

**BEAD  
-TT**

**Le Bureau enquêtes accidents Défense  
Transport Terrestre**



**BEAD-TT  
Board of investigation  
on military accident  
of land transportation**

**ECRAF Meeting in PARIS  
09/12/2017**



- 1. Mission & organization*
- 2. Overview of investigations  
since 2008*
- 3. Conclusion*



BEAD-TT – Ministerial order March 25<sup>th</sup> 2008

- BEAD-Marine – Ministerial order March 25<sup>th</sup> 2008
- BEAD-Air – Ministerial order November 4<sup>th</sup> 2005



## Initial mission 2008 : (Code of Defense)

*« To conduct technical investigations on accident/incident of land transportation implying specific military vehicles. »*

*BEAD-TT is an independent agency, performing precise investigation on significant accidents.*

*It is charged to determine the probable cause of the accident and to issue safety recommendations aimed at preventing future accidents.*



## Initial mission 2008 : (Code of Defense)

### *Specific vehicles include :*

- *Armoured vehicles (MBT, APC, IFV...)*
- *Lorries, cars, motorcycles*
- *Quads and utility vehicles (bulldozer, carrier, tractor...)*

*= all “camouflage painted “ vehicles*

*Excluded : commercial vehicles (COTS) and coaches.*

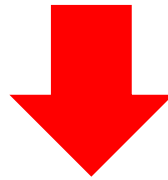
### *It also includes other modes of transportation :*

- Railways
- Waterways (= non salted waters)



## **29<sup>th</sup> june 2008 in Carcassonne :**

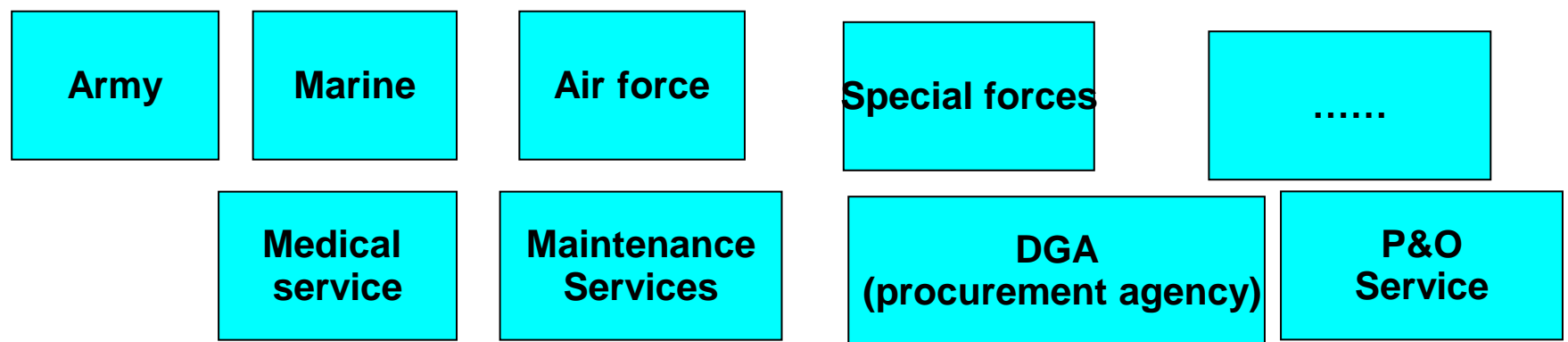
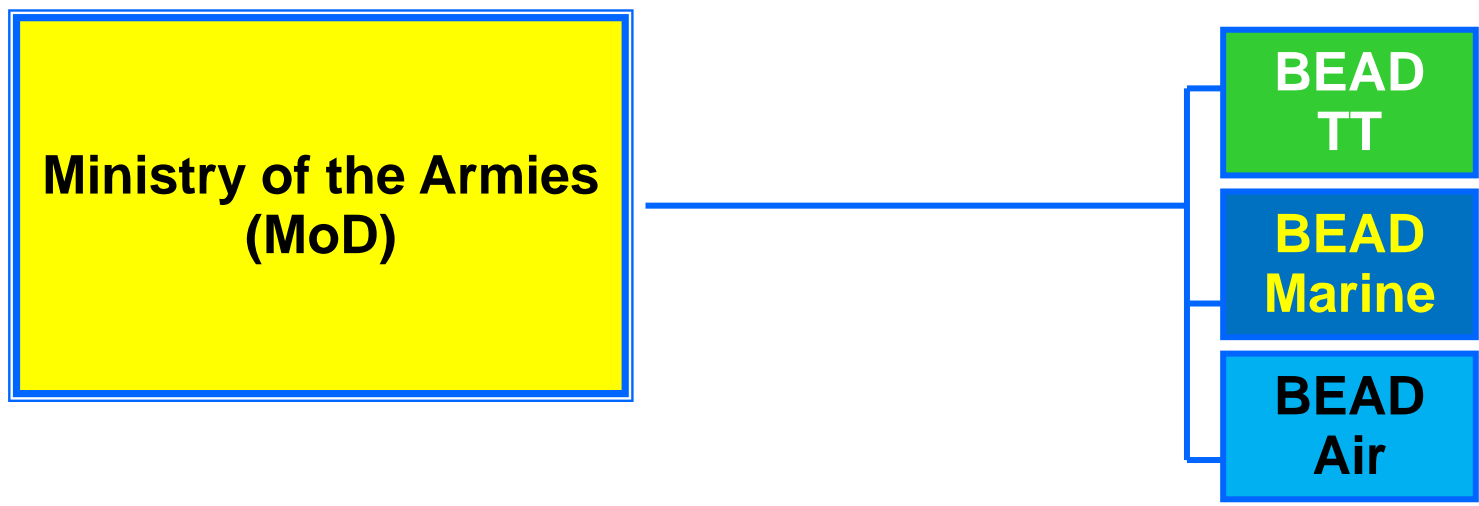
*During a public show, 16 people were wounded by a soldier firing war rounds instead of training ones.*



## **Additional mission :**

*MoD decided in Dec. 2009 to extend the field of responsibility of the BEAD-TT to firing and ammunitions accidents.*

# Missions and organisation





- **Fields of responsibility :**

Serious accident involving all services of MoD :

- **ground**
- **railway**
- **waterway**
- **firing and ammunitions**





- **Area of responsibility :**

  - French territories and theatres of operations

- **Organisation :**

  - 2 officers conducting investigations
  - 1 secretary

- **Available means :**

  - all military experts : procurement (DGA) ; maintenance (SIMMT ; SMITer) ; technical experimentation (STAT)
  - all state experts (medical services, police /gendarmerie, laboratories for criminal expertise).

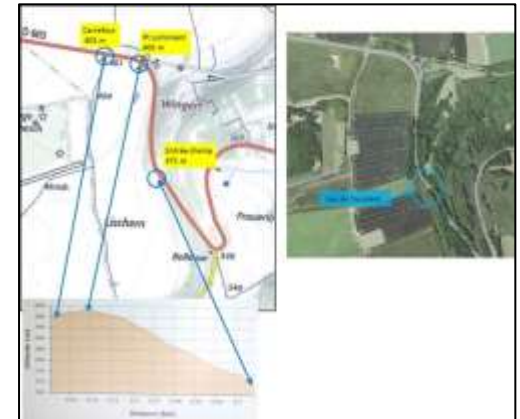


**Find causes of accident and prevent occurrence of a similar one**

**Technical investigation aims at :**

- 1. Collecting useful information ;**
- 2. Analyzing and determining probable circumstances and causes ;**
- 3. Proposing recommendations.**

# Technical investigations



**Human factors :**  
*Qualifications*  
*Experience*  
*Fatigue*  
*Drugs*  
*Rules respect*  
.....

**Equipment :**  
*Dammage*  
*Maintenance*  
*Technical expertise*  
*Same kind of accident*  
.....

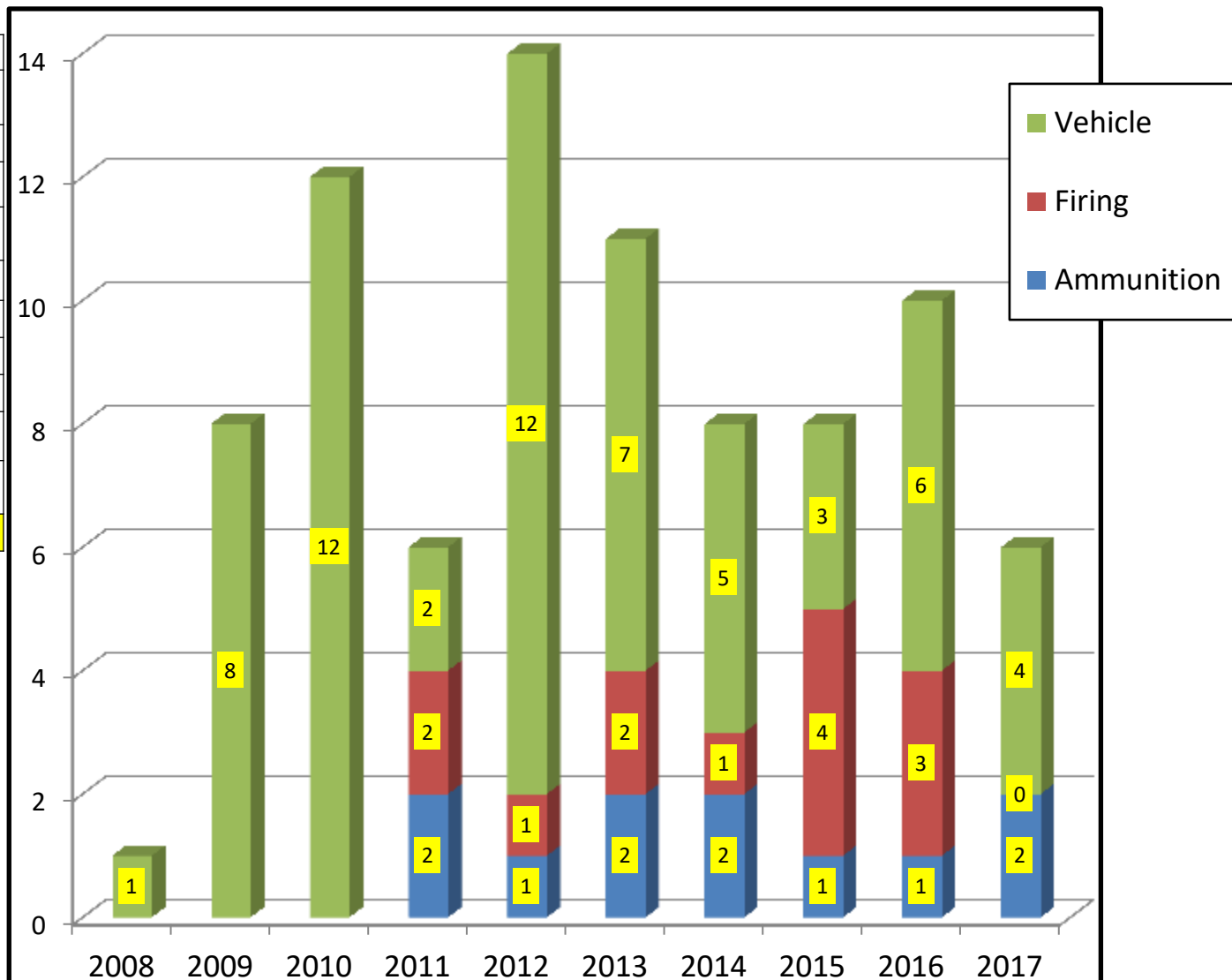
**Environmental factors :**  
*Terrain*  
*Weather*  
*State of the road or track*  
*Road signs*  
.....

**Organization factors :**  
*Laws & rules : Road code, Armies internal procedures, technical guides, users handbook, ops orders, ....*

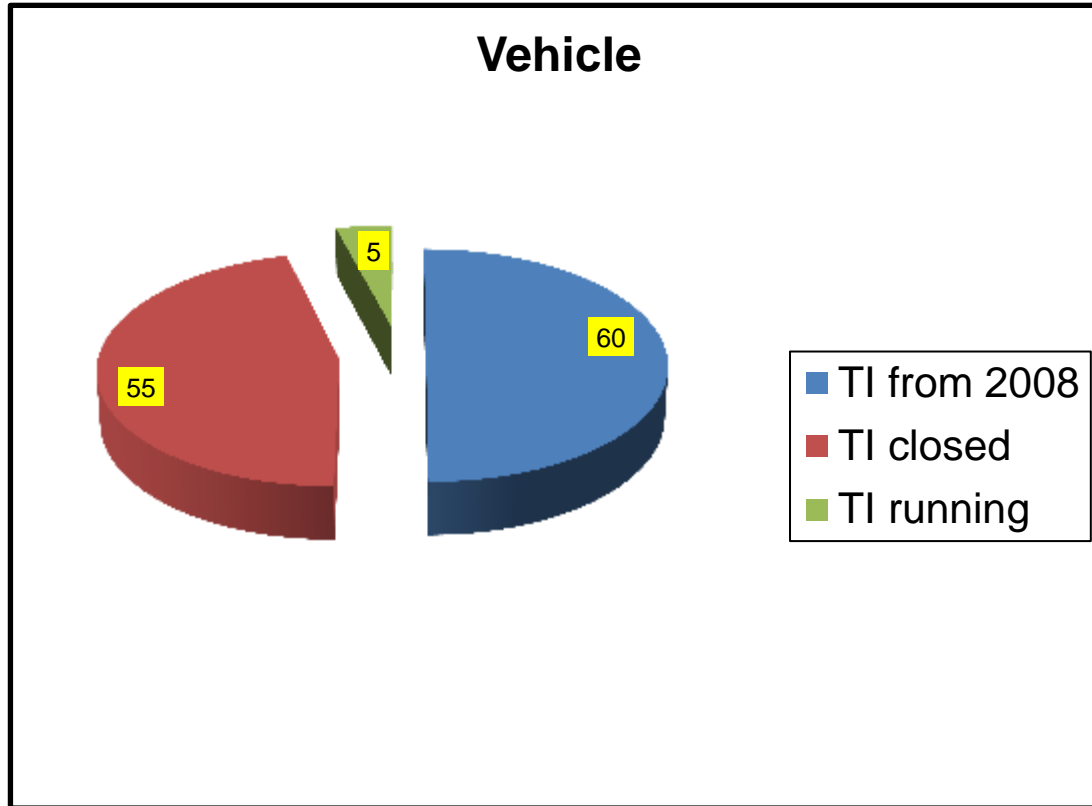
# Investigations since 2008



Year	Ammo	Firing	Vehicle
2008	0	0	1
2009	0	0	8
2010	0	0	12
2011	2	2	2
2012	1	1	12
2013	2	2	7
2014	2	1	5
2015	1	4	3
2016	1	3	6
2017	2	0	4
<b>Total</b>	<b>11</b>	<b>13</b>	<b>60</b>



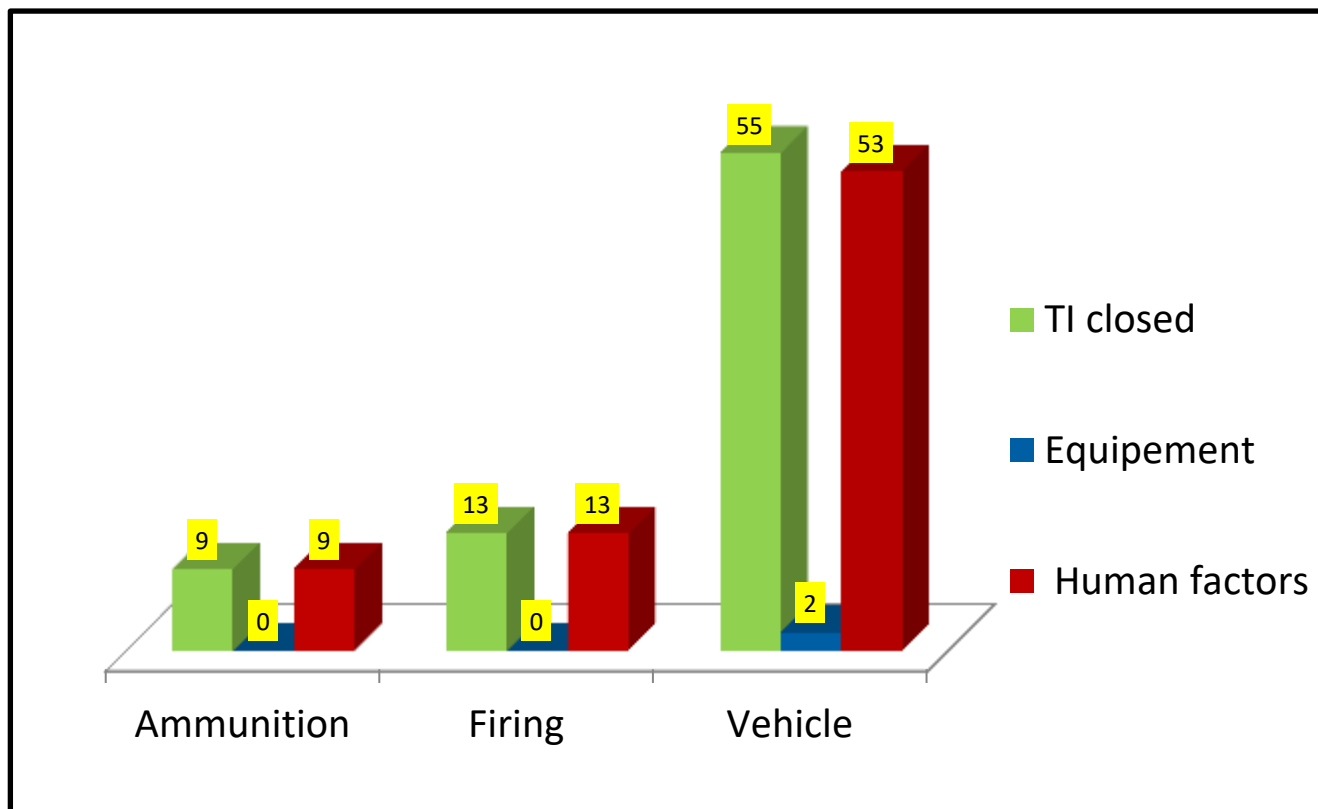
# Investigations since 2008





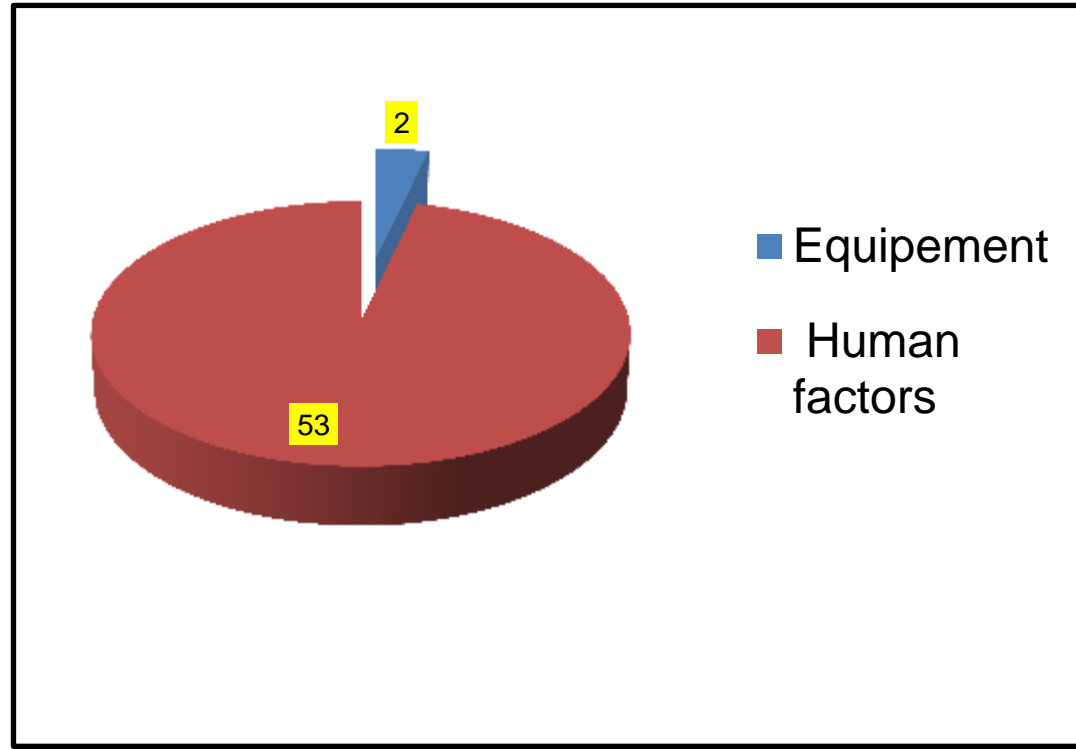
# Investigations since 2008

## Probable cause of accident Human factors VS Equipment





## Probable cause of vehicle accident Human factors VS Equipment



# Probable causes of accident



- Common points
  - Young pilot : < 24 year old and driving-license < 2 years ;
  - Safety belt not attached & opened hatches (ejection of passenger) ;
  - Poor commitment of the chief of board or of the driving instructor.
- Main cause : human factor
  - Lack of driving experience of pilots ;
  - Too much confidence in self competences ;
  - High speed not in line with road and local conditions (it does not mean speed excess) ;
  - No respect of technical and security rules (speed limits on tracks or hatches close).





- Improve initial formation and training of young pilots ;
- driving on tracks and all terrain must be done before going on operations ;
- chiefs aboard and driving instructors must do their job of pilot control ;
- Safety belt not attached : authorization strictly restricted to people on security mission and wearing bullet proof jacket.