

Arbitrators of safety and authors of law – legal consciousness, normative pluralism and modulated derogation among European licensed aircraft maintenance engineers

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Introduction

Whereas scholars have argued that there is no direct link between regulation and the impressive safety records in aviation (Fitzgerald 2012, 2), it is more commonly floated that through legislation and the implementation of common regulatory requirements, global aviation safety is “ultimately a matter of law” (Huang 2009, 8; see Cusick *et al.* 2017, 386–424, ICAO 2022). Scholarship focused on continuing airworthiness and aircraft maintenance, a key sector of aviation, argues that the regulation of aviation safety follows the basic principle that an aircraft can only be deemed fit to fly, if “it has been designed, manufactured, operated and maintained in accordance with the relevant regulation” and, if personnel and crew are “qualified in accordance with the relevant regulations” (Sulocki and Cartier 2003, 318). Legal and safety scholars have also problematized the relationship between law and safety in aviation. For example, it has long been argued that safety reporting is negatively affected if and when human error-based aviation incidents are dealt with through criminal justice systems (Schubert 2004, Dekker 2007, Fitzgerald 2012, Lawrenson and Braithwaite 2018, Pellegrino 2019). Moreover, in the specific context of European aircraft maintenance, scholars have described a lack of uniformity concerning organizational compliance with, and national level enforcement of, European Union (EU) civil aviation regulations as a safety concern (see Haas and Ourtau 2009, Shanmugam and Roberts 2015; see also Yadav 2010, EASA 2015b, Aircraft Engineers International – AEI – 2019).

At the heart of ensuring safety and continuing airworthiness in aviation is the qualified profession of licensed aircraft maintenance engineers (LAMEs). These are specialized aviation professionals who, because of their education, training, practical skills and experience, are assigned the responsibility of “certifying for the correct state of systems maintained on aircraft” to legally release aircraft into service. LAMEs are legally accountable as the sole signature on a certificate of release to service (CRS) that, following performed maintenance, a released aircraft is compliant with regulatory requirements, approved standards and technical procedures (AEI 2018; see Woodlock 2020, 281). The bottom-up socio-legal study of licensed aircraft maintenance engineers presented here introduces the concept of sectorial legal consciousness to theoretically situate and explain the plurality of normative experiences and perceptions of law and safety in everyday working life as these professionals participate in socially constructing



legality in the European aviation sector. More specifically, the article presents the findings of qualitative data gathered in 2020-2021 exploring how Swedish and Portuguese LAMEs, subject to the same European Union (EU) sectorial regulations in each country, relate to law, legal accountability, professional responsibility and safety in the risk-critical and multi-level regulatory environment of European civil aviation.

The study presented here has a comparative design where the inclusion of participants from Sweden and Portugal not only considers that safety cultural differences may exist between Northern and Southern European countries in an aircraft maintenance context (see Reader *et al.* 2015), but also that national occurrence reporting¹ rates differ between these two EU Member States (see Autoridade Nacional da Aviação Civil – ANAC – 2018, Swedish Transport Agency – STA – 2019). Previous cross-cultural comparative studies across various sectors of European civil aviation have suggested that regional and national differences affect both safety culture development and the achievement of uniform regulatory compliance. For example, in the context of air traffic management, safety culture among operational and management staff was found to be most positive in Northern Europe (including Scandinavian countries) and least positive in Southern Europe (primarily Mediterranean countries) with “national culture” explained as a determining factor affecting safety culture development (Reader *et al.* 2015;² cf. Karanikas and Chionis 2017). Research has also identified that despite the prevalence of a shared professional sub-culture among European LAMEs across different worksites and geographical locations in aircraft maintenance (McDonald *et al.* 2000, 2002), national level differences present problems concerning engineer licensing standards and, release to service certification requirements in this EU sector (Haas and Ourtau 2009; see Yadav 2010, Shanmugam and Robert 2015; see also AEI 2019). In particular, compliance and non-uniformity issues surrounding the implementation and enforcement of European aircraft maintenance regulations by different national aviation authorities (NAAs) of EU Member States are especially highlighted. Scholars have therefore called for bottom-up focused research that appropriately accounts for regional, national and organizational settings to critically examine the interaction between law and safety in this sector (see Haas and Ourtau 2009, Cromie and Bott 2016; see also European Parliament – EP – 2019). Given that scholarship has problematized non-uniform implementation and enforcement of EU rules by the national authorities of EU Member

¹ Occurrence reporting is a key component of aviation safety culture and regulated safety management systems (see Reason 1997, McDonald *et al.* 2000).

² Incident reporting included as a measure of safety culture.

States in this sector, from a broader socio-legal perspective, the research presented here considers national legal frameworks rather than “national culture”. This is because previous comparative European studies show variance (national level) in attitudes and patterns of citizen behaviour between these two countries concerning law and legality (Gibson and Caldeira 1996, Jackson *et al.* 2011 (European Social Survey); see Pellegrino 2019, Woodlock 2022).

Building on Hertogh and Kurkchian’s (2016) discussions on collective forms of “inward” and “outward” legal consciousness, and employing Ewick and Silbey’s “before the law”, “with the law” and “against the law” interpretative schemas of legal consciousness to frame and analyze the empirical findings, by sectorial legal consciousness is meant here professional participation in the social construction of legality where non-legal professionals working in a heavily regulated sector display shared “patterns of thinking” about legality in ways that challenge the legal hegemony of state-based law in different societies (Ewick and Silbey 1998, Hertogh and Kurkchian 2016, 405; cf. Sarat 1990). Legal hegemony describes how the “before the law” and “with the law” forms of legal consciousness “constitute legality as both ideal and practice” by interactively mediating the everyday imperfect “world of concrete particularities” with the required legitimacy and consent expected of “all social institutions, including law” (Ewick and Silbey 1998, 230).

In the specific context of aircraft maintenance discussed here, sectorial legal consciousness describes an inward legal consciousness that emerged from the stories of LAMEs outlining their experiences and perceptions of working under the EU regulations for civil aviation, or as they commonly described them, “our rules” for “our sector” (cf. Hertogh and Kurkchian 2016). Sectorial legal consciousness also captures a collective professional cultural alignment with a dominant sectorial norm of “safety first” (see McDonald *et al.* 2000, Woodlock 2022). Putting safety first involves “modulated derogation” to amend or displace the meaning of compliance to formal procedures and rules as the primary sources of normativity guiding professional conduct. More specifically, modulated derogation is a devised concept deployed here to describe how, through the “against the law” schema, aviation professionals occasionally deviate from formal rules/procedures by amending a binary code of compliance/non-compliance to that of a safe/unsafe code when professionally constructing legality. Unlike law-centred notions from regulatory theory such as “creative compliance” which involves the circumvention of the scope of a rule rather than explicit rule-breaking, sectorial legal consciousness is characterized by normative pluralism where the “different exigencies” and constraints of law and safety “produce plural normative expectations” (Fortes and

Kampourakis 2019, 644; see Ramstedt 2016; see also McDonald *et al.* 2002, Baldwin *et al.* 2012, 232).

Outward legal consciousness here concerns law and legality external to the aviation sector expressed through LAME perceptions of judicial interventions and the phenomenon of the criminalization of human error. More specifically, how collective legal consciousness is shaped by a perceived potential of state law and criminal justice systems, that is, the legal hegemony of state law to interfere in aviation sectorial matters (Hertogh and Kurkchian 2016; see Ewick 2006). The much-publicized Helios air crash in Greece (2005) and the Spanair accident in Spain (2008) are two such events where aircraft maintenance personnel were brought before national criminal courts to be held legally accountable for their professional actions, albeit with differing outcomes (see The Local 2008, Williams 2020; see also Michaelides-Mateou and Mateou 2010, 180, 183).

Given that commercial aviation is one of the most heavily regulated industries globally (Fitzgerald 2012, 2; see Huang 2009), and that scholars have long problematized negative effects of legal proceedings on safety conduct among aviation personnel (see Dekker 2007, 2011, Hodges 2015, Cromie and Bott 2016, McCall and Pruchnicki 2017), there are surprisingly few if any socio-legally framed studies that explicitly explore the legal experiences and normative complexity surrounding the working life of aviation professionals (see Woodlock 2022). As such, the research presented here is both timely and needed, where an empirical analysis of professional experiences of law and normativity in European aviation can allow bottom-up findings of legal consciousness research to contribute with better understandings of the interaction between law, legality and safety in this multi-level and market-steered regulated sector. The research is guided by this question:

How can normative experiences of safety and legality be understood in relation to regulatory compliance and professional deviation as structures of meaning concerning law among licensed aircraft maintenance engineers working in the European civil aviation sector?

Following this introduction, I will contextualize the regulatory and professional working environment of the European aircraft maintenance sector. Then, a short review ensues on the relevance of including a legal consciousness approach to study the aviation sector. Next, a methodology section outlines how the study was conducted and discusses the study sample. This is followed by a theoretical section which introduces the devised concepts of sectorial legal consciousness and modulated derogation and

situates the conceptual contribution of the article in relation to critical legal consciousness and normative pluralism scholarship. This conceptual framework is discussed against the backdrop of the legal consciousness scholarship of Hertogh and Kurkchian and the critical approach of Ewick and Silbey. Next, the study findings are presented and framed using the “before the law”, “with the law” and “against the law” interpretative schemas of Ewick and Silbey. A discussion then follows that critically analyses the results and lays down the empirical and theoretical contributions of the research. The article concludes by reflecting on the agonistic relationship between law and safety expertise and makes recommendations for future research.

Regulating aircraft maintenance in European civil aviation³

The current study of the legal consciousness of European LAMEs considers two regulated phenomena that are intrinsic to the everyday working lives of these professionals; the reporting of safety occurrences and the certification and release to service of aircraft. Whereas certifying and releasing aircraft is a profession-specific regulated privilege unique to the occupation of LAME, occurrence reporting is a sector-wide intervention that is enshrined in European aviation through EU law to ensure the effective regulated management of safety (see Yadav 2010, Hodges 2015). Given the centrality of both of these regulated phenomena for the LAME profession, it is difficult not to argue that law and legality are embedded in the everyday working practices of these aviation professionals.

The current EU regulation for aircraft maintenance is Commission Regulation (EU) No 1321/2014 of 26 November 2014 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks (Regulation 1321/2014, 1–194). These EU hard law regulations are implemented by aircraft maintenance organizations applying the soft law “Acceptable Means of Compliance and Guidance Material” (AMC/GM) issued by the European Union Aviation Safety Agency (EASA) (see Regulation (EU) 2018/1139 ; see also Pierre and Peters 2009, Coman Kund 2012, Ratajczyk 2015 on EASA). This is manifest in the “Maintenance Organisation Exposition” (MOE) which is the legal

³ All regulations are accessible in the *Official Journal of the European Union* (see EUR-Lex n.d.).

document outlining the scope of work and responsibilities of an aircraft maintenance organization. Once approved by a national aviation authority, an MOE presumes compliance with the hard law requirements and is a legally binding document for an organization and its personnel (see EASA 2015a, Woodlock and Hydén 2020; see also EASA 2020; see Annex II (Part-145) of Commission Regulation (EU) No 1321/2014, pp. 65–83).

Regulating the release of aircraft into service - the CRS

Certifying and releasing aircraft is a profession-specific regulated privilege unique to the occupation of LAME through Regulation (EU) No 1321/2014 (145.A.35, Annex II (Part 145), p. 69). It requires that these professionals regularly sign and issue a legal statement, a Certificate of Release to Service (CRS), guaranteeing that performed work is compliant with technical standards and relevant sector specific regulations. In that only an approved certifying LAME is authorized to sign and issue a CRS, it entails a high degree of legal accountability for the author of the signature on the release. In short, the CRS is “a legal statement clearing an aircraft” to continue flying as airworthy following performed maintenance. The issuing LAME is ascribed complete responsibility “for the quality of all maintenance covered by the CRS” (AEI 2018; see Yadav 2010, De Florio 2016; see also EASA 2015b).

These occupational privileges also legally empower LAMEs to prevent an aircraft from flying. By this is meant that by refusing to certify the release of an aircraft, these professionals can stand in the way of the profit-driven goals of commercial airlines by holding employers accountable to uphold approved standards laid down in their MOEs (AEI 2018; see Woodlock 2020). From a legal consciousness perspective, the uniqueness of the profession-specific regulated privilege to sign and issue a CRS situates legality at the core of the professional identity of LAMEs who see themselves as “the sole arbitrators of safety” while aircraft are on the ground (AEI 2018). Exploring LAMEs experiences of issuing a CRS and/or refusing to release an aircraft is key to understanding the interaction between law and safety in this context of aviation.

Regulating safety reporting in the European aircraft maintenance sector

Occurrence reporting is a sector-wide regulated requirement (hard law) in EU civil aviation through Regulation (EU) No. 376/2014 on the reporting, analysis, and follow-up of occurrences in civil aviation (Regulation 376/2014, 18–43). This regulation requires that all civil aviation organizations and NAAs of EU/EASA Member States must establish occurrence reporting systems to allow personnel to meet their legal obligation to report vital safety information. Accordingly, the MOE of aircraft maintenance organizations must procedurally outline the scope and responsibilities of their occurrence reporting systems to demonstrate compliance with the requirements of Regulation (EU) No. 376/2014 (EASA 2020; see Woodlock and Hydén 2020, Clare and Kourousis 2021b, Woodlock 2022).

The EU regulated requirements define mandatory and voluntary reporting categories (see Regulation (EU) 376/2014, Arts. 4 & 5, pp. 26–28, see also Regulation (EU) 2015/1018, p. 1). where both categories of occurrence reporting involve the collection, analyses and response (feedback) to submitted occurrence reports with the ultimate aim of reducing the likelihood of aviation accident events. Whereas mandatory requirements entail a legal obligation to report safety critical occurrences that are specifically outlined in the regulations, voluntary reporting submissions are primarily based on decisions to act in the interest of safety where individuals can make official their own concerns (see Sulocki and Cartier 2003, 325, Clare and Kourousis 2021a, 2).

The confidentiality and the protection of reporters and persons mentioned in reports are to be ensured in the handling of submitted reports, not least by applying “just culture” principles (see Hodges and Steinholtz 2017, Pellegrino 2019). Just culture is a concept that emerged in safety scholarship based on a long-standing argument that legal interferences generate fear before the law with safety reporting “often dealt a ‘harsh blow when things go to court’” (Dekker 2007, 21, 2011; see Reason 1997, McCall and Pruchnicki 2017). To alleviate fears of legal consequences, a just culture attempts to find a balance between safety and accountability by building a culture of trust and learning (Dekker 2007; see Cromie and Bott 2016, Karanikas and Chionis 2017, McMurtrie and Molesworth 2018). Citing just culture scholars, Pellegrino argues that:

(...) ‘just culture’ has been correctly defined as ‘the growing recognition of the need to establish communication and training initiatives and advance arrangements between the aviation safety sector, regulators, law enforcement and the judiciary to avoid

unnecessary interference and to build mutual trust and understanding in the relevance of their respective activities and responsibilities. (Pellegrino 2019, 93)

Accordingly, to ensure the willing reporting of safety information and to repudiate negative effects of a blame or punitive legal and/or organizational culture, the application and enhancement of “just culture” is a main objective of Regulation (EU) No. 376/2014⁴ and a legal obligation for European aviation organizations (Pellegrino 2019).

Although an effective just culture does not tolerate recklessness, it recognizes that competent professionals often employ workarounds, deviations and routine violations of rules and procedures in their everyday work practices (Dekker and Breakey 2016, 188; see Dekker 2017; see also Hobbs and Williamson 2002, 2003, Pettersen and Aase 2008, Zafiharimalala *et al.* 2014, Tsagkas *et al.* 2014). It is noteworthy that although a just culture ensures a degree of legal protection to reporters of safety information, failure to meet mandatory reporting requirements may imply regulatory non-compliance and can incur legal sanctions and punishment for organizations and individuals in cases of serious wrongdoing (UK CAA 2020; see Dekker and Breakey 2016, Heraghty *et al.* 2020). A recent EC-commissioned evaluation of EU Regulation No. 376/2014 found that in general, aviation organizations are formally establishing rules pertaining to just culture as is required. Although the report remained largely inconclusive regarding organizational levels of compliance with these rules, it did problematize contradictory organizational applications of just culture principles and highlighted a lacking awareness among industry stakeholders about national-level (State) responsibilities to designate a just culture body (European Commission – EC – 2021, 24). With consideration of these factors, exploring the experiences and perceptions of regulated occurrence reporting and just culture is crucial to understand law and safety in the everyday working lives of LAMEs in the EU aviation sector (see Woodlock 2022).

In sum, it is clear that the everyday working lives of European LAMEs are immersed in a dynamic multi-level regulatory environment with the requirements and provisions pertinent to their professional role laid down in hard and soft forms of law. Yet despite sought-after uniformity across EU member states, it appears that the application of EU regulations for aircraft maintenance and occurrence reporting continues to depend on organizational applications of the rules, NAA enforcement and national legal frameworks. Differences are known to exist regarding the application and monitoring of just culture

⁴ Just culture is legally defined under Art. 2(12) of Regulation (EU) No. 376/2014 (p. 25).

across EU/EASA Member States and aviation organizations (Hodges 2015, Gerede 2015a, 2015b, Pellegrino 2019, EC 2021, 12, Woodlock 2022). Moreover, variance exists in occurrence reporting rates among different countries with reporting rates in Sweden found to be higher than in Portugal, the two EU Member States studied here (see ANAC 2018, STA 2019).⁵ Scholarship has also noted that ambiguity issues have long concerned regulators globally regarding the certification and release of aircraft into service, not least regarding inconsistencies in defining organizational and professional responsibilities (Shanmugam and Roberts 2015, EP 2018). In Europe, EASA has therefore issued a policy statement to clarify EU-regulated requirements for CRS to negate problems arising from ambiguity and varied interpretations of these issues (EASA 2015b; see AEI 2018, EP 2019).

Against the backdrop of Hertogh and Kurkchiyan's claims that legal consciousness has "a multi-dimensional character" where what holds good for one law may not hold true for another law, exploring these two regulated phenomena – one a unique regulatory privilege for the LAME profession, the other a common requirement for the entire European aviation sector – the current study sought to explore if legal consciousness among European LAMEs is "layered according to the source with which it is associated" (Hertogh and Kurkchiyan 2016, 416). Moreover, given that variable NAA enforcement and national legal frameworks have been identified as a source of non-uniformity regarding EU regulatory interpretation and application, including participants from two different EU Member States allows the research to explore if and what similarities and differences emerge concerning hegemonic conceptions of state-based law in the legal consciousness of LAMEs (cf. Gibson and Caldeira 1996).

Why aviation-based research needs a legal consciousness focus

The scope of research into aircraft maintenance as a professional environment has expanded since the early 2000s and not least in conjunction with the growing field of safety science. Much influential scholarship exploring safety culture, safety management systems, and regulated occurrence reporting in aviation is rooted in early and more

⁵ This does not imply that Portugal has low reporting rates, but rather, comparatively *lower* rates than Sweden.

recent studies of the aircraft maintenance sector (McDonald *et al.* 2000, Taylor and Thomas 2003, Pérezgonzález *et al.* 2005, Atak and Kingma 2011, see Clare and Kourousis 2021c). Relatedly, the past two decades have seen a noticeable proliferation of studies from different scholarly disciplines addressing risk and safety in aircraft maintenance. From a global perspective, this research covers several regions; Norway (Pettersen and Aase 2008); UK (Irwin *et al.* 2016); Turkey (Gerede 2015a, 2015b, Bükec and Gerede 2017); US (Taylor and Thomas 2003, Quinlan *et al.* 2014); Australia and New Zealand (Gill and Shergill 2004, Hampson and Fraser 2016, Naweed and Kourousis 2020); Nigeria (Habib and Turkoglu 2020); Indonesia (Lestiani *et al.* 2017); Taiwan (Chang and Wang 2010); Ireland (Clare and Kourousis 2021a). However, few aircraft maintenance studies explore law and safety through the lens of sociology of law, with none to date employing a legal consciousness framework in a European context or conducting comparative just culture research.

Legal consciousness research, too, has witnessed a global surge in interest in recent years with several scholars conducting detailed reviews of legal consciousness research literature to categorize and make sense of the scope and context of past, present and future trajectories of legal consciousness research (Chua and Engel 2019, Horák *et al.* 2021; see also Halliday 2019). From different perspectives, these reviews have identified the following research gaps and important findings against which the current study is situated: research exploring legal consciousness of professional populations are sparse and fail to realize the true complexity of the concept in that most studies are limited to addressing components of legal consciousness such as knowledge of a law (Horák *et al.* 2021); legal consciousness scholarship commonly resists monolithic and singular approaches to law and legality (Chua and Engel 2019); methodological improvement is needed to overcome current limitations for the study of legal consciousness especially concerning the impact of qualitative findings (Horák *et al.* 2021; cf. Hertogh 2018); universal law-first definitions of legal consciousness which place the individual at the centre of the legitimacy and authority of legal systems are vectorial, problematically monolithic and merit further critical scrutiny (Horák *et al.* 2021); there is a need to explore other forms of social action, which are connected to, but treated separately from storytelling, to explore and understand the reproduction of the structural power of law in different social and cultural settings (Halliday 2019, 873).

Important for the research conducted in this paper is that although studies of legal consciousness most often focus on specific populations (32.7%), such as homeless or

LGBTI,⁶ compared with studies of general populations (17.9%), there are even fewer studies concerning professional populations, with most focused on legal experts (4.5%) (Horák *et al.* 2021, 14). By considering that scholars have suggested that an agonistic relationship exists between law and safety in the multi-level regulated environment of aviation that can negatively affect professionals' safety conduct, a search conducted by this researcher found no studies directly examining legal consciousness among aviation professionals. Given the current study's focus on the pervasiveness of collective professional identity among LAMEs across European countries, Chua and Engel highlight the relevance of Hertogh and Kurkchian's scholarship for exploring identity in European-focused legal consciousness research. By employing the notion of collective legal conscience, Hertogh and Kurkchian specifically examine "how individuals, groups, or societies organize themselves or manifest a sense of self" (Chua and Engel 2019, 344). Adopting a collective legal consciousness approach allows the research here to address the uniqueness of holding CRS privileges as a pertinent question of professional and legal identity among European LAMEs. And understanding legal consciousness as a flexible and protean concept can accommodate critical and comparative-cultural approaches to adequately capture the normative heterogeneous character of law and safety as they operate in a heavily regulated sector (see Halliday 2019, 872; see Silbey 2009; cf. Henriqson *et al.* 2014). As non-legal professionals that are accountable to and legally empowered through multi-level sources of law and regulation (international, regional, national, and organizational), this paper offers therefore that research exploring the sectorial legal consciousness of aviation professionals can contribute with new knowledge and insights to both sociology of law research and safety scholarship.

A sectorial legal consciousness? Experiences of law and safety in aviation

Collective legal consciousness is explained by Hertogh and Kurkchian as a foundational component of European legal culture which can allow different images of law to coexist (Hertogh and Kurkchian 2016, 404; see also Kurkchian 2011). They offer that collective legal consciousness is made up of "a pattern of thinking among people about

⁶ It is not intended here to make an opposition between studied groups but rather to establish the focus of legal consciousness research from a common perspective of emancipation and empowerment.

what law is and how they relate to it” (Hertogh and Kurkchian 2016, 405). By comparatively exploring collective legal consciousness across (then) three EU member states (UK, Poland and Bulgaria), their research found that despite a “thin layer of EU consensus”, observable differences exist in how people in these different populations perceive law, that is to say, cross-nationally (Hertogh and Kurkchian 2016, 404; cf. Gibson and Caldeira 1996, 80). Although people in the studied countries shared similar understandings of law, fundamental differences emerged across the three populations when law was contextualized and “people refer to law in relation to their everyday life and personal experience” (Hertogh and Kurkchian 2016, 407).

Importantly, Hertogh and Kurkchian point out that legal consciousness “is not a monolithic vision of ‘the law’, as it is sometimes presented” (Hertogh and Kurkchian 2016, 416). It has “a multidimensional character” where what holds good for one law may not hold true for other laws with collective legal consciousness found to be “layered according to the source with which it is associated” (Hertogh and Kurkchian 2016, 416). Against the backdrop of discussions addressing legal and political culture(s) in the EU, their study found that key differences pervade across the three societies between what they term “inward” legal consciousness relating to perceptions of national law or “our” law”, and outward legal consciousness concerning perceptions of EU law or “their” law. To explore this further, they suggest that adopting the “before the law”, “with the law” and “against the law” interpretative schemas of Ewick and Silbey regarding how people relate to the law can help in making sense of these differences. When they applied these schemas to their study,⁷ they could identify distinct differences concerning “what law means to people at a societal level”, with a dominant way observed for each of the three studied societies. For example, they found that in the UK, people’s predominant perception of national law (domestic) could be understood through the “before the law” schema while perceptions of EU law could be better explained through the “against the law” schema. The opposite was found in the case of Poland and Bulgaria (Hertogh and Kurkchian 2016, 416).

Similar to Hertogh and Kurkchian (2016), Ewick and Silbey (1998) identified that legal consciousness is always collectively constructed and “simultaneously expresses, uses, and creates publicly exchanged understandings (...)” (Ewick and Silbey 1998, 46). In their critical approach to study legal consciousness, definition and method overlap when empirically exploring legality (see also Silbey and Sarat 1987). As such, they define

⁷ It merits mention that the authors are not explicit in describing how they have applied these schemas.

legality as a social structure that is produced and reproduced by people in what they say and through their actions. To explore legal consciousness as participation in the social construction of legality, they interviewed people (American citizens) and listened to their stories about everyday life, ultimately aiming to uncover “the contours of legality” in what people say and do when directly discussing law but also when law was excluded from their stories. In this way, Ewick and Silbey identified the “before the law”, “with the law” and “against the law” forms of legal consciousness. Crucially, they found that these three commonplace narratives of legality draw upon different cultural schemas which invoke “different justifications and values; each expresses different explanations for legal action; each locates legality differently in time and space; and each positions the speaker differently in relation to law and legality (as a supplicant, player, or resister)” (Ewick and Silbey 1998, 223–24).

Sectorial legal consciousness is a devised concept here that emerged from the stories of interviewed LAMEs. It builds on an overlooked but important finding of Hertogh and Kurkchayan’s research on collective legal consciousness in a European context that distinguishes between inward and outward legal consciousness (Hertogh and Kurkchayan 2016). However, unlike their comparative study where inward legal consciousness was cross-nationally associated with perceptions of national law (“our law”), in the context of the current study inward legal consciousness concerns the sector-specific regulation, standards, procedures and norms surrounding the European aircraft maintenance sector and perceived by LAMEs as “our rules”. And whereas Hertogh and Kurkchayan found that outward legal consciousness was associated with perceptions of EU law (“their law”) in their study, outward legal consciousness in the current study pertains to state-based criminal law and legality perceived by LAMEs as external to but intervening into the aviation sector (“their rules”, a national criminal justice system), not least concerning the criminalization of human error. To make sense of how LAMEs relate to law, legality and safety, Ewick and Silbey’s interpretative schemas are applied to inward and outward conceptualizations of LAMEs’ collective legal consciousness to frame and analyze the research findings here as suggested by Hertogh and Kurkchayan (2016, 416).

Against the backdrop of Ewick and Silbey’s approach, sectorial legal consciousness is a critically conceived concept. It does not assume an “institutionally centred law-first perspective” to situate and explain the experience of professionals working in a heavily regulated high-risk sector. By this is meant that legality is not solely associated with official law so as to structurally fit comfortably into “its formal institutional location” (Ewick

and Silbey 1998, 20; Woodlock 2020, 272–273). Applying the interpretative schemas to study legal consciousness must recognize a critical conceptual distinction Ewick and Silbey make between law and legality. Those features of legality that are associated with formal institutions, authorities and related officials are conceptualized as law. They conceptualize legality, however, to refer to “the meanings, sources of authority, and cultural practices that are commonly recognized as legal”, where “who employs them or for what ends” is of less concern (Ewick and Silbey 1998, 22–23; see Woodlock 2020, 270). Two key concepts in Ewick and Silbey’s approach to legal consciousness are ideology and hegemony, where they are interested in understanding how “structures embed power”, but also “the extent to which structures are hegemonic” (Ewick and Silbey 1998, 225). The study of legal consciousness through a critical lens, therefore, involves exploring “forms of participation and interpretation through which actors construct, sustain, reproduce, *or amend* the circulating (contested or hegemonic) structures of meaning concerning law” (Silbey 2005, 334, *my italics*).

Sectorial legal consciousness is discernible through what is conceptualized here as “modulated derogation”. The Cambridge dictionary describes the term modulation as the changing of something, “such as an action or a process, to make it more suitable for its situation” (*Modulated*, 2021). It also describes derogation as “special permission not to obey a rule, law, etc.” (*Derogation*, 2021). Modulated derogation is devised to capture a sector-specific (resistance) form of professional participation in the construction of legality where compliance, as a structure of meaning concerning law among LAMEs, is occasionally amended to permit a safe/unsafe binary code to guide professional behaviour to better suit certain situational circumstances. In this sense, modulated derogation implies normative pluralism. This arises when “phenomena of different exigencies” and constraints are perceived through a legal/illegal binary code and consequently produce plural “normative expectations” (Fortes and Kampourakis 2019, 644; cf. Ramstedt 2016). However, in aviation sectorial regulatory parlance, the legal/illegal binary code is more commonly articulated and communicated as compliance/non-compliance to regulated and organizational procedural requirements where, more broadly speaking, from a legal cultural perspective, it has long been argued that the “transnational character of the EU makes compliance a more salient issue” (Gibson and Caldeira 1996, 78; see Silbey 2013). In contrast, the outward legal consciousness of LAMEs is shaped by the legal hegemony of state-based criminal law and is perceived through a legal/illegal binary code (see Fortes and Kampourakis 2019; see also Sarat 1990). Even when national level just culture applications are compliant

with EU occurrence reporting requirements, sectorial non-compliance to mandatory reporting obligations may, in the event of serious incidents or accidents, be interpreted as illegal conduct and handled as legally sanctionable behaviour (gross negligence, wilful violations) in some state jurisdictions (see UK CAA 2020).

Methodology

Methodological challenges surround studies of legal consciousness which is a complex concept that is difficult to explore without creating it for the subjects or biasing their responses. The favoured approach is to allow legal consciousness to emerge through in-depth interviews (Nielsen 2000, 295; cf. Hertogh 2018). Thus, to explore perceptions and experiences of law and legality in the European aircraft maintenance sector, in-depth semi-structured interviews were conducted with LAMEs from Sweden and Portugal (see Kvale 2007, Bryman 2012, 477).

Sampling

Aircraft Engineers International (AEI) was interesting to include in the study as the main sample in that this organization has highlighted regulatory inconsistencies and safety concerns surrounding CRS in the EU and globally, not least raising questions on these matters with the European Commission and in the European Parliament (AEI 2020; see EP 2018). Ethical review was first sought (Dnr 2020-03177) through the Swedish Ethical Review Authority who had no ethical objections to the qualitative research (Swedish Ethical Review Authority – SERA, my abbreviation – 2020). Using purposive sampling and following discussions with professional associations/unions affiliated with AEI in Sweden and Portugal, a letter was drafted in Swedish and Portuguese inviting certifying LAMEs to participate in the study. The letters were distributed among the different members via gatekeepers. Potential participants could themselves or through the gatekeepers, make contact with this researcher if interested in participating in the study. Through further convenience sampling and snowball sampling, primarily handled through the gatekeepers, four Portuguese and ten Swedish LAMEs consented to be interviewed.⁸

⁸ Planned data collection was delayed twice by the waves of the COVID-19 pandemic. Given the devastating effects of the pandemic on aviation sector globally (aircraft grounded, travel restrictions,

The interviews with Portuguese LAMEs were held online and conducted in English. Proficiency in English is a requirement for European LAMEs, and although differences in levels of English were observed, no language problems arose during interviews (see Ma *et al.* 2009). Six interviews with the Swedish LAMEs were conducted in person, one interview was conducted over the phone, and three interviews were held online. All interviews with Swedish LAMEs were conducted in Swedish.⁹ The interviews were often conversational in the sense that the interviewees indicated that they felt comfortable speaking with this researcher who is familiar with the sectorial terminology and regulatory environment.

The interview participants were all male, aged between 30 and 55 years old and were experienced aviation professionals with between 10 and 40 years working in aviation. Scholarship has highlighted the male-dominated character of this professional sector (see Newcomer *et al.* 2018). All were in full or part-time employment in an approved aircraft maintenance organization (Part-145), with most working in the commercial aviation (airline) sector and two working in helicopter operations. Their qualifications ranged between 1-20 commercial aircraft and/or helicopter type ratings on their current aircraft maintenance license approvals (AMLs) with all having CRS privileges for some aircraft types.

The interviewing technique

A thematic-based interview guide was developed with the questions informed by the findings of a survey study (see Woodlock 2022),¹⁰ reviewed legal consciousness literature, previous aircraft maintenance scholarship, and qualitative readings of EU/EASA regulation, policy, reports and documentation. A first theme explored LAME experiences of law and legality by focusing on professional experiences and perceptions of occurrence reporting and just culture in the aviation maintenance sector (see Cromie and Bott 2016, Woodlock 2022). A second theme concerned safety and professional responsibility when certifying and releasing aircraft into service (Woodlock 2020; see also note 10). A third theme focused on legal accountability, compliance, and procedural

mass employee lay-offs, etc.), the response rate was low but better than expected, given the circumstances.

⁹ Some of the interviewed LAMEs were previously known to this researcher who has an earlier professional background in aviation in Sweden.

¹⁰ Another manuscript by this author employing survey and interview data on CRS is currently under review elsewhere.

violations/deviation from sectorial rules (see Hobbs and Williamson 2002, 2003, Ward *et al.* 2010, Zafiharimalala *et al.* 2014). A fourth theme explored the phenomenon of the criminalization of human error (see Michaelides-Mateou and Mateou 2010, Dekker 2017).

Following Ewick and Silbey's approach, the interviewing technique involved first asking questions that do not directly address law and legality but more generally sought to explore if and to what extent these phenomena emerge in the answers and shared narratives of the interview participants (Ewick and Silbey 1998, 251–261). Towards the end of each thematic set of questions, LAMEs were then asked questions directly addressing issues of law and legality in relation to certain themes (Ewick and Silbey 1998, 23). For example, some questions sought to explore perceptions and experiences of legal accountability and were formulated to directly address the regulated phenomena of occurrence reporting or issuing a CRS to see if and/or to what extent LAMEs think about these (legal) issues when reporting safety information or releasing aircraft into service. To explore how LAMEs understand and experience compliance in this sector, specific questions were formulated that differentiated between the EU hard law regulations for aircraft maintenance and the soft law application of these requirements in the MOE of employing aircraft maintenance organizations. All interviews were audio recorded and the material transcribed following all interviews. The transcriptions were thoroughly read and analyzed with sub-themes extracted from the predetermined themes (see Clarke *et al.* 2015, 222–248).¹¹

The sectorial legal consciousness of LAMEs before, with and against the law

To structure their analysis of legal consciousness, Ewick and Silbey included four dimensions of legal consciousness – normativity, constraint, capacity and the time and space of law. These dimensions offer “alternative vantage points” to view legality in the “before the law”, “with the law” and “against the law” interpretative schemas (Ewick and Silbey 1998, 82–98). Sub-themes of *exposure*, *refusal*, *resolve*, *conscience*, *time*, *safety first*, and *modulated derogation* were extracted from the transcript readings and

¹¹ These authors describe six phases of thematic analysis; familiarization, coding, searching for themes, reviewing themes, defining and naming themes, and writing up the report (Clarke *et al.* 2015, 230).

subsequent coding. Due to the scope of this paper, the dimension of constraint is operationalized as exposure and conscience in the “before the law” schema, with reification, a key concept for Ewick and Silbey’s critical approach, addressed in this schema. Legality in the “with the law” schema is explored through the dimension of capacity and operationalized as resolve and refusal as LAME experiences of CRS and safety reporting. In the “against the law” schema, the dimensions of capacity, normativity and time are operationalized through the notion of “safety first” and the devised concept of modulated derogation to explore the meaning of compliance and deviation as sector-specific experiences for professionally constructing legality among LAMEs. Thus, the results presented here portray how LAMEs, employed in Sweden and Portugal, “bear the imprint of law” (Ewick and Silbey 1998, 20) in their everyday working lives in the European aviation sector – as “suppliant” before the law, as “player” with the law or as “resister” against the law (Ewick and Silbey 1998, 224).

Constraint “before the law” – exposure, reification and the ABC of “legal conscience”

When applying the “before the law” schema to interpret legality from everyday encounters with law, Ewick and Silbey noticed that people commonly expressed a “reified view of law”, that is, they impute “a thinglike quality” to law. Reification, as they employ the concept, involves “a transference of power” that severs the internal relationship between contextual social action and legality. Ewick and Silbey observed a cutting off of social action from legality in how people first critique but then conclude their assessments of law and legal institutions in a subordinating but also redeeming manner (Ewick and Silbey 1998, 77–81; see Woodlock 2020, 274). In the current study, reification was observed in how LAMEs similarly assessed the standards, procedures, and formal regulations framing their work practices.

A sense of being constrained before the law emerged from the LAMEs’ stories expressing an exposed but ‘reified view of law’ that ascribes a concretized law-like quality to the official approved manuals (technical and procedural) to which they must follow and are legally accountable. When issuing a CRS, certifying LAMEs must provide a standardized (codified) reference to legally document that performed and signed-off maintenance is in accordance with the standards outlined in the appropriate aircraft maintenance manual. Although LAMEs commonly problematized these publications as often ambiguous and abstrusely articulated, they repeatedly concluded their stories by

reiterating that the “manual” was both necessary and appreciated as a formal official source of guidance. By strictly following “the manual”, LAMEs commonly felt that they are not only complying with legal requirements but in doing so, are also afforded protection from potential legal consequences. In short, complying with the manual is perceived by LAMEs as equivalent to complying with the law. Interestingly, Portuguese and Swedish LAMEs recurrently referred to the manual as “our bible”, that is to say, a book to live by.

A Swedish LAME discussed how the compiled organizational MOE of their employer, together with the aircraft manuals, are “their rules and law” in that sector. He described the MOE as a living document which must be continuously updated with LAMEs obliged to only adhere to the latest revision(s). Explaining aircraft maintenance manuals, he explained:

For example, I see it in a way a bit like a legal document, just because it is a safety net from the manufacturer there. And you should refer to what you have done according to that manual. (Swe1, 2020)¹²

This quote suggests that rather than view legality as a legal net in which they are trapped, LAMEs reify the legality of the manual as a safety net before which sectorial actors, manufacturers and professionals are legally accountable, but also protected. A similar reification of law was expressed as simultaneously constraining and liberating, exemplified in this quote by another Swedish LAME. Having first problematized that the manuals are not always clear or easy to follow, he then added:

I have the three words A, B, C knocked into my head. I never ever break that... Always Be Covered... That for me, if something happens, then I know I have followed it [the manual] to the letter, for exactly what it wants me to do. (Swe3, 2021)

This quote expresses a reified view of the regulated requirements and standardized procedures in the manual by implicitly ascribing a thing-like protective law quality to the manual as a formal source of legality that must be adhered to. By recognizing that his professional position is exposed “if something happens”, the LAME transfers power from his own agency as an aviation professional to the legal authority manifest in the approved manual and the protective power associated with compliance. By following the content “to the letter”, the LAME feels he will “always be covered”. Similarly, another Swedish

¹² All quotes from Swedish LAMEs translated by this author.

LAME offered that he was “drilled” from the start of his career regarding the “legal bit” and was told that “the most important to remember in this profession is to cover your ass” (Swe1, 2020). A Portuguese LAME also discussed exposure and exemplified reification of law through the manual when asked about his professional responsibility (and experiences) as certifying staff. He answered:

We have the manual on our side (...) I think the real issue is to see a balance in the manual and if there is a safety issue also. We can balance a little bit, but if you see that is really not good, and you have the manual on your side, I think that we shouldn't be afraid of anyone who have any issue. (Por3, 2021)

Interestingly, this quote suggests that rather than feeling fear before the law, LAMEs reify the manual as a legally protective document that is “on our side” and before which fears of reprisal from persons who may think otherwise are negated.

Exposure and reification of law were also evident in how LAMEs commonly expressed a need to maintain “good conscience” before the law when legally releasing aircraft into service. Conscience was an emergent theme in many LAME answers to questions about professional responsibility and legal accountability. It featured often in the stories by Portuguese LAMEs concerning their experiences of issuing a CRS. Maintaining a “legal conscience” before the law demonstrated constraint through a different reified view of law as this quote from a Portuguese LAME demonstrates:

At the beginning when I started to make inspections, perform inspections or something...the weight of that, of the responsibility and the fear of an error is present as we are human and that can happen. So, I made a really good commitment to myself as I would always perform things the best I could and in conscience where I can later see 'ah that was not correct', I didn't perform it the correct way or there was a better way to do it'. But I have to make sure that at the present time, at any time, I do the best I can and, in conscience, I do what is correct for me and obviously by the rules. (Por4, 2021)

Here the LAME recognizes that performing inspections carries a heavy weight of professional responsibility and requires maintaining a good conscience, a view observed among many interviewed LAMEs. He added that he does things correctly and “obviously by the rules”. Ewick and Silbey argued that a reified view of law does not embrace an understanding where people consider themselves “the authors of the law” but rather that law and its formal authority is “the author of individuals”. The rules are perceived by this LAME as the “obvious” determinant of correct conduct and are upheld accordingly as

“the standard of objective reality” before which he defines his needs and values (see Ewick and Silbey 1998, 80–81). He continued:

And I really believe in this industry that both things [law and safety] are always parallel and always walking side by side. And that's what really obligates me to never, well, even if I really had to put my position at risk, I guess that would always [stand] up higher, as a kind of moral obligation, to do things correctly, in conscience obviously. (Por4, 2021)

Ewick and Silbey explain that reification involves a dissolving of law from particular social actions in a way that appeals to meaningful consequences, such as reversing the moral and causal relationship that can exist between behaviour and its “reified form” (Ewick and Silbey 1998, 80–81, Woodlock 2020, 274). In the quote above law and safety are described as equal partners in aviation, “things” that must be sustained “as a kind of moral obligation” to ensure work behaviour is defined by professional correctness. To maintain a good conscience the LAME would be prepared to jeopardize his professional position (such as self-reporting) to always act in a correct manner which morally holds law and safety “up higher” than self-interests.

Capacity “With the Law” through resolve and refusal

When exploring people’s everyday experiences of law through the ‘with the law’ interpretative schema, Ewick and Silbey observed that another form of legal consciousness emerged where people perceive and play legality as a game. Legality “with the law” is envisaged as an enclosed domain where social values and private and collective interests can be achieved instrumentally by strategically using current rules (Ewick and Silbey 1998, 48, Woodlock 2020, 275). In other words, people express encounters with the law as a strategic game through which actors can appraise their legal experiences (Ewick and Silbey 1998, 132).

Refusal to sign-off work and/or to release an aircraft was commonly experienced by LAMEs as a capacity to use “with the law” for ensuring safety but also for ensuring organizational accountability and restraining the coercive influence of undue corporate pressure. A Swedish LAME demonstrated capacity as resolve and refusal when asked if he has ever faced a situation where he felt pressured to issue a CRS. Although he had never experienced an actual situation meriting his own refusal, he added that:

I would absolutely be capable, if one had come to that stage where someone would say 'sign here now'. Then, I feel that I have such integrity that I would be able to say 'No, I won't sign'. (Sweet, 2020)

Resolve and refusal emerged as common capacities with the law for these professionals such as when a Portuguese LAME discussed dealing with an external airline customer:

I can give you an example. One time when one aircraft did do a hard landing, ok? And you need to do a special inspection. You need to see everything on the aircraft. So, they want to do that, make the inspection very, very fast. And I said no! I need to see everything! You need to wait! (Por1, 2021)

In this situation, the LAME participates in constructing legality by resourcefully upholding safety using resolve and refusal with the law to strategically ensure that the required time to complete inspection tasks is given while refuting external pressure. As the certifying staff doing the inspection and eventual release, he is confident that “with the law” his decision is unquestionable. When further asked if his refusal was respected, he added that it was supported by his employer but the customer continued to push him:

Yes, but it's constantly to do a pressure on me, about me. And I did a safety report about this. (Por1, 2021)

Showing resolve with the law, the LAME continued playing the legal game by voluntarily submitting an occurrence report about this incident to make official (and legal) his safety concerns. Ewick and Silbey's research found that legality interpreted through the “with the law” schema is not only a question of providing consistency but is equally defined by a promise of potential closure where they found that people commonly turn to law (official) when other possibilities to resolve conflicts fail to bring closure (Ewick and Silbey 1998, 149; see Woodlock 2020, 275; cf. Hertogh 2018). The LAME knows that by using the occurrence reporting system, he can “with the law” bring closure to the matter at hand and also create a precedent to resolve future issues by framing “customer pressure” as problematic safety concerns. Once reported into the official system, the LAME is conscious that his employer is legally obliged to address (investigate and document) reported concerns, and, when appropriate, to provide feedback outlining how the organization deals with/intends to deal with such incidents (for example, corrective actions) to mitigate the potential for reoccurrence and to provide a safety-centred basis for learning from incidents (see Woodlock 2020, 280; see also Clare and Kourousis 2021a, 2021d). Most of the interviewed LAMEs from both countries shared similar stories

of seeking closure through using the reporting system to address everyday issues as safety concerns. In doing so, they confidently play the legal game in the knowledge that to put safety first they can report occurrences but in doing so, they legally oblige their employer to do the same and to take appropriate action. It is noteworthy, however, that whereas most Swedish participants stated that they have submitted reports to their employers' occurrence reporting system, only half of the Portuguese LAMEs indicated doing the same. Moreover, several LAMEs (mostly Swedish) expressed their concerns about overly complicated employer reporting systems, poor quality of feedback received, and some suggesting that no feedback was received for some submitted reports.

When asked if his employer and he share similar or different expectations of flight safety, another Swedish LAME showed resolve with the law in confidently stating that:

(...) the discussion has never gotten so far so that there has been something of, some form of, some question over who has responsibility. It has always ended with that I stand for the responsibility and I decide how I do with this, and they have accepted that so far. (Swe8, 2021)

Similarly, a Portuguese LAME showed resolve with the law when asked if he has ever refused to sign a CRS. He answered thus:

So, when you get to the part to release the aircraft or the task or something like that, and there is a doubt if something was correctly performed. And at the time it's gonna cost time, and money, that was not predicted at the beginning. It can happen. It has happened for many reasons, if an error or something got forgotten. And sometimes I had to make a statement and say that we can't do like this. (Por4, 2021)

These two quotes demonstrate resolve and refusal with the law in the sense that LAMEs regularly play the legal game by professionally accepting their legal responsibility but then using those responsibilities to exclusively decide (individually and collectively as qualified and authorised certifying staff) whether to release or not an aircraft into service. In this way, they make an unequivocal statement to employers that as the signature on a CRS, LAMEs are both the “arbitrators of safety” and “the authors of law” when performing their professional role as certifying staff (see AEI 2018; cf. Ewick and Silbey 1998, 80).

Resistance using capacity and time “Against the Law” – “Safety first” and “modulated derogation”

Legality interpreted through the ‘against the law’ schema of legal consciousness is ubiquitous and experienced by people as freedom and meaning constraining, “a net in which they are trapped” (Ewick and Silbey 1998, 184, Woodlock 2020, 276). People’s shared stories depict experiences of “making do” when feeling trapped “against the law” (Ewick and Silbey 1998, 48). As such, by “reconstructing” what they perceive and/or experience as a partial and unfair situation, people tend to resist the law and often in a “tactical” manner (Ewick and Silbey 1998, 184). These commonplace forms of resistance can be studied to explore if and how a shared resistant legal consciousness can “provoke or prefigure” greater collective contestations of power. According to Ewick and Silbey, researchers must acknowledge what are often the “unseen and unrecognized practices of the weak against the strong” to empirically explore these resistant forms of social action (Ewick and Silbey 1998, 188, Woodlock 2020, 276). For example, through the dimension of capacity, they discuss the notion of rule literalness as a form of resistance that “challenges and disrupts power by holding it accountable to its own rationality” (Ewick and Silbey 1998, 208). Rule literalness is grounded in an appreciation that social interactions in modern societies are governed by formal rules which define rights and duties, while also recognizing “informal rules of ceremony and deference”. It also embraces the understanding that while most social interactions are governed by rules, everyday practices “can run smoothly, only if some rules are systematically overlooked, bent, stretched, and otherwise ignored” (Ewick and Silbey 1998, 208). Aware of this, they found that people can make disruptions by consciously rebuffing participation in routine violations. These resistances can involve observing the existence of a gap within a framework of rules and exposing “a space that, by virtue of not being governed or defined, becomes momentarily free of control” (Ewick and Silbey 1998, 208).

Rule literalness as a form of resistance was observed in many interviewed LAME stories about CRS (see Atak and Kingma 2011, 277). An example was provided by a Swedish LAME, who experienced that some pilots regularly ask certifying staff to informally deal with minor technical issues to avoid having to formally remark them in the aircraft logbook. Although involving benign violations only of procedures, the LAME experienced this rule stretching as a tactical effort by some captains to abdicate professional responsibility and thus legal accountability to LAMEs to prevent a flight delay from being attributed to pilots. He explained it thus:

Then, one has maybe been in situations where one is called up [to the flight deck] by a pilot. They have gotten an indication or something and there have been discussions and try to find roundabout ways to get around that. But they have not written up any remark in the logbook yet. And then I have just said that 'You are the captain, it's your aircraft, you decide! If you write it into the book, then the aircraft will stand still. If you chose to fly, that's your responsibility!' (Swe1, 2020)

By rigidly adhering to the specific rules that formally apply to him as certifying staff, the LAME refuses to participate in a routine violation by observing rule literalness. He further disrupted this bending of the rules, by letting a pilot know that sidestepping rules is a decision that he/she as captain can take responsibility for alone. Put differently, the LAME knows that by informally dealing with such problems, he exposes himself and others (LAMEs who have previously signed off and released a part and/or task in question) to potential legal consequences, such as procedural non-compliance or wilful violations in the event of a subsequent serious incident. To formally address the problem and to legally release any work performed, he observes a tactical resistance using rule literalness to ensure that a defect, however minor, is always officially registered (written up). According to Ewick and Silbey, rule literalness can also involve “subverting the purpose of the rule” or how it should be applied where rather than following unreflectively, people rigidly observe that rule. This form of resistance can be expressed as a manufactured sense of “ignorance, naïveté”, or, as the LAME above demonstrates, strict adherence to “a concrete literalness” (Ewick and Silbey 1998, 208).

Another Swedish LAME exemplified a resistant legal consciousness against the law in a way that expressed rule literalness but also portrayed LAMEs as the guardians of “their own rules”. This emerged when he described how a former employer expected LAMEs to be “go-minded”, not least concerning organizational procedures outlined in the MOE. To recap, these are the legally approved procedures outlining how the organization has applied the hard EU regulations using soft law guidance and thus presume compliance with the law. The LAME suggested that when organizational leadership tells certifying staff that they must be “go-minded” (work to keep aircraft flying), this makes some LAMEs feel that by not being flexible enough with rules and procedures, they will be perceived as lacking “go-mindedness” and therefore disruptive to productivity expectations. Although not sure by what exactly is meant by “go-minded”, he nonetheless suggested that when such issues develop, LAMEs close ranks and work at a slower pace to resist managerial pressure on how LAMEs should understand regulatory and procedural requirements (for example, the MOE):

But one can say that in general what I have experienced over having worked, if someone [management] comes and tries to piss on our rules and such, then it is out with the thorns directly. Yes, it is like that everything, suddenly everyone is working in syrup and it goes very slowly (...). (Swe2, 2021)

The LAME's description of "working in syrup" (slow pace) can be understood as a form of "foot-dragging", a known modern form of resistance that defies and relies on "the rationalization of time", that is to say, an employer's time (Ewick and Silbey 1998, 215). It is not as much a refusal to comply with the rules and procedures as an assertion of some level of autonomy when complying with the rules. Acts of resistance such as taking time involve conscious decisions by people to exert some degree of control in situations, where such opportunities are otherwise sparse and curtailed. While experiencing or even anticipating problems in their everyday working conditions, people do however understand the value of time for an employer and can use time to mitigate and/or avoid their own exposure to processes of victimization (see Ewick and Silbey 1998, 216; cf. Pettersen and Aase 2008, 515).

Notwithstanding tactical observance of rule literalness, aircraft maintenance-focused research has found that maintenance personnel also regularly deviate from official procedures (see Hobbs and Williamson 2002, 2003, Ward *et al.* 2010, Zafiharimalala *et al.* 2014). Some interviewed LAMEs revealed that deviation from official requirements does occur in this sector and can sometimes be justified in the context of exceptional circumstances, even during everyday operational situations. A Portuguese LAME explained that one may have to deviate from procedures if one is working in a poor region of the world, where resources on the ground (lack of) cannot allow the same standards in Europe to be maintained. Against the backdrop of his professional judgement which is permeated by a normative commitment to putting safety first, he offered that deviating from formal rules in this sense can be acceptable by necessity:

I believe that in some situations, like this one [previously named poor developing global region] when we are really exposed and don't have any resources to face all the things that need to be accomplished, that could be a case. But fortunately, in my case, I never encountered that situation. But I believe that in some extreme situations where something else is at stake and not, usually not, every thought of 'by the rules', then that could be a case. Something really out of the ordinary. (Por4, 2021).

Although this LAME describes these deviations as acceptable in "out of the ordinary" situations, the study findings here also suggest that rule and procedural deviations occur

in ordinary everyday work situations. When directly asked about what compliance means to them, the majority of LAMEs first associated compliance with adherence to official rules and procedures and most stating that they did not feel it was appropriate to violate rules or procedures. Yet it later emerged in the conversations that many LAMEs often experience that formal rules and procedures are often inadequate, abstruse or too complex to allow them to meet immediate needs for dealing with certain working situations (see McDonald *et al.* 2000). Some LAMEs offered that in such situations, they must instead rely on professional judgements that can involve minor deviations or rule-stretching from the literalness of a formal rule/procedure (cf. Pettersen and Aase 2008, 515). In doing so, they felt that as long they are putting safety first, they can maintain a good legal conscience.

Accordingly, modulated derogation is a concept devised here in this paper to explain how, as a resistant legal consciousness against over-complex rules, LAMEs professionally permit benign deviations from official rules or procedures to make difficult working situations more suitable for accomplishing ordinary (non-critical) tasks. Through modulated derogation, they professionally participate in constructing legality by viewing professional rule/procedural deviations as necessary and permissible as qualified judgments. Understood through the lens of normative pluralism, modulated derogation involves amending the binary code of compliance/non-compliance with sectorial rules to that of a safe/unsafe binary code. By affording equal or superior status to safety, formal law is resisted through a shared collective normative commitment to allow a sectorial norm of “safety first” among LAMEs to primarily guide professional behaviour (see Fortes and Kampourakis 2019, 644; see also McDonald *et al.* 2000, Pettersen and Aase 2008, Atak and Kingma 2011). A Swedish LAME exemplifies modulated derogation here:

And that is also one of those things I have experienced through my years in this profession, that it is not always that the manual matches the job [tasks] that you are doing. And sometimes you get then a deviation, a discrepancy. But you must anyway have it in your thoughts that what you do, it must be safe and good. So, it, yes, it must be ‘safety first’, it is very simple. (Swe4, 2021)

Outward legal consciousness – legal hegemony before the law perceived within the sector?

As discussed previously, Hertogh and Kurkchian (2016, 416) observed “inward” legal consciousness as relating to perceptions of national law or “our” law”, and outward legal

consciousness concerning perceptions of EU law or “their” law. In this study, outward legal consciousness was observed more distinctly as commonly held opinions and understandings among the LAMEs about the criminalization of human error and national criminal justice systems, but was viewed as “their law” outside “our sector”.

Most LAMEs from both countries mentioned that they have discussed the criminalization of professionals on human factors training courses but have no direct experience of the phenomenon. In the conversations, they commonly expressed concern about the outcome of two aircraft accidents – the Helios accident (Greece) and the Spanair accident (Spain) – where they believed certifying LAMEs have been prosecuted. Whereas two maintenance engineers were charged with manslaughter in the wake of the Spanair accident (Michaelides-Mateou and Mateou 2010, 183; see also The Local 2008, El País 2011), a certifying engineer was eventually exonerated from legal blame in the Helios case (Williams 2020). The source of the LAMEs’ knowledge of these two cases was in part a consequence of hearsay within the sector and engagement with popular media more generally. For example, when asked if he was familiar with the notion of the criminalization of human error, a Portuguese LAME immediately brought up the Spanair accident:

Yes, yes, yes! I do. And in this, there was, not a long time ago, I remember in Spain, in Barajas airport. Do you remember the case? Well, the first people to be locked down in prison were the certifying staff, as I recall. The ones, before any questions asked, well, and that makes you think! Well, as I said, in the beginning of my career, I was really worried in how human error, that it exists, and you can't, well, you can't put that away. You have to deal with it. It's kind of complicated to deal with this because anyone can make a mistake and not be aware of it. And if all the holes in the cheese line up, you end up in court. Fortunately, all the systems in the aircraft and all the legislation, and the way the manuals are constructed, make sure that we mitigate that to the minimum.
(Por4, 2021)

Here the LAME immediately connects criminalization with a case he is loosely familiar with but which nonetheless invokes concern for him. It is interesting that sector-specific law is reified as a source to mitigate problems of state criminal law intervening in aviation sectorial matters. In other words, law within the sector is depicted as having a protective function for LAMEs but state-based law outside the sector is associated with “court” and being “locked down in prison”. Yet the LAME continued about the justifiability of prosecuting LAMEs:

Well, it's questionable, it's really questionable. It's a tough case, it's a tough issue to decide about. Because, I really think that if we were free from that, many people would be a lot more relaxed. It's something that keeps one awake about (...) I really think that it would get worse in general in maintenance, in this industry, if the criminal implication would not be a case. It's a risk, but I really feel that this should be the way. (Por4, 2021)

Again, standing 'before the law', he reifies law in a redeeming manner by expressing that invoking criminal law and the threat of prosecution can be justifiable and perhaps necessary to curtail the potential of undesirable unsafe behaviours to proliferate within the sector. Another Portuguese LAME immediately answered yes, when asked if it is ever acceptable to criminalize aircraft professionals. He felt that there should be a criminal investigation in the event of an accident, where if human lives are hurt or lost that "of course" staff should end up in court, regardless of whether it was intentional or unintentional human actions. In his own words:

Well, if the accident, if the reason for the accident is something related to us, to maintenance, and if it can be proved, you know, that the technician, the engineer, is directly involved with that action, why not! Yes! (...) If it can be proven, yes, that it was intentional, breaking the rules, then yes, yes! (...) If it is unintentional, I think it's always, we should always even intentionally or unintentionally, you know. So, either way, I think, you know. (Por 2, 2021)

The same two accidents also emerged in several conversations with Swedish LAMEs where many shared a similar view of these events but also on criminalization. When asked what legal accountability meant to him, a Swedish LAME directly referred to the Spanair crash and the subsequent criminal investigation which he suggested led to the prosecution and imprisonment of two technicians. Although confessing to not knowing the exact details of the verdict, he felt that the criminal investigation was partly "economics steered" with much pressure from the public and understandably so from surviving families. He felt that it can be justifiable but also difficult to prosecute professionals for their actions in the event of serious wrongdoing:

But if you can, like those who were put in prison, is it right or wrong? It depends actually if one has been irresponsible. One knows what one does mostly, I hope. Do something and not know, yes, then one should probably sit in prison (...) it is still other people's lives one puts at risk. (Swe2, 2021)

Discussion

The results of this study show two images of law emerging from the stories shared by the LAMEs concerning their everyday working lives in the aviation sector – an inward view of law as a normative source of formal guidance, accountability and protection within the EU aircraft maintenance sector – and an outward view which associates law with state juridical processes that deal with professional error and wrongdoing beyond the aviation sector (cf. Hertogh and Kurkchiyan 2016, 416). A shared inward legal consciousness is revealed here among Portuguese and Swedish LAMEs who collectively display shared patterns of thinking about two regulated phenomena that define their profession and sector—the certification and release of aircraft into service, and occurrence reporting. This inward collective legal consciousness is explained here as a sectorial legal consciousness and describes professional participation in the social construction of legality in EU civil aviation, where the interaction between law and safety produces complementary and competing plural normative expectations. A Swedish LAME best exemplifies this sectorial legal consciousness when asked if all LAMEs share a similar understanding of compliance:

I think that fundamentally I would claim that [a shared view of compliance] or at least for those colleagues, I have encountered. Then, it is so that we are people, we are individuals. We interpret differently and place focus on different things. Then it feels anyway that this is a little special branch, just because it is so tightly controlled and such. So that everyone has some form of consciousness about it [compliance]. Then that one applies it to different levels in one's own, in one's personal professionalism, so it is. But the consciousness I would anyway say that it is there from the professional flight technicians. (Swe1, 2020)

It merits mention that the LAMEs often used pronouns such as “us”, “our”, and “we” when answering how they relate to sectorial rules, disclosing a professional group collective legal consciousness that is further sustained by a shared sectorial professional conscience and commitment to always put safety-first. Although regulation-specific nuances were found in relation to the different regulatory requirements for occurrence reporting and releasing aircraft, by understanding compliance and legal accountability as structures of meaning concerning law and formal regulations, sectorial legal consciousness was “found to be layered according to” the regulated phenomenon “with which it is associated” (see Hertogh and Kurkchiyan 2016, 416). Thus, to understand the

complex interaction between law, safety, compliance and deviation in the context of aircraft maintenance, modulated derogation is a devised concept deployed here to explain how LAMEs professionally construct legality by occasionally *amending* the meaning of compliance concerning sectorial regulatory and procedural requirements (see Silbey 2005, 334). Important for the discussion here is that modulated derogation is not to be conflated with the notion of creative compliance in that the concept does not derive from an institutional law-centred perspective of rules and procedures (cf. Baldwin *et al.* 2012, 232). Rather, modulated derogation is defined by a safety-centred perspective where LAMEs “invoke and enact legality in ways neither approved nor acknowledged by the law” (Ewick and Silbey 1998, 22). Legality, through modulated derogation, permits a safe/unsafe binary code to supplant a compliance/non-compliance code to support an occupation-specific professional cultural alignment with a dominant sectorial norm of “safety first” (see Woodlock 2022). As such, legality in this sector is understood here to be constituted through normative pluralism where the hard and soft law forms of EU/EASA regulations and specific rules in national legal frameworks, as well as the requirements laid down in technical manuals and procedures, as the official sources of guidance for professional conduct among European aviation professionals, must operate in parallel with or in the shadow of a sectorial dominant norm – that is – “safety first”. As Ewick and Silbey argue:

Because law is both an embedded and an emergent feature of social life, it collaborates with other social structures... to infuse meaning and constrain social action. Furthermore, because of this collaboration of structures, in many instances law may be present although subordinate. To recognize the presence of law in everyday life is not, therefore, to claim any necessarily overwhelming power for law. (Ewick and Silbey 1998, 22)

In this sense, safety-first sustained through modulated derogation is not safety trammelled by the legal hegemony of state-based law or normative homogenous sectorial experiences of law, legality and compliance as solely attributable to membership in a particular Member State society. Rather, regardless of work site, organization and geographical location, safety is universally espoused by LAMEs – collectively – as a requisite component in the construction of legality within the broader European aviation sector wherein law and safety operate as complementary and conflicting normative sources of guidance (see McDonald *et al.* 2000, Silbey 2009, Henriqson *et al.* 2014, Woodlock 2022).

What can be said then of legal accountability beyond the sector? LAMEs from both Sweden and Portugal commonly expressed concerns about the potential of state-based criminal law “outside” their sector to hold them legally accountable for what happens “inside” the sector and some going so far as to mention a threat of imprisonment for blameworthy actions and wrongdoing. Although this view was somewhat more prevalent among Swedish LAMEs, it is noteworthy that no LAMEs could provide a concrete example of the phenomenon of criminalization for human error in aviation that they know of, in Sweden or Portugal. Yet, a significant number of the interviewed LAMEs expressed that prosecution can be justifiable, and even necessary to maintain professional order within the sector. This is an important finding of the study not least because is fundamentally at odds with how just culture promoting safety scholarship has assiduously problematized judicial legal interference in safety-critical sectors (Dekker 2017). That several LAMEs not only expressed a reified view of law when reproaching the sectorial regulatory framework but also reify external legal interference into the sector calls for a closer look at how just culture is perceived and experienced by LAMEs. Thus, to make sense of shared perceptions of legal accountability for wrongdoing in the outward legal consciousness requires understanding the extent to which just culture pervades the sectorial legal consciousness of European LAMEs, not least since the entry into force of Regulation (EU) No 376/2014 for occurrence reporting. This in turn requires asking why a seldom-experienced phenomenon like the criminalization of human error in aviation continues to garner so much attention in safety scholarship.

The majority of LAMEs in this study felt that they could confidently report all safety concerns and have been and/or expect to be treated fairly by their employer and/or national aviation authority, even when self-reporting errors and deviations (see Woodlock 2022). On the one hand, this finding resonates with scholarly claims that while not tolerating reckless behaviour, a just culture approach will recognize that competent professionals do make mistakes and even acknowledge, how professionals “develop shortcuts, workarounds, routine violations” (Dekker and Breakey 2016, 188). On the other hand, most LAMEs were not confident in describing what just culture means (ideal) or explaining the extent to which it is applied (actual), if at all, in their employing organization. This suggests that assuming that just culture only positively influences reporting as is intended is questionable given that knowledge seems limited and deficient. Some LAMEs seemed to conflate just culture with the notion of a “no-blame culture” with few LAMEs explicitly recognizing that EU-based employers are legally obliged to apply just culture principles when handling occurrence reports. However,

situated in the broader institutional context of regulated occurrence reporting and just culture in European civil aviation, this finding should not come as too surprising. A closer look at the findings in the evaluation report of EU Regulation No. 376/2014 and specifically regarding just culture rule implementation reveals that key stakeholder representatives have indicated some instances at the organizational level (albeit few) “which appeared to be in direct contradiction to the “just culture” principles” (EC 2021, 24); and that at a national level, many industry stakeholders are problematically unaware that their State is responsible to designate a just culture body “with only 4 out of 31 participants” in an industry workshop confidently indicating awareness that such a body exists (or should exist) (EC 2021, 24; see Woodlock 2022).

From various LAME stories, it emerged that it is partly from hearsay within the sector about much-publicized aircraft accidents that much opinion about the criminalization of human error is shaped among these professionals (cf. Heraghty *et al.* 2020). However, important for the discussion here is that many LAMEs shared that their knowledge of this phenomenon also stems from educational discussions held on regulation-required human factors courses provided by their employer. When asked about the phenomenon of criminalization, several LAMEs answered that discussions on the criminalization of professional errors, blame culture, occurrence reporting and just culture make up the content of human factors training courses. In other words, regulated education from within the sector may not only be shaping sectorial legal consciousness but also inadvertently shaping common perceptions of law beyond the sector among Swedish and Portuguese LAMEs. From a legal consciousness perspective, it is both interesting and concerning if education on just culture, a regulated intervention in EU civil aviation to encourage safety reporting by negating fear of law and legal consequences, propagates the legal concerns and fears it seeks to mitigate. Accordingly, it merits asking why the content of regulated recurrent training reflects a purported problem of law for LAMEs when their actual experience of law and legality suggests that this phenomenon of criminalization does not happen often if at all in their countries of employment (cf. Michaelides-Mateou and Mateou 2010).

In the broader field of research surrounding aviation, risk and safety scholars have long depicted the relationship between law and safety as conflictual with state criminal legal systems consistently described as interfering with the effective development of safety reporting systems (see Dekker 2007, Lawrenson and Braithwaite 2018). By considering that just culture emerged as a conceptual solution to the problem of legal interventions in safety-critical sectors, it is no exaggeration to state that on this matter, safety

scholarship has contributed to giving ‘law a bad name’ regarding aviation safety matters. This positioning is most prevalent concerning safety reporting and human error. Scholarship continues to portray an image depicting the relationship between law and safety as analogous to a problematic morganatic marriage between two public goods – the rule of law and public safety. A monolithic vision of law is ascribed the higher rank in the union with safety portrayed as the subordinated partner that must accede to the authority of formal law (see Dekker 2017, 91–126). Just culture has therefore become a trophy concept of safety science and is commonly promoted as a universal justice-for-all solution to mitigate such problems (see Hodges 2015, Dekker and Breakey 2016, Dekker 2017, Woodlock 2022). In contrast to the dominance of safety-first in sectorial legal consciousness, this understanding of law was found to affect the outward legal consciousness of the LAMEs with many claiming that the open and non-punitive approach to mistakes and violations within the sector becomes closed and limited when talk of the criminalization of human error develops. This researcher observed how, when asked about the phenomenon of criminalization, some LAMEs were more reserved and cautious when discussing, than earlier in the interviews. In closing, the essay more critically addresses legal hegemony, understood here through the application of Ewick and Silbey’s “before the law” and “with the law” schemas. The study suggests discussing the notion of a sectorial legal consciousness is feasible when a common understanding of law within a sector leads to a sector-specific socio-professional production of legality that extends beyond national and regional boundaries and comprises normative pluralism.

But can a sectorial legal consciousness transcend the legal hegemony of state-based law as an interfering factor in sectorial matters? And what of ideology and law? With consideration of ideology and hegemony, Ewick and Silbey argue that the three forms of legal consciousness can only be properly understood in relation to one another and by recognizing (and exploring) the “contradictions and oppositions” between them. According to Ewick and Silbey, consciousness is “participation in the production of structures” and involves both thinking and doing. It is not to be construed as “individual and merely ideational” but rather, as a form of social practice (Ewick and Silbey 1998, 223–224). For Ewick and Silbey, ideology is understood as “a complex process” that shapes social relations wherein “meaning is produced, challenged, reproduced, transformed” (Ewick and Silbey 1998, 225). By encouraging rather than curtailing thinking, ideology is a process that both stems from and reflects upon shared experiences, especially those associated with power (Ewick and Silbey 1998, 225).

However, their broader definition of structure moves beyond embedded articulations that are primarily material and “external to the situations it constrains” but also includes ideas and resources. Structure, they argue, emerges out of social interactions, even when it is acting upon them (Ewick and Silbey 1998, 225). Modulated derogation emerges out of social interactions between LAMEs as a resourceful resistance to hegemonic conceptions of law as it acts upon their everyday working lives within and beyond the European aviation sector wherein a single-market ideology and corporate influences ultimately define law as a structure of meaning in the EU regulatory environment.

Concluding reflections

In challenging monolithic understandings of law that continue to be floated in much safety scholarship, it is clear from the study findings and discussions presented here that more nuanced understandings of law and legality are needed to capture the complex professional construction of legality among aviation professionals. In a post-just culture regulatory environment such as EU civil aviation, law-centred understandings of legality that continue to highlight law as a problem for safety, risk failing to recognize the normative pluralism underpinning experiences of working in the multi-level regulatory environment of European civil aviation. Rather, in adopting a bottom-up legal consciousness-focused approach to explore the heterogeneity of normative experiences of law, legality and safety among European LAMEs, the current study identifies how two images of law coexist and compete in the regulatory environment of the EU aircraft maintenance sector. A tension between a sectorial and outward legal consciousness of LAMEs was found to be embedded in a legal hegemonic understanding of law and criminal prosecution for human error that is external to but affecting of perceptions of law and legality within the aviation sector. The sectorial legal consciousness of LAMEs discussed here challenges long-standing assumptions that, in the face of wrongdoing, professionals will act in a de facto unprofessional self-regarding manner by failing to report safety occurrences. Based on the findings of this study, it is concluded here that reducing the complexity of law to a fear factor determining professional conduct and safety behaviour in the everyday working lives of European LAMEs is no longer adequate to explain the actual experiences of law and legality of aviation professionals. Conscience-based decision-making to self-report errors and deviations and the prevalence of what is conceptualized here as modulated derogation suggest that fear of legal consequences may well be a lesser concern for LAMEs than their professional

expectations to uphold safety. As such, future studies should embrace critical legal consciousness and normative pluralism approaches to the study of law and regulation in aviation that reject monolithic understandings of law and place safety into the foreground of explorations of a broader understanding of legality in aviation and other risk-critical sectors.

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