A Review of European Institutional Approaches to Independent Accident Investigation

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Industrialized democracies across the world have increasingly developed an infrastructure for independent transportation-related accident investigations that has been effective in improving safety standards. This paper considers three institutional approaches to transportation safety boards that have emerged in Europe over the past four decades – separate boards of investigation for individual modes of transport; multi-modal boards responsible for investigations of all transportation accidents; and, most recently, multi-sectoral initiatives that extend institutional frameworks of independent investigation beyond transportation to other sectors. While there are common international\(^2\) and regional\(^3\) obligations to accident investigations, the countries have fulfilled those obligations through different approaches. We present several European case studies as examples of the various accident board types, and pay especially close attention to a comparison of two multi-sectoral safety boards, in the Netherlands and Sweden. Our goal is to identify trends and distil policy lessons that might assist in broadening the jurisdiction of independent safety boards in light of the recent European experience. We begin with a brief discussion of accident investigations in the transport sector that first resulted in the creation of independent safety boards – air travel. Next, we discuss each of the three prevalent investigation modes, and finally conclude with potential implications for any expansion of the permanent safety investigatory board beyond transportation, to other sectors.

Independent Accident Investigations in the Transportation Sector – Air Safety as Catalyst

Investigations of accidents have a long tradition in the transportation sector, especially with regard to aviation, where any single accident can shape public perception of the whole

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\(^{2}\) For example, the International Maritime Organization (IMO) Code for the Investigation of Marine Casualties and Incidents.

\(^{3}\) For example, the EU Railway Safety Directive (2004/49/EC) has rules on harmonization of railway accident investigations.
industry’s risk. As early as 1944, with the establishment of the International Civil Aviation Organization (ICAO) to promote commercial aviation, the international community fashioned an agreement among member countries on rules and standards for accident investigations. A central feature of the agreement was the strict separation of technical investigations from judicial inquiries. For the subsequent seventy years, this clear delineation between learning from accidents to prevent future recurrence and the attribution of blame in specific cases has been conducive to the rapid identification and adoption of safety improvement measures. With the rise of nationalized airlines, governments and regulatory agencies became interested parties in the investigations. Hence, ICAO further stipulated that the investigations be conducted independently, to avoid conflicts of interest and foster dispassionate analysis.

Many countries have since institutionalized independent aviation accident investigation bodies. Stoop and Kahan (2005) note that airline safety performance has improved by a factor of 200 since 1945, making aviation the safest mode of travel. In the hopes of replicating aviation’s success, some countries have also set up independent accident investigation bodies for other modes of transportation. In several countries, such as the United Kingdom, France, and Germany, authorities have chosen to set up separate investigation bodies for each mode of transport – i.e., one for the maritime industry, one for rail, one for the road industry, along with the one for aviation. Most countries opted for a multi-modal approach, putting investigation of all transport accidents under a single institution. By contrast, three nations – the Netherlands, Sweden, and Finland – created investigations boards with still wider jurisdiction.

**Single-Modal Investigation Boards**

The United Kingdom initially set up Accident Investigation branches (AIB) for each of the transport modes in response to grave accidents and has since maintained the single-modal approach. The Air AIB (AAIB) was first established within the British Army during World War I. Following World War II, the AAIB was transferred to the Ministry of Civil Aviation. Following the Herald of Free Enterprise ferry disaster in 1987, the government built on this example, establishing the Marine AIB (MAIB) two years later. Similarly, the Rail AIB (RAIB) was set up in 2005 after the 1999 Ladbroke Grove rail accident, and a subsequent commission of inquiry (COI) led by Lord Cullen. One of Cullen’s key recommendations was the establishment of a Rail AIB separate from the government’s regulatory functions, modelled along that of the aviation industry.

During the Parliamentary debate on the bill to create an investigatory board for rail, some Members of Parliament raised the idea of a multi-modal transport investigation agency that would combine all three transport branches into a single agency. The proposal, however, was rejected by the Secretary of State for Transport out of a concern for diluted expertise. The Transport Secretary reported that officials in the existing AAIB and MAIB believed that their expertise might be weakened as a result of a merger. He added that as the existing air and marine branches seemed to be highly successful, it was best to leave them alone.
In France, civil aviation incidents are investigated by the Bureau of Enquiry and Analysis for Civil Aviation Safety (Bureau d’Enquêtes et d’Analyses pour la sécurité de l’aviation civile, BEA), an agency established in 1946. A similar agency, the Maritime Bureau of Enquiry and Analysis (Bureau d’Enquêtes sur les Événements de Mer, BEAmer) was set up in 1997 for investigations into maritime incidents.

In the late twentieth-century, major terrestrial accidents in France (e.g. 1988 Paris-Gare de Lyon rail accident, 1999 Mont Blanc tunnel fire) were investigated by ad hoc commissions. The experience of these commissions showed the need for highly competent investigators with clear legal powers to quickly be on site. Safety officials accordingly made a case for a permanent specialized investigation agency, similar to those for the aviation and maritime sectors. The government responded by creating the Land Transport Accident Investigation Bureau (Bureau d’Enquêtes sur les Accidents de Transport Terrestre, BEA-TT) in 2004.

A single-modal approach has worked well for these countries. The UK’s AAIB has a worldwide reputation for excellence in its field (Jupp J., 2005). A 2002 audit of the AAIB by ICAO confirmed its respected position, noting no major learning points from practices in other countries. In a recent interview, Joseph Sedor, the National Transportation Safety Board (NTSB)’s Chief of Major Aviation Investigations, similarly stressed the French BEA’s strong reputation. Notwithstanding the success of their AIBs, it is possible that these countries have missed out on synergies of combined AIBs covering multiple modes. The RAIB chief inspector in 2012 acknowledged that in its new location next to the AAIB, “the clear purpose of this is that we have the advantage of working together - we can share case history, and we can share resources.”

**Multi-Modal Investigation Boards**

Such synergies were pursued by the United States in pioneering the multi-modal institutional approach with the NTSB in 1967. The NTSB was established as an investigation agency with oversight of accidents in all forms of transportation that reach across state lines, and was part of a wider effort to create a national Department of Transportation that could better coordinate the sometimes conflicting regulatory and promotional efforts of the transportation industry. The NTSB has since been widely viewed to be highly successful, with the federal government and other stake-holders consistently adopting more than 80 percent of its recommendations. Free and Preston (2014) provide a fuller account of the NTSB’s establishment and its achievements.

NTSB’s approach has been emulated in other parts of the world, including Europe. Norway, Belgium, Denmark, Hungary and Latvia have all created multi-modal investigation boards. The establishment of Norway’s Accident Investigation Board (AIBN) suggests the sort of considerations behind the application of this approach to transportation accident investigation.
While the NTSB was created in a single act, Norway’s AIBN arrived at its current scope through a long period of deliberation and incremental accretion of modes. Jacobsson (2011) provides an account of the AIBN’s evolution. The initial step was the setting up of an AIB for civil aviation in 1989, precipitated by a major flight accident. This replaced the prior practice of setting up ad hoc commissions to investigate fatal aviation accidents. Soon after, the Ministry of Transport and Communications had considered the option of a commission that investigated all major accidents. As was the case in the UK, the Norwegian Civil Aviation Administration was not supportive, and the idea was eventually dropped. However, following a major rail accident in 2000, the government responded by giving AIBN jurisdiction over rail incidents and launching a study into AIBN’s further expansion. The report recommended an agency to investigate all transportation accidents, on the basis of potential synergies. This paved the way for AIBN’s subsequent inclusion of accidents in the road and maritime industries in 2005 and 2008, respectively.

AIBN recognized that realizing the synergies required conscious management effort. The agency’s core staff had a long experience in aviation. While this was a good basis for analyzing accidents, the agency required additional expertise related to other transportation modes, which required an increase in staff from 15 to 40. To ensure a coherent organization, AIBN held internal seminars on group projects across department so that employees became familiar with available resources. Through training across modes, AIBN has been able to prepare many of its employees to participate in investigations of the other transport branches.

Multi-Sectoral Investigation Boards

Beyond consolidating transportation accident investigations, three European countries, Finland, Sweden and the Netherlands, have expanded the scopes of the investigation boards to include accidents in other sectors such as healthcare, defense, manufacturing and construction. Largely because of the availability of sources in English, we engaged in especially detailed research into the Swedish and Dutch multi-sectoral boards. Although these two institutions have similar jurisdictions, they have exercised their authority quite differently.

The Swedish Accident Investigation Board (Statens haverikommission, SHK)

In Sweden, the Parliament established an initial safety board in 1957 with the sole focus on military aviation. By the 1970s, a combination of greater technological sophistication and several accidents involving passenger airlines led the Accident Board to expand its charge to include civilian incidents to “prevent reoccurrence of similar events” and to reinforce public confidence in the air sector (Jakobsson, 2011).

Discussions over the creation of a Swedish accident board for maritime incidents began as early as 1958, with Parliament creating the formal structure for such a board in 1963. The
government, however, did not actually appoint permanent members to this entity before the mid-1970s, perhaps because of resistance by industry. Even after the initial organization of the maritime board, its permanency remained in some doubt.

The Swedish politics of safety investigation would shift as a result of several high profile accidents that occurred in 1977 and 1978, including a large landslide and several restaurant and hotel fires. These events heightened public concerns over risks, generating a broad consensus around the advisability of an investigatory board with a broader mandate. The Swedish Parliament accordingly drew up plans for a State Catastrophe Board, which would ideally facilitate a “transfer of experience” from investigations of transportation-related accidents to investigations of industrial or construction-related accidents. The idea was to achieve a better understanding of the ways in which materials, construction and human interactions relate to one another in an incident to minimize mortal and financial damages.

Initially, the government intended the Swedish Accident Investigation Board, the Swedish Maritime Accident Investigation Board, and the State Catastrophe Board, to work side by side, and yet in strict competition. Each institution would work to demonstrate how it filled a specific niche. In 1986, fiscal pressures led Parliament to consider the possibility of combining these agencies to achieve cost savings. The resultant report found that the Swedish Maritime Accident Investigation was far too slow in producing its reports and would benefit from a merger with the agency concerned with aviation. The report further found that the procedures, research, and recommendations of the State Catastrophe Board were almost identical to those of the Swedish Accident Investigation Board. Despite the opportunities for savings and operational improvements through consolidation, the various accident investigation boards strongly preferred to remain separate.

Several accidents in 1986, however, accelerated the pace towards merger despite the boards’ preference for autonomy. These included the Prime Minister’s assassination, a radioactive pollution spill, and a school bus brake failure that resulted in several deaths. Parliament eventually passed a proposal to merge the accident investigatory boards for “security reasons” (Jakobsson, 2011). This action was predicated on the assumption that “uniformity in accident investigation methods” from a merger would lead to an improved safety culture. While the Parliament acknowledged the agencies’ concerns, it believed that the modal and agency differences would not be too large to overcome.

The resulting merger occurred in 1990 and remains in effect today. The resultant Statens haverikommission, or Swedish Accident Investigation Board (SHK) would take over all assignments. Drawing its organizational structure from the Multi-Modal model championed by the NTSB, SHK encompasses more than just transportation accidents. Differing from the NTSB, the SHK is charged to respond to accidents on the basis of their seriousness measured either by loss of life or resulting damages (Pollack, 1998).

In light of this broad mandate, the SHK relies heavily on external experts when it treads outside its traditional areas of competence. These specialists work alongside SHK investigators to assist in building the technical expertise for an effective investigation (Stoop and Roed-Larsen,
2009). This allows the SHK to comprehensively examine a wide range of incidents despite a relatively small number of permanent employees (Pollack, 1998). Currently the SHK employs close to 40 permanent employees, of which only 24 are investigators.

Limited English-language sources do not allow assessment of the SHK’s effectiveness in terms of the proportion of its recommendations that have been implemented by the Swedish government or pivotal industries. Nonetheless, the SHK’s own documentation does permit analysis of the extent to which the agency has branched out beyond transportation. We categorized all of the incident reports of the SHK that have been published online. Of the 206 reports published from 1996 to 2012, 79% were aviation accidents, 14% took place in the maritime arena, only 1% concerned rail incidents, and just 6% involved “other” events. This catchall category included a discotheque fire, but also a collision between train wagons and a tanker truck, a bus fire, and an accident involving a para-glider, all incidents also involving transportation in some way.

Thus despite the holistic charge of the SHK, investigation into non-transportation incidents remains exceedingly rare. This lack of emphasis on “other” incidents is reflected in the organization’s allocation of resources. Only one staff member has the responsibility for “fire, road, rescue and other accidents”. In reviewing the SHK’s budgets for the years 2011-2013, the funds set aside for “other” incidents also paled in comparison to those allocated to aviation. It is possible that there have been significantly fewer incidents to investigate in the “other” category. But since 1990, the Swedes have continued to use Commissions of Inquiry to investigate non-transportation accidents. The SHK, then, has not delivered on the Parliament’s charge to extend investigations beyond transportation, choosing instead to focus resolutely on the transportation sector. 

**The Dutch Safety Board (DSB)**

The Netherlands has a long history of investigation agencies for transportation accidents (e.g. the Inland Waterways Disaster Committee in 1931, the Civil Aviation Board in 1937 and the Railway Accidents Inquiry Board in 1956). Following two serious accidents (aviation and rail) in 1992, the government chose to merge these agencies in 1999, with the formation of the Transport Safety Board. Beyond the modal integration, Parliament also increased the investigation agency’s independence and sought to focus its work on safety improvement. Parliament simultaneously clarified the separation of accident investigation from the judicial process.

Precipitated by a fireworks factory disaster and a café fire in 2000, the government later moved to establish a permanent investigatory board to carry out independent investigations in all sectors. In doing so they decided against relying on ad hoc commissions to investigate non-transportation major accidents. The DSB was founded in 2005, with purview over investigations into incidents (including disasters, accidents and near-accidents) in all policy sectors, including the fields of transportation, defense, industry, health care, the environment,
and crisis management.

In considering proposals to create a more all-encompassing DSB, the Dutch Parliament focused especially on mechanisms of institutional design that would foster independence. It was eventually established as an autonomous organization, answerable only to Parliament and so not subordinate to any minister. The DSB also possesses freedom in the selection of events to investigate (apart from the aviation incidents that are subject to international obligations to investigate).

The law provides DSB with comprehensive investigative powers, including authorization to enter places and demand for information and cooperation in investigations. Underscoring the importance of keeping its investigation separate from the judicial process, DBS received unambiguous authority to withhold information from the judicial authorities. Indeed, even if DSB uncovers an offense in its investigations, it is not allowed to report it, with the exception of egregious crimes like murder and terrorism. The DSB has about seventy-five full time staff, including approximately forty investigators. As DSB is unable to maintain internal expertise in all sectors, it is legally empowered to call on the various Dutch Ministries for the deployment of experts to assist in investigations.

**Assessment of Dutch Safety Board’s Performance**

Although more than 80% of DSB’s investigations deal with aviation incidents, there have been more than 40 investigations of accidents in non-transport sectors including healthcare (e.g. Salmonella in Smoked Salmon, Oct 2012), crisis management (e.g. Safety of Asylum Seekers, Apr 2014), construction (e.g. Collapse of Stadium Roof, Jul 2011), defense (e.g. Parachuting accidents) and industry (e.g. Fatal accident in Manure silo, Feb 2014).

A Belgian study (Navamar, 2011) on the DSB assessed its reports as consistently attaining a high quality. The study also concluded that the Dutch Board did its work efficiently, since dispersed investigations by multiple bodies would have required more resources. The DBS also appears to have achieved considerable domestic legitimacy. The Dutch government has implemented the vast majority of its recommendations, at least in part, even though, like the NTSB, DSB has no power to enforce compliance with its recommendations.

Media accounts of the DSB, moreover, usually treat it as an authoritative source. One can see this implicit respect for DSB judgments in contexts as various as IT infrastructure security (IDG News, 2012) and food safety (the Dutch Parliament, 2013). For example, Radio Netherlands reported that an inquiry by DSB found that stomach reduction surgeries in a hospital “involved excessive risk levels” and that the hospital discontinued the procedure following the board’s

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4 For example, in the investigation into the 2009 crash of a Turkish airliner, DBS refused the Attorney General access to the black box data, on the grounds that its investigation would be hampered by the threat of legal action.
recommendations (Radio Netherlands, 2012). It appears that the level of confidence in the DSB’s independence is high, given that the DSB has not shied from pointing out shortcomings of the government.

DSB investigation reports regularly received respectful citations in trade publications, especially for those in the aviation sector, as well as academic papers. For example, the trade journal Flight International (2009) reported on DSB’s investigation into an accident of the Royal Netherlands Air Force Apache helicopter, and that in response to the findings, the air force amended some of its procedures and was working to identify other improvements. In Safety Science, DSB’s report on a crane accident was largely reproduced in an article by Swuste (2013). DSB’s investigations in non-traditional areas such as food safety also appear to be highly regarded by scholars (van den Akker and Lange, 2014).

Although the DSB is the newest of the multi-sectoral investigation agencies, it has been held up as a model by countries considering the approach. When the Polish government tasked the Gdansk University of Technology (GUT) to consider the model of integrated transport safety management for Poland, GUT researchers turned to the experiences of DSB, along with NSTB, in identifying key requirements of a proposed transport safety board (Zukowska, Michalski and Krystek, 2010). Similarly, in a study into the establishment of an independent investigation board for Belgium commissioned by the Ministry of the Interior, the Leuven Institute of Criminology held up the DSB as a model institution.

Lessons from Review

Given the analysis of the three different approaches to transportation safety boards, we have identified several key points to examine further. While we do not attempt to draw conclusions as to which approach is more effective than the others, we do note that there are several key lessons that apply across approaches that either boost effectiveness or limit successes. These lessons are:

- the strengths of permanent investigation agencies over ad hoc commissions;
- the impact of scale and scope in defining the agency; and
- the importance of strong leaders to champion the agency and lead it to success.

Intriguingly, governments frequently have turned to permanent investigation agencies either to address the inadequacies of ad hoc commissions or to meet the recommendations of these commissions. This pattern underscores the inherent structural advantages of a standing investigation agency over commissions, summarized by Stoop (2004) as:

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5 The Swedish Accidents Investigation Board was formed in 1990, and Finland’s Safety Investigation Authority was formed in 1996.
**Greater Independence.** As commission members are assembled by the government following a given accident, they can be perceived to be less independent than an investigation agency. Furthermore, it is likely that some commission members will need to be drawn from the regulatory agencies that have responsibilities over safety regulations and compliance. Even if a commission carries out its work with full integrity and objectivity, the perception of conflicting interests may compromise the credibility of its findings. An investigation agency also has the benefit of an established legal framework to safeguard its independence.

**Efficiency and Legitimacy.** After an accident, a one-off commission of inquiry takes time to hire staff and define its work scope and relationships with other investigating agencies. By the time a commission is established, accident sites may well have been cleared, compelling the commission to rely on secondary investigation reports. The investigation agency’s established investigation powers and methodology, and trained investigators also improve public confidence in the findings.

**Improved Follow Up.** Commissions of inquiry typically disband after issuing a report, and so cannot monitor the impact of their recommendations on policy-making. Furthermore, investigation boards are able to study series of incidents to uncover more systemic weaknesses.

Interviews with senior officials of the NTSB, conducted in June 2014, echoed these points. These officials stressed that commissions, no matter how quickly they manage to get up and running, will likely lack the agency relationships, understanding of how to conduct a proper investigation, and expertise to deal with a chaotic accident. Additionally, one-off commissions lack the ability to cultivate institutional memories, bureaucratic capacity, and public confidence. Dr Joseph Kolly, Director of NTSB’s Office of Research and Engineering, noted that “they (commissions) do not have the staying power to do the necessary follow-up that would need to occur for years and years beyond. You can identify the problem, you can make the recommendations, but it is not going to get solved at the end of that, so there needs to be a lot of follow up, and you need to have that knowledge base still hanging together to take it all the way through and even beyond.” Joseph Sedor noted that in his encounters with commissions used in foreign accidents, “the strengths are just not there”. These commissions lack “relationships” with other key governmental players; they cannot draw on a clear “investigation structure”; they are “not as familiar with the process” and so struggle “to deal with the chaos” surrounding an accident investigation. As a result, commission-based inquiries “take longer” and rarely develop a sensible strategy of public outreach.

Scale and scope are additional important parameters that can determine the success of an investigation agency. We note that the three largest EU economies, the UK, France and Germany, have maintained the single-modal approach. However, for smaller countries like Latvia, the low frequency of major accidents may result in single-modal agencies being too poorly resourced to maintain high quality investigations. While a railway accident may be
completely different from one in aviation, the methods to respond to an accident and how to systematically learn from and create recommendations for change are consistent throughout transport modes and potentially applicable to events in other sectors. Notably, in order to increase the range of investigations with relatively small agencies, both SHK and DSB adopted the NTSB “party system”. The agencies’ staffs of investigation and accident specialists are teamed with an assembly of experts for each specific investigation. van Vollenhoven (2001) and Stoop and Roed-Larsen (2009) have asserted that the international and regulatory trend is to move from single-modal to multi-modal, and possibly multi-sectoral, investigation agencies since investigations always follow the same procedures, whatever the sector of the accident. Furthermore, they observe that no multi-modal investigation agency has ever split into separate boards.

However, the potential synergies of having an agency span several categories of accidents do not arise automatically. As noted in the Swedish case, simply housing the separate sectors into the same office does not create a multi-modal agency. Institutions have to intentionally foster cross-team collaboration, exchange of knowledge, and the cultivation of expert networks if they wish to expand their investigative authority. This point raises the centrality of leadership within more expansive investigative safety boards.

In a short span of less than a decade, the DSB has carved out an international reputation as an innovative and effective investigation agency. The DSB’s standing appears to be closely tied to that of its respected former chairman Pieter van Vollenhoven. The literature on the DSB’s formation consistently identifies his central role in creating a political consensus beyond the establishment of an integrated multi-sector board, and in building an agile organization. He had been a strong advocate of independent investigations, and went as far as to claim that it helped democracy to function properly (van Vollenhoven, 2001). His multi-decade effort to secure the public’s right to independent investigations culminated in the founding of the DSB.

van Vollenhoven epitomizes the policy entrepreneur who successfully fosters bureaucratic autonomy (Carpenter, 2001). A member of the Dutch royal family and a lawyer by training, he also had training as a pilot during national service in the Royal Netherlands Air Force. This background led to his participation in several aircraft accident investigations. In 1975, he was appointed as advisor on road safety to the Minister of Transport. Subsequently, as Chairman of the Road Transport Safety Board, he had lobbied for the creation of a multi-modal Transportation Safety Board modelled after the NTSB. Although the other transport boards were far more established and reluctant to be merged into a multi-modal board, two serious transport accidents in 1992 generated the momentum to bring about the multi-modal agency. Subsequently, van Vollenhoven also lobbied for serious accidents outside the transport sector to have the benefit of independent investigations. Two major non-transport accidents in 2000

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6 The Maritime Court of the Netherlands was set up in 1909, the Civil Aviation Board in 1937 and the Railway Accidents Inquiry Board in 1956.
catalyzed the formation of the DSB, despite initial pushback from the Ministry of Justice.

Although one might be inclined to attribute van Vollenhoven’s success to his privileged position in Dutch society, such an explanation would short-change his consistent cultivation of political support for independent investigation. van Vollenhoven worked diligently through the 1980s and 1990s to frame independent investigation as a ‘right’. Domestically, he built a wide political constituency in part by founding a Victim Support Fund to assist victims of traffic accidents and crime. Internationally, he assiduously developed contacts with counterparts in the United States and elsewhere that gave him access to international best practices and solidified his reputation as an expert.  

By contrast, the SHK has largely ignored its clear mandate from Parliament to extend its work beyond aviation, preferring to maintain a much narrower focus. While the DSB emerged through the initiative of its founding chairman, the Swedish merger was forced upon reluctant agencies by Parliament. Instead of creating a new agency whose leadership was committed to the multi-sectoral approach, Sweden essentially jammed together several investigation agencies under the authority of an aviation-centric SHK. It would then be natural for the SHK leadership to maintain its focus on the familiar aviation work. With the Swedish government turning to a consolidated agency in order to save costs by reducing institutional duplication, it is hardly surprising that the SHK has tended to shortchange resources and staffing for investigation incidents that fall outside aviation.

**Conclusion**

In reviewing the European cases, we found examples of transportation accident investigation agencies in each of the three approaches of single-modal, multi-modal and multi-sectoral. While the analysis does not allow for conclusions as to which approach is more effective, we note several lessons that apply across approaches. These are the strengths of permanent investigation agencies over ad hoc commissions, the impact of scale and scope in defining the agency, and perhaps above all, the importance of strong leaders.

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7 In 1993, von Vollenhoven worked with the American, Canadian and Swedish transport safety boards to found the International Transportation Safety Association (ITSA), and became its founding chairman. The organization aimed to help the investigation agencies learn from one another’s experiences, trained investigators, helped one another with investigations and promoted the practice of independent investigations. ITSA has since grown to 14 countries, including agencies from countries like the UK, France, Finland, Japan. In Europe, he worked with German and British agencies to establish the European Transport Safety Council (ETSC) to provide impartial expert advice on transport safety matters to the European Union and member states. For several years in the 1990s, he was also advisor to the European Commissioner for Transport.
References:

AIBN, Norway, Annual Report 2002

AIBN, Norway, Annual Report 2008


Namavar N. “Opportunititeit en modaliteiten van de oprichting van een onafhankelijke onderzoeksraad voor de veiligheid voor België” Onderzoek in opdracht van de Algemene Directie Veiligheid en Preventie in samenwerking met het Crisiscentrum (FOD Binnenlandse Zaken), Uitgevoerd door het Leuvens Instituut voor Criminologie (K.U.Leuven), November 2011

Namavar N. “Appropriateness and modalities of the establishment an independent investigation board for the security for Belgium” Research commissioned by the Directorate General of Security and Prevention in collaboration with the Crisis Centre (Ministry of the Interior), conducted by the Leuven Institute of Criminology (KULeuven), November 2011

News Report “Rail accidents investigation unit open in Farnborough” Nov 14, 2012


RAIB, Dept of Transport “Consultation on proposed Rail Accident Investigation and Reporting Regulations”, Oct 2004

RAIB, Dept of Transport ‘Government response to replies to its October 2004 consultation entitled “Consultation on proposals for new Rail Accident Investigation and Reporting Regulations”’, May 2006


Strotmann O., “Research Council Safety A study of the Safety Board” Doctoral Thesis Erasmus University, Rotterdam, Faculty of Social Sciences Department of Public Administration, November 2005


UK Parliament Hansard, 28 Jan 2003, Column 766


Żukowska J., Michalski L., Krystek R. “The value of independent investigations within integrated transport safety systems” Scientific Journals, Maritime University of Szczecin, 2010 20(92)