



U.S. Department
of Transportation
**Federal Aviation
Administration**

Mar 24, 1992

Mr. Jeffrey W. Hamiel
Executive Director
Metropolitan Airports Commission
6040 28th Avenue South
Minneapolis, Minnesota 55450

Dear Mr. Hamiel:

The Federal Aviation Administration (FAA) has reviewed the Metropolitan Airports Commission's (MAC) submittal supporting the proposed noise restriction on nighttime operation of stage 2 aircraft proposed by MAC at Minneapolis-St. Paul International Airport. Enclosed are FAA's comments on the proposed restriction and MAC's submitted supporting documentation. This letter, which summarizes FAA's main concerns, and our comments should be considered collectively.

The documents reviewed by FAA included the public notice, proposed ordinance and the supporting information prepared by MAC in response to requirements of 14 CFR Part 161, Subpart C. These documents were provided by MAC to FAA as those available at the time of publication of the December 9, 1991, public notice starting the comment period. FAA has also reviewed the supplemental information provided in the docket during the extended comment period which started January 29, 1992.

One of the primary purposes of requiring an analysis of the proposed restriction and an opportunity for public comment is to ensure that the proposal is fully understood and that informed comments are submitted to the Airport Authority. That means that the information provided to the public is adequate to illuminate what is being considered, why and how it will affect persons living around the airport, and those flying to and from the airport. However, MAC's submitted supporting documentation of its proposed restriction is little more than an executive summary in form and content. Fundamental cost data are simply not there. As a result,

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both the required cost/benefit analysis of the proposal and of the alternative measures are also absent. Even with the supplemental docket information we find both the proposal and the submitted supporting documentation to be confusing, often contradictory and at least

potentially at variance from what our information indicates is the factual situation. This information is discussed in the enclosed comments.

The lack of a cost/benefit analysis means that the submitted information does not appear to comply with the requirements of Part 161.205 and any restriction adopted on the basis of this work would appear not to be in compliance with the Airport Noise and Capacity Act of 1990. If such a finding of noncompliance were made, it would affect MAC's eligibility for PFCs and AIP funding. This is an out come which the FAA wants to avoid.

Our concerns are developed in detail in the enclosed comments. We have provided considerable detail to explain deficiencies as clearly as possible, and appreciate the fact that your proposal represents the first application by an airport operator of Part 161 requirements. You are already broadly aware of our concerns from informal meetings we have had with you and your representatives. We have every confidence, based upon these previous discussions, that these concerns can be addressed and resolved in a cooperative mode.

We particularly 'applaud your ongoing efforts to achieve your goals through voluntary measures. We urge MAC to continue to negotiate with carriers serving the airport to develop a plan which meets everyone's needs.

We remain available to assist MAC in developing a voluntary plan, and to advise on Part 161 compliance issues. The FAA Airports District Office in Minneapolis, headed by Mr. Frank Benson, will be responsible for keeping abreast of further developments with you. Mr. Benson will assure that all appropriate levels within the FAA are informed of your actions regarding this matter and are responsive to your requests.

Sincerely,

/s/ Leonard L. Griggs
Assistant Administrator for Airports

Enclosures

PART 1 - INTRODUCTION AND GENERAL COMMENTS

On December 9, 1991, the Minneapolis-Saint Paul Metropolitan Airports Commission (MAC) published notice of a proposal to cap and then prohibit Stage 2 nighttime operations (11:00 p.m. -6:00 a.m.) at the Minneapolis-St. Paul International Airport (MSP). Initially, Stage 2 operations would be limited during the affected hours to those which took place during the same month of the preceding year. This so-called "baseline" number of Stage 2 operations would continue to be permitted until June 1, 1992, or such other later date as the Commission may adopt. Thereafter, all Stage 2 operations would be banned between 11:00 p.m. and 6:00 a.m. The proposed restriction applies to Stage 2 aircraft weighing over 75,000 lbs. and, if adopted as proposed, could become effective as early as June 6, 1992. The public notice, proposed ordinance, and supporting information were prepared by MAC in response to requirements of 14 CFR Part 161, Subpart, C.

The Airport Noise and Capacity Act of 1990 (ANCA), addresses the often conflicting objectives of increasing airport capacity and reducing aircraft noise. This Act and other closely related aviation legislation provide for an orderly national program for the phaseout of Stage 2 aircraft by the year 2000, a national program for reviewing airport noise and access restrictions on the operation of Stage 2 and Stage 3 aircraft, and authority for airports to collect Passenger Facility Charges (PFC's) to enhance or preserve airport capacity and to mitigate noise. ANCA gives the Secretary of Transportation the responsibility to implement and administer the law and implementing regulations.

Congress clearly recognized the need to establish a national aviation noise policy. This was based on legislative findings that aviation noise management is crucial to the continued increase in airport capacity and that community noise concerns have led to uncoordinated and inconsistent restrictions on aviation which could impede the national air transportation system. Congress also recognized that local interests in aviation noise management must be considered in determining the national interest.

In light of the law and implementing regulations, the overriding FAA policy objective is to accomplish an orderly national transition to Stage 3 aircraft and to work cooperatively with the aviation community and the public to reduce airport noise impacts locally while precluding the adoption of unreasonable, unjustly discriminatory, and unduly burdensome noise and access restrictions, including those that undermine the national schedule for transition to stage 3 aircraft. The delicate balance achieved by the national aviation noise policy will reduce noise, preserve existing capacity, enhance growth, and provide an orderly transition for air carriers to a Stage 3 fleet with the minimum necessary adverse financial impact. Consistent with the enabling Federal legislation, this policy balances costs and benefits among carriers, passengers, airports, and residents living around airports in a fair and equitable manner.

The proposed MSP stage 2 restriction is the first formal restriction proposal under ANCA and Part 161. The nighttime Stage 2 restriction would accelerate the national stage 2 phaseout schedule locally by nearly 8 years during the nighttime hours of 11:00 p.m. to 6:00 a.m. Section 9304(c) of the ANCA and FAA regulations 14 CFR Part 161.205 state that --

No airport noise or access restriction shall include a restriction on operations of Stage 2 aircraft, unless the airport operator publishes the proposed noise or access restriction and prepares and makes available for public comment at least 180 days before the effective date of the restriction--

- (1) an analysis of the anticipated or actual costs and benefits of the proposed noise or access restriction
- (2) a description of alternative restrictions and
- (3) a description of the alternative measures considered which do not involve aircraft restrictions, and a comparison of the costs and benefits of such alternative measures to the costs and benefits of the proposed noise or access restriction.

As stated in 14 CFR Part 161.205(b), the airport operator shall use the noise measurement systems and identify the airport noise study area as specified in 14 CFR Part 150, shall use currently accepted economic methodology, and shall specify the methods used to analyze the costs and benefits of the proposed restriction and the alternatives.

When the requirements of ANCA and Part 161 are met, determinations of consistency or inconsistency with the national transition plan, anticipated benefits to the community, and anticipated costs to all affected parties should be apparent in an analysis made available for public comment. The FAA thoroughly reviewed the document which was made available to the public with MAC's proposal and has grave concerns about the absence of information on costs and the subsequent lack of analysis of the anticipated or actual costs of the restriction compared to its anticipated or actual benefits, and of the restriction's costs and benefits compared to the costs and benefits of alternative measures. These and other deficiencies as well as the ambiguity of the effective dates of the two-tiered ordinance make it difficult for affected aircraft operators and the public to reasonably review and comment upon the proposed restriction and alternatives. This lack of critical information and analysis and consequent lack of informed public comment also seriously undermine the basis of the proposal under long-established requirements concerning the reasonableness of local airport access restrict. These matters will be addressed more fully in Part II and Part II of these comments.

MAC's information submitted in support of its proposed restriction is little more than an executive summary in form and content. Fundamental cost data are simply not there. The failure to analyze the costs compared to the benefits of the proposed restriction and to provide a comparison of the costs and benefits of the proposed restriction to the costs and benefits of alternative measures is a serious omission under ANCA and Part 161. The statute and regulation require an analysis that includes these specified elements to be made available for public comment at least 180 days before the effective date of a stage 2 restriction. The local adoption of a stage 2 ordinance in the face of this critical omission would raise an immediate question of compliance that could affect the eligibility of MAC for the issuance of AIP grants and the collection of passenger facility charges.

Beyond this critical flaw, FAA concerns extend to issues relating to the accuracy, breadth, and quality of MAC's submittal. The FAA questions whether all affected aircraft operators have been identified. The prospect for adverse impacts on the local community's economy

and level of service, the airport users, the region, and the interstate commerce system should be addressed in the analysis, but instead is summarily dismissed. The uncertain implementation dates of the nighttime cap and subsequently the nighttime ban on stage 2 operations hinder the ability of MAC to develop an adequate cost/benefit analysis, the ability of the affected aircraft operators to predict the severity of the impact on their operations, and the ability of the FAA to assure that there would be no undue burden on interstate or foreign commerce and that the national transition schedule would not be compromised. The anticipated noise benefits of the proposed restriction are inadequately evaluated and look to the past year rather than to the future, taking into consideration the benefits that will be achieved absent a local restriction through the national transition to stage 3 aircraft. The costs and benefits of alternative measures are not evaluated in comparable terms. More specific detailed comments on these issues and others follow in Parts II and III of these comments and are designed to serve as guidance concerning the elements of an adequate analysis of a proposed stage 2 restriction that is subject to 14 CFR Part 161.205.

In Parts II and III of these comments we have attempted to assist MAC in pointing out the elements of the cost and benefit analysis and other information, including alternatives and their costs and benefits, that would meet the public notice and comment requirements of Part 161 with respect to the imposition of noise and access restrictions on the operators of stage 2 aircraft. We urge that no restriction be placed on stage 2 operators at MSP unless a new notice and the analysis required by Subsection 9304(c) of the Airport Noise and Capacity Act of 1990 and section 161.205 of 14 CFR Part 161 are provided 180 days before the restriction's effective date.

Based on a preliminary analysis of available MAC information and independently developed data presented in these comments as an illustration, the FAA believes that, if adopted, the MAC proposal would be a very costly way to gain relatively modest noise benefits that will inevitably be achieved with the national transition schedule and that may substantially be achieved earlier at MSP through continued negotiated voluntary measures.

FAA concerns extend to the region wide and system wide implications. Not only are there presently unaccounted for costs that will extend beyond the Minneapolis metropolitan area, but also the restriction is likely to export noise to other airports throughout the system by repositioning stage 2 aircraft to serve other airports. Additionally, the adoption of the MSP rule would create a precedent for similar restrictions by other airports, possibly leading to diminished nighttime stage 2 capacity nationwide. Service cutbacks would not be the only costs of such a restriction. Network hub efficiencies would be denied by increased operating restrictions throughout the country. Accommodating local restrictions would undermine the national transition schedule. The purpose of the National Aviation Noise Policy implemented in part by FAR Part 91 is to ensure an orderly, nationwide decline in airport noise levels. Noise relief will accrue at MSP through the year 2000 as a result of the transition to stage 3 aircraft under Part 91 without the imposition of the proposed restriction. Preliminary FAA analysis using the FAA Airnet Model suggests that the number of people within the DNL 65 dB noise contour will steadily decline from 43,000 in 1991 to 12,700 in the year 2000. That would be a 70 percent decline in the impacted population attributable to

compliance with the Part 91 Federal rule alone. The National Policy is designed to enable carriers and other entities to plan and schedule their transition to stage 3 aircraft with less uncertainty, and therefore less adverse economic impact.

FAA is convinced that benefits equivalent to national results, but sought earlier to deal with local sensitivity to nighttime noise as in this proposed restriction, can best be achieved at a lower economic cost to all parties through negotiated agreement with affected carriers. In fact, MAC has a history of success with this conciliatory approach, and we understand is in the process of discussing enhanced voluntary efforts by nighttime operators during this comment period.

The concerns expressed here primarily address the adequacy of the information submitted to support your proposed restriction for Part 161 purposes. The overall adequacy of supporting information with respect to compliance with your grant assurances and related obligations is not addressed. The airport's handling of and response to specific comments or complaints by airport users would be an important aspect of these broader compliance issues.

PART II COMMENTS ON SECTIONS OF THE PROPOSED ORDINANCE

The proposed ordinance on the first page has a note indicating that only Sections 2, 4 and 7.2 have been revised. We assume that the previous edition of the ordinance referenced is that found in a notice published July 16, 1991, for an August 26, 1991 public hearing. These changes were purported to reflect a delay in the effective date of the restriction. Clarification is needed in that Subsections 1.2 and 6.1 have also been changed. The latter, Subsection 6.1, was changed to reflect the effective date. However, the change to Subsection 1.2 was more significant, as it removed from the exceptions to "Affected Aircraft operation," landings necessitated by "air traffic control delay." This change will be discussed below in the comments on Subsection 1.2.

SECTION 1 DEFINITIONS

Subsection 1.1 defines "AFFECTED AIRCRAFT." MAC's submittal notes that military aircraft are exempt. However, in the ordinance it states that other aircraft owned and operated by the U.S. Government are also exempt. The ordinance and submitted information should also clarify whether aircraft under contract to or leased by the U.S. government for governmental purposes would be exempt. This is important since the u.s. Postal Service is dependent on two departures and two arrivals of contracted flights of Stage 2 aircraft on an average night during the restricted hours. If exempted, these Stage 2 operations would be allowed to continue, which would affect both the costs and the benefits of the proposed restriction.

Subsection 1.2 defines "AFFECTED AIRCRAFT OPERATION." An analysis of Subsection 1.2 should address the reason for, and the implications of, the change in the current proposed ordinance from the exceptions allowed under the proposed ordinance. as it was presented for a public hearing on August 26, 1991. FAA notes with concern the removal of landings

necessitated by "air traffic control delay" from the exceptions provisions of "Affected Aircraft operation."

SECTION 2 EFFECTIVE DATE

The narrative in MAC's submittal regarding the "effective date" does not appear to be consistent with section 2 of the proposed ordinance. The proposed ordinance provides that the restriction shall be effective after publication or after the date of enactment by MAC. The submittal states that both are needed prior to the ordinance being effective. The MAC ordinance provides in a different section that the ordinance does not become effective until after enactment, notwithstanding publication. Clarification is needed. No matter what is ultimately decided, according to Part 161, the proposed ordinance cannot be effective until at least 180 days after the required public notice and analysis have been provided.

SECTION 4 REGULATION

The ability of aircraft operators to comply with the stage 2 baseline requirements and the prohibition of any Stage 2 operations during the nighttime period (subsections 4.1.1 thru 4.1.3 and -4.1.4, respectively) may be limited in some circumstances. For aircraft operators to comply all of the time may not be possible. The ability of the aircraft operator to comply is dependent on the aircraft operator's existing and projected fleet, as well as the nature of the operator's activities at a particular location. The profitable operation of an integrated national route system requires a carrier to balance fleet mix and aircraft locations with demand on particular routes and at particular times of the day. In these circumstances, what may be reasonable use of particular equipment at a given location or on a given route structure, may be unreasonable use of equipment on a different route or at a different location.

During the period of a cap based on prior year baseline stage 2 operations, the ordinance attempts to provide for the normal variations of schedule by using the monthly data from the previous year to account for seasonal, holiday, and weekday variations. However, freezing operations based on a snapshot of a particular timeframe limits the flexibility of aircraft operators to respond effectively to realities of day-to-day scheduling, which includes changes in passenger and cargo demand, unforeseen delays of sometimes long duration, equipment breakdowns and substitutions, and use of the airport as a designated alternate for other airports with severe weather conditions. In extreme situations, an aircraft operator's only likely choices would be to cancel a flight or use an aircraft that is not noise compliant. For air cargo operators, an inability to fulfill the contractual promise of overnight delivery may be financially significant to both the aircraft operator and those dependent on the packages that are to be delivered. Charter carriers, such as Sun Country Airlines (SCA), must meet provisions of 14 CFR Part 380 which do not allow charter carriers to cancel a trip within 10 days of scheduled departure. and requires them to complete the return portion of a trip, given a weather or mechanical delay, as close to schedule as possible. These problems will be exacerbated if MAC imposes a Stage 2 nighttime ban in place of a stage 2 nighttime cap.

Effective dates listed in Subsections 4.1.3, 4.1.4, 4.1.5.1 and 4.1.5.2, are internally inconsistent and may not provide an adequate opportunity for compliance once final MAC action is taken. As written, the ordinance could result in the implementation of the Stage 2 ban on nighttime operations as early as June 1992. This would be a worst case, the cost of which would have to be taken into account in actual costs and a cost/benefit analysis. Even if the regulation were supportable and were issued essentially as proposed, the FAA would urge MAC to use the flexibility apparently provided in Section 4.1.3 to propose a date for a total ban on nighttime Stage 2 operations at a more distant time to give carriers a more reasonable opportunity to comply.

There appears to be another exception listed in Subsection 4.1.5.1 that was not included earlier in Subsection 1.2, "Affected Aircraft Operation." That exception is "delays due to weather conditions." The analysis should explain the significance of including this exception in this subsection and not in Subsection 1.2. Also, in the analysis and changes to the proposed ordinance, clarification should be made as to how broadly the exemption for weather conditions can be interpreted. Would it apply only to local weather conditions, or would it also be applicable to air traffic system delays caused by weather? In view of the conscious effort by MAC to remove air traffic control delays from being considered an exception under Subsection 1.2, has the proposed ordinance become easier to enforce but more difficult with which to comply?

In addition, clarification should be made as to whether MAC, the carrier, FAA or some other entity will determine the cause of delays. If MAC will make the determination, further clarification of the procedures MAC will follow in making the determination would also be necessary. FAA is concerned that there is the potential for the FAA air traffic facility to become the middle man in settling disputes between aircraft operators and MAC, i.e. weather related delays and whether the delays are system wide or are related to weather specific to the Minneapolis area. Aircraft operators may attempt to blame the air traffic system as the cause for delay, placing the air traffic facility in an inappropriate posture of justifying what caused a flight to be late.

We are also concerned that the exception provision, as written and as may be applied, may not give adequate flexibility to the carriers. For example, the waiver does not appear to apply to operations scheduled to arrive at other airports that are diverted to MSP due to local weather conditions at the scheduled destination airport. In addition, the 30-minute limit between scheduled arrival time and actual arrival time may not always provide carriers with sufficient time to correct a mechanical problem or avoid severe weather conditions. The proposed 30-minute extension rule for weather delays potentially conflicts with the previously cited DOT regulations under which Sun Country Airlines (SCA) is required to operate.

MAC has not been responsive to comments made at the August 26, 1991, public hearing regarding the effects of the 30-minute waiver on operations. It was pointed out that the ordinance that was analyzed and discussed by the Stage 3 Working Group is not the one analyzed for the public hearing (nor for the Part 161 submittal). The information provided by MAC shows no effect on Northwest Airlines as it only looks at scheduled operations. It

was pointed out that even with Northwest's good on-time record, flights will be late. They are affected by wind velocity, weather, traffic congestion and mechanical problems, among other things. The Stage 3 Utilization Working Group apparently anticipated that these delayed flights would be allowed to land, particularly those returning to Minneapolis for aircraft maintenance, even if it meant that doing so would allow stage 2 aircraft to be operated during nighttime hours.

As the ordinance is drafted, the only flights that will be allowed during the nighttime period are those that were originally scheduled to arrive after 10:30 p.m. but before 11 p.m. but were delayed by weather or mechanical problems. This can present a problem for fleet maintenance if a flight is scheduled to come into MSP to be maintained overnight and is not allowed to land, while parts are waiting to be put on a plane. The number of impacted aircraft would vary by size of carrier and whether they have a maintenance base at MSP. The impact appears to be greatest for Northwest and Sun Country airlines. The former estimates that a couple of flights a week might be impacted. Sun Country did not indicate a specific number of flights potentially impacted, but in correspondence did indicate that it could be an occasional problem. By further expanding the waiver provisions and by relaxing the 30-minute requirement, MAC could substantially alleviate some of the potential undesirable consequences of the proposed restriction.

SECTION 5 COMPLIANCE

In the fourth line of Subsection 5.1, it appears that either a word is missing or an extra word has been included in the phrase, "...during the any Nighttime Period...." This should be clarified and corrected before the final ordinance is submitted for enactment.

Another problem with this section of the proposed ordinance is the requirement to file compliance reports monthly. In addition to being a costly paperwork burden, it includes the potential for self-incrimination regarding noncompliance with the restriction.

SECTION 6 EXTENSION OF COMPLIANCE DATE

Prior to MAC's enactment of the proposed ordinance, clarification should be provided regarding the effective date. Even if the regulation is adopted, it would be important to clarify or modify the dates so they are consistent with the earliest possible date for implementation (180 days after adequate public notice and analysis), and with MAC's updated plans for implementing a cap and later a total ban. The FAA believes that all of these elements should be re-noticed under Part 161 for the reasons stated herein.

SECTION 7 PENALTIES AND SANCTIONS

From a compliance and enforcement standpoint, this subsection of the proposed ordinance raises a number of troubling issues. Federal law recognizes the legitimate interest of an airport operator in taking reasonable, non-discriminatory actions designed to address local aviation noise problems. However, it does not appear that the penalties and sanctions

provisions are within the constrained and limited authority of an airport operator to act in its proprietary capacity rather than under the police powers when regulating airport noise. Violation of the prohibition on nighttime Stage 2 operations is made punishable by imprisonment or a criminal fine or both. The imposition of criminal penalties is clearly an exercise of police power, not an exercise of proprietary authority. Additionally, section 7.1 makes it a crime to fail to file the monthly reports. This is separate from the provision of section 7.2, which provides for the loss of some or all of a carrier's nighttime Stage 2 baseline for a violation during the initial part of the proposed restriction.

Another compliance problem is presented in Subsection 7.2, which provides that any air carrier that violates the ordinance during the period between the time of its enactment and June 31, 1992 (per original text of proposed ordinance, though section-by-section analysis utilizes a date of May 31, 1992), shall be subject to loss of all or part of its nighttime stage 2 baseline allowance. This language would appear to give MAC the power to prohibit flights needed by aircraft operators to meet contractual obligations in cases where the air cargo or charter airline operator doesn't immediately comply with a newly-enacted restriction. The adoption by MAC of a sanction that includes a potential complete denial of a carrier's ability to serve the airport at night with stage 2 aircraft during the period of a cap is drastic and inappropriate, particularly considering the critical lack of analytical justification for the regulation itself.

FAA also has concerns that because of criminal penalties, aircraft operators and pilots who arrive late will attempt to "cut corners" to make up time, thereby jeopardizing safety, and will attempt to pressure the controller to provide preferential service to "beat" the clock. This could not only occur in the Minneapolis area, but throughout the entire flight plan of the affected aircraft.

As noted, the FAA believes that imposition of criminal sanctions is beyond the proprietary authority of an airport proprietor. In addition, the proposed criminal sanctions provisions as drafted contain a number of ambiguities.

Moreover, MAC must clarify to whom the penalties and sanctions would be applied. The FAA has consistently opposed MAC's use of criminal penalties in implementing ordinances restricting aircraft noise. Are criminal penalties being applied to pilots for landing or taking off during the restricted hours or are they being applied to companies for noncompliance with section 5, particularly filing fraudulent data and scheduling aircraft in violation of baseline? What person associated with a non-complying aircraft would be subject to imprisonment--the pilot flying the plane, the clerk providing the data, the aircraft operations manager who scheduled the flight, or the CEO of the non-complying company?

**PART III - DETAILED COMMENTS ON THE INFORMATION
SUBMITTED
IN SUPPORT OF THE PROPOSED ORDINANCE**

**ANTICIPATED OR ACTUAL COSTS AND BENEFITS OF THE PROPOSED
RESTRICTION**

Section 161.205(a) of the Federal rule states in part: "Each airport operator proposing a noise or access restriction on Stage 2 aircraft operations shall prepare...an analysis of the anticipated or actual costs and benefits of the proposed noise or access restriction...." Section 161.205(b) of the rule states in part: "In preparing the analysis required by this section, the airport operator...shall use currently accepted economic methodology...and...shall specify the methods used to analyze the cost and benefit of the proposed restriction and the alternatives."

The document containing MAC's information supporting the restriction indicates that the costs and benefits of the proposed ordinance were analyzed with respect to the effect on noise, airport operations, and capacity; moreover, the quality of air service, regional economic impacts, and aircraft acquisition and operating costs were considered. However, cost estimates are noticeably absent from this document. Though some cost information can be found in the MAC's Status Report of the Stage 3 Utilization Working Group (April 19, 1991), the conclusions were not quantified and the report was not provided as supporting documentation for review with the proposed restriction until January 28, 1992, after the beginning of the extended comment period. We make reference to and extract data from this report to illustrate that detailed data on the nighttime operations and individual costs are available to MAC and that such data, upgraded as necessary to address ANCA and Part 161 requirements and for currency, should have been used to develop a cost/benefit analysis for consideration by the public and by MAC's full commission.

It should also be noted that the April 19, 1991, report contains a footnote on page 5 that seems to indicate that the utilization Working Group's data does not take into account the acceleration of the forecast of stage 3 operations associated with the 1990 Airport Noise and Capacity Act and the resulting national transition schedule. This information is critical to any estimate of the costs and benefits of the proposed ordinance.

The ambiguity in the ordinance regarding the proposed effective date of a stage 2 cap and subsequently a stage 2 ban between 11:00 p.m. and 6:00 a.m. contributes to the difficulty of effectively evaluating the costs and benefits of this proposal. MAC's incomplete analysis concentrates on the ban, rather than the cap. FAA's comments on MAC's submittal do likewise for the most part, assuming a worst case of an immediately imposed ban--subject to compliance with ANCA and Part 161. If a cap is to be imposed for some duration, followed in later years by a ban, an analysis needs to include the required costs and benefits and alternatives information for each tier of the restriction.

Prior to presenting MAC's commissioners with the results of the comments and evaluation of the proposal, the FAA urges MAC to expand its information to address the issues raised herein and to make an analysis available for public review in accordance with ANCA and Part 161.

Numbers of Affected Aircraft Operations.

FAA attempted to review the assumptions that went into the information submitted by MAC. First of all, we did not find any cost analysis of the impact of the restriction on

carriers that would serve as the basis for a proper cost/benefit analysis. MAC's submittal does not contain detailed current aircraft operations data at MSP by carrier or adequate data to properly analyze the impact of the restriction on the base of nighttime operations at the airport. In the absence of a data base in MAC's submittal, FAA selected an actual day to review nighttime activity at MSP by accessing operations data from the FAA Air Traffic Control database, officially known as Host Z. Table 1 shows the actual operations between 11:00 p.m. and 6:00 a.m. on a representative day in 1991 at MSP.

TABLE 1
BASE OF NIGHTTIME OPERATIONS AT MSP INTERNATIONAL AIRPORT

Carrier	Time (CST) ARR or DEP	Stage Type	To/From	# of Stage 2
*Airborne Express	5:38am	ST2	ILN	1
America West	11:25pm	ST3		
*Continental	11:09pm	ST2	DEN	1
Delta	12:10am	ST2	SLC	1
Emery Worldwide	5:20am	ST2	DAY	1
Federal Express	1:39am	ST2	ORD	
	5:22am	ST3		1
Great Western	1:16am	ST3		
Northwest	11:03pm	ST3		
*	11:26pm	ST2	DLH	
	2:08am	ST2	DLH	
	5:42am	ST3		2
Sat-Air, Inc.	11:18pm	ST3		
	1:52am	ST3		
	3:07am	ST3		
	4:29am	ST3		
	5:46am	ST3		
Southern Air Transport	12:20am	ST2	FWA	1
*Sun Country	11:16pm	ST2	PIE	
	2:34am	ST2	ORD	2
Ryan International	11:59pm	ST2	SEA	
	12:32am	ST2	IND	
	4:42am	ST2	IND	
	5:21am	ST2	SEA	4
United	11:08pm	ST3		
United Parcel Service	5:09am	ST3		
*	5:55am	ST2	SDF	1
Zantop	11:24pm	ST3		
TOTAL:		33		15

SOURCE: FAA Host Z database for March 20, 1991 * = Stage 2 operations that possibly could be moved to a non-curfew time period with the minimum necessary impact on the

carrier.

Over half of the nighttime operations between 11:00 p.m. and 6:00 a.m. shown in Table 1 already use stage 3 aircraft. Two carriers operate a higher percentage of stage 3 aircraft at night at MSP than indicated by their overall stage 3 fleet mixes. On this representative day, Federal Express and Northwest Airlines performed stage 3 operations well above their 1991 stage 3 fleet averages of 27 percent and 38 percent, respectively.

As stated at the public hearing of August 26, 1991, Northwest Airlines has formally ceased all nighttime stage 2 passenger operations at MSP since 1987. The Northwest Stage 2 operations shown in Table 1 may indicate the airline's need to perform Stage 2 nighttime operations at MSP in response to maintenance and other unanticipated needs.

Assuming two unscheduled Northwest operations, Table 1 also shows that, on a representative day, 13 Stage 2 operations of passenger, cargo and charter carriers were conducted during the proposed curfew period. The data on times of departures or arrivals in Table 1 would indicate that four of the remaining operations could possibly be rescheduled to fall within the non-curfew period (generally flight arrivals or departures between 11-11:30 p.m. and 5:30-6:00 a.m.). While potentially possible, rescheduling is not a costless exercise, since carriers would likely have to readjust system wide operations and change schedules. Changes in schedules or service can frequently result in lower demand for the particular service and result in decreased profitability. Based on the assumption of operators adjusting four flights to conform their schedules to the curfew, operators of the remaining nine stage 2 nighttime operations in Table 1 would be more directly and possibly adversely impacted by adoption of the nighttime stage 2 ban.

MAC's information submitted in support of the proposed restriction shows an average of 0.9 daily affected passenger carrier operations for 1990, while, as an example, the FAA data in Table 1 show at least two potentially impacted passenger carrier operations for a representative day in 1991. A March 4, 1992, letter from Delta Airlines to MAC confirms that not all scheduled passenger flights are adequately represented in MAC's analysis. MAC's data on cargo carriers is unclear. The FAA example from Host Z shows as many as nine daily cargo operations affected. MAC data also estimates 2.7 charter operations per night, which is consistent with the FAA example.

The brief MAC data on the scheduled operations profile of MSP stage 2 nighttime operations also differs from the most current Official Airline Guides (OAG) for scheduled passenger and cargo operations. The March 1992 OAGs appear to show one scheduled stage 2 passenger operation, and two scheduled stage 2 cargo operations.

In light of these apparent discrepancies, it is important for MAC to verify that affected nighttime operations are fully accounted for in its analysis, accompanied by supporting data.

The estimates of Stage 2 aircraft operations at MSP in the MAC submittal were developed prior to issuance of the National Noise Policy and adoption of the rules to phase out Stage 2 aircraft. The validity of MAC's forecasts may have considerably diminished now that the aircraft operators are basing their fleet planning on the new noise policy and rules. It is doubtful that carriers' plans for transition to Stage 3 are incorporated with the earlier MAC information on the projected transition at MSP.

Impact on Aircraft Operations.

An analysis of individual operators' ability to comply, probable selected method of compliance, and resulting estimated cost of compliance is not included in MAC's information. Such cost analysis is critical for ANCA and Part 161 compliance.

Cargo and charter operators are anticipated to be more adversely affected by the restriction than passenger carriers. The disruption of the air cargo and air charter operations by this ordinance could be significant since they both appear to be quite concentrated around the nighttime period. MAC's submittal does not adequately support its conclusion that rescheduling or replacement of stage 2 cargo and charter aircraft appears to be achievable. The MSP utilization Working Group pointed out in their document that cargo and charter carriers do not currently have enough orders or options for stage 3 aircraft to meet the proposed restrictions. The Working Group did not provide any estimate of costs. In its documentation, MAC also failed to provide cost estimates. If the proposed stage 2 curfew is made effective on the earliest possible date, there probably would be insufficient lead time for carriers to modify existing equipment to stage 3 or to acquire new equipment other than by leasing at premium rates. A March 2, 1992, letter from the u.s. Postal Service and a March 4, 1992, letter from Delta Airlines to MAC confirm this conclusion.

A significant amount of information was provided to MAC in this regard at the April 18, 1991, meeting of the Stage 3 Utilization Working Group sponsored by MAC. At that meeting, it appears that the Working group recommended that some of this data be included in an April 19, 1991, Draft Report to go to the full commission. It was not included. Without inclusion of this data in MAC's submittal, the impacts associated with the proposed ordinance, particularly on air cargo operations, cannot be determined. MAC's analysis must describe how existing and forecast air cargo and charter airline operations will be affected in terms of costs, not simply list aircraft utilized.

FAA analysis forecasts that system wide an average 47 percent stage 3 fleet mix will be achieved in 1992 by the affected cargo carriers, absent adoption of proposed local restrictions or voluntary agreements. Table 1 indicates that Airborne Express, Emery Worldwide, Federal Express, Southern Air Transport, Ryan International, and United Parcel Service utilize Stage 2 aircraft at MSP. To comply with the additional operating constraints imposed by the proposed restriction, these carriers may incur restructuring costs above those already imposed by the national transition schedule. None of this kind of cost analysis is contained in the airport's submittal.

For cargo operators, the time of the cargo "sort" is absolutely critical. A nightly sort requires approximately three hours to complete from the time the first aircraft arrives until the last plane departs. During this timeframe, each inbound aircraft is off-loaded and the packages are sorted in the center by destination city/airplane/zip code. Each plane is then loaded with packages for the destination city it serves.

Hubs in the Eastern Time Zone tend to operate between about 1:00 a.m. and 4:00 a.m. Others in the Central Time Zone operate approximately one hour earlier. Minneapolis has air cargo aircraft operating to and from hubs in both time zones. Because the continental United States covers four time zones, and because it is essential for shippers to offer both pickups at least until 5:00 to 6:00 p.m. in the West (8:00 to 9:00 in the eastern part of the country) and early morning delivery, the sort schedule must accommodate these requirements. In the eastern part of the country, shippers demand late close-out times to fill orders until 8:00 or 9:00 p.m. Many of these orders come from the West where it is three hours earlier. The system simply cannot be moved forward in the day so that aircraft could depart to or from their hubs at an earlier or later hour as MAC suggests. Such an approach would impact the integrity of the service in the western part of the country by requiring pickups by 2:00 to 3:00 p.m. and would, at the same time, interfere with the needed evening service for shippers in the eastern part of the country who must fill orders, up till 9:00 p.m. Similarly, if the sort were later in the night, it would preclude next morning deliveries required by business. Consequently, the hub sort function is a most critical link in the chain of providing overnight door-to-door service. The sort cannot be rescheduled, and aircraft cannot be operated at different times without negatively impacting the entire overnight air delivery system. There appears to be no attempt at all to account for or analyze costs or other impacts from this standpoint.

It appears that a substantial number of the nighttime operations affected by the restriction would be those flown in support of the U.S. Postal Service. Since MSP is the only major airport in the area, it is important for MAC to consider potential impacts on mail delivery.

With respect to charter operations, insufficient information is provided in the MAC submittal to evaluate how the affected charter airlines operate (e.g., whether any charter flights arrive or depart during the proposed restriction period with passengers on board) and how much the proposed restriction will impact those operations. For example, Sun Country's (SCA) method of operation and formula for continued success depends on maximum aircraft utilization. In SCAs case, this means that its aircraft must operate at least 12.5 hours per day on Sunday, Monday, Thursday, Friday and Saturday--all prime departure days for -the vacation traveler. FAA has determined from cursory information that charter operators generally reposition aircraft to Minneapolis-St Paul International Airport the night before a charter flight in order to conduct maintenance and prepare the aircraft.

Sun Country, in late 1991, had a low Stage 3 fleet mix of 29 percent. SCA indicated in a September 5, 1991, letter to MAC that as of January 1, 1992, it will operate four Stage 3 aircraft (36 to 40 percent of its fleet) at MSP. This is a significant increase from a single Stage 3 aircraft operated January 1, 1991 (12.5 percent of its fleet). As of April 30, 1992, Stage 3 aircraft will comprise 44.4 percent of Sun Country's fleet. However, imposition of

the curfew may eliminate some charter service, despite the increased use of Stage 3 operations. The submittal failed to quantify this cost to the airport, the Twin Cities or the charter air carrier. With regard to rescheduling morning flights, Sun Country Airline, in earlier input to MAC, indicated that they were limited by their gates for early morning departures (6:00 a.m. to 8:00 a.m.), creating a taxi congestion problem which would likely be exacerbated by rescheduling nighttime flights into this time period.

DOT recently granted (12/91) the application of Sun Country Airlines for certificate authority to provide scheduled air transportation between the U.S. and Norway, Denmark and Sweden by way of intermediate points in the U.S. The possible ramifications of the nighttime restriction on this authority were not discussed in MAC's submittal, but should be considered before final action especially if these flight will operate during the nighttime period. The Minneapolis-based carrier has been operating charter service from Minneapolis-St. Paul to Oslo, Norway. Sun Country proposes to offer one weekly roundtrip from Minneapolis to Oslo, Copenhagen, Stockholm and Gothenburg, Sweden, with Oslo and Gothenburg to be served on a seasonal basis. The carrier plans to carry both charter and scheduled passengers, with the scheduled passengers filling the seats not taken by the charter passengers.

Sun Country will use the DC-10 aircraft it now leases. There appears to be no analysis of the costs or the impacts of the proposed restriction on this carrier's plans and services.

FAA Illustrations of Cost/Impact Considerations.

For illustrative purposes only, the FAA below provides a very preliminary discussion of potential costs and impacts. Included are examples of costs for purchase of new aircraft, hushkitting or re-engining, rescheduling, swapping, and discontinuing service. These are the kinds of considerations that need to be factored into MAC's data.

Purchase of New Aircraft

Cost analysis should cover the additional aircraft purchase costs beyond those imposed by the national transition plan. To comply with the proposed nighttime restriction by purchasing new stage 3 aircraft, airlines could incur costs 2 to 8 years earlier than scheduled under the national transition plan. To illustrate, assume a new stage 3-aircraft costs, on average, \$35 million, and further assume an effective date of the MSP proposed restriction is June 6, 1992. Depending on the type of aircraft purchased and the number of years purchased in advance of the carrier's compliance with the national transition schedule, additional aircraft purchase costs could range from \$6 to \$19 million per aircraft (present value, using a 10 percent discount rate). We conservatively estimate that the cost of early aircraft replacement for the Host Z scenario could be between \$54 and \$171 million (present value, using 10 percent discount rate). Using the Host Z data for this example, at least nine aircraft operations could be impacted by the restriction on a basis other than rescheduling. The MAC stage 3 Utilization Working Group Status Report (April 1991) estimates that Emery Worldwide (CF) and Ryan International would spend \$9.25 million each to replace a Boeing 727 with an MD- 80. This same cost analysis projects replacement (leasing) costs for

Sun Country at \$2.7 to \$4.3 million. SCA indicates that all of its stage 2 aircraft leases will expire by December 31, 1996, far ahead of the national transition schedule. Cost estimates need to be provided for all other affected operators as well. Carriers' and other public review of this kind of information is clearly contemplated by the public notice requirements of Part 161.

Hushkitting or Re-engining

As an example of the impact of the MSP proposed restriction on hushkitting costs, assuming a \$3.0 million hushkit purchase cost, FAA estimates that to comply by hushkitting stage 2 aircraft, aircraft operators could incur incremental costs over those imposed by the national transition schedule in a range of \$500,000 to \$1.6 million per aircraft. Hushkitting is generally the least expensive equipment change option. If the Host Z assumed nine impacted carrier operations that could not reschedule seek to comply by hushkitting aircraft, the range of direct compliance cost could be between \$4.5 and \$14.4 million (present value, using 10 percent discount rate). Looking at Table 1, if three of the Stage 2 aircraft are used twice during restricted hours, the incremental costs to hushkit might then fall in the range of \$3.0 to \$9.6 million. The Stage 3 Utilization Working Group status Report estimated that Emery (CF) "would incur a net acquisition cost of \$1.7 to \$1.9 million for a hushkit." The Working Group also estimated that Sun Country would incur additional leasing costs for hushkitted aircraft on the order of \$1 to \$1.7 million.

The MSP Stage 3 utilization Working Group pointed out the long lead time required to order and install hushkits or to re-engine: 12 to 18 months. The Working Group also stated that hushkits are not currently available for all Stage 2 engines. The cargo and charter carriers serving MSP have a high percentage of Stage 2 aircraft, and some of these aircraft do not currently have certified hushkits available. Replacement with Stage 3 aircraft may be some operators' only compliance option.

Rescheduling

Rescheduling may be a tolerable compliance option for those carriers operating near the curfew cutoffs. For illustrative purposes, assume carrier operations occurring within one-half hour of the curfew cutoffs can be rescheduled. Actual operations data from the March 20, 1991 Host Z database show that four scheduled Stage 2 flights operate one half hour within the curfew. These flights are operated by Continental, Airborne Express, UPS, and Sun Country. If not cost prohibitive, rescheduling may be feasible.

Sun Country indicates that, due to limitations of the HHH Charter Terminal, it is physically impossible to achieve the necessary aircraft utilization with its fleet between the hours of 0600 and 2300. However, SCA has agreed to continue to schedule stage 2 aircraft departures only between 0600 and 2300. SCA also has committed to MAC, on September 5, 1991, to restrict Stage 2 arrivals after 2300 by first assigning Stage 3 aircraft to these flights. Nevertheless, due to operational requirements, SCA may not always be able to accomplish this goal. Rescheduling is not the likely solution for most cargo and mail haulers. The U.S.

Postal Service and Delta Airlines, in letters to MAC dated March 2, 1992, and March 4, 1992, respectively, described the costs of having to reschedule.

Swapping

An airline may attempt to swap aircraft as an economically rational reaction to the proposed restriction. Aircraft swapping is a solution most likely performed with the least disruption to operations at a hub. Looking at the Host Z day again, as an illustration, the data shows that about 7 of the 15 Stage 2 operations do involve hub traffic. The Delta flight, for example, comes from Salt Lake City, Utah and might be eligible for a swap. There is some consideration however, that carriers providing lower levels of service to MSP might also consider flight cancellation a more economical solution. The MAC submission does not discuss swapping options.

Discontinuing Service

Cargo and charter carrier economics show that daytime operations are generally uneconomical or otherwise infeasible substitutes *for* nighttime operations. All such carriers serving MSP would be adversely impacted by adoption of the proposed restrictions. Some carriers may discontinue services, or possibly face enforcement penalties. One cargo carrier (Ryan International) may be forced to terminate service at MSP if the proposed curfew is adopted. No assessment of the costs or impacts of discontinuing service were provided.

Impact on Air Service Locally, Regionally, and Nationally.

The MAC submittal states that passenger service will be minimally impacted. While this proposed restriction may minimally affect service volume, it may more severely impact service choice. Lack of consumer choices often raises costs (fares) and lowers service quality.

During the months of January through April, SCA dedicates the majority of its fleet to meet the needs of vacation travelers from the Twin cities and the surrounding five-state area. Important from the standpoint of impact on quality of air services would be the unique need, if any, to get the charter group to a destination at a particular time to avoid overnight accommodations, to make connections with other forms of transportation, or to take advantage of underutilized customs staff at point of origin or destination.

The FAA notes that in a document not in the record, an October 1991 environmental document on MSP makes reference to a healthy Minneapolis-St. Paul business community, citing 23 Minnesota-based Fortune 500 companies headquartered in the Twin Cities area. If adoption results in the elimination of some cargo service to MSP, these and other firms' local and interstate business patterns may be adversely impacted.

The MAC submittal does not provide any description of regional economic impacts except to say that such impacts appear unlikely. This statement is unsupported. As noted in the

1991 MSP environmental document, one half of the Minnesota population resides in the Twin Cities area, MSP is one of only four large air traffic hubs in the North Central region, and none of the surrounding states has a large traffic hub. MSP serves a larger population than that of the metropolitan area, potentially making service substitution difficult.

Regional economic effects on overnight package delivery are not addressed. That one of the air cargo carriers is already utilizing stage 3 aircraft and/or has Stage 2 aircraft scheduled outside the nighttime period is significant, but not mentioned in the data submitted by MAC. Is the service provided by this carrier the same as the others, including the U.S. Postal Service (destinations served), does it cost more, do all businesses in the region have equal access to its services, etc? Our indication is that service from mail mini-hubs to the U.S. Postal Service Indianapolis hub would be adversely affected. It should also be pointed out and discussed that the region served by air cargo operators (on the ground) may include other areas beyond the Minneapolis-St. Paul- Metropolitan Area, i.e. North and South Dakota, the rest of Minnesota and parts of Wisconsin.

Since MAC's ordinance could affect nationwide operations of some carriers, an adequate cost-benefit analysis of the ordinance must include consideration of its national impact. MAC did not provide analysis of the benefits and costs of the proposed restriction in terms of the system wide implications. It is difficult to ascertain the interstate commerce effects from the proposed restriction, as submitted. Without a specific effective date, incremental costs to the interstate commerce system over and above those imposed by the national transition schedule cannot be determined. By reviewing city-pairs served during the nighttime period, a cost analysis of the traffic would indicate areas of impact. For example, the illustrative Host Z day showed about half of the nighttime stage 2 traffic to operate to and from MSP and cargo and mail hubs. The remaining traffic appears to be passenger air carriers positioning for the next day's itineraries, and charter passenger service. To remove or reschedule any of these flights is not costless.

The MAC documentation does not include any city-pair or other interstate commerce cost analysis. Without such analysis, one cannot be certain that the impacts are unimportant to communities at both ends. If other flights between the city pairs are reasonably available, it may not be significant. However, for the non-hub end of a city pair where this is not the case, the effects may have a substantial impact for individuals and firms that make up a significant portion of that community's economic base. Such an analysis should be developed to determine the costs of this proposed restriction. Congress, in ANCA, wanted to preserve Essential Air Service (EAS). Whether EAS flights are affected needs to be addressed.

Noise Benefit of the Proposed Ordinance.

With respect to the issue of the effect of the proposed restriction on aircraft noise, several different measures of benefit appear in MAC's submittal. The number of persons removed from the 1991 DNL 65 dB noise contour is calculated to be 2,200. An alleged single-event benefit from replacing a "typical stage 2 aircraft" by an MD- 80 is described as affecting approximately 22,000 fewer people by a departure. "Additionally, a general statement is made that elimination of nighttime stage 2 operations would benefit all area residents

affected by aircraft noise proportionately, including those outside the DNL 65 dB contour. Three different noise contour maps are cited: one each for 1987, 1989 and 1991.

MAC did not provide sufficient detail to allow the FAA and the public to evaluate the various claimed benefits. Beyond the fact that at least one of the benefits is measured with reference to DNL, the information submitted does not describe the methodologies or information used to determine the projected reductions in the noise exposure. The information necessary to comply with FAR Part 161.9 includes at least the following:

- 0 DNL contours overlaid on the map of airport and surrounding land uses
- 0 method used to generate the noise contours
- 0 specific airport and aircraft data used by the methodology

The above information is especially critical in this case because of substantial cited changes in data regarding noise exposure within a relatively short period of time. The EIS for the proposed extension of Runway 22/4 shows 41,000 people impacted in 1989. This number is also included on page 7 of MAC's submittal. However, MAC's submittal, on page 4, describes the noise exposure in 1991 as 30,400 people within the DNL 65 dB contour. As explained in Section III-B of the information submitted by MAC, the allocation of night operations plays a large part in calculations of noise impacts. An examination of the detailed input data could resolve questions of the accuracy of the calculation of noise exposure, including the contribution of nighttime operations, and the reasonableness of projected noise benefits.

No matter how the above issue is resolved, simply identifying the immediate reduction in airport noise exposure upon implementation of the ordinance does not define the benefit of the proposed noise restriction. The noise benefit is the reduction in noise impacts which will be achieved by the proposed restriction above and beyond the expectations under Part 91 Subpart I from introduction of the restriction through the final compliance with Part 91. The MAC submittal alludes to this in the Impact on Noise section, but allusion is not analysis. In MAC's submittal, the various attempted quantifications of noise benefits all look backwards to previous years. To identify the noise benefit requires calculation and comparison of the noise impacts on people in the vicinity of MSP with and without the restriction in place, including the nighttime preferential runway use program that is already in place, noise abatement operating procedures (which the FAA understands are used by most nighttime stage 2 operators to reduce noise nearly to a level comparable to hushkitting), any near-term anticipated changes in airport operation or land uses that will affect the number of people subject to nighttime noise impacts, and the foreseeable effects on noise of the Part 91 compliance schedule.

The MAC proposal supplements the DNL analysis with a description of the potential sleep disturbance as 22,000 people who would be awakened by aircraft events of 75 dB or higher. The current state of scientific knowledge does not support this prediction methodology or choice of threshold level. Research has not shown that single event metrics are useful in predicting community reactions to aircraft noise, for developing compatible land use plans,

or describing the overall noise environment. Furthermore, there is no accepted methodology within the technical community for aggregating the single event effects into some form of cumulative impact metric.

A recent review and analysis of sleep disturbance studies by the United States Air Force ("Analysis of the Predictability of Noise- Induced Sleep Disturbance," NSBIT Report No. HSD-TR-89-029, October 1989) revealed that previous sleep disturbance prediction equations, such as the one on which the 75 dB "threshold" is based, should not be considered to yield accurate estimates of sleep disturbance because of the great variability in the data sets from which they were developed and because of the great disparity between the results of laboratory versus field studies. The latter position is also supported by some of the original researchers, such as Dr. J.S. Lukas in his article Noise and Sleep:-A Literature Review and a Proposed Criterion for Assessing Effect. In an attempt to develop a dose-effect model to predict %Awakening with single event noise levels, USAF found:

- 0 large discrepancies between laboratory and field studies
- 0 highly variable and incomplete data bases
- 0 lack of appropriate field studies
- 0 questions related to how the studies were conducted
- 0 the need to consider non-acoustic effects
- 0 the role of habituation

MAC has compounded the problems already inherent in trying to predict sleep interference based on a single-event level by basing its calculation of 40,000 people potentially awakened by a "typical Stage 2 aircraft" on a situation in which winds require an aircraft to depart over south Minneapolis at night. This is not the preferential mode of MSP operation at night, yet MAC presents no data on how often this occurs.

In light of these concerns, it cannot be emphasized enough that DNL is a superior metric for assessing the noise "impact of nighttime aircraft operations.

MAC's use of varying noise benefit calculations, both for the proposed ordinance and for non-restrictive alternatives later in its submittal, also introduces the serious problem of making the cost/benefit comparisons of the proposed restriction and alternatives required by ANCA and Part **161** when the noise data bases are not comparable.

ALTERNATIVE MEASURES NOT INVOLVING AIRCRAFT RESTRICTIONS; COSTS AND BENEFITS COMPARED TO COSTS AND BENEFITS OF PROPOSED ORDINANCE

MAC does not in this section of its submittal, or elsewhere, compare the costs of alternative measures to the costs of the proposed restriction, as required by ANCA and Part 161. This cannot be done because of the failure to calculate costs of the proposed restriction elsewhere in the submittal. There is, therefore, no basis for comparison.

There is a minimal attempt to compare benefits of alternatives against benefits of the proposed restriction in a few descriptive sentences. This comparison would be significantly strengthened by developing better noise impact data, as previously commented on.

Soundproofing or Acquisition.

Non-comparable costs and benefits are provided for comparative purposes in this section of the submittal. Soundproofing costs are estimated on the basis of insulating 13,300 homes to benefit all 30,400 people in the 1991 DNL 65 dB noise contour. Acquisition costs are estimated on the basis of acquiring 1,000 homes to remove 2,200 people from the DNL 65 dB contour. Previous FAA comments have dealt with the lack of cost data for the proposed restriction and with the significant flaws in the noise benefit data for the restriction. Once MAC has corrected deficiencies in this basic noise benefit data, the same data base should be used to compare the costs of all alternatives against the costs of the restriction.

MAC may be able to achieve greater benefits at less cost by combining soundproofing and/or acquisition with another alternative, instead of treating each as a stand-alone option. The FAA recommends that voluntary measures be pursued to abate nighttime noise as a preferable alternative to an ordinance. MAC should consider whether voluntary measures combined with an insulation program, acquisition program, or both will reasonably serve its nighttime noise mitigation goals.

Voluntary Measures.

The FAA strongly recommends that MAC consider voluntary measures negotiated with its nighttime operators in lieu of the proposed ordinance. MAC has had a history of success in this regard and has reason to believe that additional nighttime noise benefits will accrue at MSP following this approach.

Noise abatement measures are a part of existing and proposed agreements with Northwest Airlines for financing the Northwest maintenance bases. Articles written in this regard indicate the airline has agreed to provisions that would regulate aircraft noise, and said it would operate a fair share of stage 3 aircraft at MSP. Northwest also purportedly has agreed to discontinue use of noisier Stage 2 aircraft at Minneapolis-St. Paul International Airport between 11:00 p.m. and 6:00 a.m.

FAA understands that the air cargo operators have had discussions with MAC and have forwarded to MAC a proposal for voluntarily reducing nighttime noise due to cargo operations.

Sun Country has indicated that it will operate four stage 3 aircraft (36 to 40 percent of its fleet) at MSP, will continue to schedule Stage 2 departures only between 6:00 a.m. and 11:00 p.m., and will restrict Stage 2 arrivals after 11:00 p.m. by first assigning stage 3 aircraft to these flights (although SCA's operational requirements may preclude its meeting these criteria 100 percent of the time).

In informal FAA communication with MAC, it has been pointed out that MAC may be able to achieve significant noise reduction benefits by contacting the U.S. Postal Service Air Mail Facility on the airport and/or the U.S. Postal Service's Realigned Transportation System (RTS) Task Force in Washington D.C. to request the Postal Service to specify utilization of Stage 3 aircraft for contracted operations at Minneapolis-St. Paul International Airport. The RTS Task Force has prepared a five-year forecast of transportation requirements for the U.S. Postal Services air cargo network. Solicitations for aircraft services, expected to be released in March 1992, will incorporate these requirements. The contract with a carrier is to begin between October 1992 and January 1993. It appears that a substantial amount of the affected nighttime operations would be those flown

.in support of the U.S. Postal Service, and a negotiated agreement with this airport user could achieve many of the same benefits attributed to this proposed restriction on Stage 2 aircraft. A letter from the U.S. Postal Service to MAC dated March 2, 1992, appears to bear this out. However, the Postal Service seeks a delay in implementation of the Stage 2 restriction until January 20, 1993, to allow for this transition to occur without requiring substantial changes and costs associated with its current operational contract.

MAC should include in its analysis the benefits that can be achieved by a voluntary agreement to assist in determining whether any extra margin of noise benefit that may be achievable through an ordinance is worth the cost. The FAA believes that it will not be.