BEFORE THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, D.C.

Notice of Proposed Rulemaking for Flightcrew Member Duty and Rest Requirements	)	**Docket No. FAA-2009-1093** **Notice No. 10-11**

AIR LINE PILOTS ASSOCIATION, INTERNATIONAL'S COMMENTS

On behalf of the 53,000 pilots at 38 airlines in the United States and Canada, the Air Line Pilots Association, International ("ALPA") submits the following comments and responses to questions to the Notice of Proposed Rulemaking ("NPRM") for Flightcrew Member Duty and Rest Requirements.

Introduction

Over 79 years ago when the first professional pilots joined together to form a union their main focus was not on higher wages but on safety. Among the most egregious practices they faced was "pilot pushing" in which operators forced pilots to fly long hours in all kinds of weather. It was little wonder, then, that ALPA's motto became "Schedule with Safety." That motto remains the foundation of ALPA today. Given this history, it should not come as a surprise that ALPA views this proceeding as the most important in modern aviation history. The Flag and Supplemental Flight Limitation Rules have not been substantially amended for some 60 years and the Domestic rules were modified in 1985 with the provision – which was not fulfilled – to revisit the rule in two years to review a NASA study on the operational significance of pilot fatigue and circadian desynchronosis and engage in further rulemaking.

We applaud the FAA's and industry's desire to move forward with a regulation that is scientifically supported to the maximum extent possible. While there is a great deal of science that supports a great many parts of the proposed rule, all stakeholders understand that there are significant scientific gaps that still exist. Some of these include modeling on the back side of the clock for cargo and passenger operations, or determining what the true local time zone is for an airman who has been transversing multiple time zones on successive days during a trip. Other knowledge 'gaps' include the external generalization of fatigue models and studies to the populations in their mid-fifties and older, as opposed to the younger populations that most studies examine via the military or college student research. It is well known that sleep patterns and acclimation to new time zones change with an increase in age. Sleep variability of individuals has also been widely recognized for decades. Frankly, the science hasn't captured these truths yet. Therefore the FAA's conservative approach in addressing conditions where these variables are in play make sense until an FRMS process can extend the science into these areas.

This proposed revision of the regulations is based on the available science and is sorely needed. The safety of commercial aviation requires limitations on flight time, flight duty periods and duty to ensure that flight crewmembers are performing at an adequate level of alertness for safe flight operations. It is also essential that flight crewmembers be given adequate rest between flight duty periods.

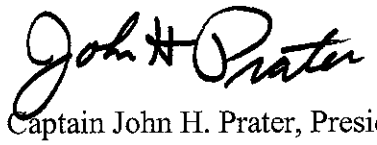
We expect that certificate holders, as they have in the past, will argue that the proposed regulation if implemented will be extremely costly. With the sophisticated scheduling optimizers available we believe that the cost of the proposed regulation will

be minimal. The optimizers are designed to schedule to achieve the greatest productivity and lowest cost solution. This was demonstrated when the certificate holders implemented the "Whitlow" interpretation.

We support the proposed regulation, with some modifications as recommended in our comments. The FAA's proposed regulation will result in a science-based regulation that will comply with the ICAO standard and ensure flight crewmember alertness. Our submission is in three parts; our comments on the NPRM, our responses to the FAA's questions as posed in the Notice and our responses to the FAA's clarifying questions.

We appreciate the opportunity to comment.

Sincerely,



Captain John H. Prater, President
Air Line Pilots Association, International

Comments

117.1 Applicability

We are pleased that the FAA has acknowledged the current science and recognizes that pilot fatigue does not differ whether the pilot is operating domestically, internationally or in supplemental operations. We support the FAA's determination that one level of safety with regard to fatigue should apply equally to all Part 121 certificate holders.

117.3 Definitions

We propose the following additions and clarifications to the Definition section.

> **Acclimated** – means a condition in which a crewmember has been in a new theater for the first 72 hours since arriving **and** has been given at least 36 consecutive hours free from duty during the 72 hour period.

Rationale: The established science, as we demonstrate below, is that 3 consecutive local nights rest is required to become acclimated. CAP 371 recognizes this science and requires 3 consecutive local nights rest to be acclimated.

As the rule currently is written, it would allow carriers to provide 36 hours of uninterrupted rest at the layover location and then be considered "acclimated" to the local time zone. Such an assumption is incorrect for the following reasons:

1) For typical flights from the U.S. to Europe or Pacific destinations, the number of time zones crews would transit would be in excess of 5 or more. The general agreed upon acclimation rate is about 1 time zone or one hour difference per day.[1] Some expert

[1] It takes about one day for every time zone crossed to recover from jet lag. When circadian disruption and sleep loss occur together, the adverse effects of each are compounded. Battelle Memorial Institute. March 1998. *A Review of Issues Concerning Duty Period Limitations, Flight Time Limitations, and Rest Requirements as stated in the FAA's Notice of Proposed Rulemaking 95-18*, 60 Fed. Reg. 244 (Proposed Dec. 20, 1995).

researchers have published data showing even longer periods to become acclimated to the local time zone.[2] Conclusion: The crew would not be acclimated after 36 hours of layover rest.

2) While 3 consecutive physiological nights may start approaching a reasonable compromise for the purpose of entering the FDP tables, a 36 hour rest by itself clearly would not. In order for the rules to approach parity, the implication is that a night of normal sleep would be approximately 8-9 hours of sleep. Three nights of consecutive sleep would be 24-27 hours of sleep. The 36 hour rule suggests that crews would remain asleep for nearly the entire layover period. This is not physiologically plausible for healthy aircrews.

3) Further, when crews are put into a rest period, it is critical for any fatigue safety regulation to assess where they are in their own circadian cycle – as that will determine when in the following rest periods, crews would be able and likely to sleep from a physiological perspective. To be sure, being put into a rest cycle does not mean that the crew will be able to sleep according to a desired clock position. The crews' circadian phase will be the key-determining factor as to when and how long crews will subsequently sleep. In a 36 hour rest situation, crews could have only one full sleep cycle in their physiological nadir and if that falls early in the layover rest period, they

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[2] For example: Gander, et al. (1989) showed that it took several days for the acrophase of the temperature rhythm to come within one standard error of complete resynchronization after a 9h westward transition, and that the adaptation in an eastward direction took even longer. *Paper presented at the RTO HFM Lecture Series on "Sleep/Wakefulness Management in Continuous/ Sustained Operations," held in Fort Rucker, Alabama, United States, 17-18 June 2002; Warsaw, Poland, 24-25 June 2002; Paris, France, 27-28 June 2002, and published in RTO-EN-016,* Gander PH, Myhre G, Graeber RC, Andersen HT, Lauber JK (1989*) Aviat Space Environ Med* 61: 733-743.

would initially sleep, then be awake for an extended period before reporting for duty. At that point, the pilots, through no fault of their own, would be significantly fatigued after being awake for 12 to 15 hours prior to starting their duty period.

We believe that the regulation should require 3 local nights rest. However, during the first 72 hours in theater, measured from the time of first arrival, a 36 hour rest within the 72 hours may allow a flight crewmember to become acclimated. Merely being in theater for a 72 hour period without at least 36 consecutive hours rest during that time would not allow a person to become acclimated. It is necessary to have both time in theater and adequate rest to become acclimated. The preamble to the proposed regulation states that the tables selected from the ARC were in part based on being the most conservative approach. The wide range of available research on the topic of acclimation, combined with operational experience, clearly supports a more conservative approach of 72 hours in theatre with 36 hours free of duty to consider the crew acclimated.

Acclimated Local Time - means the local time at the location where the pilot last had greater than 36 hours free from duty in the first 72 hours in theater.

Rationale: This definition provides an unambiguous time for applying the definition of Nighttime Duty Period and for entering the FDP and Flight Time limit tables. The original NPRM wording of "acclimated or home base" time left many questions of interpretation. For example, a USA based pilot who acclimates in Europe and then subsequently flies to Japan would, under the current wording, enter the tables at Home Base time instead of Europe time. Similarly, the exact location of acclimation must be known to determine future loss of acclimation. For example, a pilot flies to Paris and has 37 hours off, but at the end of his 72 hours in theater happens to be 3 more hours east at Tel Aviv. He is now acclimated, but where? Would a further flight two more

hours east to Dubai cause him to be unacclimated? It depends whether you define the point of acclimation as being tied to the 36 hour rest or to the 72 hours in theater condition. The above proposed definition removes such doubts about the location of acclimation and the use of regulatory tables, allowing practical and reliable computer programming of scheduling. Under this proposal, both the tables and the definition of Nighttime Flight Duty Period would then use the new term, "Acclimated Local Time".

> **Consecutive night duty period - means two or more night flight duty periods that are not separated by at least a Part 117.25 rest between the duty periods that encompasses a physiological night's sleep (1:00 am to 7:00 am at home base or acclimated local time).**

Rationale: Part 117.27 limits consecutive nighttime flight duty periods to three periods. The term *consecutive night duty period* is not defined, and to avoid confusion in applying 117.27 we believe it should be defined.

> **Flight Time – means when the aircraft first moves with the intention of flight.**

Rationale: The FAA in FAR 1.1 currently defines flight time as the moment the aircraft first moves under its own power. However, the PIC and required flight deck crewmembers are always responsible and must perform their duties when the aircraft is moved by a tug or sits on a hardstand and that time should count as flight time if the movement is with the intention for flight. This definition is consistent with EU-OPS subpart Q which provides:

> "The **time** between an aeroplane first moving from its parking place for the purpose of taking off until it comes to rest on the designated parking position and all engines or propellers are stopped."

> **Nighttime Flight Duty – means a duty period during which any part of the duty period falls within the home base or acclimated local time period of 0200 to 0459.**

Rationale: The term "nighttime flight duty" is not defined and to avoid confusion in applying 117.27 we believe it should be defined. The Nighttime Flight Duty definition we have used is the CAP 371 definition which we believe is scientifically correct.

Rest Facility definition should include the following clarification:

"A rest facility on an aircraft shall only be used for in-flight rest opportunities."

Rationale: This statement will eliminate any temptation to have crews obtaining their Part 117.25 or Part 117.17 rest on the aircraft when it is on the ramp. A bunk or seat on an aircraft is simply not a suitable rest facility on the ground.

Schedule Reliability – means the accuracy of the length of both a scheduled flight duty period and a <u>scheduled flight segment</u> as compared to the actual flight duty period <u>and segment</u>.

Rationale: This change in definition to include measurement of "flight segments" is necessary for consistency with our proposed changes to 117.9 below.

Suitable accommodation - means a <u>single occupancy</u>, temperature-controlled facility with sound mitigation that provides a crewmember with the ability to sleep in a bed and to control light.

Rationale: Operational experience has demonstrated that a <u>single occupancy</u> room is required. Otherwise, disruptions such as the other person reading, watching TV, snoring, etc., will disrupt the roommate's rest.

Theater - means a geographical area where local time at the crewmember's flight duty period departure point and arrival point differ by more than 4 time zones or 60 degrees of longitude.

Rationale: Theater is a term used in the proposed regulation and should be defined. 60 degrees of longitude is necessary for those countries such as China which for political reasons is a single time zone.

Unacclimated – A pilot becomes unacclimated if he has traveled to a location more than 4 time zones or more than 60 degrees of longitude from the location at which he was last acclimated.

Rationale: The NPRM references "unacclimated" in several sections of the proposed regulation but does not define the term. We believe it should be defined. Defining acclimation in terms of "time zones" is subject to whim of governmental policy, (e.g., all of China is in a single time zone even though it spans 5 normal time zones in width). 60 degrees of longitude is equivalent to 4 normal time zones and should be included as a supplement to the time zone metric.

117.5 Fitness for Duty

We support the concept that a flight crewmember must be fit for duty prior to operating an aircraft. The fitness for duty is and must be a joint responsibility of the certificate holder and the flight crewmember. While it is important that both the flight crewmember and the certificate holder be involved in fit for duty determinations, we cannot create an environment that requires tracking and reporting the activities of an individual flight crewmember prior to their reporting for flight duty. Such tracking would be difficult, costly and impractical for the certificate holder to administer and would constitute an unwarranted invasion of the personal privacy of the flight crewmember. The proposed provision provides a framework for educating and encouraging responsible jointly-managed commuting policies. The proposed 117.5 should be adopted as written and the accompanying Advisory Circular (AC 120-FIT) should be removed from the docket, as the topic itself was not exposed to the same peer review and recommendations that other aspects of the proposed rule were during the ARC process. The FAA took a path in AC 120-FIT significantly different from ARC

recommendations. If it is the desire to continue down this path, all of the applicable stakeholders should have a similar opportunity to provide input in the process and a corresponding comment period should follow separate from this rulemaking. We recommend an ARAC approach so that the issue is properly identified and jointly addressed.

117.7 Fatigue Risk Management System (FRMS)

We strongly support the introduction of FRMS in the U.S. Aviation System. We do, however, believe that Section 117.7(b) needs to be amended to include the following items:

- **The FRMS must be an equal partnership that includes the FAA, the certificate holder and a non-management pilot representative.**
- **FRMS does not replace the regulatory scheme, its purpose is to supplement adequate prescriptive rules.**
- **Any FRMS must provide an equivalent or better level of safety and be centrally approved by the FAA. (One office at FAA headquarters should be responsible for approving FRMS. This is the only way to provide a uniform FRMS approval scheme.)**
- **FRMS should be limited to specific certificate holders' data and scheduled city pairs or substantially similar city pairs in terms of FDP length, start time and block, which must be scientifically and then operationally validated by all stakeholders.**
- **FRMS, like SMS, requires a commitment from the certificate holder's senior management team and a specified line of accountability in the organization.**

Rationale: A FRMS comprises a comprehensive range of procedures that are both scientifically based and data-driven, allowing a cooperative and flexible means of managing fatigue. There remains a requirement for the regulator to provide prescriptive flight and duty time rules for operators not embracing FRMS principles. Such a set of rules will also provide a base line against which the fatigue levels of any FRMS can be

compared, and in the case where an FRMS does not provide at least an equivalent level of safety to the prescriptive scheme, provide a reversion. Operators may, subject to regulator approval, embrace FRMS for all or part of their operations.

The *purpose* of any FRMS is to ensure that flight crew members are sufficiently alert so that they can operate to a satisfactory level of performance and safety under all circumstances.

A FRMS supplements prescribed flight and duty time regulations and other validated independent scientific research based software tools by applying safety management principles and processes to proactively and continuously manage fatigue risk through a partnership approach requiring shared responsibility among management and crew members. These changes to the prescriptive rules must be operationally validated prior to acceptance. It can therefore only operate in circumstances where all stakeholders, particularly the pilot body, support the operation of a FRMS. Accordingly, an open reporting system and non-punitive working environment, sometimes referred to as a "just culture" is a prerequisite within the organization for a FRMS to exist because crew feedback is an essential component of the program. All successful safety programs such as ASAP and FOQA are based on a three-way partnership and FRMS should be the same. A FRMS must specify the prescriptive regulatory scheme upon which it is based. In the event of suspension, termination or revocation of FRMS, the carrier's affected operations shall revert to the baseline prescriptive scheme.

FRMS is intended to be used to supplement prescriptive fatigue management regulations as a means of ensuring that flight crew remain sufficiently alert during duty to achieve a satisfactory level of operational performance and hence safety under all

circumstances. A well developed and managed FRMS integrates operational and scientific data such as physiological and behavioral measures in the scheduling of crew members by providing a balance between duty types, crew rest and recovery. In the case of extended flight duty periods with augmented crew, such as ultra long range (ULR) operations, the planning of in-flight rest can be optimized.

FRMS must be based on a partnership approach for which there is agreement between the operator, regulator and pilot body. As FRMS is a new emerging concept, a Memorandum of Understanding between principle stakeholders should form the basis of initial agreement and be the subject to on-going periodic review based on assessment of the effectiveness of the program in achieving its stated goals. The Memorandum of Understanding must include a mechanism for the representatives of the stakeholding pilots to unilaterally suspend or terminate participation in the operator's FRMS in the event that the representatives of the stakeholding pilots determine in their discretion that the FRMS program's safety *purpose* is not being met.

Pilot representatives, either from, where such a body exists, an established organization independent of the company, or where such a body does not exist, independently elected directly by the pilots, must be included as members of the operator's Fatigue Management Steering Group. This committee will be fully involved in the initial development of the FRMS program, and shall be fully and directly involved in the on-going oversight of the operator's FRMS program including the development of modifications of the FRMS to meet the program's safety *purpose*.

117.9 Schedule Reliability

We propose the following additions and changes to the Schedule Reliability section:

117.9(a) Change 60 days to **30 days**

(a)(1)(*modified*) Its system-wide flight duty periods if the total actual flight duty periods exceed the maximum allowed flight duty periods for the start time of the FDP by more than 5 percent.

(a)(2)(*modified*) Any scheduled flight segment that is shown to actually exceed schedule 20 percent of the time.

(b)(*modified)* Each certificate holder must submit a report detailing the scheduling reliability adjustments required in paragraphs (a) of this section to the FAA every 30 days detailing the overall scheduling reliability, and flight segment reliability. Submissions must consist of:

(1) The carrier's entire FDP schedule for the previous 30 day period and separately those FDP's exceeding the maximum FDP limit.

(2) The carrier's flight segments on a per segment basis and the list of those segments exceeding the 20 percent requirement in (a)(2).

Rationale: These proposed amendments accomplish two changes to the proposed rule. First, the reporting period is 30 days rather than 60 days and second, a flight segment reliability requirement is added.

If a schedule exceeds the limits in this section the certificate holder should take prompt action to correct the schedule. A certificate holder should not be allowed to operate a schedule that violates the scheduling limitations for 60 days. With the sophisticated computerized scheduling programs available and used by most if not all certificate holders, a 30 day reporting period is neither unreasonable nor burdensome. The certificate holder should correct any schedule exceedance at the point the certificate holder becomes aware that the schedule does not meet the scheduling limitations. This is

particularly true considering the amount of change in an air carrier's flight crew schedule month to month.

To achieve schedule reliability the individual flight segments must be considered. If a given segment within a pairing causes the pairing to exceed the limits, the certificate holder can merely leave the offending segment and change the pairing mix to hide the problem and/or bring it within limits. The problem segment would never be corrected. We believe that a scheduling metric must be included in 117.9. Certificate holders now provide on-time reports to the DOT on an individual flight segment so this should not be a burdensome requirement.

117.13 Flight Time Limitation

We propose that Table A which specifies flight time limits be amended as follows:

Table A—Maximum Flight Time (Block) Limits

Time of Report (Home Base or Acclimated Local Time)	Maximum Flight Time (hours)
0000-0459	7
0500-0659	8
0700-1259	9
1300-1959	8
2000-2359	7

Rationale: The flight time limits must be "hard" and not scheduled for several reasons. Foremost, the most frequently abused provision of the current rules is the "scheduled flight limitation provision." Certificate holders consistently schedule to the limit, i.e., 7:59 or 7:55, even when they know in advance that the flight on a given day

will not meet the scheduled time because of winds or ATC delays at busy airports. In practice, many of these schedules exceed 8 hours by 45 minutes or more.

The hard limits would be applied like "Whitlow" is with the 16 hours duty limit. As the FAA and others will recall, in 2001 the certificate holders resisted Whitlow on the grounds that the cost would put certificate holders out of business. We anticipate the same approach to this NPRM. In their request to stay enforcement of Whitlow, the RAA stated that the Whitlow interpretation would "bring about the demise of smaller carriers." They would be required to hire numerous flight crewmembers and the cost would mean elimination of service to smaller cities. Likewise, the ATA complained that enforcement of Whitlow would inconvenience the traveling public as their members would have to delay and cancel flights. Additionally, the ATA carriers would be subjected to having to hire many additional flight crewmembers incurring tremendous costs for salaries, benefits and training.

For this reason they engaged in litigation to overturn Whitlow. When that effort failed, the certificate holders implemented the interpretation with little or no impact on their operation. They adjusted their scheduling practices with minimal or no cost. It can be anticipated that the certificate holders will take the same position on hard limits as they did with Whitlow. *The sky is falling* approach should be rejected. With the sophisticated scheduling programs and historical data available to certificate holders, the implementation of this provision should be accomplished at minimal cost. Another reason these limits must remain hard is that the current protection for exceeding schedule, which is *compensatory rest,* is not included in this proposal. If Table A were to be scheduled rather than actual flight time there would be no protection for fatigue caused

by the exceedances. We do recommend that Table A be modified to reflect the unanimous view of the ARC that the limit be 7 hours for the early morning hours and the majority view that it be 7 hours for the late evening hours.

Likewise, the majority view was that the maximum limit should be 9 hours for the 0700-1259 time period, which is a 12.5 percent increase when compared to the current rule. Even if certificate holders have to "buffer" schedules, they will be in no worse position than they are today because of the changed limits. In most instances, they will receive a distinct advantage with the increased flight limits.

117.15 Flight Duty Period: Un-augmented Operations

We propose the following changes to 117.15(c)

(c)(1)(*added)* The certificate holder may extend a flight duty period to the maximum allowed in Table B based upon the time the flight crewmember reported for duty.

(c)(2)(*added)* The pilot in command and certificate holder may extend a flight duty period **beyond the maximum in Table B based upon the time the flight crewmember reported for duty** up to 2 hours.

(c)(3)*(renumbered)* An extension in the **maximum** flight duty period exceeding 30 minutes may occur only once in any 168 consecutive hour period.

Rationale: Since the certificate holder is free to initially schedule up to the appropriate FDP limits in Table B, we are not opposed to allowing certificate holders in unforeseen circumstances to extend the assigned FDP to the maximum permitted. We expect this would occur in limited circumstances. With regard to (c)(3) above, we cannot conceive of a circumstance where an extension could occur on consecutive days due to the once in 168 hours limitation. Therefore, we recommend deleting the words "and never on consecutive days."

117.19 Flight Duty Period: Augmented Flightcrew

We propose the following amendments and additions to 117.19.

Revised Table C—Flight Duty Period: Acclimated Augmented Flightcrew

Time of Start (Home Base or Acclimated Local Time)	Maximum Flight Duty Period (hours) Based on Rest Facility and Number of Pilots					
	Class 1 Rest Facility		Class 2 Rest Facility		Class 3 Rest Facility	
	3 Pilots	4 Pilots	3 Pilots	4 Pilots	3 Pilots	4 Pilots
0000-0559	13:50	16:05	12:55	14:20	11:45	12:15
0600-0659	15:10	17:40	14:10	15:40	12:55	13:25
0700-1259	16:00	18:00	15:25	17:05	14	14:30
1300-1659	15:10	17:40	14:10	15:40	12:50	13:20
1700-2359	13:50	16:05	12:55	14:20	11:45	12:15

Revised Table D—Flight Duty Period: Nonacclimated Augmented Flightcrew

Time of Start (Home Base or Acclimated Local Time)	Maximum Flight Duty Period (hours) Based on Rest Facility and Number of Pilots					
	Class 1 Rest Facility		Class 2 Rest Facility		Class 3 Rest Facility	
	3 Pilot	4 Pilot	3 Pilot	4 Pilot	3 Pilot	4 Pilot
0000-0559	13:15	15:20	12:20	13:35	11:15	11:45
0600-0659	14:30	17	13:35	15	12:15	12:50
0700-1259	15:50	18:00	14:50	16:25	13:30	14
1300-1659	14:30	17	13:35	15	12:20	12:45
1700-2359	13:15	15:20	12:20	13:35	11:15	11:40

Amend (c)(1) to read:

117.19(c)(1) The final segment provides a minimum of 2 consecutive hours available for in-flight rest for both flightcrew members occupying a control seat during landing. (This would require a minimum segment length of 6 hours for a 3 pilot crew and 3:45 for a 4 pilot crew to achieve the required rest).

117.19(c)(3) deleted.

117.19(d)(*modified*) No certificate holder may assign and no flightcrew member may accept an assignment involving more than **2** flight segments under this

section unless the certificate holder has an approved fatigue risk management system under §117.7.

117.19(f)(1)(*added*) The certificate holder may extend a flight duty period to the maximum allowed in Table C or D based upon the time the flight crewmember reported for duty.

117.19(f)(2)(*renumbered and modified)* The pilot in command and certificate holder may extend a **maximum** flight duty period **beyond the maximum in Table C or D based upon the time the flight crewmember reported for duty** up to **2** hours.

117.19(f)(3)(*renumbered and modified*) An extension to the maximum flight duty period in Table C or D exceeding 30 minutes may occur only once in any 168 consecutive hour period.

Rationale: As an administrative matter, we have pointed out in our clarifying questions on the docket that Table C as published in the NPRM has an incorrect heading. The Table heading needs to match Table B and the "Time of Start" should include home base or acclimated local time.

The NPRM proposed chart in Table C is based on the TNO Report. Upon a further review of the TNO Report, we believe the proposed Table C was oversimplified in two regards. The first was that many of the values were oversimplified following a rounding process that doesn't adequately represent the actual calculations used in the ARC process. The second oversimplification is the use of a standard 30-minute reduction for a nonacclimated crewmember. The end result is an improper application of a nonacclimated penalty for the operation planned. Additionally, just as is the case with the acclimated discussion, a table that reflects the true values is better suited to accurately reflect the appropriate reduction for the crewmember not being acclimated.

Additionally, the TNO Report is intended for single segment operation only and the addition of more than one additional segment would stray too far from the science on

which the charts were developed. Multi-leg augmentation should only be allowed when no crew change is possible. Multi-leg augmentation should never be used solely for the purpose of extending a flight duty period. Augmented flights must not be mixed with non-augmented flights in the same flight duty period.

The proposed regulation (117.19 (c)(3)) provides for a two hour consecutive sleep opportunity for the flight crewmember manipulating the controls on landing. That sleep opportunity should be mandated for both required crewmembers at landing. Both crewmembers manipulate the controls, i.e., the non-flying pilot normally operates flaps, landing gear and radios and performs monitoring so he must be equally alert. This is especially important as augmentation has the potential to significantly increase time on task. The final segment of any augmented flight must provide the required rest. During the most challenging approaches on short final, both crewmembers are manipulating the controls and the manipulation of the flight controls transfers from one pilot to the other at about 300 feet. There are also other high workload circumstances where both pilots are manipulating the controls such as when a landing must be rejected or decision-making is required for diversion.

The rationale for the proposed changes to section (f) is the same as stated in 117.15(c) above and is equally applicable here.

117.21 Reserve Status

Due to overly complex language, we propose to rewrite section **117.21(c)** as follows:

(c) For short call reserve,

(1) **The maximum reserve duty period for un-augmented operations is defined as:**

Table E—Short Call Reserve Duty Period

Time of Start of RAP (Home Base or Acclimated Local Time)	Maximum Flight Reserve Duty Period (hours) Based on Number of Flight Segments						
	1	2	3	4	5	6	7+
0000-0359	13	13	13	13	13	13	13
0400-0459	14	14	13	13	13	13	13
0500-0559	15	15	15	15	14	13.5	13
0600-0659	16	16	16	16	15	15	14.5
0700-1259	16	16	16	16	16	16	15
1300-1659	16	16	16	16	15.5	15	14.5
1700-2159	15	15	14	14	13.5	13	13
2200-2259	14.5	14.5	13.5	13.5	13	13	13
2300-2359	13.5	13.5	13	13	13	13	13

(2) **All time within the reserve availability period is duty**.

(3) **The maximum reserve duty period (to include phone availability and/or flight duty period assignments) is determined by the earlier end point of (a) the start of the RAP time plus value in Table E or (b) the Flight Duty Period limitation in Table B as measured from the FDP time of start (home base or acclimated local time).**

Note: For example: If the RAP started at 0100, crewmember called at 0115, show at 0300, then it would be the EARLIER FDP end time of:

(i) RAP start 0100 + 13 hours = 1400 FDP end

(ii) RAP start 0100 + 1307 hours (+ 7 minute WOCL adjustment) = 1407 FDP end

(iii) FDP start at 0300 + 9 hours FDP limit = 1200 FDP end

Rationale: This ensures that the reserve will NOT have an allowable FDP limit greater than the lineholder the reserve is paired with and does not impact the operator in any manner since the reserve and lineholder end point is the same.

(4) **If all or a portion of a reserve flightcrew member's reserve availability period falls between 0000 and 0600, the air carrier may increase the maximum reserve duty period in table E by one-half of the length of the time during the reserve availability period of 0000-0600 in which the air carrier did not contact the flightcrew member, not to exceed 3 hours; however, the maximum reserve duty period may not exceed 16 hours. If the flight crewmember is contacted for an assignment prior to 0000 hours the reserve duty period would not be extended.**

Note: For example, RAP starts at 2200 hours, pilot called at 0300 for flight assignment, the RAP may be extended by 1.5 hours. If the pilot was called prior to 0000 hours there would be no extension.

Rationale: The short call reserve section is complex and we are concerned that there will be misunderstanding by flight crewmembers, schedulers and management officials with the section as written. Consistent with other limitations in the proposal, we believe a chart is a better way to set forth the short call reserve limits expressed in the proposal. We urge that the chart that sets forth the short call reserve limits be adopted. In both the ARC and the NPRM preamble, the intent was expressed that RAP extension credit is to be made available for not contacting reserves between 0000 and 0600 whose RAP's touch that time period. However, the proposed language in 117.21(c)(4) (iv) and 117.21(c)(5)(iii) neglects this distinction, providing credit for *any* period of non-contact. This error in the language has been corrected in our revised language in (4) above.

(5) **No certificate holder may schedule and no reserve flightcrew member on short call reserve may accept an assignment of a flight duty period that begins before the flightcrew member's next reserve availability period unless the flightcrew member is given at least 14 hours rest. <u>This provision may be used only once in a rolling 168 hour period.</u>**

Rationale: The need for this provision is best illustrated by real world examples. A pilot is scheduled and adjusts his rest schedule for a series of RAPs beginning at 0400. If the operator contacts the pilot at 0600 (after the morning bank of departures) and releases

the pilot for a 14 hour rest period, the pilot could then begin a RAP at 2000 to cover the late evening bank of departures. The pilot could then be contacted at 2200 and released for another 14 hour rest period. This cycle could continue for an indefinite period. Our proposal aligns this section with the provision for shifting of a RAP in section (e). Without this provision there is essentially no difference between a short-call and long-call reserve removing all circadian protection afforded by having a RAP system in the first place.

117.25 Rest

The following changes are proposed:

(d)(1) (*added*) An unacclimated flight crewmember shall be given at least 12 consecutive hours of rest beginning upon arrival at the rest facility before beginning a RAP or flight duty period.

(e) In the event of unforeseen circumstances, the pilot in command and certificate holder may reduce the 9 **or 12** consecutive hour rest period in paragraph (d) of this section to 8 **or 11** consecutive hours.

(f) (*added*) No certificate holder may schedule and no flightcrew member may accept an assignment for reserve or a flight duty period after completion of any duty period(s) (flight or reserve) in a new theater unless the flightcrew member is given a rest period upon return to the flightcrew members home base location in accordance with Table F.

(f)(1)(*added*) The recovery rest in Table F satisfies the requirements for acclimation and the flight crewmember would then enter Table (B) without a penalty.

Table F – Number of Local Nights for Recovery on Return to Home Base

Elapsed Time Since Leaving Home base (h)	Maximum Time Difference from Home Base (h)					
	4	**5**	**6**	**7**	**8-9**	**10-12+**
60-84h	1*	2*	2*	2*	2*	3
84-108h	2*	2*	3	3	3	3
108-132h	3	3	3	3	3	3
132-156h	3	3	3	3	3	3
156+h	3	3	3	3	3	3

Note 1: The values in Table F refer to eastward transitions (eastward outbound/ westward homebound) only. * denotes that for westward transitions (westward outbound/eastward homebound) one extra day is required to be added to the value depicted.

Note 2: When the elapsed time away from home base is less than 60 hours one local night's recovery rest should be provided on return to base, except when the returning flight duty period encroaches the WOCL, then an additional local nights rest will be added.

Rationale: Although 10 hours is more likely to provide an 8 hour sleep opportunity, 9 consecutive hours rest at a rest facility in the continental United States would provide an 8 hour sleep opportunity in most circumstances. A flight from the U.S. to Europe or Asia disrupts the circadian cycle and a rest of 9 hours is not sufficient to achieve an appropriate level of alertness. However, when flight crewmembers fly to a new theater they should be given at least 12 hours at a suitable accommodation between all duty periods until they become acclimated to the new theater in accordance with 117.25 or return to home base. We can accept a 1 hour reduction in the rest once every 168 hours in the event of unforeseen circumstances.

Where crew members are not acclimated, upon return to home base, a recovery period should be provided that ensures a crew member's body clock has recovered to

home base local time before the start of the next duty. The time necessary to ensure complete recovery of the circadian rhythm varies as a function of the elapsed time away from home base and the maximum time difference from home base. Table F can be used to determine the number of local nights required to reacclimate within an hour of home base.

We also believe that there should be recovery rest for time away from home when operating flights in a different theater that is less than 168 hours away from home base. The current regulations provide for recovery rest in international operations for operations less than a 168 consecutive hours period. See 121.483, 485; 121.523, 525

We believe that this recovery rest is necessary to address cumulative fatigue, to provide circadian restabilization and to repay accumulated sleep debt. We therefore propose the recovery rest chart (Table F) be incorporated into the final rule.

117.27 Consecutive Nighttime Operations

We propose the following amendment:

> No certificate holder may schedule and no flight crew member may accept more than three consecutive nighttime flight duty periods unless the certificate holder provides an opportunity to rest during the flight duty period in accordance with § 117.17.
>
> **A fourth consecutive nighttime flight duty period may be assigned if the flight crewmember receives a minimum of 12 hours rest following each nighttime flight duty period.**

Rationale: Operational experience has shown over a period of years that overnight cargo airlines can assign up to four consecutive nighttime duty periods providing that flight crewmembers are given adequate rest between each consecutive duty period. If a crewmember is given a 12 consecutive hour rest break after each duty period, that will

provide for an 8 hour rest opportunity and the cumulative sleep debt incurred will not be so excessive as to prevent a 4th consecutive nighttime FDP.

ALPA RESPONSES TO FAA'S QUESTIONS IN NOTICE 10-11

1) Please comment on adopting maximum FDPs. Should the maximum FDP vary based on time of day? Should it vary based on the number of scheduled flight segments? Should the proposed limits be modified up or down, and to what degree? Please provide supporting data.

The approach taken in the NPRM comports with scientific data and decades of professional pilot experience. We applaud this effort and believe the proposed FDP limits need no modification. We are, however, concerned with the lack of standardization of preflight duty show time. It should be 1 hour at a minimum for purpose of using the FDP tables. To do otherwise invites abuse from certificate holders who could sacrifice safety by reducing preflight time for a small gain in FDP.

2) Please comment on permitting flightcrew members and carriers to operate beyond a scheduled FDP. Is the proposed 2-hour extension appropriate? Is the restriction on a single occurrence beyond 30 minutes in a 168-hour period appropriate? Should a flightcrew member be restricted to a single occurrence regardless of the length of the extension? Please provide supporting data.

We believe the proposed extensions should apply to the maximum FDP allowed based on flight duty period start time. There is relief for certificate holders in that there is no limit or restrictions for extension of 30 minutes or less. The single occurrence beyond 30 minutes in 168 hours is also appropriate to ensure there is not abuse of the extension provision. We also concur that the PIC, who is in the best position to know the condition of the crew, must agree to any extension beyond the maximum FDP allowed regardless of the length.

3) Please comment on the proposed schedule reliability reporting requirements. Should carriers be required to report on crew pairings that exceed the scheduled FDP, but not the maximum FDP listed in the FDP table?

The reporting requirements should include scheduled segment flight times in addition to flight duty periods. Including a report on all segments is crucial in avoiding adjustments which continually remix offending segments and flight duty periods rather than scheduling them accurately. The data on flight segments is already gathered by the carrier for internal monitoring and public reporting of on-time reliability statistics to the Department of Transportation. To that end the definition of schedule reliability in 117.3 should be changed to use segments as the basis. More definitive wording in 117.9 is needed to make clear the timeline of the reporting and ensuing schedule adjustment. In addition, all stakeholders should receive a copy of the report, especially the carrier's pilot labor organization.

We have recommended specific wording changes to 117.9 in our comments.

4) Should carriers be required to report on more parameters, such as cumulative duty hours or daily flight time? If so, why?

Since there are hard limits on both items, periodic review by the FAA should suffice.

5) What should be the interval between reporting requirements?

The reporting requirement should be 30 days. This should not be burdensome, as certificate holders have automated this data.

6) How long after discovering a problematic crew pairing should the carrier be afforded to correct the scheduling problem?

Once the carrier becomes aware of a flight duty period or a flight segment that is exceeding the schedule by more than the percentage allowed it must take corrective action immediately but not later than 30 days after becoming aware of the exceedance. In addition, FAA guidance material should suggest carriers maintain a historical record of flight segments and flight duty periods for utilization in scheduling development. For example if the January 2011 Newark to London schedule required adjustment, the January 2012 Newark to London schedule should not repeat the same errors unless substantial factors have changed, such as different aircraft types, etc.

7) Is a 3-day adjustment to a new theater of operations sufficient for an individual to acclimate to the new theater?

No. As supported by science, at best a person can acclimate 1 hour per day. Just being in a new theater for 72 hours while still working allows for a crewmember's sleep to potentially be swapped multiple times resulting in both transient and cumulative fatigue and further circadian de-synchronization. We have proposed changing the requirement to a 36 consecutive hour rest within the first 72 consecutive hours in theater as appropriate to allow recovery from cumulative fatigue and enable flightcrew members to deal with circadian de-synchronization. Defining acclimation in terms of "time zones" is subject to the whim of governmental policy, e.g., all of China is a single time zone even though it spans 5 normal time zones in width. In addition some countries utilize 30 minute time zones. To better capture this new theater concept, we have proposed incorporating traveling 60 degrees of longitude within the definition.

In addition, a pilot needs to be able to enter Table B (FDP limits) at a specific acclimated time. To be programmable for tracking purposes and Table B

use, a pilot must have two pieces of information. First, is the pilot acclimated or not (does he subtract 30 min from the FDP limit)? Second, what was the time zone at which the pilot was last acclimated, (whether currently acclimated or not which row in the Table B does the pilot use)? Note that even an unacclimated pilot still has an "acclimated local time" based on where he was previously acclimated.

We have therefore recommended modifications to the definitions for "acclimated" and "unacclimated" and added a definition for *acclimated local time* in Section 117.3.

8) Is a 36-hour break from duty sufficient for an individual to acclimate to a new theater?

No. 36 hours free from duty within the first 72 consecutive hours in theater is needed for acclimation. See answer to question 7 and our proposed language change and rationale in our comments.

9) Should flightcrew members be given a longer rest period when returning to home base than would otherwise be provided based on moving to a new theater?

Yes. We have proposed a modification to Section 117.25 to provide a Table F for recovery rest on return to home base. This concept is contained in numerous international regulations and current FAA regulations.

10) Should the FAA have different requirements for flightcrew members who have been away from their home base for more than 168 hours? If so, why?

No. The regulation should provide for additional recovery rest for flight crewmembers who are away from their home base for more or less than 168 hours. Current FAA and international regulations provide for such rest and to only provide recovery rest for crewmembers who have been away from home base for 168 hours or more would degrade not improve the current regulation. We have proposed a recovery rest table in our comments.

11) Should the FAA require additional rest opportunities for multiple pairings between two time zones that have approximately 24-hour layovers at each destination? What if the scheduled FDPs are well within the maxima in the applicable FDP table or augmentation table?

The regular rules of acclimation and those of recovery rest should apply.

12) If the FAA adopts variable FDP limits, is there a continued need for daily flight time limits?

Yes. Daily flight time limits are still needed. There have been no studies on the effects of altitude, noise, vibration and limited movement on flight crews. Until such studies are completed it is prudent to err on the side of safety, just as has been stated in the preamble to the proposed regulation. These limits have been in place since the beginning of the flight limitation regulations and there is no basis not to continue these limits.

13) If the FAA retains daily flight time limits, should they be higher or lower than proposed? Please provide data supporting the answer.

Daily flight time limits should be lower due to the unknown effects of altitude, noise, vibration and limited motion on flight crews. Until the effects of these stresses are evaluated maximum daily flight time should be 9 hours from 0700-1259 LBT and 7 hours from 2000-0459. The latter value was supported by the majority of the ARC. 7 hours in the early morning hours was unanimously supported.

14) Should modifications be made to the proposed flight time limits to recognize the relationship between realistic flight time limits and the number of flight segments in an FDP?

No modification is necessary. The proposed Table B limits correctly address the need for lower FDP limits when multiple segments are being flown.

15) Should augmentation be allowed for FDPs that consist of more than three flight segments? Does it matter if each segment provides an opportunity for some rest?

No. Augmentation should be limited to two flight segments. Otherwise you are betting safety on an individual's ability to obtain in-flight rest without dedicated, sufficiently long rest opportunities. This may not be possible due to a host of reasons. Unusual operations requiring more than two flight segments should be considered by FRMS only. Additionally the rest opportunity should occur on the last flight segment of a multi segment augmented FDP to provide at least 2 hours of rest for both pilots occupying control seats during landing.

16) Should flight time be limited to 16 hours maximum within an FDP, regardless of the number of flightcrew members aboard the aircraft, unless a carrier has an approved FRMS?

Yes. The current template associated with Ultra Long Range (ULR- over 16 hours of block) flying is a good model to follow and any flight assignments over 16 hours block should require an FRMS system.

17) Should some level of credit be given for in-flight rest in a coach seat? If so, what level of credit should be allowed? Please provide supporting data.

No credit should be allowed for rest in a coach seat. Obtaining rest without leg and foot support and the ability to recline at least 40 degrees is documented as difficult by sleep scientists and was adequately benchmarked in the TNO Report.

18) Is there any reason to prohibit augmentation on domestic flights assuming the flight meets the required in-flight rest periods proposed today?

The best method of fatigue mitigation is always a fresh crew. Domestic augmentation has the potential to be a deliberate lowering of flight crew alertness levels for economic reasons. A fresh crew can be cost effectively and safely positioned domestically to any location. Certainly domestic augmentation that touches the WOCL is an unnecessary degradation of flight crew alertness. As noted in the Preamble, augmentation should be used strictly for long flights and not to extend the FDP for multiple short flight segments (FR 55865).

19) Are the proposed required rest periods appropriate?

The proposed rest requirements are appropriate for an acclimated flight crew. Unacclimated flight crews should have a minimum rest period of 12 hours reducible to 11 hours once per 168 hours in the event unforeseen circumstances arise. This is critical as sleep science has shown that the sleep opportunity must coincide with the circadian cycle for restorative sleep. Allowing a minimum 12 hour rest opportunity will usually provide a sleep opportunity aligned with one of the WOCL's. (morning or afternoon).

20) Should credit be allowed if a flightcrew member is not type-rated and qualified as a PIC or SIC?

No. Relief on the flight deck during augmented operations must ensure that it is by flightcrew members who are current (including landings) in that aircraft type and possess the same or greater level of qualification. This is essential so that qualified flightcrew are immediately available in the cockpit to handle any in-flight emergencies from cruise altitude thru landing, especially during a security lockdown. Additionally, given that sleep science indicates up to 30 minutes may be required to overcome the effects of sleep inertia, the option of waking up a sleeping qualified crew member during a time critical emergency is ineffective. Integrity of augmented crew for the entire FDP is essential.

We also recognize that the FAA intends proposed Part 117 to replace the existing Domestic, Flag and Supplemental rules. Current sections 121.483, 121.485, 121.493, 121.511 and 121.523 provide distinct flight time rules for flight engineers and pilots that operate in crews requiring a flight engineer.

The NPRM eliminates this distinction. As the flight engineer function is actively being phased out of the system (no new commercial aircraft requiring a flight engineer are currently being built or planned), the NPRM rules as proposed should be forward looking; the NPRM and its underlying concepts need not be modified to address those operations that still require a flight engineer. In the NPRM preamble, the FAA notes that the ARC largely deferred to the FAA to decide whether to allow augmentation (extension of flight time or FDP limits) based on the presence of a flight engineer. In response to the ARC's position we note that the FAA in the preamble has rejected the concept that a flight engineer may act as a relief crewmember. We agree with that conclusion. Absent further clarification, we presume under the NPRM that the FAA intends that the proposed flight time and FDP limits for pilots will apply to flight engineers as well.

21) Please comment on whether a single occupancy rest facility provides a better opportunity for sleep or a better quality of rest than a multiple occupancy facility such as a multi-bed crew sleeping facility or multi-bed living quarters. Please provide supporting data.

A single occupancy rest facility is critical for adequate rest. Different personal sleeping habits (i.e. snoring) can cause disruptions to others. As operational experience at various cargo operators has shown, the individual sleep rooms are always full prior to the recliner cubicles even though both provide lie flat surfaces, validating that pilots know they get better sleep in individual rest facilities. The definition of "Suitable accommodation" in 117.3 should be modified to include the phrase "single occupancy," and we have made that recommendation in our comments.

22) Should there be any restriction on consecutive nighttime operations? If not, why?

Yes. Due to the fatiguing nature of operating during the WOCL there should be no more than 4 consecutive nighttime operations allowed, and then only if at least 12 hours free of all duty is provided between each duty period.

23) If the nighttime sleep opportunity is less than that contemplated under the split duty provisions of this notice, should a carrier be allowed to assign crew pairing sets in excess of three consecutive nights? Why or why not?

No. As detailed in Response No. 22 above, to schedule 4 consecutive nights would require 12 consecutive hours free of all duty between each FDP.

24) If the nighttime sleep opportunity meets the split duty provisions of this notice, should the carrier be allowed to extend the flight duty period as well as the number of consecutive nighttime flight duty periods? Why or why not?

No. See response to Nos. 22 and 23 above.

25) Should a fourth night of consecutive nighttime duty be permitted if the flightcrew member is provided a 14-hour rest period between nights three and four?

No. See response to No. 22 above.

26) Please comment on whether a 16 maximum hour FDP for long call reserve is appropriate when the maximum FDP for a lineholding flightcrew member is 13 hours.

There should be no difference between the allowable FDP for a Long Call Reserve and a lineholder. Both are coming off of legal rest periods and it will vary as to which one has higher cumulative fatigue. To assume that the long call reserve pilot is somehow fresher when notification of the rest period was received in the middle of a daytime period is a fallacy.

27) Please comment on whether the proposed maximum extended FDP of 22 hours for an augmented flightcrew member is appropriate. If not, please provide an alternative maximum FDP.

We calculate a maximum proposed 20 hour FDP under the 117.19 as written (18 hours plus 2 hour operational extension). As discussed in #2, we believe that a consistent operational extension limit of 2 hours should apply to both augmented and unaugmented operations. That would make the maximum possible augmented FDP 20 hours. This matches our proposal for short call reserves discussed in response No. 30 below.

28) Please comment on whether a certificate holder should receive credit for not calling a flightcrew member during the WOCL while on reserve.

We believe the credit outlined for not contacting a short call reserve during the WOCL is appropriate. The science says that the rest provided during the WOCL is the most restorative. Note in our response to No. 30 that we propose a simpler system.

29) Should minimum required rest while on reserve status be greater than the amount of rest required for a lineholding flightcrew member? If so, please provide supporting data, if not, please provide rationale.

No. Minimum rest for a reserve and line holder should be the same. This should provide an adequate level of alertness.

30) Please comment on the level of complexity on the proposed reserve system.
We believe the system is too complicated as written. Therefore, we have proposed a language revision and a Table E which we believe makes the reserve system more easily understood and applied.

31) The FAA seeks input on the appropriate cumulative limits to place on duty, flight duty periods and flight time. Is there a need for all the proposed limits? Should there be more limits (e.g., biweekly, or quarterly limits)?

The proposed cumulative limits are well chosen and sufficient. None need to be added, but neither should any be eliminated.

32) The FAA also asks for comments on measuring limits on an hourly rather than daily or monthly basis. Does this approach make sense for some time periods but not for others?

No. The use of "rolling 168 hours" versus a number of calendar days, and other hourly measuring limits, properly and consistently addresses fatigue regardless of the time periods. It provides each flight crewmember their own start time to determine the applicable limit as compared to first making a determination on the start of a "day" or week. Additionally, it prevents gaming of the system to start and stop assignments just before or after midnight.

33) If transportation is not considered part of the mandatory rest period, is there a need for a longer rest period for international flights?

Yes. Because of the circadian de-synchronization experienced by exiting your home theater, more time "behind the door time" is needed for managing sleep and acclimation. An unacclimated pilot may not be able to sleep on demand nor remain asleep for as long as desired. A rest time of 12 hours, reduced with pilot consent once each 168 hours to 11 hours, provides a reasonable sleep management opportunity for unacclimated pilots. The test here should be whether the pilot is currently acclimated. Acclimated – 9 hrs reduced with pilot consent down to 8 hrs once each 168 hours; Unacclimated – 12 hours reduced with pilot consent down to 11 hrs once each 168 hours. Rest at home base is not reducible.

34) Whether some elements of an FRMS, such as an incident reporting system, would be better addressed through a voluntary disclosure program than through a regulatory mandate?

We believe that voluntary disclosure reports should be mandatory for all FDP extensions. The success of other voluntary disclosure programs (ASAP, FOQA) illustrate the benefits of a tri-party arrangement between the regulator, operator and pilot group.

35) Are there other types of operations that should be excepted from the general requirements of the proposal? If so, what are they, and why do they need to be accommodated absent an FRMS?

No. We believe that the single set of rules approach to fatigue is the correct and reasonable approach. The human physiology of fatigue is the same regardless of the type of operation. Any exceptions to the rules should be rare and addressed only through an instituted FRMS. To that end, the FRMS section 117.7 of the proposed rule should clearly state that an FRMS is meant to address individual exceptions by pairing and city pairs.

36) In response to the FAA's invitation to comment on the costing of the proposed regulation, we submit the following:

<u>Methodology:</u> ALPA commends the FAA's methodology of the Impact Analysis. The number of expected occurrences of a very low probability event over a long period of opportunity can vary considerably. The use of established probability theory, including the Poisson Distribution theory specifically designed for such low probability, high frequency event sets, was mathematically rigorous and well presented. In addition, the inclusion of the probability of a large scale catastrophic accident was well chosen to show that not erring on the side of safety could have a chilling outcome in terms of both human and financial cost.

<u>Value of a Statistical Life:</u>
The FAA requests comment on its selection of a Value of a Statistical Life (VSL). The VSL is an inherently and appropriately sensitive subject. It is unclear whether the values in the literature are driven more by average legal liability or by intrinsic judgment of human worth. Nevertheless, ALPA notes that fatalities caused by verifiably fatigued pilots in today's media environment would create a liability to the operator far in excess of $6 million per human life in subsequent settlement or trial. We believe that the benefits analysis should, at the very least, use the more current VSL of $8.4 million.

<u>Broken Pairings</u>
We believe that the FAA's costing assumptions were generous to the certificate holders in some areas. For example, the FAA in estimating the cost of "broken pairings" that might be recovered through schedule optimization is, in our view, overly generous. We believe that the chosen recoupment of merely 25% is an extremely low estimate. Our experience in implementing new collective bargaining agreements in which allowable flight duty periods were reduced have consistently shown that the uncovered block hours were simply moved to the schedules of pilots with shorter duty periods on those days. The same number of pilots can still cover most of the same number of block hours, since block hours are generally the limiting factor in a full month's schedule for a commercial pilot, not individual daily duty length. ALPA strongly feels that the percentage of savings over unadjusted

cost from schedule optimization after these “daily focused” regulation changes will be in excess of 60%.

ALPA'S RESPONSE TO QUESTIONS POSED IN THE FAA'S RESPONSE TO CLARIFYING QUESTIONS

1) The FAA is open to suggestions on how to improve the clarity of the proposed regulatory text regarding schedule reliability.

ALPA has proposed modifications to Section 117.9 to clarify the language and add a flight segment metric.

2) The agency is interested in suggestions on how to measure the reliability of infrequently flown pairings in unscheduled operations.

These pairings in the aggregate would be captured in the system-wide flight duty metric and a single segment would fall under the 20 percent metric. While the FDP is not "scheduled" in advance, it is nevertheless a FDP with a start and end time when the flight crew receives the assignment. This could be captured in a record and used to demonstrate compliance. We believe that the language in 117.9 as we have proposed in our comments is adequate for non-scheduled operations.

3) The FAA seeks comment on allowing a certificate holder to reschedule a flight crewmember if the rescheduled time is within the limits of Tables B and C.

We believe that this reschedule should be permitted when unforeseen circumstances arise, and we have modified Section 117.15 and 117.19 to allow such rescheduling.

4) The FAA seeks comments when a certificate holder's customer demands less than a 2 hour final segment and situations where both crewmembers are manipulating the controls.

The final segment must allow 2 hours of rest for each pilot occupying a control seat during the landing. For a single augmented crew (3 pilots) this would require a minimum 6 block hour segment. For a dual augmented crew (4 pilots) this would require a minimum 3 + 45 block segment. These block times are based on 45 minutes from block out to top of climb, 2 hours of sleep opportunity and 1 hour in the seat prior to block in for the crew performing the landing. For single augmented crews 15 minutes is required for pilot swap out in the rest facility. These should be mandated by the FAA to ensure operators truly allow a realistic sleep opportunity.

5) The FAA seeks input on whether the flight crewmember must be current on the aircraft and actually at the controls rather than simply on the flight deck.

It is our position that both flight crewmembers occupying a control seat throughout the flight must be current (including landings) and qualified (to include Operational Experience). See our comment to No. 20 above.

6) Should short call reserve count as duty?

Yes. The FAA has consistently interpreted reserve duty to include a present responsibility for work should work arise. In our view, that is duty. The flight crewmember is restricted in his/her activities and must be prepared to perform flight duty when called on short notice.

We agree that flight crewmembers in reserve status can acclimate just as any other flight crewmember.

7) Can a certificate holder assign additional duty time if there is no additional FDP contemplated for the relevant time period?

No. An extreme example would be the completion of a 20-hour augmented flight duty period (18-hour FDP limit plus 2 hour extension) followed by an immediate scheduling of an 8-hour training period. The level of cumulative fatigue without an intervening rest period is unacceptable. Any duty (FDP, reserve, training) performed on behalf of the carrier should require the appropriate minimum rest period before beginning the duty period. We believe that the cumulative duty periods should apply as written. The consecutive duty limits apply to crewmembers who do fly and these limits are necessary to assure alertness over a longer period of time. If a management or other pilot wants to work excessive hours performing administrative duties, he or she should relinquish flight duties.

8) Does Union work count as administrative time?

Yes, however the difficulty is that the work is not performed for the certificate holder, not required to be reported to the certificate holder, is difficult to track and even more difficult for the FAA to oversee. An individual performing administrative time for the carrier has a defined work schedule easily monitored by the carrier. As previously stated within the findings it is incumbent upon all flight deck crewmembers to ensure they are adequately rested prior to reporting for any flight deck duty period. Not only would this apply to those who would be engaged in labor representative activities but any other activity outside of that associated with the flight deck duty period. This concept is covered within the requirement to report fit for duty.

9) The FAA seeks input on a circumstance where a flight crewmember is at the end of the cumulative duty period but cannot be released due to circumstances beyond the control of the certificate holder.

We believe this would be an isolated occurrence limited to operations in an unsafe area or during extreme weather conditions and perhaps the best way to handle this issue is under the emergency powers of the PIC. It would be, in our view, so rare that it need not be addressed in a regulation but should be discussed in the accompanying guidance material.

10) Is prospective scheduling of short call reserve in excess of cumulative duty limits permissible so long as actual duty limits are met?

Since short call reserve is duty, this presents a circumstance where the schedule would have to be modified prior to the actual duty limits being reached. To over-schedule certainly would not be realistic scheduling and it would be disruptive to the crewmember. However, since 117.23 is not a scheduling limitation, so long as the schedule is modified and actual duty limits are not exceeded it would be allowed. We agree that this issue is best addressed in the labor-management context.