European Aviation Safety Agency

Comment Response Document 2012-04

'Critical tasks'

CRD TO NPA 2012-04 — RMT.0222 (MDM.020) — 10/06/2013
Related Opinion: No 06/2013

Executive Summary

This CRD contains the comments and responses received by the Agency on NPA 04-2012 published on 12 June 2012.

In general the comments received to NPA 04-2012 are supportive of the proposed changes because they improve the understanding of the requirements and provide a clear safety objective.

The consultation, nevertheless, has helped to identify some concerns with the proposal, in particular with the proposed AMC/GM. These concerns have been debated by a dedicated review group , the result of such a debate has been summarised in this CRD.

The text as proposed in the NPA 04-2012 has not suffered any significant change.

Based on the comments and responses Opinion No 06/2013 has been developed.

Applicability	
Affected regulations and decisions:	Regulation (EC) 2042/2003 Decision 2003/19/R
Affected stakeholders:	Maintenance organisations, persons performing maintenace
Driver/origin:	Safety recommendation

Process map	
Rulemaking lead	R4
Concept paper	No
RIA type	light
Terms of Reference	12/05/2009
Rulemaking group	Yes
Technical consultation during NPA drafting	No
NPA consultation	12/06/2012 to 12/09/2012
Review group	Yes
Focused consultation	No
Publication date of the Decision	2015/Q3

Table of contents

1. Procedural information

This CRD provides the summary of comments and responses as well as the comments received to NPA 04-2012 and the responses. For the full resulting rule text, see Opinion No 06/2013, and Appendix I - III to this CRD which includes the draft Decision for information.

The Agency has published this CRD in parallel with the Opinion No 06/2013.

The Opinion contains proposed changes to European Regulations. The Opinion is addressed to the European Commission, which uses it as technical basis to prepare a legislative proposal.

The Decision containing AMC and GM will be published by the Agency when the related Implementing Rules are adopted by the Commission.

2. Summary of comments and responses

NPA 2012-04 was published for consultation on the EASA website (http://www.easa.europa.eu) on 12 June 2012. By the closing date of 12 September 2012, the European Aviation Safety Agency (hereinafter referred to as 'the Agency') had received 193 comments from 37 National Aviation Authorities, professional organisations and private companies.

In general the comments are supportive of the proposed changes because they will be helpful in eliminating misunderstanding and misapplication of the requirements in both Part-M and Part-145. Nevertheless, some concerns have been identified from the comments received which can be summarised as follows:

Impact of the new requirements

Several comments claim that the proposal does not consider the impact that the new requirements will have in the maintenance organisations. These comments are not accepted. As it was explained in the NPA the majority of the proposal is based on already existing requirements, which are already required to be implemented by maintenance organisations.

The text proposed in the NPA aimed at clarifying the applicability of these requirements Following some comments to the NPA, the text has been further amended to improve its understanding. The term 'flight safety sensitive maintenance tasks' is replaced by 'critical maintenance tasks', besides new AMC/GM on 'critical maintenance task' and 'independent inspection' is added. This AMC/GM has been drafted trying to keep it as simple and easy to understand as possible. Finally, some comments suggested that the changes to the Maintenance Organisation Exposition (MOE) should be kept at a minimum, the review group agreed with these comments and, as a result, the addition of new chapters proposed in the NPA has been deleted.

Wait until adoption of KSI

Some comments suggest that the proposal should also address TC/STC holders, and consider the recommendations of the Key Safety Information (KSI) development team for the implementation of the 'Key Safety Information' process. As explained in the ToR and the NPA, the Agency will monitor the FAA initiatives to implement the recommendations of the KSI team, in order to ensure a harmonised approach. Nevertheless, the review group considers that critical maintenance task is also related to the performance of maintenance and the 'disturbance' made to a system when performing maintenance. Therefore, the maintenance organisation needs to consider the possible effects of this disturbance.

Additional elements of Part-M that also apply to Part-145 organisation

Some comments highlight the need to clarify which other requirements of Part-M are also applicable to Part-145 maintenance organisations and have not been transposed to the Part-145 requirements. This proposal has only considered the need to transpose to Part-145 those elements under the current M.A.402. The other additional elements have been taken into consideration with rulemaking task MDM.055. These are detailed in the explanatory note of NPA 2013-01 (C).

Qualification of the 'independent qualified person'

Several comments argue that the proposed AMC3 145.A.48 (b) c) 1) ii B defining the qualification level required for the 'independent qualified person' should be either removed or completed with other possible options for qualification. The review group agrees with the comments. The text on qualification level of the 'independent qualified person' is expanded to identify several means to qualify the 'independent qualified person'.

Alignment with FAA AC 120-16F

Some comments require a perfect alignment with the concept of required inspection item ('RII') as described in FAA AC 120-16F [1]. This alignment is not possible because the regulatory framework for continuing airworthiness and maintenance in the EASA system and in the FAA system are different.

Applicability to component maintenance

Some comments argue that it is not clear whether the definition of 'critical maintenance tasks' includes component maintenance. The review group agrees that clarification is required and thus the definition of 'critical maintenance tasks' proposed in article 2(n) is changed to make specific reference to aircraft, engines and propellers and excluding component maintenance.

3. Individual comments and responses

In responding to comments, a standard terminology has been applied to attest the Agency's acceptance of the comment. This terminology is as follows:

1. **Accepted** — The Agency agrees with the comment and any proposed amendment is wholly transferred to the revised text.
2. **Partially accepted** — The Agency either agrees only partly with the comment or agrees with it, but the proposed amendment is only partially transferred to the revised text.
3. **Noted** — The Agency acknowledges the comment but no change to the existing text is considered necessary.
4. **Not accepted** — The comment or proposed amendment is not shared by the Agency.

CRD table of comments, responses and resulting text

(General Comments)	-

comment	*6*	comment by: *SVFB/SAMA*
	2012-04 NPA critical tasks, aka "flight safety sensitive maintenance tasks" v03	

[1] http://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/1020485 .

SAMA Swiss Aircraft Maintenance Association, a member of ECOGAS
SAMA supports the content of NPA 2012-04 with a few remarks:
A.IV.9
Quote:
"***these safety recommendations highlight the need to have requirements to prevent and detect errors being made during the performance of maintenance".***
End quote
Nobody could seriously claim this statement NOT to be true. Critical questions must however be raised:
In addition to two of the three cited accidents, there are many very similar to the ATR in Flesland on 31. Jan 2005 and the 757 on 7. September 2003 in LGW.
They have one thing in common: handover problems at shift change, complex organisations, big organisations.
BUT regulations had been in place at the time of the incidents, but have not been followed.
How effective is the principle of adding more and more regulations ?
Why did the regulation in place at the time being not prevent the error ?
Why should more regulation now be more effective as then, when regulation in place at the time did not prevent the incident ?
What supports the belief that more regulation will lead to better compliance ?
What was the real root cause for not following the regulation in place ?
We admit that the proposed regulation in NPA 2012-04 has less words than the present one and clarity is quite improved.
However we are highlighting that throughout the whole regulation process since founding EASA there is a nearly complete lack of reaching the goals set by the EU for certain important qualities of regulations, stated in "Council conclusion on Smart Regulation in the European Union, compet 232" as follows, quote:
"RECALLS the relevant conclusions of the European Council of 24th and 25th of March, 2011especially that ***the overall regulatory burden, in particular for SMEs,*** *should be reduced at both European and national levels, and that the Commission will report on this issue by the summer;"*
and continues (highlighted by the commission not by us)
„IMPROVING EXISTING EU LEGISLATION AND ENSURING HIGH QUALITY OF
NEW LEGISLATION THROUGH IMPACT ASSESSMENTS, SIMPLIFICATION, AND
REDUCTION OF ADMINISTRATIVE BURDENS" (SME in the EU according WIKI means: small up to 50 staff, medium up to 250 staff)

response

Noted
The review group agrees that any new requirement added to the regulation would have an impact both in the organisations and in the competent authorities, because they would need to adapt to those new requirements. Nevertheless, as explained in the NPA, the proposed text is based on already existing requirements which maintenance organisations are already required to implement. The proposal has the objective of clarifying the applicability of these requirements and improve its understanding.

comment

18 comment by: *Stefan Freudiger*

Despite the heavy critics against EASA's hyperregulation, EASA continues to blow its regulation. EASA's approach to require a control procedure for every cotter-pin to be installed anywhere in an aircraft can never lead to a success.

	We all agree that forgetting to place a cotter pin on attachments of flight controls may have dramatic consequences. But to avoid such instances, not new rules will be successful, but rather proper instruction and education of involved personnel. Every holder of a B- or C- licence must have proven to have the proper mind, proper discipline, proper understanding, proper competence and proper power to comply with basic maintenance requirements. If EASA has reasons to assume, that the actual state of maintenance quality is not sufficient, then the education should be addressed and not the addition of paragraphs to an already (too) long document (e.g. MOE). In the actual MOE's the issue of critical tasks is well handled in chapter 2.23. The existing procedures are being audited regularly during product audits and the personnel has been successfully sensitised. Forcing SME's to invent another set of processes on the second or third meta-level is not the way to go. Maintenance personnel are loosing more and more confidence in the rules if they have to invent more and more processes in high meta-levels, thus becoming more and more distant from the object-level, which shall be the airplane. Aviation safety also has something to do with steadiness. Once new rules are instructed, applied and trained, they should not continously be changed. EASA's change-rate of their rules has become a serious threat to aviation safety. Stefan Freudiger, aviation profesional since 40+ years
response	Noted The approach of the commenter is wider than the NPA, the objective of this rulemaking task is to clarify the applicability the requirements that affect 'critical tasks'.

comment	*42* comment by: *Aero-Club of Switzerland* The Aero-Club of Switzerland, on behalf of the 23'000 members, thanks the Agency for the preparation of this NPA. Powered flight, gliding, ballooning, parachute operations, flying experimental aircraft represent the operations of our members, all touched up to a certain extent by "critical task", particularly looking at the "pilot/owner maintenance provisions" producing good results in the past, keep costs down, maintaining an acceptable level of safety, nearly never causing accidents or incidents for which maintenance errors, omissions and/or mistakes could be blamed. We invite the Agency to separate provisions for CAT from provisions for other than CAT operations, to draw distinct lines between ELA 2 aircraft and the heavier ones, and to accept that "commercial" or "non-commercial operations" have nothing to do with an aircraft, only with the legal entity operating the aircraft.
response	Noted. The comment addresses an issue outside the scope of this rulemaking task (RMT.0222).

comment	*76* comment by: *Dassault Aviation* Dassault-Aviation support the clarification brought by the concept of « safety sensitive task" and of "error capturing methods". Some other comments are added about AMC3 145.A.48(b)
response	Noted.

	The working group thanks the commentator for their contribution.

comment	*86* comment by: *René Meier, Europe Air Sports* Europe Air Sports, the Association representing European National Aero-Clubs and Air Sports Associations in regulatory matters with European Authorities and Institutions, wishes to thank the Agency for the preparation of NPA 2012-04. Our members operate a great variety of light aircraft, mostly within the framework of sports and recreational activities. They are interested in the highest possible level of safety, based on an adequate risk assesment, and streamlined maintenance processes to keep costs down. For decades we practised safe maintenance procedures prior to the advent of EASA, working according to a system of pilot-owner maintenance combined with indenpendent reviews executed by authorised persons. This principle must be maintained to attract future pilots, new aircraft owners and to promote light aircraft technology and development in Europe. In the past, accidents or incidents caused by maintenance errors, omissions or mistakes were very rare. No additional obligations are required. In our letter of 19 September 2011 to the Agency's Mr. Eric Sivel we stated our points of view as regards light aircraft mainentance and strongly asked for a "Part-M light", as for decades we practised maintenance procedures prior to the advent of EASA, which resulted in safe flight operations. As a consequence, our organisation is represented in the "Part-M for General Aviation" Task Force, with the aim to get adequate risk-based provisions for aircraft maintenance Bearing in mind Annex VIII of Part-M, "Pilot-Owner Maintenance" we shall add our comments to NPA 2012-04.
response	Noted. The working group thanks the commentator for his contribution.

comment	*100* comment by: *UK CAA* **Page No:** Not applicable - Not included in document but required to align Part M with Part 145. **Comment:** Part M.A. 202(a) Occurrence Reporting makes reference to reporting to the Member State of the Operator but Part 145.A.60(a) only makes reference to reporting to the State of Registry. **Justification:** If an aircraft is being maintained at a Part 145 organisation and the aircraft is subject to a dry leased agreement with an EU Operator, under arrangements between Member States, or another Non EU State, the Part 145 should also where applicable be reporting to the State of the Operator. **Proposed Text:** Revise Part 145.A.60(d) to add: "Where the organisation is contracted by a commercial operator to carryout maintenance, the organisation shall also report to the operator and where different from the State of Registry, the State of the Operator, any such condition affecting the operator's aircraft or component."
response	Not accepted. Occurrence reporting requirements are outside the scope of this task.

comment	*112* comment by: *UK CAA* **Page No:** Various

	Paragraph No: Various but includes AMC M.A.402(g) and AMC3 145.A.48(b) **Comment:** The terms 'Authorised Person' and 'Independent Qualified Person' may lead to confusion. We would propose that reference is made to a 'First' and 'Second Independent' Inspection and then describe the qualification and experience requirements of personnel authorised to conduct the 'First' and 'Second' Inspection requirement. (Obviously a person authorised to complete the 'First Inspection' could also on a separate occasion perform the 'Second Inspection' task, whereas a person who has only been authorised to perform the 'Second inspection' is limited to that task only.) **Justification:** Particularly in the larger Part 145 organisations the 'Independent qualified person' may also be granted an authorisation covering the required privileges and consequently both persons will be authorised, albeit with different privileges.
response	Partially accepted. Text amended but not as proposed by the commenter.

comment	*119* comment by: *Luftfahrt-Bundesamt* The LBA has no comments on NPA 2012-04.
response	Noted

comment	*127* comment by: *KLM Engineering & Maintenance* **General comment** In general, KLM is supportive of the changes as proposed by this NPA. It is believed that the proposed changes will be helpful in eliminating misunderstanding and misapplication of the requirements in both Part M and Part 145 . Some elements of the proposed text however remain vague and need additional explanation in order to produce practical guidance in day-to-day maintenance operations.
response	Noted.

comment	*150* comment by: *Chairman Technical Affairs Committee AEI* General statement: Point 1 AEI both welcomes the EASA initiative in section V of this NPA to harmonise the terminology used in Part-M and Part-145 for critical tasks and the initiative to follow up on safety recommendations made as a result of incident investigations. AEI further welcomes the statement in paragraph 9 that "These safety recommendations highlight the need to have requirements to prevent and detect errors being made during the performance of maintenance". However ambiguity remains within the text which will ultimately reduce the impact of this NPA and the safety benefits it is expected to realise. Point 2 For example the term "authorised person" appears several times in this NPA and in the regulations. Yet the term has different, conflicting meanings. On the one hand an "authorised person" is taking full responsibility for the

maintenance action and issues the release to service. Therefore logic determines that this person is in fact certifying staff qualified in accordance with Part 66. But we also have guidance material to 145.A.48 paragraph (c) informing us that an authorised person is "a person formally authorised by the maintenance organisation approved under Part-145 to sign-off tasks. An 'authorised person' is not necessarily 'certifying staff'".
In order to avoid confusion AEI recommends the agency consider applies terminology in a consistent manner throughout the regulations.

Point 3
There should also in our view be no difference in the application of independent inspections between approved organisations or non approved. The text contained within paragraph MA.402.(a) should apply equally across all annexes of the regulation to ensure both consistency and clarity whilst maintaining adequate safety levels.

Point 4
The UK Air Accident Investigation Board published the following text as part of an investigation into an incident following a maintenance error:
It is not sufficient to issue maintenance staff with authorisations and expect that they will always stick to them rigidly whilst ignoring all external pressures and factors applied to them in the workplace; this is ignoring the influence of human factors. Simply relying on procedures and assuming that people will always adhere to them is unrealistic and can , over a period of time, result in a gradual shift in the norm away from best practice as people inevitably respond to the most pressing environmental and peer influences around them.
The UK AAIB also stated that:
Additionally, Technicians and Mechanics should always be under the close supervision of an Licensed Aircraft Engineer (CFS).
As this NPA has already stated that one initiative is to follow up on safety recommendations made as a result of incident investigations AEI and considering the AAIB comments it is surprising that M.A. 402 (a) still contains a differential as far as application of the rule is concerned. It is AEI's view that the following M.A. 402(a) text should apply equally to all organisations:
Maintenance should be performed by persons authorised to issue a release to service or under the supervision of persons authorised to issue a release to service. Supervision should be to the extent necessary to ensure that the work is performed properly and the supervisor should be readily available for consultation. b) The persons authorised to issue a release to service should ensure that: 1) each person working under its supervision has received appropriate training or has relevant previous experience and is capable of performing the task required; and 2) each person who performs specialised tasks, such as welding, is qualified in accordance with an officially recognised standard
Due to the safety critical nature of this working group AEI would urge the Agency to re-examine the whole situation. Of course independent inspections are a vital part of the maintenance process but much more is required if the Agency and the aviation industry as a whole are genuine in their wish to prevent and detect errors made during maintenance.
There are already numerous accident investigation reports highlighting shortcomings in the supervision of maintenance. The agency's own opinion 06/2010 also highlights issues with the certification of maintenance by stating that:

	"*In addition, the comments received during the consultation phase of the NPA and CRD, the comments received during the workshop held on 30 September 2010 and the discussions held between the Agency and the competent authorities during recent Standardisation conferences*, ***have shown to the Agency that there is still a significant number of misinterpretations as well as areas where the regulation may not be fully consistent or accurate in relation to Part-145 and CAMO responsibilities, as well as in relation to the accountability of the certifying staff when releasing maintenance".*** It is our opinion that this NPA although well intended will not actually achieve its purpose because it hasn't actually dealt with the real threat to safety namely the consistent undermining of the role of CFS. Until this problem is properly solved incidents will continue to occur. It is our view that an opportunity has been missed to enhance safety. We believe the current regulations already require a form of independent inspection for ALL maintenance performed by unlicensed staff. We believe that the regulations do not allow for unsupervised work to be performed by unlicensed mechanics. We believe that the regulations require all work performed by unlicensed individuals to be supervised by Certifying Staff with the amount of supervision being determined by the person certifying for the work, (taking into consideration various local factors) and nobody else. Point 5: We request that the Agency confirm this interpretation of the regulation. We also believe this interpretation to be valid for both line and base maintenance environments albeit in a base environment the supervision will be performed by supporting staff as per 145.A.30 (h). Once we have confirmed that view, applied M.A. 402 (a) equally to all areas of maintenance and the agency, NAA's and industry actually begin to properly support Part 66 qualified personnel in maintain safety, then we have a firm basis upon which we can constructively work together to enhance safety.
response	Partially accepted. This general comment has been divided by the Agency in different points in order to be able to provide a clear answer Point 1: Noted Point 2: Accepted. Terminology used in this NPA has been reviewed for consistency. Besides, the AMC and GM to 145.A.48 have been re-structured to help reading and understanding. Point 3: Not accepted. The text for a Part-145 and a Part-M Subpart-F is different from the text for certifying staff in accordance M.A.803 (b)(2) (hereinafter referred as 'independent certifying staff') because in the first case we are talking about organisations which may develop different means to comply with the objectives of the regulation to fit their organisational characteristics, however this is not case for independent certifying staff. Point 4: Noted. The subject of supervision of staff during maintenance is outside the scope of this task. Point 5: Noted. The Agency does not concur with the interpretation of the commenter. In fact, GM 145.A.48 describes the concept of 'authorised person' as a person formally authorised by the maintenance organisation to perform or supervise a maintenance task. An 'authorised person' is not necessarily 'certifying staff'. It has to be highlighted that this concept already exists in the current regulation. (please refer to current AMC 145.A.65 (b)(3)). This rulemaking task has not amended this concept, only has it transposed to a

	different paragraph (GM 145.A.48).

comment	*165* comment by: *Swiss International Airlines / Bruno Pfister* SWISS Intnl Air Lines takes note of the NPA 2012-04 without further comments.
response	Noted

comment	*173* comment by: *Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)* The Swedish Transport Agency fully agrees with the NPA 2012-04 regarding the rules but we have some comments on the layout of the MOE: · The content of chapters 2.23, 2.25, 2.29 and 2.30 are very much related and this will result in the MO to write overlapping procedures. We agree in the need of clarifying the procedures but recommend that those shall be restricted to one chapter in the MOE. · The people that have to follow these procedures in the MO will have difficulties to see the complete picture and act accordingly if the procedures are put in four different places.
response	Accepted. The review group agrees that the changes to the MOE should be limited, taking into account that the proposal does not add new requirements and the organisation should already have procedures in the MOE to comply with these existing requirements. Thus, the amendments to the MOE have been limited to chapter 2.23.

comment	*180* comment by: *DGAC FRANCE* **DGAC France has three general comments as follows, that can be in some instances also attached to some specific paragraphs, but which have an overall impact on the purpose of the NPA and that France considers important issues that must be resolved to allow the NPA converted to an acceptable opinion.** **General comment n°1 :** As stated in paragraph IV, page 5/30 of the NPA, it was initially planned within the TOR to have the critical tasks being defined by the TCH. This has not been addressed and the result is that the NPA is completely inadequate. Actually, it is the responsibility of the maintenance organisation to assess various documentation and decide what is a "flight sensitive maintenance task": GM M.A.403(g) identifies sources of data that can be used to identify those flight sensitive maintenance tasks: of course, the maintenance organization will primarily use data from the TCH. But it's hard to imagine the organization will review accident reports, assess them and decide what to implement; accident report agencies make recommendation that are first addressed by the responsible parties and then authorities could mandate things applicable to all maintenance organization. Regarding the occurrence reporting, it is up to the maintenance organisation to report to its authority, or to the TCH about issues which are found. Maintenance organizations have no way to have an overall picture of the issues regarding one fleet of aircraft. Therefore DGAC suggests that this NPA is postponed until the process to identify critical maintenance tasks by the TCH (maybe with the OSD issue

	linked to maintenance) is completed. Otherwise, this NPA puts uncertainty on the maintenance organization: - as each of them may decide what to independently check for a given type of aircraft, so there is no harmonization and therefore, should an operator use several maintenance organisations for a same aircraft type, the identified critical tasks could be completely different ; - they may decide not to perform too much "independent verification" as it will increase the overall cost they charge to their customers, in particular if they feel they are alone to do that ; - they do not know all the functional hazard assessment for the type of aircraft and may assess the impact on safety wrongly. So they do not have competency to perform that identification task. **General comment n°2:** The NPA introduces the concept of independent verification or re-inspections that is necessary for flight sensitive maintenance tasks. The issue is that there are many one-person maintenance organization, or pilot-owner maintenance for non-complex tasks that will be jeopardized by this process. If two independent persons are necessary for some tasks, it is the end of business for these one-person organization. The pilot-owner will not any longer perform some tasks in the future. There is no reason to state there is a link between "non-complex" tasks and flight sensitive maintenance tasks. Those two families have intersections. There is a possibility of re-inspection in the Part 145 business, but it is not identified in the Subpart MF approved organization. This is an important miss, considering that subpart MF maintenance organisations are likely to be more concerned with the non-availability of the independent inspector. **General comment n°3:** Within Part 145 organization, the AMC3.A.48(b) paragraph c) 1) ii) B) request that the "independent qualified person" has at minimum a Part 66 license as the "authorized person" doing maintenance: this has a huge impact especially for French organizations: only some people of the staff are licensed and able to certify the release to service. They supervise work performed by competent individuals who are not licensed. We could imagine the Part 145 organization manager decide within those people who is competent to cross-check his colleagues, so it is an acceptable error capturing method. But if he needs to only use his Part 66 licensed persons, he will have rapidly a resource issue. Or that would, without saying, lead the maintenance organisation to limit to the minimum the tasks to be considered as flight sensitive maintenance tasks. Therefore DGAC recommends this paragraph to be replaced by : "the independent qualified person should have an adequate competency, similar to that of the authorized person. It should be decided by the organization manager and documented within the organization manual."
response	Comment 1: partially accepted. The review group acknowledges the fact that the instructions for continued airworthiness (ICA) provided by the TC/STC holder may be used as the basic source for this identification but it is not the scope of this task to mandate to the TC/STC holder such identification. As explained in the ToR and the NPA, the Agency will monitor the FAA initiatives to implement the recommendations of the KSI team, in order to ensure a harmonised approach. Nevertheless, the review group considers that critical maintenance task is also related to the performance of maintenance and the 'disturbance' made to a system when performing maintenance, therefore the maintenance organisation needs to consider the possible effects of this disturbance.

As for the reference to the use of accident reports or information from accidents, the review group would like to highlight that those are mentioned in the guidance material as a possible source to be used.
The comment argues that these proposals may result in lack of harmonisation amongst maintenance organisations on the way the critical maintenance tasks are identified. This may be true but to a limited extent because the proposal contains AMC to identify what would qualify as critical maintenance tasks. Differences may be justified by the particularities of the Part-145, the data obtained from their own experience, use of improved processes, quality findings, internal occurrence reporting, etc. At the end, the competent authority of the organisation would need to approve those procedures

Comment 2: Accepted.
The re-inspection as an error capturing method was added in AMC 145.A.48 to provide an alternative that could be used in unforeseen cases in line stations where only one mechanic is available. Following the comments made to the NPA, the re-inspection method is introduced AMC M.A.402 for subpart-F organisations.
Comment 3: Partially accepted.
The text has been amended

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comment *14* comment by: *SVFB/SAMA*

The economical effect of the NPA to the aviation community will not so much depend on this in principle well designed NPA but more on the effect the "alignment" of the terms CAT, commercial purposes etc. by, for example NPA 2010-10 and others, respective the economical effect created by them on:
CAT on one hand, and on
Business and General Aviation and
on the private, sports, leisure segment.
We highlight what the 34 Presidents of the AEA Airlines told the VP of the EU Commission, Mr. Siim Kallas at their common meeting May 24th:
" Europe's leader must come to an end with economically illiterate regulation,…..
….that the 34 AEA airlines are sick and tired of misguided regulation, which is hampering the ability to deliver growth and jobs. "
What is true for major airlines is much more true for Business Aviation and General Aviation and their respective Small and Medium Enterprise (SME) Maintenance Repair Organisations (MRO).

response Noted.
This issue is outside the scope of this rulemaking task RMT.0222.

comment *87* comment by: *René Meier, Europe Air Sports*

As a general information to the Executive Summary we wish to add that maintenance errors or omissions of checks were very rarely contributing to or causing incidents and/or accidents, looking at the segment of aircraft up to ELA 2.
Two questions arise from the proposed text: Who is responsible to identify tasks requiring an independent inspection? And: Who has the obligation to

	ensure that such an inspection is carried out? We are of the opinion that these two questions are not satisfactorily answered by the proposals of the Agency.
response	Noted. The person/organisation responsible to identify the tasks requiring an independent inspection are the person or organisation performing maintenance. The person who is going to issue the certificate of release to service should ensure that the independent inspection is performed, if required. The review group considers that the text proposed in the NPA answers the questions made in this comment.

A. Explanatory Note - IV. Content of the draft Opinion/Decision p. 5-6

comment	*15* comment by: *SVFB/SAMA* **Perfect alignment** of handling *flight sensitive maintenance tasks* with the respective FAA AC's would ease application of the regulation for European MRO's in competing with global competitors. A 100 % alignment should be a goal.
response	Noted. Alignment with the FAA AC is not possible due to the fact that the approach followed by the existing requirements in regulation 2042/2003 and the FAA AC are different. The result of this rulemaking task would need to be considered by the JMCB in the context of the MAG

comment	*43* comment by: *Aero-Club of Switzerland* Why does the Agency only present 3 recommendations, one dealing with a twin turbo-prop airliner, one with a twinjet-airliner, one with a SEP aircraft? We hope that the NPA is based on additional evidence, otherwise we were inclined to say that what the Agency presents is not well justified, not solidly founded.
response	Not accepted. The requirements proposed in this NPA are already existing requirements. The final objective is to provide more clarity, in particular for Part-145 organisations. The Safety recomendations have been used to provide a framework of the objective but the NPA was not meant to list all the incidents/accidents which could be linked to critical maintenance tasks.

comment	*61* comment by: *Airbus* Comment related to: Page 5, Explanatory Note, Paragraph IV, article 10.a. Page 7, Explanatory Note, Paragraph IV, articles 18 and 19 Page 12, Draft Rules, Paragraph I ToR MDM.020, section 3., bullet 2 Page 17, AMC1 M.A.402(g) Page 20, AMC2 145.A.48(b) Suggested change: It is proposed to keep the term 'critical task' in the Regulation (EC) 2042/2003, the Part 145, and the Part M regulatory material, and to replace the other terms as necessary.

	Amend article 2 as follows Within the scope of this Regulation, the following definitions shall apply: n) 'Critical tasks' means those tasks that involve the assembly or any disturbance of a system or any part on an aircraft that, if errors occurred, could directly endanger the flight safety. Further harmonization within the various Certification Specifications and Part 21 is highly recommended. Comment justification: We support the Agency in its attempt to harmonize the terminology used within Part M ('flight safety sensitive maintenance tasks') and Part 145 ('critical systems'). The article 19 of the Explanatory Note defines the flight safety sensitive maintenance tasks as *"those tasks that, if improperly performed, can endanger the safety of the flight or produce a system malfunction"*. But some system malfunctions have no impact on the airworthiness of the aircraft. From this definition, it could be interpreted that all maintenance tasks producing a system malfunction are critical tasks. It would be appropriate to take into account the severity of failures. The paragraph I. of the Draft Rules provides the following definition: *"'flight safety sensitive maintenance tasks' means those tasks that involve the assembly or any disturbance of a system or any part on an aircraft that, if errors occurred, could endanger the flight safety."* Safety cannot be fully described and covered by the activities related to continuing or continued airworthiness. While the term 'Safety' is globally recognized and understood by the aviation community as the objective to reach, it shall not be mistaken for the term 'Airworthiness' that only entails a series of activities necessary, but not sufficient, to reach this objective. Although the failure of one of these activities is likely to impact the full safety chain, the selection of the term 'Safety' in a very specific context should be avoided. In addition, the notion of safety as defined in the AMC 1 to M.A.402(g)/AMC 2 to 145.A.48(b) is misleading and not adapted to the present context as it does not cover entirely the matter: an error occurring during the accomplishment of a maintenance procedure on the passenger oxygen system may result in consequences as severe as those identified for cases described in the subject AMC. Therefore, the term 'critical' is preferred to 'flight safety', including for sake of coherence with the various Certification Specifications (CS-27, CS-29, CS-E, CS-P): It is a practice to refer to terms such as Critical Design Configuration Control Limitations (CDCCL), critical components, etc… This will participate in the global harmonization of the terminology used in the EASA Part 21 through the Part 147, and therefore in preventing misunderstanding (refer to ToR section 3., bullet 2). The decision to replace the term 'critical tasks' by 'flight safety sensitive maintenance tasks' has also some consequences on procedures, training material, work cards and tools. The term 'critical tasks', which has been used since 2004, is part of the culture of the maintenance personnel. The RIA (starting on page 8) has not taken into account the cost of all the changes that would be required in the IT systems currently in place. It is not shown that replacing a powerful and striking language such as 'critical task' by a long term such as 'flight safety sensitive maintenance task', be effective for the safety improvement. It is even considered that such a change is creating confusion on a safety-related topic.
response	Partially accepted. The review group agrees with the commenter, therefore the term critical is kept. The text has been amended to replace flight safety sensitive maintenance tasks by 'critical maintenance task'.

comment *62* comment by: *Airbus*

Comment related to:
Page 5, Explanatory Note, Paragraph IV, article 11, referring to CPS and KSI reports
ToR MDM.020, section 3., bullet 3
Page 17, AMC1 M.A.402(g)
Page 18, GM M.A.402 (g)
Page 20, AMC2 145.A.48(b)
Page 29, GM 145.A.48 (b)
Comment:
The comment is relative to the objective in the ToR (section 3., bullet 3) where it is mentioned:
"Give a methodology (general criteria) how to identify those maintenance tasks […]. Identify which systems or maintenance tasks of the aircraft should be considered as "critical" in the sense of having possibly a catastrophic, hazardous or major failure in the case of undetected maintenance errors."
When the ToR were issued, the FAA Key Safety Information (KSI) project was on-going. But since, the KSI Final report, dated March 2007, has been issued and says that:
"the OEM would identify KSI using the following criteria:
Identify maintenance and operational tasks and procedures related to mitigating the risk of:
- A single failure leading to a catastrophic or hazardous failure condition
- A foreseeable common cause failure leading to a catastrophic failure condition
- A latent failure in a dual-failure combination leading to a catastrophic or hazardous failure condition"
The language (catastrophic, hazardous, major) that is used to select the KSI in order to capture and then to highlight key procedures and associated tasks that must be protected, maintained and correctly performed throughout the life of the airplane(s) should be addressed by the system safety assessment. Is this language defined in the EASA Part M/Part 145 or in the Certification Specifications (associated to Part 21)?
Is it considered that EASA Part M/Part 145 organization would have to have a procedure, to include in their review, the effect of single failure **or** the effect of multiple failures? Is it only necessary to look at single failure? The end result will be different depending on criteria to be used. The complexity and the number of items that might result from this review has an impact on organization and persons performing maintenance
The Explanatory note and the regulation/AMC/GM should say how (methodology) and where (documents, databases, etc) the Part M and Part 145 organizations can get access to the OEM Key Safety Information (if this language KSI is retained) to ensure that no omission or over conservatism will happen in the selection of aircraft items and maintenance tasks. It could be studied if the information delivered by DAH cover the expectations.
The KSI project focused on aircraft systems maintenance tasks and procedures only
The identification of the critical aircraft items/maintenance tasks and procedures should be a combination of the DAH and Maintenance organization inputs.
Comment justification:
The NPA suggests that the involvement of the TC holders, in the definition of the "critical systems", is left apart in spite of the AIBN recommendation 12/2006 ("Special consideration should be made as to whether the manufacturer should be given a responsibility on this matter."). This decision

	seems to be driven by the FAA CPS and KSI projects. However, the Explanatory note doesn't say how the Part M and Part 145 organizations can evaluate the criticality of systems in lieu of OEM as suggested in AMC1 M.A.402(g) and AMC2 145.A.48(b). These AMC provide only a limited number of critical maintenance task examples. The GM M.A.402 (g)/GM 145.A.48 (b) record different sources (where) to find data for the identification of critical maintenance tasks including information from TC holder (refer to bullet 1) The existing regulations do not require the TC holder to identify (/to flag) such tasks in its publications.
response	Not accepted. The review group acknowledges the fact that the instructions for continued airworthiness (ICA) provided by the TC/STC holder may be used as the basic source for this identification but it is not the scope of this task to mandate to the TC/STC holder such identification. As explained in the ToR and the NPA, the Agency will monitor the FAA initiatives to implement the recommendations of the KSI team in order to ensure a harmonised approach. Nevertheless, the review group considers that critical maintenance tasks are also related to the performance of maintenance and the 'disturbance' made to a system when performing maintenance. Therefore, the maintenance organisation needs to consider the possible effects of this disturbance.

comment	*88* comment by: *René Meier, Europe Air Sports* We think the Agency should have produced more data and facts under point 8. on page 5. Rationale: Only indicating three events is in our view not sufficient, even looking at the fact that the Agency presents an ATR-42 twin-turboporp airliner, a Boeing 757 twin-jet airliner and a Mooney M20J general aviation aircraft. Pure sports and recreational aviation incidents/accidents also should have been added to this very short list, in doing so the argumentary power would be much stronger.
response	Not accepted. Repeated comment. See answer to comment 43.

comment	*96* comment by: *CAA-NL* Explanatory Note paragraph 13: We wonder whether the standardisation activities also have shown a need to clarify that other items of Part M, e.g. 'subpart E components', which are not completely contained in Part 145 are also applicable for Part 145 AMO's.
response	Noted. The changes to section E are outside the scope of this task, the additional elements of Part-M which also apply to Part-145 organisations will be transferred to Part-145 under rulemaking tasks RMT.0093 (145.017) and RMT.0251 (MDM.055).

comment	*128* comment by: *KLM Engineering & Maintenance*

	Comment to subpara 8 and 9 : Do only these safety recommendations highlight the need for rulemaking action? And secondly, would stricter rules for Part 145 organizations have prevented these occurrences (e.g. are all companies to blame in these Safety Recommendation cases Part 145 organizations) ?
response	The requirements contained in this NPA are already existing requirements. The final objective is to provide more clarity, in particular for Part-145 organisations. The SR have been used to provide a framework of the objective but the NPA was not meant to list all the incidents/accidents which could be linked to critical maintenance tasks.

comment	*129* comment by: *KLM Engineering & Maintenance* Comment to subpara 13: the rulemaking proposal for Part M.A. 402 as shown later on in this NPA excludes provisions for organisations approved according EASA Part-145. This conflicts with what is written in article 3(2) of the regulation. Is this indeed the intent of the rulemaking proposal?
response	Not accepted. The text in M.A.402 clarifies that the requirements under that paragraph are not applicable to Part-145 organisations. However, there are other requirements in Part-M which are still applicable to Part-145 organisations. These will be transferred to Part-145 under rulemaking tasks RMT.0093 (145.017) and RMT.0251 (MDM.055).

comment	*168* comment by: *AESA* **1. Point 13.- article 3(2) of regulation 2042/2003** This point is appreciated because there is a need to clarify how Part 145 organisations comply with Part M. However, it is not fully clear if this NPA completely addresses the fact the Part M is applicable to Part 145 organizations; or on the contrary, the NPA only takes into account point M.A.402. That is, there are two interpretations: 1.- M.A.402 is the only article applicable to Part 145 organizations and the rest of the articles of Part M are not applicable or are already covered by Part 145 2- M.A 402 is applicable to Part 145, so it is transposed to Part 145 in this NPA, but there may be other provisions of Part M that are still applicable to Part 145 organisations but are not addressed in this NPA. If the interpretation is case 1, then this fact should be reflected in point 13. If the case is 2, then the NPA purpose should be extended and it should address which provisions of Part M are applicable, which ones are not applicable and which ones are already contained in Part 145.
response	Noted. The changes to section E are outside the scope of this task, the additional elements of Part-M which also apply to Part-145 organisation will be transferred to Part-145 under rulemaking tasks RMT.0093 (145.017) and RMT.0251 (MDM.055).

A. Explanatory Note - IV. Content of the draft Opinion/Decision - Transpose and adapt the requirements of M.A.402 to Part-145 p. 6-7

comment	*140* comment by: *KLM Engineering & Maintenance*

15. The following table identifies which elements of M.A.402 are already contained in Part-145 and which needed to be transposed.

M.A.402	
(a) ..... Furthermore, an independent inspection shall be carried out after any flight safety sensitive maintenance task unless otherwise specified by Part-145 or agreed by the competent authority.	Needed to be transposed (to 145.A.48 (b))

Comment: It is intended to transpose M.A.402(a) to the Part-145 regulation (being 145.A.48(b))
However the term "Independent inspection" is only introduced at AMC level. Why is the term not stated at 145.A.48(b) level ?

response

Noted.
The text in 145.A.48 provides the safety objective, which is the implementation of error capturing methods. The proposal considers that the independent inspection could be an acceptable means of compliance (acceptable error capturing method) to meet this objective but organisations could propose other alternative means to meet that objective.

A. Explanatory Note - IV. Content of the draft Opinion/Decision - Harmonise the terminology used in Part-M and Part-145 for 'critical tasks'. p. 7

comment

61 ❖ comment by: *Airbus*

Comment related to:
Page 5, Explanatory Note, Paragraph IV, article 10.a.
Page 7, Explanatory Note, Paragraph IV, articles 18 and 19
Page 12, Draft Rules, Paragraph I
ToR MDM.020, section 3., bullet 2
Page 17, AMC1 M.A.402(g)
Page 20, AMC2 145.A.48(b)
Suggested change:
It is proposed to keep the term 'critical task' in the Regulation (EC) 2042/2003, the Part 145, and the Part M regulatory material, and to replace the other terms as necessary.
Amend article 2 as follows
Within the scope of this Regulation, the following definitions shall apply:
n) 'Critical tasks' means those tasks that involve the assembly or any disturbance of a system or any part on an aircraft that, if errors occurred, could directly endanger the flight safety.
Further harmonization within the various Certification Specifications and Part 21 is highly recommended.
Comment justification:
We support the Agency in its attempt to harmonize the terminology used within Part M ('flight safety sensitive maintenance tasks') and Part 145 ('critical systems').
The article 19 of the Explanatory Note defines the flight safety sensitive maintenance tasks as *"those tasks that, if improperly performed, can endanger the safety of the flight or produce a system malfunction"*. But some system

	malfunctions have no impact on the airworthiness of the aircraft. From this definition, it could be interpreted that all maintenance tasks producing a system malfunction are critical tasks. It would be appropriate to take into account the severity of failures. The paragraph I. of the Draft Rules provides the following definition: *"'flight safety sensitive maintenance tasks' means those tasks that involve the assembly or any disturbance of a system or any part on an aircraft that, if errors occurred, could endanger the flight safety."* Safety cannot be fully described and covered by the activities related to continuing or continued airworthiness. While the term 'Safety' is globally recognized and understood by the aviation community as the objective to reach, it shall not be mistaken for the term 'Airworthiness' that only entails a series of activities necessary, but not sufficient, to reach this objective. Although the failure of one of these activities is likely to impact the full safety chain, the selection of the term 'Safety' in a very specific context should be avoided. In addition, the notion of safety as defined in the AMC 1 to M.A.402(g)/AMC 2 to 145.A.48(b) is misleading and not adapted to the present context as it does not cover entirely the matter: an error occurring during the accomplishment of a maintenance procedure on the passenger oxygen system may result in consequences as severe as those identified for cases described in the subject AMC. Therefore, the term 'critical' is preferred to 'flight safety', including for sake of coherence with the various Certification Specifications (CS-27, CS-29, CS-E, CS-P): It is a practice to refer to terms such as Critical Design Configuration Control Limitations (CDCCL), critical components, etc… This will participate in the global harmonization of the terminology used in the EASA Part 21 through the Part 147, and therefore in preventing misunderstanding (refer to ToR section 3., bullet 2). The decision to replace the term 'critical tasks' by 'flight safety sensitive maintenance tasks' has also some consequences on procedures, training material, work cards and tools. The term 'critical tasks', which has been used since 2004, is part of the culture of the maintenance personnel. The RIA (starting on page 8) has not taken into account the cost of all the changes that would be required in the IT systems currently in place. It is not shown that replacing a powerful and striking language such as 'critical task' by a long term such as 'flight safety sensitive maintenance task', be effective for the safety improvement. It is even considered that such a change is creating confusion on a safety-related topic.
response	Repeated comment

A. Explanatory Note - V. Regulatory Impact Assessment	p. 8-11

comment	*5* comment by: *SVFB/SAMA* **V.3 Objectives** Pg 10v30 :We support Option 1 as the basic regulation should not be further loaded up. In a second step, by adapting the basic regulation to risk potential and by better dividing CAT from Business and Private, after it will become transparent how the final regulation will look like, the proposal can then be integrated, if necessary. Option 2 Economic Pros: The improvements of the methods to detect errors will minimize the costs… Agreed for Major MRO's like those involved in the two Airline Incident reports

cited above.
Not agreed for the case of the Money airplane: much simpler regulation would do for SME organisation, for example:
Maintenance Organisation and its personnel must use valid DATA.
With this sentence you could reduce Part M by 70 %, reduce it to a size appropriate for all non CAT operations and give the SME's a kick for prosperity, by reducing dramatically the legal text.
This would have a positive safety side effect, because the B1/B2 would again be able to understand the regulation.

response

Not accepted.
The proposal does not add new requirements, in fact the objective of the proposal is to make the requirements more clear and simple.
The regulation already requires to use valid data during performance of maintenance, and in addition to that the regulation has to take into account the errors that could be introduced by human factors.

comment

63 comment by: *Airbus*

Comment related to:
Page 8, Explanatory Note, Paragraph V, article 2.3
Page 13, 145.A.30
Suggested change:
It is proposed to delete the point (i) in 145.A.30 as the requirement is already in the Article 5(6) of the Regulation 2042/2003.
Comment justification:
We agree with the Agency's position on the proper qualification of persons implementing procedures to detect errors that may occur during maintenance (*"proper qualification of the persons implementing them would reduce the risks associated to such maintenance activity"*). The existing process to detect errors during maintenance shows a weakness resulting from the absence of uniform requirements for licenses/nomination.
There is an obvious unequal treatment in terms of licenses between the different kinds of maintenance. It is confessed in the Article 1 of the Commission Regulation (EU) No 1149/2011 amending the Article 5 of the Regulation (EC) No 2042/2003, by adding the paragraph 6:
"6. Until such time as this Regulation specifies requirements for certifying staff:
(i) for aircraft other than aeroplanes and helicopters;
(ii) for components;
the requirements in force in the relevant Member State shall continue to apply, except for maintenance organisations located outside the European Union where the requirements shall be approved by the Agency."
This contributes to the degradation of the high uniform level of civil aviation safety in Europe (ref. Article 2 of the Basic Regulation (EC) No 216/2008).
What justifies that maintenance on aircraft requires a license framework more stringent than for off-aircraft maintenance of engines or components, or for Non Destructive Testing (NDT) techniques?
Apparently, nothing does. Some examples prove that defects resulting from improper off-aircraft actions (repair, modification, inspection, assembly, etc…) on removed items may not be detected by tests performed after installation on aircraft, but may unfortunately become an accident enabling factor (in itself not sufficient to breach defenses). For example, NDT techniques used as part of a landing gear overhaul not applied appropriately to ensure the detection of damages, which led to a structural failure.
The amendment of the EASA Part 66 is deemed necessary to appropriately

	cover licenses for personnel involved in the off-aircraft maintenance of engines or components, or in Non Destructive Testing (NDT) techniques. The ICAO Safety Management Manual (Doc. 9859) indicates that *"Breaches in safety defenses are a delayed consequence of decisions made at the highest levels of the [considered organizational] system, which remain dormant until their effects or damaging potential are activated by specific sets of operational circumstances. Under such specific circumstances, human failures or active failures at the operational level act as triggers of latent conditions conducive to facilitating a breach of the system's inherent safety defenses. In the concept advanced by the Reason model, all accidents include a combination of both active and latent conditions"*.
response	Not accepted. This issue is outside the scope of this task.

comment	*72* comment by: *Airbus* Comment related to: Page 8, RIA Paragraph 2.3 Comment: It is said that the worst foreseeable situation would be that the error is made on a system that control the flight path, the stability or the propulsive forces. It is no referring to structure. It would be of interest to detail the quantitative evaluation of in service experiences which could lead to focus on some systems and not to the structure for the determination of flight safety sensitive maintenance tasks. A possible outcome is that this EASA detailed information would give guidance to maintenance organizations/owner/operators for the determination of a list of critical maintenance actions based on data that can be shared by the Part 145 and Part M organizations. Comment justification: EASA may provide guidance material for Part-M and Part-145 to raise awareness on this matter and harmonize the implementation.
response	Not accepted. Critical in the structures is addressed in the classification of repairs as minor/major.

comment	*97* comment by: *CAA-NL* RIA paragraph 4 Analysis of the impacts, Option 1 When we understand the Explanatory Note paragraph 13 rightly, the problem of Part 145 AMO's is not so much with the content of the rule in Part M.A.402 as well with the unawareness of the applicability of this rule. We are off the opinion that GM in Part 145 clarifying to the AMO the applicability of Part M also for Part 145 AMO's would solve the unawareness. We disagree therefore with the overall conclusion of very limited impact. However we support the proposal to amend Part 145 for ease of access to the rules for the stakeholders. In this line we would support a task to see if any other items from Part M may need transposition to Part M e.g. subpart E etc.
response	Noted. The review group considers that keeping the paragraph 145.A.48 makes the application more clear for Part-145 organisations. Transposition of other elements such as section E is outside the scope of this

	task, the additional elements of Part-M that also apply to Part-145 organisations will be transferred to Part-145 under rulemaking tasks RMT.0093 (145.017) and RMT.0251 (MDM.055).
comment	*115* comment by: *Air Greenland* Air Greenland does not agree that the only Con is due to revised procedures. There is a SIGNIFICANT economical impact on operators in remote regions with stations hundreds of miles apart, where only one certified mechanic is available. Ref. comments to AMC3 145.A.48.
response	Not accepted. The proposal is not introducing new requirements, it is only clarifying the existing requirements.Besides the proposal includes the possibility of re-inspection to be used is instead of independent inspection in exceptional circumstances when only one person is available.
comment	*149* comment by: *GE Aviation* Including every task where an error would affect "the propulsive forces" (RIA paragraph 2.2) implies that virtually every maintenance task conducted on an engine or propeller would be Critical.
response	Not accepted. The definition included in article 2 for 'critical maintenance tasks' explains that a critical task is linked to the situation that if errors occurred, could endanger the flight safety of the aircraft. The review group considers that not all the errors on engine tasks would affect the flight safety of the aircraft where this engine is installed.

B. Draft Rules - I. Draft amendment to Regulation (EC) 2042/2003 p. 12

comment	*22* comment by: *Association of Dutch Aviation Technicians NVLT* In the opinion of the NVLT: the phrase "if errors occurred could endanger the flight safety" is not adequate enough due the fact that in many occasions the flight safety shall be endangered by specific errors.
response	Not accepted. The possibility that it could affect the flight safety has also to be considered.
comment	*44* comment by: *Aero-Club of Switzerland* We kindly ask the Agency do define more clearly what "flight safety maintenance tasks" are, because we did not find anywhere who eventually is responsible for the identification of tasks requiring independent inspections. As far as we see, there is no clear allocation of responsibilities. Rationale: We consider this to be a weakness from a regulatory point of view.
response	Not accepted. The proposal already included the definition in article 2, besides M.A.402 and 145.A.48 clarify who is responsible to identify critical maintenance tasks.

comment	*50* comment by: *ICAO* In order to make the definition clearer, suggest changing "those tasks" to "those maintenance tasks". Then the definition would read: n) 'flight safety sensitive maintenance tasks' means those maintenance tasks that involve the assembly or any disturbance of a system or any part on an aircraft that, if errors occurred, could endanger the flight safety.
response	Accepted.

comment	*60* comment by: *Airbus* Comment related to: Page 12, Draft Rules,– paragraph B(1) Draft amendment to Regulation (EC 2042/2003) Comment and suggested change: The proposed definition of 'flight safety sensitive maintenance tasks' is: n) 'flight safety sensitive maintenance tasks' means those tasks that involve the assembly or any disturbance of a system or any part on an aircraft that, if errors occurred, could endanger the flight safety. *(underlining added)* The proposed text is too broad and is not supported by the actual changes that have been implemented in the guidance material and by the text in the RIA para 2.3 on page 8. The word **'part'** in the phrase 'of a system or any part on an aircraft' implies a 'non-system' item, i.e. structural component (e.g. doors, access panels, fairings). Examples of such non-system components are not included in the definition of Flight Safety Sensitive Maintenance Tasks in AMC1 M.A.402(g) and AMC2 145.A.48(b) which is reflecting only the issues identified in the RIA para 2.3 on page 8 *'The worst foreseeable situation would be that the error is made on a system that controls the flight path, the stability or the propulsive forces. Proper implementation of procedures to detect errors and proper qualification of the persons implementing them would reduce the risks associated to such maintenance activity'.* Secondly, it would be better to state 'could **directly** endanger...' since incorrect assembly of most emergency systems could endanger flight safety if they were required (crew oxygen, fire protection systems, inerting systems etc). Without this change it might be argued that many more tasks than anticipated could be considered as 'flight safety sensitive'. Comment justification: To ensure consistency between basic regulation, AMC and guidance material. A multiple interpretation will not permit to produce a harmonized list of maintenance task to be reviewed in order to assess their impact on safety.
response	Partially accepted Comment 1: Not accepted. The word "part" is included to refer to doors, panels, fairings,… Comment 2: Accepted. Word 'directly' added to the definition.

comment	*61* ❖ comment by: *Airbus* Comment related to: Page 5, Explanatory Note, Paragraph IV, article 10.a. Page 7, Explanatory Note, Paragraph IV, articles 18 and 19

Page 12, Draft Rules, Paragraph I
ToR MDM.020, section 3., bullet 2
Page 17, AMC1 M.A.402(g)
Page 20, AMC2 145.A.48(b)
Suggested change:
It is proposed to keep the term 'critical task' in the Regulation (EC) 2042/2003, the Part 145, and the Part M regulatory material, and to replace the other terms as necessary.
Amend article 2 as follows
Within the scope of this Regulation, the following definitions shall apply:
n) 'Critical tasks' means those tasks that involve the assembly or any disturbance of a system or any part on an aircraft that, if errors occurred, could directly endanger the flight safety.
Further harmonization within the various Certification Specifications and Part 21 is highly recommended.
Comment justification:
We support the Agency in its attempt to harmonize the terminology used within Part M ('flight safety sensitive maintenance tasks') and Part 145 ('critical systems').
The article 19 of the Explanatory Note defines the flight safety sensitive maintenance tasks as *"those tasks that, if improperly performed, can endanger the safety of the flight or produce a system malfunction"*. But some system malfunctions have no impact on the airworthiness of the aircraft. From this definition, it could be interpreted that all maintenance tasks producing a system malfunction are critical tasks. It would be appropriate to take into account the severity of failures.
The paragraph I. of the Draft Rules provides the following definition: *"'flight safety sensitive maintenance tasks' means those tasks that involve the assembly or any disturbance of a system or any part on an aircraft that, if errors occurred, could endanger the flight safety."* Safety cannot be fully described and covered by the activities related to continuing or continued airworthiness. While the term 'Safety' is globally recognized and understood by the aviation community as the objective to reach, it shall not be mistaken for the term 'Airworthiness' that only entails a series of activities necessary, but not sufficient, to reach this objective. Although the failure of one of these activities is likely to impact the full safety chain, the selection of the term 'Safety' in a very specific context should be avoided. In addition, the notion of safety as defined in the AMC 1 to M.A.402(g)/AMC 2 to 145.A.48(b) is misleading and not adapted to the present context as it does not cover entirely the matter: an error occurring during the accomplishment of a maintenance procedure on the passenger oxygen system may result in consequences as severe as those identified for cases described in the subject AMC.
Therefore, the term 'critical' is preferred to 'flight safety', including for sake of coherence with the various Certification Specifications (CS-27, CS-29, CS-E, CS-P): It is a practice to refer to terms such as Critical Design Configuration Control Limitations (CDCCL), critical components, etc… This will participate in the global harmonization of the terminology used in the EASA Part 21 through the Part 147, and therefore in preventing misunderstanding (refer to ToR section 3., bullet 2).
The decision to replace the term 'critical tasks' by 'flight safety sensitive maintenance tasks' has also some consequences on procedures, training material, work cards and tools. The term 'critical tasks', which has been used since 2004, is part of the culture of the maintenance personnel. The RIA (starting on page 8) has not taken into account the cost of all the changes that would be required in the IT systems currently in place.

	It is not shown that replacing a powerful and striking language such as 'critical task' by a long term such as 'flight safety sensitive maintenance task', be effective for the safety improvement. It is even considered that such a change is creating confusion on a safety-related topic.
response	Repeated comment.

comment	*89* comment by: *René Meier, Europe Air Sports* May we kindly ask the Agency to define more clearly what is meant by "flight safetey sensitive maintenance tasks" already here? Rationale: As operators we need clear information about what is safety relevant. Definition n) of (EC) No. 2042/2003 should therefore address such items more directly. It would be better, in our view, to name these parts or assemblies in the definition. We propose to add to this paragraph what is stated under AMC1 M.A.402(g) to make the use of the text easier.
response	Not accepted. The list of examples cannot be part of the definition.

comment	*101* comment by: *UK CAA* **Page No:** 12 of 30 **Paragraph No:** I. Draft amendment to Regulation (EC) 2042/2003 - Amend Article 2 - Definitions **Comment:** The definition as written only applies to aircraft. Flight safety sensitive maintenance tasks may equally apply to components. **Justification:** Consistent with other paragraphs which refer to aircraft and components. **Proposed Text:** Add "… or any part on an aircraft **or component** that, …."
response	Partially accepted. Text has been amended. Reference to engines and propellers included, however critical maintenance tasks do not expand to all component maintenance.

comment	*130* comment by: *KLM Engineering & Maintenance* Comment: what is "Flight Safety" . Does it only refer to MSG3 Route 5 and Route 8? Or is it in a wider context? In the latter case, the number of all the individual tasks that would qualify as Flight Safety Sensitive Maintenance Tasks could easily "explode". There is a definite need to pinpoint what actually is "Flight Safety".
response	Not accepted. The critical maintenance tasks are not limited to MSG3 route 5 and route 8. AMC 145.A.50 (a) explains the concept of 'Endangers the flight safety' means any instances where safe operation could not be assured or which could lead to an unsafe condition.

comment	*151* comment by: *Boeing* Page: 12 Paragraph: B. I**.** Draft amendment to Regulation (EC) 2042/2003

	Sub paragraph n) The proposed text states: ***Draft amendment to Regulation (EC) 2042/2003*** *Amend article 2 as follows* *Within the scope of the basic this Regulation, the following definitions shall apply:* *…* *n) 'flight safety sensitive maintenance tasks' means those tasks that involve the assembly or any disturbance of a system or any part on an aircraft that, if errors occurred, could endanger the flight safety.* **REQUESTED CHANGE:** Revise sub-paragraph n) as follows *n) '~~flight safety sensitive maintenance tasks' means those tasks that involve the assembly or any disturbance of a system or any part on an aircraft that, if errors occurred, could endanger the flight safety~~ **'required inspection items' are maintenance items and/or alterations that must be inspected by a qualified and authorized person other than the one performing the work, and include at least those that could result in a failure, malfunction, or defect endangering the safe operation of the aircraft, if not properly performed or if improper parts or materials are used.*** **JUSTIFICATION:** *"Required Inspection Item (RII)"* is a well-understood term that has been used in the aviation industry for many years by many regulatory agencies. The introduction of a new term -- *flight safety sensitive maintenance tasks* -- that overlaps an existing term can cause confusion. The use of RII still allows the emphasis given in AMC1 M.A.40 (g) and AMC2 145.A.48 (b) to specific tasks for which EASA would like the operators to do the additional inspection requirements. In light of this, We also recommend changing all instances of the term *"flight safety sensitive maintenance tasks"* used throughout the NPA to ***"required inspection items."*** (See our other comments related to those sections.)
response	Not accepted. The proposal is based on existing requirements of regulation 2042/2003, the concept of 'critical maintenance tasks' is already applicable to the persons and organisations performing maintenance in accordance with regulation 2042/2003. Although it could be argued that both critical maintenance tasks and RII are based on the same concept, the approach followed in the FAA system diverges from the approach in regulation 2042/2003 (Part-M and Part-145). In the FAA system the identification of RIIs is the responsibility of the operator, whereas in regulation 2042/2003 the identification of critical maintenance tasks is responsibility of the person or organisation performing maintenance.

B. Draft Rules - II. Draft Opinion - Annex I: Part-M	p. 12-13

comment	*7* comment by: *SVFB/SAMA* **Annex I: Part M** Pg 12 v30 ff As stated above we appreciate the improved clarity of the text as well as the reduced size.
response	Noted.

comment	*23* comment by: *Association of Dutch Aviation Technicians NVLT* In the opinion of the NVLT: regarding performing maintenance, 'been qualified, is in certain cases not adequate enough, one has to be authorized also.
response	Noted The qualification is always required. The authorisation is required when the person works in a maintenance organisation, the need for an authorisation is therefore contained in the respective Part-M subpart-F or Part-145 requirement.

comment	*24* comment by: *Association of Dutch Aviation Technicians NVLT* In the opinion of the NVLT: M.A.401 is not referring to 'tools'. Please clarify which tools should be controlled and calibrated, f.i. privat (toolbox) or 145-organization tools used by many mechanics and certifying staff or other tools or equipment. Please clarify M.A.402 (c) : Where necessary, tools and equipment shall be controlled. What does 'where necessary' means in this phrase? Please give guidance for the controlment of tools.
response	Not accepted. The comment is outside the scope of this task.

comment	*25* comment by: *Association of Dutch Aviation Technicians NVLT* In the opinion of the NVLT: a 'general verification' in item f) carry out a general verification after completion of all maintenance to ensure the aircraft or component is clear of all tools, equipment and any other extraneous parts and material, and that all access panels removed have been refitted. Is if one wants to ensure not adequate enough. See the common used inspection terms in a maintenance program as GVC General Visual Check, GVCE General Visual Check External, TVC Thorough Visual Check. To our point of view only a 'Thorough Visual Check' is sufficient enough to ensure that there is no safety hazard left.
response	Not accepted. The comment is outside the scope of this task.

comment	*26* comment by: *Association of Dutch Aviation Technicians NVLT* In the opinion of the NVLT: item (f) and (g) should be synchronized with 145.A.30 (h)1(i) "B1 and B2 support staff shall ensure that all relevant tasks or inspections have been carried out to the required standard before the category C certifying staff issues the certificate of release to service". Please clarify what are "all relevant tasks or inspections" in a base maintenance environment? For the sake of standardization and level playing field it is to our point of view only the EASA who should be responsible for the interpretation of "all relevant "and not the organizations or local authorities. Te tasks and inspection from item (f) and (g) should be considered as relevant.
response	Not accepted. The comment is outside the scope of this task.

comment	*45* comment by: *Aero-Club of Switzerland* We think, letter f) "carry out a general verification..." should be changed in "carry out a thorough (or careful) verification after completion...". Rationale: "general" is too weak, not sufficiently demanding, thinking of the consequences omissions may provoke. To letter h) we would add "...well organised and clean in respect of every aspect of efficient and safe work, particularly in respect of dirt and contamination." Rationale: Not only dirt and contamination have a negative effect on the quality of work to be executed. Many other aspects, e.g. preparation of the workplace/workhop, of the right tools and ground support equipment, are equally important.
response	Not accepted. The comment is outside the scope of this task. This task targets 'critical maintenance tasks' and not all the elements in M.A.402.

comment	*51* comment by: *ICAO* … e) ensure that proper facilities are used in case in case of inclement weather or lengthy maintenance; … The phrase "in case" is duplicated.
response	Accepted.

comment	*52* comment by: *ICAO* In item f) "…is clear of all tools, equipment and any other extraneous parts and material", suggest deleting the word "other" and changing "extraneous parts and material" to "extraneous parts or material". The item f) would read: f) carry out a general verification after completion of all maintenance to ensure the aircraft or component is clear of all tools, equipment and any extraneous parts or material, and that all access panels removed have been refitted;
response	Accepted

comment	*56* comment by: *NHAF Technical committee* Add new bulletpoint: Person who perform inspection must physically present on-site where maintenance is performed. Justification: To prevent companies for use photos, webcams and other visual interactive aids to send «evidence» to inspector located at different site, other than where the maintenance is performed.
response	Not accepted. The review group considers that the use of remote inspection techniques cannot be excluded.

comment	*64* comment by: *Airbus*

	Comment related to: Pages 12 & 13, M.A.402 & 145.A.48 Suggested change: If the regulation comes into force what is proposed in terms of implementation period? Comment justification: The implications of the compliance with the actions specified in this regulation for each actor (approved Part M/Part 145 organizations) have not been described in the NPA. The following illustrates only one of the difficulties generated by this regulation: An Aircraft Maintenance Manual (AMM) include roughly 8000, or even up to 10000, maintenance procedures for a given aircraft. Each of these maintenance procedures will have to be reviewed to determine its criticality. This time-demanding activity will have to be carried out also for the other manuals prescribing Instructions for Continued Airworthiness. Therefore, sufficient time has to be given to the impacted organizations to comply with this regulation.
response	Noted. The requirements contained in this proposal already exist in the current regulation (ref. paragraph M.A.402 (a) and 145.A.65 (b)(3)). Nevertheless, this comment will be considered for entry into force and applications dates.

comment	*90* comment by: *René Meier, Europe Air Sports* We think, letter f) should be changed into "carry out a careful verification after completion of all maintence..." Rationale Our proposal fits better with the basic idea of the NPA, "general" being not strong enough, if something which really has to be done is meant. To letter h) we would like to add "...well organised and clean in respect or every aspect of efficient and safe work, particularly in respect of dirt and contamination." Rationale: Preparation of workshop/workplace environment is at least as important as the absence of dirt or contamination. To do the job efficiently, tools and ground support equipment should be included in letter h).
response	Repeated comment, see answer to comment 45

comment	*98* comment by: *CAA-NL* M.A.402 Performance of maintenance We suggest to change the order of the items of the new M.A.402 into a), h), b), c), d), e), g) and f) as this is more in line with the order of considerations when performing actual maintenance. As a consequence of this the numbering of the related AMC and GM needs to be amended.
response	Accepted.

comment	*102* comment by: *UK CAA* **Page No:** 13 of 30 **Paragraph No:** M.A.402 e)

	Comment: Typo – "in case" is repeated. **Justification:** Typographical error. **Proposed Text:** Delete superfluous "in case".
response	Accepted.

comment	*131* comment by: *KLM Engineering & Maintenance* Comment: (see also comment 129) the rulemaking proposal for Part M.A. 402 as shown later on in this NPA excludes provisions for organisations approved according EASA Part 145. This conflicts with what is written in article 3(2) of the regulation. Is this indeed the intent of the rulemaking proposal?
response	Repeated comment, see answer to comment 129.

comment	*152* comment by: *Boeing* Page: 13 Paragraph: II. Draft Opinion; Annex I: Part-M; M.A.402 -- Performance of maintenance; Subparagraph f) The proposed text states: ***Annex I: Part-M*** ***M.A.402 Performance of maintenance*** *Except for maintenance performed by a maintenance organisation approved in accordance with Annex II (Part-145), any person or organisation performing maintenance shall:* *. . .* *f) carry out a general verification after completion of all maintenance to ensure the aircraft or component is clear of all tools, equipment and any other extraneous parts and material, and that all access panels removed have been refitted;* **REQUESTED CHANGE:** Revise the text of sub-paragraph f) as follows: *f)* ***account for all tools, equipment, parts, and materials entering and exiting the aircraft and/or maintenance area and*** *carry out a general verification after completion of all maintenance to ensure the aircraft or component is clear of all tools, equipment, and any other extraneous parts and material, and that all access panels removed have been refitted;* **JUSTIFICATION:** Foreign object debris (FOD) control is more effective if all tools, equipment, parts, and materials are tracked entering and exiting the airplane. As proposed in the draft Annex, the verification may be questionable because it is performed after the maintenance has been accomplished. Without knowing how many tools, equipment, parts, and materials went into the airplane, performing a verification after maintenance may be ineffective.
response	Not accepted. The comment is outside the scope of this task. This task targets 'critical maintenance tasks' and not all the elements in M.A.402.

comment	*164* comment by: *Rolls-Royce plc (ZM)* Typo in item e) ….facilities are used in case in case …

response	Accepted.

comment	*181* comment by: *DGAC FRANCE* **1. AFFECTED PARAGRAPH:** **M.A.402** **2. PROPOSED TEXT/ COMMENT:** Create a "145.A.28 : Maintenance standards" as proposed : **145.A.28 Maintenance standards:** All maintenance shall be carried out in accordance with the requirements of Part M.A. Subpart D. **3. JUSTIFICATION:** DGAC France agrees there is a need to clarify if some paragraphs of part M apply or not to Part 145. It has often been heard that Part M applies to general aviation aircraft whereas Part 145 applies to transport category aircraft. But Part 145 organization may forget to apply the general items of Part M, i.e. those that are outside of subpart F. EASA decides to clarify MA402 does not apply to Part 145 and to copy requirements in a new 145.A.48 paragraph. But one could ask about MA401, MA 403 … paragraphs. Therefore, DGAC foresees two solutions to remove the ambiguity: - Either add a 145.A.xx similar to the M.A.611 to make a complete reference to Part M. subpart D as being applicable to Part 145. - Or duplicate all necessary data in Part 145, so the two parts become independent. DGAC also understands that those general rules apply to independent licensed person or for pilot-owner maintenance. Therefore, it is probably easier to keep one writing of the requirements and have explicit links from Subpart F and Part 145 Similar debate should occur about Part M Subpart E toward Subpart F and Part 145.
response	Not accepted. The review group considers that it is better to issue a 'self-contained' paragraph and avoid references to Part-M. Transposition of other elements, such as section E, is outside the scope of this task. The additional elements of Part-M that also apply to Part-145 organisation will be transferred to Part-145 under rulemaking tasks RMT.0093 (145.017) and RMT.0251 (MDM.055).

B. Draft Rules - II. Draft Opinion - Annex II: Part-145 - 145.A.30 Personnel requirements p. 13

comment	*27* comment by: *Association of Dutch Aviation Technicians NVLT* In the opinion of the NVLT: 145.A.48 (a) 'Performance of maintenances' should be synchronized with 145.A.30 (h)1(i) "B1 and B2 support staff shall ensure that all relevant tasks or inspections have been carried out to the required standard before the category C certifying staff issues the certificate of release to service". Please clarify what are "all relevant tasks or inspections" in a base maintenance environment? For the sake of standardization and level playing field it is to our point of view only the EASA who should be responsible for the interpretation of "all relevant "and not the organizations or local authorities. Te tasks and inspection from item (f) and (g) should be considered as relevant.

response	Repeated comment. See response to comment 26.

comment	*36* comment by: *Association of Dutch Aviation Technicians NVLT* Please give guidance for the controlment of tools, and clarify which tools should be controled.
response	Not accepted. The comment is outside the scope of this task. This task targets 'critical maintenance tasks' not control of tools.

comment	*53* comment by: *ICAO* For item a), in "…is clear of all tools, equipment and any other extraneous parts and material", suggest deleting the word "other" and changing "extraneous parts and material" to "extraneous parts or material". For item c), since "multiple errors" and "errors being repeated in identical tasks" are two different kinds of risks, suggest changing "the risk of multiple errors and errors being repeated in identical tasks is minimised" to "the risk of multiple errors and the risk of errors being repeated in identical tasks are minimised". Then 145.A.48 would read: **145.A.48 Performance of maintenance** The organisation shall establish procedures to ensure that: a) after completion of all maintenance a general verification is carried out to ensure the aircraft or component is clear of all tools, equipment and any extraneous parts or material, and that all access panels removed have been refitted; b) an error capturing method is implemented after the performance of any flight safety sensitive maintenance tasks; and c) during line and base maintenance the risk of multiple errors and the risk of errors being repeated in identical tasks are minimised.
response	Accepted.

comment	*57* comment by: *NHAF Technical committee* Please include that person who perform inspection have to be physically present, on-site where maintenance is performed. Justification: To prevent companies for use photos, webcams and other visual interactive aids to send «evidence» to inspector located at different site, other than where the maintenance is performed.
response	Repeated comment, see answer to comment 56

comment	*63* ❖ comment by: *Airbus* Comment related to: Page 8, Explanatory Note, Paragraph V, article 2.3 Page 13, 145.A.30 Suggested change: It is proposed to delete the point (i) in 145.A.30 as the requirement is already

in the Article 5(6) of the Regulation 2042/2003.
Comment justification:
We agree with the Agency's position on the proper qualification of persons implementing procedures to detect errors that may occur during maintenance (*"proper qualification of the persons implementing them would reduce the risks associated to such maintenance activity"*). The existing process to detect errors during maintenance shows a weakness resulting from the absence of uniform requirements for licenses/nomination.
There is an obvious unequal treatment in terms of licenses between the different kinds of maintenance. It is confessed in the Article 1 of the Commission Regulation (EU) No 1149/2011 amending the Article 5 of the Regulation (EC) No 2042/2003, by adding the paragraph 6:
"6. Until such time as this Regulation specifies requirements for certifying staff:
(i) for aircraft other than aeroplanes and helicopters;
(ii) for components;
the requirements in force in the relevant Member State shall continue to apply, except for maintenance organisations located outside the European Union where the requirements shall be approved by the Agency."
This contributes to the degradation of the high uniform level of civil aviation safety in Europe (ref. Article 2 of the Basic Regulation (EC) No 216/2008).
What justifies that maintenance on aircraft requires a license framework more stringent than for off-aircraft maintenance of engines or components, or for Non Destructive Testing (NDT) techniques?
Apparently, nothing does. Some examples prove that defects resulting from improper off-aircraft actions (repair, modification, inspection, assembly, etc…) on removed items may not be detected by tests performed after installation on aircraft, but may unfortunately become an accident enabling factor (in itself not sufficient to breach defenses). For example, NDT techniques used as part of a landing gear overhaul not applied appropriately to ensure the detection of damages, which led to a structural failure.
The amendment of the EASA Part 66 is deemed necessary to appropriately cover licenses for personnel involved in the off-aircraft maintenance of engines or components, or in Non Destructive Testing (NDT) techniques. The ICAO Safety Management Manual (Doc. 9859) indicates that *"Breaches in safety defenses are a delayed consequence of decisions made at the highest levels of the [considered organizational] system, which remain dormant until their effects or damaging potential are activated by specific sets of operational circumstances. Under such specific circumstances, human failures or active failures at the operational level act as triggers of latent conditions conducive to facilitating a breach of the system's inherent safety defenses. In the concept advanced by the Reason model, all accidents include a combination of both active and latent conditions"*.

response | Repeated comment.

comment | *64* ❖ comment by: *Airbus*

Comment related to:
Pages 12 & 13, M.A.402 & 145.A.48
Suggested change:
If the regulation comes into force what is proposed in terms of implementation period?
Comment justification:
The implications of the compliance with the actions specified in this regulation for each actor (approved Part M/Part 145 organizations) have not been

	described in the NPA. The following illustrates only one of the difficulties generated by this regulation: An Aircraft Maintenance Manual (AMM) include roughly 8000, or even up to 10000, maintenance procedures for a given aircraft. Each of these maintenance procedures will have to be reviewed to determine its criticality. This time-demanding activity will have to be carried out also for the other manuals prescribing Instructions for Continued Airworthiness. Therefore, sufficient time has to be given to the impacted organizations to comply with this regulation.
response	Repeated comment.

comment	*65* comment by: *Airbus* Attachment #1 Comment related to: Page 13, 145.A.48 and 145.A.65 AMC 145.A.48(b), AMC 145.A.48(c), GM 145.A.48(b), GM1/2/3 145.A.48(c) Suggested change: Airbus disagrees to create a new requirement 145.A.48 and recommends to keep existing requirements of 145.A.65 with small change and to clarify where applicable the AMC 145.A.65(b)3 taking into account missing elements needed to be transposed from existing AMC M.A402(a) It is proposed to put in the rule that the maintenance organization should identify the critical systems/structure elements and maintenance tasks, title, reference of the source or the reason for having selected such elements/maintenance tasks, training aspect of special interest. The preliminary identification of aircraft elements/maintenance tasks in a document providing cognizance and controls of the critical elements/maintenance tasks, before performing the tasks and then putting in place an error capturing method should be part of the rule. The attached proposal is a review of the Part-145 aspect only but can easily be adapted to modify Part-M accordingly with it's particulars. Comment justification: It is reasonable to require the identification of and the emphasis on the critical tasks and aircraft elements. The error capturing or detection method that is required to be implemented after the performance of any critical maintenance tasks is a concept that needs to determine such tasks as a preliminary step in the process. It is not clear why the risk of multiple errors and errors repeated in identical tasks should be minimized for line and base maintenance only. For example when several servo controls are removed from aircraft for a shop visit, multiple errors and errors repeated in accomplishing identical tasks may occur. While maintenance errors and critical task are linked with safety aspects ,145 A.65 already deals with maintenance procedures and safety and quality action, the introduction of 145.A.48 creates confusion.
response	Partially accepted. The review group considers that the proposed paragraph 145.A.48 is more simple and this would help its understanding and implementation. The wording "line and base maintenance" is removed from 145.A.48 (c). The commenter is right, the requirement of 145.A.48 (c) applies to all maintenance (line, base, component maintenance, etc)

comment	*99* comment by: *CAA-NL* 145.A.48 Performance of maintenance We suggest to change the order of the items of the new 145.A.48 into c), b) and a) as this is more in line with the order of considerations when performing actual maintenance. As a consequence of this the numbering of the related AMC and GM needs to be amended.
response	Accepted

comment	*124* comment by: *FAA* After a review of (NPA) No. 2012-04 in regards to EC regulation 2042/2003 Annex II, part 145, it appears that the addition of 145.A.48 may have an impact on the agreement between the US and the EU. After a review of the regulation, the AMC and the GM it appears the regulation is somewhat like our Required Inspection Items (RII), the major difference is that our RII is a 121 rule that is mandated to the repair under 145.205. This NPA will affect all repair stations with an EASA approval whether they perform maintenance on aircarrier products or general aviation products. This will probably require some discussion with in the JMCB because it appears this may require an additional special condition applicable to us based repair stations with an EASA Approval.
response	Noted. The result of this rulemaking task would need to be considered by the JMCB in the context of the MAG.

comment	*132* comment by: *KLM Engineering & Maintenance* Comment: (145.A.30 (i)) This text is out of place in this NPA since it has no relationship with this NPA's subject. Furthermore reference to Regulation 2042/2003 is confusing.
response	Noted. The commentator is right. The change to paragraph 145.A.30 (i) is not related to this task. The Agency included this change to correct an inconsistency between article 5(6) and 145.A.30 (i).

comment	*133* comment by: *KLM Engineering & Maintenance* Comment: the text of 145.A.48 c) is too vague: which maintenance tasks are meant in this paragraph? Is it for all maintenance tasks, only Flight safety sensitive maintenance tasks, or .....? Furthermore, the type of operation and the environment wherein the aircraft operation takes place are partly a basis for certain tasks (very likely also flight safety sensitive tasks) in the Operators Aircraft Maintenance Programme. Now that M.A.402 is no longer applicable to Part 145 organizations and it is up to the Part 145 Maintenance Organisation to define Flight Safety Sensitive Maintenance Tasks and –Systems, it seems the associated Operator responsibilities for tasks as defined in the Maintenance Program shift towards the Maintenance Organisation. Is it indeed the intent of this NPA to have the Maintenance Organisation shoulder the sole responsibility for defining these tasks and systems?

response	Noted. The existing M.A.402 and 145.A.65 paragraphs are applicable to 'performance of maintenance', this means any person or organisation performing maintenance including a Part-145 organisation. The proposed 145.A.48 paragraph is applicable to Part-145 organisations therefore the responsibility remains with the Part-145 organisation.

comment	*153* comment by: *Boeing* Page: 13 Paragraph: Annex II: Part-145; 145.A.48 Performance of maintenance; Subparagraph a) The proposed text states: ***145.A.48 Performance of maintenance*** *The organisation shall establish procedures to ensure that:* *a) after completion of all maintenance a general verification is carried out to ensure the aircraft or component is clear of all tools, equipment and any other extraneous parts and material, and that all access panels removed have been refitted; …* **REQUESTED CHANGE:** Revise the text of sub-paragraph a) as follows: *a) **all tools, equipment, parts, and materials are accounted for entering or exiting the aircraft and/or maintenance area and,** after completion of all maintenance a general verification is carried out to ensure the aircraft or component is clear of all tools, equipment, and any other extraneous parts and material, and that all access panels removed have been refitted;* **JUSTIFICATION:** Foreign object debris (FOD) control is more effective if all tools, equipment, parts, and materials are tracked entering and exiting the airplane. As proposed in the draft Annex, the verification may be questionable because it is performed after the maintenance has been accomplished. Without knowing how many tools, equipment, parts, and materials went into the airplane, performing a verification after maintenance may be ineffective.
response	Repeated comment. See answer to comment 152

comment	*183* comment by: *DGAC FRANCE* **1. AFFECTED PARAGRAPH:** **Paragraph 145.A.30 (i)** **2. PROPOSED COMMENT:** Modify accordingly : …. the provisions of article 5 ~~(6)~~ of this regulation…. **3. JUSTIFICATION:** There is a reference to the article 5 point 6 or regulation CE2042/2003. It seems too restrictive and it is suggested to make reference to article 5 as a whole.
response	Not accepted. None of the other points of article 5 are applicable to component certifying staff.

B. Draft Rules - II. Draft Opinion - Annex II: Part-145 - 145.A.65 Safety and p. 13-14

quality policy, maintenance procedures and quality system

comment	*48* comment by: *Aero-Club of Switzerland* 145.A.65 is not very clear to us: We do not find any reference to "critical tasks", not any no requirement for independent inspections.
response	Noted. The requirements applicable to critical maintenance tasks are in 145.A.48.

comment	*54* comment by: *ICAO* Suggest changing "…all aspects of carrying out the maintenance activity…" to "…all aspects of the carrying out of the maintenance activity…". The b) 2) would read: 2) cover all aspects of the carrying out of the maintenance activity, including the provision and control of specialised services and lay down the standards to which the organisation intends to work; and
response	Partially accepted. Text amended, although not as proposed by the commenter.

comment	*125* comment by: *FAA* Damage assessment must be accomplished with consideration of previous alterations, modifications and repairs.
response	Noted.

comment	*169* comment by: *AESA* **1. 145.A.65 Safety and quality policy, maintenance procedures and quality system** The text should be revised to be consistent with Regulation 593/2012; that is *3) ensure that damage is assessed and modifications and repairs are carried out using data approved by the Agency or by an approved Part-21 design organisation, as appropriate. ¨* *Should say* *3) ensure that damage is assessed and modifications and repairs are carried out using data specified in point M.A.304.'.*
response	Accepted. Reference amended.

B. Draft Rules - II Draft Decision AMC to Part-M - Annex I AMC/GM to Part-M p. 14-16

comment	*134* comment by: *KLM Engineering & Maintenance* "FOR MAINTENANCE PERFORMED OUTSIDE OF AN APPROVED MAINTENANCE ORGANISATION……" Comment: (see also comments 129 and 131) the rulemaking proposal for Part M.A. 402 as shown later on in this NPA excludes provisions for organisations

	approved according EASA Part 145. This conflicts with what is written in article 3(2) of the regulation. Is this indeed the intent of the rulemaking proposal?
response	Repeated comment. See answer to comment 129

B. Draft Rules - II Draft Decision AMC to Part-M - GM M.A.402 (a) Performance of maintenance p. 16

comment	*46* comment by: *Aero-Club of Switzerland* Please add: "...provided they hold a valid or an expired pilot licence with the appropriate type or class rating and provided that they are fully familiar with the aircraft..." Rationale: We loose experienced specialists still interested in aviation, but no longer carrying a licence, when the limit is drawn in the strictest possible way as proposed by the Agency. A former pilot, not flying anymore, will still be able to serve co-owners. We urgently ask for an adaption in our favour of this provision.
response	Noted The qualification of pilots to perform pilot owner maintenance is not in the scope of this task. This task targets 'critical maintenance tasks' which are excluded from pilot owner maintenance.

comment	*91* comment by: *René Meier, Europe Air Sports* Europe Air Sports is of the opinion that also former pilots having held a licence should allowed to continue to work according to the provisions of pilot-owner maintenance as long as they are fully familiar with the aircraft concerned. Rationale: The strict rule as it is written today provokes a loss of experience and knowledge when a pilot looses his licence, e.g. for medical reasons. A loss of licence has not much to do with the ability to maintain an aircraft.
response	Repeated comment, see comment 46.

B. Draft Rules - II Draft Decision AMC to Part-M - AMC M.A.402 (b) Performance of maintenance p. 16-17

comment	*156* comment by: *Chairman Technical Affairs Committee AEI* Original M.A 402 (a) refers to "personnel not authorised to issue a **CRS** should work **under the supervision of certifying personnel**" VS. the new text that refers to "under the supervision of persons authorised to issue a release to service" Aircraft Engineers International opposes this change in the AMC and believes this change will further lead to confusion and misinterpretation of the essence in original AMC an could in worst case jeopardise flight safety Aircraft Engineers International will argue with the same logic as in 402(b) "The person authorised to" issue a release to service should ensure that"- Should be written: "The **certifying person** authorised to issue a **CRS** should ensure that"

response | Not accepted.
The text as it is covers all possible cases of persons authorised to issue a 'release to service' as described in M.A.803.

B. Draft Rules - II Draft Decision AMC to Part-M - AMC1 M.A.402 (g) Performance of maintenance p. 17

comment | *28* comment by: *Association of Dutch Aviation Technicians NVLT*

In the opinion of the NVLT: the following items should be added to AMC1 M.A.402 (g) Performance of maintenance:
e) Tasks that may affect the control of the aircraft direction on the ground, such as a replacement of both nose wheels.
f) Tasks that may affect a safe operation of the aircraft, such as a closing panels and or engine cowl doors etc.

response | Not accepted.
The list of examples provided in the AMC cannot contain all possible cases.

comment | *61* ❖ comment by: *Airbus*

Comment related to:
Page 5, Explanatory Note, Paragraph IV, article 10.a.
Page 7, Explanatory Note, Paragraph IV, articles 18 and 19
Page 12, Draft Rules, Paragraph I
ToR MDM.020, section 3., bullet 2
Page 17, AMC1 M.A.402(g)
Page 20, AMC2 145.A.48(b)
Suggested change:
It is proposed to keep the term 'critical task' in the Regulation (EC) 2042/2003, the Part 145, and the Part M regulatory material, and to replace the other terms as necessary.
Amend article 2 as follows
Within the scope of this Regulation, the following definitions shall apply:
n) 'Critical tasks' means those tasks that involve the assembly or any disturbance of a system or any part on an aircraft that, if errors occurred, could directly endanger the flight safety.
Further harmonization within the various Certification Specifications and Part 21 is highly recommended.
Comment justification:
We support the Agency in its attempt to harmonize the terminology used within Part M ('flight safety sensitive maintenance tasks') and Part 145 ('critical systems').
The article 19 of the Explanatory Note defines the flight safety sensitive maintenance tasks as *"those tasks that, if improperly performed, can endanger the safety of the flight or produce a system malfunction"*. But some system malfunctions have no impact on the airworthiness of the aircraft. From this definition, it could be interpreted that all maintenance tasks producing a system malfunction are critical tasks. It would be appropriate to take into account the severity of failures.
The paragraph I. of the Draft Rules provides the following definition: *"'flight safety sensitive maintenance tasks' means those tasks that involve the assembly or any disturbance of a system or any part on an aircraft that, if errors occurred, could endanger the flight safety."* Safety cannot be fully

described and covered by the activities related to continuing or continued airworthiness. While the term 'Safety' is globally recognized and understood by the aviation community as the objective to reach, it shall not be mistaken for the term 'Airworthiness' that only entails a series of activities necessary, but not sufficient, to reach this objective. Although the failure of one of these activities is likely to impact the full safety chain, the selection of the term 'Safety' in a very specific context should be avoided. In addition, the notion of safety as defined in the AMC 1 to M.A.402(g)/AMC 2 to 145.A.48(b) is misleading and not adapted to the present context as it does not cover entirely the matter: an error occurring during the accomplishment of a maintenance procedure on the passenger oxygen system may result in consequences as severe as those identified for cases described in the subject AMC.
Therefore, the term 'critical' is preferred to 'flight safety', including for sake of coherence with the various Certification Specifications (CS-27, CS-29, CS-E, CS-P): It is a practice to refer to terms such as Critical Design Configuration Control Limitations (CDCCL), critical components, etc… This will participate in the global harmonization of the terminology used in the EASA Part 21 through the Part 147, and therefore in preventing misunderstanding (refer to ToR section 3., bullet 2).
The decision to replace the term 'critical tasks' by 'flight safety sensitive maintenance tasks' has also some consequences on procedures, training material, work cards and tools. The term 'critical tasks', which has been used since 2004, is part of the culture of the maintenance personnel. The RIA (starting on page 8) has not taken into account the cost of all the changes that would be required in the IT systems currently in place.
It is not shown that replacing a powerful and striking language such as 'critical task' by a long term such as 'flight safety sensitive maintenance task', be effective for the safety improvement. It is even considered that such a change is creating confusion on a safety-related topic.

response | Repeated comment.

comment | *62* ❖ comment by: *Airbus*

Comment related to:
Page 5, Explanatory Note, Paragraph IV, article 11, referring to CPS and KSI reports
ToR MDM.020, section 3., bullet 3
Page 17, AMC1 M.A.402(g)
Page 18, GM M.A.402 (g)
Page 20, AMC2 145.A.48(b)
Page 29, GM 145.A.48 (b)
Comment:
The comment is relative to the objective in the ToR (section 3., bullet 3) where it is mentioned:
"Give a methodology (general criteria) how to identify those maintenance tasks […]. Identify which systems or maintenance tasks of the aircraft should be considered as "critical" in the sense of having possibly a catastrophic, hazardous or major failure in the case of undetected maintenance errors."
When the ToR were issued, the FAA Key Safety Information (KSI) project was on-going. But since, the KSI Final report, dated March 2007, has been issued and says that:
"the OEM would identify KSI using the following criteria:
Identify maintenance and operational tasks and procedures related to mitigating the risk of:

- A single failure leading to a catastrophic or hazardous failure condition
- A foreseeable common cause failure leading to a catastrophic failure condition
- A latent failure in a dual-failure combination leading to a catastrophic or hazardous failure condition"

The language (catastrophic, hazardous, major) that is used to select the KSI in order to capture and then to highlight key procedures and associated tasks that must be protected, maintained and correctly performed throughout the life of the airplane(s) should be addressed by the system safety assessment. Is this language defined in the EASA Part M/Part 145 or in the Certification Specifications (associated to Part 21)?

Is it considered that EASA Part M/Part 145 organization would have to have a procedure, to include in their review, the effect of single failure **or** the effect of multiple failures? Is it only necessary to look at single failure? The end result will be different depending on criteria to be used. The complexity and the number of items that might result from this review has an impact on organization and persons performing maintenance

The Explanatory note and the regulation/AMC/GM should say how (methodology) and where (documents, databases, etc) the Part M and Part 145 organizations can get access to the OEM Key Safety Information (if this language KSI is retained) to ensure that no omission or over conservatism will happen in the selection of aircraft items and maintenance tasks. It could be studied if the information delivered by DAH cover the expectations.

The KSI project focused on aircraft systems maintenance tasks and procedures only

The identification of the critical aircraft items/maintenance tasks and procedures should be a combination of the DAH and Maintenance organization inputs.

Comment justification:

The NPA suggests that the involvement of the TC holders, in the definition of the "critical systems", is left apart in spite of the AIBN recommendation 12/2006 ("Special consideration should be made as to whether the manufacturer should be given a responsibility on this matter."). This decision seems to be driven by the FAA CPS and KSI projects.

However, the Explanatory note doesn't say how the Part M and Part 145 organizations can evaluate the criticality of systems in lieu of OEM as suggested in AMC1 M.A.402(g) and AMC2 145.A.48(b). These AMC provide only a limited number of critical maintenance task examples.

The GM M.A.402 (g)/GM 145.A.48 (b) record different sources (where) to find data for the identification of critical maintenance tasks including information from TC holder (refer to bullet 1)

The existing regulations do not require the TC holder to identify (/to flag) such tasks in its publications.

response: Repeated comment.

comment: *126* comment by: *FAA*

The listing of flight safety sensitive maintenance tasks items "A" thru "D", while not all inclusive, could be enhanced with an item "E" added.

As noted by the FAA Commercial Airplane Certification Process Study :

Processes for identification of safety critical features of the airplane do not ensure that future alterations, maintenance, repairs, or changes to operational procedures can be made with the cognizance of those safety features.

- Many critical safety features of complex transport airplane designs are not readily obvious. Examples:

	– Check valves, shear links – Environmental capability features (e.g., lightning) – Seals, drain lines, vapor barriers – Wire routing, electrical grounding paths – Secondary structural load paths, energy absorption devices
response	Not accepted. The list of examples provided in the AMC cannot contain all possible cases.

comment	*146* comment by: *GE Aviation* AMC M .A.402 (g)(c) states independent inspection should ensure correct assembly, locking and sense of operation. In propulsion, some tasks are not amenable to the approaches proposed. For instance, once a b-nut is torqued, the torque cannot be checked unless the nut is disturbed. It is not clear that independent inspection can "ensure" locking in this case.
response	Noted. Organisations may define alternative methods of error capturing adapted to the particularities of the specific critical maintenance task.

comment	*157* comment by: *Boeing* Page: 17 Paragraph: AMC1 M.A.402 (g) Performance of maintenance; FLIGHT SAFETY SENSITIVE MAINTENANCE TASKS; Sub-paragraph c) The proposed text states: **AMC1 M.A.402 (g) Performance of maintenance;** ***FLIGHT SAFETY SENSITIVE MAINTENANCE TASKS*** *The following maintenance tasks should primarily be reviewed to assess their impact on safety:* *…* *c) Task that may affect the propulsive force of the aircraft, including installation of aircraft engines, propellers and rotors; and …* **REQUESTED CHANGE:** Revised the text of sub-paragraph c) as follows: *c) Task that may affect the ~~propulsive force of the aircraft, including installation of aircraft engines, propellers and rotors~~* ***installation and adjustment of components related to the propulsive force of the aircraft***; and … **JUSTIFICATION:** "*Task that may affect propulsive force of the aircraft*" could be interpreted as every engine maintenance procedure in the AMM, CMM, and Engine Manual. The resulting number of tasks would likely number in the hundreds, and all of the tasks require additional inspection requirements by virtue of the independent inspection requirement. Our suggested change in wording differentiates sub-paragraph c) from sub-paragraph d) ("*Overhaul, calibration or rigging of components such as engines, propellers, transmissions and gearboxes").* It also limits the number of tasks by excluding ones that cover painting and cleaning.
response	Not accepted. The definition of 'critical maintenance tasks' explains that a critical task is

linked to the situation that if errors occurred, could endanger the flight safety of the aircraft. Not all the errors on engine tasks would affect the flight safety of the aircraft where this engine is installed.

B. Draft Rules - II Draft Decision AMC to Part-M - AMC2 M.A.402 (g) Performance of maintenance p. 17-18

comment	*8* comment by: *SVFB/SAMA* **AMC2** pg 17v30 Independent Inspection For small organisations working on remote stations with one B1/B2 it is not possible to comply with this requirement. Save operation had been performed for years by such operators and their MRO's. The need to more stringent regulation in the this case would have to be proved by relevant accident statistics, not by single cases.
response	Accepted. The re-inspection as an error capturing method was added in AMC 145.A.48 to provide an alternative that could be used in unforeseen cases in line stations where only one mechanic is available. Following the comments made to the NPA, the re-inspection method is introduced AMC M.A.402 for subpart-F organisations.

comment	*29* comment by: *Association of Dutch Aviation Technicians NVLT* Please give a proper definition about the 'INDEPENDENT INSPECTION' in AMC2 M.A.402 (g) Performance of maintenance
response	Not accepted. The review group consider that AMC2 M.A.402 (g) provides a clear explanation on what an independent inspection should consist of.

comment	*30* comment by: *Association of Dutch Aviation Technicians NVLT* Please do not use the word 'satisfactory' in AMC2 M.A.402 (g), to be satisfied about the completion of a task is not adequate enough, one has to be ensured.
response	Accepted. Text has been amended.

comment	*31* comment by: *Association of Dutch Aviation Technicians NVLT* Please do not use the term 'maintenance release' in AMC2 M.A.402 (g), use only the formal terms from Commission Regulation (EC) No 2042/2003 and its Acceptable Means of Compliance and Guidance Material such as a 'certificate of release to service' or 'sign-off'(base maintenance)
response	Accepted. 'Maintenance release' has been replaced by' certificate of release to service'.

comment	*32* comment by: *Association of Dutch Aviation Technicians NVLT*

	Please do not use the term 'maintenance release' in AMC2 M.A.402 (g), use only the formal terms from Commission Regulation (EC) No 2042/2003 and its Acceptable Means of Compliance and Guidance Material such as a 'certificate of release to service' or 'sign-off'(base maintenance)
response	Accepted. 'Maintenance release' has been replaced by 'certificate of release to service'.

comment	*33* comment by: *Association of Dutch Aviation Technicians NVLT* In the opinion of the NVLT: a (2) Please clarify that for the accomplishment of an 'independent inspection' depending if the work should be done on Line or Base maintenance, that only certifying B1/B2 or supporting staff B1/B2 could carry out this task.
response	Noted. The review group considers that this comment is misplaced. This comment is made to AMC M.A.402 and the commenter refers to line and base maintenance. In the context of AMC M.A.402, which applies to independent certifying staff (this means certifying staff referred in M.A.802 (b)(2)) and Part-M subpart-F organisations there is not distinction between line and base maintenance. Please refer to AMC4 145.A.48 (b) for the qualifications of personnel performing an independent inspection in a Part-145 organisation.

comment	*34* comment by: *Association of Dutch Aviation Technicians NVLT* In the opinion of the NVLT: b (1) this issue has been covered by 145.A.35. Please clarify if independent inspection can be accomplished by a B1 and the particular task carried out by B2 and vice versa.
response	Noted. AMC2 M.A.402(g) explains the qualification of persons performing independent inspection. This paragraph highlights the need for the person to have the knowledge, and experience on the task or the specific control systems being inspected. It does not establish limitations in terms of licences categories, so provided the B1/B2 has the knowledge and experience then it could be an independent qualified person.

comment	*35* comment by: *Association of Dutch Aviation Technicians NVLT* In the opinion of the NVLT: a (1) Please clarify that for the accomplishment by an authorised person of an task depending if this task should be done on Line or Base maintenance, that only certifyingB1/B2 or supporting staff B1/B2 should carry out this task.
response	Noted The review group considers that this comment is misplaced. This comment is made to AMC M.A.402 and the commenter refers to Line and base maintenance. In the context of AMC M.A.402, which applies to independent certifying staff (M.A.802 (b)(2)) and part-M subpart-F organisations there is not distinction between line and base maintenance. The concept of 'authorised person' in GM 145.A.48 is not limited to B1/B2 certifying staff or B1/B2 support staff.

comment	*37* comment by: *Association of Dutch Aviation Technicians NVLT* Please clarify and give guidance if a Flight safety sensitive maintenance task has to be carried out and there is due a unforeseen situation only one person available to carry out this task.
response	Accepted. This possibility was already included in the proposal for Part-145 organisations. For independent certifying staff (M.A.802 (b)(2)) and Part-M subpart-F organisations this possibility has been described in AMC2 M.A.402 (g) .

comment	*39* comment by: *Tahsin Istanbullu-Pegasus Airlines* Comment: Assessment of the qualifications and experience of the 'independent qualified person' should not be done by the authorised person, this would compromise "independancy" of the inspection. Assessment should be organisation's responsibility.
response	Noted. AMC2 M.A.402 (g) point (b) applies to maintenance performed OUTSIDE a maintenance organisation environment (independent certifying staff as referred in M.A.802 (b)(2)).

comment	*41* comment by: *Cargolux Airlines International* Cargolux (CLX) feels that dissimilar text for 'maintenance release', 'sign-off' and Certificate of Release to Service is used in NPA 2012-04 within the various paragraphs for the same 'Independent Inspection' performed: - AMC2 M.A.402(g)(a)(4) states: License number of each person, signature, name and details. (each person: mechanic, authorised person, independent qualified person? - AMC3 145.A.48(b)(c)(1)(i)(D) states: Signature of both persons and details. - AMC3 145.A.48(b)(c)(2)(iii) states: Signature and details. Up till now, EASA requires to have name and signature of the person recorded on the work-card system for a 'Release to Service'. Having additional information recorded for each maintenance entry preceding an 'independent inspection' is very time consuming for the mechanics and space-consuming for the work-card and Technical Log layout. Furthermore for all integrated IT-systems accepting the digital signature recognition, a highly costly re-encoding will be necessary. The added value to have this additional information recorded on each and every work-cards seems not to be demonstrated. Cargolux prefers the following as the quality system following the current EASA 145.A.35(j) is in place to allow identification of an employee: - Stamp (with ID number) in lieu of the license number and name entry for maintenance release and sign off. - Stamp & Signature for Release to Service'. - EASA Form 1 as described in EASA Part-M IR Appendix II showing name & signature.
response	Accepted. The term 'maintenance release' has been replaced by 'certificate of release to service'. The review group agrees that the way to identify the persons should be

	described by the organisation in the exposition (electronic signature, hand-written signature, licence number, company code, etc). Thus, the text has been simplified.
comment	*47* comment by: *Aero-Club of Switzerland* We have two questions: 1) Who is acceptable as "independant qualified person"? 2) This qualified person should be independen from what? Many thanks for your clarifications.
response	Noted. 1st question: AMC2 M.A.402 (g) point b explains who is acceptable as independent qualified person for maintenance outside Part-145. AMC4 145.A.48 (b) point b explains who may be an independent qualified person in the Part-145 environment. 2nd question: Independent from the task that it is going to be inspected'.
comment	*55* comment by: *ICAO* In item **AMC2 M.A.402 (g) Performance of maintenance** b) 2) i A, suggest adding the word "license" after "equivalent national". Then, item b) 2) i A would read: A. a Part-66 license or equivalent national license when national regulation applies; or
response	Not acceptable. Qualifications other than licences may exist in the national systems.
comment	*58* comment by: *NHAF Technical committee* AMC2 M.A.402 (g), (b), 1) and 2), and Page 21, AMC3 145.A.48 (b) c), ii item B. Text in these paragraphs does not reflect the same requirement, for an independent qualified person. The requirements also, does not state what kind of type training the independent qualified person need to have this role. As this is an inspection to be performed after maintenance of systems critical to flight safety, we will recommend full level 3 type rating training to be mandatory for this role. (Support staff, of CRS personell.)
response	Noted. The text in AMC M.A. 402 and AMC 145.A.48 are different because they apply to different maintenance environments. There is no reference to type training because the group did not consider that the independent qualified person would need to have type training to perform the independent inspection.
comment	*73* comment by: *ICAO*

	In AMC2 M.A. 402 (g) Performance of maintenance, item b) 2) i B, suggest adding the word "regulations" after "equivalent national". Then, item b) 2) i B would read: B. a current pilot licence valid for the aircraft type issued in accordance with European regulations or equivalent national regulations when national regulation applies.
response	Not accepted.

comment	*74* comment by: *ICAO* According to the overall style of the NPA, the "independent qualified person" should be quoted. Then, AMC2 M.A.402 (g) Performance of maintenance, item b) 2) ii should appear as: ii. Additionally, the 'authorised person' should assess the qualifications and experience of the 'independent qualified person' taking into account that the 'independent qualified person' should have received training and have experience in the particular task. It should not be acceptable that the 'authorised person' shows the 'independent qualified person' how to perform the inspection at the time the work is completed.
response	Accepted.

comment	*75* comment by: *ICAO* In the covering text of paragraph c), suggest adding a comma before and after the phrase "for example", and putting the "independent qualified person" in single quotation marks. For item c) 7), suggest adopting the same wording style as items 1) through 6) by adding the words "should be checked for updating and applicability" at the end. Thus, the covering text of paragraph c) would read: c) How should the independent inspection be performed? The independent inspection should ensure, for example, correct assembly, locking and sense of operation. When inspecting control systems that have undergone maintenance, the 'independent qualified person' should consider the following points independently: And the item c) 7) would read: 7) software that is part of the flight safety sensitive maintenance task should be checked for updating and applicability (i.e. version, compatibility with aircraft configuration).
response	Partially accepted, text amended but not with the proposed wording.

comment	*92* comment by: *René Meier, Europe Air Sports* Who defines who could act as "independent qualified person"? We need some guidance on this point.
response	Noted. For work performed outside a maintenance organisation, this means by independent certifying staff, it is the same independent certifying staff who defines who could act as independent qualified person. For work performed by a maintenance organisation, it is the maintenance organisation.

comment	*103* comment by: *UK CAA* **Page No:** 17 of 30 **Paragraph No:** AMC2 M.A.402(g) Para a) 1) **Comment:** The current wording does not place the responsibility on the 'authorised person' to detail the full scope of the inspection. **Justification:** There is a need to ensure that the 'independent qualified person' referred to in Para a) 2) has a clear understanding of the tasks and areas that are to be independently inspected. **Proposed Text:** "1) The 'authorised person' assumes full responsibility for satisfactory completion of the task **and must clearly identify scope of the independent inspection."**
response	Not accepted. The scope of the inspection is defined by the independent qualified person and it should be identified in the workcard system as explained in AMC2 M.A.402 (g) point (a)(4).

comment	*104* comment by: *UK CAA* **Page No:** 17 and 18 of 30 **Paragraph No:** AMC2 M.A.402(g) (b)(2)iA and paragraph iB. **Comment:** Add the word "licence" for clarity **Justification:** Clarity. **Proposed Text:** "a Part 66 licence or equivalent national **licence** when national regulation applies."
response	Not accepted. Qualifications other than licences may exist in the national systems.

comment	*105* comment by: *UK CAA* **Page No:** 17 of 30 **Paragraph No:** AMC2 M.A.402(g) (b)(2)iA **Comment:** Whilst referencing the Part 66 licence, the required category is not clearly specified. **Justification:** For clarity add: "in any Category". **Proposed Text:** "a Part 66 licence **in any Category** or equivalent national **licence** when national regulation applies."
response	Accepted. Text has been added.

comment	*106* comment by: *UK CAA* **Page No:** 18 of 30 **Paragraph No:** AMC2 M.A.402(g) paragraph c) **Comment:** When the independent inspection reveals a defect, this should require a further re-inspection of the system and it to be reported through the internal occurrence reporting system, to ensure it is recorded and to allow further investigation if required. Therefore add an additional paragraph as bullet point 8) **Justification:** To highlight errors and latent failures and allow them to be further investigated. **Proposed Text:** "In the event that the independent inspection identifies a

	defect, it will be necessary to record the defect and carry out further independent inspections when appropriate rectification action has been completed. This should also be reported through the internal occurrence reporting system."
response	Not accepted. The internal occurrence reporting system is not part of the scope of this task.

comment	*158* comment by: *Boeing* Page: 17 Paragraph: AMC2 M.A.402 (g) - Performance of maintenance; INDEPENDENT INSPECTION; Sub-paragraph a) The proposed text states: ***AMC2 M.A.402 (g) Performance of maintenance*** ***INDEPENDENT INSPECTION*** *a) An independent inspection consists of an inspection performed by an 'independent qualified person' of a task carried out by an 'authorised person', taking into account that: …* **REQUESTED CHANGE:** Revise this section as follows: ***AMC2 M.A.402 (g) Performance of maintenance*** ~~*INDEPENDENT*~~ ***REQUIRED*** *INSPECTION* *a)* ~~*An independent*~~ ***A required*** *inspection consists of an inspection performed by an 'independent qualified person' of a task carried out by an 'authorised person', taking into account that: ...* **JUSTIFICATION:** The term *"required inspection"* is an aviation industry term widely used for many years by many operators and regulatory agencies. Introducing a new term -- *"independent inspection"* -- will likely cause confusion and misunderstanding. A significant number of operators have already embedded the term *"required inspection"* into their processes, maintenance documentation, and computing systems. Changing to the new term *"independent inspection"* would be costly for some operators. Further, some regulatory agencies may require that operators continue to use the term *"required inspection,"* thereby forcing some operators to employ dual terminology.
response	Repeated comment.

comment	*184* comment by: *DGAC FRANCE* **1. AFFECTED PARAGRAPH:** **Paragraph AMC 2 M.A.402(g) , c 7** **2. PROPOSED COMMENT:** Modify accordingly: Software that is part of the flight sensitive maintenance tasks (i.e verify appropriate version is loaded~~, compatibility with aircraft configuration~~) **3. JUSTIFICATION:** The maintenance organisation personnel when installing a new software revision will apply the corresponding SB. He will have to make sure the software is properly loaded. He may have the task to verify compatibility with other computers (example: software version for each channel of fly by wire system), but only if requested in the SB.

	The maintenance person has no means to check compatibility with other systems: example fly by wire systems with flight alarms warning systems, with flight displays, with engine control systems…. and to know all the acceptable configurations that are compatible at aircraft level. It is therefore proposed to delete "compatibility with aircraft configuration"
response	Partially accepted. Text amended although not as proposed by the commenter.

B. Draft Rules - II Draft Decision AMC to Part-M - GM M.A.402 (g) Performance of maintenance p. 18

comment	*9* comment by: *SVFB/SAMA* **GM M.A.402 g** pg 18v30 How do you expect the MRO access and process accident/occurrence report ? The small volume of data per individual SME is of no statistical value. All 30 EASA member states process accident /occurrence reports and they are all in a different format. In the case of our NAA each and every report must be individually analysed to sort out those with maintenance relevance. This is just not possible. It would be a relatively easy project for EASA to access the data of all 30 EASA member states in a common manner and process them in a way, that the reports can be shown with different key parameters, like for example show number of occurrences of all a/c between 2'000 kg to 5'000kg with technical root cause. The data should be accessible easy and select key parameters as useful for the specific MRO for display. It should give the root cause in one glance.
response	Noted The use of accident reports or information from accidents to identify critical maintenance tasks is mentioned in the guidance material as a possible source to be used. This does not mean that maintenance organisations have to analyse every individual accident report.

comment	*62* ❖ comment by: *Airbus* Comment related to: Page 5, Explanatory Note, Paragraph IV, article 11, referring to CPS and KSI reports ToR MDM.020, section 3., bullet 3 Page 17, AMC1 M.A.402(g) Page 18, GM M.A.402 (g) Page 20, AMC2 145.A.48(b) Page 29, GM 145.A.48 (b) Comment: The comment is relative to the objective in the ToR (section 3., bullet 3) where it is mentioned: "Give a methodology (general criteria) how to identify those maintenance tasks […]. Identify which systems or maintenance tasks of the aircraft should be considered as "critical" in the sense of having possibly a catastrophic, hazardous or major failure in the case of undetected maintenance errors." When the ToR were issued, the FAA Key Safety Information (KSI) project was on-going. But since, the KSI Final report, dated March 2007, has been issued and says that:

	"the OEM would identify KSI using the following criteria: Identify maintenance and operational tasks and procedures related to mitigating the risk of: - A single failure leading to a catastrophic or hazardous failure condition - A foreseeable common cause failure leading to a catastrophic failure condition - A latent failure in a dual-failure combination leading to a catastrophic or hazardous failure condition" The language (catastrophic, hazardous, major) that is used to select the KSI in order to capture and then to highlight key procedures and associated tasks that must be protected, maintained and correctly performed throughout the life of the airplane(s) should be addressed by the system safety assessment. Is this language defined in the EASA Part M/Part 145 or in the Certification Specifications (associated to Part 21)? Is it considered that EASA Part M/Part 145 organization would have to have a procedure, to include in their review, the effect of single failure **or** the effect of multiple failures? Is it only necessary to look at single failure? The end result will be different depending on criteria to be used. The complexity and the number of items that might result from this review has an impact on organization and persons performing maintenance The Explanatory note and the regulation/AMC/GM should say <u>how</u> (methodology) and <u>where</u> (documents, databases, etc) the Part M and Part 145 organizations can get access to the OEM Key Safety Information (if this language KSI is retained) to ensure that no omission or over conservatism will happen in the selection of aircraft items and maintenance tasks. It could be studied if the information delivered by DAH cover the expectations. The KSI project focused on aircraft systems maintenance tasks and procedures only The identification of the critical aircraft items/maintenance tasks and procedures should be a combination of the DAH and Maintenance organization inputs. <u>Comment justification</u>: The NPA suggests that the involvement of the TC holders, in the definition of the "critical systems", is left apart in spite of the AIBN recommendation 12/2006 ("Special consideration should be made as to whether the manufacturer should be given a responsibility on this matter."). This decision seems to be driven by the FAA CPS and KSI projects. However, the Explanatory note doesn't say <u>how</u> the Part M and Part 145 organizations can evaluate the criticality of systems in lieu of OEM as suggested in AMC1 M.A.402(g) and AMC2 145.A.48(b). These AMC provide only a limited number of critical maintenance task examples. The GM M.A.402 (g)/GM 145.A.48 (b) record different sources (<u>where</u>) to find data for the identification of critical maintenance tasks including information from TC holder (refer to bullet 1) The existing regulations do not require the TC holder to identify (/to flag) such tasks in its publications.
response	Repeated comment.

B. Draft Rules - II Draft Decision AMC to Part-M - GM to Appendix II to Part-M Use of the EASA Form 1 for maintenance	p. 19

comment	*135* comment by: *KLM Engineering & Maintenance* Comment: This text is out of place in this NPA since it has no relationship with

	this NPA's subject.
response	Noted The GM to Appendix II is not related to this task. The Agency has taken the opportunity of this rulemaking task RMT.0222 to merge in one Annex the AMC and GM of Part-M.

B. Draft Rules - III Draft Decision AMC to Part-145 - AMC2 145.A.30 (e) Personnel requirements p. 19

comment	*71* comment by: *Airbus* Comment related to: Page 19, AMC2 145.A.30(e), paragraph 5: 5. The human factors should address the procedures defined by the organisation to identify flight safety sensitive maintenance tasks and the error capturing methods implemented. Suggested change: Airbus proposes to move the above change in GM 145.A.30(e) which is dedicated to the HF training syllabus and content, as follows: **GM 145.A.30(e) Personnel requirements** ... 6. Procedures, information, tools and practices 6.1 Visual Inspection 6.2 Work logging and recording 6.3 Procedure – practice / mismatch / norms 6.4 Technical documentation – access and quality 6.5 ~~Flight safety sensitive maintenance~~ critical tasks and error ~~capturing~~ detecting methods (independent inspections, re-inspections, etc.) ... 10 Organisation's HF program 10.1 Reporting errors 10.2 Disciplinary policy 10.3 Error investigation 10.4 Action to address problems 10.5 Feedback **10.6 Identification of ~~flight safety sensitive maintenance~~ critical tasks** **10.7 Error ~~capturing~~ detecting methods** ... Comment justification: - The AMC2 145.A.30(e) already refers to the GM 145.A.30(e) for the topics to be covered in the HF training syllabus. - To ensure consistency between AMC and GM purpose - To avoid the dissemination of specific training requirements across the different regulatory requirements that may be confusing to the maintenance organisations.
response	Accepted. AMC2 145.A.30 (e) deleted.

comment	*147* comment by: *GE Aviation* AMC 145.A.30 (e) is not clear in its intent. It would be appropriate for human factors training to address maintenance tasks, errors, and ways to capture

	errors. However, the AMC calls for training to address the procedures used to identify sensitive maintenance tasks. It is not clear whether the intent is that those trained be proficient in the procedures, or that they be able to analyze the procedure definition process. The second option is unlikely to reduce maintenance error.
response	Noted. The maintenance organisation should train its staff in the procedure implemented for the identification of critical maintenance tasks, this means which tasks are critical maintenance tasks for a particular aircraft/engine/propeller. The HF training is not intended to train the staff on each critical maintenance task.

comment	*161* comment by: *Chairman Technical Affairs Committee AEI* AEI opposes the change of the traditional wording "critical task". This terminology is well known in 145 organisations and by introducing "flight safety sensitive maintenance task" we will again confuse the performing maintenance personnel and risk confusion of the task in hand for many years to come.
response	Partially accepted. Terminology amended to critical maintenance task.

B. Draft Rules - III Draft Decision AMC to Part-145 - AMC 145.A.47 (a) Production planning p. 19-20

comment	*49* comment by: *Aero-Club of Switzerland* There are some typing errors in 3. where several time two types are superimposed one to the other. The last bullet point "scheduling of safety critical tasks during periods when staff are likely to be most alert" does not improve anything, it is written in a far too general way and will therefore not bring the results the Agency wishes to have. We propose to turn it the other way round: "staff performing safety critical task must be scheduled in order to achieve best possible results while working on these tasks when they are most alert" or in a similar way. Rationale: To roster staff is in our view much simpler than to schedule the safety critical tasks.
response	Not accepted. This is the existing text. The review group considers that this paragraph is well understood by industry.

comment	*93* comment by: *René Meier, Europe Air Sports* There are some typing errors in AMC 145.A.47 (a), some caracters are superimposed one to another. We propose to change the last bullet point: "staff performing safety critical tasks must be scheduled in order to achieve best possible results while working on these tasks when they are most alert". Rationale: Is is easier to roster staff than to schedule the safety critical tasks.
response	Repeated comment. See comment 49.

B. Draft Rules - III Draft Decision AMC to Part-145 - AMC1 145.A.48 (b) Performance of maintenance p. 20

comment	*10* comment by: *SVFB/SAMA* **AMC2 145.A.48** pg 20v30 (b) The procedure should describe which data sources are used to identify flight safety sensitive maintenance tasks. This goes beyond the possibility of SME and may even be beyond medium and major MRO's see above.
response	Noted. The use of accident reports or information from accidents to identify critical maintenance tasks is mentioned in the guidance material as a possible source to be used. This does not mean that maintenance organisations have to analyse every individual accident report.

B. Draft Rules - III Draft Decision AMC to Part-145 - AMC2 145.A.48 (b) Performance of maintenance p. 20

comment	*61* ❖ comment by: *Airbus* Comment related to: Page 5, Explanatory Note, Paragraph IV, article 10.a. Page 7, Explanatory Note, Paragraph IV, articles 18 and 19 Page 12, Draft Rules, Paragraph I ToR MDM.020, section 3., bullet 2 Page 17, AMC1 M.A.402(g) Page 20, AMC2 145.A.48(b) Suggested change: It is proposed to keep the term 'critical task' in the Regulation (EC) 2042/2003, the Part 145, and the Part M regulatory material, and to replace the other terms as necessary. Amend article 2 as follows Within the scope of this Regulation, the following definitions shall apply: n) 'Critical tasks' means those tasks that involve the assembly or any disturbance of a system or any part on an aircraft that, if errors occurred, could directly endanger the flight safety. Further harmonization within the various Certification Specifications and Part 21 is highly recommended. Comment justification: We support the Agency in its attempt to harmonize the terminology used within Part M ('flight safety sensitive maintenance tasks') and Part 145 ('critical systems'). The article 19 of the Explanatory Note defines the flight safety sensitive maintenance tasks as *"those tasks that, if improperly performed, can endanger the safety of the flight or produce a system malfunction"*. But some system malfunctions have no impact on the airworthiness of the aircraft. From this definition, it could be interpreted that all maintenance tasks producing a system malfunction are critical tasks. It would be appropriate to take into account the severity of failures. The paragraph I. of the Draft Rules provides the following definition: *"'flight*

safety sensitive maintenance tasks' means those tasks that involve the assembly or any disturbance of a system or any part on an aircraft that, if errors occurred, could endanger the flight safety." Safety cannot be fully described and covered by the activities related to continuing or continued airworthiness. While the term 'Safety' is globally recognized and understood by the aviation community as the objective to reach, it shall not be mistaken for the term 'Airworthiness' that only entails a series of activities necessary, but not sufficient, to reach this objective. Although the failure of one of these activities is likely to impact the full safety chain, the selection of the term 'Safety' in a very specific context should be avoided. In addition, the notion of safety as defined in the AMC 1 to M.A.402(g)/AMC 2 to 145.A.48(b) is misleading and not adapted to the present context as it does not cover entirely the matter: an error occurring during the accomplishment of a maintenance procedure on the passenger oxygen system may result in consequences as severe as those identified for cases described in the subject AMC.
Therefore, the term 'critical' is preferred to 'flight safety', including for sake of coherence with the various Certification Specifications (CS-27, CS-29, CS-E, CS-P): It is a practice to refer to terms such as Critical Design Configuration Control Limitations (CDCCL), critical components, etc… This will participate in the global harmonization of the terminology used in the EASA Part 21 through the Part 147, and therefore in preventing misunderstanding (refer to ToR section 3., bullet 2).
The decision to replace the term 'critical tasks' by 'flight safety sensitive maintenance tasks' has also some consequences on procedures, training material, work cards and tools. The term 'critical tasks', which has been used since 2004, is part of the culture of the maintenance personnel. The RIA (starting on page 8) has not taken into account the cost of all the changes that would be required in the IT systems currently in place.
It is not shown that replacing a powerful and striking language such as 'critical task' by a long term such as 'flight safety sensitive maintenance task', be effective for the safety improvement. It is even considered that such a change is creating confusion on a safety-related topic.

response | Repeated comment.

comment | *62* ❖ comment by: *Airbus*

Comment related to:
Page 5, Explanatory Note, Paragraph IV, article 11, referring to CPS and KSI reports
ToR MDM.020, section 3., bullet 3
Page 17, AMC1 M.A.402(g)
Page 18, GM M.A.402 (g)
Page 20, AMC2 145.A.48(b)
Page 29, GM 145.A.48 (b)
Comment:
The comment is relative to the objective in the ToR (section 3., bullet 3) where it is mentioned:
"Give a methodology (general criteria) how to identify those maintenance tasks […]. Identify which systems or maintenance tasks of the aircraft should be considered as "critical" in the sense of having possibly a catastrophic, hazardous or major failure in the case of undetected maintenance errors."
When the ToR were issued, the FAA Key Safety Information (KSI) project was on-going. But since, the KSI Final report, dated March 2007, has been issued and says that:

	"the OEM would identify KSI using the following criteria: Identify maintenance and operational tasks and procedures related to mitigating the risk of: - A single failure leading to a catastrophic or hazardous failure condition - A foreseeable common cause failure leading to a catastrophic failure condition - A latent failure in a dual-failure combination leading to a catastrophic or hazardous failure condition" The language (catastrophic, hazardous, major) that is used to select the KSI in order to capture and then to highlight key procedures and associated tasks that must be protected, maintained and correctly performed throughout the life of the airplane(s) should be addressed by the system safety assessment. Is this language defined in the EASA Part M/Part 145 or in the Certification Specifications (associated to Part 21)? Is it considered that EASA Part M/Part 145 organization would have to have a procedure, to include in their review, the effect of single failure **or** the effect of multiple failures? Is it only necessary to look at single failure? The end result will be different depending on criteria to be used. The complexity and the number of items that might result from this review has an impact on organization and persons performing maintenance The Explanatory note and the regulation/AMC/GM should say <u>how</u> (methodology) and <u>where</u> (documents, databases, etc) the Part M and Part 145 organizations can get access to the OEM Key Safety Information (if this language KSI is retained) to ensure that no omission or over conservatism will happen in the selection of aircraft items and maintenance tasks. It could be studied if the information delivered by DAH cover the expectations. The KSI project focused on aircraft systems maintenance tasks and procedures only The identification of the critical aircraft items/maintenance tasks and procedures should be a combination of the DAH and Maintenance organization inputs. <u>Comment justification</u>: The NPA suggests that the involvement of the TC holders, in the definition of the "critical systems", is left apart in spite of the AIBN recommendation 12/2006 ("Special consideration should be made as to whether the manufacturer should be given a responsibility on this matter."). This decision seems to be driven by the FAA CPS and KSI projects. However, the Explanatory note doesn't say <u>how</u> the Part M and Part 145 organizations can evaluate the criticality of systems in lieu of OEM as suggested in AMC1 M.A.402(g) and AMC2 145.A.48(b). These AMC provide only a limited number of critical maintenance task examples. The GM M.A.402 (g)/GM 145.A.48 (b) record different sources (<u>where</u>) to find data for the identification of critical maintenance tasks including information from TC holder (refer to bullet 1) The existing regulations do not require the TC holder to identify (/to flag) such tasks in its publications.
response	Repeated comment.

comment	*66* comment by: *Airbus* <u>Comment related to</u>: Page 20, AMC2 145.A.48(b) <u>Suggested change</u>: It is well noted that b) asks for a procedure that should describe which data are used to identify the flight safety sensitive maintenance tasks.

	It can be made reference to the Key Safety Information (If KSI term is retained) Process description and recommendation final report that identifies the process and the KSI items document containing the following information: - KSI Type - KSI Title - Reference(s) to the documents(s) in which the KSI procedures and associated tasks can be found. - Reason for having the KSI Then, it makes sense to refer to NPA proposed GM M.A.402(g) / GM 145.A.48(b). Comment justification: For the sake of clarity on the means which are envisaged to implement this process.
response	Not accepted. Once the KSI process is adopted by design approval holders it should become part of the design approval holder information and therefore already covered in the proposed AMC.

comment	*78* comment by: *ICAO* In a) 1), "such us" should be "such as"; At the end of a) 3), "or" should be "and"; In a) 4), there should be a comma between "Overhaul" and "calibration". Then, AMC2 145. A. 48 (b) should appear as: **AMC2 145.A.48 (b) Performance of maintenance** FLIGHT SAFETY SENSITIVE MAINTENANCE TASKS a) The procedures should ensure that the following maintenance tasks are reviewed to assess their impact on safety: 1) Tasks that may affect the control of the aircraft flight path and attitude, such as installation, rigging and adjustments of flight controls, electronic or mechanical; 2) Aircraft stability control systems (autopilot, fuel transfer); 3) Tasks that may affect the propulsive force of the aircraft, including installation of aircraft engines, propellers and rotors; and 4) Overhaul, calibration or rigging of components such as engines, propellers, transmissions and gearboxes.
response	Accepted.

comment	*107* comment by: *UK CAA* **Page No:** 20 of 30 **Paragraph No:** AMC2 145.A.48(b)a)1) **Comment:** Typographical error in 2nd line. **Proposed Text:** Change 'us' to 'as'.
response	Accepted.

comment	*136* comment by: *KLM Engineering & Maintenance* Comment: in this paragraph Flight Safety Sensitive Maintenance Tasks are defined. We believe the definition of Flight Safety Sensitive Maintenance Tasks should be done at a higher level in the regulations, e.g. somewhere in Article 2. Secondly, also here the text is too vague because we still do not know what is

	meant by "Safety" (and we think it was meant to say "Flight Safety" in the text) . And thirdly, AMC1 to M.A.402(g) has the same text as AMC2 to 145.A.48 (b). But under this NPA , M.A. 402 is no longer applicable to Part 145 organisations: therefore it is unclear what the applicability is of the tasks mentioned both under M.A.402 and 145 .A.48 . E.g., does 145.A.48 (b) also refer to tasks on reciprocating engines? As a final comment to this paragraph, in subitem 4 there must be a comma between "overhaul"and "calibration".
response	Partially accepted. First comment: The definition of critical maintenance tasks is in article 2, this AMC provides some examples and guidelines. Second comment: Word 'flight' included before safety Third comment: 145.A.48 (b) refers to maintenance performed by a Part-145 under the scope of its approval. (aircraft, engines and propellers) Fourth comment: accepted.

comment	*159* comment by: *Boeing* Page 20 Paragraph AMC2 145.A.48 (b), Performance of maintenance; FLIGHT SAFETY SENSITIVE MAINTENANCE TASKS; Sub-paragraph a) 3) The proposed text states: ***AMC2 145.A.48 (b) Performance of maintenance*** *FLIGHT SAFETY SENSITIVE MAINTENANCE TASKS* *a) The procedures should ensure that the following maintenance tasks are reviewed to assess their impact on safety:* … *3) Task that may affect the propulsive force of the aircraft, including installation of aircraft engines, propellers and rotors; and …* **REQUESTED CHANGE:** Revise the text of sub-paragraph 3) as follows: *3) Task that may affect the ~~propulsive force of the aircraft, including installation of aircraft engines, propellers and rotors~~* ***installation and adjustment of components related to the propulsive force of the aircraft***; and … **JUSTIFICATION:** "*Tasks that may affect propulsive force of the aircraft*" could be interpreted as every engine maintenance procedure in the AMM, CMM, and Engine Manual. The resulting number of tasks would likely number in the hundreds, and all of the tasks require additional inspection requirements by virtue of the independent inspection requirement. Our suggested change in wording differentiates sub-paragraph 3) from sub-paragraph 4) ("*Overhaul, calibration or rigging of components such as engines, propellers, transmissions and gearboxes").* It also limits the number of tasks by excluding ones that cover painting and cleaning.
response	Repeated comment see response to 157.

comment	*162* comment by: *Rolls-Royce plc (ZM)* In addition to 1), 2), 3) I propose to add: 4) Rigging of components such as engines, propellers, transmissions and gearboxes. This would make Overhaul shops aware that FSSMT also exist on "components" like engines (assembly of

	critical rotating parts) or propellers (installation of propeller blades) etc.
response	Noted. The text is already there.

B. Draft Rules - III Draft Decision AMC to Part-145 - AMC3 145.A.48 (b) Performance of maintenance p. 20-22

comment	*1* comment by: *APT AvConsult Ltd* The proposed re-inspection as worded would effectively dilute the proposals outlined in this NPA. Currently, under 145.A.65, many interpret the requirements for safety critical maintenance as relating to the same maintenance on separate but identical systems at the same time. These systems are most often interpreted as those not considered as vital points (such as oil fillers etc) and require a level of caution in accomplishment and self-inspection (with separate entries in documents for certification) but in which their malfunction not cause serious damage or loss. APT AvConsult considers that the proposed re-inspection under unforeseen circumstances could be interpreted by some for commercial expediency, especially during down-route maintenance. We suggest a clear distinction be made between safety-critical maintenance and that requiring independent inspections; the former acomplished by one person with self re-inspection of tasks such as oil filler caps etc and the latter requiring, IN ALL CIRCUMSTANCES, two documented inspections by separate persons, for example, when replacing a flight control component. We further suggest the UK CAA's well established Duplicate Inspection requirement outlined in BCARs is a bench mark system for such independent inspections and has been widely adopted without any modification by regulators and AMOs around the world.
response	Not accepted. The review group considers that re-inspection could be used in exceptional circumstances as an error capturing method for critical maintenance tasks. The maintenance organisation has to describe in its MOE when and how the re-inspection could be used, this has to be approved by the competent authority.

comment	*17* comment by: *TAM MRO* We have the quality control inspector who is responsible for inspection critical tasks that a qualification mechanic done. Usually when the inspector has the appropriate qualification he/she release the task too. So they will assume the independent qualified person and the authorised person roles. Is accepted?
response	Noted. The independent qualified person needs to be independent from the work so he/she cannot perform or supervise the work. For an independent inspection, the roles of authorised person (this means person performing the work, taking responsibility for the proper accomplishment and releasing the work) and independent qualified person should be assigned to two different persons.

comment	*20* comment by: *ACE quality*

My comment is about the proposed AMC 145.A.48(b).c).1). ii. B
For me this point seems problematic. Very ambiguous.
As proposed GM 145A48(c) also say and in the real life: An authorised person is not necessarily certifying staff. It means an authorised person not necessarily have license at all. For me the sentence " The independent qualified person should hold as a minimum the same part-66 license subcategory ... as the authorised person" this is very problematic. If I would be a mathematician I would say 0 is equal to 0 so this sentence is OK, but for aviation professionals this sentence is not acceptable. I suggest that the independent qualified person shall have the same level of company authorisation, or shall have the same trainings or something else instead of Part 66 license. Further because during component maintenance it is also can be an issue to talk about error capturing during working on a component having multiple sub component. And in component maintenance part-66 license has no sense at all.
However I have problem with this point I found this NPA 2012-04 as a good proposal, and I think this will help the industry to work on a same high quality level.

response

Partially accepted.
Qualification of the 'independent qualified person' has been amended explaining different possibilities.
The text about the 'authorised person" is already existing text (please refer to current AMC 145.A.65). Nevertheless GM 145.A.48 has been reworded/ restructured to make it more clear to understand.
As for component maintenance, the definition of 'critical maintenance tasks' limits its applicability to aircraft, engines and propellers. Other components are excluded.

comment

21 comment by: *Luxair Technics*

item c) 1) i. A. -> *the "authorised person"* (performing the independent inspection) *assumes full responsibility for satisfactory completion task*
Precision to be proposed : if the task has subtasks with independent inspection, he takes only the responsibility of the subtask(s) he controlled
item c) 1) ii. B. -> *the independent qualified person should hold as a minimum the same part 66 licence subcategory as the authorised person* (performing the task or certified it)
means that a B1 or B2 task with control performed by an avionic should be controlled by a B2, but as this task is a B1 or B2 task, it should be possible to be controled also by a B1, so we propose that the independent qualified person should hold the part 66 licence corresponding to the type of wok to control, not depending of the person performing the task

response

Accepted.
Comment 1: Partially accepted. GM 145.A.48 has been reworded to highlight the role of the authorised person in the performance of maintenance.
Comment 2: Qualification of the 'independent qualified person' has been amended explaining different possibilities.

comment

38 comment by: *Blue Jet Sp. z o. o.*

AMC3 145.A.48 (b)
c)1)ii Qualifications of personnel performing independent inspection

This paragraph should describe qualifications of personnel performing

	independent inspection more **detailed**. It is crucial to clarify if term **"specific inspection"** means method of inspection, e.g visual, functional ,or it means inspection required by specific workcard. In first case, independent qualified personnel can be any personnel holding valid Part-66 license (with same subcategory) authorized by organization to certify maintenance. In second case personnel with Part-66 license (with same subcategory) who can certify maintenance on another aircraft type will have to be trained to perform this "specific inspection". In our opinion, second case described, would be very inconvenient for maintenance organizations. It would require organization to organize special trainings for personnel performing independent inspection and issue special authorizations for this personnel . We belive that personnel authorised by organization to certify maintenance on one type of aircraft has enough experience and is properly trained to perform independent inspection on all types of aircraft in scope of approval of organization. Our proposition is to change paragraph is as follow: "A. The organisation should have procedures to demonstrate that the 'independent qualified person' has been trained and has gained experience on the specific **method of** inspection being performed."
response	Not accepted. The AMC 145.A.48 (b) provides a means to comply, organisations may define alternative means adequate to the nature or environment of the organisation.

comment	*40* comment by: *Tahsin Istanbullu-Pegasus Airlines* Comment: This should be reviwed in light of normally expected workload of a line station. Shifts with only one authorised persons in remote stations are possible and should be allowed.
response	Not accepted. The proposal already includes in AMC4 145.A48 (b) the possibility to use re-inspection in exceptional circumstances.

comment	*59* comment by: *NHAF Technical committee* Page 17: AMC2 M.A.402 (g), (b), 1) and 2) and Page 21, AMC3 145.A.48 (b) c), ii item B. Text in these paragraphs does not reflect the same requirement, for an independent qualified person. The requirements also, does not state what kind of type training the independent qualified person need to have this role. As this is an inspection to be performed after maintenance of systems critical to flight safety, we will recommend full level 3 type rating training to be mandatory for this role. (Support staff, of CRS personell.)
response	Repeated comment. See comment 58.

comment	*67* comment by: *Airbus* Comment related to:

	Page 20, AMC3 145.A.48 (b) – Definition of 'error capturing method' Suggested change: The definition given in AMC3 145.A.45 (b) for error capturing method is confusing with the internal occurrence reporting that is defined in 145.A.60. The term "capturing" should be replaced by "detection" in the rule and in the AMC. This comment is treated with proposal elaborated in Airbus comment 65. Comment justification: With the internal occurrence reporting, there is already a procedure that, in principle analyzes the reporting and the development of curative/preventive actions.
response	Not accepted. The review group considers that the word 'capturing' reflects better the need to identify errors that could have been introduced for critical maintenance tasks.

comment	*77* comment by: *Dassault Aviation* Dassault Aviation comments about **AMC3 145.A.48 (b) Performance of maintenance** ERROR CAPTURING METHODS a) Error capturing methods are those actions defined by the organisation to detect maintenance errors made when performing maintenance. b) The organisation should ensure that the error capturing methods are adequate to the work and the disturbance of the system. A combination of several actions (visual inspection, operational check, functional test, rigging check, record verification) may be necessary in some cases Dassault Aviation propose to add : "Record verification" to the list of possible actions. An error capturing method may be recording information and checking it. For instance if the wrong grease is used, this may block a mechanism; The type of grease used shall be recorded. No later inspection is possible. If a wrong torque value is used, no inspection is possible, it must be recorded, when necessary. c) Error capturing methods may consist of: 1) Independent inspection: … 2) Re-inspection: … It seems, reading this AMC, that only 2 error capturing methods are identified and that they are inspections. This is not consistent with the intent of the NPA : 21. "Paragraph 145.A.48 (b) introduces the concept of error capturing methods instead of just mirroring from the current M.A.402 (a) the requirement for an independent inspection. This variation is made to acknowledge the fact that Part-145 organisations may develop and implement measures to capture errors other than independent inspections." This is also not consitent with the item c) of this AMC : as error capturing methods may be also: operational check, functional test, rigging check, record verification Dassault Aviation propose to add to c) : 3) any other method or combination of methods such as operational check, functional test, rigging check, record verification found appropriate by the maintenance organization.
response	Not accepted. The review group does not have very clear how the record verification can be used as an error capturing method. Nevertheless, the AMC provides for a

	means to comply and other means to comply may be developed by the organisation to fit their particular environment.
comment	*79* comment by: *ICAO* In AMC3 145.A.48 (b) Performance of maintenance, item ii. B., to avoid confusion, the "independent qualified person" and "authorised person" should be put in single quotation marks to be consistent in the way when these two expressions are used throughout the NPA. In addition, suggest adding the word "licence" after "equivalent national". Then, ii. B. would read: B. The 'independent qualified person' should hold as a minimum the same Part-66 licence subcategory (or equivalent national licence when national rules apply) as the 'authorised person'.
response	Repeated comment. See answer to comment 55
comment	*80* comment by: *ICAO* In AMC.145.A.48 (b) Performance of maintenance, at the covering text of item iii, suggest putting the "independent qualified person" in single quotation marks. For item iii G, suggest adopting the same wording style as items A through F by adding the words "should be checked for updating and applicability" at the end. Thus, the covering text of item iii would read: iii. The independent inspection should ensure correct assembly, locking and sense of operation. When inspecting control systems that have undergone maintenance, the 'independent qualified person' should consider the following points independently: And the item iii G would read: G. software that is part of the flight safety sensitive maintenance task should be checked for updating and applicability (i.e. version, compatibility with aircraft configuration).
response	Repeated comment. See answer to comment 75
comment	*108* comment by: *UK CAA* **Page No:** 20 of 30 **Paragraph No:** AMC3 145.A.48 (b) paragraph c) **Comment:** When error capturing methods such as independent inspections reveal defects this should require a further re-inspection of the system, and it to be reported through the internal occurrence reporting system to ensure it is recorded, and to allow further investigation if required. Therefore add an additional paragraph as 3) at the bottom of paragraph c). **Justification:** To highlight errors and latent failures and allow them to be further investigated. **Proposed Text:** "In the event that as a result of the error capturing method used a defect is found, it will be necessary to record the defect and carry out further independent inspections when appropriate rectification action has been completed. This should also be reported through the internal occurrence reporting system."
response	Repeated comment See response to comment 106

comment	*109* comment by: *UK CAA* **Page No:** 20 of 30 **Paragraph No:** AMC3 145.A.48 (b) paragraph c)1)i.A **Comment: :** The current wording does not place the responsibility on the 'authorised person' to detail the full scope of the inspection. **Justification:** There is a need to ensure that the 'independent qualified person' referred to in Para a) 2 has a clear understanding of the tasks and areas that are to be independently inspected. **Proposed Text:** "A . The 'authorised person' assumes full responsibility for satisfactory completion of the task **and must ensure that the workcards clearly identify the scope of the independent inspection**;"
response	Not accepted. The scope of the inspection is defined by the independent qualified person and it should be identified in the workcard system as explained in AMC4 145.A.48(b).

comment	*110* comment by: *UK CAA* **Page No:** 21 of 30 **Paragraph No:** AMC3 145.A.48(b) paragraph c)1)i.C **Comment:** The text does not cover base maintenance where the release is made by a CAT C certifier. **Justification:** During base maintenance of large aircraft the task will not be subject to an individual maintenance release to service. **Proposed Text:** "the maintenance release **or sign off for the completion of** the task is performed by the 'authorised person' after the independent inspection is carried out satisfactorily; and"
response	Accepted. Text has been amended.

comment	*111* comment by: *UK CAA* **Page No:** 21 of 30 **Paragraph No:** AMC3 145.A.48(b) paragraph c)1)i.D **Comment:** The text does not reflect the common text as specified in AMC2 M.A.402(g)(a)4. **Justification:** The workcard should reference date, name and authorisation number. **Proposed Text:** "the workcard system established by the organisation should record **the name**, signatures **and authorisation number** of both persons, **the date of and** the details of the inspection, as necessary, before the maintenance release, **or sign off for the completion of** the task is issued."
response	Partially accepted. The text has been amended but not as proposed by the commentator.

comment	*116* comment by: *Air Greenland* **AMC3 145.A.48 (b) c) 1) ii B – Qualification of personnel performing independent inspection.** For operators in remote regions, where typically only one licenced mechanic is available, it is a significant burden to limit the possibility for independent

	inspection to Part 66 licenced person of the same subcategory. It has to be acknowledged that any person found qualified by the organization through adequate procedures, should be allowed to perform independent inspection of a certain task, regardless of formal credentials. An example may be task trained flight crew or ground support personnel.
response	Accepted. Qualification of the "independent qualified person" has been amended explaining different possibilities.

comment	*117* comment by: *Air Greenland* **AMC3 145.A.48 (b) c) 1) iii E** For smaller operators with limited resources, it is unrealistic to demand procedures which result in requirement of more than two qualified persons to perform maintenance in redundant systems. The AMC should clarify that this requirement may be met by independent inspection in combination with re-inspection of redundant systems, if sufficient qualified personnel are not available.
response	Accepted. Paragraph has been deleted.

comment	*118* comment by: *Air Greenland* **AMC3 145.A.48 (b) c) 2 – Re-inspection.** For operators in remote regions, where typically only one licenced mechanic is available, it is a significant burden to limit the possibility for re-inspection to unforeseen circumstances. This should be allowed for planned tasks as well, possibly subject to review/risk assessment of individual tasks, with due consideration taken of complexity and criticality.
response	Noted The proposal introduces the re-inspection in this AMC as an alternative to the independent inspection in the unforeseen situations. Other means of compliance different from independent inspection and/or re-inspection could be defined by the organisation taking into account its particular conditions and environment, provided the safety objective of capturing errors is achieved.

comment	*120* comment by: *Ian Robinson, Patriot Aerospace Group* AMC3 145.A.48 (b) c)1) ii B – Error Capturing Methods This is unnecessarily restrictive within a Part 145 environment. In a small or medium size company, or a company which specialises in third party maintenance for a number of different customers and aircraft types, it may not be practical to have the 'independent qualified person' holding the same Part 66 licence sub-category as the authorised person. In fact, it is not at all necessary. Why should an individual who has a rating on a turbine engined rotorcraft, not be capable of signing an independent inspection on a piston engined rotorcraft, or vice versa? Or a piston engined aeroplane, and a piston engined rotorcraft? Or any other combination of categories? Currently, it is possible to issue an independent inspection authorisation to persons without a Part 66 licence, as long as they have appropriate qualifications, training and experience. We propose that AMC3 145.A.48 (b) c)1) ii B is deleted, leaving AMC3 145.A.48

	(b) c)1) ii A as a description of the qualifications required.
response	Accepted. Qualification of the 'independent qualified person' has been amended explaining different possibilities.

comment	*141* comment by: *AIR FRANCE* After review of AMC3 145.A.48 (b) c) 1) ii B defining the qualification level required for the " independent qualified person ", it is requested to remove the notion of Part-66 licence for this person considering that holding a Part-66 license does not bring additional security and can significantly complexify the maintenance staff management. The privilege associated with the detention of the Part-66 license is to be empowered to issue CRS. Nothing requires the maintenance organization to hold a number of oversized persons holding a license, the agency is only required to hold an amount of "Certifying staff" necessary and sufficient for its activity. Moreover, the new paragraph 145.A.48 must be considered as applicable for aircraft, engine and appliance parts and consequently the Part 66 license should not be applicable as minimum qualification.
response	Accepted. Qualification of the 'independent qualified person' has been amended explaining different possibilities.

comment	*142* comment by: *Bond Offshore Helicopters* AMC3 145.A.48 (b) c)1) ii B - Qualifications of personnel performing independent inspections Although fully appreciated that the Agency is proposing to set a bench-mark qualification requirement for personnel performing the independent inspection, it is our opinion that this proposed requirement is unnecessarily restrictive within a Part 145 Organisation. It will especially cause problems in line maintenance stations which are "leanly" manned. It is suggested that the Agency would allow for appropriately task trained and competence assessed personnel to perform such independent inspections. The Agency could provide suitable guidance within the AMC material as to the required level of training that would be acceptable. These procedures can then be captured in the company procedures and approved by the Authority. The Agency is urged to review this proposal prior to acceptance into the Regulation.
response	Accepted. Qualification of the 'independent qualified person' has been amended explaining different possibilities.

comment	*144* comment by: *Bristow (European Operations)* This is unnecessarily restrictive within a Part 145 environment. In a small or medium size company, or a company which specialises in third party maintenance for a number of different customers and aircraft types, it may not

	be practical to have the 'independent qualified person' holding the same Part 66 licence sub-category as the authorised person. In fact, it is not at all necessary. Why should an individual who has a rating on a turbine engined rotorcraft, not be capable of signing an independent inspection on a piston engined rotorcraft, or vice versa? Or a piston engined aeroplane, and a piston engined rotorcraft? Or any other combination of categories? Currently, it is possible to issue an independent inspection authorisation to persons without a Part 66 licence, as long as they have appropriate qualifications, training and experience. We propose that AMC3 145.A.48 (b) c)1) ii B is deleted, leaving AMC3 145.A.48 (b) c)1) ii A as a description of the qualifications required. **Entered on behalf of the European Helicopter Association Technical Committee.**
response	Accepted. Qualification of the 'independent qualified person' has been amended explaining different possibilities.

comment	*160* comment by: *Boeing* Page: 20 Paragraph: AMC3 145.A.48 (b) - Performance of maintenance ERROR CAPTURING METHODS Sub-paragraph c) 1) i. The proposed text states: ***AMC3 145.A.48 (b) - Performance of maintenance*** ***INDEPENDENT INSPECTION*** *…* *c) Error capturing methods may consist of:* *1) Independent inspection:* *i. An independent inspection consists of an inspection performed by an 'independent qualified person' of a task carried out by an 'authorised person', taking into account that:* **REQUESTED CHANGE:** Revise this section as follows: ***AMC3 145.A.48 (b) - Performance of maintenance*** ~~*INDEPENDENT*~~ ***REQUIRED*** *INSPECTION* *c) Error capturing methods may consist of:* *1) Independent inspection:* *i.* ~~*An independent*~~ ***A required*** *inspection consists of an inspection performed by an 'independent qualified person' of a task carried out by an 'authorised person', taking into account that:* **JUSTIFICATION:** The term *"required inspection"* is an aviation industry term widely used for many years by many operators and regulatory agencies. Introducing a new term -- *"independent inspection"* -- will likely cause confusion and misunderstanding. A significant number of operators have already embedded the term *"required inspection"* into their processes, maintenance documentation, and computing systems. Changing to the new term *"independent inspection"* would be costly for some operators. Further, some regulatory agencies may require that operators continue to use the term *"required inspection,"* thereby forcing some operators to employ dual terminology.
response	Not accepted.

	The term independent inspection is commonly used in the European maintenance organisations. The term 'required inspection' would create confusion.

comment	*163* comment by: *Rolls-Royce plc (ZM)* I propose to add item C. considering Pilot Owner Maintenance.
response	Not accepted. There is no pilot owner maintenance in the Part-145 environment.

comment	*166* comment by: *Lufthansa Technik AG* AMC3 145.A.48(b) iii (E.) overshoots the target: Maintenance has to be performed and often been check by a functional check by the mechanic (first check). Duplicate ckeck will be done by independent qualified person (duplicate inspection). This is sufficient. Unneccessary burden would be to have in the case of redundant control system a third or fourth person (if maintenance of redundant systems have to performed by different mechanics) involved as proposed by 145.A.48(b) iii (E.).
response	Accepted. Point E has been deleted.

comment	*167* comment by: *EUROCOPTER* AMC3 145.A.48 c)1)ii)B: Following text is proposed: *"The independant qualified person **may** hold the same Part 66 licence subcategory (or equivalent national when national rules apply) as the authorised person, **and should be qualified according to the procedure of the Part 145 organization**."*
response	Noted. Qualification of the 'independent qualified person' has been amended explaining different possibilities.

comment	*170* comment by: *AESA* **1. Reinspection** The term "re-inspection" is used in two different situations and this can lead to confusion. Firstly, AMC 145.A.48 b defines the reinspection (of a Flight Safety Sensitive Maintenance Task) as an error capturing method, alternative to the independent inspection. Here the reinspection should only be used in unforeseen circumstances when only one person is available. Secondly, AMC 145.A.48c mentions the concept of reinspection (of an identical task). In this case, it is the reinspecion of an identical task and it is not restricted to unforeseen circumstances so it can be used under normal planning of works (example one single person attending a transit check). To avoid misunderstanding, the proposal is to remove the paragraph AMC3 145.A.48 (b) c) 2) and adding a point iv to AMC 3 145.A.48(b) c) 1) iv) the independent inspection can be performed by the same person performing the maintenance task. This case should only be used in foreseen circumstances when only one person is available to carry out the task and perform the independent inspection. The circumstances cannot be considered

	unforeseen if the organization has not programmed a suitable independent qualified person onto that particular line station or shift.
response	Accepted. Paragraph has been reworded.

comment	*171* comment by: *AESA* **1. AMC3 to 145.A.48.(b), c).1.ii.B, National rules** The expression "national rules" on AMC3 to 145.A.48.(b), c).1.ii.B can be confusing. If it refers to aircraft other than airplanes and helicopters and components, then another wording would be more appropriate. Also it is not clear what happens with organizations located outside the EU, in this case Appendix IV applies for certifying staff, not national rules and it does not seem coherent to require a Part 66 license to the independent inspector when it is not required to the certifying staff. The following wording is proposed: The independent qualified person should hold as a minimum the same Part-66 licence subcategory (or equivalent national when national requirements for certifying staff or Appendix IV apply) as the authorized person.
response	Noted. Qualification of the 'independent qualified person' has been amended explaining different possibilities.

comment	*172* comment by: *AESA* **1. AMC3 to 145.A.48.(b), c).1.ii.A Independent qualified person** This NPA introduces a new role of personnel (independent qualified personnel), so it would be of beneficial to harmonize the mix of nomenclatures of personnel that are contained in the regulation. For example, AMC 1 145.A.30 (e) - Personnel requirements defines managers, planners, supervisors, mechanics,…. AMC 145.A.70 (MOE Layout) contains Certifying staff support staff qualification and training procedures (3.4), Qualifying inspectors (3.7) and Qualifying mechanics (3.8). A proposal may be to include the independent qualified personnel under the term of "inspector" , in this way the procedures required to describe the qualifications of these personnel should be included in 3.7 of MOE.
response	Not accepted. The review group considers that making reference to the independent qualified person on chapter 3.7 would create confusion. Some organisations use the terms inspectors to designate staff at the incoming receiving inspection department of the stores.

comment	*179* comment by: *Bristow (European Operations)* AMC3 145.A.48 (b) c)1) ii B - Qualifications of personnel performing independent inspections Although fully appreciated that the Agency is proposing to set a bench-mark qualification requirement for personnel performing the independent inspection, it is our opinion that this proposed requirement is unnecessarily restrictive within a Part 145 Organisation. It will especially cause problems in line maintenance stations which are "leanly" manned. It is suggested that the Agency would allow for appropriately task trained and

	competence assessed personnel to perform such independent inspections. The Agency could provide suitable guidance within the AMC material as to the required level of training that would be acceptable. These procedures can then be captured in the company procedures and approved by the Authority. The Agency is urged to review this proposal prior to acceptance into the Regulation. Entered on behalf of the European Helicopter Association Technical Committee.
response	Accepted. Qualification of the 'independent qualified person' has been amended explaining different possibilities.

B. Draft Rules - III Draft Decision AMC to Part-145 - AMC 145.A.48 (c) Performance of maintenance p. 22

comment	*65* ❖ comment by: *Airbus* Comment related to: Page 13, 145.A.48 and 145.A.65 AMC 145.A.48(b), AMC 145.A.48(c), GM 145.A.48(b), GM1/2/3 145.A.48(c) Suggested change: Airbus disagrees to create a new requirement 145.A.48 and recommends to keep existing requirements of 145.A.65 with small change and to clarify where applicable the AMC 145.A.65(b)3 taking into account missing elements needed to be transposed from existing AMC M.A402(a) It is proposed to put in the rule that the maintenance organization should identify the critical systems/structure elements and maintenance tasks, title, reference of the source or the reason for having selected such elements/maintenance tasks, training aspect of special interest. The preliminary identification of aircraft elements/maintenance tasks in a document providing cognizance and controls of the critical elements/maintenance tasks, before performing the tasks and then putting in place an error capturing method should be part of the rule. The attached proposal is a review of the Part-145 aspect only but can easily be adapted to modify Part-M accordingly with it's particulars. Comment justification: It is reasonable to require the identification of and the emphasis on the critical tasks and aircraft elements. The error capturing or detection method that is required to be implemented after the performance of any critical maintenance tasks is a concept that needs to determine such tasks as a preliminary step in the process. It is not clear why the risk of multiple errors and errors repeated in identical tasks should be minimized for line and base maintenance only. For example when several servo controls are removed from aircraft for a shop visit, multiple errors and errors repeated in accomplishing identical tasks may occur. While maintenance errors and critical task are linked with safety aspects ,145 A.65 already deals with maintenance procedures and safety and quality action, the introduction of 145.A.48 creates confusion.
response	Repeated comment

comment	*81* comment by: *ICAO* In AMC145.A.48 (c) Performance of maintenance, item b) 3), suggest putting

	the "authorised person" in single quotation marks to be consistent in the way when this expression is used throughout the NPA. Then, item b) 3) would appear as: 3) that work performed by personnel under supervision (i.e. temporary staff, trainees) should be checked and signed-off by an 'authorised person'.
response	Accepted.

comment	*82* comment by: *ICAO* According to the definition of "maintenance" as included in Article 2 of the Commission Regulation (EC) No 2042/2003 of 20 November 2003, which reads: 'maintenance' means any one or combination of overhaul, repair, inspection, replacement, modification or defect rectification of an aircraft or component, with the exception of pre-flight inspection. "modification" and "repair" are covered by "maintenance". Therefore, suggest deleting the words "a modification, repair or" from paragraph AMC 145.A.48 (c) Performing of maintenance, item c). Thus, paragraph c) would read: c) ensuring that when carrying out maintenance, Critical Design Configuration Control Limitations are not compromised.
response	Repeated comment.

comment	*113* comment by: *UK CAA* **Page No:** 22 of 30 **Paragraph No:** AMC 145.A.48(c) paragraph c) **Comment:** There is too much emphasis on CDCCL requirements. Whilst important there are many Complex and Large aircraft where CDCCL is not applicable. Furthermore a CDCCL is part of an Airworthiness Limitation (AWL). **Justification:** Equally important is to ensure that any mandatory requirement including all Airworthiness Limitations and Airworthiness Directives are not compromised when performing maintenance. **Proposed Text:** "ensuring that when carrying out a modification, repair or maintenance, **Airworthiness Directives and Airworthiness Limitations, including where applicable** CDCCL requirements are not compromised."
response	Partially accepted. Text has been amended, although not as proposed by the comment. The text on CDCCL is transferred to a GM applicable only to organisations working with aircraft affected by CDCCL.

comment	*122* comment by: *Ian Robinson, Patriot Aerospace Group* AMC 145.A.48 (c) c) Performance of Maintenance, & GM3 145.A.48 (c) Performance of Maintenance CDCCL is referred to in both these paragraphs, giving the impression that all aircraft are subject to CDCCL regulations. This is another example of EASA writing rules for airlines, and completely ignoring all other areas of the aviation industry. There are thousands of aircraft, maintained by 145 organisations, operating CAT and Non-CAT ops, for which CDCCL does not apply. This should be made clear – after all, clarification is the purpose of AMC's and GM is it not?

response	Accepted. The text on CDCCL is transferred to a GM applicable only to organisations working with aircraft affected by CDCCL.

comment	*137* comment by: *KLM Engineering & Maintenance* Comment: (see also comment 133) The text of 145.A.48 c) is too vague: which maintenance tasks are meant in this paragraph? Is it for all maintenance tasks, only Flight safety sensitive maintenance tasks, or .....? Furthermore, the type of operation and the environment wherein the aircraft operation takes place are partly a basis for certain tasks (very likely also flight safety sensitive tasks) in the Operators Aircraft Maintenance Programme. Now that M.A.402 is no longer applicable to Part 145 organizations and it is up to the Part 145 Maintenance Organisation to define Flight Safety Sensitive Maintenance Tasks and –Systems, it seems the associated Operator responsibilities for tasks as defined in the Maintenance Program shift towards the Maintenance Organisation. Is it indeed the intent of this NPA to have the Maintenance Organisation shoulder the sole responsibility for defining these tasks and systems?
response	Repeated comment, see comment 133.

comment	*145* comment by: *Bristow (European Operations)* AMC 145.A.48 (c) c) Performance of Maintenance, & GM3 145.A.48 (c) Performance of Maintenance CDCCL is referred to in both these paragraphs, giving the impression that all aircraft are subject to CDCCL regulations. This is another example of EASA writing rules for airlines, and completely ignoring all other areas of the aviation industry. There are thousands of aircraft, maintained by 145 organisations, operating CAT and Non-CAT ops, for which CDCCL does not apply. This should be made clear – after all, clarification is the purpose of AMC's and GM is it not? **Entered on behalf of the European Helicopter Association Techncial Committee**
response	Accepted. The text on CDCCL is transferred to a GM applicable only to organisations working with aircraft affected by CDCCL.

comment	*148* comment by: *GE Aviation* AMC 145.A.48 (c) proposes that in a single-person scenario, the person should re-inspect their own work. A more robust approach might focus on verifying that the work corresponds exactly to the work instruction. Re-inspection of a person's own work would not catch the scenario where the person may have misunderstood the work instruction and performed the task the way he thought it should be done – repeatably, on multiple engines – but with different intent than the work instruction.
response	Noted. The proposal introduces the re-inspection in this AMC as an alternative to the independent inspection in unforeseen situations. Other means of compliance

different from independent inspection and/or re-inspection could be defined by the organisation taking into account its particular conditions and environment, provided the safety objective of capturing errors is achieved.

comment *182* comment by: *DGAC FRANCE*

1. AFFECTED PARAGRAPH:
Paragraph AMC 145.A.48(c)
2. PROPOSED COMMENT:
Move the c paragraph to appropriate place as it is not "multiple errors" or "repetitive errors" specifically related.
3. JUSTIFICATION:
The (c) part of this paragraph is a valid concern, but is independent of the multiple errors or repetitive errors" concerns that is supposed to be addressed by the AMC. It can apply also to any single error. Therefore, it should be move to a more appropriate part, or put in a separate AMC paragraph.

response Accepted.
The text on CDCCL is transferred to a GM applicable only to organisations working with aircraft affected by CDCCL.

B. Draft Rules - III Draft Decision AMC to Part-145 - AMC 145.A.65(b)(3) Safety and quality policy, maintenance procedures and quality system p. 22-23

comment *11* comment by: *SVFB/SAMA*

AMC3 145.A.48(b) pg 22v30 and GM pg 29/30
FLIGHT SENSITIVE MAINTENANCE TASKS, general for the whole point:
EASA is not aware, (as with the TNA) how much work is loaded up to the MRO's by request (a):
"to define the error capturing methods" for the whole scope of maintenance.

response Not accepted.
AMC3 145.A.48 (b) provides guidelines and examples of error capturing methods. Besides, the use of error capturing methods is an already existing practice in the maintenance industry.

comment *138* comment by: *KLM Engineering & Maintenance*

Comment on deleted text with respect to the note on "sign-off" : NPA 2012-04 introduced a new Part-145 paragraph (145.A.48) for "flight sensitive maintenance task" previously called "Critical tasks" in Part-145. It transposes the 145.A.65(b)(3) into the new paragraph 145.A.48 which results in deleting the definition of sign-off personnel from the Note (see below) in AMC 145.A.65(b)(3) to this paragraph and push it to a place where it becomes applicable to only critical tasks/flight sensitive maintenance tasks. The definition of sign-off personnel is subject to the Terms of Reference for Rulemaking task 145.024, leaving the industry with (a gap) no definition and conditions for the sign-off of maintenance tasks other than 'critical tasks' until the outcome (Decision) of Rulemaking task 145.024 is published.

response Partially accepted.
The text has been transferred to GM 145.A.48 Performance of maintenance.

B. Draft Rules - III Draft Decision AMC to Part-145 - AMC 145.A.70 (a) Maintenance organisation exposition p. 23

comment	*13* comment by: *SVFB/SAMA* **GM2 145.A.48(c)** A "sign off" is a statement by the authorised person… We do not object the process, but we object, that to the numerous categories of Licenses B1-B3 and more coming, EASA is introducing once more an additional category, like earlier "certifying staff", "support staff" and here now new **"authorised person".** It will be beneficial for major MRO's, but it will again be additional burden without a safety impact on SME MRO's. The next step is 1000 Moe's will have to be changed and to the many lists of personal they already have must add this category, and so must 30 NAA's, and they all must be trained and it will need additional personnel etc. etc.. An example how bureaucracy is constantly growing. We definitely miss focus on how regulations can be reduced by EASA and it's 30 NAA's
response	Not accepted. This is already existing text, so there is no need for changes to the already approved MOEs The review group agrees to acknowledge on this CRD that there are a certain number of comments on the amount of terms/definitions. This issue is brought to the attention of the Agency to work on improving the harmonisation of the terminology and to issue a GM consolidating all the definitions/terminology used in Part-145.
comment	*19* comment by: *EPCOR B.V.* Dear Reader, **AMC 135 A.70 (a)** Part 2 Maintenance procedures. In my understanding 2.23 relates to 145.A.48 (b) 2.29 relates to 145.A.48 (a) and 2.30 relates to 145.A.28 (c) However in 145.A.48(c) explicit reference is made to: Line and Base Maintenance. In 2.30 no reference is made to Line and Base Maintenance. This could give the impression that such procedures are required to be described in MOE's for Component Maintenance Organisations as well, when such is not the requirement per 145.A.48. The question is to be clear for which scope (LM, Base, Comp.) 145.A.70 2.30 has been written.
response	Noted. 145.A.48(b) is applicable to maintenance organisations working on aircraft, engines and propellers, because critical maintenance tasks are applicable to aircraft, engines and propellers. 145.A.48 (c) is applicable to all maintenance organisations (working on aircraft, engines, propellers, components). It should be the goal of any maintenance organisation to prevent/minimise errors.
comment	*68* comment by: *Airbus*

Comment related to:
AMC 145.A.70(a) page 23, and Appendix II to AMC 145.B.20(5): EASA Form 6 page 27
Suggested change:
AMC 145.A.70 (a) Maintenance organisation exposition
PART 2 MAINTENANCE PROCEDURES
2.23.. Control of critical tasks. ~~Procedures for implementation of error capturing methods on flight safety sensitive maintenance tasks~~ *(for consistency with other Airbus comments)*
…
2.29 Procedures for general verification after completion of maintenance
~~2.30 Procedures for preventing errors during performance of maintenance~~…*(no need for such procedure as it should already be covered by 2.25 Procedures to detect and rectify maintenance errors)*
Appendix II to AMC 145.B.20(5): EASA Form 6
The table shall reflect above changes and L2.7 Line procedure for control of critical tasks (shall not be deleted)
Comment justification:
Critical tasks and maintenance errors are already covered within the existing MOEs, the proposed changes with the exception of 2.29 will create unnecessary burden to the organization.

response

Accepted.
The review group agrees to limit the changes to the MOE to the title of chapter 2.23 and to change the EASA form 6 accordingly.

comment

84 comment by: *Aero-Club of Switzerland*

We studied with interest this short paragraph. We are of the opinion that templates should be prepared for error capturing methods, based on defined flight safety sensitive maintenance tasks, particularly because the Agency proposes in 2.29 procedures for general verfication as well as in 2.30 procedures for preventing errors. What is missing in our view are procedures for the preparation of flight safety sensitive maintenance tasks.
Rationale: Any successful execution of maintenance tasks is based on best possible preparation. This is as important as the choice of the right persons for the job. For these reasons, templates should be developed. In doing so, the preparation, the execution and the check of the work done could be covered and best possible oversight would be the result.
As a general remark: The most important factor of them all is well trained staff. To invest in training adds much more to flight safety than updated manuals.

response

Not accepted.
The work card system of the organisation should be used for all tasks, these includes critical maintenance tasks.

comment

94 comment by: *René Meier, Europe Air Sports*

May we invite the Agency to add a paragraph about procedures for the preparation of flight safety sensitive maintenance tasks?
Rationale:
Adequate preparation is very important for a succesful completion of the maintenance tasks.
Templates should be prepared for such preparations, but also for 2.29 Procedures for general verification... and for 2.30 Procedures for preventing

	errors... Rationale: The availability of templates eases the the preparation, the execution and the verification of the jobs done.
response	Not accepted. The work card system of the organisation should be used for all tasks, these includes critical maintenance tasks.

B. Draft Rules - IIV Draft Decision GM to Part-145 - GM1 145.A.30 (e) Personnel requirements p. 29

comment	*12* comment by: *SVFB/SAMA* **AMC3 145.A.48(b)** pg 22v30 and GM pg 29/30 FLIGHT SENSITIVE MAINTENANCE TASKS, general for the whole point: EASA is not aware, (as with the TNA) how much work is loaded up to the MRO's by request (a): "to define the error capturing methods" for the whole scope of maintenance.
response	Not accepted. AMC3 145.A.48 (b) provides guidelines and examples of error capturing methods. Besides, the use of error capturing methods is an already existing practice in the maintenance industry.

comment	*62* ❖ comment by: *Airbus* Comment related to: Page 5, Explanatory Note, Paragraph IV, article 11, referring to CPS and KSI reports ToR MDM.020, section 3., bullet 3 Page 17, AMC1 M.A.402(g) Page 18, GM M.A.402 (g) Page 20, AMC2 145.A.48(b) Page 29, GM 145.A.48 (b) Comment: The comment is relative to the objective in the ToR (section 3., bullet 3) where it is mentioned: "Give a methodology (general criteria) how to identify those maintenance tasks […]. Identify which systems or maintenance tasks of the aircraft should be considered as "critical" in the sense of having possibly a catastrophic, hazardous or major failure in the case of undetected maintenance errors." When the ToR were issued, the FAA Key Safety Information (KSI) project was on-going. But since, the KSI Final report, dated March 2007, has been issued and says that: "the OEM would identify KSI using the following criteria: Identify maintenance and operational tasks and procedures related to mitigating the risk of: - A single failure leading to a catastrophic or hazardous failure condition - A foreseeable common cause failure leading to a catastrophic failure condition - A latent failure in a dual-failure combination leading to a catastrophic or hazardous failure condition" The language (catastrophic, hazardous, major) that is used to select the KSI in order to capture and then to highlight key procedures and associated tasks that

must be protected, maintained and correctly performed throughout the life of the airplane(s) should be addressed by the system safety assessment. Is this language defined in the EASA Part M/Part 145 or in the Certification Specifications (associated to Part 21)?
Is it considered that EASA Part M/Part 145 organization would have to have a procedure, to include in their review, the effect of single failure **or** the effect of multiple failures? Is it only necessary to look at single failure? The end result will be different depending on criteria to be used. The complexity and the number of items that might result from this review has an impact on organization and persons performing maintenance
The Explanatory note and the regulation/AMC/GM should say how (methodology) and where (documents, databases, etc) the Part M and Part 145 organizations can get access to the OEM Key Safety Information (if this language KSI is retained) to ensure that no omission or over conservatism will happen in the selection of aircraft items and maintenance tasks. It could be studied if the information delivered by DAH cover the expectations.
The KSI project focused on aircraft systems maintenance tasks and procedures only
The identification of the critical aircraft items/maintenance tasks and procedures should be a combination of the DAH and Maintenance organization inputs.
Comment justification:
The NPA suggests that the involvement of the TC holders, in the definition of the "critical systems", is left apart in spite of the AIBN recommendation 12/2006 ("Special consideration should be made as to whether the manufacturer should be given a responsibility on this matter."). This decision seems to be driven by the FAA CPS and KSI projects.
However, the Explanatory note doesn't say how the Part M and Part 145 organizations can evaluate the criticality of systems in lieu of OEM as suggested in AMC1 M.A.402(g) and AMC2 145.A.48(b). These AMC provide only a limited number of critical maintenance task examples.
The GM M.A.402 (g)/GM 145.A.48 (b) record different sources (where) to find data for the identification of critical maintenance tasks including information from TC holder (refer to bullet 1)
The existing regulations do not require the TC holder to identify (/to flag) such tasks in its publications.

response: Repeated comment.

comment: *83* comment by: *ICAO*

In GM 145.A.48 (b) Performance of maintenance, The "To" in the middle of the sentence "several data sources may be used To identify the flight safety..." should be "to".

response: Accepted.

comment: *114* comment by: *UK CAA*

Page No: 29 of 30
Paragraph No: GM 145.A.48(b)
Comment: The sources to identify flight safety sensitive maintenance tasks are agreed but suggest amending item 1) and add an additional item.
Justification: To provide extra clarity.

Proposed Text:
- Revise item 1): "information from the TC/**STC** holder;"
- Add new item 9): "tasks specified by the aircraft operator/CAMO."

response

Partially accepted
Item 1: partially accepted, text changed to "design approval holder"
Item 9: not accepted. The concept of critical maintenance tasks applies to the maintenance environment, and it is not a responsibility of the operator/CAMO to identify critical maintenance tasks. The operator/CAMO shall define the work package and it may specify particular conditions for the performance of certain tasks, but the maintenance organisation still has the responsibility to comply with the requirements of the regulation on critical maintenance tasks.

comment

139 comment by: *KLM Engineering & Maintenance*

Comment on GM 145.A.48 (b) : same comment as comment 133 and 137 (for errors that are repeated during performance of the maintenance task) , but now for error capturing after accomplishment of the task. Dependent on the definition of "Flight Safety" please provide a list of Flight Safety Sensitive Maintenance tasks.

response

Repeated comment. See answer to comment 133

comment

186 comment by: *Aero-Club of Switzerland*

With regards to 6.5: We do not see how "error capturing methods" could be developed without provoking tremendous additional costs. You may propose independent inspections, re-inspections and re-re-inspections, all this will not help much, if the training is inadequate and the product's qualitiy is poor.
Rationale:
"Quality has to be built in" as Mr. Phil Condit of Boeing said years ago. To train people to deliver the utmost quality is initially the harder, but in the end the more profitable way for all of us.

response

Not accepted.
The requirements proposed in the NPA already exist. So there should not be additional added cost by this amendment.
Part-145 contains already requirements for qualification of staff and implementation of quality systems.

B. Draft Rules - IIV Draft Decision GM to Part-145 - GM1 145.A.48 (c) Performance of maintenance p. 29

comment

65 ❖ comment by: *Airbus*

Comment related to:
Page 13, 145.A.48 and 145.A.65
AMC 145.A.48(b), AMC 145.A.48(c), GM 145.A.48(b), GM1/2/3 145.A.48(c)
Suggested change:
Airbus disagrees to create a new requirement 145.A.48 and recommends to keep existing requirements of 145.A.65 with small change and to clarify where applicable the AMC 145.A.65(b)3 taking into account missing elements needed to be transposed from existing AMC M.A402(a)
It is proposed to put in the rule that the maintenance organization should

	identify the critical systems/structure elements and maintenance tasks, title, reference of the source or the reason for having selected such elements/maintenance tasks, training aspect of special interest. The preliminary identification of aircraft elements/maintenance tasks in a document providing cognizance and controls of the critical elements/maintenance tasks, before performing the tasks and then putting in place an error capturing method should be part of the rule. The attached proposal is a review of the Part-145 aspect only but can easily be adapted to modify Part-M accordingly with it's particulars. Comment justification: It is reasonable to require the identification of and the emphasis on the critical tasks and aircraft elements. The error capturing or detection method that is required to be implemented after the performance of any critical maintenance tasks is a concept that needs to determine such tasks as a preliminary step in the process. It is not clear why the risk of multiple errors and errors repeated in identical tasks should be minimized for line and base maintenance only. For example when several servo controls are removed from aircraft for a shop visit, multiple errors and errors repeated in accomplishing identical tasks may occur. While maintenance errors and critical task are linked with safety aspects ,145 A.65 already deals with maintenance procedures and safety and quality action, the introduction of 145.A.48 creates confusion.
response	Repeated comment.

comment	*85* comment by: *Aero-Club of Switzerland* GM 145.A.48 (b) First line: Just a typing error: Please write "to" instead of "To", many thanks. Then: 1) Should "STC holders not be added to this paragraph? And: Sorry for the question: Where do we find details covering requirements to be fulfilled by an "authorised person"? Many thanks for your reply.
response	Accepted. Point 1: text has been amended. Point 2: GM 145.A.48.

comment	*95* comment by: *René Meier, Europe Air Sports* GM 145.A.48 (b): A typing error to be corrected: Change "To" to "to" on the first line, many thanks. Then: 1) Should we not have added "STC holders" to this paragraph? And a question: Where do we find details about requirements to be fulfilled by an "authorised person"?
response	Accepted. Point 1: text has been amended. Point 2: GM 145.A.48.

comment	*185* comment by: *Aero-Club of Switzerland*

	In our view the title choosen is misleading: Not one "flight safety sensitive maintenance task" is listed, only possibly available sources are indicated. This is not what we are looking for! Rationale: We think that under this title the real "flight safety sensitive maintenance tasks" should be listed, together with some guidance how to identify possible weaknesses in the own organisation, not only a list of available sources. Studying these sources should in the end produce evidence-based lists of "flight safety sensitive maintenance tasks".
response	Not accepted. The guidance and examples is given in AMC2 145.A.48 (b).

B. Draft Rules - IIV Draft Decision GM to Part-145 - GM2 145.A.48 (c) Performance of maintenance p. 29

comment	*65* ❖ comment by: *Airbus* Comment related to: Page 13, 145.A.48 and 145.A.65 AMC 145.A.48(b), AMC 145.A.48(c), GM 145.A.48(b), GM1/2/3 145.A.48(c) Suggested change: Airbus disagrees to create a new requirement 145.A.48 and recommends to keep existing requirements of 145.A.65 with small change and to clarify where applicable the AMC 145.A.65(b)3 taking into account missing elements needed to be transposed from existing AMC M.A402(a) It is proposed to put in the rule that the maintenance organization should identify the critical systems/structure elements and maintenance tasks, title, reference of the source or the reason for having selected such elements/maintenance tasks, training aspect of special interest. The preliminary identification of aircraft elements/maintenance tasks in a document providing cognizance and controls of the critical elements/maintenance tasks, before performing the tasks and then putting in place an error capturing method should be part of the rule. The attached proposal is a review of the Part-145 aspect only but can easily be adapted to modify Part-M accordingly with it's particulars. Comment justification: It is reasonable to require the identification of and the emphasis on the critical tasks and aircraft elements. The error capturing or detection method that is required to be implemented after the performance of any critical maintenance tasks is a concept that needs to determine such tasks as a preliminary step in the process. It is not clear why the risk of multiple errors and errors repeated in identical tasks should be minimized for line and base maintenance only. For example when several servo controls are removed from aircraft for a shop visit, multiple errors and errors repeated in accomplishing identical tasks may occur. While maintenance errors and critical task are linked with safety aspects ,145 A.65 already deals with maintenance procedures and safety and quality action, the introduction of 145.A.48 creates confusion.
response	Repeated comment.

comment	*69* comment by: *Airbus*

	Comment related to: Page 29, Draft Rules, paragraph IV., GM 2 145.A.48(c) Comment: Would it not be better to transfer the content of this GM into the AMC or GM for 145.A.30 or 145.A.35? Comment justification: For sake of consolidation.
response	Not accepted. The review group considers that this change would be outside the scope of this task.

comment	*143* comment by: *Bristow (European Operations)* AMC 145.A.48 (c) c) Performance of Maintenance, & GM3 145.A.48 (c) Performance of Maintenance CDCCL is referred to in both these paragraphs, giving the impression that all aircraft are subject to CDCCL regulations. This is another example of EASA writing rules for airlines, and completely ignoring all other areas of the aviation industry. There are thousands of aircraft, maintained by 145 organisations, operating CAT and Non-CAT ops, for which CDCCL does not apply. This should be made clear – after all, clarification is the purpose of AMC's and GM is it not? **Entered on behalf of the European Helicopter Association Technical Committee**
response	Accepted. The text on CDCCL is transferred to a GM applicable only to organisations working with aircraft affected by CDCCL.

B. Draft Rules - IIV Draft Decision GM to Part-145 - GM3 145.A.48 (c) Performance of maintenance p. 29-30

comment	*65* ❖ comment by: *Airbus* Comment related to: Page 13, 145.A.48 and 145.A.65 AMC 145.A.48(b), AMC 145.A.48(c), GM 145.A.48(b), GM1/2/3 145.A.48(c) Suggested change: Airbus disagrees to create a new requirement 145.A.48 and recommends to keep existing requirements of 145.A.65 with small change and to clarify where applicable the AMC 145.A.65(b)3 taking into account missing elements needed to be transposed from existing AMC M.A402(a) It is proposed to put in the rule that the maintenance organization should identify the critical systems/structure elements and maintenance tasks, title, reference of the source or the reason for having selected such elements/maintenance tasks, training aspect of special interest. The preliminary identification of aircraft elements/maintenance tasks in a document providing cognizance and controls of the critical elements/maintenance tasks, before performing the tasks and then putting in place an error capturing method should be part of the rule. The attached proposal is a review of the Part-145 aspect only but can easily be adapted to modify Part-M accordingly with it's particulars. Comment justification: It is reasonable to require the identification of and the emphasis on the critical

	tasks and aircraft elements. The error capturing or detection method that is required to be implemented after the performance of any critical maintenance tasks is a concept that needs to determine such tasks as a preliminary step in the process. It is not clear why the risk of multiple errors and errors repeated in identical tasks should be minimized for line and base maintenance only. For example when several servo controls are removed from aircraft for a shop visit, multiple errors and errors repeated in accomplishing identical tasks may occur. While maintenance errors and critical task are linked with safety aspects ,145 A.65 already deals with maintenance procedures and safety and quality action, the introduction of 145.A.48 creates confusion.
response	Repeated comment.

comment	*70* comment by: *Airbus* Comment related to: Pages 29 & 30, Draft Rules, paragraph IV., GM 3 145.A.48(c) Comment: Why is there a focus on CDCCL while they are other mandatory instructions and associated airworthiness limitations as important as CDCCL? Further, should not the second paragraph be included in the training course on CDCCL rather than in the GM of Part 145? Comment justification: For sake of clarity.
response	Accepted. The text on CDCCL is transferred to a GM applicable only to organisations working with aircraft affected by CDCCL.

comment	*121* comment by: *Ian Robinson, Patriot Aerospace Group* AMC 145.A.48 (c) c) Performance of Maintenance, & GM3 145.A.48 (c) Performance of Maintenance CDCCL is referred to in both these paragraphs, giving the impression that all aircraft are subject to CDCCL regulations. This is another example of EASA writing rules for airlines, and completely ignoring all other areas of the aviation industry. There are thousands of aircraft, maintained by 145 organisations, operating CAT and Non-CAT ops, for which CDCCL does not apply. This should be made clear – after all, clarification is the purpose of AMC's and GM is it not?
response	Accepted. The text on CDCCL is transferred to a GM applicable only to organisations working with aircraft affected by CDCCL.

4. Attachments to comments

NPA2012-04_Attachment_to_Airbus_comment_65.pdf
Attachment #1 to comment #65

5. Appendices

This section contains the draft AMC/GM prepared to complement Opinion No 06/2013. This material is included for information only, the Decision containing AMC and GM will be published by the Agency when the related Implementing Rules are adopted by the Commission.

The content of the appendices is as follows:

- Appendix I: draft amendment to AMC/GM to Part-M
- Appendix II: draft amendment to AMC to Part-145
- Appendix III: draft amendment to GM to Part-145

5.1 Appendix I: draft amendment to AMC/GM Part-M

1. AMC M.A.402 (a), AMC M.A.402 (b), AMC M.A.402 (d) and AMC M.A.402 (e) are replaced by the following:

AMC M.A.402 (a) Performance of maintenance

FOR MAINTENANCE PERFORMED OUTSIDE OF AN APPROVED MAINTENANCE ORGANISATION

(a) Maintenance should be performed by persons authorised to issue a release to service or under the supervision of persons authorised to issue a release to service. Supervision should be to the extent necessary to ensure that the work is performed properly and the supervisor should be readily available for consultation.

(b) The person authorised to issue a release to service should ensure that:

(1) each person working under its supervision has received appropriate training or has relevant previous experience and is capable of performing the task required; and

(2) each person who performs specialised tasks, such as welding, is qualified in accordance with an officially recognised standard.

GM M.A.402 (a) Performance of maintenance

In the case of limited Pilot-Owner maintenance as specified in M.A.803, any person maintaining an aircraft which they own or jointly own, provided they hold a valid pilot licence with the appropriate type or class rating, may perform the limited Pilot-owner maintenance tasks in accordance with Appendix VIII of Annex I (Part-M) of Regulation (EC) No 2042/2003.

AMC M.A.402 (c) Performance of maintenance

The general maintenance and inspection standards applied to individual maintenance tasks should meet the recommended standards and practices of the organisation responsible for the type design which are normally published in the maintenance manuals. In the absence of maintenance and inspection standards published by the organisation responsible for the type design, maintenance personnel should refer to the relevant aircraft airworthiness standards and procedures published or used as guidance by the Agency or the competent authority. The maintenance standards used should contain methods, techniques and practices acceptable to the Agency or competent authority for the maintenance of aircraft and its components.

AMC M.A.402 (d) Performance of maintenance

When performing maintenance, personnel are required to use the tools, equipment and test apparatus necessary to ensure completion of work in accordance with accepted maintenance and inspection standards. Inspection, service or calibration on a regular basis should be in accordance with the equipment manufacturers' instructions. All tools requiring calibration should be traceable to an acceptable standard.

In this context officially recognised standard means those standards established or published by an official body whether having legal personality or not, which are widely recognised by the air transport sector as constituting good practice.

If the organisation responsible for the type design involved recommends special equipment or test apparatus, personnel should use the recommended equipment or apparatus or equivalent equipment accepted by the competent authority.

All work should be performed using materials of such quality and in a manner, that the condition of the aircraft or its components after maintenance will be at least equal to its original or modified condition (with regard to aerodynamic function, structural strength, resistance to vibration, deterioration and any other qualities affecting airworthiness).

AMC1 M.A.402 (g) Performance of maintenance

CRITICAL MAINTENANCE TASKS
The following maintenance tasks should primarily be reviewed to assess their impact on safety:

(a) Tasks that may affect the control of the aircraft, flight path and attitude, such us installation, rigging and adjustments of flight controls, electronic or mechanical;

(b) Aircraft stability control systems (autopilot, fuel transfer);

(c) Task that may affect the propulsive force of the aircraft, including installation of aircraft engines, propellers and rotors; and,

(d) Overhaul, calibration or rigging of engines, propellers, transmissions and gearboxes.

AMC2 M.A.402 (g) Performance of maintenance

INDEPENDENT INSPECTION

(a) What is an independent inspection?

An independent inspection consists of an inspection performed by an 'independent qualified person' of a task performed by an 'authorised person', taking into account that:

(1) the 'authorised person' is the person who performs the task or supervises the task and he/she assumes full responsibility for completion of the task in accordance with the applicable maintenance data;

(2) the 'independent qualified person' is the person who performs the independent inspection and attests satisfactory completion of the task and that no deficiencies have been found. The 'independent qualified person' is not issuing a certificate of release to service therefore he/she is not required to hold certification privileges;

(3) the certificate of release to service is performed by the 'authorised person' after the independent inspection is performed satisfactorily;

(4) the workcard system should record the identification for each person, the date and the details of the independent inspection, as necessary, before the certificate of release to service is issued.

(b) Qualifications of personnel performing independent inspection

(1) When the work is performed by a Part-M subpart-F organisation, then the organisation should have procedures to demonstrate that the 'independent qualified person' has been trained and has gained experience on the specific control systems being inspected. This training and experience could be achieved, for example, by:

(i) holding a part-66 licence in the same subcategory as the licence subcategory or equivalent necessary to release or sign-off the critical maintenance task;

(ii) holding a part-66 licence in the same category and specific training on the task to be inspected; or,

(iii) having received appropriate training and having gained relevant experience on the specific task to be inspected.

(2) When the work is performed outside a Part-M subpart-F:

(i) the 'independent qualified person' should hold:

(A) a Part-66 license in any category or equivalent national when national regulation applies; or

(B) a valid pilot licence for the aircraft type issued in accordance with European regulations or equivalent national when national regulation applies.

(ii) additionally, the 'authorised person' should assess the qualifications and experience of the 'independent qualified person' taking into account that the 'independent qualified person' should have received training and have experience in the particular task. It should not be acceptable that the 'authorised person' shows the 'independent qualified person' how to perform the inspection at the time the work is completed.

(c) How should the independent inspection be performed?

The independent inspection should ensure for example correct assembly, locking and sense of operation. When inspecting control systems that have undergone maintenance, the 'independent qualified person' should consider the following points independently:

(1) all those parts of the system that have actually been disconnected or disturbed should be inspected for correct assembly and locking;

(2) the system as a whole should be inspected for full and free movement over the complete range;

(3) cables should be tensioned correctly with adequate clearance at secondary stops;

(4) the operation of the control system as a whole should be observed to ensure that the controls are operating in the correct sense;

(5) if different control systems are interconnected so that they affect each other, all the interactions should be checked through the full range of the applicable controls; and,

(6) software that is part of the critical maintenance task should be checked, for example version, compatibility with aircraft configuration.

(d) What to do in unforeseen cases when only one person is available?

RE-INSPECTION:

(1) The re-inspection is subject to the same conditions as the independent inspection except that the 'authorised person' performing the task is also acting as 'independent qualified person' and performs the inspection.

(2) For critical maintenance tasks, the re-inspection should only be used in unforeseen circumstances when only one person is available to perform the task and the independent inspection. The circumstances cannot be considered unforeseen if the person or organisation has not programmed a suitable 'independent qualified person'.

(3) The certificate of release to service is issued by the 'authorised person' after the re-inspection is performed satisfactorily.

(4) The workcard system should record the identification of the 'authorised person' and the date and the details of the re-inspection, as necessary, before the certificate of release to service is issued.

GM M.A.402 (g) Performance of maintenance

Several data sources may be used for the identification of critical maintenance tasks, such as:

- information from the design approval holder;
- accident reports;
- investigation and follow-up of incidents;
- occurrence reporting;
- flight data analysis;
- results of audits;
- normal operations monitoring schemes;
- feedback from training; and
- information exchange systems.

5.2 Appendix II: draft amendment to AMC to Part-145

2. AMC 145.A.47 (a) is amended as follows:

AMC 145.A.47 (a) Production planning

…

3. When establishing the production planning procedure, consideration should be given to the following:
   - Logistics,
   - inventory control,
   - square meters of accommodation,
   - man-hours estimation,
   - man-hours availability,
   - preparation of work,
   - hangar availability,
   - environmental conditions (access, lighting standards and cleanliness),
   - co-ordination with internal and external suppliers, etc.
   - scheduling of critical maintenance tasks during periods when staff are likely to be most alert.

3. The following AMCs to the new point 145.A.48 are added as follows:

AMC1 145.A.48 (b) Performance of maintenance

The procedure should identify the error capturing methods, the critical maintenance tasks, the training and qualification of staff performing error capturing methods, and how the organisation ensures that its staff is familiar with critical maintenance tasks and error capturing methods.

AMC2 145.A.48 (b) Performance of maintenance

CRITICAL MAINTENANCE TASKS

(a) The procedure should ensure that the following maintenance tasks are reviewed to assess their impact on flight safety:

(1) Tasks that may affect the control of the aircraft flight path and attitude, such as installation, rigging and adjustments of flight controls, electronic or mechanical;

(2) Aircraft stability control systems (autopilot, fuel transfer);

(3) Tasks that may affect the propulsive force of the aircraft, including installation of aircraft engines, propellers and rotors; or

(4) Overhaul, calibration or rigging of engines, propellers, transmissions and gearboxes.

(b) The procedure should describe which data sources are used to identify critical maintenance tasks. Several data sources may be used, such as:

(1) information from the design approval holder;

(2) accident reports;

(3) investigation and follow-up of incidents;

(4) occurrence reporting;

(5) flight data analysis;

(6) results of audits;

(7) normal operations monitoring schemes; and

(8) feedback from training.

AMC3 145.A.48 (b) Performance of maintenance

ERROR CAPTURING METHODS

(a) Error capturing methods are those actions defined by the organisation to detect maintenance errors made when performing maintenance.

(b) The organisation should ensure that the error capturing methods are adequate to the work and the disturbance of the system. A combination of several actions (visual inspection, operational check, functional test, rigging check) may be necessary in some cases

AMC4 145.A.48 (b) Performance of maintenance

INDEPENDENT INSPECTION

One possible error capturing method is the independent inspection.

(a) What is an independent inspection?

An independent inspection consists of an inspection performed by an 'independent qualified person' of a task carried out by an 'authorised person', taking into account that:

(1) the 'authorised person' is the person who performs the task or supervises the task and he/she assumes full responsibility for completion of the task in accordance with the applicable maintenance data;

(2) the 'independent qualified person' is the person who performs the independent inspection and attests satisfactory completion of the task and that no deficiencies have been found. The 'independent qualified person' is not issuing a certificate of release to service therefore he/she is not required to hold certification privileges;

(3) the certificate of release to service or sign off for the completion of the task is performed by the 'authorised person' after the independent inspection is carried out satisfactorily;

(4) the workcard system established by the organisation should record identification of both persons and the details of the independent inspection as necessary before the certificate of release to service or sign off for the completion of the task is issued.

(b) Qualifications of persons performing independent inspection

The organisation should have procedures to demonstrate that the 'independent qualified person' has been trained and has gained experience on the specific inspection being performed. This training and experience could be achieved, for example, by:

(1) holding a part-66 licence in the same subcategory as the licence subcategory or equivalent necessary to release or sign-off the critical maintenance task;

(2) holding a part-66 licence in the same category and specific training on the task to be inspected; or,

(3) having received an appropriate training and having gained relevant experience on the specific task to be inspected.

(c) How to perform the independent inspection

The independent inspection should ensure correct assembly, locking and sense of operation. When inspecting control systems that have undergone maintenance, the independent qualified person should consider the following points independently:

(1) all those parts of the system that have actually been disconnected or disturbed should be inspected for correct assembly and locking;

(2) the system as a whole should be inspected for full and free movement over the complete range;

(3) cables should be tensioned correctly with adequate clearance at secondary stops;

(4) the operation of the control system as a whole should be observed to ensure that the controls are operating in the correct sense;

(5) if different control systems are interconnected so that they affect each other, all the interactions should be checked through the full range of the applicable controls; and

(6) software that is part of the critical maintenance task should be checked, for example: version, compatibility with aircraft configuration.

(d) What to do in unforeseen cases when only one person is available?

RE-INSPECTION:

(1) A re-inspection is an error capturing method subject to the same conditions as an independent inspection except that the 'authorised person' performing the maintenance task is also acting as 'independent qualified person' and performs the inspection.

(2) A re-inspection as an error capturing method should only be used in unforeseen circumstances when only one person is available to carry out the task and perform the independent inspection. The circumstances cannot be considered unforeseen if the organisation has not programmed a suitable 'independent qualified person' onto that particular line station or shift

(3) The certificate of release to service after the task is performed by the 'authorised person' after the re-inspection is carried out satisfactorily. The workcard system, established by the organisation, should record the identification and the details of the re-inspection before the certificate of release to service for the task is issued.

AMC 145.A.48 (c) Performance of maintenance

The procedures should be aimed at:

(a) minimising the possibility of an error being repeated in identical tasks and therefore compromising more than one system or function. Thus, the procedure should ensure that no person is required to perform a maintenance task involving disassembly or reassembly of several components of the same type fitted to more than one system on the same aircraft or component during a particular maintenance check. However, in unforeseen circumstances when only one person is available the organisation may use re-inspection as described above.

(b) preventing omissions. Therefore, the procedures should specify:

(1) that every maintenance task is signed-off only after completion;

(2) how the grouping of tasks for the purpose of signing-off allows critical steps to be clearly identified; and

(3) that work performed by personnel under supervision (i.e. temporary staff, trainees) is checked and signed-off by an authorised person.

4. The AMC 145.A.65 (b)(3) is deleted.

5. The AMC 145.A.70 (a) is amended as follows:

AMC 145.A.70 (a) Maintenance organisation exposition

…
PART 2 MAINTENANCE PROCEDURES
…
2.23.Critical maintenance tasks and error capturing methods
…

6. Appendix II to AMC 145.B.20(5): EASA Form 6 is amended as follows:

Appendix II to AMC 145.B.20(5): EASA Form 6

Part-145 APPROVAL RECOMMENDATION REPORT	**EASA FORM 6**
Part 1: General	
Name of organisation:	
Approval reference:	
Requested approval rating/ Form 3 dated*:	
FAA FAR 145 Cert No (if applicable):	
Address of Facility Audited:	
Audit period: From to	
Date(s) of Audit:	
Audit reference(s):	
Persons interviewed:	
Competent authority surveyor:	Signature(s):
Competent authority office:	Date of Form 6 part 1 completion:
	*delete where applicable

Part-145 APPROVAL RECOMMENDATION REPORT EASA FORM 6

Part 2: Part-145 Compliance Audit Review

The five columns may be labelled and used as necessary to record the approval class and/or product line reviewed. Against each column used of the following Part-145 subparagraphs please either tick (√) the box if satisfied with compliance or cross (X) the box if not satisfied with compliance and specify the reference of the Part 4 finding next to the box, or enter N/A where an item is not applicable, or N/R when applicable but not reviewed.

Para	Subject					
145.A.25	Facility requirements					
145.A.30	Personnel requirements					
145.A.35	Certifying Staff and support staff					
145.A.40	Equipment, Tools and material					
145.A.42	Acceptance of Components					
145.A.45	Maintenance Data					
145.A.47	Production Planning					
145.A.48	Performance of maintenance					
145.A.50	Certification of Maintenance					
145.A.55	Maintenance Records					
145.A.60	Occurrence Reporting					
145.A.65	Safety and Quality Policy, maintenance procedures and Quality System					
145.A.70	Maintenance Organisation Exposition (see Part 3)					
145.A.75	Privileges of the organisation					
145.A.80	Limitations on the organisation					
145.A.85	Changes to the organisation					
145.A.95	Findings					

Competent surveyor(s): Signature(s):

Competent authority office: Date of Form 6 part 2 completion:

Part-145 APPROVAL RECOMMENDATION REPORT EASA FORM 6

PART 3: Compliance with 145.A.70 Maintenance organisation exposition
Please either tick (√) the box if satisfied with compliance; or cross (X) if not satisfied with compliance and specify the reference of the Part 4 finding; or enter N/A where an item is not applicable; or N/R when applicable but not reviewed.

Part 1	**Management**	
1.1		Corporate commitment by the accountable manager
1.2		Safety and Quality Policy
1.3		Management personnel
1.4		Duties and responsibilities of the management personnel
1.5		Management Organisation Chart
1.6		List of Certifying staff and B1 and B2 support staff (Note: a separate document may be referenced)
1.7		Manpower resources
1.8		General description of the facilities at each address intended to be approved
1.9		Organisations intended scope of work
1.10		Notification procedure to the competent authority regarding changes to the organisation's activities/approval/location/personnel
1.11		Exposition amendment procedures
Part 2	**Maintenance Procedures**	
2.1		Supplier evaluation and subcontract control procedure
2.2		Acceptance/inspection of aircraft components and material from outside contractors
2.3		Storage, tagging, and release of aircraft components and material to aircraft maintenance
2.4		Acceptance of tools and equipment
2.5		Calibration of tools and equipment
2.6		Use of tooling and equipment by staff (including alternate tools)
2.7		Cleanliness standards of maintenance facilities
2.8		Maintenance instructions and relationship to aircraft/aircraft component manufacturers' instructions including updating and availability to staff
2.9		Repair procedure
2.10		Aircraft maintenance programme compliance
2.11		Airworthiness Directives procedure
2.12		Optional modification procedure
2.13		Maintenance documentation in use and completion of same

Part-145 APPROVAL RECOMMENDATION REPORT		**EASA FORM 6**
PART 3: Compliance with 145.A.70 Maintenance organisation exposition		
2.14		Technical record control
2.15		Rectification of defects arising during base maintenance
2.16		Release to service procedure
2.17		Records for the operator
2.18		Reporting of defects to the competent authority/Operator/Manufacturer
2.19		Return of defective aircraft components to store
2.20		Defective components to outside contractors
2.21		Control of computer maintenance record systems
2.22		Control of manhour planning versus scheduled maintenance work
2.23		Critical maintenance tasks and error capturing methods
2.24		Reference to specific maintenance procedures
2.25		Procedures to detect and rectify maintenance errors
2.26		Shift/task handover procedures
2.27		Procedures for notification of maintenance data inaccuracies and ambiguities to the type certificate holder
2.28		Production planning procedures
Part L2	**Additional Line Maintenance Procedures**	
L2.1		Line maintenance control of aircraft components, tools, equipment, etc.
L2.2		Line maintenance procedures related to servicing/fuelling/de-icing, etc.
L2.3		Line maintenance control of defects and repetitive defects
L2.4		Line procedure for completion of technical log
L2.5		Line procedure for pooled parts and loan parts
L2.6		Line procedure for return of defective parts removed from aircraft
L2.7		Line procedure for critical maintenance tasks and error capturing methods
Part 3	**Quality System Procedures**	
3.1		Quality audit of organisation procedures
3.2		Quality audit of aircraft
3.3		Quality audit remedial action procedure
3.4		Certifying staff and support staff qualification and training procedure
3.5		Certifying staff and support staff records
3.6		Quality audit personnel

Part-145 APPROVAL RECOMMENDATION REPORT EASA FORM 6

PART 3: Compliance with 145.A.70 Maintenance organisation exposition

3.7		Qualifying inspectors
3.8		Qualifying mechanics
3.9		Aircraft/aircraft component maintenance tasks exemption process control.
3.10		Concession control for deviation from organisation's procedures
3.11		Qualification procedure for specialised activities such as NDT, welding etc.
3.12		Control of manufacturers' and other maintenance working teams
3.13		Human Factors training procedure
3.14		Competence assessment of personnel
3.15		Training procedures for on-the-job training as per Section 6 of Appendix III to Part-66 (limited to the case where the competent authority for the Part-145 approval and for the Part-66 licence is the same).
3.16		Procedure for the issue of a recommendation to the competent authority for the issue of a Part-66 licence in accordance with 66.B.105 (limited to the case where the competent authority for the Part-145 approval and for the Part-66 licence is the same).

Part 4

4.1		Contracting operators
4.2		Operator procedures/paperwork
4.3		Operator record completion

Part 5 Appendices

5.1		Sample Documents
5.2		List of subcontractors
5.3		List of Line maintenance locations
5.4		List of Part-145 organisations

MOE Reference: MOE Amendment:

Competent authority audit staff: Signature(s):

Competent authority office: Date of Form 6 part 3 completion:

Part-145 APPROVAL RECOMMENDATION REPORT EASA FORM 6

Part 4: Findings Part-145 Compliance status

Each level 1 and 2 finding should be recorded whether it has been rectified or not and should be identified by a simple cross-reference to the Part 2 requirement. All non rectified findings should be copied in writing to the organisation for the necessary corrective action.

Part 2 or 3 ref.	Audit reference(s): Findings	LEVEL	Corrective action		
			Date Due	Date Closed	Reference

Part-145 APPROVAL RECOMMENDATION REPORT EASA FORM 6

Part 5: Part-145 Approval or continued approval or change recommendation*

Name of organisation:

Approval reference:

Audit reference(s):

The following Part-145 scope of approval is recommended for this organisation:

Or, it is recommended that the Part-145 scope of approval specified in EASA Form 3 referenced ..... be continued.

Name of recommending competent authority surveyor:

Signature of recommending competent authority surveyor:

Competent authority office:

Date of recommendation:

Form 6 review (quality check) : Date:

5.3 Appendix III: draft amendment to GM to part-145

7. GM1 145.A.30 (e) is amended as follows:

GM1 145.A.30 (e) Personnel requirements

...
6. Procedures, information, tools and practices
6.1 Visual Inspection
6.2 Work logging and recording
6.3 Procedure – practice / mismatch / norms
6.4 Technical documentation – access and quality
6.5 Critical maintenance tasks and error capturing methods (independent inspections, re-inspections, etc.)
…

8. The following GMs to 145.A.48 are added:

GM 145.A.48 Performance of maintenance

AUTHORISED PERSON

An 'authorised person' is a person formally authorised by the maintenance organisation to perform or supervise a maintenance task. An 'authorised person' is not necessarily 'certifying staff'.

SIGN-OFF

A 'sign-off' is a statement by the 'authorised person' which indicates that the task or group of tasks has been correctly performed. A 'sign-off' relates to one step in the maintenance process and is therefore different to a certificate of release to service.

GM 145.A.48 (c) Performance of maintenance

One example of identical task in multiple systems is the reinstallation of engine gearbox access covers or oil filler caps on all engines of a multi-engine aircraft by the same individual.

GM 145.A.48 (d) Performance of maintenance-CDCCL

For aircraft for which Critical Design Configuration Control Limitations ('CDCCL') are specified by the TC holder/ STC holder, the organisation should ensure that when performing maintenance the CDCCL are not compromised. The organisation should pay particular attention to possible adverse effects of any wiring change to the aircraft, even a change not specifically associated with the fuel tank system. For example, it should be common practice to identify segregation of fuel gauging system wiring as a CDCCL. The organisation can prevent adverse effects associated with wiring changes by standardising maintenance practices through training, rather than by periodic inspection. Training should be provided to end indiscriminate routing and splicing of wire and to provide comprehensive knowledge of critical design features of fuel tank systems that would be controlled by a CDCCL. Guidance is provided for training to maintenance organisation personnel in an Appendix IV to AMC 145.A.35.

9. GM 145.A.65 (c)(1) is amended as follows:

GM 145.A.65 (c)(1) Safety and quality policy, maintenance procedures and quality system

The proposed plan lists the subject matter that should be covered by the audit and attempts to

indicate applicability in the various types of workshops and aircraft facilities. The list should therefore be tailored for the particular situation and more than one list may be necessary. Each list should be shown against a timetable to indicate when the particular item is scheduled for audit and when the audit was completed.

PARA	Comment	HANGAR	ENGINE	MECH	AVIONIC
			Workshop	Workshop	Workshop
145.A.25		Yes	Yes	Yes	Yes
145.A.30		Yes	Yes	Yes	Yes
145.A.35		Yes	Yes	Yes	Yes
145.A.40		Yes	Yes	Yes	Yes
145.A.42		Yes	Yes	Yes	Yes
145.A.45		Yes	Yes	Yes	Yes
145.A.47		Yes	Yes	Yes	Yes
145.A.48		Yes	Yes	Yes (propeller workshop)	No
145.A.50		Yes	Yes	Yes	Yes
145.A.55		Yes	Yes	Yes	Yes
145.A.60		Yes	Yes	Yes	Yes
145.A.65		Yes	Yes	Yes	Yes
2.1	MOE	Yes	Yes	Yes	Yes
2.2	MOE	Yes	Yes	Yes	Yes
2.3	MOE	Yes	Yes	Yes	Yes
2.4	MOE	Yes	Yes	Yes	Yes
2.5	MOE	Yes	Yes	Yes	Yes
2.6	MOE	Yes	Yes	Yes	Yes
2.7	MOE	Yes	Yes	Yes	Yes
2.8	MOE	Yes	Yes	Yes	Yes
2.9	MOE	Yes	Yes	Yes	Yes
2.10	MOE	Yes	No	No	No
2.11	MOE	Yes	Yes	Yes	Yes
2.12	MOE	Yes	Yes	Yes	Yes
2.13	MOE	Yes	Yes	Yes	Yes
2.15	MOE	Yes	No	No	No
2.16	MOE	Yes	Yes	Yes	Yes
2.17	MOE	if appl	if appl	if appl	if appl
2.18	MOE	Yes	Yes	Yes	Yes
2.19	MOE	Yes	Yes	Yes	Yes
2.20	MOE	Yes	Yes	Yes	Yes
2.21	MOE	if appl	if appl	if appl	if appl
2.22	MOE	Yes	Yes	No	No
2.23	MOE	Yes	No	No	No
2.24	MOE	Yes	Yes	Yes	Yes
2.25	MOE	Yes	Yes	Yes	Yes
2.26	MOE	Yes	Yes	Yes	Yes
2.27	MOE	Yes	Yes	Yes	Yes
2.28	MOE	Yes	Yes	Yes	Yes
L2.1	MOE	if appl	No	No	No
L2.2	MOE	if appl	No	No	No
L2.3	MOE	if appl	No	No	No
L2.4	MOE	if appl	No	No	No
L2.5	MOE	if appl	No	No	No
L2.6	MOE	if appl	No	No	No

PARA	Comment	HANGAR	ENGINE	MECH	AVIONIC
L2.7	MOE	if appl	No	No	No
3.9	MOE	if appl	if appl	if appl	if appl
3.10	MOE	if appl	if appl	if appl	if appl
3.11	MOE	if appl	if appl	if appl	No
3.12	MOE	Yes	Yes	No	No
3.13	MOE	Yes	Yes	Yes	Yes
3.14	MOE	Yes	Yes	Yes	Yes
145.A.70		Yes	Yes	Yes	Yes
145.A.75		Yes	Yes	Yes	Yes
145.A.80		Yes	Yes	Yes	Yes
145.A.85		Yes	Yes	Yes	Yes
145.A.95		if appl	if appl	if appl	if appl

Note 1: 'if appl' means if applicable or relevant.

Note 2: In the line station case all line stations should be audited at the frequency agreed with the competent authority within the limits of AMC 145.A.65(c)(1).