - unscrew the screws (not to worry, the cover is not an armed element).



Module: Three blinking buttons



OVERVIEW: A one-letter display and a row of 3 colorful blinking buttons.

TO DISARM: Press each of the buttons at the moment they blink with the right color **and hold**.

The correct set of colors is determined by:
1. the letter showing on the display (the letter changes periodically!)
2. the time left until the detonation.

Find the correct combination of the lights' colors in the table below.

HOW TO READ THE TABLE: The three letters divided by vertical lines correspond to the colors of the three buttons. The appearing colors are:

Y - yellow **R - red** **B - blue**

EXAMPLE: Y|R|B - press and hold each of the buttons at the moment they blink: yellow, red, and blue (starting from the left).

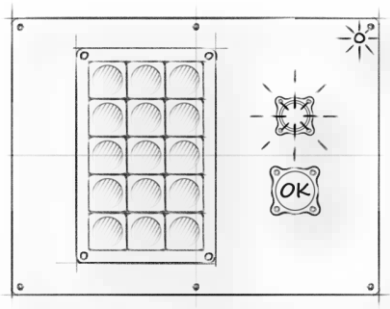
	displayed letter						
time until detonation	**A**	**B**	**C**	**D**	**E**	**F**	**G**
240 s < time	Y|B|R	Y|R|Y	R|R|R	B|Y|B	B|B|B	R|Y|R	Y|Y|Y
120 s < time ≤ 240 s	B|Y|B	B|R|B	B|B|Y	Y|Y|R	R|B|Y	R|Y|Y	Y|B|R
60 s < time ≤ 120 s	Y|Y|Y	B|B|B	R|Y|Y	Y|B|R	B|B|Y	B|R|B	Y|Y|R
time ≤ 60 s	R|R|R	B|B|Y	R|Y|R	R|B|Y	B|R|B	Y|R|Y	R|R|R

(240 s = 4 minutes, 120 s = 2 minutes, 60 s = 1 minute)

TIPS FOR THE "STILL-ALIVE BOMB DEFUSER":

- For the first two buttons, you can make mistakes when pressing the right color. When pressing the third button however, you need to be right or there will be unpleasant consequences.
- Does it seem like a very hard task? Try to memorize the number of colors appearing between black and the color you want to press.

Module: 15 tiles and a light

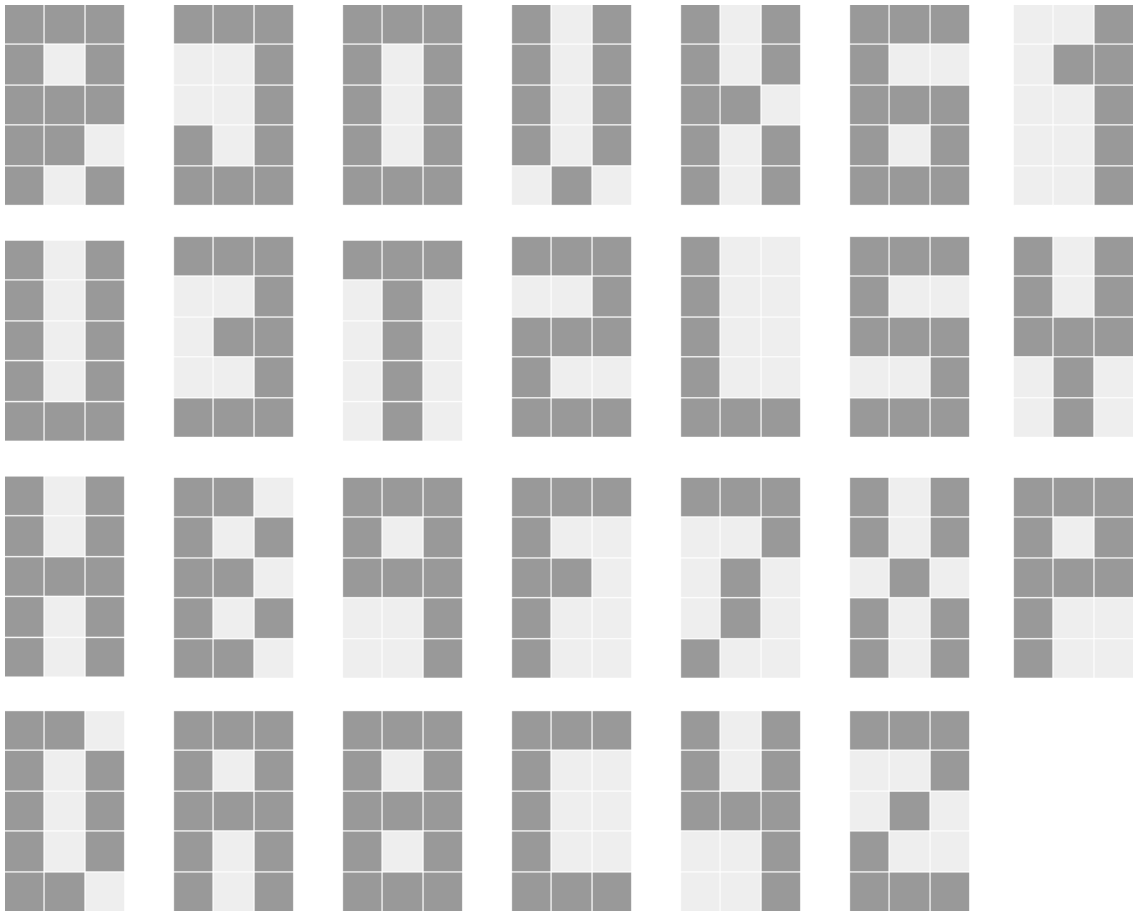


OVERVIEW: 15 tiles, a blinking light, and an “OK” button.

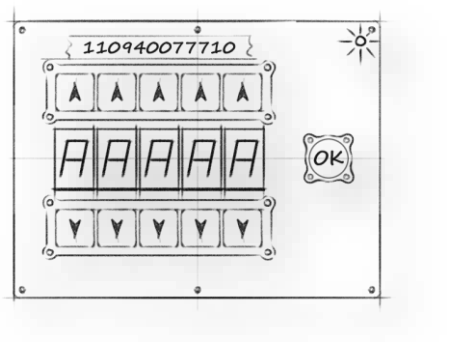
TO DISARM: Press and light up the correct tiles, then press OK.

The blinking light is transmitting a signal of a letter or a number using the Morse Code - **see Appendix III**. Press the tiles to recreate the shape of this letter/number .

POSSIBLE COMBINATIONS OF THE TILES:



Module: 5-letter code



OVERVIEW: A plate with a number sequence, 5-letter display (the letters can be changed using the top and bottom arrows) and an "OK" button.

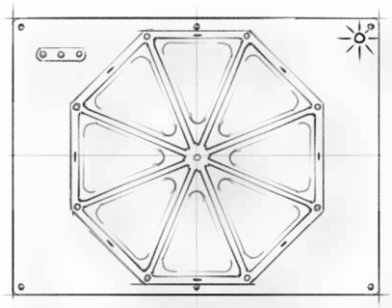
TO DISARM: Input the correct 5-letter code and press OK.
Starting from the left, add the consecutive digits. When you get to an even digit, stop adding (but add the even digit as well). Find the result in the table below.
Repeat this process for the remaining digits.

Example:
1112 sums up to 5, which corresponds to letter A
1112330 becomes 5 and 6, corresponding to letters A and B

A - 5	J - 17	S - 2
B - 6	K - 21	T - 7
C - 27	L - 8	U - 25
D - 12	M - 14	V - 15
E - 0	N - 10	W - 16
F - 11	O - 3	X - 19
G - 26	P - 22	Y - 20
H - 13	Q - 18	Z - 24
I - 4	R - 9	

TIPS FOR THE "STILL-ALIVE BOMB DEFUSER":
- There are exactly 5 even numbers in the number sequence.
- "Zero" is also an even number!

Module: Pizza



OVERVIEW: 8 triangles. Some of the triangles light up in a random sequence.

TO DISARM: Press the correct triangles **and hold them** for around 3 seconds.

TRIANGLES TO PRESS AND HOLD:

- If the bomb's cover was mounted with 4 screws, press and hold only the triangles that lit up*.
- If the bomb's cover was mounted with 6 screws, press and hold only the triangles that did not light up*.

*See exceptions below.

EXCEPTIONS:

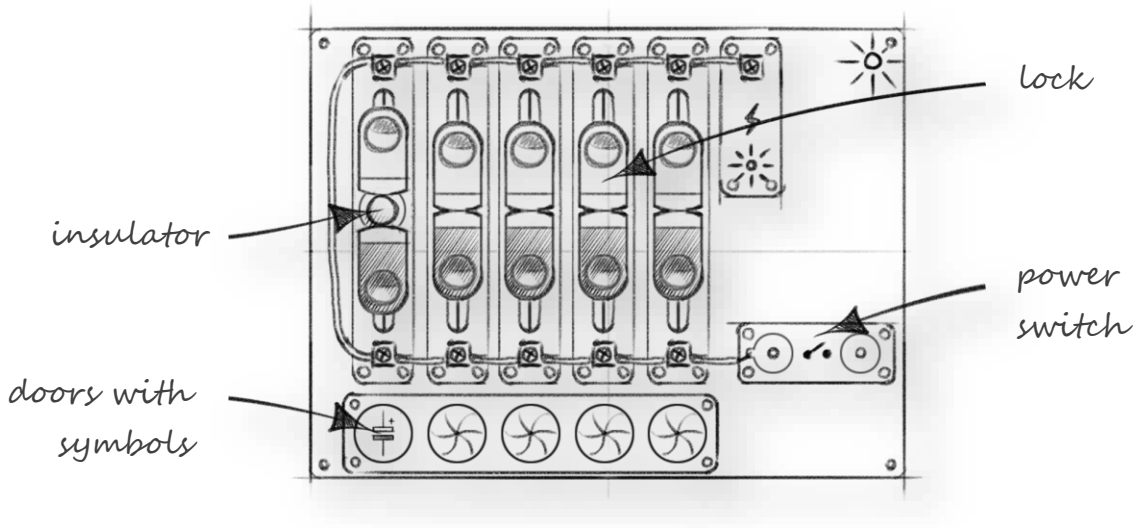
- If the timer battery has a lithium manganese dioxide cell (**see Appendix I**), do not press the north triangle.
- If there is an opposite terminals battery holder (**see Appendix I**), do not press the south triangle.
- If the timer serial number includes at least one even number, do not press the east triangle.
- If the timer serial number digits include even numbers only, do not press the west triangle.

TIPS FOR THE "STILL-ALIVE BOMB DEFUSER":

- Zero is also an even number.
- Press and hold the triangles until your combination is accepted or rejected, which is at least 3 seconds.
- If according to the above instructions no triangles should be pressed, press one random triangle and release it.

Module: Electric locks

OVERVIEW: 5 locks made up of paired blue and red connect plates. There are also 5 aperture doors and 2 buttons (power switch).



TO DISARM: Open the correct locks and pass current through the module.
One by one, for each of the locks, perform the following:

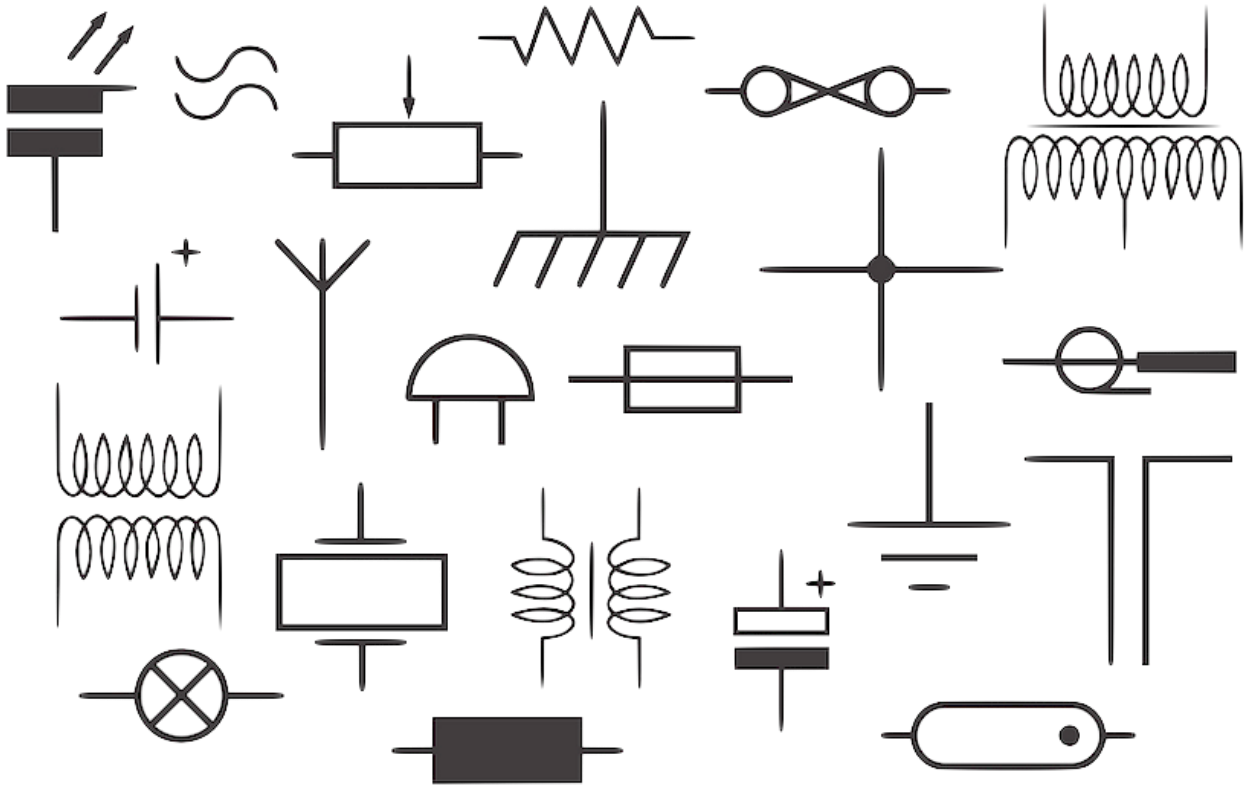
1. Carefully open a lock (spreading the blue and red plates) so that the aperture door below the lock opens.
2. Find the symbol in one of the lists on the next page.
3a. If the symbol indicates that the lock must be open (***break symbol***), place an insulator between the lock's plates (press the circle between the plates) and move on to the next lock.
3b. If the symbol indicates that the lock must be closed (***pass symbol***), close the lock back and move on to the next lock.

Lastly, switch the power on - press both power switch plates simultaneously. If the correct locks are open and closed, module will be disarmed.

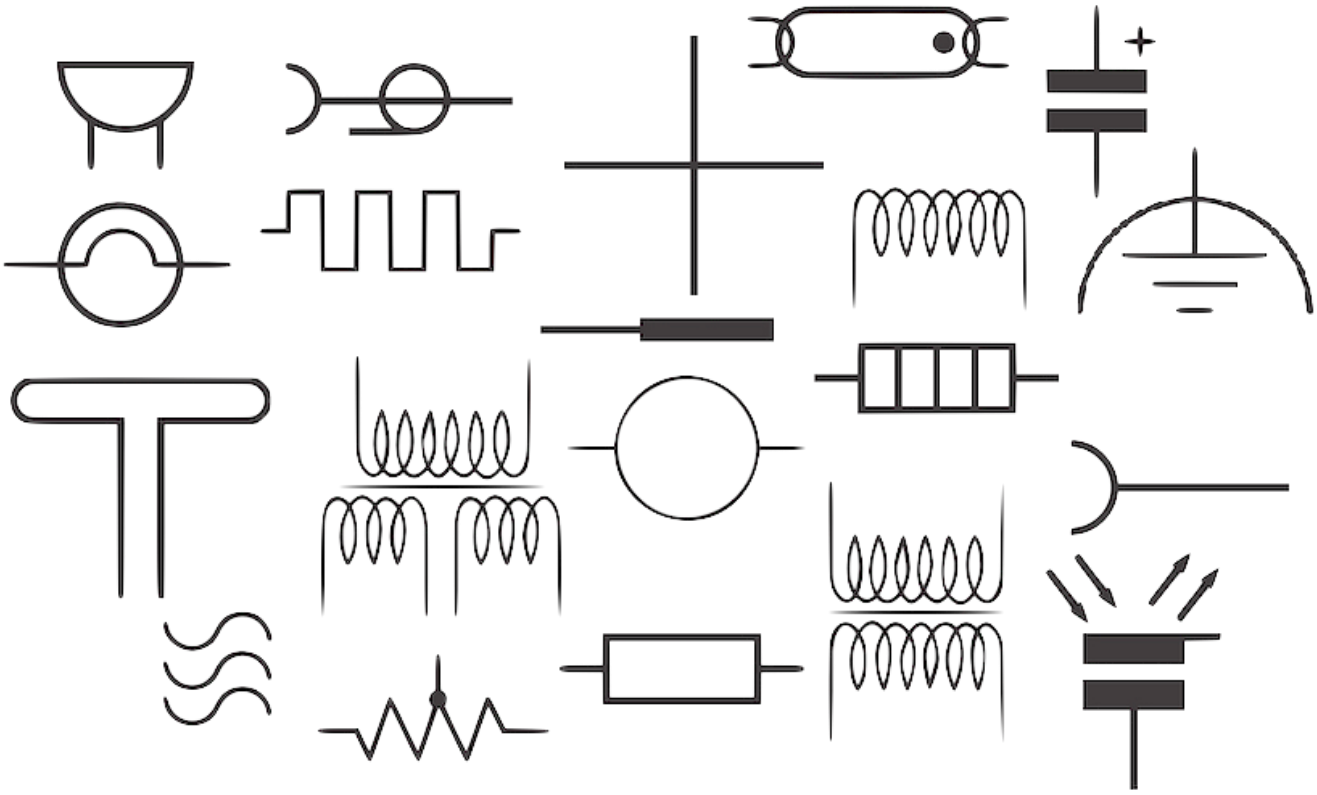
TIPS FOR THE "STILL-ALIVE BOMB DEFUSER":

- Be careful not to cause a short circuit! It happens when you spread a lock's plates too far.
- Be sure to closely look at the symbols - they can be misleading…
- If you make a mistake, you can remove an insulator by pressing it again.

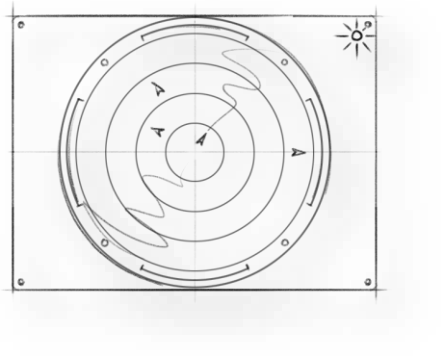
BREAK SYMBOLS – LOCK MUST BE OPEN, PLACE AN INSULATOR:



PASS SYMBOLS – THE LOCK MUST BE CLOSED:



Module: 4 rotating rings



OVERVIEW: 4 rotating rings. Each of the rings is marked with an arrow indicating the ring's orientation.

TO DISARM: Press **and hold** each of the rings to stop them so that they are orientated towards the correct cardinal direction, which are:

N - north **W** - west
S - south **E** - east

The direction points are marked on the outside border of the rings.

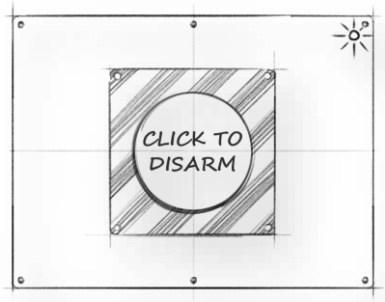
HOW TO READ DIRECTION POINTS: Check the crucial elements of the bomb: the timer battery, the timer serial number and the bomb's cover. Then, find the correct cardinal directions in the table below.

ring	correct direction points
1 (the biggest ring)	Check the timer battery voltage in **Appendix I**: • if total voltage is greater than 9 V - point **N** • if total voltage is 8 V - point **S** • if total voltage is 2.6 V - point **W** • all other cases - point **E**
2	Check the timer serial number (next to the timer): • if the first letter is Y - point **N** • if the first letter is T - point **S** • if the first letter is A - point **W** • all other cases - point **E**
3	Check the type of timer battery cell in **Appendix I**: • if the cell is *silver-oxide* - point **N** • if the cell is *lithium manganese dioxide* - point **S** • if the cell is *zinc manganese dioxide* - point **W** • all other cases - point **E**
4 (the smallest ring)	The bomb's cover (removed at the beginning) was: • green - point **N** • red - point **S** • blue - point **W** • all other cases - point **E**

TIPS FOR THE "STILL-ALIVE BOMB DEFUSER":

- The arrow on the ring will light up yellow when the ring is stopped at one of the cardinal points.

Module: Trap



OVERVIEW: One big button with an inviting text (e.g. *Click me!*, *Press here!*, *Click to defuse!* etc.).

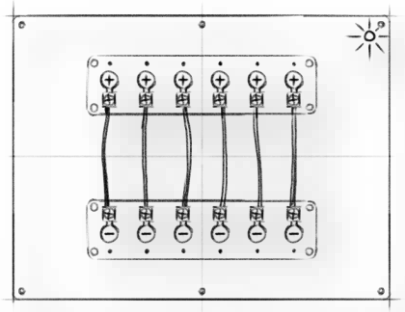
NOTE! Under no circumstance should you press this button carelessly! It is a trap - the bomb will explode that very moment.

TO DISARM: Always disarm this module as the last. Once all other security modules are disarmed, press **and hold** the button for at least 3 seconds… and then release.

TIPS FOR THE "STILL-ALIVE BOMB DEFUSER":

Be careful! There is no room for error!

Module: Wires



OVERVIEW: 3 to 6 color-coded wires mounted vertically. Each wire is connected to a contact plate marked "+" and "-".

TO DISARM: Press and hold the right contact plates ("+" and "-") and then cut the correct wires.

Check the type of initiating explosive used in this bomb - **see Appendix II**.
If the initiating explosive is: **C-4**, **Semtex** or **TNT**, refer to table A.
If the initiating explosive is: **Dynamite**, **improvised explosive** or **other**, refer to table B.

TABLE A (C-4, Semtex, TNT)

- If there are 3 wires and all of them are the same color, *HOLD* **[+]** of the wire on the left and **[-]** of the wire on the right. *CUT* the middle wire.

- If there are 3 or 4 wires and exactly two of them are blue, *HOLD* **[+]** of the blue wire on the right and **[-]** of the blue wire on the left. *CUT* all the wires.

- If there are 3 or 4 wires and exactly two of them are yellow, *HOLD* **[+]** of both yellow wires and **[-]** of the wire between the yellow wires. C*UT* the yellow wires only.

- If there are 5 wires and exactly three of them are the same color, *HOLD* **[+]** of the first wire on the right and **[-]** of the first wire on the left. *CUT* all the wires.

- If there are 5 wires and exactly two of them are red, *HOLD* **[+]** of both red wires and **[-]** of the first wire on the right. *CUT* all the wires except for the red ones.

- If there are 5 wires and exactly two of them are green, *HOLD* **[+]** of both green wires and **[-]** of the first wire on the left. CUT all wires.

TABLE B (Dynamite, improvised explosive, other)

- If there are 3 wires and all of them are the same color, *HOLD* **[+]** of the wire on the right and **[-]** of the wire on the left. *CUT* the middle wire.

- If there are 3 or 4 wires and exactly two of them are blue, *HOLD* **[+]** of the blue wire on the left and **[-]** of the blue wire on the right. *CUT* all wires.

- If there are 3 or 4 wires and exactly two of them are yellow, *HOLD* **[-]** of both yellow wires and **[+]** of the wire between the yellow wires. C*UT* the yellow wires only.

- If there are 5 wires and exactly three of them are the same color, *HOLD* **[+]** of the first wire on the left and **[-]** of the first wire on the right. *CUT* all wires.

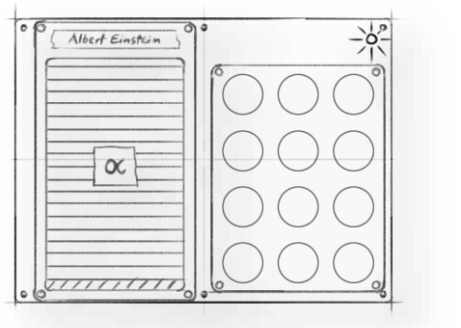
- If there are 5 wires and exactly two of them are red, *HOLD* **[+]** of both red wires and **[-]** of the first wire on the left. *CUT* all the wires except for the red ones.

- If there are 5 wires and exactly two of them are green, *HOLD* **[-]** of both green wires and **[+]** of the first wire on the left. *CUT* all wires.

TIPS FOR THE "STILL-ALIVE BOMB DEFUSER":

- The wires can only be colored red, blue, green, pink, yellow or brown.
- Cutting the wrong wire can lead to an immediate explosion or can drastically shorten the countdown time!
- To avoid a time penalty, when cutting the correct wires, make sure to hold the correct contact plates (the correct ones **only!**).

Module: Triple safe



OVERVIEW: 12 round color-coded buttons, a roll up door with a letter from the Greek alphabet, and the name of a famous scientist.

TO DISARM: Open each of the two consecutive safe doors and input the correct 4-digit code.

A. THE FIRST SAFE DOOR: Press **and hold** the correct combination of the color-coded buttons.
The combination is determined by:

1. the Greek letter visible on the door,
2. the name of the scientist.

You will find the possible combinations in the below table.
You can press any of the buttons as long as their number and colors are correct.

	Greek letter on the door							
scientist	α	β	γ	δ	ε	ζ	η	θ
Albert Einstein 1879-1955	1Y 2G 1R	2Y 2G	1G 3R	3Y 1R	4G	4R	4Y	1Y 1G 2R
Isaac Newton 1643-1727	4G	4R	2Y 2R	1G 3R	2G 2R	1Y 2G 1R	3Y 1G	3Y 1R
Marie Curie 1867-1934	2Y 2G	1Y 3R	2Y 1G 1R	1Y 3G	3Y 1R	2G 2R	4R	3G 1R
Louis Pasteur 1822-1895	2Y 2R	1Y 2G 1R	4R	3Y 1G	1G 3R	2Y 1G 1R	2Y 2G	4Y
Nikola Tesla 1856-1943	2G 2R	2Y 1G 1R	3Y 1R	4Y	1Y 3G	1Y 1G 2R	3G 1R	4G
Thomas Edison 1847-1931	4R	4Y	4G	1Y 3R	2Y 2G	3G 1R	2Y 2R	1G 3R
Blaise Pascal 1623-1662	1G 3R	2G 2R	1Y 1G 2R	2Y 2R	3Y 1G	1Y 3R	1Y 1G 2R	1Y 3G
Galileo Galilei 1564-1642	3Y 1G	2Y 2G	1Y 3G	4G	2Y 1G 1R	3Y 1R	1Y 2G 1R	1Y 3R

Y -yellow **G** - green **R** - red

EXAMPLE: With a 1Y 2G 1R combination, press the following buttons: 1 yellow button, 2 green buttons and 1 red one.

B. THE SECOND SAFE DOOR: Press three of the six square buttons with Greek letters on them. The correct combination is determined by:

1. the color of the second door (the door below the six square buttons),
2. the set of available Greek letters.

Only one of the possible combinations below will match the combination in the bomb module.

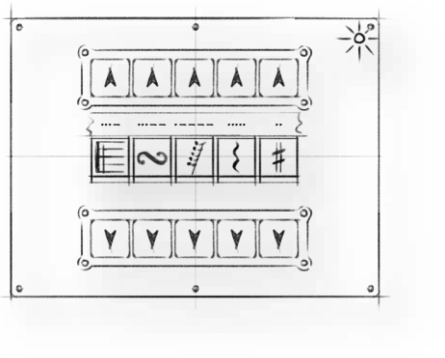
door color	possible letter combinations			
	combination	combination	combination	combination
blue	α δ ζ	γ ε ϰ	β η ψ	π μ θ
grey	ϱ δ ϰ	α η ζ	ι ξ λ	ψ ν μ
violet	τ ξ β	η ι ν	δ λ υ	ϱ ω ε
brown	σ γ ϰ	θ ζ π	β ο υ	ω μ α
orange	ι ν ο	λ γ σ	χ ε π	ψ ϱ θ

C. 4-DIGIT CODE: Use the arrows to change the digits. The correct code is the year of the scientist's death.

TIPS FOR THE "STILL-ALIVE BOMB DEFUSER":

- You need flexible fingers. Luckily, it is a characteristic of a good bomb defuser.
- Does it seem like you don't have enough fingers? You can always use your nose… or your tongue…

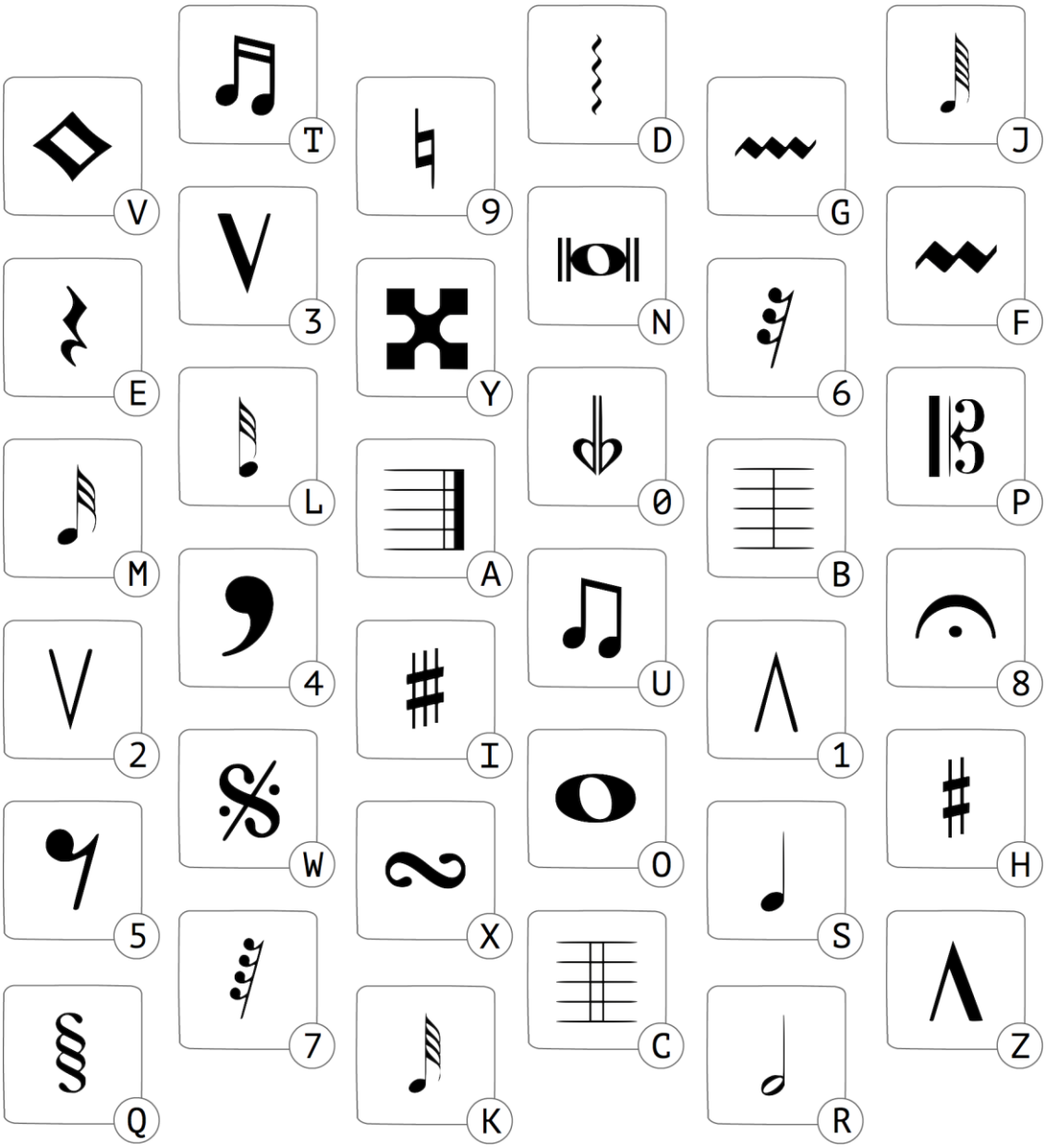
Module: Musical symbols



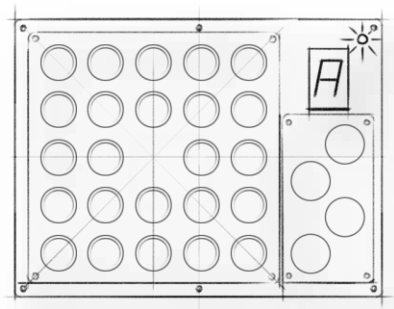
OVERVIEW: 5 boxes with musical symbols and a piece of paper with Morse code on it. The symbols can be changed using the top and bottom arrows.

TO DISARM: Set each of the boxes to the correct musical symbol.
Convert the Morse code over each of the boxes into a letter or a number - **see Appendix III**. Next, find this letter or number below and set the corresponding symbol in the box.

The module will be disarmed 3 seconds after you set the correct symbols in all five boxes.



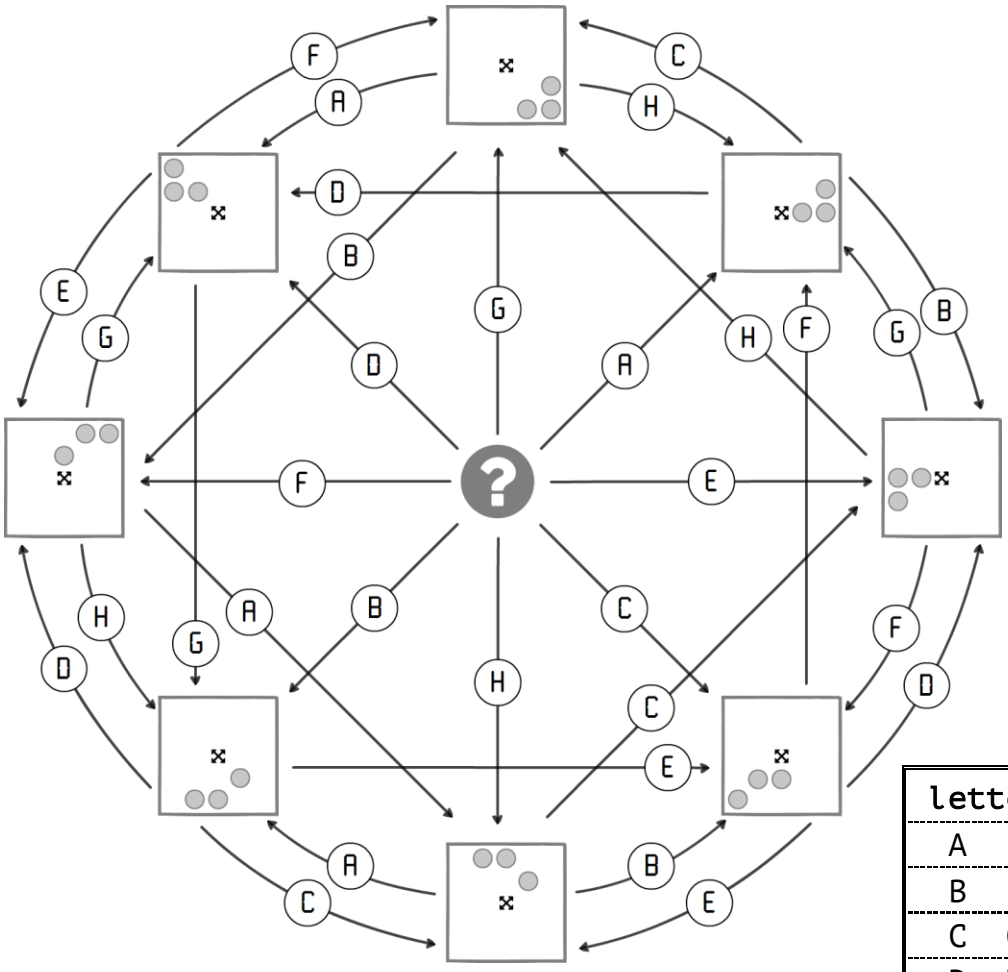
Module: 24 Dots



OVERVIEW: 24 dots, a one-letter display and 4 color-coded round plates.

TO DISARM: Using the right color, light up 9 dots according to the diagram below.
Starting from the question mark, follow the arrows to the successive pattern boxes.
The letter on the display indicates:

1. the arrow to follow to find the correct pattern box,
2. the color to use to light up the dots (refer to the table)

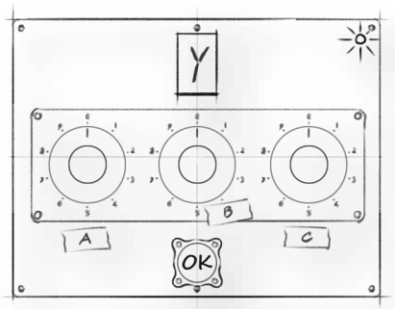


letter	color
A E	blue
B F	yellow
C G	red
D H	green

TIPS FOR THE "STILL-ALIVE BOMB DEFUSER":

- To color a dot, hold a color plate and press a dot you want to light up.
- You can change the color by overwriting it with another. To remove a color completely, press a dot without holding any of the color plates. If it is not possible to change the color of a dot, it means that this color has already been verified as correct.

Module: Three knobs



OVERVIEW: 3 knobs marked as A, B and C, a one-letter display and an "OK" button.

TO DISARM: Set each of the knobs to the correct value and press OK.

Knob A - rotate the knob and observe at which values a sound signal is played and at which values the letter display shows 'X'.

KNOB A		
values with sound signal	values at which letter 'X' appears	**the correct value of the knob A**
2	5	**1**
2	3	**2**
2	6	**3**
4	8	**4**
4	7	**5**
6	0	**6**
6	1	**7**
7	3	**8**
7	6	**9**
7	1	**0**
1	3	**1**
1	7	**2**
1	9	**3**
3	1	**4**
3	5	**5**
5	8	**6**
5	2	**7**
8	4	**8**
8	0	**9**
9	7	**0**

Knob B - rotate the knob and observe at which values the letter display shows 'X' and at which - 'Z'.

KNOB B		
values at which letter 'X' appears	values at which letter 'Z' appears	**the correct value of the knob B**
0	9	**7**
0	8	**1**
0	4	**9**
1	3	**0**
1	2	**0**
1	6	**8**
2	1	**5**
2	3	**3**
2	8	**8**
3	5	**1**
3	4	**6**
3	0	**1**
4	3	**5**

4	2	**5**
4	5	**1**
5	7	**1**
5	6	**4**
5	9	**1**
6	5	**4**
6	8	**1**
6	1	**4**
7	1	**8**
7	4	**1**
7	3	**0**
8	4	**6**
8	2	**8**
8	7	**9**
9	0	**5**
9	7	**5**
9	5	**3**

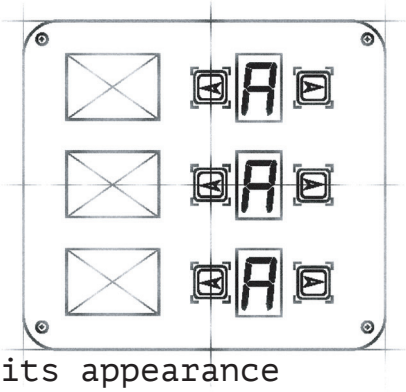
Knob C – set knobs A and B to correct values, then look at the timer and check the last two digits (seconds value).

KNOB C		
sum of the values of knobs A and B	last two digits on the timer (seconds value)	**the correct value of the knob C**
is an even number	0-15 seconds	**1**
is an even number	16-30 seconds	**2**
is an even number	31-45 seconds	**3**
is an even number	46-59 seconds	**4**
is an odd number	0-15 seconds	**5**
is an odd number	16-30 seconds	**6**
is an odd number	31-45 seconds	**7**
is an odd number	46-59 seconds	**8**

TIPS FOR THE "STILL-ALIVE BOMB DEFUSER":

- You can "take your time" with setting the A and B knobs. With the knob C however, do it as quickly as possible and press "OK".
- Set the right combination but the module is still armed? Make sure the dials are set **precisely** at the correct values.

SYSTEM: Alfa Bravo



GENERAL DESCRIPTION: The system includes three displays with buttons. Next to each display, there is a delta bravo alpha code related to security alerts.

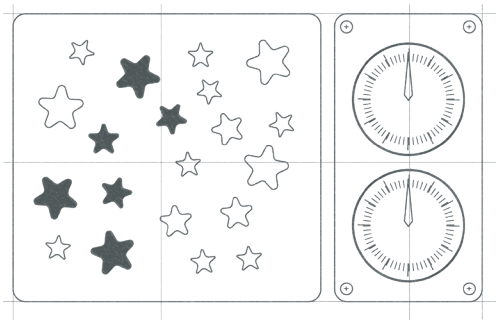
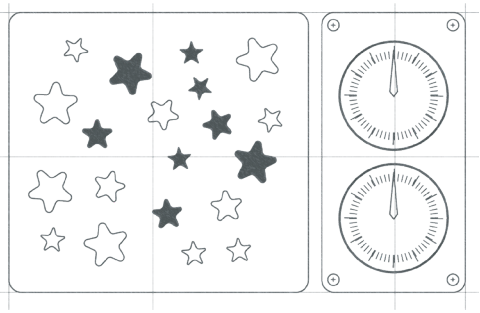
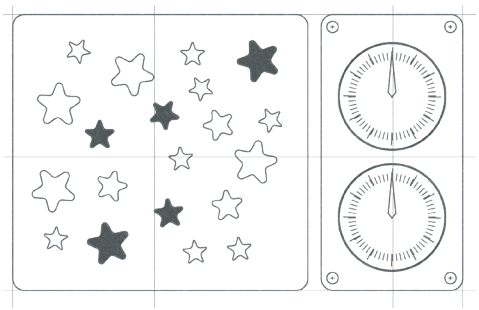
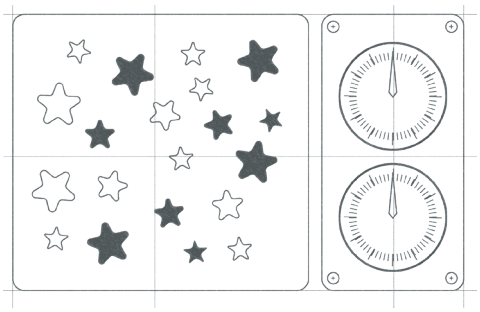
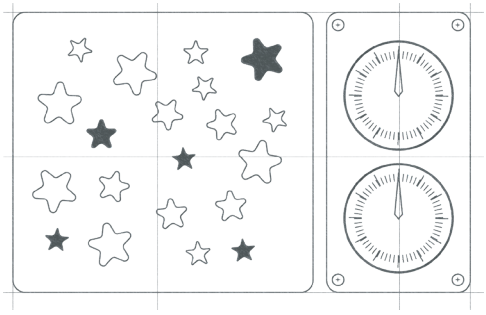
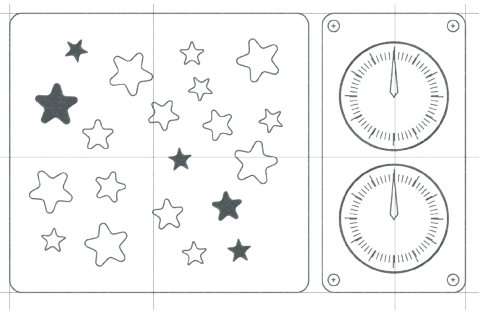
DISARMING: Each flag is unique. Describe its appearance and pass it on to another person. After receiving the descriptions for the letters, set them correctly for each flag.

Alfa	Kilo	Uniform	1
Bravo	Lima	Victor	2
Charlie	Mike	Whiskey	3
Delta	Novem -ber	Xray	4
Echo	Oscar	Yankee	5
Foxtrot	Papa	Zulu	6
Golf	Quebec	1st	7
Hotel	Romeo	2nd	8
India	Sierra	3rd	9
Juliett	Tango	CODE	0

SYSTEM: Astro

GENERAL DESCRIPTION: The layout includes a star chart and two clocks on the right side. The upper clock indicates the hour.
The lower clock indicates the minutes.

DISARMING: Read the values from the clocks and pass them to the other person. Each value is assigned the rectitude of each constellation.
After a failed attempt - the clocks reset.
After determining the corresponding constellations, mark them on the star map.

6h 45m	14h 15m
	
18h 36m	5h 55m
	
19h 50m	4h 35m
	

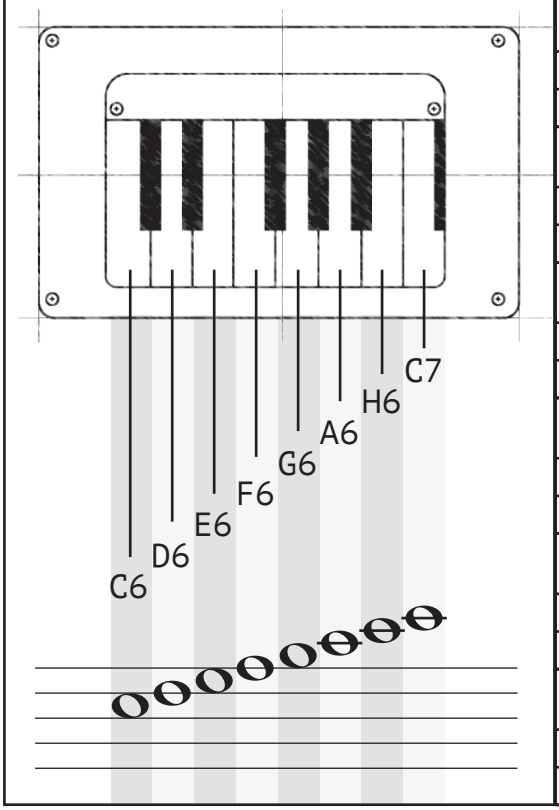
SYSTEM: Piano

GENERAL DESCRIPTION: The layout contains 8 piano keys.
A character is assigned to each key.

DISARMING: Find the number of the battery in the bomb.
Note the order in which the characters are arranged on the piano.
Once you have determined the battery number and the order in which the characters occur, pass it to the other person.

From the table, find the corresponding melody assigned to the battery number and the order in which the characters occur.
Once you have determined the melody, decode it using the assigned characters.

Play the melody.

Notes	Melodies	
	6LR61	
	A	G6 E6 C6 C6 D6 F6
	B	A6 C7 H6 D6 C6 C6
	6LS05	
	A	E6 F6 G6 C7 H6 D6
	B	C6 D6 G6 F6 A6 H6
	CR61++	
	A	D6 C7 H6 G6 E6 C6
	B	G6 C6 C7 C7 E6 H6
	CR61+-	
	A	A6 H6 A6 G6 A6 E6
	B	C7 D6 E6 A6 C7 H6
	2SF11+-+-	
	A	E6 C6 F6 H6 C7 D6
	B	D6 A6 F6 C6 H6 H6
	2SF11++++	
	A	G6 E6 A6 D6 C7 C6
	B	C6 D6 C7 H6 H6 E6

	C6	D6	E6	F6	G6	A6	H6	C7
A								
B								

SYSTEM: Hertz

GENERAL DESCRIPTION: The Herz layout consists of a central board, two dials on the right side and a panel with an “OK” button. There is a level indicator on the left side. The upper knob is used to set the frequency (herz), and the lower knob is used to adjust the volume level (decibels).

DISARMING:
The first person sets the frequency on the top knob.
The waves must coincide.

They communicate the hertz value to the second person.
The second person reads the decibel value assigned to that frequency from the manual.
The first person then uses the lower knob to adjust the decibel level.

After setting the appropriate value, they press the “OK” button.

TIP: Turn the knobs slowly and precisely - fast movements can cause interference and loss of waves.

Values			
Hz	dB	**Hz**	dB
630 Hz	55 dB	**370 Hz**	15 dB
480 Hz	70 dB	**510 Hz**	75 dB
420 Hz	25 dB	**580 Hz**	50 dB
100 Hz	45 dB	**690 Hz**	5 dB
140 Hz	10 dB	**740 Hz**	30 dB
240 Hz	35 dB	**760 Hz**	40 dB
260 Hz	80 dB	**810 Hz**	20 dB
300 Hz	65 dB	**890 Hz**	60 dB

SYSTEM: Chemistry Module

GENERAL DESCRIPTION:
The module contains two containers with liquids.
The container on the left always holds water (H_2O) plus a substance, and there is a slider on the right. And the panel at the bottom of the module.
DISARMING: Slowly set the distilation temperature using the slider on the right. Then press the start button. If the liquid separates - distillation has been successful. If the LED lights up green, the temperature range is correct.
Repeat the process several times to define the closest value assigned to the correct liquid. (To start over press the circular arrow button on the right).
Read the temperature value and give it to the other person.
In the table, find the corresponding value and formula of the fluid.
Enter the chemical formula on the bottom panel and validate it.

Substance	Formula	Boiling Point (°C)
Water	H_2O	100
Ethanol	C_2H_5OH	78.4
Acetone	C_3H_6O	56.1
Methanol	CH_3OH	64.7
Glycerin	$C_3H_8O_3$	290
Isopropanol	C_3H_8O	82.6
Chloroform	$CHCl_3$	61.2
Nitrobenzene	$C_6H_5NO_2$	210
Phenol	C_6H_5OH	181
Octanol	$C_8H_{18}O$	195

SYSTEM: Chemistry Module

HOW THE DISTILLATION PROCESS WORKS (IN SIMPLE TERMS):

Two substances with different boiling points are mixed in a container. When heated, they will evaporate and then condense into another container, with those substances whose boiling point is lower than the set temperature moving to the second container.
In order to distill correctly, the temperature must be set between the boiling points of the two substances—then the substances will separate into different containers.

FOR EXAMPLE:

Water and ethanol are mixed together, with boiling points of 100 and 78 degrees Celsius, respectively.

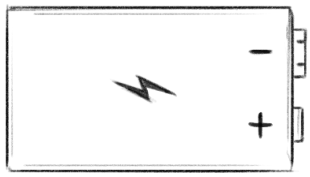
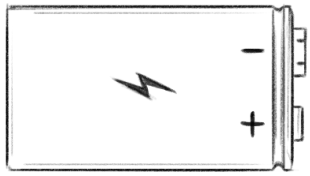
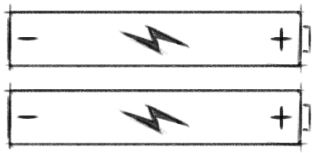
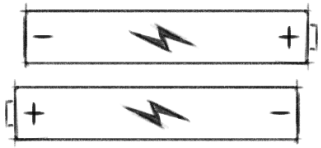
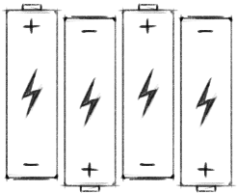
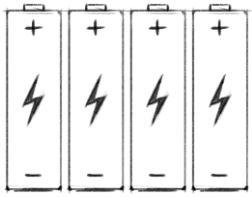
- If the temperature was set to 120 degrees Celsius, distillation failed; both substances went into the second container.

- If the temperature was set to 90 degrees Celsius, distillation succeeded; ethanol distilled into the second container, and water remained in the first.

Dr. Tint's fallacy is that we don’t know what substance besides water is in the container.
So, if the distillation succeeds at 90 degrees Celsius, it could mean that in the container, the water was mixed with ethanol (boiling at 78 degrees), chloroform (boiling at 61 degrees), or another substance. Correctly identifying the substance can only be done by elimination, repeatedly distilling with different temperature settings.

Appendix I - Types of batteries

Knowing which timer battery type the bomb uses is very important when defusing several of the security modules. The timer battery is usually placed next to the timer.

Pictorial view	Battery parameters
	**TYPE:** 6LR61 **VOLTAGE:** 9.0 V **CELL:** zinc manganese dioxide **HOLDER:** 1 piece
	**TYPE:** 6LS05 **VOLTAGE:** 9.2 V **CELL:** zinc manganese dioxide **HOLDER:** 1 piece
	**TYPE:** CR61 **VOLTAGE:** 2 × 1.3 V **CELL:** lithium manganese dioxide **HOLDER:** 2-piece, same-side terminals
	**TYPE:** CR61 **VOLTAGE:** 2 × 1.3 V **CELL:** lithium manganese dioxide **HOLDER:** 2-piece, opposite terminals
	**TYPE:** 2SF11 **VOLTAGE:** 4 × 2.0 V **CELL:** silver-oxide **HOLDER:** 4-piece, opposite terminals
	**TYPE:** 2SF11 **VOLTAGE:** 4 × 2.0 V **CELL:** silver-oxide **HOLDER:** 4-piece, same-side terminals

Appendix II - Types of initiating explosives

Dr. TiNT uses relatively small initiating explosives placed inside the bomb case. The initiating explosive detonates the main charge.
The most common initiating explosives are:

Name	Characteristics
C-4	**MAIN COMPONENT:** RDX **CHEMICAL FORMULA:** $C_3H_6N_6O_6$ **COMPOUND CLASS:** aliphatic **R.E. FACTOR:** 1.6* **DETONATION VELOCITY:** 8750 m/s
Semtex	**MAIN COMPONENT:** PETN **CHEMICAL FORMULA:** $C_5H_8N_4O_{12}$ **COMPOUND CLASS:** aliphatic **R.E. FACTOR:** 1.66* **DETONATION VELOCITY:** 8400 m/s
Dynamite	**MAIN COMPONENT:** nitroglycerin **CHEMICAL FORMULA:** $C_3H_5N_3O_6$ **COMPOUND CLASS:** aliphatic **R.E. FACTOR:** 1.5* **DETONATION VELOCITY:** 7700 m/s
TNT	**MAIN COMPONENT:** trinitrotoluene **CHEMICAL FORMULA:** $C_7H_5N_3O_6$ **COMPOUND CLASS:** aromatic **R.E. FACTOR:** 1.0* **DETONATION VELOCITY:** 6900 m/s
Improvised explosive	**MAIN COMPONENT:** TATP **CHEMICAL FORMULA:** $C_9H_{18}O_6$ **COMPOUND CLASS:** aliphatic **R.E. FACTOR:** 0.83* **DETONATION VELOCITY:** 5300 m/s

* in relation to 1 kg of TNT

Appendix III - The Morse alphabet

Many of the bomb's security modules are based on Morse code. A dot refers to a short light (or sound) signal. A dash refers to a long signal. The long signal is three times longer than the short signal.

A	•−	M	−−	Y	−•−−
B	−•••	N	−•	Z	−−••
C	−•−•	O	−−−	1	•−−−−
D	−••	P	•−−•	2	••−−−
E	•	Q	−−•−	3	•••−−
F	••−•	R	•−•	4	••••−
G	−−•	S	•••	5	•••••
H	••••	T	−	6	−••••
I	••	U	••−	7	−−•••
J	•−−−	V	•••−	8	−−−••
K	−•−	W	•−−	9	−−−−•
L	•−••	X	−••−	0	−−−−−