

Security in the Civil Nuclear and Aviation Sectors: Identifying Transferable Best Practices

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Scope of the Research

The World Institute for Nuclear Security, supported by the MacArthur Foundation, has conducted a major research project comparing and benchmarking the international security regimes in the civil nuclear and aviation sectors.

The Scope of the Research



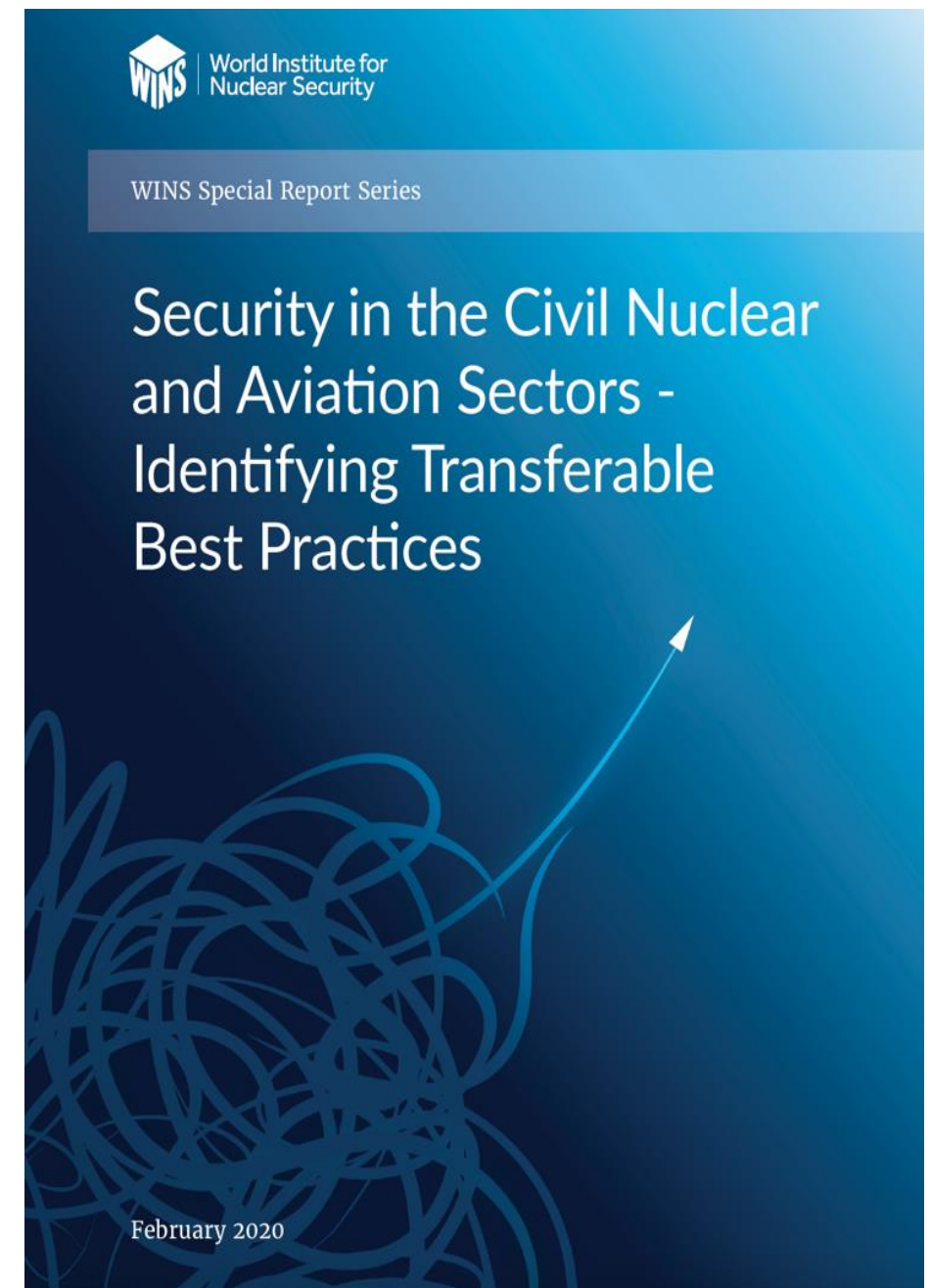
Member States
National Regulators
Industry

- ***International Activities and Oversight***
- ***Legal and Regulatory Approach***
- ***Industry Engagement and Peer Review***
- ***Best Practices***

Scope of the Research

The Research Summary was published last week.

The 9 Supporting Volumes will be published in the next few weeks and be available on the WINS website.



Supporting Volumes

Volume 2	International Civil Nuclear Security and Aviation Frameworks
Volume 3	Strategic Planning, Guidance Development and Involvement of Industry
Volume 4	International Oversight, Audit, Peer Review and Enforcement Powers
Volume 5	Professional Development, Training and Certification
Volume 6	Developments in Civil Nuclear and Aviation Security by Decade
Volume 7	Civil Nuclear Security Incident Database 1960 - 2019
Volume 8	Civil Aviation Security Incident Database 1930 - 2019
Volume 9	Research Programme and Methodology
Volume 10	Consolidated Recommendations

What do these two Sectors have in common?

Commercial civil aviation is a very public activity, transporting billions of people each year between airports. It is a highly dynamic and competitive international sector, where time is money and customer satisfaction is a high priority.



What do these two Sectors have in common?

Nuclear Power Plants (and associated fuel cycle facilities) are some of the most robust, static structures on Earth with control points that prevent unauthorised public access. Security at these plants is often characterised by the phrase “guns, guards and gates”; in strong contrast to the public image that airports are trying to achieve.



What do these two Sectors have in common?

Both Sectors have UN-affiliated organisations – the IAEA and ICAO - that provide the international framework for security in their sectors.



Statute	1957
Security Mentioned?	No
Member States	171
Board of Governors	35



Statute	1947
Security Mentioned?	No
Member States	193
The Council	36

So, is their role the same?

Comparative Regular Budgets (Million Euros/annum): 2019

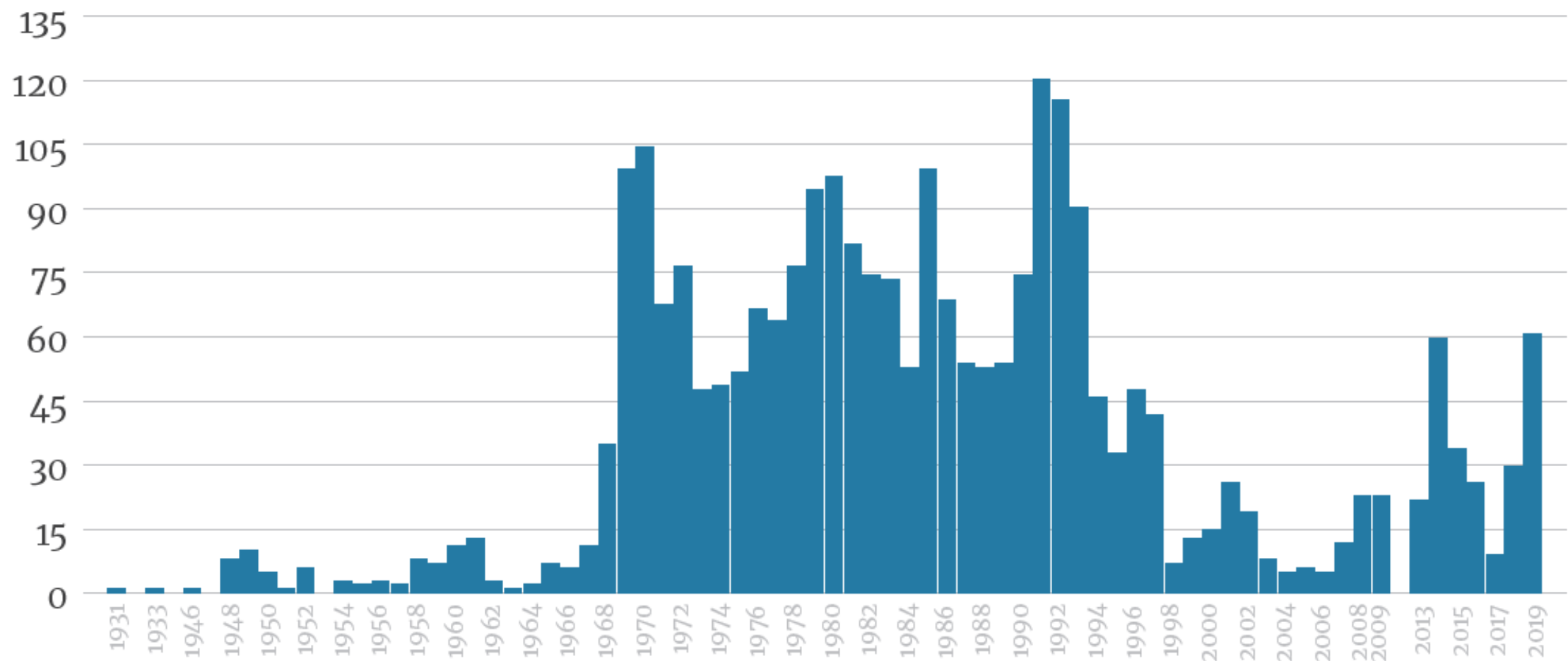
	IAEA	ICAO	Ratio IAEA/ICAO
Regular Budget	378	71	5-6 times as much
Safety and Security	36 (9.5%)	16 (23%)	Twice as much
Security	6 (1.6%)	6 (9%)	The same

So, the Regular Budgets for security are about the same

What do these two Sectors have in common?

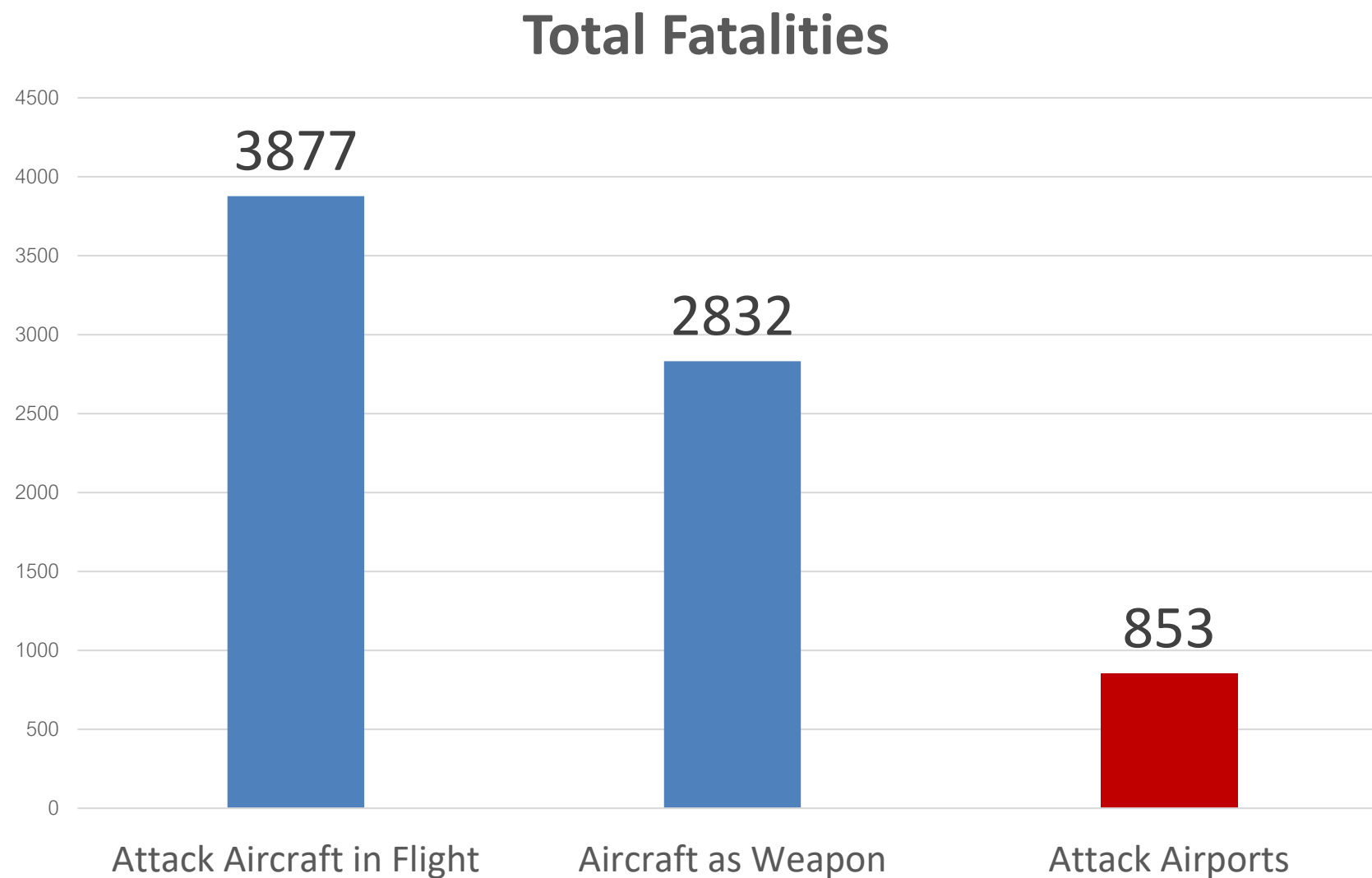
- The State is accountable for both aviation and nuclear security and both sectors have national regulators.
- Both sectors are considered part of the National Critical Infrastructure in most countries.
- Both sectors are of significant political and public concern with respect to the security arrangements.
- Both sectors face the same type of threats and are concerned about physical attacks, cyber security and insiders.

Significant Terrorist Incidents in the Aviation Sector

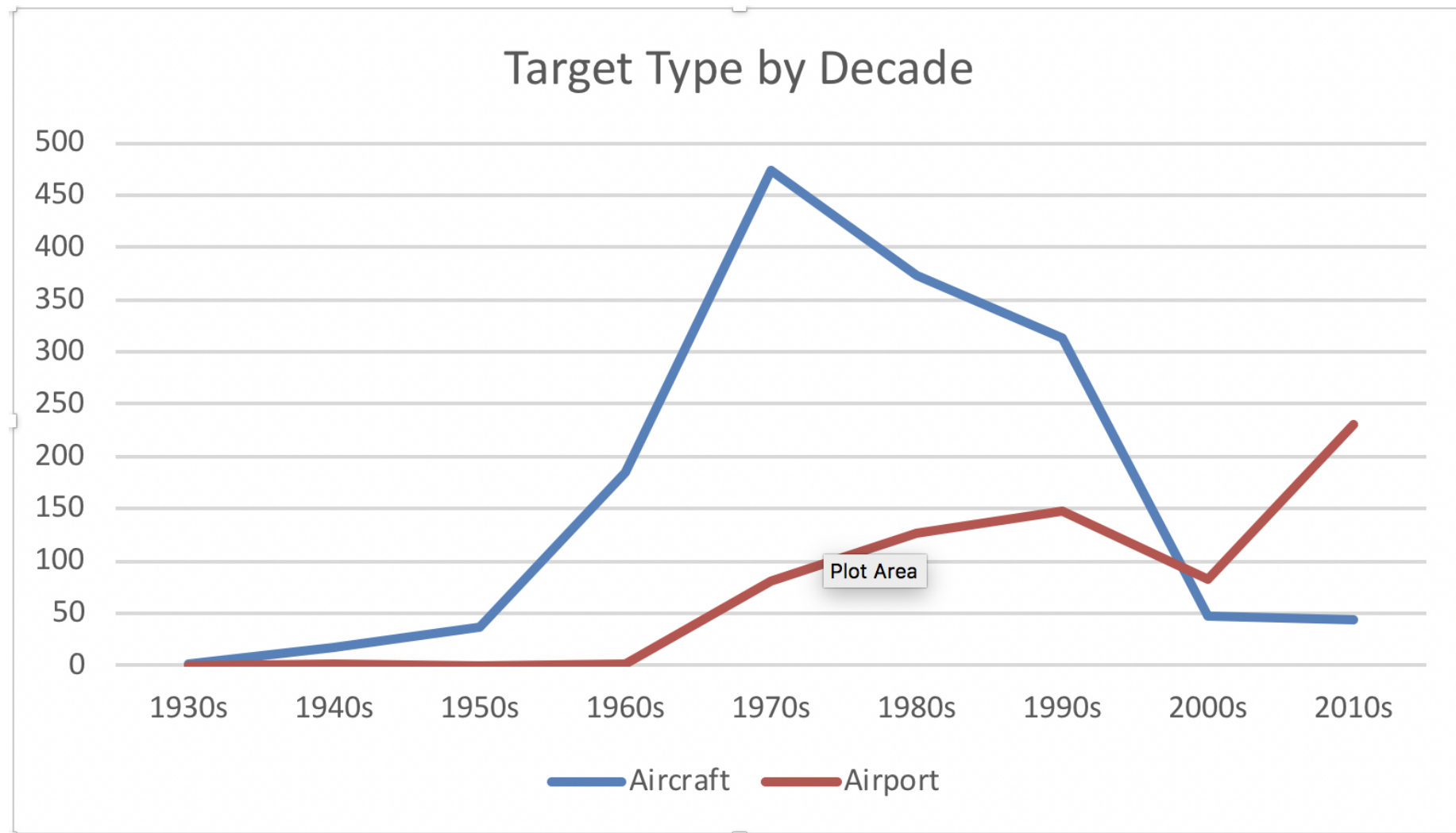


Falling but still peaks

Fatalities from Terrorist Incidents in the Aviation Sector

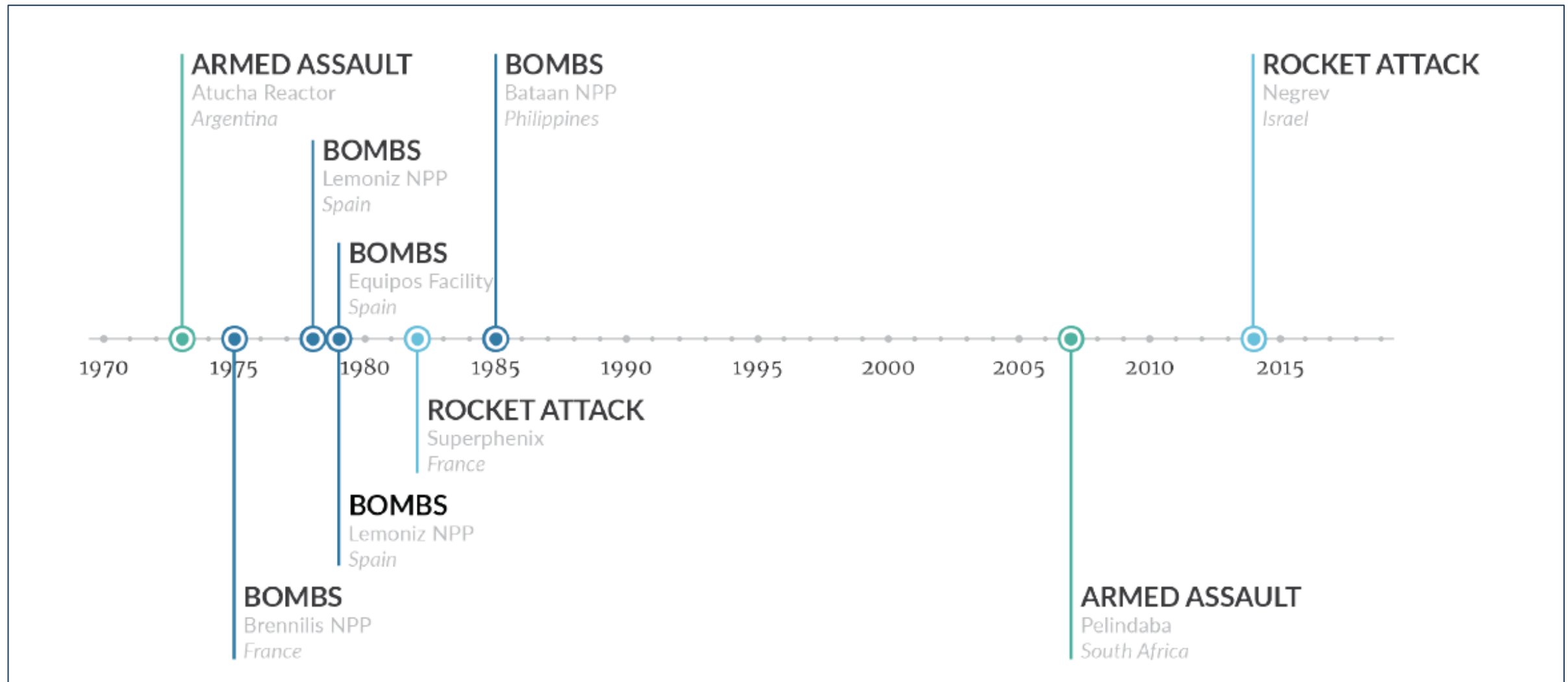


Significant Terrorist Incidents in the Aviation Sector



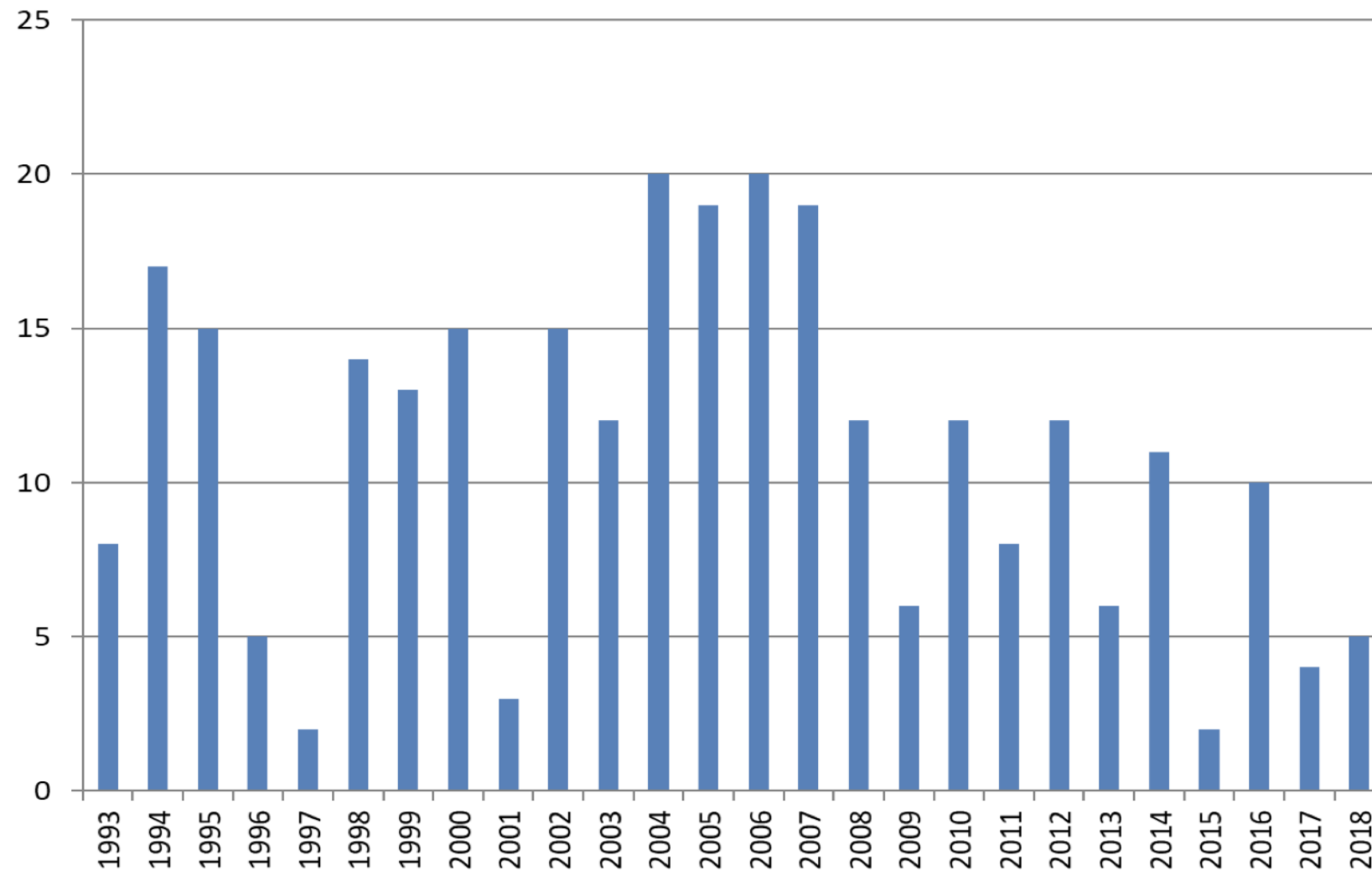
More Attacks at Airports

Armed Assaults and Bombings at Nuclear Facilities are Rare



9 physical attacks in 50 years; no radiological releases.

Radiological Material: Incidents related to trafficking or malicious use



No Dirty Bombs Exploded

What do we conclude from these Statistics?

- Security in the nuclear sector is much more effectively implemented, from the IAEA down to operators?
- Nuclear facilities and transport operations are too heavily defended to make them an attractive target?
- There are many more potential aviation targets (airports and aircraft) around the world?
- Public access to the airports and aircraft is the deciding factor?
- Terrorists are simply not interested in attacking nuclear facilities or detonating dirty bombs?
- Do we have anything to learn from the aviation sector?

Divergence between ICAO and the IAEA

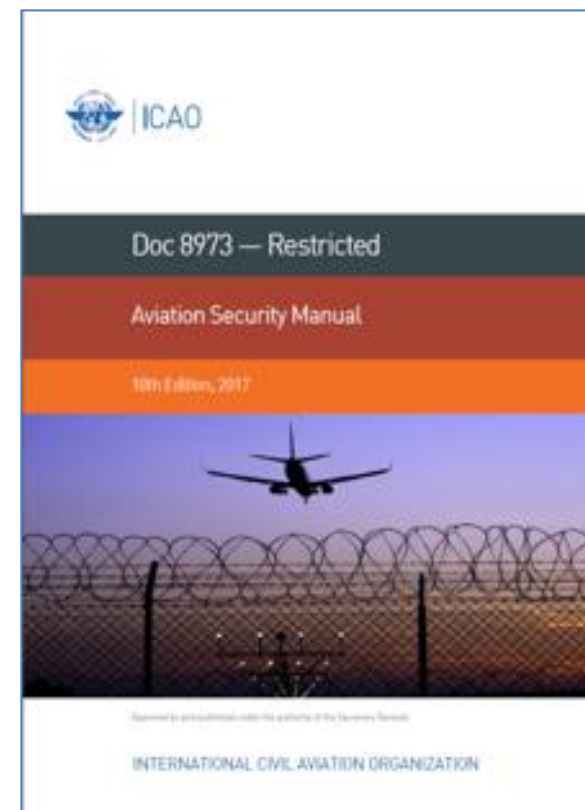
Following the terrorist attacks in the USA in September 2001 the ICAO Assembly adopted ***Resolution A33-1: Declaration on misuse of civil aircraft as weapons of destruction and other terrorist acts involving civil aviation*** (Endorsed by the Ministerial Conference on Aviation Security in February 2002)

This strengthened ICAO's role in the adoption of ICAO Security Standards and Recommended Practices (SARPs), in the auditing of their implementation, and allowed it to develop a comprehensive Global Aviation Security Plan.

This marked a significant divergence in ICAO authority and strategy compared to the IAEA

ICAO Security Standards and Recommended Practices

ICAO's aviation SARPs are defined in Annex 17 of the Chicago Convention, supported by the Aviation Security Manual, Document 8973, both approved by the ICAO Council.



ICAO Security Standards and Recommended Practices

ICAO draws a distinction between required Standards and Recommended Practices:

- ***Standard***: Any specification for physical characteristics, configuration, matériel, performance, personnel or procedure, the uniform application of which is recognized as necessary for the safety or regularity of international air navigation and to which **Contracting States *will conform* in accordance with the Convention; in the event of impossibility of compliance, notification to the Council is compulsory under Article 38 of the Convention.**
- ***Recommended Practice***: Any specification for physical characteristics, configuration, matériel, performance, personnel or procedure, the uniform application of which is recognized ***as desirable*** in the interests of safety, regularity or efficiency of international air navigation, and to which **Contracting States *will endeavour to conform in accordance with the Convention.***

By contrast the IAEA produces only guidance

Powers of Enforcement and Audit

Neither the IAEA or ICAO have any powers of enforcement but unlike the IAEA, ICAO does have the authority to conduct mandatory aviation security audits.

The ICAO Universal Security Audit Programme (USAP) was launched in 2002 and introduced regular, *mandatory*, systematic and harmonised audits to evaluate aviation security in all 191 ICAO Contracting States. Since 2002, over 430 audits have been conducted in 181 States.

The IAEA conducts a variety of reviews, *at the request of the State*. Since 1992 the IAEA has conducted 103 IPPAS missions, including follow up activities; about 4 per year.

Publication of Audit/Review Results

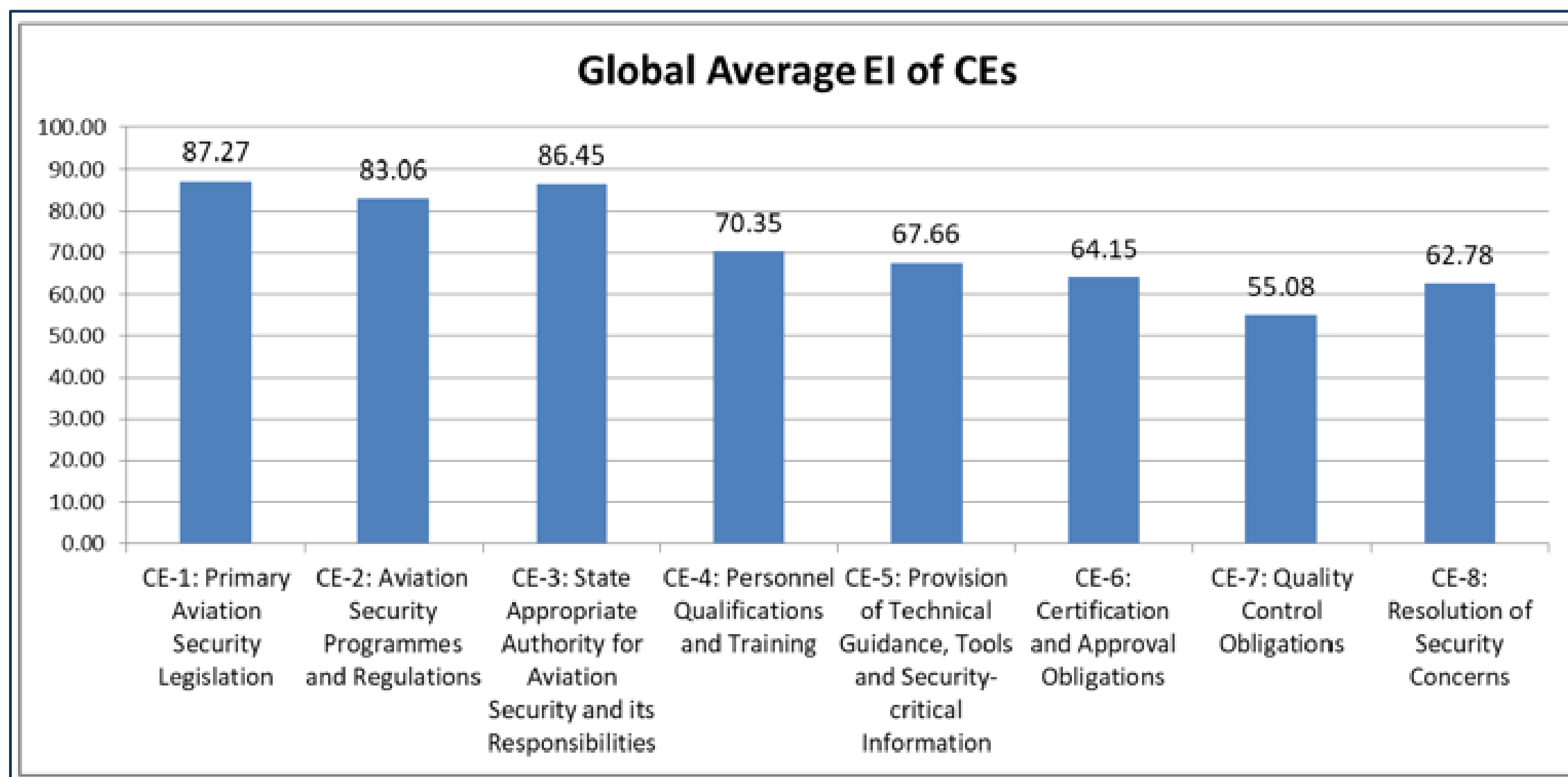
The reports of ICAO security audits and IAEA IPPAS Missions are confidential to the State involved.

However, ICAO publishes the overall results of its aviation security audits in two ways:

1. By reference to the effective implementation of the eight Critical Elements (CEs) of the aviation security oversight system and
2. The effective implementation of the aviation standards defined in ICAO Annex 17.

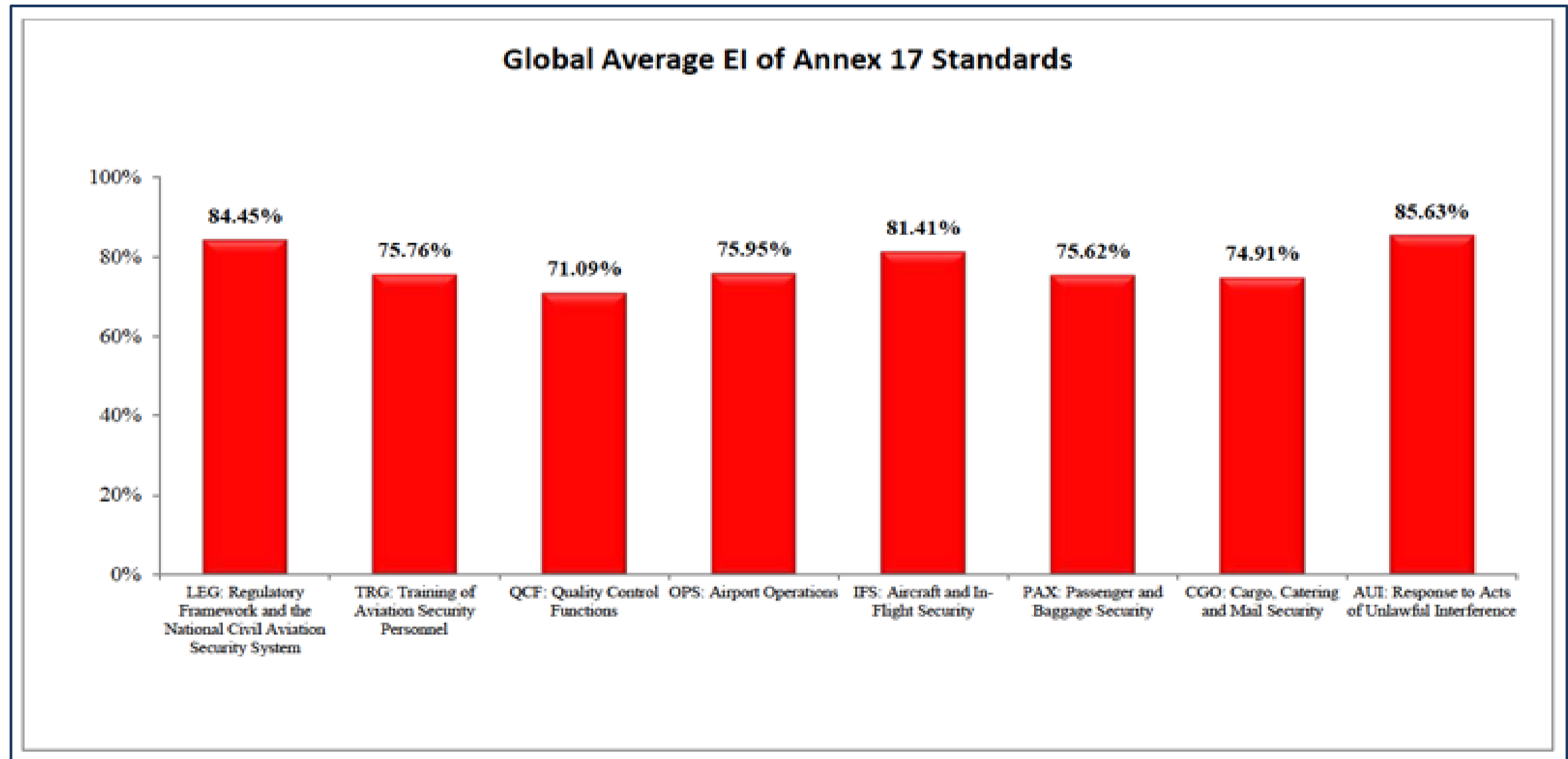
The data are presented on a regional or global basis, as percentage compliance

Publication of Audit/Review Results



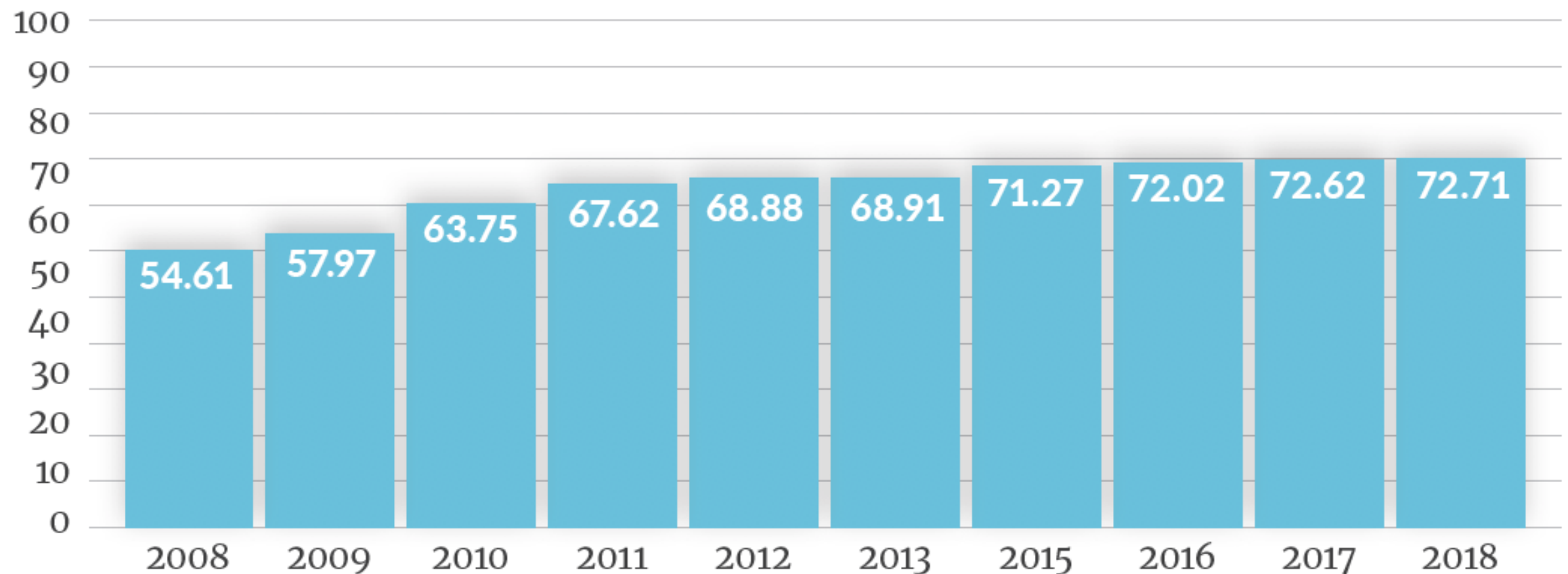
Global Average Effective Implementation of Critical Elements, 2018

Publication of Audit/Review Results



Global Average Effective Implementation of Annex 17 Standards, 2018

Implementation of ICAO targets (%): Global trends for Critical Elements



The aspirational global targets for 2023 and 2030 are 80% and 90%

Publication of Audit/Review Results

How is it possible for ICAO to publish overall global and regional trends in aviation security when the IAEA cannot/doesn't do the same for nuclear security and information from IPPAS and other reviews?

- Is it because there are no agreed Norms for nuclear security against which to assess compliance?
- Is it because nuclear security is deemed more sensitive and, if so, why is this? And to whom is it more sensitive – Member States, the public, industry?

Certification of Training Centres, Training Courses, Instructors and Auditors

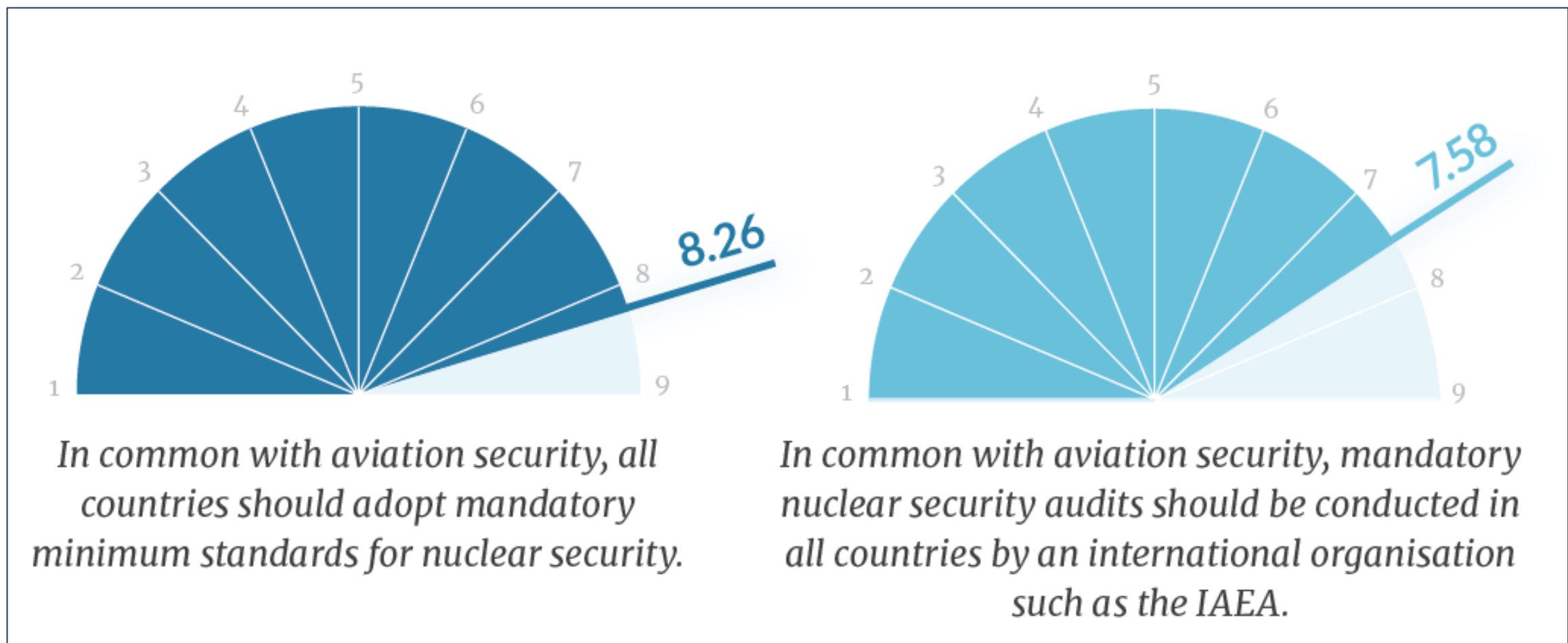
ICAO's policies require high standards of demonstrable competence in all its activities including the 35 certified regional training centres, all of its security courses, instructors and auditors.

The IAEA encourages the networking of Nuclear Security Support Centres and the sharing of information on a voluntary basis. It provides a wide range of security awareness courses on request but none are certified and no assessment is made of what the course participants learn.

The IAEA doesn't support certification, believing it to be a matter for the State.

Global Survey on Nuclear Security in 2020; 98 Countries

Huge support for equivalent norms in nuclear security



Research Conclusions

ICAO was given additional authority by its Member States within six months of the 9/11 attacks in 2002. Since then, ICAO and its aviation industry partners have developed and implemented a highly effective global security strategy and implementation programme for aviation in a high security threat environment .

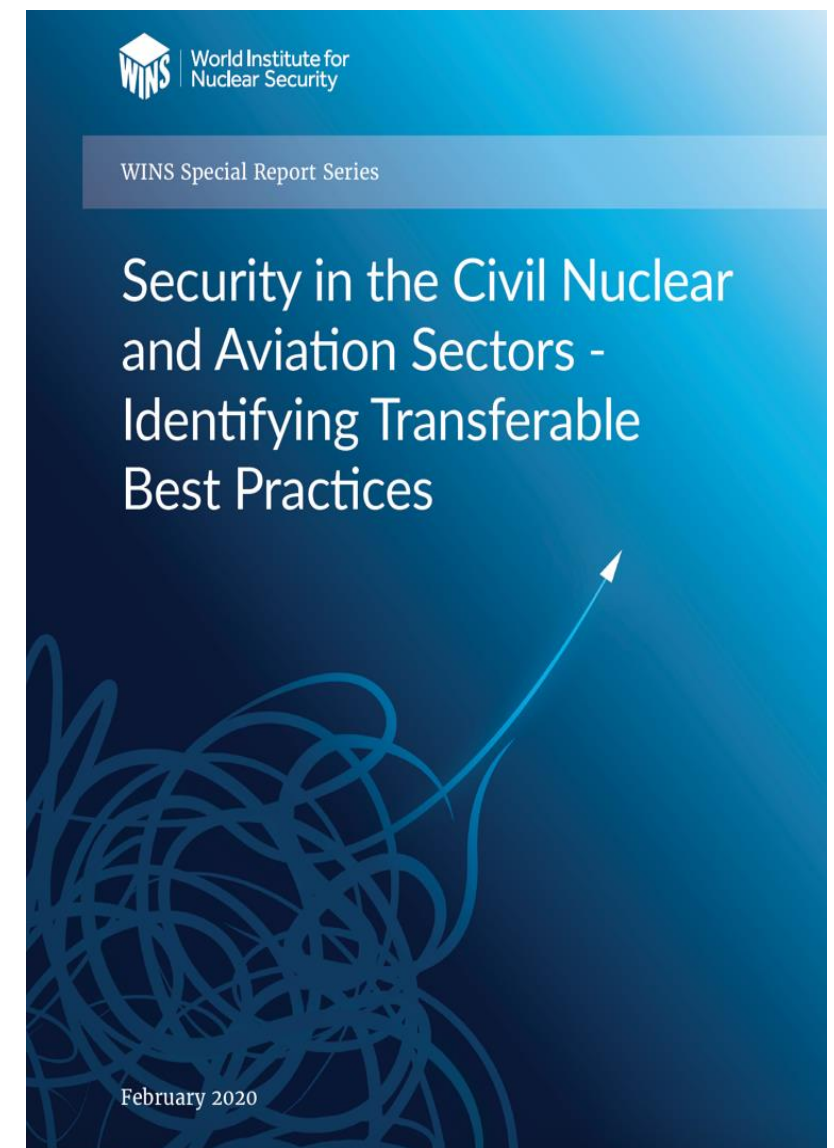
Over the same 20-year period, the IAEA has had none of this authority given to it by its Member States.

The IAEA in relation to nuclear security strategy and implementation is roughly where ICAO was some 20 years ago.

Conclusions

It's time that States left behind the legacy of the nuclear sector and its secret "State controlled" attitudes and looked forward to a bright, international future for the nuclear industry to help mitigate global warming.

The Research Report sets out a 10-point plan that the IAEA could adopt through the development of norms and voluntary arrangements to generate real change.



Leadership

“I intend to build on the great political impetus seen in nuclear security in recent years, expand our support to all Agency Member States and work to transform our nuclear security guidance into mainstreamed norms.”

Statement of IAEA Director General
Rafael Mariano Grossi

December 2019,
to the Second Special Session of the IAEA General Conference

Thank You for Your Attention.

For more information about WINS and to download the report please go to:

www.wins.org