STUDY ON AIR FREIGHT SERVICES AND CHALLENGES

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ABSTRACT

Air freight is crucial to current global trade. It allows fast, secure, and reliable cross-border movement of high-value, time-sensitive, and perishable goods. This article reviews air freight services and their operational, financial, and regulatory issues. The study examines speed, safety, paperwork, cargo capacity, cost, and technology innovation using primary survey data from 44 logistics professionals at Greenwich Meridian Logistics (India) Pvt. Ltd. and secondary sources and industry reports. 95.5% of respondents believe air freight is essential to modern logistics, but high and unpredictable freight costs, capacity shortages during peak seasons, cumbersome customs procedures, weather delays, and increased environmental sustainability are still major obstacles. It offers practical solutions and explores air freight's future in a rapidly changing global logistics world.

Keywords: Air Freight, Cargo Operations, Global Logistics, Freight Challenges, Supply Chain, Greenwich Meridian Logistics, Airway Bill, Cargo Capacity

INTRODUCTION

Air freight transports commodities and cargo domestically or internationally. It's one of the fastest and most efficient logistics and supply chain shipping methods. Air freight is the backbone for urgent, high-value, and perishable shipments in today's globalized economy, when firms operate across continents and customers anticipate near-instant delivery. However, air freight is complicated. Aviation safety, customs compliance, fuel price volatility, and infrastructure limits shape its capital-intensive, heavily regulated environment. Airlines, freight forwarders, cargo agencies, ground handlers, and customs authorities must work together across many touch-points to deliver cargo securely and on time. When one link in this system is challenged by extreme weather, geopolitical turmoil, or peak-season demand rises, global supply chains are swiftly affected.

This article examines the structure, evolution, and current operational realities of the global air freight industry, with particular reference to the services and challenges experienced by a leading Indian freight forwarding company, The study is grounded in survey data from 44 logistics professionals, industry reports, and academic literature, and aims to provide both theoretical insights and practical recommendations for freight forwarding practitioners.

EVOLUTION OF THE AIR CARGO INDUSTRY

The story of air cargo is inseparable from the story of aviation itself. What began with the Wright brothers' first powered flight in 1903 evolved, within a generation, into a global system capable of moving millions of tonnes of goods annually. The key milestones of this evolution are summarised below. A pivotal moment came in the 1970s with FedEx's introduction of overnight delivery — a concept that permanently changed customer expectations and spawned the express logistics industry. The simultaneous growth of globalisation in the 1980s and 1990s,

coupled with trade liberalisation, created demand for air freight that sea and road transport simply could not satisfy on time. By the 2000s, digital platforms, real-time tracking, and electronic documentation transformed air freight from a paper-intensive to a data-driven industry.Most recently, the COVID-19 pandemic accelerated the industry's evolution in unexpected ways. With passenger aircraft grounded, belly freight capacity — which accounts for roughly 44% of global air cargo by revenue tonne kilometres — collapsed overnight. Dedicated freighter aircraft and cargo-only passenger flights became essential. The pandemic also demonstrated air freight's irreplaceable role in humanitarian logistics, with vaccines, ventilators, and PPE moving by air to where they were needed most, often within hours of production.

REVIEW OF LITERATURE:

The global air freight market is projected to reach USD 201.57 billion by 2029, growing at a compound annual growth rate (CAGR) of 5.92% between 2024 and 2029 (Mordor Intelligence, 2025). The industry currently employs over 627,600 people worldwide, with more than 28,300 new professionals entering the field in the past year alone. Over 7,400 businesses operate in the sector, including more than 530 active startups developing innovative logistics solutions. The Asia-Pacific region leads global air cargo volumes, with China as the dominant player. The top countries contributing to the air freight domain are the United States, India, the United Kingdom, Germany, and the United Arab Emirates. Key cargo cities include Dubai, Mumbai, Singapore, New Delhi, and Sydney. Top investors include Thor Capital Group (USD 418.7M), Singapore Post (USD 184M), PAG (USD 153.5M), and Carlyle (USD 140M).

Major Global Airlines in Air Freight

Leading airlines in the global air cargo market include Qatar Airways Cargo, Emirates SkyCargo, Etihad Cargo, Lufthansa Cargo, Air France KLM Cargo, Singapore Airlines Cargo, Cathay Pacific Cargo, Turkish Airlines Cargo, Ethiopian Airlines Cargo, Saudia Cargo, Kenya Airways Cargo, and Air Arabia Cargo. These carriers collectively provide the backbone of international air freight capacity, operating dedicated freighter fleets alongside belly-hold cargo in passenger aircraft

National Market: India (2021–2025)

India's domestic air freight market has undergone significant transformation between 2021 and 2025. Post-pandemic recovery, e-commerce growth, pharmaceutical exports, electronics manufacturing, and government infrastructure investments converged to produce a sustained growth trajectory. The Airports Authority of India reported that Indian airports handled approximately 3.7 million tonnes of cargo in FY2024–25, representing a 10% year-on-year increase.

South India Air Freight Highlights (2025)

Chennai: 241,752 metric tonnes (Apr 2024 – Jan 2025), driven by electronics and smartphone exports. Bengaluru: 496,227 metric tonnes (2024), led by perishables, engineering goods, and e-commerce. Hyderabad: 98,825 metric tonnes, anchored by pharmaceutical exports. These three cities collectively positioned South India as one of India's most significant air cargo corridors, connecting domestic manufacturing to international markets in the US, Europe, and the Middle East.

DATA ANALYSIS AND FINDINGS

A structured survey was administered to 44 logistics and freight forwarding professionals at Greenwich Meridian Logistics (India) Pvt. Ltd. The survey instrument comprised 19 statements covering air freight speed, safety, documentation, cost, capacity, weather impact, and regulatory compliance. Respondents rated each statement on a five-point Likert scale or a Yes/No format.

Respondent Profile

Designation	Responses	Percentage
Import/Export Manager	11	25.0%
Logistics / Supply Chain Management	10	22.3%
Others	10	22.7%
Business Owner / Director	7	15.2%
Customs Broker	6	13.6%
Total	44	100%

The respondent base represents a cross-section of logistics expertise, with Import/Export Managers forming the largest group (25%), followed by Logistics/SCM professionals (22.3%) and Others (22.7%). This composition ensures that findings reflect both operational and strategic perspectives from across the freight forwarding value chain.

Survey Findings

Statement	Agree / Yes	Neutral	Disagree / No
Air freight is the fastest mode of transport for international trade	79.6%	15.9%	4.6%
Air freight ensures better safety and security of goods	81.9%	13.6%	4.5%
Air freight is suitable for high-value and time-sensitive goods	97.7%	—	2.3%
Air freight plays a vital role in global supply chains	93.2%	—	6.8%
Despite challenges, air freight is essential for modern logistics	95.5%	—	4.5%
Airlines provide efficient tracking systems	79.2%	15.9%	9.1%
Fuel price fluctuations significantly impact freight rates	86.4%	9.1%	4.5%
Limited cargo space causes delays	72.7%	20.5%	6.8%
Weather conditions disrupt air cargo schedules	70.5%	20.5%	9.1%
Packaging requirements are strict and costly	77.3%	18.2%	6.8%

Capacity shortages are common during peak seasons	75.0%	22.7%	2.3%
Security checks increase transit time	70.4%	20.5%	9.0%
AWB documentation is easy to understand and process	70.5%	15.9%	13.6%
Airlines offer flexible scheduling options	75.0%	13.6%	13.6%
Air freight is too expensive vs other modes	38.7%	27.3%	40.9%

Cost Perception

Notably, while 86.4% of respondents acknowledge that fuel price fluctuations significantly impact air freight rates, opinions on overall cost are divided — 38.7% consider air freight too expensive relative to alternatives, but 40.9% disagree. This reflects the nuanced, context-dependent nature of cost evaluation in logistics: for high-value and time-sensitive cargo, the premium is widely accepted as justified.

CHALLENGES FACING THE AIR FREIGHT INDUSTRY

Despite its many strengths, the air freight industry confronts a set of interconnected structural, operational, and environmental challenges that shape its competitive landscape and constrain its growth potential.

High and Volatile Costs

Air freight is the most expensive mode of international transportation. Aviation fuel — which accounts for 25–35% of airline operating costs — is highly susceptible to geopolitical events, oil price shocks, and currency fluctuations. These cost pressures are passed on as fuel surcharges, which can change weekly and create significant uncertainty for shippers planning logistics budgets. Additionally, airport handling fees, cargo terminal charges, and security costs add further layers of expense. The survey confirmed this reality, with 86.4% of respondents agreeing that fuel price fluctuations significantly impact air freight rates.

Capacity Constraints and Peak-Season Bottlenecks

Aircraft supply is a finite and capital-intensive resource. During peak demand periods — the pre-Christmas retail season (October–December), Chinese New Year, and harvest cycles for agricultural exporters — available cargo space tightens dramatically, rates spike, and delivery timelines extend. The 2021–2024 period saw structural supply chain issues in aircraft manufacturing that are expected to continue until 2031–2034. The survey found that 75% of respondents experience capacity shortages as a common challenge during peak seasons, and 72.7% identify limited cargo space as a direct cause of shipment delays.

Documentation and Regulatory Complexity

International air freight requires compliance with a complex web of documentation standards, customs regulations, import/export controls, and safety requirements that vary by country, cargo type, and trade lane. The Airway Bill (AWB), commercial invoice, packing list, certificate of origin, import/export licences, dangerous goods declarations, and phytosanitary certificates must all be accurately prepared and submitted in the correct sequence. Errors at any stage can result in cargo being held at customs, incurring demurrage charges, or being returned to the shipper. While 70.5% of respondents found AWB documentation manageable, 13.6% reported difficulties — indicating room for improvement in digital documentation standardisation.

Weather and Operational Disruptions

Air cargo schedules are inherently vulnerable to meteorological conditions. Cyclones, fog, heavy rainfall, and extreme heat can ground flights, divert aircraft, close runways, and delay cargo handling at major hubs. Unlike maritime shipping, where vessels can shelter or change speed, aircraft have limited ability to work around severe weather. The survey found that 70.5% of respondents believe weather frequently disrupts air cargo schedules — a significant operational risk, particularly for perishable cargo where even a 24–48 hour delay can render shipments unsaleable.

Security Compliance and Transit Time

Post-9/11 and continuing global security concerns have led to increasingly rigorous cargo screening protocols. All air cargo must pass through X-ray, explosive trace detection, or physical inspection before being cleared for loading. While these measures are essential for aviation safety, they add measurable time to the logistics process. The survey revealed that 70.4% of respondents believe security checks increase overall transit time — a perspective that highlights the tension between safety imperatives and the speed expectations that justify air freight's premium price.

Environmental Sustainability Pressure

Aviation contributes approximately 2.5% of global CO_2 emissions, but its non-CO_2 effects (contrails, nitrogen oxides at altitude) may make its total climate impact two to four times higher. As ESG (Environmental, Social, and Governance) criteria become central to corporate procurement decisions, shippers are increasingly scrutinising the carbon footprint of their logistics choices. This is driving airlines and freight forwarders to invest in sustainable aviation fuel (SAF), carbon offset programmes, and fuel-efficient aircraft — all of which have cost implications that will filter through to freight rates.

Infrastructure Congestion

Major global cargo hubs — including Hong Kong, Dubai, Frankfurt, and Chicago O'Hare — regularly face congestion in cargo terminals, leading to delays in loading, unloading, and truck collection. In India, airports in Mumbai, Chennai, and Bengaluru are investing in terminal expansion, but rapid volume growth continues to pressure existing infrastructure. This congestion is particularly acute for temperature-sensitive cargo that requires priority handling within strict time windows.

RECOMMENDATIONS

Based on survey findings, industry analysis, and the operational experience of Greenwich Meridian Logistics, the following recommendations are presented for air freight service providers and shippers:

Adopt Digital Documentation Platforms

Electronic AWB (eAWB), digital customs declarations, and automated documentation management systems can significantly reduce the time, cost, and error rate associated with paper-based processes. All stakeholders — shippers, freight forwarders, airlines, and customs authorities — should work toward universal adoption of IATA's eAWB standard.

Invest in Real-Time Cargo Visibility

Fragmented tracking across carriers, handlers, and forwarders creates blind spots that undermine trust and complicate exception management. Investment in integrated, carrier-agnostic tracking platforms — leveraging IoT sensors and block-chain-secured data sharing — provides shippers with the visibility they need and freight forwarders with the data to resolve disruptions proactively.

Proactive Capacity Planning for Peak Seasons

Freight forwarders should negotiate space guarantee agreements with carriers well in advance of peak seasons, and shippers should provide rolling 90-day demand forecasts to enable proactive capacity booking. Last-minute bookings during peak periods carry a significant price and reliability premium that can be largely avoided through forward planning.

Compliance Excellence for DG and Specialize Cargo

Dangerous goods, temperature-sensitive pharmaceuticals, and high-value cargo require meticulous compliance with IATA Dangerous Goods Regulations (DGR), GDP (Good Distribution Practice) guidelines, and airline-specific handling requirements. Training investment for staff handling DG cargo is not optional — non-compliance risks cargo rejection, aircraft safety, and regulatory penalties.

Embrace Sustainable Aviation Practices

Freight forwarders should actively partner with airlines investing in SAF and offer customers carbon-neutral shipping options backed by verified offset programme. As carbon pricing mechanisms spread globally, early movers in sustainable logistics will gain competitive advantage and align with client ESG commitments.

Strengthen Multi-modal Integration

For routes where air freight is prohibitively expensive or unavailable, freight forwarders should develop robust sea-air and air-road hybrid routing options. These combinations — moving cargo by sea to a regional hub and then by air for final delivery, or using air to a hub and road to the final destination — can balance cost and speed effectively.

CONCLUSION

All metrics aside, air cargo is the fastest and most reliable international shipping method for high-value, time-sensitive, and perishable goods. According to the study, 95.5% of logistics professionals believe air freight is essential to modern logistics and 97.7% think it is suitable for high-value and urgent goods. With industry strength comes complexity. Due to high and fluctuating costs, peak season capacity constraints, strict documentation requirements, weather disruptions, and environmental challenges, the operating environment is tough and requires constant adaptation. Because it is experienced, customer-focused, technically proficient, and globally networked, Greenwich Meridian Logistics (India) Pvt. Ltd. can meet these challenges and provide value to clients across their entire air cargo needs.The air freight business will adapt as e-commerce drives faster cross-border delivery, medicine and tech supply chains become global and time-sensitive, and climatic constraints change aviation's cost and regulatory environment. Companies and people that invest in digital capacity, sustainable practices, and deep operational skills will lead this transformation.

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