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Systemic Outcome Accountability for PT KAI's Third-Party Level-Crossing Liability Under The 2025 SOE Reform

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Abstract : *Recurring level-crossing accidents expose an imbalance between railway risks and legal protection for third parties. This study examines PT Kereta Api Indonesia's civil liability after the 2025 State-Owned Enterprise reform and develops a model based on Systemic Outcome Accountability Theory. Using normative legal research with statutory, conceptual, case-illustrative, and limited functional-comparative approaches, the study finds that Article 159(1) of Law Number 23 of 2007 retains a fault-based standard that disadvantages victims because crucial operational and technical evidence remains controlled by operators and public authorities. Regulatory fragmentation also distributes safety duties without an integrated compensation and recourse mechanism. The 2025 reform reinforces PT KAI's separate corporate responsibility while preserving its public-service obligations. This study proposes a three-layer framework consisting of limited strict liability toward victims, proportional recourse among contributing actors, and corporate risk governance supported by evidence disclosure, mandatory third-party insurance, and a dedicated railway accident compensation fund for third parties.*

Keywords : *civil liability; level crossing; limited strict liability; PT KAI; systemic outcome accountability.*

Abstrak : Kecelakaan perlintasan sebidang yang berulang menunjukkan ketimpangan antara risiko operasi perkeretaapian dan pelindungan hukum bagi pihak ketiga. Penelitian ini menganalisis pertanggungjawaban perdata PT Kereta Api Indonesia setelah reformasi Badan Usaha Milik Negara tahun 2025 serta merumuskan model berdasarkan Systemic Outcome Accountability Theory. Penelitian hukum normatif ini menggunakan pendekatan perundang-undangan, konseptual, ilustrasi kasus, dan perbandingan fungsional secara terbatas. Hasil penelitian menunjukkan bahwa Pasal 159 ayat (1) Undang-Undang Nomor 23 Tahun 2007 masih mempertahankan standar berbasis kesalahan yang merugikan korban karena bukti operasional dan teknis dikuasai operator serta lembaga pemerintah. Fragmentasi regulasi juga membagi kewajiban keselamatan tanpa mekanisme kompensasi dan regres yang terpadu. Reformasi BUMN

2025 mempertegas tanggung jawab korporasi PT KAI dengan tetap mempertahankan kewajiban pelayanan publik. Penelitian ini menawarkan tiga lapis pertanggungjawaban berupa limited strict liability, regres proporsional antaraktor, dan tata kelola risiko korporasi melalui keterbukaan bukti, asuransi wajib, serta dana kompensasi kecelakaan perkeretaapian khusus bagi pihak ketiga yang dirugikan.

Kata kunci : Akuntabilitas Akibat Sistemik; Limited Strict Liability; Perlintasan Sebidang; Pertanggungjawaban Perdata; PT KAI.

Introduction

The collision near Bekasi Timur Station on 27 April 2026, involving a Cikarang Line commuter train and the Argo Bromo Anggrek train, once again exposed the vulnerability of level crossings.[1] This incident was not an isolated event, as similar accidents have continued to occur at crossings, some of which remain inadequately guarded or officially unregistered.[2] The recurrence of such accidents indicates that level-crossing incidents cannot be sufficiently explained by road users' negligence alone. They must instead be examined through the relationship between infrastructure conditions, safety governance, the allocation of authority, and the capacity of relevant actors to control risks.

The regulation of level crossings is dispersed across several legal instruments. Law Number 23 of 2007 concerning Railways imposes safety obligations on railway operators. However, Article 159 paragraph (1) requires third parties to prove the operator's fault before obtaining compensation.[3] Article 114 of Law Number 22 of 2009 concerning Road Traffic and Transportation requires road users to give priority to railway traffic, while Minister of Transportation Regulation Number 94 of 2018 allocates responsibility for securing level crossings to the central Government, regional governments, or legal entities owning special-purpose roads, depending on the status of the road.[4] This regulatory structure distributes responsibility among railway operators, infrastructure managers, Government institutions, and road users.

A legal gap arises because an integrated mechanism of liability and redress has not accompanied this allocation of obligations. There are no explicit provisions identifying the party responsible for providing initial compensation, regulating victims' access to technical evidence, establishing realistic claim periods, or providing a right of recourse when an accident is attributable to multiple actors. Article 159 paragraph (1) also retains the burden of proving fault on victims, even though operational data, signaling

1 Tri Angga Kriswaningsih, "Kronologi Kecelakaan Kereta di Stasiun Bekasi Timur, Berawal KRL Tabrak Taksi Online," *Kompas TV*, May 1, 2026.

2 Andien Muarifah Primawati and Arief Suryono, "Tanggung Jawab PT. KAI (Persero) terhadap Kecelakaan Kereta Api pada Keselamatan Penumpang," *Eksekusi: Jurnal Ilmu Hukum dan Administrasi Negara* 2, no. 2 (2024): 184, https://doi.org/10.55606/eksekusi.v2i2.1103; Komite Nasional Keselamatan Transportasi, "KNKT Sampaikan Capaian Kinerja Tahun 2024," July 17, 2024.

3 Republik Indonesia, "Undang-Undang Republik Indonesia Nomor 23 Tahun 2007 tentang Perkeretaapian" (2007).

4 Republik Indonesia, "Undang-Undang Republik Indonesia Nomor 22 Tahun 2009 tentang Lalu Lintas dan Angkutan Jalan" (2009).

records, communication recordings, and technical investigation reports remain under the control of the operator or Government institutions.[5] This arrangement is inconsistent with Systemic Outcome Accountability Theory, which treats the resulting harm, control over risk, and institutional capacity as the grounds for determining which party should bear responsibility.[6]

This issue has become increasingly relevant following the enactment of Law Number 1 of 2025, as amended by Law Number 16 of 2025. The reform of the state-owned enterprise regime reinforces the separation between state assets invested as capital and the assets of the business entity, thereby placing corporate profits, losses, and liabilities upon the enterprise itself.[7] PT Kereta Api Indonesia must consequently be understood as a state-owned corporation possessing a separate legal personality and independent corporate liability. Third-party claims arising from railway operations cannot be transferred to the state solely because the state acts as the company's shareholder. Nevertheless, such corporate independence remains inseparable from obligations relating to public service, transparency, risk management, and the provision of effective remedies for injured parties.[8]

Previous studies have produced several findings relevant to this issue. Churniawan, Agustriana, and Priyanto identified uncertainty concerning the criteria for eligible recipients, the categories of compensable loss, and the amount of compensation available to victims of railway accidents.[9] Fahlevi and Abduh demonstrated that PT Kereta Api Indonesia's liability toward passengers has been legally regulated, although its implementation continues to face procedural and institutional coordination barriers.[10] Pradipta and Widjajanti explained that the 2025 state-owned enterprise reform strengthened the separation between state assets and corporate assets while reinforcing the independence of corporate liability.[11] Read, Cox, Hulme,

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5 Republik Indonesia, Undang-Undang Republik Indonesia Nomor 23 Tahun 2007 tentang Perkeretaapian; Komite Nasional Keselamatan Transportasi, "KNKT Investigasi Kecelakaan Kereta Brantas dan Truk Tronton di Semarang," July 17, 2026.

6 Gemma J M Read et al., "What Factors Influence Risk at Rail Level Crossings? A Systematic Review and Synthesis of Findings Using Systems Thinking," *Safety Science* 138 (2021): 105207, https://doi.org/10.1016/j.ssci.2021.105207; Nils Jansen, *The Structure of Tort Law A4 - Steel, Sandy* (Oxford: Oxford University Press, 2021), https://doi.org/10.1093/oso/9780198705055.001.0001; Olivier Butzbach et al., "State-Owned Enterprises as Institutional Actors: A Hybrid Historical Institutionalist and Institutional Work Framework," *Management and Organization Review* 18, no. 6 (2022): 1032–76, https://doi.org/10.1017/mor.2021.25.

7 Republik Indonesia, "Undang-Undang Republik Indonesia Nomor 1 Tahun 2025 tentang Perubahan Ketiga atas Undang-Undang Nomor 19 Tahun 2003 tentang Badan Usaha Milik Negara" (2025); Republik Indonesia, "Undang-Undang Republik Indonesia Nomor 16 Tahun 2025 tentang Perubahan Keempat atas Undang-Undang Nomor 19 Tahun 2003 tentang Badan Usaha Milik Negara" (2025).

8 OECD, "OECD Guidelines on Corporate Governance of State-Owned Enterprises 2024" (Paris: OECD Publishing, 2024), pp 20–46, https://doi.org/10.1787/18a24f43-en.

9 Erifendi Churniawan, Titiek Masdini Agustriana, and Sapto Priyanto, "Kajian Yuridis terhadap Kerugian yang Ditimbulkan Akibat Kecelakaan Perkeretaapian Berbasis Nilai Keadilan," *Wajah Hukum* 8, no. 2 (2024): 612, https://doi.org/10.33087/wjh.v8i2.1539.

10 M Reza Fahlevi and Rachmad Abduh, "Tanggung Jawab PT. Kereta Api Indonesia (Persero) terhadap Penumpang Akibat Terjadinya Kecelakaan Kereta Api," *JISE: Journal of Islamic and Law Studies* 3, no. 3 (2023): 270, https://doi.org/10.55823/jise.v3i3.561.

11 Firwanda Sandi Pradipta and Ermania Widjajanti, "Pembaharuan Hukum Pidana Korupsi dalam Pengelolaan BUMN Pasca Revisi UU No 1 Tahun 2025," *Locus Journal of Academic Literature Review* 4, no. 2 (2025): 84, https://doi.org/10.56128/ljoalr.v4i2.431.

Naweed, and Salmon found that level-crossing risks arise from interactions among technical, human, and organizational components, while Di Graziano and Marchetta emphasized technical conditions, traffic exposure, and intervention capacity in risk assessment.[12] Butzbach, Fuller, Schnyder, Svystunova, and Nurgozhayeva conceptualized state-owned enterprises as corporations possessing commercial autonomy while remaining bound by public objectives and state accountability.[13]

The research gap lies in the absence of studies specifically examining PT Kereta Api Indonesia's civil liability toward third parties by integrating the systemic risks of level crossings, unequal control over evidence, fragmented institutional authority, and the transformation of the state-owned enterprise liability regime in 2025. Existing studies continue to address victim compensation, legal relationships with passengers, safety risks, or state-owned enterprise governance separately. Consequently, they have not yet provided an analytical foundation capable of treating these interconnected issues as a unified legal problem.

The novelty of this study lies in its use of Systemic Outcome Accountability Theory as a single analytical framework for examining the relationship between the resulting harm, control over risk, and the legal character of PT Kereta Api Indonesia as a state-owned corporation performing public-service functions. Its theoretical contribution concerns the development of civil liability scholarship in high-risk transportation activities. Its practical contribution consists of establishing a normative basis for third-party protection, corporate risk management, and the allocation of responsibility among actors involved in level-crossing operations.

This study aims to analyze the construction of PT Kereta Api Indonesia's civil liability toward third parties in level-crossing accidents following the reform of the state-owned enterprise regime in 2025. It also seeks to formulate a proportionate liability framework for third-party protection based on Systemic Outcome Accountability Theory by considering the resulting harm, control over risk, institutional capacity, and the involvement of each relevant party in level-crossing accidents.

Methods

This study employs normative legal research to examine law as a coherent system of applicable norms.[1] The statutory approach assesses the consistency of Law Number 23 of 2007 on Railways, Law Number 22 of 2009 on Road Traffic and Transportation, Law Number 1 of 2025 as amended by Law Number 16 of 2025, and Minister of Transportation Regulation Number 94 of 2018.

The conceptual approach examines civil liability, fault liability, strict liability, limited strict liability, vicarious liability, proportional liability, and Systemic Outcome Accountability Theory. The case approach uses the collision

[12] Read et al., "What Factors Influence Risk at Rail Level Crossings? A Systematic Review and Synthesis of Findings Using Systems Thinking."

[13] Butzbach et al., "State-Owned Enterprises as Institutional Actors: A Hybrid Historical Institutionalist and Institutional Work Framework."

involving the KRL Commuter Line and the Argo Bromo Anggrek train near Bekasi Timur Station on 27 April 2026, as well as the Sancaka train collision at JPL 82 between Sragen and Masaran Stations on 10 January 2025, as factual illustrations of normative implementation rather than empirical evidence or judicial precedents.

Primary legal materials comprise the relevant statutes and regulations. Secondary materials include doctrinal works on civil and transportation law, legal journal articles published primarily within the last five years, limited comparative literature, and official publications issued by PT KAI, DJKA, KNKT, and the Ministry of Transportation. Official data are used cautiously where investigations or findings remain provisional. Tertiary materials, including legal dictionaries and encyclopedias, serve as supplementary references. The materials are collected through library research and analyzed qualitatively and prescriptively through norm description, legal systematization, identification of vertical and horizontal inconsistencies, and normative evaluation based on civil liability principles, Systemic Outcome Accountability Theory, and sound legislative drafting.[14]

Result And Discussion

PT Kereta Api Indonesia's Civil Liability toward Third Parties after the 2025 SOE Reform

The construction of PT Kereta Api Indonesia's civil liability toward third parties must be examined through the relationship between Article 1365 of the Indonesian Civil Code and Article 159(1) of the Railway Law. Article 1365 requires an unlawful act, fault, damage, and causation, while Article 159(1) exempts railway operators from third-party losses unless the claimant proves the operator's fault.[15] Although this arrangement reflects fault-based liability, it creates evidentiary inequality because signaling records, journey data, crew communications, maintenance histories, event-recorder information, and internal safety reports remain under the control of the operator or public authorities. A formally equal burden of proof therefore produces unequal access to compensation.

Read et al. demonstrate that level-crossing risks emerge from interactions among infrastructure, warning devices, railway operations, road conditions, vehicle conditions, enforcement, institutional coordination, and human behavior.[16] The legal assessment cannot stop at the immediate conduct of the road user. It must also examine whether the crossing was authorized, adequately protected, properly maintained, and supported by effective

[14] Soerjono Soekanto and Sri Mamudji, *Penelitian Hukum Normatif: Suatu Tinjauan Singkat* (Jakarta: Rajawali Pers, 2019), 13–14.

[15] Republik Indonesia, "Kitab Undang-Undang Hukum Perdata" (n.d.); Republik Indonesia, Undang-Undang Republik Indonesia Nomor 23 Tahun 2007 tentang Perkeretaapian; Rosa Agustina, *Perbuatan Melawan Hukum* (Jakarta: Pascasarjana Fakultas Hukum Universitas Indonesia, 2003), pp 36-47.

[16] Read et al., "What Factors Influence Risk at Rail Level Crossings? A Systematic Review and Synthesis of Findings Using Systems Thinking"; Alessandro Di Graziano and Vincenzo Marchetta, "Application of a Quantitative Risk-Based Decision Tool for Local Railway Level Crossing Management," *Applied Sciences* 14, no. 19 (2024): 8630, https://doi.org/10.3390/app14198630.

emergency communication and institutional supervision. Systemic analysis does not eliminate individual responsibility, but prevents organizational and regulatory failures preceding the accident from being overlooked.

Article 159(1) provides weaker protection to third parties than Articles 157 and 158 provide to passengers and cargo owners. The operator bears responsibility during carriage unless it proves a recognized ground of release, whereas third parties exposed to the same operational danger must first establish fault.[17] This distinction rests on contractual status rather than the severity of harm, control of evidence, or capacity to prevent risk. Churniawan, Agustriana, and Priyanto identify continuing uncertainty regarding eligible claimants, compensable losses, valuation methods, and recovery amounts.[18] Article 159(2) further restricts claims to thirty days from the occurrence of loss, although victims may still be undergoing treatment and technical investigations may remain incomplete.

Corporate responsibility should focus on the organization of safety rather than the personal conduct of individual employees. Article 1367 of the Indonesian Civil Code supports corporate responsibility for employees acting within the scope of their functions. Saputri, together with Dita and Winanti, links vicarious liability and corporate-governance duties to the prevention of institutional failures in recruitment, training, supervision, maintenance, signaling, data preservation, and emergency response.[19] Such failures cannot be transferred to operational personnel. Good corporate governance may restrict attribution when an employee acts entirely outside assigned functions, but it cannot release the corporation from weaknesses in systems that it designs, finances, and controls.

The 2025 SOE reform clarifies that PT KAI remains a government-owned corporation with separate legal personality, assets, profits, losses, and obligations. Law Number 1 of 2025, as amended by Law Number 16 of 2025, separates state capital participation from the assets and liabilities of the enterprise.[20] Claims arising from railway operations should therefore be directed primarily toward PT KAI rather than automatically transferred to the state as shareholder. This autonomy does not detach the company from public

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[17] Republik Indonesia, Undang-Undang Republik Indonesia Nomor 23 Tahun 2007 tentang Perkeretaapian; Fahlevi and Abduh, "Tanggung Jawab PT. Kereta Api Indonesia (Persero) terhadap Penumpang Akibat Terjadinya Kecelakaan Kereta Api."

[18] Churniawan, Agustriana, and Priyanto, "Kajian Yuridis terhadap Kerugian yang Ditimbulkan Akibat Kecelakaan Perkeretaapian Berbasis Nilai Keadilan"; Republik Indonesia, Undang-Undang Republik Indonesia Nomor 23 Tahun 2007 tentang Perkeretaapian.

[19] Republik Indonesia, Kitab Undang-Undang Hukum Perdata; Theodora Pritadianing Saputri, "Prinsip Tata Kelola Perusahaan Yang Baik dan Prinsip Kewajaran sebagai Batasan Vicarious Liability Perseroan Terbatas," *Refleksi Hukum: Jurnal Ilmu Hukum* 8, no. 2 (2024): 249–68, https://doi.org/10.24246/jrh.2024.v8.i2.p249-268; Sekar Ayu Dita and Atik Winanti, "Analisis Asas Vicarious Liability dalam Pertanggungjawaban Pengganti atas Perbuatan Melawan Hukum Pegawai Bank," *Jurnal USM Law Review* 6, no. 2 (2023): 526–42, https://doi.org/10.26623/julr.v6i2.7037.

[20] Republik Indonesia, Undang-Undang Republik Indonesia Nomor 1 Tahun 2025 tentang Perubahan Ketiga atas Undang-Undang Nomor 19 Tahun 2003 tentang Badan Usaha Milik Negara; Republik Indonesia, Undang-Undang Republik Indonesia Nomor 16 Tahun 2025 tentang Perubahan Keempat atas Undang-Undang Nomor 19 Tahun 2003 tentang Badan Usaha Milik Negara; Pradipta and Widjajanti, "Pembaharuan Hukum Pidana Korupsi dalam Pengelolaan BUMN Pasca Revisi UU No 1 Tahun 2025."

objectives because the state retains distinct functions as owner, regulator, policymaker, and road authority.

Systemic Outcome Accountability Theory interprets this position as hybrid corporate accountability. PT KAI's corporate autonomy places operational risks, reserves, insurance, evidence preservation, and claim settlement within the company, while Government ownership strengthens duties of transparency, board supervision, stakeholder protection, implementation of investigation recommendations, and coordination with public authorities. Butzbach et al. characterize state-owned enterprises as institutionally hybrid actors, while Nurgozhayeva emphasizes that corporate form should not weaken accountability where the state retains control over governance and public objectives.[21] Corporate autonomy identifies the bearer of operational obligations, whereas public accountability justifies stronger governance and scrutiny.

Regulatory fragmentation nevertheless prevents this corporate status from producing an effective remedy. The Railway Law governs railway operations, the Road Traffic and Transportation Law regulates road-user conduct, and Minister of Transportation Regulation Number 94 of 2018 distributes crossing-protection authority according to road status.[22] These rules identify several duty bearers but do not determine who must provide initial compensation when railway operations, infrastructure defects, inadequate crossing protection, vehicle failure, and road-user conduct jointly contribute to an accident.

Putri et al. classify regulatory disharmony into horizontal conflict, vertical inconsistency, and normative gaps, while Cahyani, Hartanto, and Ghoffar associate such fragmentation with inconsistent implementation.[23] In the level-crossing regime, the unresolved issues concern evidence disclosure, compensation procedures, minimum recovery, mandatory third-party insurance, and recourse among responsible actors.

Responsibility must therefore be mapped across railway facility or service operators, railway infrastructure operators, competent Government authorities, vehicle or public-transport operators, and road users. PT KAI's operational control and possession of technical evidence justify its position as a principal addressee of claims when the loss falls within the railway

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[21] Butzbach et al., "State-Owned Enterprises as Institutional Actors: A Hybrid Historical Institutionalist and Institutional Work Framework"; Roza Nurgozhayeva, "Corporate Governance in Russian State-Owned Enterprises: Real or Surreal?," *Asian Journal of Comparative Law* 17, no. 1 (2022): 24–50, https://doi.org/10.1017/asjcl.2022.3; OECD, "OECD Guidelines on Corporate Governance of State-Owned Enterprises 2024."

[22] Kementerian Perhubungan Republik Indonesia, "Peraturan Menteri Perhubungan Republik Indonesia Nomor 94 Tahun 2018 tentang Peningkatan Keselamatan Perlintasan Sebidang antara Jalur Kereta Api dengan Jalan" (2018); Republic of Indonesia, "Law of the Republic of Indonesia Number 22 of 2009 on Road Traffic and Transportation" (2009); Republik Indonesia, Undang-Undang Republik Indonesia Nomor 23 Tahun 2007 tentang Perkeretaapian.

[23] Nur Kemala Putri et al., "Disharmonisasi Peraturan Perundang-Undangan di Indonesia: Antara Bentuk, Penyebab, dan Solusi," *Wathan: Jurnal Ilmu Sosial dan Humaniora* 1, no. 1 (2024): 55–63, https://doi.org/10.71153/wathan.v1i1.17; Lalita Vembrina Putri Cahyani, Ratna Hartanto, and Mahendra Ridwanul Ghoffar, "Tantangan dan Strategi Proses Harmonisasi Peraturan Perundang-Undangan di Indonesia," *Soedirman Law Review* 7, no. 1 (2025): 128–44, https://doi.org/10.20884/1.slr.2025.7.1.16093.

operational risk sphere. This position does not make PT KAI the sole final bearer of every loss because each actor remains responsible for risks within its authority and control. The principal defect of the current regime lies in its failure to distinguish prompt victim-facing responsibility from the final allocation of loss among contributing actors.

The current framework leaves third parties facing substantive and institutional uncertainty. Article 159(1) requires proof of fault, while preventive authority and technical evidence remain dispersed among several institutions without an integrated claims mechanism. A coherent liability regime must preserve PT KAI's corporate autonomy, recognize the independent duties of public and private actors, and prevent regulatory fragmentation from becoming a barrier to compensation.

Table 1. Current Allocation of Level-Crossing Civil Liability

Legal component	Current position	Principal deficiency	Required direction
Article 159(1) of the Railway Law	Third parties must prove operator fault.	Victims lack access to technical and operational evidence.	Replace the victim-facing rule with limited strict liability.
Article 159(2) of the Railway Law	Claims must be submitted within thirty days of loss.	The period may expire before medical recovery or completion of technical investigation.	Link the period to reasonable discovery of loss or the final investigation report.
Crossing-protection authority	Authority is allocated according to road status.	Administrative authority is not matched by a civil compensation and recourse rule.	Create a joint responsibility and evidence-preservation protocol.
Post-2025 SOE status	PT KAI retains government ownership and separate corporate assets.	Operational autonomy may be misread either as state immunity or purely private status.	Apply company-level liability with enhanced public accountability.

Table 1 confirms that the legal gap arises from the absence of a compensation sequence linking dispersed statutory duties. The reform must therefore identify an initial paying party while preserving proportional recourse against public authorities, infrastructure managers, vehicle operators, and road users according to their respective contributions.

Reconstructing Proportional Liability through Systemic Outcome Accountability

Systemic Outcome Accountability Theory provides a unified framework for reconstructing civil liability at level crossings. It integrates outcome responsibility, risk allocation based on control and preventive capacity, and the dual accountability of government-owned corporations. According to Jansen, private law may allocate the consequences of an organized activity to the actor controlling its principal risks without treating civil liability as moral condemnation of individual conduct.[24] Applied to railway operations, the analysis examines control over operating systems, technical information, preventive measures, insurance, and loss-distribution capacity, while recognizing the statutory authority of other institutions responsible for crossing safety.

This framework avoids attributing every accident either to the last road user involved or solely to PT KAI because a train caused the immediate impact. Level-crossing accidents may involve infrastructure defects, inadequate supervision, unauthorized crossings, vehicle failure, weak emergency coordination, and organizational omissions.

Read et al. show that accident risk emerges from interactions among technical, human, and institutional components rather than isolated conduct.[25] Systemic accountability therefore distinguishes the external relationship with victims from the internal allocation of responsibility among contributing actors. Victims require a clear claim addressee and timely recovery, while the final distribution of loss may be determined through recourse after technical evidence establishes each actor's contribution.

The proposed victim-facing standard is limited strict liability. A third party would only need to establish legally recognized loss, a causal connection with railway operations, and the occurrence of harm within the railway operational risk sphere under the balance of probabilities standard. Proof of operator fault would no longer be required. The operator could obtain release by proving force majeure, the victim's exclusive fault, or an independent third-party intervention that was not reasonably foreseeable or preventable. The term limited refers to these restricted defenses and the availability of recourse rather than an artificially low compensation ceiling or broad exceptions that restore the evidentiary burden to victims.

This allocation reflects the severity and concentration of railway risk arising from train mass, speed, limited stopping distance, and potentially catastrophic consequences at road-rail interfaces. Operators and public authorities possess greater capacity to prevent accidents, investigate causes, preserve evidence, obtain insurance, and distribute losses. Di Graziano and Marchetta emphasize that preventive capacity must be assessed through technical conditions, traffic

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[24] Jansen, *The Structure of Tort Law A4 - Steel, Sandy*.

[25] Read et al., "What Factors Influence Risk at Rail Level Crossings? A Systematic Review and Synthesis of Findings Using Systems Thinking."

exposure, and the intervention capacity of responsible institutions.[26] Calabresi likewise maintains that initial accident losses should be allocated to the actor capable of reducing and insuring the risk at lower informational and administrative cost.[27] The model consequently rests on control and institutional capacity rather than Government ownership alone.

Indonesian transport law already provides a functional analogy. Article 240 of Law Number 1 of 2009 on Aviation regulates liability for losses suffered by third parties on the ground without conditioning recovery on proof of operator fault and requires the relevant risk to be insured.[28] This provision need not be copied mechanically into railway law, but it confirms that Indonesian law recognizes stricter victim-facing liability when high-risk transportation exposes persons outside a carriage contract to harm. Railway regulation may adopt the same protective function while accommodating the multi-actor structure of level crossings through limited exoneration and proportional recourse.

Evidentiary asymmetry must form part of the substantive liability rule. PT KAI and competent authorities control journey records, signaling and barrier logs, CCTV recordings, event-recorder data, maintenance documents, crew communications, operating procedures, and internal reports. Claimants should receive access to relevant materials through a statutory administrative procedure. Unjustified failure to preserve or disclose evidence under exclusive institutional control should permit an adverse inference. Disclosure may remain limited to information relevant to causation, operational compliance, and loss assessment, with safeguards for personal data, confidential information, and legitimate security interests.

Article 159(2) of Law Number 23 of 2007 on Railways also requires revision because its thirty-day claim period does not reflect serious injury, delayed damage, or technical investigations that may continue for months.[29] A more realistic period would permit claims for at least 180 days from the issuance of the final KNKT report or the reasonable discovery of loss, whichever occurs later. The period should be suspended when a victim lacks legal capacity or remains medically unable to submit a claim. This approach aligns procedural deadlines with the availability of evidence while maintaining legal certainty for operators and insurers.

Compensation should be available before all institutional disputes are resolved. Mandatory third-party liability insurance may provide the primary financing mechanism, supported by minimum coverage based on train frequency, passenger volume, crossing exposure, and historical risk. Insurance should supplement preventive obligations rather than replace them. Risk-based premiums may encourage compliance by considering crossing conditions, risk registers, and the implementation of KNKT recommendations.

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[26] Di Graziano and Marchetta, "Application of a Quantitative Risk-Based Decision Tool for Local Railway Level Crossing Management."

[27] Guido Calabresi, *The Costs of Accidents: A Legal and Economic Analysis* (New Haven: Yale University Press, 1970).

[28] Republik Indonesia, "Undang-Undang Republik Indonesia Nomor 1 Tahun 2009 tentang Penerbangan" (2009).

[29] Republik Indonesia, Undang-Undang Republik Indonesia Nomor 23 Tahun 2007 tentang Perkeretaapian.

PT KAI should also maintain contingency reserves and a transparent internal claims unit with fixed periods for receiving, examining, and deciding claims.

A Railway Accident Victim Compensation Fund should supplement insurance and the Jasa Raharja scheme established under Law Number 33 of 1964 and Law Number 34 of 1964.[30] The fund would address cases involving unidentified, uninsured, insolvent, or institutionally disputed contributors, as well as losses exceeding immediate insurance payments. Financing may combine operator contributions, risk-based levies, and Government contributions linked to public crossing responsibilities. Independent management, external audits, published eligibility standards, coordination with Jasa Raharja, and reviewable administrative decisions are necessary to prevent duplication and ensure accountability. Payment by the fund would not eliminate the right to recover costs from the actors ultimately responsible.

Proportional recourse forms the second layer of the model. After compensating the victim, PT KAI, the insurer, or the fund may recover costs according to causal contribution, breach of statutory duties, and preventive capacity. Government authorities may bear responsibility for inadequate crossing protection, infrastructure operators for defective signaling or track-side systems, vehicle operators for maintenance or driver-management failures, and road users for conduct that materially contributed to the collision. Exclusive victim fault may release the operator, while ordinary contributory conduct should affect the final allocation of loss rather than eliminate access to initial compensation.

Where causal contributions cannot be separated, limited joint and several liability may apply if each actor materially contributed to indivisible harm and fragmentation would otherwise leave the victim uncompensated. The paying party would retain recourse against other contributors. Courts or an administrative claims body could assess contribution by considering control over the risk source, statutory duties, foreseeability, preventive capacity, possession of evidence, and the causal significance of each act or omission. This mechanism protects victims without treating PT KAI as an unlimited source of compensation.

Corporate risk governance forms the final layer. The post-2025 SOE framework places operational losses at the company level and strengthens incentives for PT KAI to identify, price, and mitigate level-crossing risks. Board oversight should include a national crossing-risk register, criteria for identifying high-risk locations, documented mitigation plans, adequate insurance and reserves, evidence-preservation protocols, and periodic reviews of accident patterns. Butzbach et al. describe state-owned enterprises as institutional actors that combine corporate autonomy with public objectives.[31] The OECD Guidelines further emphasize that operational autonomy must be accompanied by transparency, stakeholder protection, board accountability, and effective remedies.[32] Public ownership therefore strengthens safety

[30] Republik Indonesia, "Undang-Undang Republik Indonesia Nomor 33 Tahun 1964 tentang Dana Pertanggungan Wajib Kecelakaan Penumpang" (1964); Republik Indonesia, "Undang-Undang Republik Indonesia Nomor 34 Tahun 1964 tentang Dana Kecelakaan Lalu Lintas Jalan" (1964).

[31] Butzbach et al., "State-Owned Enterprises as Institutional Actors: A Hybrid Historical Institutionalist and Institutional Work Framework."

[32] OECD, "OECD Guidelines on Corporate Governance of State-Owned Enterprises 2024."

reporting and accountability without eliminating PT KAI's separate corporate liability.

Institutional coordination remains necessary because civil liability cannot operate effectively when evidence and authority are dispersed. A joint protocol should determine responsibility for immediate evidence preservation, standardize exchanges among the Police, KNKT, DJKA, PT KAI, infrastructure operators, and road authorities, and distinguish technical investigation from civil adjudication. KNKT findings may support factual analysis and prevention without automatically determining legal liability. Each institution should also record whether safety recommendations have been implemented, delayed, or rejected, together with reasons and completion targets.

The resulting framework addresses the legal gap through three connected mechanisms. Limited strict liability governs the relationship between victims and the initial paying operator, proportional recourse allocates the final loss among contributing actors, and corporate risk governance regulates insurance, reserves, disclosure, evidence preservation, and board oversight. The compensation fund and interinstitutional protocol provide institutional support. This architecture operationalizes Systemic Outcome Accountability Theory while protecting the rights to legal certainty and information under Articles 28D(1) and 28F of the 1945 Constitution of the Republic of Indonesia.[33]

Table 2. Operational Structure of Limited Strict Liability

Stage	Applicable standard	Burden and decision rule	Legal effect
Victim claim	Loss, causal connection, and occurrence within the railway operational risk sphere.	The claimant proves these elements on the balance of probabilities. No proof of operator fault is required.	The claim proceeds against the identified railway operator or designated paying institution.
Operator defence	Force majeure, exclusive victim fault, or an unforeseeable and unpreventable independent intervention.	The operator bears the burden of proving exoneration.	Liability is released only where a narrowly defined defence is established.
Evidence access	Disclosure of claim-relevant material controlled by the	Unjustified non-preservation or non-disclosure permits an adverse inference.	Technical information asymmetry no longer defeats the claim.

[33] Republik Indonesia, "Undang-Undang Dasar Negara Republik Indonesia Tahun 1945," 1945.

	operator or authority.		
Initial compensation	Payment through insurance, an administrative claims mechanism, or the compensation fund.	Inter-agency disputes do not postpone recovery.	The victim receives timely economic and legal redress.
Final allocation	Proportional recourse according to causal contribution, statutory duty, and preventive capacity.	The paying actor may recover from other responsible actors.	PT KAI is not the sole final bearer of every level-crossing loss.
Corporate governance	Risk register, reserves, insurance, disclosure, evidence preservation, and board oversight.	Compliance is evaluated through transparent reporting and implementation of safety recommendations.	Government ownership is translated into enforceable stakeholder protection.

Table 2 confirms that the proposed model protects victims without assigning every accident cost permanently to PT KAI. Limited strict liability secures initial recovery, while narrow exoneration, evidence disclosure, proportional recourse, and corporate risk governance determine the defensible final allocation of responsibility.

Conclusion

The study concludes that Article 159(1) of the Railway Law no longer provides adequate protection for third parties at level crossings because it places the burden of proving technical fault on victims who lack access to operational evidence. The short claim period, fragmented safety authority, separate investigative procedures, and the absence of an integrated compensation mechanism intensify this weakness. The 2025 SOE reform further confirms that PT KAI bears independent corporate responsibility for operational losses, while its public-service function preserves heightened obligations of transparency, risk governance, and stakeholder protection.

A more proportionate liability framework should combine limited strict liability, proportional recourse, and corporate risk governance. Initial compensation should not depend on proof of operator fault, while the final distribution of loss may be allocated among PT KAI, infrastructure managers, public authorities, vehicle operators, and road users according to causation, statutory duties, and preventive capacity. This framework requires revision of Articles 159(1) and 159(2), broader access to technical evidence, mandatory third-party insurance, a supplementary compensation fund, and stronger institutional coordination.

Recommendation

It is recommended that Articles 159(1) and 159(2) of the Railway Law be amended by adopting limited strict liability for third-party losses at level crossings. Initial responsibility should be placed on the railway facility or infrastructure operator, subject to limited defenses of force majeure, exclusive victim fault, and unforeseeable third-party intervention. The claim period should also be extended from thirty days to at least 180 days from the issuance of the final KNKT report or the reasonable discovery of loss, whichever occurs later. Victims should be granted access to relevant operational evidence, administrative claim procedures, and legal assistance where necessary.

It is further recommended that the Railway Law, the Road Traffic and Transportation Law, Minister of Transportation Regulation Number 94 of 2018, and the post-2025 SOE regime be harmonized to clarify technical authority, preventive duties, and recourse among responsible actors. Mandatory third-party liability insurance and a supplementary Railway Accident Victim Compensation Fund should be established to ensure prompt recovery. Coordination among PT KAI, DJKA, KNKT, relevant ministries, regional governments, infrastructure managers, and vehicle operators should also be strengthened to support evidence preservation, implementation of KNKT recommendations, closure of high-risk crossings, and development of grade-separated crossings.

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