



AeroSpace and Defence
Industries Association of Europe

Civil vs Military Airworthiness. The necessary collaboration.



MAC 2014

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ASD Civil vs Military Airworthiness. The regulatory status.

ICAO Basic Principles.

The Chicago “Convention on International Civil Aviation” document 7300/9, article 3, determines the exclusion of military aircraft (as state aircraft) from such convention.

European Regulations.

In compliance with ICAO, The “Basic Regulation” EC216/2008 defines the European regulatory frame and excludes in article 1, paragraph 2 (a) the military aircraft from the EU regulatory scope:

2. This Regulation shall not apply to:

(a) products, parts, appliances, personnel and organisations referred to in paragraph 1(a) and (b) while carrying out **military**, customs, police, search and rescue, firefighting, coastguard or similar activities or services.

The Member States shall undertake to ensure that such activities or services have due regard as far as practicable to the objectives of this Regulation;



ASD Consequences of the regulatory status.

Two Separated worlds.

- Civil regulations recognise an international scope for civil aviation, giving and promoting common rules and collaboration,
- Military aviation is under each individual Nation responsibility/sovereignty. This fact also apply to airworthiness and aviation safety matters.

Difficulties in establishing a collaborative frame.

- Today, international collaboration on military aviation matters can only be performed under agreement by the involved Nations.
- In absence of an international recognised regulatory frame, such agreements have to be done in a “case by case” basis and linked to specific topics (or projects).
- Concerning airworthiness, although civil and military worlds have the same basic objectives, the difficulties arise, involving a significant amount of discussions to establish the airworthiness criteria for every new project.
- Such discussions to get final agreements involve, in multinational projects, representative personnel of the different nations and industrial groups, and require a significant time consumption to consolidate the specific contracts.
- In the industry side, it becomes difficult to apply standard practices, procedures and processes from one programme to another. The final consequence is: **extra-cost in terms of time and money**

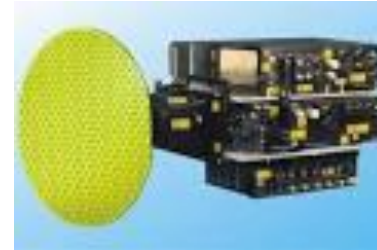




However.....

Regulations do not prohibit collaboration.

- Although regulations clearly separate the responsibility and authority for civil and military products, the collaboration among the authorities (civil and military) is not forbidden.
- Moreover, the last statement of article 1 paragraph 2 (a) of European regulation EC 216/2008, represents a call to establish an appropriate collaboration line.



There is a trend in the military world to follow the principles of civil model.

- In addition there is an increasing recognition by the military world, at least in Europe, that following the basic principles behind the civil regulations can be a benefit also in military aviation.
- This is the case of the EDA-MAWA initiative that along the last years has been involved in the development of a set of military regulations following the European civil model.





How things work today

Heavy and expensive pre-contractual discussions.

- Establishing airworthiness criteria and rules for a new programme is a task linked to the pre-contractual activity.
- In absence of a general regulatory framework, such task must be customized for every programme.
- Although, industry tries to introduce elements that are common to all projects the result is, generally, a programme-specific procedural system .
- The time spent in pre-contractual discussions on the adequate certification and airworthiness route runs from several months to years depending on the complexity of the product.
- The convenience of EASA involvement is normally studied by the industry.
- For export projects the additional discussion on the authorities that will oversight the different certification/airworthiness steps is conducted by the industry:
 - with the customer authorities,
 - with the authorities of the design and manufacturing country
 - with the EASA when the Agency contribution can be relevant for the product.
 - With other government Agencies when when qualification is affected.



ASD How things work today (2)

- Normally the industry has to take the initiative to seat on the table all stakeholders of the process, and this task is not easy to succeed in short term.
- Civil and military airworthiness processes have too many commonalities and it is easy to recognise that the current situation represents a very significant over-cost for both: the industry and the customer,
- There are many situations for which it make sense to keep the civil authorities in the airworthiness route of some military products.
- Such involvement can be done today in a case by case basis.
- In Europe the EASA has always had a positive attitude to collaborate with the industry in military programmes.





The industrial point of view.

Industrial need for appropriate collaboration.

- Standardization is the basis for efficient industrial processes allowing the design and production being performed under well defined procedural systems.
- The higher commonality between civil and military regulations the maximum level of standardization can be reached in industrial processes/procedures.
- Currently, for the following products, the collaboration between the civil and military authorities is highly suitable from the industry point of view:
 - Military transport aircraft.
 - Military derivatives of civil types.
 - Propellers and engines used in both types of aircraft.
 - Equipment shared by civil and military products.
 - Dual role aircraft (aircraft changing from military register to civil one and vice-versa).
 - RPAs/UAVs, where airworthiness rules are in the early development steps and both the civil and military markets will experience significant growth in the near future.
- The industry understands the fact that procedural regulations (like basic regulation and implementing rules) can have a high level of commonality, both in civil and military products and organisations.
- However, the Certification Specs, CSs of the civil system are not sufficient to cover the complexity of military systems. Anyway, in some cases (see above), the civil CSs can be an appropriate frame supplemented, when necessary, with Special Conditions.





How collaboration can be established

Important topics to consider to enable the participation of the EASA in military projects.

- Today's legal responsibility of military products is under the National Military Airworthiness Authorities (NMAAs) and this has to be assumed to clearly define the legal limits for the participation of EASA in military programmes.
- The Agency should act under specific agreement with the interested NMAAs.
- Such agreement shall clearly determine:
 - For which kind of products the Agency can participate.
 - Which products and/or operations are definitely excluded.
 - Which levels of approval the Agency can grant for such products and under which conditions.
 - Which are the conditions for which the Agency can provide airworthiness support and the scope of such support..
 - The acceptance by the NMAA of EASA determinations into their system as if done by themselves.
 - And, probably the most important topic, how the EASA activities can be funded for such projects.
- Based on such agreement the Agency can standardize their procedures for participating in such projects.





How collaboration can be established (2)

Existing Civil-Military Airworthiness agreements.

- As a good collaboration example we can mention the USA case for Commercial Derivative Aircraft.
- In this case the FAA and the US DoD have reached a collaboration agreement that allowed the creation of the FAA Military Certification Office.
- The extent and details of such agreement can be found in:
 - FAA Order 8110.101
 - AC 20-169 as companion material of above order.
- Most of the relevant topics mentioned in previous slide are addressed in such agreement.





How collaboration can be established (3)

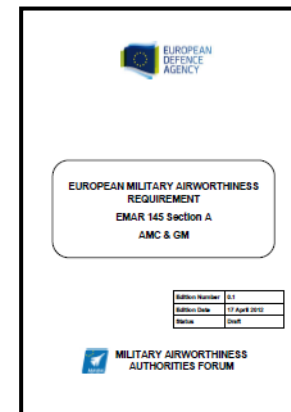
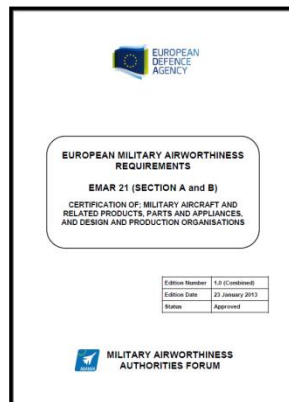
Some ideas to reach a similar or more ambitious agreement in Europe.

- The American agreement is not 100% implementable in Europe because:
 - In the US both, Military and Civil Airworthiness are under the authority of the Federal Government.
 - In Europe, with the exceptions indicated in the Basic Regulation, the Civil Aviation is under responsibility of European Union whereas the Military Airworthiness is under the Nations responsibility.
- Anyway, the principles underlying the FAA-DoD agreement can be perfectly valid also in Europe.
- Therefore, the only problem to reach an agreement is depending on the will of the interested Nations.
- Although the task seems to be challenging, the European Nations, and the EU have proven to be able of reaching agreements even in the most complex situations.
- The agreement between EASA and EDA signed in 2013 could be an appropriate mechanism to promote and organise the discussions.



ASD The benefit of EMARs regulatory frame

- During the last few years, several European Nations have decided to work together in order to simplify and harmonise the different National Military Airworthiness systems,
- Such initiative (MAWA) under the co-ordination of the European Defence Agency (EDA), has already produced several European Military Airworthiness Regulations (EMARs) that are in process of implementation in the corresponding National regulatory systems.
- EMARs are mainly based upon the European civil airworthiness system
- EMARs can definitely pave the way for a really ambitious collaboration programme with the civil airworthiness system.



ASD RPAs/UASs. The opportunity.

- One of the key thematic subjects of this MAC 2014 are RPAs/UASs.
- For such products, the military systems are technically a few steps ahead the civil, however, in airworthines, although some technical military rules are in place, there is still a long way ahead.
- On the civil side, the market is born and the growth is expected to be spectacular with the risk to become explosive.
- Many sizes (micro, small , medium and large), different kind (fixed wing, rotary wing, etc.) and different operational purposes (civil, military, dual, etc) will probably claim their portion of market.
- Many of them will also claim access to controlled airspace, and therefore a significant challenge is in front of us, Industry and Authorities.
- Such challenge will require revisiting some basic airworthiness topics and concepts.
- In such context, it makes no sense to deal with civil and military airworthiness separately, and a new collaborative scenario will be necessary.





Conclusions.

- Civil and Military Airworthiness have been matters clearly separated from the regulatory point of view, although they share many common objectives.
- The complexity of some military systems require the participation of the civil authorities based upon technical and economical optimization criteria.
- The current situation imply over-costs to the military programmes that have a potential to be reduced by involving civil authorities and adopting civil-like processes.
- The european military authorities have recognised that the civil model can largely be extrapolated to military air systems and are in process of harmonisation following the civil model.
- In the US some formal collaboration agreements already exist between the civil and military authorities.
- The arrival of RPAs and UASs will require a quick and clever action to allow Europe to get a position in this new challenge in aviation.
- The basis for a real airworthiness collaboration between civil and military authorities is in place.
- The industry can have a significant role as a catalyst of the process, and...

.....we are ready to play the game.



Thanks for your attention