



Administration des enquêtes techniques (AET)

Accident Investigation



MINISTÈRE DU DÉVELOPPEMENT DURABLE
ET DES INFRASTRUCTURES
Département des transports

Administration des enquêtes techniques



- Presentation of the Administration
- Legal Framework – Civil Aviation
- Definitions of Accident / Serious incident
- Notification of an occurrence
- Investigation Process
- Final report
- Documentation - Useful Links



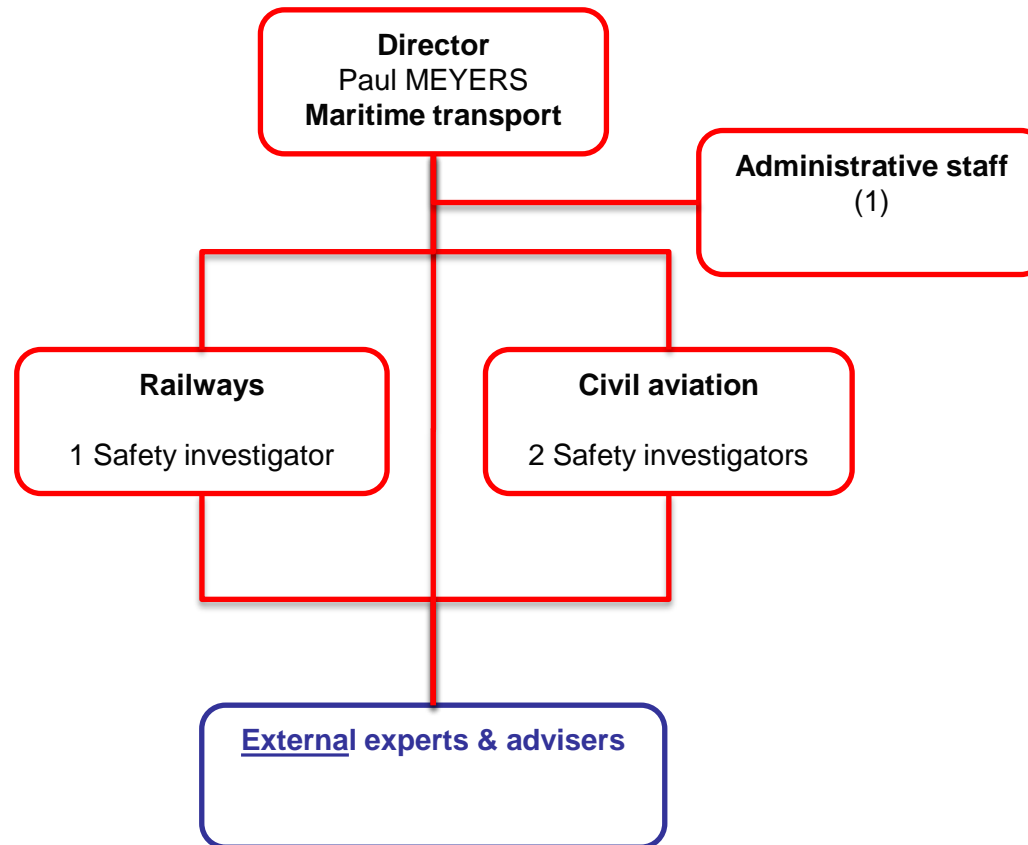
Presentation of the Administration



- Established by national law dated 30 April 2008
- Background: EU Directives in different transport modes
 - Member States (MS) shall ensure that technical investigations are conducted or supervised by permanent and independent body or entity
- Multi-modal structure:
 - Civil aviation
 - Maritime transport
 - Railways



AET: Staff & Structure





➤ AET – Identity card / title

AET Safety investigators



Le titulaire de la présente carte de légitimation est désigné pour exercer la fonction d'enquêteur visée à la loi du 30 avril 2008 portant création de l'Administration des enquêtes techniques

The holder of the present legitimization card is designated to carry out the duty of investigator as referred to in the law of 30 April 2008 creating the Administration of technical investigations

Date d'émission:

Signature du ministre

External experts / advisers

TITRE DE LEGITIMATION
N° AET-EXT/20..._

1. Base légale

- Article 7 de la loi du 30 avril 2008 portant
 - a) création de l'Administration des Enquêtes Techniques
 - b) modification de la loi modifiée du 22 juin 1963 fixant le régime des traitements des fonctionnaires de l'Etat et
 - c) abrogation de la loi du 8 mars 2002 sur les entités d'enquêtes techniques relatives aux accidents et incidents graves survenus dans les domaines de l'aviation civile, des transports maritimes et des chemins de fer;
- Règlement grand-ducal du 21 septembre 2011 définissant les modalités de délivrance, d'utilisation et de retrait des titres de légitimation du personnel de l'Administration des Enquêtes Techniques désigné pour exercer la fonction d'enquêteur, des enquêteurs désignés externes à ladite Administration et des experts dans le cadre des enquêtes techniques relatives aux accidents et aux incidents graves survenus dans le domaine de l'aviation civile, des transports maritimes et du chemin de fer.

2. Description de l'enquête technique

Domaine : ☐ Aviation civile ☐ Chemins de fer ☐ Transport maritime ☐ Transport fluvial

Type d'événement : ☐ Accident ☐ Incident grave ☐ Incident ☐ Autre : _____

Date de l'événement : _____ Lieu de l'événement : _____

Désignation : _____

3. Titulaire

Nom : _____

Prénom(s) : _____

Lieu de naissance : _____

Date de naissance : _____

4. Fonction

☐ Enquêteur désigné (externe à l'Administration des Enquêtes Techniques)

☐ Expert (exerce sa fonction sous l'autorité de l'enquêteur désigné et dans les limites fixées par l'Administration des Enquêtes Techniques)

5. Validité

Le titulaire du présent titre de légitimation est désigné pour exercer la fonction d'enquêteur visée à la loi du 30 avril 2008 portant création de l'Administration des enquêtes techniques.

The holder of the present legitimization title is designated to carry out the duty of investigator as referred to in the law of 30 April 2008 creating the Administration of technical investigations.

Le présent titre de légitimation expire le _____

Il n'est valable que s'il est présenté ensemble avec une pièce d'identité valable.

Luxembourg, le _____

Le Ministre _____



➤ Training for safety investigators

(Engineering/scientific background pre-requisite)

- Multi-modal:
 - Cranfield University (UK): Fundamentals of accident investigation (3 weeks)
- Civil aviation specific:
 - ENCASIA
 - ECCAIRS
 - EUROCONTROL
 - ACC workshops
 - Manufacturers courses (Technify, Turbomeca, etc.)

Presentation of the Administration



LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG

➤ AET on the Web (www.mt.public.lu/transport/AET/)

Start page

The screenshot shows the start page of the AET website. The header includes the Grand-Duché de Luxembourg logo and the text 'Département des transports' and 'Ministère du Développement durable et des Infrastructures'. The main content area is titled 'Administration des Enquêtes Techniques' and contains a 'Constitution' section. The 'Constitution' section states that the AET is based on the law of 30 April 2008 and the law of 22 June 1963. It also mentions that the AET is placed under the tutelage of the Ministry of Transport. The 'Missions' section lists the AET's tasks: investigating accidents in the national airspace, on the national railway network, and on inland waterways. The 'Sous-rubriques' section lists three sub-sections: 'Domaine de l'aviation civile', 'Domaine ferroviaire', and 'Domaine maritime'. The 'Pour en savoir plus...' section lists external links, including the law of 30 April 2008, the law of 22 June 1963, and the law of 21 September 2011.

Civil aviation section

The screenshot shows the civil aviation section of the AET website. The header is the same as the start page. The main content area is titled 'Domaine de l'aviation civile' and contains a 'Conformément à l'article 6 de la loi du 30 avril 2008' section. This section states that the AET is responsible for investigating accidents and determining the causes of the event. It also mentions that the AET is responsible for determining the responsibilities of the parties involved. The 'Pour en savoir plus...' section lists internal documents, including the 'Accident on 6 November 2002 to the Luxair Fokker 27 Mk650 (Revised Final Report - July 2009)', the 'Accident survenu le 6 novembre 2002 au Fokker F27 Mk650 de Luxair (Rapport final révisé - juillet 2009)', the 'FINAL REPORT ON THE ACCIDENT OF 24 SEPTEMBER 2003 IN LUXEMBOURG TO THE LUXAIR EMBRAER E145 REGISTERED LX-LGX', the 'Rapport d'enquête N° 2107 de l'incident grave entre l'avion Pilatus PC-12 LX-LAB et l'avion GALAXY HB-BUT survenu le 7 décembre 2009', the 'REPORT ON AIR ACCIDENT AT HONNINGSVAG AIRPORT VALAN ON 12 JULY 2010 INVOLVING LANCAIR LEGACY 2000 LX-DNV', the 'Final Report - Serious Incident on January 21 2010 between Cargolux and Van on runway 24', the 'Rapport d'enquête de l'incident du 23 juin 2011 à l'aéroport de Montserrat d'un CIRRUS SR20 LX-MPR', the 'Final report IN-043/2011 EMBRAER 145 LX-LGX', and the 'NOTIFICATION OF AN ACCIDENT, SERIOUS INCIDENT OR INCIDENT'. The 'Formats' section lists the available formats for each document: PDF, Word, and Excel.


Presentation of the Administration



LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG

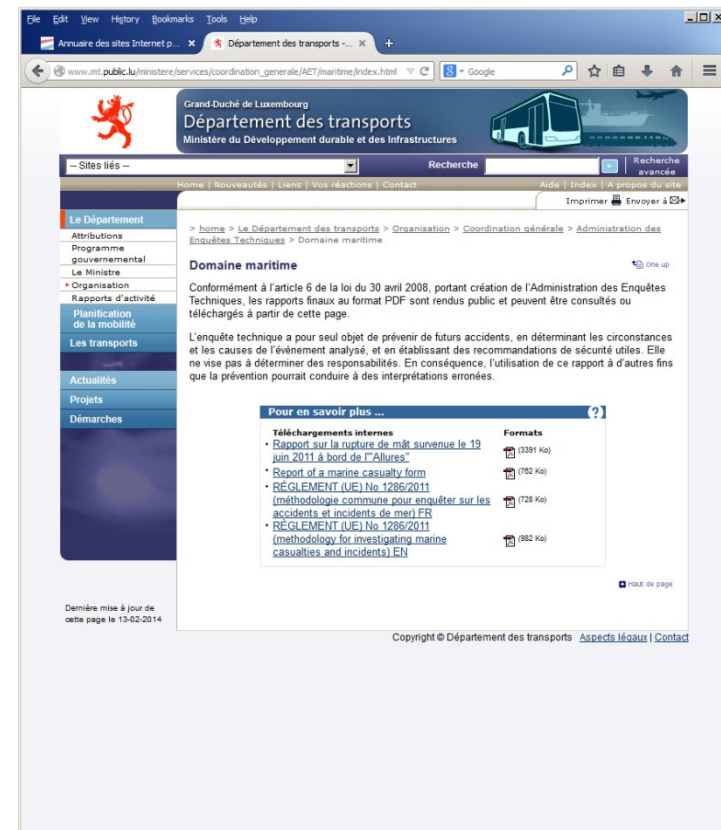
➤ AET on the Web (www.mt.public.lu/transports/AET/)

Railway section



The screenshot shows the 'Domaine ferroviaire' (Railway domain) section of the AET website. The header includes the Luxembourg coat of arms and the text 'Grand-Duché de Luxembourg, Département des transports, Ministère du Développement durable et des Infrastructures'. The left sidebar contains a navigation menu with links to 'Le Département', 'Attributions', 'Programme gouvernemental', 'Le Ministre', 'Organisation', 'Rapports d'activité', 'Planification de la mobilité', 'Les transports', 'Actualités', 'Projets', and 'Démarches'. The main content area is titled 'Domaine ferroviaire' and contains a paragraph explaining the purpose of the technical survey (AET) for railway accidents, aimed at preventing future accidents by analyzing circumstances and causes. Below this, there is a section 'Pour en savoir plus ...' with a list of external links and internal reports. The external links include a regulation from November 2008 and a report from October 2006. The internal reports include a report on a collision from October 2006, dimensions of human factors from 2009, a report on the S.N. des C.F.L. from 2009, and a report on a work accident from February 2009. Each report is accompanied by a download icon and its size in Ko. The footer includes the copyright notice 'Copyright © Département des transports' and links to 'Aspects légaux' and 'Contact'.

Maritime section



The screenshot shows the 'Domaine maritime' (Maritime domain) section of the AET website. The header is identical to the railway section. The left sidebar is also identical. The main content area is titled 'Domaine maritime' and contains a paragraph explaining the purpose of the technical survey (AET) for maritime accidents, aimed at preventing future accidents by analyzing circumstances and causes. Below this, there is a section 'Pour en savoir plus ...' with a list of internal reports and external links. The internal reports include a report on a marine casualty from June 2011, a report on a marine casualty form, a regulation from 2011, and a report on a marine casualty from 2011. Each report is accompanied by a download icon and its size in Ko. The footer includes the copyright notice 'Copyright © Département des transports' and links to 'Aspects légaux' and 'Contact'.



Legal Framework – Civil Aviation



➤ National level:

- Loi du 30 avril 2008 portant création de l'Administration des Enquêtes Techniques ...
- Règlement grand-ducal du 8 juillet 2010 portant des spécifications complémentaires relatives aux accidents et incidents survenus dans le domaine de l'aviation civile

➤ EU:

- REGULATION (EU) No 996/2010 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation...

➤ International:

- ICAO Annex 13 to the Convention on International Civil Aviation: Aircraft Accident and Incident Investigation



- Objectives laid out in Reg (EU) 996/2010:
 - Prevention of future accidents and incidents
 - Without apportioning blame or liability
 - Improve the assistance to the victims of air accidents and their relatives (-> at MS level)
- Tool to address identified safety issues:
 - Recommendations issued to relevant civil aviation stakeholders (regulators, operators, manufacturers, etc.) and published in the Final report



Definitions of Accident / Serious incident



- Classification of the occurrence is main criteria for the authorities to decide whether or not to open a safety investigation
- R996/2010 applies to safety investigations into **accidents** and **serious incidents**
 - which occurred in the territories of the MS
 - involving aircraft registered in a MS or operated by an undertaking established in a MS, which have occurred outside the territories of the MS, when such investigations are not conducted by another State



- For incidents, safety investigation authority may open an investigation, when safety lessons are expected to be drawn
- R996/2010 usually not applicable to aircraft engaged in military, customs, police or similar services, unless determined otherwise by MS
- R996/2010 does not apply to aircraft specified in Annex II to Regulation (EC) No 216/2008



➤ Accident (simplified definition*)

Occurrence associated with the operation of an aircraft in which

- a) a person is fatally or seriously injured
or
- b) the aircraft sustains damage or structural failure
or
- c) the aircraft is missing or is completely
inaccessible

(*complete definition can be found in REGULATION (EU) N° 996/2010)



➤ Serious incident (simplified definition*)

Incident involving circumstances indicating that there was a high probability of an accident and is associated with the operation of an aircraft

- A list of examples of serious incidents is set out in the Annex of R996/2010

(*complete definition can be found in REGULATION (EU) N° 996/2010)



Notification of an occurrence



- R996/2010 Art.9: Obligation to notify accidents and serious incidents
 - **Any person involved** who has knowledge of the occurrence of an accident or serious incident shall notify **without delay** the competent **safety investigation authority of the State of Occurrence** thereof.

Who:	<i>Any person involved</i>
When:	<i>Without delay</i>
To whom:	<i>SIA State of Occurrence</i>



➤ Definition of ‘**person involved**’

- **owner**, a **member of the crew**, the **operator** of the aircraft involved in an accident or serious incident
- any person involved in the maintenance, design, manufacture of that aircraft or in the training of its crew
- any person involved in the provision of air traffic control, flight information or aerodrome services, who have provided services for the aircraft
- staff of the national civil aviation authority
- staff of EASA;

[illegible]



➤ Notes:

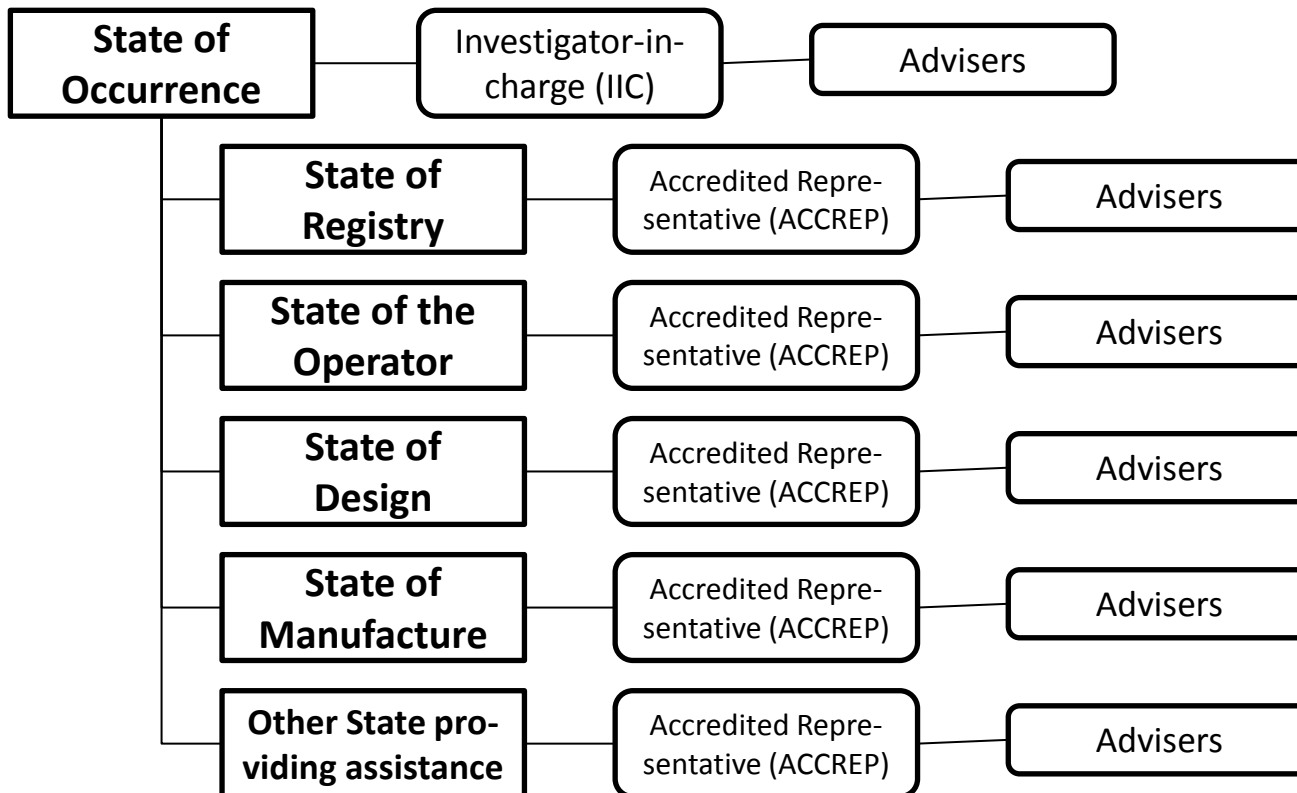
- Any safety report submitted by Email (safety@av.etat.lu) or online (aviationreporting.eu) to DAC is automatically forwarded to AET (info@aet.etat.lu)
- Any accident or serious incident outside of Luxembourg territory, reported to AET, will be forwarded to the SIA of the State of Occurrence



Investigation Process



➤ Who is entitled to participate in a safety investigation? (Occurrence in the territories of the MS*)



(* For an occurrence outside of the territory of any State, the safety investigation shall be conducted by the SIA of the State of Registry)



- Basic steps of a safety investigation
 - Gathering of information
 - Analysis of information
 - Drawing of conclusions
 - Determination of cause(s) and/or contributing factors
 - Making of safety recommendations (when appropriate)
 - Producing the Draft Final report
 - Consultation with involved parties
 - Addressing pertinent comments
 - Publishing of the Final report
 - Follow-up to safety recommendations and safety recommendations database



Final report



- Basic layout of a Final report (ICAO Annex 13)
 - Synopsis
 - Describing briefly relevant information and concluding with a brief résumé of the circumstances leading to the accident
 - Heading 1 – Factual information
 - Presenting the data and evidence gathered in the course of the investigation and relevant to the safety investigation
 - Heading 2 – Analysis
 - Analyzing safety related issues on the basis of the data presented in Heading 1
 - Heading 3 – Conclusions
 - Presenting the conclusions drawn from the analysis in Heading 2
 - Heading 4 – Safety recommendations
 - Addressing and justifying safety recommendations aimed at preventing a reoccurrence of a similar event
 - Appendices
 - Include as appropriate (Excerpts of Manuals, Procedures, Graphs, Tests, etc.)



- Each safety investigation shall be concluded with a report in a form appropriate to the type and seriousness of the accident or serious incident
- The report shall protect the anonymity of any individual involved in the accident or serious incident
- Before publication of the final report, the SIA shall solicit comments from the involved parties
- Involved parties are bound by applicable rules of professional secrecy with regard to the contents of the consultation
- A safety recommendation shall in no case create a presumption of blame or liability for an accident, serious incident or incident.



Documentation – Useful Links



- REGULATION (EU) No 996/2010 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation...
 - <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010R0996&from=EN>
- Loi du 30 avril 2008 portant création de l'Administration des Enquêtes Techniques ...
 - <http://www.legilux.public.lu/leg/a/archives/2008/0065/a065.pdf#page=2>
- Règlement grand-ducal du 8 juillet 2010 portant des spécifications complémentaires relatives aux accidents et incidents survenus dans le domaine de l'aviation civile
 - <http://www.legilux.public.lu/leg/a/archives/2010/0114/a114.pdf#page=2>



- Accident/Serious incident Notification Form
 - http://www.mt.public.lu/ministere/services/coordination_generale/AET/aviation/pdf_notif_accident.pdf
- Online Occurrence Reporting
 - http://www.aviationreporting.eu/index.php?id=190&no_cache=1
- Administration des enquêtes techniques (AET)
 - <http://www.mt.public.lu/transports/AET/>
- Direction de l'aviation civile (DAC)
 - <http://www.dac.public.lu>



Any Questions?

Thank you for your attention!