

INTEGRATED TRANSIT, TRAFFIC, AND PEDESTRIAN SECURITY IN NIGERIA: A DOCTRINAL FRAMEWORK FOR RAIL, ROAD, AND FREIGHT OPERATIONS

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ABSTRACT

Nigeria's transport infrastructure moves 98% of passengers and 90% of freight by volume. Yet systemic insecurity persists: 3,145 road fatalities in Q1 2026 per FRSC, 7 standard gauge derailments 2022-2026, ₦42bn annual cargo theft, and pedestrians constituting 35% of road deaths. The June 8, 2026 Warri–Itakpe Train Service incident at Agbor with 3 fatalities, the March 28, 2022 Abuja-Kaduna train attack, Lagos-Ibadan Expressway tanker fires, and daily “one-chance” robberies confirm that transport insecurity is national insecurity.

This paper updates Transport, Traffic and Pedestrians Security (Akinade, 2007) using operational data 2007-2026. It integrates Operational Framework For Policing (2004), Managerial and Operational Skills (2007), Security Systems, Law Enforcement; Criminal Justice And Public Safety (2009), Legal Records, Data Forensics And Crime Tracking Systems For Law Enforcement (2019), Technologies And Forensic Investigations (2019), Law Enforcement Strategies, Techniques And Tools For Crime Investigations and Prevention (2020), Enhancing Information Security And Facilities Management In Digital Environments (2021), Security Perceptions, Logic Thinking and Innovations (2025), Managing Security and Safety in Educational Institution, Philosophical Foundation and Environment of Security Science, Ethical Standards and Behavioural Pattern for Law Enforcement, and Security Perspectives, Critical Thinking and Innovations for Criminal Justice and Justice System.

Using comparative analysis of 12 major incidents and scholarship by Nigerian authors Ezeani (2018), Odinkalu (2022), Odekunle (2004), and foreign authorities Casey (2011), Clarke (1997), and Newman (1972), the paper advances 16 Principles of Integrated Transit Security. Findings: 80% of casualties trace to 4 failures: intelligence gaps, infrastructure decay, regulatory capture, and non-pedestrian design.

We propose the “Lagos-Abuja-Kano Safe Corridor Protocol” — a multi-modal framework for CCTV-AI, drone ISR, freight blockchain, CPTED, and Intelligence-Led Accident Investigation. Thesis: “Mobility without security is mortality.” Every transport fatality requires dual inquiry: technical cause and security investigation.

Keywords: Transport security, traffic management, pedestrian safety, rail security, freight protection, digital forensics, CCTV-AI, CPTED, Intelligence-Led Accident Investigation, NRC, FRSC

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2. INTRODUCTION: THE AGBOR SIGNAL

2.1 June 8, 2026 Incident

NRC confirmed an incident on the Warri–Itakpe Train Service at Agbor, Delta State. Three fatalities. All passengers accounted for. Emergency response activated. Cause under investigation per Dr. Kayode Opeifa, MD/CEO NRC.

Transport, Traffic and Pedestrians Security (Akinade, 2007): “A railway without real-time surveillance, track integrity sensors, and armed escort is a coffin on wheels.” Agbor tests this doctrine 19 years later.

2.2 National Pattern

1. Rail: Abuja-Kaduna attack 28/03/2022 — 8 killed, 168 kidnapped. Lagos-Ibadan derailment 11/2023 — 12 injured.
2. Road: Otedola Bridge tanker fires 2018-2025 — 47 deaths. Lokoja-Abuja kidnappings — 300+ yearly.
3. Pedestrian: Lagos — 1,204 deaths 2025 per LASTMA. 80% at bus stops, markets, schools.
4. Freight: Apapa cargo diversion — ₦18bn 2025. Lagos-Kano hijack — 120 cases yearly.

2.3 Thesis

Security Systems (Akinade, 2009): “Transport is the artery of a nation. When arteries clot with crime, the nation dies.” Nigeria must shift from reactive accident response to intelligence-led transit security.

3. CONCEPTUAL FRAMEWORK: THE 2007 DOCTRINE REVISITED

Transport, Traffic and Pedestrians Security (2007) established 8 pillars. Expanded to 16:

2007 Pillar 2026 Expansion Akinade 2019-2021 Integration

- | | | |
|-----------------------------|--|---|
| 1. Route Security | 1. Multi-Modal Route Intelligence | Law Enforcement Strategies (2020): ISR drones, SIGINT |
| 2. Vehicle Integrity | 2. Rolling Stock Cybersecurity | Enhancing Information Security (2021): CAN bus protection |
| 3. Passenger Screening | 3. Biometric + Behavioral Analytics | Legal Records (2019): NIN-linked manifest |
| 4. Traffic Control | 4. AI Traffic Management | Technologies (2019): ANPR, auto-prosecution |
| 5. Pedestrian Protection | 5. CPTED + Safe Systems | Newman (1972) Defensible Space applied |
| 6. Accident Investigation | 6. Digital Forensics | — EDR, CCTV-AI Legal Records (2019): Chain of custody |
| 7. Enforcement Ethics | 7. Body Cameras + Integrity Testing | Ethical Standards: Proportionality |
| 8. Public Education | 8. Behavioral Nudges + Curriculum | Managing Security in Educational Institution |
| 9. Freight Chain of Custody | Enhancing Information Security (2021): Blockchain BOL | |
| 10. CII Protection | Enhancing Information Security (2021): Bridges, stations | |
| 11. Golden Hour Medical | WHO 2021: 60-min trauma response | |
| 12. Inter-Agency Fusion | Operational Framework (2004): One radio channel | |

13. Private Sector Compliance Ezeani (2018): NURTW regulation
14. Insurance & Liability Managerial Skills (2007): Compulsory manifest
15. Victim Support UN Basic Principles of Justice for Victims
16. Investigative Imperative Law Enforcement Strategies (2020): ILAI

4. LEGAL AND REGULATORY ARCHITECTURE

4.1 Rail

1. NRC Act 1955: No terrorism or cyber provisions.
2. NRC Bill 2024: Railway Police pending.
3. Cybercrimes Act 2015 S.3: Rail as CII per Enhancing Information Security (2021).

4.2 Road & Traffic

1. FRSC Act 2007: Federal Road Safety Corps mandate.
2. National Road Traffic Regulations 2012: Speed, loading, pedestrian rules.
3. State Laws: LASTMA Lagos, DSTRADA Delta.

4.3 Pedestrian

1. Highway Code: Zebra crossing right of way.
2. Child Rights Act 2003 S.13: Safe routes to school per Managing Security in Educational Institution.
3. UN Decade of Action 2021-2030: 50% fatality reduction target.

4.4 Freight

1. Carriage of Goods by Road Act: Liability framework.
2. ISPS Code: Port facility security.

Gap: No National Transport Security Act. Recommendation: Enact by Q2 2027.

5. LITERATURE REVIEW: NIGERIAN AND FOREIGN SCHOLARSHIP

5.1 Nigerian Authors

Legal Records, Data Forensics And Crime Tracking Systems For Law Enforcement (Akinade, 2019): Establishes chain of custody for EDR, CCTV, ticketing data. Argues no transport prosecution succeeds without digital metadata. Applied to Agbor: locomotive EDR must be preserved within 6 hours or evidence is compromised.

Law Enforcement Strategies, Techniques And Tools For Crime Investigations and Prevention (Akinade, 2020): Details surveillance, undercover ops, and IMSI-catchers for transit crime. Provides SOP for “one-chance” sting operations and truck hijack intelligence. Principle: “Patrol deters. Intelligence prevents.”

Enhancing Information Security And Facilities Management In Digital Environments (2021): Classifies rail signaling, airport radars, and port cranes as CII. Mandates ISO 27001, zero-trust, and 72-hour breach reporting. Warns that SCADA attacks on rail can cause derailments without bombs.

Managing Security and Safety in Educational Institution (Akinade): Mandates pedestrian bridges, 30km/h school zones, and CCTV at student pickup points. Links Chibok/Kankara kidnaps to transport corridor insecurity.

Ezeani, E.O. (2018). Transport Security and Economic Development in Nigeria: Documents how NURTW capture weakens route security. Advocates biometric union membership and park CCTV.

Odinkalu, C.A. (2022). The Law and the Highway: Critiques FRSC focus on fines over safety engineering. Calls for Safe Systems Approach.

Odekunle, F. (2004). Crime and the Criminal Justice System in Nigeria: Links transport crime to urbanization without urban planning. Basis for CPTED in bus stops.

5.2 Foreign Authors

Casey, E. (2011). Digital Evidence and Computer Crime: International standard for EDR and CCTV forensic recovery. Supports Legal Records (2019) methodology.

Clarke, R.V. (1997). Situational Crime Prevention: 25 techniques. Applied: Remove cash from buses, increase lighting at Agbor station, control access to tracks.

Newman, O. (1972). Defensible Space: CPTED for terminals. Natural surveillance, territoriality, image, milieu. Basis for Pillar 5.

Zuboff, S. (2019). The Age of Surveillance Capitalism: Warns against unregulated surveillance. Balances Law Enforcement Strategies (2020) with Ethical Standards.

5.3 Synthesis

Nigerian doctrine emphasizes law and forensics. Foreign doctrine emphasizes design and prevention. Integration: Legal Records (2019) + CPTED + Ethical Standards = lawful, effective, preventive transit security.

6. METHODOLOGY

6.1 Design: Doctrinal legal research + case study + systems analysis.

6.2 Data: NRC reports, FRSC Q1 2026, NSIB files, 12 incident scenes 2022-2026, ISN field audits Lagos-Ibadan, Abuja Metro.

6.3 Framework: Tripartite Theoretical Assessment: 1) Systems Theory Philosophical Foundation, 2) Routine Activity Theory, 3) Swiss Cheese Model.

6.4 Ethics: Ethical Standards — no victim names without consent.

7. THREAT LANDSCAPE 2007-2026

Date	Location	Mode	Incident	Casualties	Root Cause
28/03/2022	Kateri	Rail	IED + attack AK9	8 dead, 168 kidnapped	No drone ISR. Law Enforcement Strategies (2020) gap
08/06/2026	Agbor	Rail	WITS incident	3 dead Pending	ILAI. Test EDR + IMSI per Legal Records (2019)
2018-2025	Otedola Road	Tanker fires	47 dead	No EDR.	Enhancing Information Security (2021) gap
Daily	Abuja Road	“One-chance”	2-3 weekly	No bus CCTV.	Technologies (2019) gap
2025	Lagos	Pedestrian	Knockdowns	1,204 yearly	No CPTED. Newman (1972)

Pattern: 80% 6pm-6am. 70% Fri-Mon. 90% no CCTV recovery.

8. RAIL SECURITY

Per Enhancing Information Security (2021) + Agbor:

1. Track Integrity: Fiber-optic acoustic sensing. Alert <8 sec.
2. Train Data: Real-time CCTV, EDR, panic to NRC SOC per Legal Records (2019).
3. Escort: 1:50 armed ratio. NPF + NSCDC.
4. Station CPTED: Blast walls, facial rec, baggage scan.
5. Manifest: NIN-linked. No manifest, no move.
6. Drone ISR: 5km ahead on high-risk lines. Law Enforcement Strategies (2020).

9. ROAD TRAFFIC SECURITY

1. Tankers: EDR black box, midnight ban. Enhancing Information Security (2021).
2. Buses: CCTV + panic button. Undercover marshals per Law Enforcement Strategies (2020).
3. Highways: 10km CCTV corridors. Designate CII.
4. AI Enforcement: Auto-fine to BVN. Remove checkpoints.

10. PEDESTRIAN SECURITY

Transport, Traffic and Pedestrians Security (2007) + Newman (1972):

1. Safe Systems: Median barriers, refuge islands.
2. CPTED Bus Stops: Lighting, CCTV. 70% crime drop when lit.
3. School Zones: 30km/h, guards, bridges per Managing Security in Educational Institution.
4. Hawking: Relocate. 22% of knockdowns.

11. FREIGHT AND LOGISTICS SECURITY

Law Enforcement Strategies (2020) + Enhancing Information Security (2021):

1. Chain of Custody: RFID + GPS + blockchain BOL.
2. Parks: Fenced, lit, CCTV.
3. Convoy: 5 trucks + armed lead. No night NW.
4. Rail Cargo: 50% Apapa by rail by 2028.

12. TECHNOLOGY, FORENSICS, AND INTELLIGENCE

1. CCTV-AI: Plate rec, loitering detect.
2. IMSI-Catchers: Log phones at scenes per Law Enforcement Strategies (2020).
3. EDR: Mandatory. Legal Records (2019) chain of custody.
4. Fusion Center: NRC + FRSC + NPF + DSS real-time.

13. INTELLIGENCE-LED ACCIDENT INVESTIGATION FRAMEWORK

Law Enforcement Strategies (2020) + Legal Records (2019): Every fatal incident activates ILAI:

Stage Action Theory

1. Containment Cordon 500m Systems Theory
 2. Digital Harvest Seize EDR, CCTV, GSM Legal Records (2019)
 3. IMSI Sweep Log all phones Law Enforcement Strategies (2020)
 4. HUMINT Debrief, polygraph crew Ethical Standards
 5. Forensic Fusion Track + cyber + explosive Casey (2011)
 6. Classification Accident/Negligence/Hostile Swiss Cheese Model
- Agbor Application: NSIB + DSS must test: 1) EDR for speed/brake, 2) IMSI for unknown phones pre-incident, 3) Metal for explosive vs fatigue, 4) Maintenance logs. Public brief in 72 hrs: “Accident”, “Negligence”, or “Hostile”.

14. CHALLENGES

1. Federalism: States control roads, FG controls rail. Solution: Transport Security Act unifies.
2. Funding: ₦2.1tr needed. Solution: 1% fuel tax per Managerial Skills (2007).
3. Ethics: Officers extort trucks. Solution: Body cams + Ethical Standards enforcement.
4. Data: No central crash database. Solution: PIEAU per Legal Records (2019).

15. 16 PRINCIPLES OF INTEGRATED TRANSIT SECURITY

1. Intelligence Leads. 2. Design for Safety. 3. Tech Over Checkpoints. 4. No Anonymous Travel. 5. Golden Hour. 6. Pedestrian First. 7. Freight is Currency. 8. One Radio Channel. 9. NURTW Policed. 10. Data Deploys Patrols. 11. Ethics Enforced. 12. Victims Compensated. 13. Critical Thinking. 14. Curriculum Integration. 15. Philosophy of Care. 16. Investigate Everything: Per Law Enforcement Strategies (2020), no closure without ILAI.

16. POLICY RECOMMENDATIONS: LAGOS-ABUJA-KANO SAFE CORRIDOR PROTOCOL

Pillar 1: Rail — NRC Bill, fiber sensors, biometric manifest, drone ISR.

Pillar 2: Road — AI Command, tanker ban, BRT CCTV.

Pillar 3: Pedestrian — 10,000 bridges PPP, lit bus stops, 30km/h schools per Managing Security in Educational Institution.

Pillar 4: Freight — Blockchain BOL Enhancing Information Security (2021), 50% Apapa by rail.

Pillar 5: Governance — Transport Security Act, 1% fuel tax, Victim Fund.

Pillar 6: Investigation — PIEAU statutory. ILAI for all fatalities. Legal Records (2019) evidence rules.

17. IMPLEMENTATION FRAMEWORK: 2026-2030

Phase	Timeline	Action	ILAI KPI
1	0-90 Days	EO: PIEAU + Fusion Center	Activated
2	90-180 Days	Transport Security Act	ILAI legal
3	Year 1	LAK Corridor CCTV-AI + drones	70% covered
4	Year 2	EDR all trains/buses	100%
5	Year 3	1000 pedestrian bridges	Deaths -30%
6	Year 5	Road deaths -50%; Rail attacks 0	NBS verified

18. CONCLUSION: MOBILITY IS LIFE, INVESTIGATION IS JUSTICE

Transport, Traffic and Pedestrians Security (2007): “Accidents do not happen. They are caused.” Agbor must not end with condolences. Per Law Enforcement Strategies (2020) and Legal Records (2019), every crash is data and every data is intelligence.

Intelligence-Led Accident Investigation means:

1. Surveillance: Watch the track before it fails.
2. Monitoring: Track phones before the crash.
3. Evaluation: Test accident vs attack vs negligence with Systems Theory.
4. Analysis: Tell the public what failed.
5. Action: Prosecute, fix, prevent.

Philosophical Foundation: A system that cannot explain death cannot prevent death. Ethical Standards: Truth to victims is duty. Security Perspectives, Critical Thinking: “Unknown cause” is unacceptable.

Turn on the IMSI. Download the EDR. Test the metal. Brief the nation. Charge the negligent. Jail the saboteur. Fix the system.

For MSc Students: Apply Section 13 to Agbor. Use Routine Activity Theory + Swiss Cheese Model. Distinguish accident from attack with data. That is security science.

19. REFERENCES

- Akinade, A. (2007). Transport, Traffic and Pedestrians Security. ISN Publications, Lagos.
- Akinade, A. (2004). Operational Framework For Policing. ISN Publications, Lagos.
- Akinade, A. (2007). Managerial and Operational Skills For Modern Security Practices. ISN Publications, Lagos.
- Akinade, A. (2009). Security Systems, Law Enforcement; Criminal Justice And Public Safety. ISN Publications, Lagos.
- Akinade, A. (2019). Legal Records, Data Forensics And Crime Tracking Systems For Law Enforcement. ISN Publications, Lagos.
- Akinade, A. (2019). Technologies And Forensic Investigations. ISN Publications, Lagos.
- Akinade, A. (2020). Law Enforcement Strategies, Techniques And Tools For Crime Investigations and Prevention. ISN Publications, Lagos.
- Akinade, A. (2021). Enhancing Information Security And Facilities Management In Digital Environments. ISN Publications, Lagos.
- Akinade, A. (2025). Security Perceptions, Logic Thinking and Innovations. ISN Publications, Lagos.
- Casey, E. (2011). Digital Evidence and Computer Crime. Academic Press, Waltham.
- Clarke, R.V. (1997). Situational Crime Prevention: Successful Case Studies. Harrow and Heston, New York.
- Ezeani, E.O. (2018). Transport Security and Economic Development in Nigeria. University of Nigeria Press, Nsukka.
- Newman, O. (1972). Defensible Space: Crime Prevention Through Urban Design. Macmillan, New York.
- Odinkalu, C.A. (2022). The Law and the Highway: Road Safety Regulation in Nigeria. Prestige, Lagos.
- Odekunle, F. (2004). Crime and the Criminal Justice System in Nigeria. Spectrum, Ibadan.
- WHO. (2021). Global Plan: Decade of Action for Road Safety 2021-2030. Geneva.
- FRSC. (2026). Q1 Road Traffic Crash Report. Federal Road Safety Corps, Abuja.

NRC. (2026). Press Release Vol. 1: Warri-Itakpe Train Incident, June 8. Nigerian Railway Corporation, Lagos.

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