Safety Briefing for Test Beam User

- There is NO physics result **worth risking** your or other persons' **health**, or even **life**!
- Life is **dangerous** enough, and there is no need to increase the **risk** of **harming** ourselves
- We do not like setups that are a test of the cleverness of co-workers, and especially of newcomers!

Last updated: 28/04/2015

Safety Briefing for Test Beam User

Responsibilities/1:

- One of you, the **run leader**, is the **boss** and **responsible**:
  - He/She has to be designated **since from the beam time application** (of course can be changed afterwords)
  - He/she has provided the **access documentation** before coming to the test beam
  - He/she is the **contact person** with BTF and DAΦNE teams
- If more then one group are working in an area a **coordinator** has to be assigned, generally the **run leader** of the "main user" group

Safety Briefing for Test Beam User

Responsibilities/2

- **B. Buonomo** is the safety officer for all DAΦNE installations, including the test beam area
- The **BTF staff** member(s) following your installation and run will:
  - Instruct on safety in the test beam area
  - Check [and **enforce**] safety rules
    - Starting from Rule #1: if you are **not in the list** of authorized personnel, **you cannot enter** the test beam area

Safety Briefing for Test Beam User

Safety & Radio-protection office

- LNF has a **safety** and a **radiation safety** service for the entire Laboratory
- They are responsible for the general safety rules (reported in the "LNF general safety document")
- There are then **safety officers** in charge of the main installations and laboratories
- All this responsibilities are collected on the **door sheet** that has to be filled and placed next to the door of the control room!

Safety Briefing for Test Beam User

Fire or accident:

Call 5555!

Do **not** directly call **ambulance** or **fire brigade** yourself!

If you got completely lost you can ask
help
to the main door surveillance, phone **2200**
or to the accelerator control room, phone **2400**

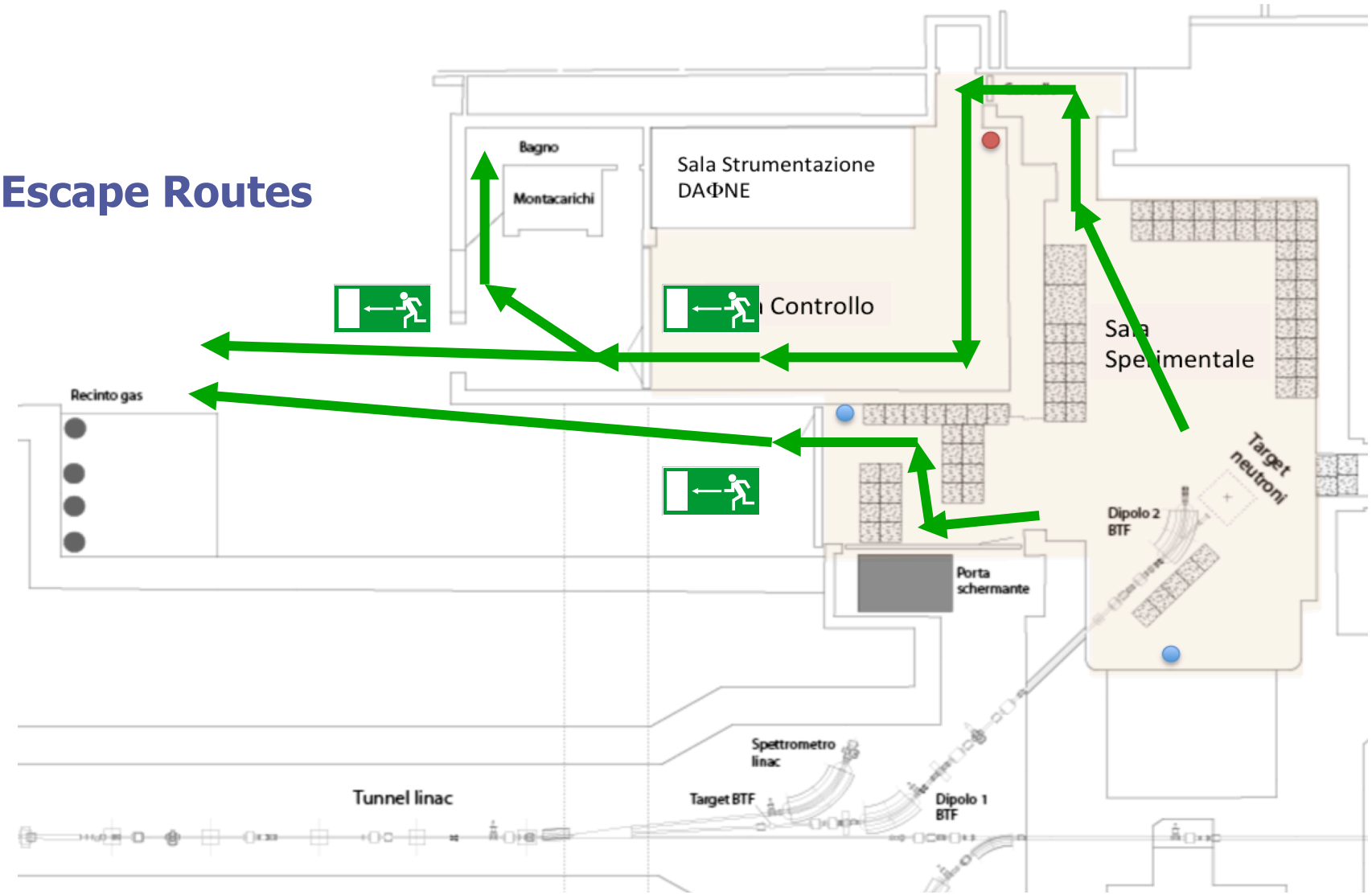
Safety Briefing for Test Beam User

General (1):

- Be aware of the **escape routes**
  - Keep them clear!
  - Remove your trash!
- Do not explore **other areas**
- Obey **safety signs**!
- Do **not climb** on the walls, do **not enter** not accessible areas
- **NO** open **fires** in the hall! (should we say it?...)
- Watch out for **crane** work
  - Stay clear of hanging loads
  - Wear hard heads if you assist

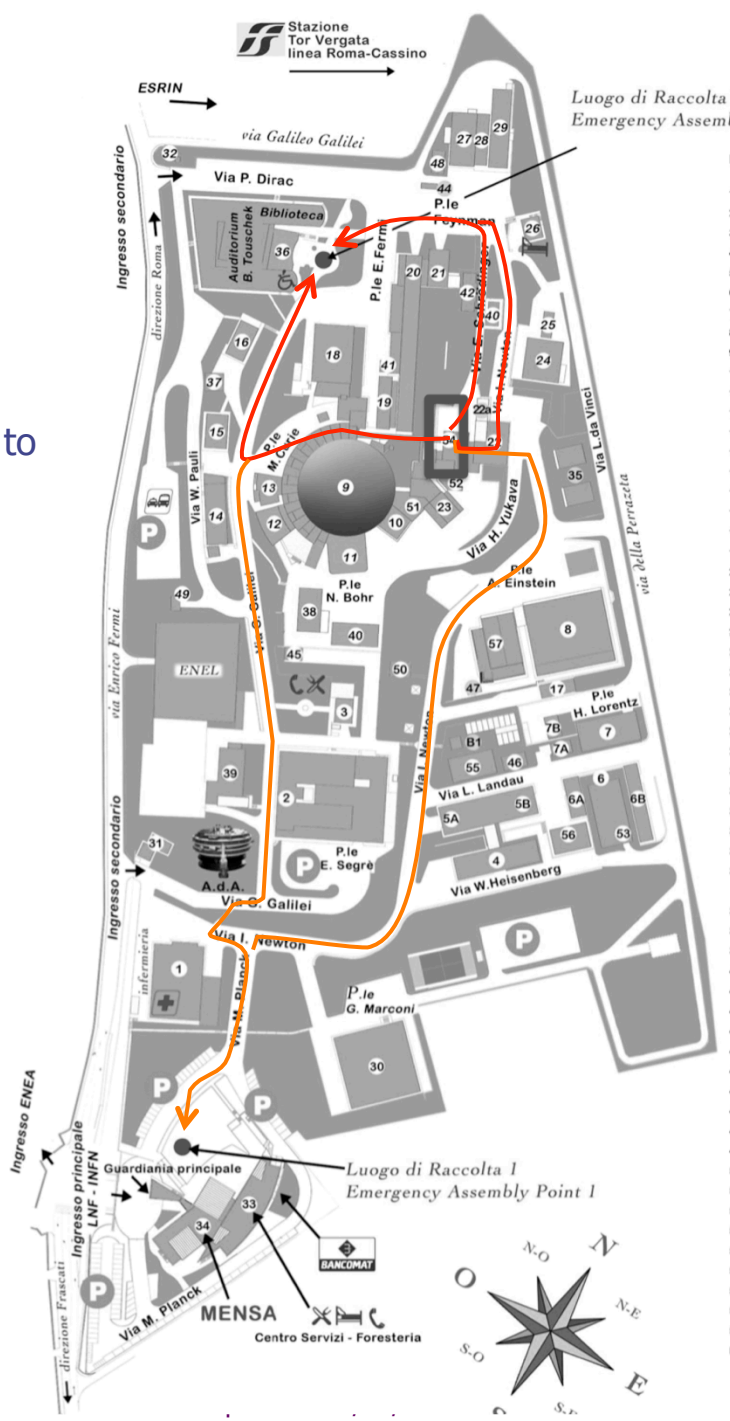
Safety Briefing for Test Beam User

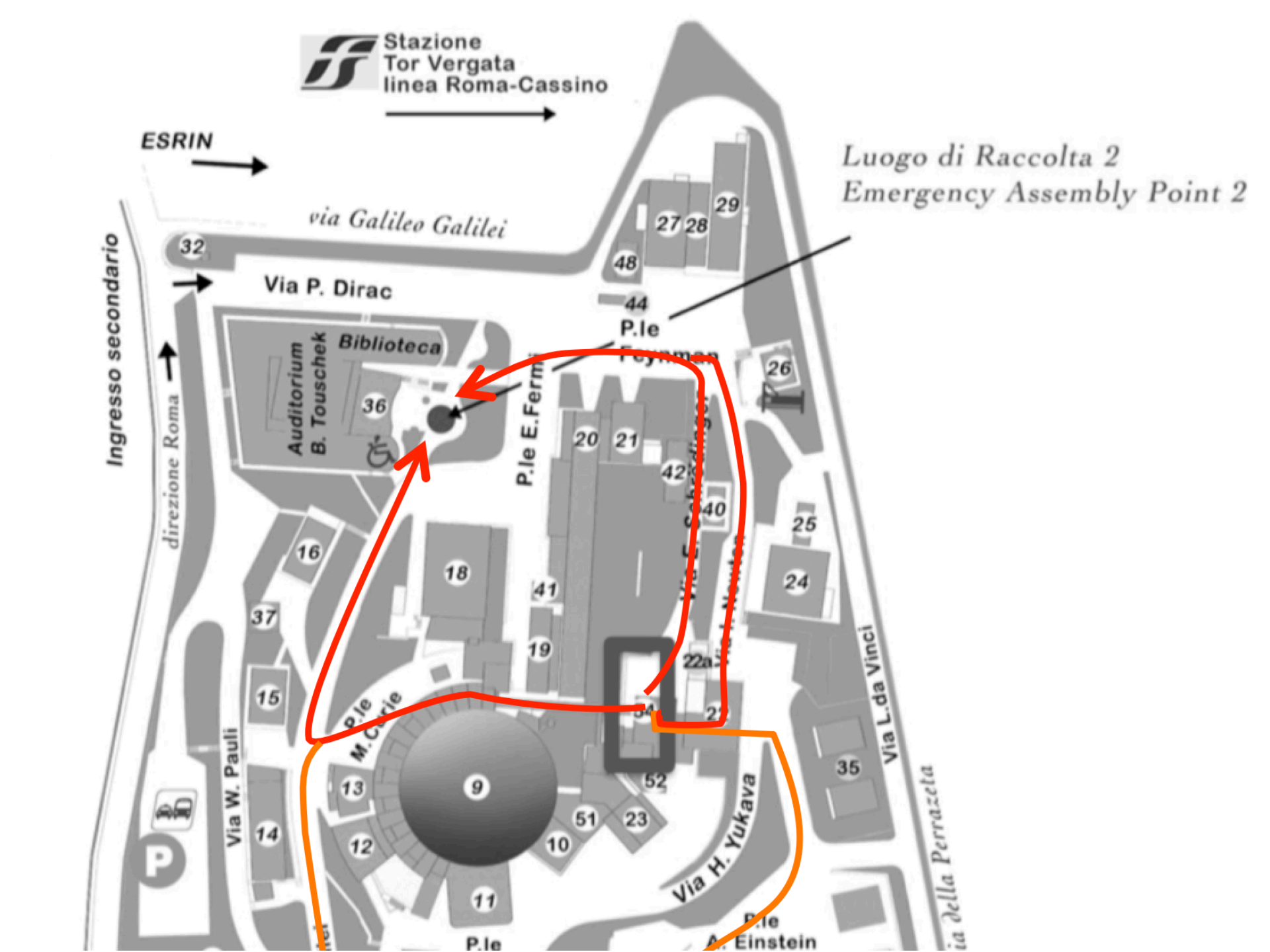
- **Escape Routes**



◎ Assembly Points

- The points are **marked**.
- In case of an evacuation alarm go to the assembly point **immediately** and wait for further advices.




Stazione
Tor Vergata
linea Roma-Cassino
ESRIN
Luogo di Raccolta 2
Emergency Assembly Point 2
via Galileo Galilei
Via P. Dirac
Ingresso secondario
direzione Roma
Auditorium
B. Touschek
Biblioteca
P.le E.Fermi
P.le
Feynman
Via W. Pauli
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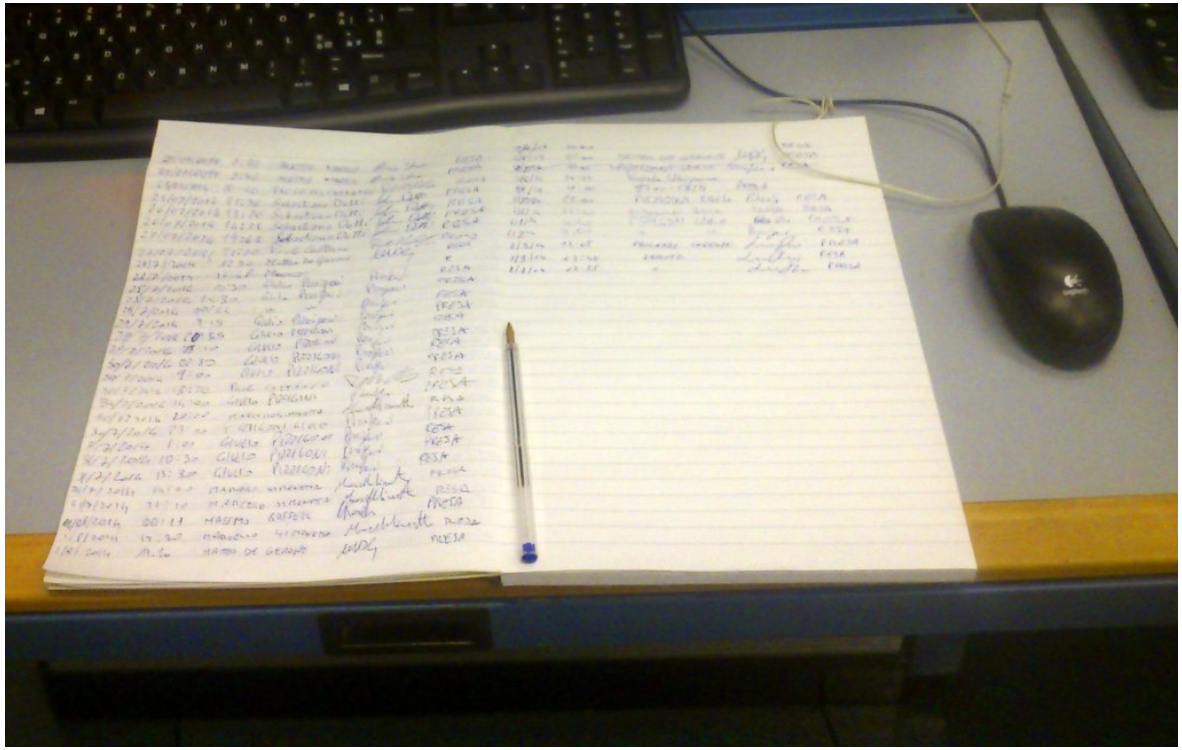
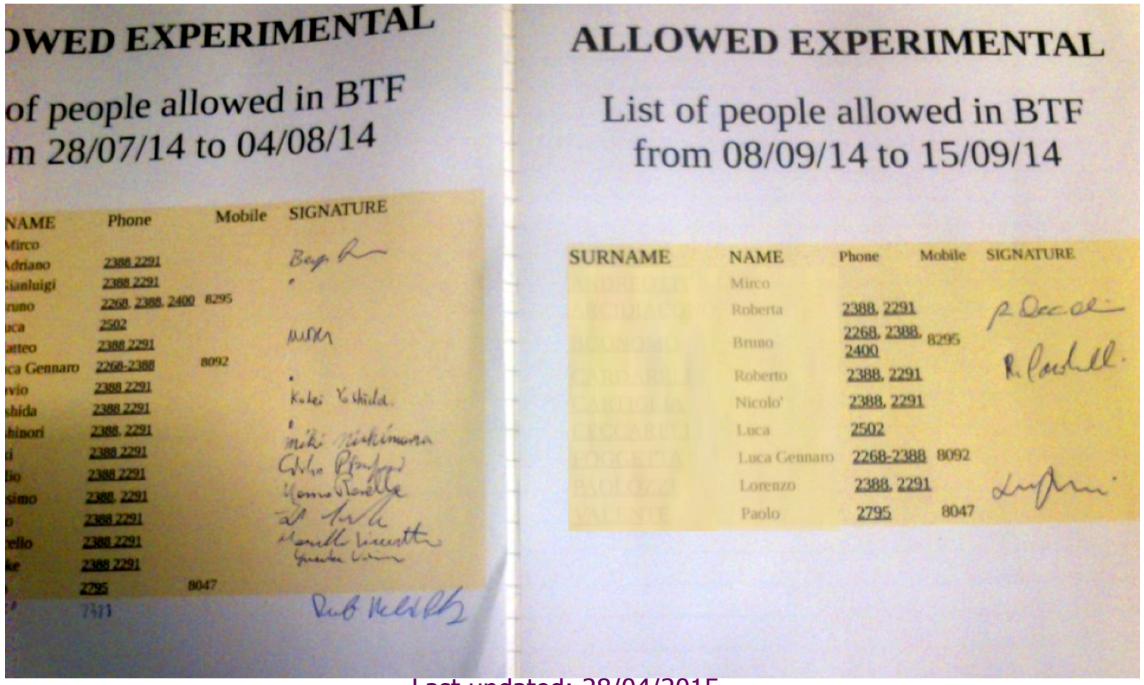
Safety Briefing for Test Beam User

- **Key:**
  - Get the BTF key in the **DAFNE main control room**
    - **Sign the register** every time you **take** and **give back** the key



Safety Briefing for Test Beam User

- Authorized personnel:
  - Only the previously authorized person can access the BTF area
  - **All participants** should attend the safety course
  - **All participants** have to sign the safety register in the BTF control room after the course



Safety Briefing for Test Beam User

General (2):

- **Working alone** is only permitted for data taking during normal working hours.
  - Working **alone** during **night** or **weekend** will be possible only in the main DAΦNE control room. Ask first!
- If you hear anomalous noise (e.g. whistling) or if you notice other **anomalous or unexpected situations** (water floods, fountains, smoke, vapours, sparkles, etc.)
  - Call **5555**
  - Take into account to leave the hall before.
- For more detailed information read the general LNF safety instruction:

Safety Briefing for Test Beam User

Large fires:

- Leave the hall as fast as possible.
- Call **5555**

Small fires:

- Small fires elsewhere in the hall **may be** attacked by you with a **fire extinguisher**.
- Press **emergency off**!
- Keep a distance of **1 meter minimum** from electrical and HV systems!
- For HV systems use **CO2 fire extinguisher**!
- In any case, inform test beam co-ordinators and safety officers

Safety Briefing for Test Beam User

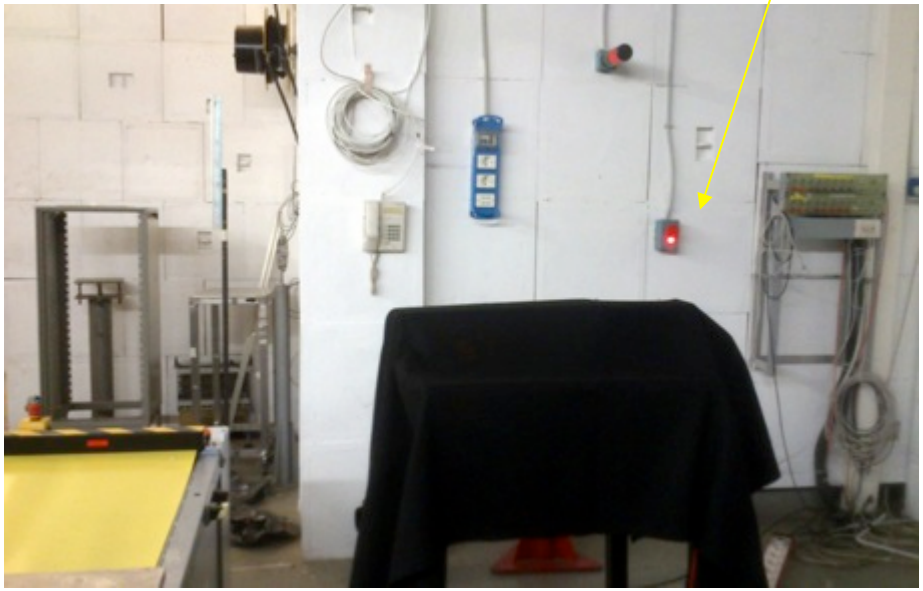
Accident/Emergency:

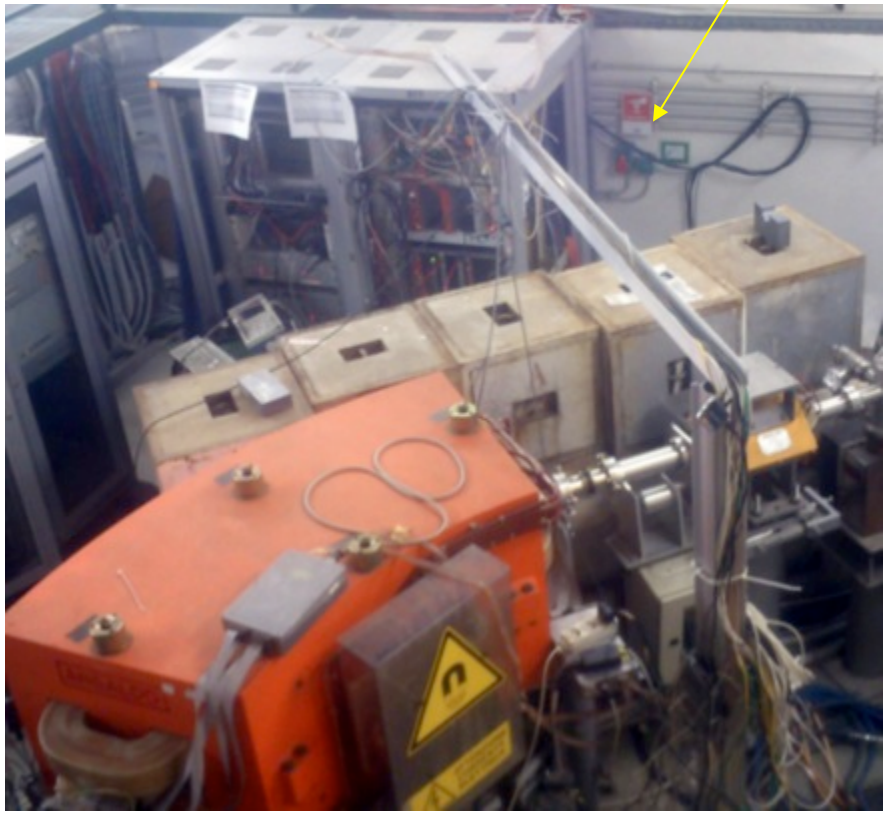
- If a person is seriously injured or ill call **5555**.
  Explain: **Who** you are,
  what happened
  where,
  when and
  if there is danger of life
  Describe the situation briefly: strong bleedings, electrical injury, downfalls, etc..
- Do **not** call directly emergency numbers (fire brigade, ambulance, police, etc.) yourself, **they** will call the fire brigade or ambulance and guide them to the building 54
- Remember your First Aid Training
  - (The next first aid supplies are available in the white locker in the control room).
  - Please inform the test beam staff about any safety relevant incident that occurred.

Safety Briefing for Test Beam User

Emergency off:

- Emergency off buttons in the experimental hall





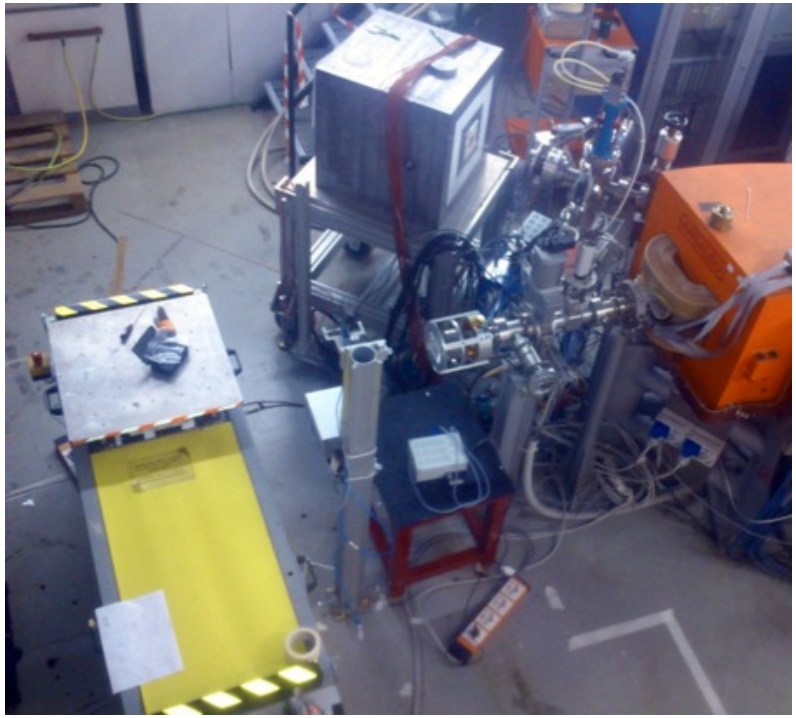
Safety Briefing for Test Beam User

- **Translation/rotation stages and trolley/1:**
  - Be careful! Danger of squeezing!
    (The trolley is authorized up to **200 kg** load)
  - Stay in contact via **phone** during remote operation if people are inside the area!
    - Make sure that the stages **do not touch** other equipment when they move remotely!
    - Be careful with the **cables**, taking into account the full range of possible translation/rotation.

Safety Briefing for Test Beam User

Translation/rotation stages and trolley/2:

- **Always** follow the operations **manual**
- Do **not** exceed the maximum weigth of 200 kg
- **Fix** your stuff **safely** to the metal movable plate of the trolley
- **Check the full range** of trolley movements both in horizontal and vertical directions
  - Check your cabling
  - Check mechanical interference
- Do **not** put any weight on the **yellow band**



Safety Briefing for Test Beam User

Lead/Iron bricks:

- Iron and Lead bricks are heavy.
- Lead is poison
  - Avoid hand-mouth contact
- **Always** wear **gloves** when handling lead!

Safety Briefing for Test Beam User

Ladders

- Working on ladders is quit dangerous!
- Do **NOT** take broken ones!
- Use properly! Right angle! Solid ground! Both feet on the ladder!
  - You are **not** allowed to **climb** on the walls
  - You are **not** allowed to use the stairs going u the **mezzanine**
    - You are **not** allowed to access the **mezzanine**

Safety Briefing for Test Beam User

⊙**Do not access the mezzanine** and **do not climb on the stairs** going to the mezzanine: this area is reserved to DAΦNE and BTF staff

⊙There is **really no reason** for climbing there, isnt't it? So… **don't do it**!

Safety Briefing for Test Beam User

⊙Do **not** enter the **DAΦNE instrumentation room** (window panels delimeted area)

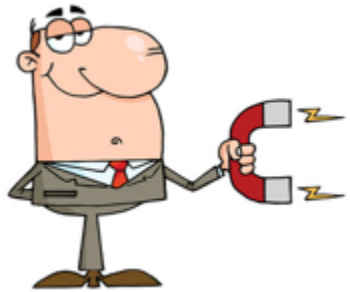
⊙Arrange **proper cablings** also in the control room
⊙Use only the patch panels corresponding to the ones inside the experimental area
⊙Do **not disconnect** cables **not belonging to you** in any case

Safety Briefing for Test Beam User

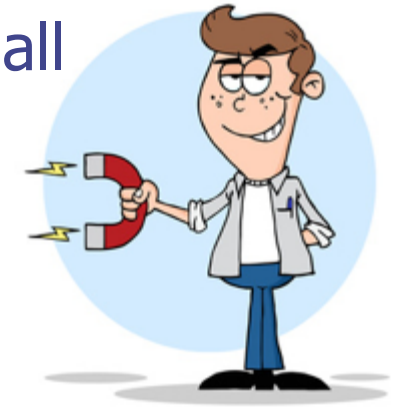
- Always **watch your step**!
  - Avoid cables running on the floor, and, if you need to:
    - Block them with **tape**
    - Avoid the paths to the **search and emergency buttons**
    - Keep the cabling as **clean** as possible
    - **Protect connectors**

Safety Briefing for Test Beam User

Magnetic field:



- **Warning sign!**
- **NO** people with **pacemakers** in the hall with magnets on: switch magnets off (and put power supply in **stand-by**)
- Switch magnets off (and put power supply in **stand-by**), when working with magnetic tools!
  - The forces on tools due to the magnetic field can be very high and you can squeeze parts of your body
- Do NOT touch or enter areas which are signed as **electrical area**
  - In case of problems inform experts and safety officer



Safety Briefing for Test Beam User

Electrical Tools and Equipment

Only **proper** equipment allowed!

- Annual checks for electrical equipment!
- Obey the voltage limits of connectors
- (i.e. No high voltage on standard Lemo connectors!)

- Avoid extensions, multiple plugs or in general unsafe multiple connections
  - In any case, do **not** leave any plug on the **floor**
- Take power **only** from the outlet boxes and not from the **blindos-bar**

Safety Briefing for Test Beam User

High voltage equipment

- Only **proper** equipment allowed!
- **Warning signs**, if needed!
- **NO work** on the HV systems or electrical systems **with the voltage switched on**.

Safety Briefing for Test Beam User

Hazard Materials

- Have to be announced before!
- Have to be handled/marked/stored properly!
- In general, no chemicals/toxic material allowed in the test beam area

- **All radioactive material that comes to LNF has to be reported to the radiation safety group!**

- In case of **high-intensity** operations, activation of materials should be measured **before** manipulation and transport

Safety Briefing for Test Beam User

Gas system

- **Always** agree with BTF staff the use of compressed gas
  - Use the BTF system (external gas fence, dedicated gas lines, pressure reducers, etc.)
  - Be aware of the danger of your gas!
  - Attach gas bottles!
  - Store gas cylinders in the outside gas fence!
  - Use exhaust line!
  - Ask for the adaptation of the gas safety system if needed!
- **NO** mechanical work on a running gas system.
  - Check pressure before breaking a gas line!
- **NO** manipulation of the gas safety system!

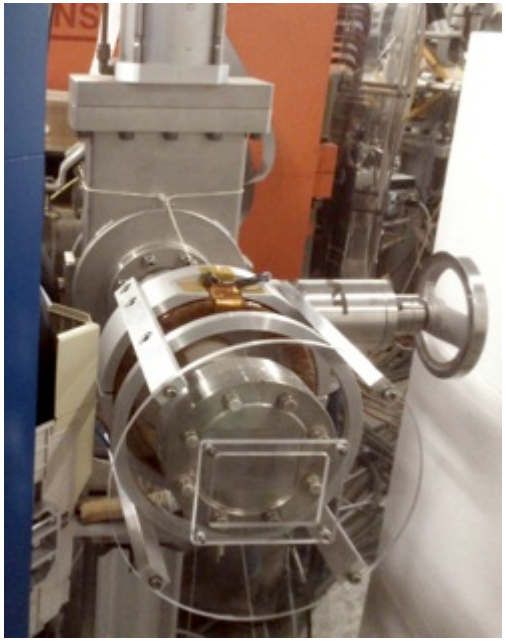
Safety Briefing for Test Beam User

- (Always **agree** the use of compressed gas with the BTF staff in advance)
- Use the proper line for the gas you are going to use
- Do **not abandon** exausted bottles
- Do **not** leave gas fence **open**
- **Always** return the **key** of gas fence
- Do **not** use bottles **not belonging** to you!

Safety Briefing for Test Beam User

Vacuum

Safety Briefing for Test Beam User



- Do **not touch** the beam exit windows
- In general, avoid touching the beam pipe, pumps, valves, and all parts of the vacuum system.

Safety Briefing for Test Beam User

Searching and closing the area

- **Search procedure (Ronda)**
  - **Two persons**:
    - the first one must stand close to the gate, ensuring that **nobody is entering the area**,
    - the second one checking that nobody else is in the area and pushing the two search **buttons in sequence**:
      - **P1** behind the BTF rack (the one with HV mainframe)
      - Shortly after (<30 seconds) **P2** (close to the large green door)

- As soon as the buttons are pushed, the green light starts **flashing**

Safety Briefing for Test Beam User

◎**Close** the gate, **turn the key** clock-wise (once), and remove the key (you will need the other, **smaller key**, attached to it, for the next step)

◎Make sure that the "**RONDA OK**" led in the sinoptic panel close to the gate is **on**, otherwise you have to **repeat the search** correctly

Safety Briefing for Test Beam User

Searching and closing the area

- **Closing the area and enabling beam**
  - Insert the small key in the panel next to the access gate
  - Turn from the free (**libera**) to the blocked position (**bloccata**) turning clock-wise
  - The **green** led (left) on the key panel will stay **on**
  - Ask to **enable beam** to the main control room (**2400**)
  - The green led will go off and the **red led** (right) will go **on**
  - **Only after the red led is lighted, you can switch on the transport dipole magnet (DHSTB01)**

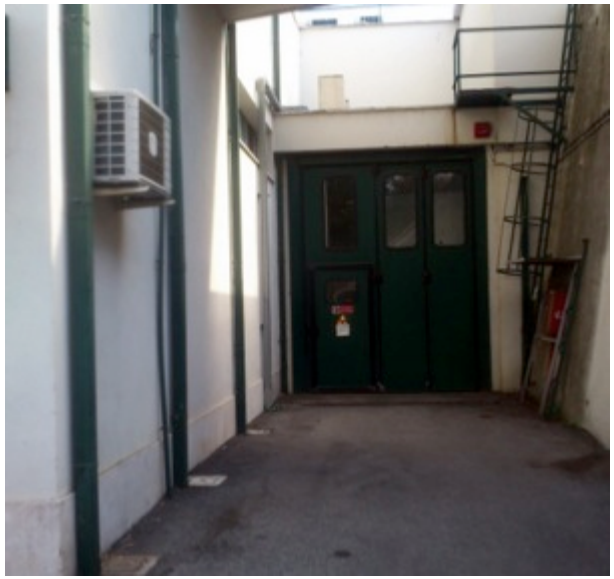
Safety Briefing for Test Beam User

- **Operations**
  - Check the DAΦNE state in the **TV screen**
  - You can get further information from the status web page:
  - **http://www.lnf.infn.it/acceleratori/status/**
  - Follow the instructions of operators from the main control room (**2400**), when required to

Safety Briefing for Test Beam User

Miscellanea

- **Always leave free**:
  - The LINAC tunnel emergency door on the "**chicane**" towards the experimental hall large green door,
  - The **chicane** itself,
  - The access to the **green door**
  - The **external access to the green door**
- Do **not park** in front of the BTF building door

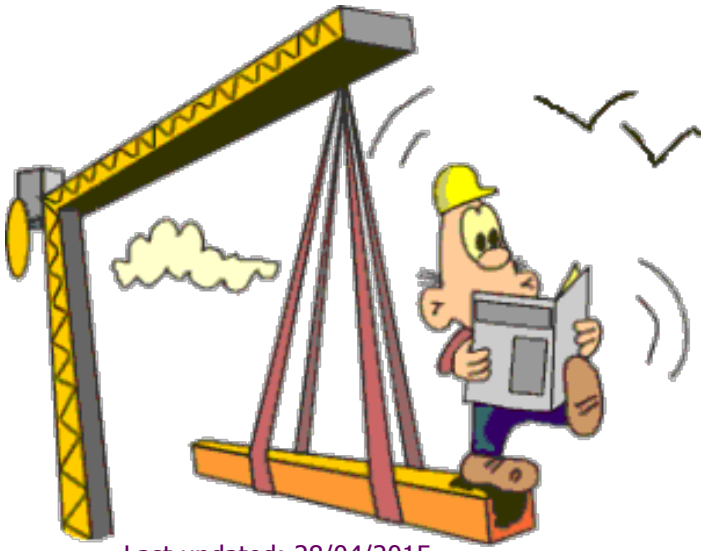


BTF

Last updated: 28/04/2015

Safety Briefing for Test Beam User

- **Further reading and documentation**
  - LNF general safety document
  - BTF safety appendix
  - BTF manuals



Last updated: 28/04/2015