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Subject: NPRM #99-09 FAA-99-5836-39

My comments to NPRM No. 99-09, Docket No. FAA-1999-5836 are on the attached Word 97 document file. If you would prefer these comments in a different file format, please reply to this message with instructions.

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US Department of Transportation Dockets
Docket No. FAA-19995836
400 Seventh Street SW
Room Plaza 401
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Subject: Comments to NPRM No. 99-09, Docket No. FAA-1999-5836

As a 25 year aviation professional, I have spent most of my career working in, managing and establishing repair stations. Most recently, as a consultant, I provide my repair station clients with assistance in developing quality systems, preparing electronic and hardcopy procedural manuals, developing documentation systems and implementing training programs. During that time I have had ample opportunity to come to appreciate the shortcomings of the current FAR 145 and have looked forward to the release of the proposed changes.

I feel that on the whole, the proposed rule represents a significant improvement over the current regulations, however I feel that additional consideration should be given to many aspects of the regulation. I also feel that the comment period for this proposal is unreasonably short given the extensive nature of the changes presented. While I have focused a significant effort at preparing my comments quickly, a proper review of the proposal within a repair station organization will consume a great deal of time. Furthermore, because many of the requirements go beyond the walls of the repair stations, other organizations such as non-certificate holding sub-contractors will have to be briefed on the NPRM and may also be contributing comments. I anticipate that several petitions will be made to extend the comment period and, for the reason stated above, strongly endorse those requests.

The following pages contain my comments to the NPRM, both those of a general nature and paragraph specific responses.

Yours truly,

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General Comments

Domestic/Foreign/MMF Standardization

The objective of standardizing domestic and foreign repair station requirements is a worthwhile one and one which, in the long run can provide both greater business opportunities for organizations involved in aircraft maintenance, modification and repair as well as a potentially sounder safety oversight system. Further, the elimination of the Manufacturer's Maintenance Facility designation also contributes to the standardization of the maintenance process on an industry-wide basis and is therefore a desirable goal. I therefore support these changes in the proposed rule.

Transition

Several issues of concern should be considered regarding the transition phase for the new rule. While the transition to the new requirements may be viewed as a challenge, it also offers an opportunity for improving aviation safety; one which the Administration should encourage. Taking advantage of this opportunity requires going beyond the minimum requirements however. The transition process should be sympathetic to this.

Complexity of the evaluation process

The CHDO's processing the applications under this requirement will be encountering many new systems with which they are unfamiliar. Particularly in the early phases of this process a great deal of coordination between field offices and the AVR offices will be required as various proposals for the new requirements are reviewed. The proposed regulation allows a significant amount of discretion on the part of the CHDO in determining acceptability of the new requirements for quality assurance systems and training programs in particular. Current Administration efforts at standardizing oversight throughout all regions will quite likely be set back as these new requirements are evaluated and approved (or disapproved). Increasing the time frame for the transition process and scheduling activities in that process like the sequence of transitions and the release of advisory material rather than providing for essentially a lump sum nationwide conversion can minimize interpretational differences during the transition.

Furthermore no distinction in the current proposed transition period provides for an industry wide learning process. It can be expected that some of the more forward thinking organizations will present some innovative systems and procedures in response to the new requirements. Current repair station operations have developed out of the existing regulatory framework and many repair stations have been stymied in efforts to improve their processes by outdated requirements. The proposed regulation offers many opportunities for streamlining operations and improving safety. Particularly in the case of the latter of these, the lessons learned early on in the transition process should be available to other CHDO's and repair stations completing their transitions in the later stages of the process.

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Economics based on estimates of minimum compliance

The estimate provided in the NPRM of "less than $5,000" per repair station do not reflect the real world costs that a repair station will face. While there are recognizable cost savings as noted, these pale to the initial costs associated with implementing training programs, quality assurance systems and writing new manuals. The man-hours associated with these tasks alone, even for a small repair station operation are considerable as will be the effort involved in reviewing and demonstrating compliance with the requirements during the approval process. Even the smallest of repair stations is unlikely to effect the transition without expending two man-months in the effort. The cost of this alone is about double the estimate provided in the NPRM. Furthermore the on-going cost of maintaining the newly established requirements will also effect the cost of doing business for each repair station from transition onward. The savings cited in manual distribution costs for what will generally be between a few and perhaps 100 pages per year are far outweighed by the costs of training and quality assurance systems introduced as new requirements in the proposed rule.

That being said, repair stations wishing to do more than meet the bare minimum of requirements should be encouraged to do so. Sophisticated quality systems, thorough training programs and detailed operational guidelines are elements that all repair stations should be encouraged to develop. From a business standpoint it makes sense to make a change only once and businesses that elect to make the most of this change should be afforded an opportunity to defray the associated costs. In my specific response to paragraph 145.6 1 I have recommended a longer transition period and an opportunity for repair stations who will incur significant costs in their planned transition to spread that expense over a longer period of time.

Another significant point of the economics of transition is the possibility or even likelihood that many repair stations will have to acquire additional equipment and training when making the transition. The most obvious example of this would be the case of a current repair station with an airframe class rating but no power-plant rating. Under the new system, this facility would have to add the capabilities needed to perform engine work to qualify for an equivalent class aircraft rating. In each case where the requirements of the new rating exceed those a repair station already has, the cost of completing the transition will have to be borne by the repair station prior to receiving a new certificate.

Effect on supply chain

It is not clear in all circumstances how a repair station will be effected when it changes its ratings to the new system while using subcontract suppliers who have not completed the transition. It seems that the possibility exists for there to be a mismatch of capabilities between organizations using the new and old classifications which could render some existing subcontract relationships in violation of the regulations until both parties have completed the transition. It should not be the intent or the effect of the proposed rule to disrupt current working relationships as a result of a temporary misalignment of capabilities. There should be some provision in the regulation to allow repair stations to continue as normal throughout the transition period.

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Ratings

The proposed rating system seems to offer several improvements to the current system. As explained in the NPRM it does provide a more accurate reflection of the technologies used in aviation. It also seems to provide greater opportunity for businesses to begin repair station operations on a small scale by allowing a narrower focus of capabilities (and the associated equipment, data and training) than the current system. This same tightness of focus may make it easier for repair stations to target specific markets and expand their capabilities in smaller increments that is currently possible.

The actual definitions of the ratings however are not sufficiently concise to ensure that repair stations can always be sure to operate within the limits of their Operations Specification.

It is unclear what advantage there would be to establishing a separate regulation to define classes and capabilities unless they will become the basis for classifications in other regulations such as the proposed Part 66. While the clarity of the definitions provided in this proposed rule could be improved upon, such improvement could occur as easily under Part 145 as under any other Part.

Quality Assurance

The addition of a requirement for repair stations to have quality systems in place is an important one. While many organizations do have them, very many do not. I find it an interesting observation that the importance of these systems seems diminished by the wording used. In many other places in the proposed rule, such as the training program in paragraph 145.159, the requirement is to be "approved" by the Administrator. In the case of a quality assurance system, the requirement need only be "accepted" by the Administrator – a distinction which Flight Standards field personnel are quick to make. In the case of this particular requirement, this is an appropriate distinction. This is not to say that I would recommend that the wording be changed to "approved" here. As discussed under the general discussion on transition, getting CHDO "approval" on all of the training programs and repair station manuals this regulation will require will be a challenging enough task. Granting acceptance on the wide range of quality systems that may be presented will likely prove daunting for the Flight Standards organization. Increasing the complexity of that review would be impractical.

Never the less, it is discomforting that there is the appearance that quality assurance is less important to the Administrator than training program content or vendor selection.

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Specific Comments

145.3

There is no definition provided for the term "airworthy" or it's consequent derivatives, "airworthiness" and "unairworthy". In view of the criticality of these terms to an understanding of paragraphs 145.2 11 and 145.2 19 such a definition should be provided in the regulation.

145.3 (c) "Approve for return to service"

The proposed definition includes three categories of data which may be acceptable for accomplishing maintenance, preventive maintenance or alteration (collectively, work) under this part.

- The first of these, "manufacturer's maintenance manual" (particularly as it is used here without capitalization) is a fairly generic term which may or may not apply to such things as overhaul manuals, component maintenance manuals, structural repair manuals, aircraft maintenance manuals etc. Furthermore, many of these documents have never been FAA approved and there is rarely an indication on the document as to whether or not this is the case.
- The second of these, Instructions for Continued Airworthiness, is FAA approved as a part of the type certification process (or supplemental type certification process, or technical standard order authority process or even "field approval" process). Unfortunately, ICA's are an evolving concept and there is currently a growing debate over what constitutes a proper ICA. Current approved ICA's range from cursory directions for replacement to elaborate and comprehensive repair manuals.
- The third, other methods, techniques and practices acceptable to the administrator, constitutes a broadening of the terminology used in the existing regulation, "technical data approved by the administrator".

An attempt to broaden the understanding of what information can be used for work under this part is a worthwhile effort. However, the terms as here-in defined seem to offer opportunities for debate between repair stations and their overseeing authorities in the future. Furthermore, these definitions are not congruent with the wording in paragraph 145.2 15 when referring to returning to service as a privilege of the certificate. A broader range of data than the "approved technical data" and "data acceptable to the Administrator" as used in 145.2 15 would certainly be desirable, but at least those terms won't encourage much disagreement. I do not, at this time, have a suggestion for an alternative wording to this definition, but I encourage a review of the possible interpretations of these phrases.

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145.3(k) "Directly in charge"

In light of the significant potential for expanding remote operations either in satellite locations, as work performed away from the repair station as provided for in part 145.103 or as subcontracted maintenance as provided for in 145.2 13, and in light of the precedent set in paragraph 145.109 for electronic communications for the chief inspector, this definition should reflect a similar ability to communicate.

The regulation in and of itself doesn't set an upward limit on how high in the organization, this person can be. Currently, in part 121 operations, the term is used through a Vice President level position. Particularly in the case of larger repair stations, a similar organizational structure may be present and documented in the RSM. It is not unusual for maintenance issues to be brought to the attention of such persons. Therefore, their ability to deal with any issues should not be restricted to an on-site presence.

145.11 Deviation Authority

The inclusion of the provision for a Deviation Authority in the proposed rule is a welcome one. Such a provision can actually encourage innovations which may enhance safety. In all probability however, the majority of applications for Deviation Authority will be initiated as a result of economic concerns. As such, the potential exists for Deviation Authority to become a competitive tool.

Despite the intent expressed in the background section of the NPRM that Deviation Authorities will not be widely granted, the motivation for repair stations to seek these authorities will be strong. Repair stations that have developed alternative means of compliance for any regulation may wish to consider those means of compliance proprietary to enhance a competitive edge in the marketplace. However, since the purpose of the Deviation Authority is to provide regulatory flexibility, each Deviation Authority granted should be considered as an instance-specific regulatory interpretation and as such be public knowledge.

I would suggest that a means of publishing active Deviation Authorities be established just as Type Data, PMA, designee listings and other information is currently published through Advisory Circulars.

145.59(a) Aircraft ratings

The rationale provided in the NPRM for dividing the current Class 4 airframe category into two separate categories assumes a higher level of complexity and a predominant "transport category" use for aircraft over 75,000 pounds. This distinction raises two separate issues.

It clearly recognizes a differentiation between business jet aircraft and those used by air carriers. The operational differences are certainly pronounced between the two groups of aircraft but it seems unclear what difference this makes in terms of the maintenance capabilities of a repair station performing work on the aircraft. The certification requirements for aircraft used in the two

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operational modes are identical (FAR 25) and it is the technology of that certification process that relates most closely to the maintenance capabilities required for their continued safe operation.

More importantly however, we have seen an astounding growth in the use of smaller jet transport aircraft in the last few years, many of which fall under the 75,000 pound weight limit proposed for Class 3. (An increase that the FAA along with everyone else in the industry expects to continue for many years). These aircraft are built and operated to the same requirements as larger aircraft and should therefore not be distinguished for maintenance purposes by either use or complexity.

It can be argued that the types of maintenance programs used for transport and private use aircraft are significantly different, but they are different primarily on when activities are accomplished, not which activities are accomplished or how these are performed (except for a greater emphasis on cost saving methods in transport maintenance than in private aircraft maintenance). If the intent of the Class 2 rating was to allow repair stations engaged primarily in work on private aircraft to obtain a class rating without incurring the expense associated with maintaining transport category aircraft capabilities, a more suitable approach would be to apply a liberal interpretation of the limited aircraft rating for repair stations engaged solely in that market.

A separate concern regarding this paragraph lies in the extension of the authority based on the new terminology. The wording and apparent intent of the background discussion on this class indicate that the holder of one of these ratings would be able to work on the engines of any aircraft on its capabilities list. What is unclear is if this is intended to mean that the holder can operate essentially as an engine shop working on any engines listed on a given aircraft's TC or only on those engines coming off of or going on to aircraft which it is maintaining.

145.59(g)(4)

The distinction of an accessory rating for APU's may lead to inconsistencies for aircraft class rating holders. Under the proposed rule, an aircraft class rating holder may perform work on the aircraft's engines (excluding overhaul). This same repair station does not appear to have the authority to do the same on the aircraft APU even though the capabilities required to work on each are likely to be identical.

145.59(i) "Specialized service ratings"

The background explanation of the expansion of specialized service rating indicates that this will include non-essential equipment like entertainment and passenger telephone systems. The text of the proposed rule itself however, maintains the current focus on process oriented functions such as NDI, plating or fuel tank repair. If the intent of the proposed rule is to treat these types of systems as something other than accessories, paragraph (i) should so state. Additionally, those non-essential systems being maintained or altered under this type of rating should be maintained

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in accordance with the ICA's generated as a part of their certification (generally STC) rather than in accordance with a specification as indicated in the proposed rule.

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145.61(a)

I would suggest that in order to ensure a smooth transition to the new rule a staggered schedule be established based on the types of ratings currently held for all transitions which occur under this paragraph. At a minimum, the period should be extended to three years as shown on the following table.

current rating held	transition deadline
Airframe Class (l-4)	1 year from adoption of the new rule
Power-plant Class (l-3)	16 months from adoption of the new rule
Radio Class (l-3)	20 months from adoption of the new rule
Instrument Class (l-4)	2 years from adoption of the new rule
Accessory Class (l-3)	27 months from adoption of the new rule
Propeller Class (1 -2)	30 months from adoption of the new rule
Limited Rating (including Specialized Service and Manufacturers)	33 months from adoption of the new rule
Hardship exemption	3 years from adoption of the new rule

The selection of classes shown here is fairly arbitrary except that the Airframe and Powerplant classes were selected first since it is likely that the widest range of issues or difficulties will be encountered during the transition of the larger and more complex operations of the large repair stations holding these ratings. The intervals here are shortened during the third year because the experience level of the CHDO's with processing the transition applications will have increased and the number of remaining repair stations decreased. All repair stations would have to comply with the earliest applicable deadline for which their current ratings qualify.

A final interval is added to provide for special circumstances which might create an undue burden on repair stations. This would primarily result from increased costs not foreseen in the Administrator's estimates. Any repair station which could demonstrate an estimated conversion cost in excess of a reasonable percent of annual revenues (I would suggest 0.5%) could be granted an extension to the longest transition interval in order to distribute those costs over a longer period of time.

145.103(b)(2)

The discussion in the background section of the NPRM addresses the desire on the part of the FAA to eliminate the provision for permanent outdoor work docks for performing maintenance. While this may indeed provide quantifiable benefits in situations where work docks are used exclusively in lieu of hangar facilities, a provision should remain for the use of work docks in conjunction with hangar facilities. It may not be the intent of the desired change to imply that no outdoor work is allowable, but unless specific provision is made for it, the interpretation that this is the case will certainly arise.

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Significant portions of many maintenance and alteration activities may be performed with an aircraft outdoors with no effect on the quality of the work performed. The clearest example of this would be work performed in the cockpit or cabin interior, both of which can be climate controlled and properly lighted with relative ease. A complete elimination of the provision for work docks would place an unwarranted restriction on the capacity of many repair stations (a point that will hopefully be quantified by comments from other sources).

As an example, during the late 1980's and early 1990's I worked at Tracor Aviation in Santa Barbara, California. This was perhaps the classic case for the use of work docks. The climate in Santa Barbara is particularly benign and our involvement in modification work in hush-kitting and interior reconfiguration afforded plenty of opportunity for safe outdoor work.

The facility had three hangar bays each capable of housing a DC-10 sized aircraft. We calculated our maintenance and alteration capacity based on the use of these hangars and on the use of the ramp area outside of the facility. While the type of work performed had the largest effect on the capacity modeling, the facility utilization provided a significant impact as well. The following table has been constructed from my records on the facility operations and shows the breakdown of capacity at that facility as used for planning purposes by the company.

	In Hangar	**Ramp**
Production man hour capacity (average work mix)	1,500,000	550,000
Associated labor revenues (at then average bill rate of $40/hr)	$60,000,000	$22,000,000
Associated material revenues (at then average work mix ratios -- 18% of labor for in hangar work 55% of labor for ramp work)	$10,800,000	$12,100,000
Total revenue capacity	$70,800,000	$34,100,000
	67%	33%

Since this company is no longer in business, the above figures represent a model rather than an estimate of economic impact. The principle of this model however, holds for the current tenant of the facility and for many other facilities around the country. Removal of this existing capacity for repair stations where it is utilized represents an undue economic burden.

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145.153(g)

While it is important for the proposed rule to provide a provision for the evaluation of a repair station's personnel capabilities, the wording imported from the current foreign repair station requirements presents three problems.

Sub paragraph (1) provides for inspection of employee records. However, as the GAO's review of the Air Transportation Oversight System has recently observed of a similar requirement in that program, with no guidelines of what constitute suitable qualifications for a given position, the review may become arbitrary.

Sub paragraph (2) offers similar opportunity for arbitrary action as well by providing for the evaluation of technical personnel by individuals who may not possess a background in the specific area of expertise. In practice, such evaluations are most likely to be conducted by the repair station's PMI. These persons are certainly not required to personally have all of the qualifications possessed by a repair station's personnel and in most cases, they will not. They are therefore, potentially unqualified to make evaluations in an oral venue.

Sub paragraph (3) uses a grammatical pattern similar to one long in use in other parts of the regulation "other means acceptable to the administrator". However, there is a significant difference between a situation in which a presentation is made to the Administrator by a repair station to determine its acceptability as occurs under current regulations using this wording and one in which the Administrator (or more specifically, the Administrator's field representative) establishes an ad hoc requirement as the wording "Any other method the administrator elects." would allow.

The wording in the proposed rule should reflect a reference to some standards for both qualifications and for testing in order to make the application of the rule fair. More importantly, it should not provide for any ad hoc establishment of criteria on the part of FAA field personnel.

145.155(a)

The expansion of the ability of a repair station to recommend repairmen based on technical capabilities rather than organizational responsibilities is a significant improvement in this part of the regulation. It reduces organizational and financial restraints controlling the number of repairmen a repair station may employ and offers the possibility of increasing safety by more evenly distributing employee workloads.

145.155(b)

The comments above to section 145.153(g) are directly applicable to this paragraph.

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145.201 Quality assurance and quality control systems.

Quality systems are indeed important to safety. While the background discussion in the NPRM indicates a belief on the FAA's part that they are essential to ensuring consistent regulatory compliance, it is important to remember that safety (at least the very high level of safety for which we strive) doesn't result from just following the rules. It results from a thorough and systematic approach to all activities with an awareness that the end result of everyone's efforts requires careful attention to the process. Quality systems can do much to foster such an approach.

Many repair stations have adopted IS09000 or AS9000 quality systems and put them into place. Functionally these systems encompass all of the quality requirements of the FAR. Yet these systems have been traditionally difficult to coordinate with the regulatory requirements of FAR 145 because of differences in structure. (See the comments to paragraph 145.205 for an expansion on this statement.) The goals of aviation safety and regulatory compliance would be enhanced if the proposed rule (or its associated advisory material) provided for the acceptance of a quality system like an ISO/AS9000 system which encompassed all of the regulatory requirements of Part 145. Without the need to maintain a separate manual and system to satisfy both IS0 registrars and FAA inspectors and the confusion attendant to doing so, organizations would be better able to satisfy both requirements.

At the same time, many organizations (particularly smaller ones) may find elaborate quality assurance systems like the ISO/AS systems burdensome. While the Administrator should encourage the use of the more comprehensive systems, guidance on the broad spectrum of systems that can meet this requirement should be provided both to repair stations and to CHDO personnel.

145.201 (c)

The discussion above for paragraph 145.3(c) applies here as well. While there may be a difference between performing maintenance or alterations and returning to service from a reference data standpoint, the proposed rule would benefit from a consistency in the terms used for the reference materials required for these activities.

145.203 Capabilities list

The proposed rule does not provide any guidance on the required level of breakdown needed for items on the capabilities list. While it may at first glance seem obvious that the capability to repair a given part number includes the capability to repair sub-components of that part, in practice this is not always clear.

The discussion in the background section of the NPRM on the new class rating for computers highlights this concern. While the distinction made in this particular case seems clear under abstract consideration, it is important to remember that aircraft design engineers have not and will not consider maintenance classifications in their product definition. This will lead to

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illustrated parts catalog based debate on what constitutes a particular class or sub-class of product.

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145.205 Repair station manual

The change from an inspection procedures manual to a more comprehensive repair station manual represents a significant improvement in the process of organizing a repair station's operations. Traditionally many repair stations had to prepare two separate manuals, one to satisfy the requirements of Part 145 and a second to direct employees on how to do their jobs because of the impracticality (and often impossibility) of having both sets of instructions in one document. This has often led to conflicts, confusion and errors on the part of well-intentioned people trying to satisfy two sets of requirements. A factor which should be considered with this new emphasis on procedural documentation is ease of use of these manuals.

In conjunction with the introduction of the proposed rule, new guidance should be prepared to assist repair stations and CHDO's in preparing and evaluating the new RSM's. What will be important in preparing this guidance will be a recognition of the larger role that the RSM will play in an organization and a recognition that many activities other than those required to be documented by paragraph 145.207 may be affected by what is said in the RSM. Traditionally AC 145-3 has provided guidance in what an IPM required, but unfortunately, the AC reads like a checklist against the regulation. Administration inspectors who had to review IPM's often refused to accept anything that didn't follow the AC very closely, even if the document presented by the repair station was more thorough and easier to use.

With the introduction of a requirement for a quality assurance system in the proposed rule, an opportunity arises for many repair stations to consolidate disparate documents into one manual that defines a quality system under which the organization can operate. This is most clearly evident in the cases of those repair stations that have obtained IS0 9000 certifications. These organizations have in place a detailed, broadly applied and effective quality system that far exceeds the quality and operational requirements of this Part. In all likelihood however, the documentation of those requirements will be organized in a systematic manner that matches the process flows in the company. As certificate holding repair stations, they have also demonstrated that they meet all of the requirements of the regulation. Technically, this can be determined by reviewing their IS0 documentation but in practice, two sets of manuals are generally used; one for the quality system and another for the repair station requirements.

Currently, this is done for two reasons, first of all there is invariably a shift in perspective between the quality system requirements and the regulatory compliance requirements. In attempting to satisfy both a quality system standard and the item by item requirements of the regulation, one or the other must be disassembled. It makes more sense from an operational point of view to document a complete process and ensure that all of the regulatory requirements are addressed there-in. This often requires that a particular paragraph in the regulation is satisfied by following two, three or even more separate paragraphs in the manual dealing with discrete steps in a process within the quality system to show that the requirement is addressed. In my experience, representatives of the Administrator have been reluctant to accept this practice.

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The second obstacle is more far reaching. This is the question of FAA review of procedures and requirements outside of those in the current regulation. Over the years, many organizations have developed a philosophy of minimizing their IPM's to satisfy the requirements and nothing more. The rationale behind this has been to minimize the repair station's exposure during normal surveillance. Since FAA inspectors have traditionally looked only at those aspects of the organization documented in the IPM, keeping out any organizational process or procedure not required by the rule kept that process or procedure out of the inspector's focus. At the same time, many FAA inspectors have refused to accept portions of IPM's that dealt with subjects not addressed by the regulation.

As we move into our second century of aviation, we should be thinking of the larger picture of what aviation safety is. What aviation safety is clearly becoming is a matter of systematic organization that carefully plans, prepares and executes each function within the process of keeping aircraft coming and going from production through operation and maintenance. Repair stations have an obligation to safety that goes beyond satisfying the regulation and the FAA has an obligation to safety that goes beyond enforcing rules. In a perfect world, it should make no difference to a repair station how much of their operation is observed by the FAA, in a perfect world FAA inspectors should be able to share observations and suggestions for improvement with the people over whom they conduct surveillance. We are not going to get to a perfect world, but by recognizing potential improvements and providing a mechanism which allows them to develop, we can at least improve upon what we have.

The RSM should therefore be evaluated less dogmatically than in the past so that industry practices that enhance safety can be integrated into any repair station's operations.

145.205(h)

While the manual. content requirements for contracted maintenance are quite clear in this paragraph, there is an implication in other paragraphs regarding the manual that some aspects of a contractor's operation might also have to be documented. The requirement for a facility description, examples of paperwork and maintenance procedures could be interpreted by FAA field personnel as applying to those functions contracted out. I do not believe that this is the intent of this paragraph, but the wording should protect repair stations against this possible interpretation in the future.

145.207 (h)

Since each change to the RSM must be approved by the CHDO, each time a new vendor for a listed service is added, the revision must be sent to the CHDO for approval. This implies that the CHDO is approving each individual vendor, a process which would (and should if it were to be done properly) take weeks. This can represent an undue hardship when services are needed on short notice and all existing approved suppliers are unable to meet schedule requirements. Following the precedent set with capabilities list revisions would provide a more workable option. Similar procedures for vendor selection and acceptance could be written in to the manual

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(as described in the background section of the NPRM) and the listing of vendors forwarded as each addition or deletion is made.

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145.207 (m) & (n)

This language reflects paper documents but can cause confusion when applied to electronic documents. Electronic data can take many forms and while many current (and probably future) forms will support pagination similar to that of printed materials, many do not. Under current technology, one of the easiest formats for presenting electronic manuals is by using HTML or SGML. These formats do not produce pages in the traditional sense since a page can scroll almost interminably and may have many embedded discrete objects within it.

The wording of this rule should, at the least, reflect current technology and preferably should allow for future technologies to be used to satisfy the requirement.

145.221 FAA inspections

While I agree with this paragraph in content and intent, I would strongly suggest that at the very least, guidelines be developed for inspection of non-certificated facilities. It will be extremely difficult for field inspectors to wear the kind of "blinders" necessary to inspect only that portion of a contractor's operation directly related to the work performed. Even better than guidelines alone would be an expanded itemization of what is inspectable at a contract facility.

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