

Jurisdictional Challenges in Aircraft Security: Legal Gaps and Emerging threats in International Aviation

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Abstract: *Determining jurisdiction in the context of aircraft insecurity remains a persistent legal challenge, despite international efforts through conventions and national laws. This paper critically evaluates the efficacy of existing jurisdictional frameworks, highlighting the limitations of conventions such as Tokyo (1963), Hague (1970), and Beijing (2010), particularly in dealing with contemporary threats like cyber-attacks and drone warfare. It is evident that overlapping claims and the absence of a clear rule of priority among states continue to obstruct legal clarity and enforcement. In my view, a unified legal instrument with an established hierarchy of jurisdiction is urgently needed to address these issues effectively.*

Keywords: jurisdiction, aircraft security, international aviation law, sovereignty, cyber threats

1. Introduction

Aircraft insecurity remains a basic threat to the aviation industry. The threat to commercial aviation is not new [1] and the basic modes of attacks against civil aviation have not really changed pending to the fact that we are faced with modern challenges. Over the years, attacks on civil aviation have been carried out against airliners, airports and airline offices [2]. However, airlines have been the most target in commercial aviation [3]. The early modes of unlawful interference with civil aircraft mostly took the form of hijacking like the September 11, 2001 incident, aircraft sabotage like the case of Lockerbie bombing. Therefore, hijacking has been the most common form of attack before the end of the 20th century, between 1946 to 1996 with 87% [4]. During this era, the aviation community enacted laws to fight against insecurity in the sector in which were all included the assertion of jurisdiction by states. A good example during this era was the Convention on offences and certain other acts on board an aircraft signed in Tokyo 1963; the Convention for the suppression of unlawful seizure of an aircraft 1970; and the Montreal Convention for the suppression of unlawful acts against civil aviation 1971. These legal instruments just cited rules for asserting jurisdiction in cases of violation of aircraft security but were not without flaws and this hindered the smooth deterrence of unlawful interference with aircraft. For example, the Tokyo convention of 1963 limited its scope to aircraft in flight making it difficult to prosecute offences that were committed against airport and airport offices. The convention gave no definition of the word offence and was almost silent on the issue of extradition and "*ne bis in idem*". [5] Furthermore, the question of whether the offender has to be on board at the time the offence was committed like the case of aircraft sabotage was unanswered. Also, the question of an act on board that is made criminal which if performed on ground within a state's territory is not considered criminal like the case of smoking cigarettes on board. Again, the Convention in resolving jurisdiction on the high seas in articles 3 and 4 left out the question of jurisdiction of acts and occurrences over the contiguous zone. The Convention for the suppression of unlawful seizure of an aircraft signed in Hague 1970 did not differ much in its efforts to tackle the unlawful seizure of

aircraft which were very common at the time as it restricted its breath by employing the same idea "Aircraft inflight" and this will set aside any unlawful seizure of an aircraft on ground by an offender not on board, an act which is possible today using modern technology like drones. All of this made it difficult to determine jurisdiction whenever the security of an aircraft was violated.

The determination of jurisdiction has become more complex in this age characterized by the advent of technology. Apart from the benefits it procures to global development, offenders have exploited it to increase the ravages of unlawful interference with civil aircraft. Terrorist ways of attacking keep changing to target the weakest link of the aviation industry with the use of modern technology. Furthermore, there are emerging security threats today that pose huge challenges in determining jurisdiction. For example, bombing of land side by a perpetrator who is outside the jurisdiction of the state, attacks conducted by trusted insider or airport staff, attacks against air cargo supply chain, attacks using chemical or biological weapons, drone attacks and finally cyber-attacks. These contemporary threats against civil aviation create more challenges in determining jurisdiction. The 2010 Convention for the suppression of unlawful acts against the safety of civil aviation tries to resolve these challenges in article 8 but leaves unclear the issue rule of priority. Today, with the prevalence of aircraft insecurity all over the world, the need to expose the challenges remains inevitable. This article aims to critically analyse the legal and practical challenges in asserting jurisdiction over acts that threaten aircraft security, especially in light of technological and geopolitical developments. This article is a doctrinal legal analysis relying on international treaties, case studies, and comparative legal perspectives.

2. Formula for the determination of Jurisdiction in civil aviation discuss

Before looking at the methods of determining jurisdiction, it is important for us to look at the reasons behind such efforts. The determination of jurisdiction is largely derived from the drive to enforce state sovereignty, through identifying the linking factors known as basis of jurisdiction to piecemeal

efforts to protect state integrity [6]. In this note, every nation possesses exclusive sovereignty and jurisdiction within its own territory and all people who are resident within it, be it naturally born subjects or aliens. This includes all agreements like contracts, and all sort of acts performed within the territorial confines of that state [7]. Therefore, we may say that every state has the power to make laws, to execute those laws and to enforce them to acts, offences and occurrences within the territory of that state. This is the concept of legislative, executive and enforcement jurisdiction of a state. It is this aspect of sovereignty that states make efforts to determine jurisdiction for acts by or against their citizens within their territory. Under this heading we shall examine the modes of determining jurisdiction for the unlawful interference with civil aircraft.

2.1 Classical methods

The classical method for determining jurisdiction in aviation can either be territorial or extra territorial. They involve those methods of asserting jurisdiction which developed from general principles of international law and directly affect the sovereignty of states. These modes evolve around the components of a state sovereignty and its components like territory, population of a territory and autonomous power.

2.1.1 The territorial approach

The territorial approach depicts the determination of jurisdiction in reference to where the offence was committed. It holds the view that criminal jurisdiction depends on the place where the crime was committed [8]. It is called the territorial principle due to its global acceptance, and it is the act by which a state executes laws inside its territorial confines. This principle is founded on two tenets which is sovereignty and equality of sovereigns [9]. One cannot talk about territory without knowing the meaning of the word and its components. Therefore, in this subject, territory will involve terrestrial, maritime and the airspace. The terrestrial which includes the earth's surface like hills, low land and high lands like mountains and properties on it. The Maritime component includes water bodies like internal waters, port bays and the territorial sea which is 12 nautical miles from the baseline. In practice, there have been various notions of territory like special status territory, special environments and floating territory, which was derived from the Lotus case, today referred to as the flag state principle. The territorial view was first stated in Article 4 of the Tokyo convention of 1963 and common in all local laws as a basic principle of criminal law. The question we may want to answer involves the complexity of this principle with regards to the nature of certain offences that may be plotted in one jurisdiction but are effective in another. For example, a terrorist who stands at the border of one state and shoots down an aircraft flying in the airspace of another jurisdiction, may create a conflict in asserting jurisdiction or lead to concurrent jurisdiction. The territorial approach was clearly stated in all the Conventions dealing with aircraft insecurity.

2.1.1.1 Objective territorial view

This applies when states claim jurisdiction based on acts that produce substantial effect within the territory of a state, even if the act was initiated outside that state territory. This allows a state to claim jurisdiction over offences that have significant

impact over its territory [10]. A good example is currency forgery. Also, this view is held I article 4(1) of the Tokyo Convention of 1963 when it stated that states may claim jurisdiction over offences if the offence has an effect on the territory of the state. The provision is clear and the same as that of the Beijing convention of 2010 that affirms the objective approach in its article 8(2). A good application of this principle under aviation law is the case of cyber-attacks on aircraft where the perpetrator can carry on the act from another jurisdiction as he needs not be on the same territory to affect the aircraft. For example, the case of Yahoo vs LICRA (2006). In this case, the French court asserted jurisdiction over yahoo for content hosted in US servers arguing that it violated French laws and created negative effects on its citizens in France.

2.1.1.2. subjective territorial consideration

According to article 8(1) of the Beijing Convention for the suppression of unlawful acts against the safety of civil aviation, states can assert jurisdiction over acts when such acts were committed on their territory. This takes a clear subjective view in asserting jurisdiction to the state of commission of the offence. The limitation of this principle is very feasible on cyber related attacks. Therefore traditionally, the subjective territorial principle relies on three fundamental notions [11]. Firstly, it is usually where a criminal offence takes place that the most useful piece of evidence to solve a crime is to be found. The place where the perpetrator engaged in criminal conduct is indeed generally where most of the witnesses and indicia of criminal activities were and are still likely to be found. Again, with regards to the objective view, the place of commission of an offence assures the respect of legality principle which ensures that individuals are aware that a certain act is criminalized. This is contrary to the place of result which may be random and unpredictable because the place of conduct is more certain. Finally, subjective territoriality depends on the idea that from the criminal logical point of view, it is more important for states to sanction the expression of criminal will on their territory than to protect and restore their public order. The main limit of this territorial view is its flaws regarding cyber-related offences due to its technical nature.

2.1.2 State of registration of the aircraft (Flag state)

The origin of asserting jurisdiction by the state where an aircraft was registered is not only common to aviation law. This is sometimes referred to as floating territory. It is commonly used in maritime law to cover acts and occurrences over the high seas [12]. This principle was first mentioned in article 3 of the Tokyo Convention of 1963. The advantage of this principle is that it solved the problem of the gap of the law in offences committed during flight over the high sea, a situation that could not be resolved by the territorial standpoint. The principle of determining jurisdiction by the flag state resolves the gap of violation of aircraft insecurity over the high seas and such places beyond state territory. This view brings a solution to many difficulties that could arise in applying territoriality for acts and occurrences on board. The nature of modern aircraft makes it possible for it to travel across many jurisdictions in a matter of minutes. This may create the problem of determining the exact location where a crime was committed. Therefore, asserting jurisdiction based on the state where an aircraft was registered is very vital for

acts and occurrences on board. Apart from the Lotus case which lays a foundation of this principle, other examples include United states vs Cordova where the offender was arrested and tried for acts committed in an American aircraft flying across the High seas. The consolidation of this principle can be seen in recent aviation laws like article 8(1 b) of the Beijing convention of 2010.

The question of jurisdictional conflict may arise when the act on board affected the public order of the subjacent state, could the subjacent state claim jurisdiction for such acts? Also, it is possible with modern technology for an offender to commit an act while not on board the aircraft. This means two states may be willing to assert jurisdiction over such offences and may lead to a conflict or concurrent jurisdiction. There may be acts that are punishable on board an aircraft but not on ground, could this still lead to an offence leading to asserting jurisdiction? These questions are to expose the limited nature of this principle under aviation law.

2.1.3 Determining jurisdiction based on the nationality of the offender / victims in cases involving aircraft security

The Tokyo convention of 1963 states that state may assert jurisdiction if the offence was committed by or against the national of a state [13]. The determination of jurisdiction based on nationality can be addressed using two methods.

2.1.3.1 Active nationality considerations

Active nationality or personality theory like the territorial theory is based upon state sovereignty which provides in art that nationals of the state are entitled to states protection even when they are outside the territory. Following this right to states protection is the obligation to equally respect the laws of the state extraterritorially. The Active personality principle can be classified into five different categories. For example, those laws making all offences punishable, those that make punishable only the offences which are punishable by the place of commission (*lex loci delicti*), those that make all offences of a certain serious degree punishable, those that punish only offences by co-nationals and finally those that punish only certain specified offences [14]. The specification in Convention on offences for the suppression of unlawful acts against the safety of civil aviation article 8(1) e states clearly that states will assert jurisdiction for acts of unlawful interference if such acts are committed by their nationals. The question of stateless person is also addressed as the law stipulates that states may assert jurisdiction if such acts of insecurity were committed by stateless persons who reside in their territory [15].

2.1.3.2 Passive nationality

This theory compliments the active personality theory. While active nationality principles ensure to protect states citizens abroad, the passive personality seeks to protect states interest in the warfare of its nationals abroad [16]. Since one of the ultimate missions of a state foreign policy is to protect its citizens abroad, we can consider that every state has legitimate interest in prosecuting offences against its citizens abroad. The most famous application of this principle is the S.S. Lotus case between Turkey and France. This theory can equally lead to a situation of double jeopardy like the case of US v Cordova. During the Lockerbie incident, US claimed jurisdiction because for an act that was committed over the

Scottish territory by a supposed Libyan national. Libya's effort to secure jurisdiction based on the active nationality did not prevail [17]. In Article 8 (2) a, the Beijing convention makes it clear by stating that state may assert jurisdiction when the offence is committed against their nationals [18].

The assertion of jurisdiction based on nationality has several challenges that will be examined in the second part of this work. Of course, we must answer the following question on the nationality principle which surrounds the determination of nationality like the question of dual nationality, dominant nationality, stateless persons, change of nationality and the case of refugees.

2.1.4 Universal theory in determination of jurisdiction for acts of aircraft insecurity

All standards for determining jurisdiction in aviation are with links except universal jurisdiction which is jurisdiction without links. Some offences due to their very nature affect the entire mankind even when committed in a given state, against a particular victim or interest. Such acts can be committed in an area without exclusive jurisdiction like the high seas, airspace or outer space. The main issue is that it affects the entire world of mankind. The oldest application has been the crime of piracy [19]. States with custody of the offender are called upon to either prosecute or extradite. The power to exercise universal jurisdiction in aviation is established in the Hijacking convention of 1970. It states that each contracting state with custody of the offender shall prosecute the offender if it does not extradite him. Furthermore, when such aircraft lands on board with offender still on board, the landing state may assert jurisdiction. A good example of Universal jurisdiction in aviation law is united states v Yousef [20]. The offender was charge for bombing a Philippine airline causing death an injury in December 1994 and was turned over to the United States by Pakistani authorities. Count Nineteen, the bomb of the Philippine airline flight 434 appears to present a less straight forward jurisdictional issue because the airplane that was bombed was not registered in the US and was flying between two destinations outside the United States. Also, no evidence showed that there was any US citizen involved or where the target of the sabotage act. It was held that the US claimed jurisdiction based on Universal grounds [21].

We will now look at the contemporary modes of asserting jurisdiction in the next part.

2.2 Contemporary modes of determining jurisdiction

Contemporary modes of determining jurisdiction in aviation refers to those methods of determining jurisdiction which developed out of the quest to subdue unlawful interference to civil aircraft. Some principles are applied only to aviation law due to its nature.

2.2.1 State of landing of the aircraft

The state where the aircraft lands with offender still on board was granted jurisdiction to either prosecute or extradite the offender. Article 8 (1) c of the Beijing Convention of 2010 provides that states may claim jurisdiction if the aircraft on which the off the offence was committed lands in their territory with offender still on board. This makes room to

trigger universal jurisdiction since the landing state may not even have any link for extraterritoriality like flag state, or nationality.

2.2.2 Determination of jurisdiction in cyber related violations of aircraft security

The aviation ecosystem is quite broad and includes the supply chain, manufacturing, distribution, airport facility and ground service. Cyber-attacks can lead to damage in aircraft systems leading to great damages and loss [22]. Cyber terrorism can take several forms and may be defined in many ways. Usually, it is a terror attack or threat that targets computers and computer systems. Computer systems control the ground handling of passengers, luggage, communication with the airplane, flight plans, and control of the flights themselves. Such complicated computerized systems can be exposed to cyber-attacks [23]. Cyber-attack against civil aviation can take the form of phishing, malware and can target communication systems. And other critical IT Infrastructure. For example, on August 2008, Spanair Flight 5022 (JK5022) [24] from Barcelona to Gran Canaria airport in Spain, crashed minutes after taken off from Madrid airport. One Hundred and fifty-three died and 18 survived. Two years later, the company reported that the main computer which reports malfunctioning had been contaminated with malicious computer programs and therefore might not have recognized the airplanes problems before take-off. It was made upon that the aircraft system was contaminated by a cyber-attack.

The idea of asserting jurisdiction in aviation is from the idea that when a crime occurs, one must be able to first determine the place of commission. The place of commission of an offence is the basic theory of criminal jurisdiction. The subjective notion in jurisdiction is ineffective when it comes to cyber-crimes because it's possible for an offender to stay in one jurisdiction using the internet to cause damages in another jurisdiction. When this happens, the subjective territorial state may not even be interested because of little or no effect it may suffer from such attacks. This is also because cyber criminals always enjoy attacking distant states to further conceal their identity and harden traceability. As a result, it is quite difficult to trace the origin of cybercrime perpetrators and pinpoint where the offence took place [25]. So, in such cases, we will be faced with the two theories of territoriality.

As mentioned earlier, when it comes to cyber space, the principle of subjective territoriality faces challenges. On the one hand it will make forum shopping easier than before because the conduct has the freedom to obey the law of the state that is more favourable to them by selecting or changing the location of data processing. On the other hand, from a technical point of view, it is not easy to identify the location of data processing, especially in this era of cloud computing [26].

So, the application of objective territoriality in asserting jurisdiction in cyber-attacks in aviation has many advantages. Firstly, the foreseeability of the application of objective territoriality is more suitable in allocating jurisdiction between states than that of the subjective notion. One reason for this is the fact that the results for data processing can easily be identified as proved by the states on whose territory the result is produced. The results in cyberspace for example are

recognized as the accessibility of a website, interference with computer data system, damages to the devices, or injuries to persons [27]. Secondly, the country that claim its jurisdiction bases of the objective territorial principle has better interest in the issue than the state where the crime was committed since the conduct of processing data can be placed on an overseas server. The country where the server is located can have little substantial interest in the conduct. The states in possession of the data may be less interested in the conduct.

3. Hitches involved the determination of jurisdiction for the violation of aircraft insecurity

As mentioned earlier, asserting jurisdiction in offences involving aviation insecurity is a process necessary to bring perpetrators to justice. States are given the obligation to either prosecute or extradite violators of aircraft security. States are equally called upon to take steps to establish their jurisdiction whenever an offence is committed against aircraft [28]. However, asserting jurisdiction remains a challenge to both national and international legal order. This section examines the challenges encountered in the efforts to assert jurisdiction. It is in fact, international aviation law itself is founded upon state sovereignty, and makes states territory exclusive from others [29].

3.1 Legislative Challenges

3.1.1 Conflicting national provisions

The nature of aviation cries out for the need for a unified system of law due to the cosmopolitan nature of aircraft. This is because aircraft flies across national boundaries, national laws which breed different state sovereignties. A single aircraft can transport multiple passengers of different nationalities at a time. Even the Chicago Convention of 1944 in article 1 states that every state has Complete and exclusive sovereignty over its airspace. This suggests that every state has the right to enact, execute and enforce laws on any issues within its territorial limits. This position has brought about the enforcement of different nationalistic laws to protect states interest. This has not only delayed the determination of jurisdiction but has equally subjected aviation to the mercy of the national legal system. It has also secluded a sector which requires a pan global approach to individual state systems. Therefore, we may say that international aviation law is still governed by nationality [30].

Conflicting national provisions on the same issue is a key stumbling block on jurisdiction. Laws are built on different regions and cultural philosophy or religion and reflect each nation's ideology on a particular issue. The fact that aircraft insecurity sometimes has either a universal element, or a cross-border components makes it quite challenging to decide or to arrive at a consensus especially if the state's political interest or integrity is involved. For example, while some nations approve of the surrender of their nationals to extradition request, others don't approve and in any given case, conflict may be inevitable. During Lockerbie incident, the two parties were on a conflicting course. Libya relied on the codified rule of article 7 of the Montreal Convention which gives room for states to either prosecute or extradite offenders as a governing principle which entitles it to

prosecute her citizens especially in the absence of any extradition treaty, the US and Britain insisted the surrender of the two nationals [31]. Also, different states have a different approach to the same issue. For example, in US vs Cordova [32], the perpetrator was arrested and tried in Malata with a 7years imprisonment. The USA was not satisfied and arrested the same perpetrator and sentenced him to a lifetime imprisonment.

3.1.2 Cosmopolitanism

States are bound to run into conflict during the assertion of jurisdiction. This is because the whole idea of laws and jurisdiction was constructed on sovereignty which is also rooted in triangular relation: territory, sovereignty, jurisdiction itself so that statehood is recognized by allusion to a specific physical territory, jurisdiction in a state's authority over individuals and incidents by citing to their location within that territory [33]. As mentioned above. The foundation of aviation carries to certain nationalistic philosophy guarded by state interest and sovereignty. However, the very invention of aircraft cries for universal citizenship. Aircraft must operate across various national airspaces to sustain commercial viability. The modern era is not only marked by international trade and transnational activities like contracts of sales, but services are also both online and offline activities, reducing everyone into a global citizen. All these have promoted the development of cosmopolitanism, challenging the territorial nature of international aviation law standards. Cosmopolitanism has made the reliance on territorial factors in the determination of a country's legislative and enforcement jurisdiction to be questionable. This is due to the increasing complexity in the determination of aviation's cosmopolitan nature events, and incidents that warrant the application of jurisdictional inquiry. A Libyan national who leaves in Malat plants a bomb in an aircraft bearing the US flag and later explodes over British airspace killing both Americans and British. Today, courts do not only have to fight with transnational or universal events, but equally with events that are deemed to have occurred everywhere like cyber-offences [34].

3.1.3 Emergence of technology: Cyber-attacks.

In this era, significant changes are taking place, which has forced global society to rely significantly on digital technology. Today, a significant part of activities of all subjects of law occurs in cyber space or is closely related to the use of information technologies [35]. The aviation industry is faced with global challenges of modern threats involving technology like drones' attacks and cyber-attacks which create difficulties in not only identifying perpetrators but equally is a stumbling block of determining jurisdiction. Cyber-attacks can take many forms. It can be defined as a terror attack that targets computer and computer systems in aviation [36]. In aviation, computer systems control the ground handling of passengers, luggage, communication with the airplane, flight plans and control flight themselves. As a result, all these systems are vulnerable to cyber-attacks. For instance, the director of the European aviation safety agency made it clear that aviation cyber systems are subject to at list 1000 attacks each month [37].

The challenges encountered in the determination of jurisdiction arising from cyber-attacks against the safety of

civil aviation are many. Firstly, the main problems is reaching a consensus of jurisdictional boundaries between acts of national and international jurisdiction, cross border activities and extraterritorial consequences. This is because the development of cyber space is not based on physical territories or location of subjects of law contrary to systems of laws that are based on a particular territory and subjects of law in a particular state. Obviously, there is bound to be a jurisdictional problem. Therefore, to create more difficulties, it is said that cyber transactions occur outside physical borders, further complicating jurisdictional claims [38]. They are said to have occurred everywhere. Another difficulty arising from the digital age is the context of human right protection in the context of privacy.

3.1.4 Determination of *locus delicti*

Another difficulty making it difficult to determine jurisdiction for the violation of aircraft insecurity is to decide on where exactly an offence was committed. This involves cases of insecurity that occur when an aircraft is in flight. The supersonic nature of aircraft now our days make it possible for an aircraft to fly across many jurisdictions in a short possible time. The Tokyo convention gives room for the flag state to try offences on board an aircraft inflight. However, the territorial state may still be interested in the issue, but the problem may lie in how to determine that such offences took place in the airspace of the subjacent state. This is true with cases of unruly behaviours. The offence can also be committed over international airspace, or across many states' jurisdiction bringing conflict. All these are the possibility of limiting the exercise of asserting jurisdiction which may be quite different from traditional offences.

3.1.5 Gap International Legislation

Gap in international legislation refers to key issues about jurisdiction left out by the international community during the drafting of rules regulating standards of security of aviation. The first important Gap is the issue of no rule of priority among the jurisdictional principles. This alone is a clear space for continuing disputes among states. The standards of jurisdiction are spelled out in the various treaties but there are no regulations stipulating which state has jurisdiction in case of a conflict. This alone has led to states having concurrent jurisdiction over the same legal issue. This will lead to prolonged debate, delay, and sometimes violation of states' sovereignty as no state may be willing to give up their interest in a particular case that may have been committed by or against their nation, against an aircraft bearing their flag or committed over their space. Also new challenges against aircraft security like drone attacks or cyber-attacks have insufficient provisions on what can amount to an offence using both means.

3.2 Problems associated with Nationality of the offender or victim

In determining jurisdiction based on the concept of nationality, a lot of issues or questions ought to be answered. The question surrounding asserting jurisdiction based on the nationality of the victim or offender range from the fact that offender can be of dual nationality, dominant nationality, or has changed nationality after changing nationality after committing the offence. Also, there are situation where the

offence is committed by stateless individuals or refugees. How then can one resolve such issues.

3.2.1 The offender of aircraft security is of multiple nationality

Nationality rule is usually strait forward, but it will be more complex if the offender is of dual nationality [39]. Multiple states could claim concurrent jurisdiction over an offender of aircraft security. Under international criminal law for example, a multiple national accused may even claim that since one of the states of which he is a national has not accepted its jurisdiction, the court is not competent in the matter. This argument can be backed by article 29 of the Rome status which provides that challenges to the jurisdiction of the court may be made by a person to whom a warrant of arrest has been issued under article 58. Also, a state of which acceptance of jurisdiction is required under article 12 could raise such objections. The pretrial chamber will have to decide whether such jurisdiction can be valid by taking a longer procedure to verify if each state of the accused nationality has accepted its jurisdiction. It may even go further to determine whether the objecting state has its nationality in the accused or if its dominant nationality.

This issue is silent in aviation law. The provisions are straight forward in the Tokyo Convention's article 4(b) when it states that states can assert jurisdiction when the "offence has been committed by or against a national or permanent resident of such State". Beijing convention for the suppression of unlawful acts against the safety of civil aviation in its article 8 paragraph 1 e and article 8 paragraph 2 (a) states nationality as a principle of asserting jurisdiction. There are no provisions for objecting to jurisdiction under these laws.

3.2.2 The offender has changed his Nationality after the act

There can be situations where offenders change their nationality after violating the security of the aircraft. This can raise serious debate on jurisdiction regarding this issue. Though there are some attempts to arrive at a consensus on this matter, it continues to persist. For example, article, 8 of the international Conference on Unification of penal laws 1927 states that the law will also apply to foreigners who at the time of commission of the act was a national. The law will also apply to citizenship after the commission of an act. Also, article 5 of the Havard draft convention of 1935-based jurisdiction on nationality either the time of commission of the act or the time of prosecution. The first is justified in the fact that by committing a crime, the accused becomes liable to his own state and this liability should continue even after he lost the nationality. Also, it was held in the Havard previous draft that the naturalization of a person does not neutralize the liability for crimes he committed against it while he was national. There are no provisions in aviation law regarding change of nationality, and all these will depend on different national laws. Australia and Britain have accepted nationality during prosecution as a base of jurisdiction over war crimes committed during the WW2 [40].

3.2.3 The offender is a stateless person.

Stateless persons are those who have no nationality and this makes active personality to be meaningless. However, the Beijing Convention of 2010 settles the matter by stating in it

article 8 (2) b that states may claim jurisdiction if the offence is committed by a stateless person whose habitual residence is in the territory of that State. In our view, the greater part is how to determine the offender's habitual residence. What are the factors that determine it and how can we determine the habitual resident of a state. What if many claim the offender habitually resides in their territory? These questions are not answered in international aviation law so resort will be driven towards local laws of the states objecting to. Many municipal jurisdictions have rejected stateless persons. However, some states extend their active personality jurisdiction to all residents irrespective to their nationality. Therefore, as mentioned above, the bigger question will be to determine the word habitual resident, which is also not defined in aviation law. The law is not clear as it uses the word habitual residents and leaves no definition. Some municipal laws will insist on permanent residence while others use habitual. What if the offender has more than one resident or he decides to change his residents after violating the security of the aircraft.

3.3 Judicial challenges

These are challenges encountered in the efforts to determine certain facts and elements needed to know the exact state that may be in good position to here and try an offence committed in a case concerning aircraft insecurity. Before we assert jurisdiction, we must identify the culprits, gather enough evident, and cooperate with each member state to achieve the objective. This has not always been an easy task in practical terms.

3.3.1 Identification of culprits

identifying culprits is not always easy. It is true that when an offence is committed on board an aircraft, we may have our way in easily pointing out who the offender is. Also, there are cases where the aircraft lands with the offender still on board. However, in some cases like cyber offences against aviation, aircraft sabotage, since the offender need not be on board the aircraft, identifying the offender can be very challenging. During Lockerbie it took almost a decade to identify the culprits. The first attempts were directed to USA enemy at the time who were the Palestinians [41]. How can a state claim jurisdiction on the bases of the nationality principle if we don't know who the offender is. We may need to rely on other principles whose states may not be willing to assert jurisdiction. Several methods can be used to identify culprits. For example, identification parade, DNA etc. There may still be problems related to all these methods as identifying a criminal after a long time can lead to misidentification. The Scottish criminal Case review commission of the Lockerbie incident raised this issue to claim there was miscarriage of justice as the Witness Mr Tony had pictures of the supposed mysterious buyer days before the identification parade. The description of the man in his police statement, was contradictory to who he pointed out during the parade as the man who bought a grey man's shirt in his shop [42]. The witness who pointed at the accused in the parade had a picture of him in a magazine called Focus that had a capture on who is the Lockerbie timer [43].

3.3.2 Evidentiary difficulties

In cases of aircraft insecurity, this problem may appear in the form of nondisclosure of evidence due to unwillingness by a

state to cooperate, and discovery of fresh evidence after the judgement has been passed. During the Lockerbie incident, it was difficult to first bring out the evidence that the man the man who bought the shirt also bought an umbrella that was in the same shop. Proofing that took decades. Secondly, conducting investigation abroad to get more evidence is usually very difficult. Conducting investigation abroad to get evidence, identifying evidence especially forensic evidence involved in aircraft. It is very expensive to conduct experiments to proof evidence. There are equally several difficulties associated with documentary evidence especially with the issue of authentication of evidence. Other difficulties include transportation of evidence out of a state, excavation of graves and the issue of non-disclosure of evidence for the purpose of state security and secrecy.

3.2.3 Conducting investigations abroad

Conducting investigation abroad remains a challenges task not only in aviation law. This is a task which is limited because states will always protect their nationality, culture and integrity. It is not easy for a foreign investigator to carry out an investigation in a state which does not master the terrain, the people and reality on ground. Again, investigating abroad is usually very expensive, and risky, especially in such cases, which has to do with state security. Furthermore, the courts and other state authorities may not be willing to cooperate, especially if the case involves state sovereignty.

3.3.3 Problems associated with witnessing

Getting witnesses in cases involving aircraft insecurity is usually not easy. Even those who are willing to cooperate are usually scared of the consequences. Those who are not willing usually will not give sufficient evidence in court. The greater part of this factor lies on witness intimidation, either by the court or for higher organized crimes by terrorist groups. These further limits the determination of jurisdiction if witnesses willing to cooperate are afraid of their lives, loved ones and family who face the effect.

4. Conclusions and Recommendations

The significance of this study lies in its exploration of the inadequacy of current jurisdictional frameworks in handling modern aviation threats and the pressing need for harmonized international legal responses. The determination of jurisdiction in aviation security remains hampered by outdated legal frameworks, conflicting sovereignties, and evolving technological threats. Despite conventions like Tokyo, Montreal, and Beijing, legal clarity is undermined by a lack of priority rules and cyber-era complexities. This paper underscores the need for a unified international framework that recognizes both traditional and modern threats, offering a clearer path for prosecuting aviation-related crimes across jurisdictions.

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