99. Require field testing of completed residential structures to ensure compliance with Title 24 of the California Administrative Code.

100. Minimize noise impacts upon residential and other noise sensitive land uses.

101. Discourage sensitive land uses from locating in the 65 CNEL noise contour of the John Wayne Airport. Should it be deemed by the City as appropriate and/or necessary for a sensitive land use to locate in the 65 CNEL noise contour, ensure that appropriate interior noise levels are met and that minimal outdoor activities are allowed.

102. Strongly encourage the governor to appoint a Costa Mesa resident to the Orange County Fair Board to better control noise-related impacts of uses and activities within the Fairgrounds.

103. In conjunction with Environmental Impact Reports, assess the potential noise impact associated with increased traffic on surrounding residential and sensitive land uses. When acceptable exterior and interior noise levels are projected to be exceeded, project related impacts shall be mitigated through construction of noise attenuation walls or other measures.

104. Strongly encourage the Orange County Fair Board and other appropriate individuals and/or decision-making bodies to take such action as will bring the Pacific Amphitheater in compliance with all Costa Mesa noise ordinances or noise levels permitted in the City.

105. While maintaining safety, support alternatives for the future of Orange County Airport which will reduce the noise impact of airport operations.

REFERENCES

1. Costa Mesa General Plan Update Air Quality and Noise Analyses. Endo Engineering, May 1991.

2. Noise Abatement Program Quarterly Report for the period October 1, 1989, through December 31, 1989. John Wayne Airport, Orange County.

3. Environmental Management Resources Element, City of Costa Mesa, 1978.

ADOPTED MARCH 16, 1992
CITY COUNCIL RESOLUTION #92-27

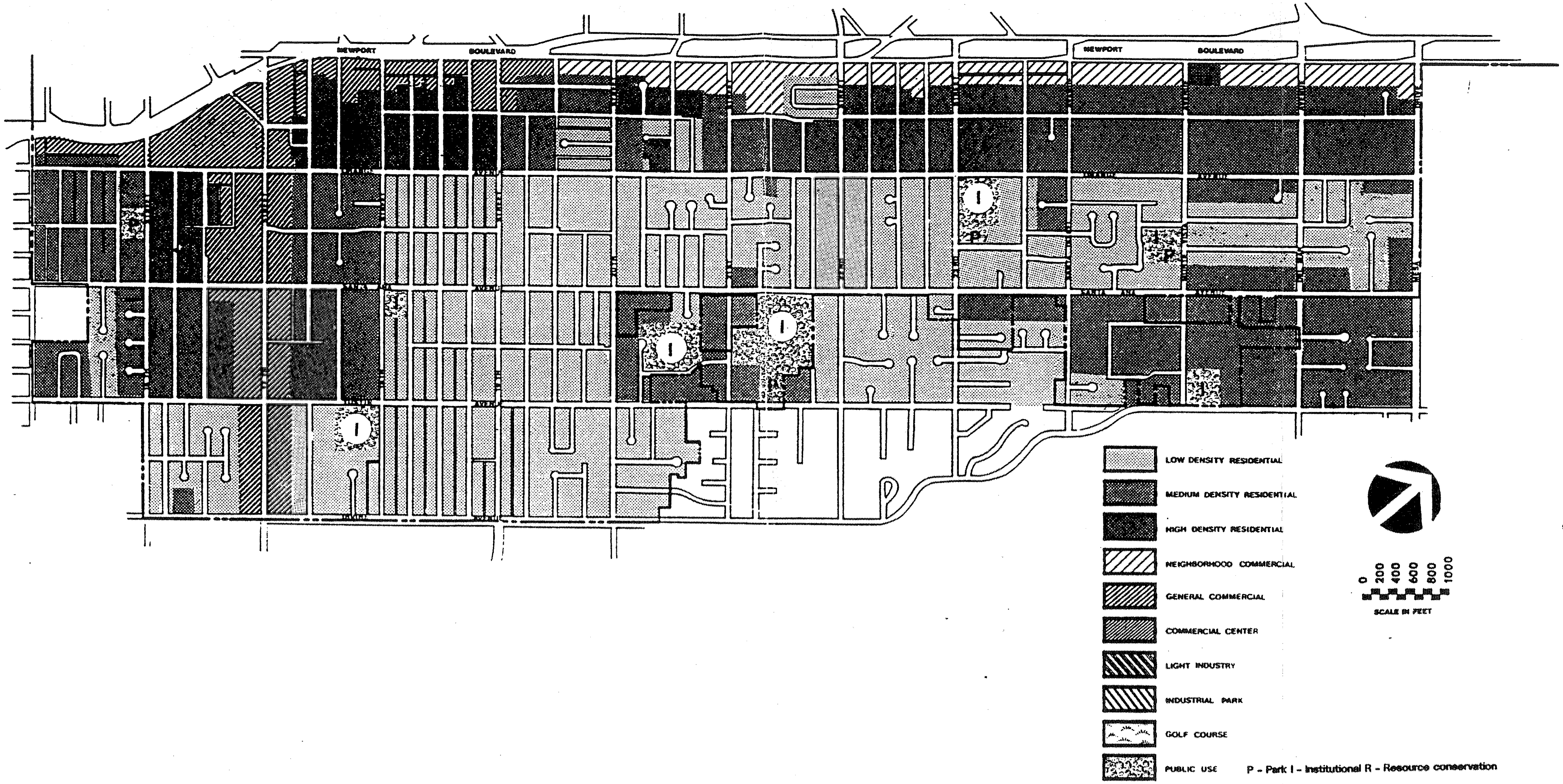

FIGURE 71

GENERAL PLAN LAND USE ELEMENT

PLANNING AREA 3

ADOPTED MARCH 16, 1992
CITY COUNCIL RESOLUTION #93-27

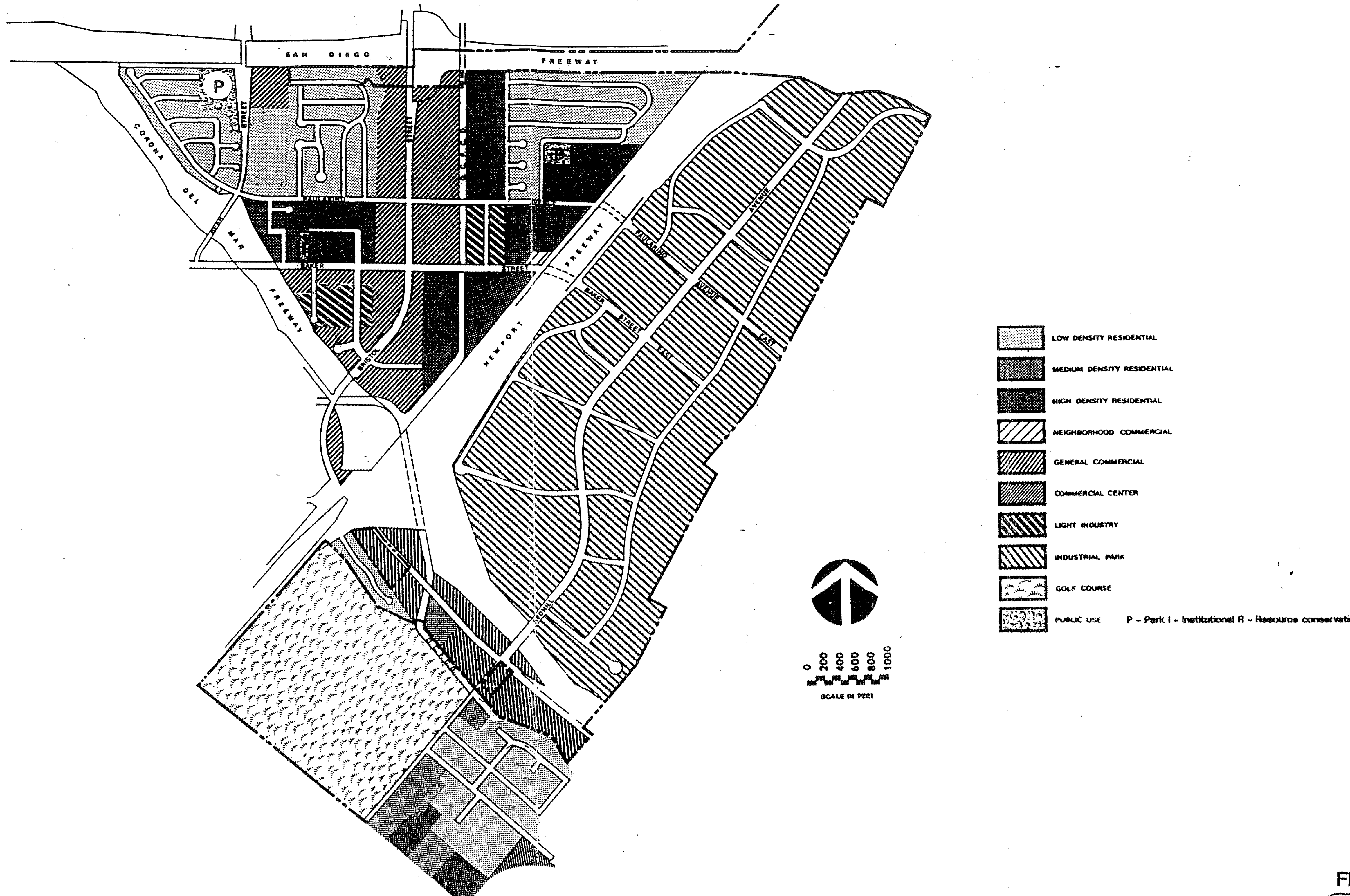

FIGURE 74

GENERAL PLAN LAND USE ELEMENT
PLANNING AREA 6

costa mesa

Community Development Department

City of Irvine, One Civic Center Plaza, P.O. Box 19575, Irvine, California 92713 (714) 724-6000

December 14, 1992

Ms. Kari Rigoni
Environmental Planning Division
Environmental Management Agency
Post Office Box 4048
Santa Ana, CA 92702-4048

Subject: John Wayne Airport Access Plan Amendments

Dear Ms. Rigoni: Kari

Thank you for providing the City of Irvine an opportunity to review the Notice of Preparation (NOP) for the John Wayne Airport Access Plan Amendments Project. The City has concluded its review of the subject NOP and has no comments to offer at this time.

However, the City of Irvine looks forward to receiving the Draft Environmental Impact Report during the 45-day environmental review period. If you have any questions, please feel free to contact Mr. Daniel Jung, Associate Planner, at (714) 724-6406.

Sincerely,

PETER HERSH
Manager of Planning Services

PH:dj/ragoni.jwa

cc: Allison Hart, Assistant City Manager
Daniel Jung, Associate Planner

Santa Ana Education 1st

CITY OF SANTA ANA

20 CIVIC CENTER PLAZA • P.O. BOX 1988
SANTA ANA, CALIFORNIA 92702

December 31, 1992

Ms. Kari Rigoni
County of Orange
Environmental Management Agency
P.O. Box 4048
Santa Ana, CA 92702-4048

RE: **NOTICE OF PREPARATION FOR JOHN WAYNE AIRPORT ACCESS PLAN AMENDMENTS**

Dear Ms. Rigoni:

Thank you very much for the opportunity to review the Notice of Preparation for the John Wayne Airport Access Plan Amendment. After examining the NOP, the City of Santa Ana Planning Division has no specific comments for the project at this time.

However, the City Planning Division would like to voice concern on an Access Plan Amendment which may effect current flight patterns over the City of Santa Ana. Therefore, in the Draft Environmental Impact Report, we are requesting a discussion on existing and proposed flight patterns over or near the City of Santa Ana boundaries.

Sincerely,

Maya DeRosa

Maya DeRosa
Environmental Coordinator

GN:SA

cc: Charles View, Senior Planner

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JAN - 6 1993
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UNITED STATES MARINE CORPS
MARINE CORPS AIR BASES, WESTERN AREA
EL TORO (SANTA ANA), CALIFORNIA 92709

IN REPLY REFER TO:

11131.8
AQ/TL0868
8 Dec 1992

Environmental Planning Division
Attn: Ms. Kari Rigoni
Environmental Management Agency
County of Orange
P.O. Box 4048
Santa Ana, CA 92702-4048

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DEC 11 1992
ORANGE COUNTY EMA
ENVIRONMENTAL PLANNING
DIVISION

DEIR #546 - JOHN WAYNE AIRPORT ACCESS PLAN AMENDMENTS

Dear Ms. Rigoni:

The Notice of Preparation of a Draft EIR for the above project dated November 10, 1992 has been reviewed and we have no comments at this time.

If you have any questions, please contact Ann Dotson at (714) 726-3702.

Sincerely,

L. R. FUCHS, JR.
Colonel, U.S. Marine Corps
Community Plans and Liaison Officer
By direction of the Commander

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EMA

United States Department of the Interior

TAKE PRIDE IN AMERICA

FISH AND WILDLIFE SERVICE
FISH AND WILDLIFE ENHANCEMENT
Carlsbad Field Office
2730 Loker Avenue West
Carlsbad, California 92008

December 14, 1992

Ms. Kari Rigoni
Environmental Planning Department
Environmental Management Agency
P.O. Box 4048
Santa Ana, California 92702-4048

Re: Notice of Intent to Prepare an Environmental Impact Report for the John Wayne Airport Access Plan Amendments

Dear Ms. Rigoni:

The U.S. Fish and Wildlife Service (Service) has reviewed the referenced notice of preparation (notice) and attached environmental analysis. As currently proposed, the project calls for, in part, "access plan amendments modifying maximum permitted noise levels on departure in areas south of John Wayne Airport" (Notice, page 2).

In general, the Service believes that the notice and environmental analysis appropriately: 1) identifies many of the real and potential environmental impacts of the proposed project, and 2) requires careful analyses and consideration of these impacts. Indeed, the Service concludes that the preliminary data and analysis support the conclusion that "endangered, threatened, or species of special concern...may be affected by increased noise levels, particularly in the upper back bay [Upper Newport Bay Ecological Reserve] area" (document, page 20). Accordingly, the Service offers the following specific information and recommendations to assist you in planning for the preservation of sensitive wildlife species and habitats within the County of Orange and as a means to assist you in complying with pertinent Federal statutes.

As you may know, the primary concern and mandate of the Service is the protection of public fish and wildlife resources and their habitats. Our mandates further require that we provide comments on any public notice issued for a Federal permit or license affecting the nation's waters (e.g., Clean Water Act Section 404 and River and Harbor Act of 1899, Section 10). The Service is also responsible for administering significant portions of the Endangered Species Act of 1973 as amended (Act). Section 7 of the Act requires Federal agencies to consult with the Service should it be determined that their discretionary acts "may affect" a listed threatened or endangered species. Section 9 of the Act additionally prohibits the unpermitted "take" (e.g., harm, harassment, pursue, injure, kill) of Federally-listed species. "Harm" (i.e., "take") is further defined to include destruction of necessary habitat or disruption of essential breeding or feeding behaviors. "Take" can only be permitted pursuant to the pertinent language and provisions in Section 7 (Federal consultations), the implementing regulations pertaining thereto (50 CFR 402), and Section 10a of the Act.

Based upon the Service's current knowledge of the project and proposed changes in the permitted noise levels in the project area, it is entirely possible that a Section 7 consultation will be required or that a one or more Section 10a permits may be necessary. It is anticipated that the Federal Aviation Administration will be the Federal "Action Agency" pursuant to Section 7 of the act and the regulations at 50 CFR 402.

To assist the Service in adequately evaluating the proposed project from the standpoint of fish and wildlife protection, we request that the Environmental Impact Report contain the following specific information:

1) A complete discussion of the purpose and need for the project.

2) A complete description of the proposed project, including all practicable alternatives that have been considered to reduce project impacts to listed and other sensitive species.

3) Specific acreages and descriptions of the types of wetland, riparian, coastal sage scrub, and other sensitive habitats that will or may be indirectly impacted by the proposed project or project alternatives. Maps and tables should be used to summarize such information.

4) Descriptions of the biological resources associated with each habitat type. These descriptions should include both qualitative and quantitative assessments of the resources present on the proposed project site and alternative sites.

5) An assessment of direct, indirect, and cumulative project impacts to fish and wildlife and associated habitats. All facets of the project should be included in this assessment.

6) A list of Federal candidate, proposed or listed species, state-listed species, and locally sensitive species that may be affected by the project. A detailed discussion of these species, including information pertaining to their local status and distribution and susceptibility to noise impacts, should be included in this report. The anticipated or real impacts of the project on these species should be addressed fully. The Service is particularly interested in any and all pertinent information and data pertaining to potential or real impacts to populations of: a) currently listed species, including the light-footed

clapper rail (Rallus longirostris levipes), California least tern (Sterna antillarum browni), brown pelican (Pelecanus occidentalis), peregrine falcon (Falco peregrinus), least Bell's vireo, Vireo bellii pusillus), b) proposed endangered species, specifically the coastal California gnatcatcher Polioptila californica californica), and Federal candidates for listing, including the elegant tern (Sterna elegans).

7) Specific mitigation or species conservation plans to fully offset project-related impacts, including proposals for mitigating project-related and cumulative impacts of the project. The mitigation or compensation plans should fully explain all measures taken to avoid impacts to affected species. In addition, said plans should provide precise descriptions of the proposed mitigation measures for unavoidable impacts and the clear identification of the agency or persons that will guarantee the successful implementation of the mitigation plan in perpetuity.

Of clear concern are project-related potential noise impacts to listed species and other public fish and wildlife resources. The Service has developed a rather extensive bibliography pertaining to known impacts of noise on wildlife and stands ready to assist you and the Federal Aviation Administration in avoiding or appropriately mitigating noise-related impacts to listed species and other sensitive taxa.

The Service thanks you for the opportunity to comment on the referenced notice of preparation and looks forward to receiving a copy of the draft Environmental Impact Report when it is available. If you should have any questions or comments pertaining to this letter, please do not hesitate to call Loren Hays of my staff at (619) 431-9440.

Sincerely,

Jeffrey D. Opdycke
Field Supervisor

cc: CDFG, Region 5 (Attn: Cheryl Heffley)

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DEC 02 1992

ORANGE COUNTY EMA
ENVIRONMENTAL PLANNING
DIVISION

THE WILDLIFE SOCIETY
Southern California Chapter
P.O. Box 3538
Logan, Utah 89423

25 November 1992

Ms. Kari Rigoni
Environmental Management Agency
P.O. Box 4048
Santa Ana, CA 92702-4048

Dear Ms. Rigoni:

Thank you for sending us the notice of intent to prepare a draft environmental impact report #546. We are concerned that increased noise levels may be detrimental to wildlife at the Newport Bay Ecological Reserve. Several federally and state listed species and other non-listed species spend at least part of their time on the reserve and may be subjected to the increased noise levels. Because some of these species are migratory we are concerned that test will only be conducted for a 6 month period; we believe they should be at least 1 year in length. We are concerned that these species continued survival, in part, is dependent on their ability to hear other members of their own species, and they need to be able to hear potential predators. Increased noise levels may impair their ability to hear important sounds.

We recommend the County of Orange in cooperation with the Federal Aviation Administration initiate consultation proceedings with the U. S. Fish and Wildlife Service regarding the issues of protected species.

Sincerely yours,

W. Douglas Padley

W. Douglas Padley, President

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SHUTE, MIHALY & WEINBERGER
ATTORNEYS AT LAW
396 HAYES STREET
SAN FRANCISCO, CALIFORNIA 94102
TELEPHONE: (415) 552-7272
TELECOPIER: (415) 552-5816

E. CLEMENT SHUTE, JR.
MARK I. WEINBERGER
MARC B. MIHALY, P.C.
ALLETTA D'A. BELIN
FRAN M. LAYTON
RACHEL B. HOOPER
ELLEN J. GARBER
CHRISTY H. TAYLOR
TAMARA S. GALANTER

LAUREL L. IMPETT
URBAN PLANNER

ELLISON FOLK
RICHARD S. TAYLOR
JAMES S. ANGELL
ENVIRONMENTAL FELLOWS

November 30, 1992

Michael Scott Gatzke
Gatzke, Mispagel & Dillon
2011 Palomar Airport Road, Ste. 305
Carlsbad, CA 92009-1432

Re: Comments on the Environmental Analysis for the Access Plan Amendments

Dear Mike:

I am writing to you since the observations and requests contained in this letter pertain to matters we have discussed with you, airport staff and Vince Mestre concerning a stipulated change in the 1985 Settlement Agreement. However, you should feel free to make the letter available to anyone involved in this process. Our purpose in preparing the letter is to make sure that the EIR which will be prepared will not have the effect of foreclosing subjects which are important to us in the discussions over changes in the 1985 Settlement Agreement.

Our first concern arises over the description of project objectives. The principal objectives should be expanded to establish new maximum permitted noise levels not only in the Santa Ana Heights area but on down the Bay as well. We have agreed that new maximum noise levels should be established at TMS 21, 22 and 24 for Class A departures. AWG and SPON have proposed that new lower noise levels be established for Class AA and Class E departures at those monitors also. The EIR must "leave room" for these negotiations to occur.

At several places in the Environmental Analysis there is discussion of setting "maximum permitted noise levels". See for example, pages 7, 11, 15 and 16. The Draft EIR to be prepared should make clear that the numbers suggested are maximums which could be reduced in the Final EIR such that lower numbers could be adopted in the amended Phase 2 Access Plan. If agreement on the precise numbers for each monitor for each class of departing aircraft can be reached before the Draft EIR is circulated, then those numbers should be set forth in the draft.

At page 15, under discussion of Class A aircraft, it is noted that the noise level definition is driven by the MD 80. We agree. As has been discussed, there is merit in making separate arrangements with the carriers which operate that aircraft. The Class A aircraft noise definition levels can then be set based on other aircraft such as the A-320, B-737 and B-757. The Draft EIR should allow for this resolution of maximum noise levels for Class A aircraft.

Finally, at page 17 it is stated that one of the implementing actions which is a condition precedent to implementing the proposed project is a binding agreement with the FAA preserving the "grandfathered" status of the Phase 2 Access Plan (and also the 1985 Settlement Agreement). In accordance with discussions at our meeting of November 19, 1992 the Draft EIR should also indicate that a condition precedent is the FAA's binding agreement that the noise levels specified are reasonable, nondiscriminatory and enforceable against aircraft operating at JWA.

Please contact me to discuss any of the points raised in this letter.

Very truly yours,

SHUTE, MIHALY & WEINBERGER

E. CLEMENT SHUTE, JR.

ECS:kl

cc: Robert Burnham

Printemps & Kaufman
Attorneys at Law

Edwin Printemps
Nancy Kaufman

Telephone (714) 973-8077
FAX (714) 973-0671

December 11, 1992

Environmental Management Agency
P.O.Box 4048
Santa Ana, CA 92702-4048

RE: DEIR 546
Project Title: John Wayne Airport Access Plan Amendments
Applicant: County of Orange/John Wayne Airport

To the EMA:

The Back Bay Community Association makes the following comments regarding the scope and content of the proposed DEIR:

The Project Objectives are formulated in such a way as to limit options and preclude certain alternatives. The objective should be to continue operation of the airport while accommodating the FAA's concerns. To state that the objective is to establish new (and higher) maximum noise levels is to state a conclusion not yet warranted by any EIR. Stated in this way, the objective precludes the possibility of establishing new operational capacities in order to preserve the current residential uses, and precludes any good faith exploration of the proposed third alternative.

We would like to see a thorough exploration of the third alternative, as well as an exploration of the feasibility of moving the runway further back to the 405 freeway. The homeowners of Santa Ana Heights have been urging such a move for at least the last twenty years, but its feasibility and relative social cost have never been adequately explored.

The DEIR should specify with particularity the effect of the project and alternatives on the Santa Ana Heights Specific Plan.

Thank you for your consideration.

Back Bay Community Association

BY [signature]
Nancy Kaufman

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Concerned
Home
Owners of
Sherwood
Estates

C.H.O.S.E.
SANTA ANA HEIGHTS

Edwin C. Hall
1572 Indus Street
Santa Ana, Ca..92707
Ph. 714-546-4047

December 13, 1992

Environmental Management Agency
Post Office Box 4048
Santa Ana, Ca..92702-4048

SUBJECT : County of Orange, Environmental Review Process inre:
To proposed Noise Amendments/John Wayne Airport.

ATTENTION: EMA.

Based upon information contained in Santa Ana Heights Newsletter number 18, dated December 1992 (copy attached), inre: to FAA Noise Standard Update; is cause for the Concerned Home Owners of Sherwood Estates, to respond as follows:

1. The County's Project, "Notice Of Preparation," was issued on November 10th, with Public comments accepted through December 10th. However, we were not aware of this "NOP" until receipt of SAH Newsletter on December 3rd; therefore providing insufficient time for Public comment.

2. As stated, "the Project envolves amendment of noise limits," which implies a predetermined conclusion; thereby tending to discourage Public input, again.

3. Finally, the same occurence is more obvious when the Project directs (that) the "EIR will propose new noise limits." A declared action noise-remedy such as this, is preclusive toward considering alternates to the problem; and once again, "shuts the door" for Public participation.

In the best interest of Communities who will ultimately be on the receiving end of any further noise increase; we recommend the Proposed EIR - NOP Project should be reworked by Staff, in a manner that would seek to find alternates to the problem, rather than (simply) raising noise limits.

Thank you in advance for your consideration.

Sincerely,

Edwin C. Hall

Edwin C. Hall - CHCSE

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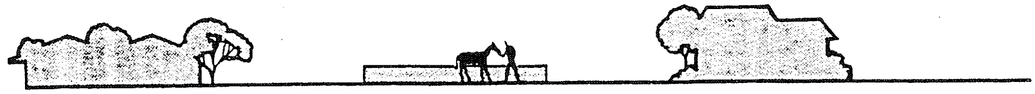
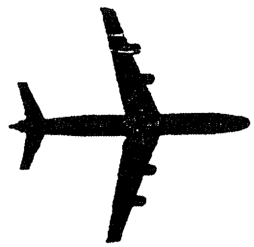
Santa Ana Heights



NUMBER 18 COUNTY OF ORANGE DECEMBER, 1992

ENVIRONMENTAL MANAGEMENT AGENCY

FAA NOISE STANDARD UPDATE



Preliminary results from the test of noise abatement departure procedures are in. The test is being conducted at JWA as a result of the FAA's pending adoption of new national safety standards for noise abatement departure procedures. These standards will require that some of the air carriers who serve JWA change the procedures they have traditionally used to reduce aircraft noise south of JWA.

The preliminary analysis of the noise test data shows that, while aircraft related noise levels in Santa Ana Heights will increase, the new 65 dB CNEL contour will probably not exceed the contour projected in EIR 508/EIS. Fortunately, the EIR 508 contour has been used as the basis for planning in Santa Ana Heights. Land use decisions and mitigation programs, such as the acoustical insulation and purchase assurance programs, have been based on noise levels greater than or equal to those expected to result from the 1992 test and implementation of the new federal standards.

This information was recently presented to the Santa Ana Heights Project Area Committee members at an informational session, held at JWA on November 12th. An additional update will be given at the next PAC meeting scheduled for December 3rd at 6:30 p.m. at JWA.

The past few issues of the *Santa Ana Heights Newsletter* have included articles regarding the test of noise abatement departure procedures at John Wayne Airport. Our last update explained that "Phase 2" of the test was to end on September 30th and that the County would then analyze the data and initiate the environmental processes required by state law. In the course of analyzing the results, we concluded that additional data for certain aircraft types, to be collected in October 1992, would be of assistance in completing the environmental analysis. In light of the need for this additional data, and in light of the time required to prepare, notice, and hold public hearings on the environmental documentation, the County requested an extension of the test period from December 31, 1992, to March 31, 1993. The moratorium on other programs in Santa Ana Heights will also be extended. To minimize noise and the amount of pilot retraining, the airlines will operate only the quieter test procedures, those they have been using since October 1st, through the end of March.

The County is now proceeding with the environmental review process. A Notice of Preparation ("NOP"), issued on November 10th, defines the "project". The project involves: (i) the amendment of noise limits which apply south of JWA; and (ii) the addition of three new monitoring stations and removal of two existing stations. (The two stations recommended for removal are <u>not</u> in the Santa Ana Heights community.) Public comments will be accepted on the NOP through December 10th.

The next step in the process involves the preparation of an Environmental Impact Report ("EIR"). In the case of this project, the EIR will propose new noise limits, identify environmental impacts, and discuss, in detail, the measures which may be implemented to mitigate the project. The County hopes to circulate the draft EIR in late December and to accept comments through early February. Once the draft EIR has been circulated and public comments have been received, the County will prepare a final EIR for certification by the Board of Supervisors. Before the EIR is submitted for Board action, it will be reviewed by the County Planning and Airport Commissions some time in March. Throughout the environmental process, the Santa Ana Heights community and other interested parties will have at least five opportunities to offer comments.

If you have questions or would like more information, please contact Courtney Wiercioch at (714) 252-5166.

APPENDIX C

SUMMARY OF ISSUES RAISED IN COMMENTS TO THE NOTICE OF PREPARATION AND RESPONSIVE PORTIONS OF THE EIR

APPENDIX C

Summary of Issues Raised in Comments to the Notice of Preparation and Responsive Portions of the Draft EIR

On November 11, 1992, the County Environmental Management Agency, Environmental Planning Division, circulated a Notice of Preparation ("NOP") to various federal, state, regional and local governmental agencies as required by CEQA. Attached to the NOP was an environmental checklist, a description of the proposed project and an initial study. Those materials are reproduced in Appendix A.

During the circulation of the NOP a number of comments were received. All written comments received regarding the NOP have been reproduced in Appendix B. The primary issues raised in the comments are summarized below, including how and where the issues are responded to in this EIR.

DEPARTMENT OF FISH AND GAME

Comment: The EIR should provide a complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened and locally unique species and sensitive and critical habitats.

Response: *This issue is discussed in Section 3.3, Biological Resources.*

Comment: The EIR should provide a discussion of the direct, indirect and cumulative impacts expected to adversely affect biological resources and identify specific measures to offset those impacts.

Response: *This issue is discussed in Section 3.3, Biological Resources.*

Comment: The EIR should provide a discussion of the adverse impacts from any increased runoff, sedimentation, soil erosion, and/or urban pollutants on streams and watercourses on or near the project. Mitigation measures should be discussed to alleviate any identified impacts. In addition, the impact of the proposed project on stream buffer areas should also be considered.

Response: *The proposed project will not result in any changes in runoff, sedimentation, soil erosion and/or urban pollutants on streams and watercourses on or near the proposed project. The proposed project will also not result in any changes to stream buffer areas.* See *Section 6.4, Water Quality. Because the proposed project will not have a significant impact on the identified issues, no mitigation measures are proposed or required.*

Comment: The EIR should include a discussion of alternatives to minimize adverse impacts on wildlife and to directly benefit wildlife and wildlife habitat. These alternatives should consider the Department of Fish and Game's policy that there should be no net loss of wetland acreage or habitat values.

Response: *The proposed project will not result in any significant impacts on biological resources.* See *Section 3.3, Biological Resources. Three alternatives have been analyzed for the proposed project. These alternatives are discussed in Section 4.0. None of the proposed alternatives will result in any significant impacts on biological resources.*

Comment: The Department of Fish and Game must be notified, after project approval, of any diversion or obstruction of the natural flow of the bed, channel or bank of any river, stream or lake.

Response: *The proposed project will not result in the diversion or obstruction of the natural flow of the bed, channel or bank of any river, stream or lake. This issue is discussed in Section 6.4, Water Quality.*

E. Clement Shute, Jr. (representing the Airport Working Group of Orange County, Inc. ("AWG") and Stop Polluting Our Newport ("SPON"))

Comment: The EIR should not have the effect of foreclosing subjects which are important to AWG and SPON in the discussions over amendments to the 1985 Settlement Agreement.

Response: *The EIR does not and will not have that effect. As discussed in Section 3.1.5 (Noise, Mitigation Measures), the EIR does propose that the County accept the invitation of the other settling parties to engage in such discussions. The opportunity to engage in these discussions is one of the reasons for limiting the proposed* PHASE 2 ACCESS PLAN *amendments to one year.*

Comment: The project objectives of the proposed project should be expanded to include the establishment of new maximum permitted noise levels not only in the Santa Ana Heights area, but also down the Bay. Specifically, new noise levels should be established for Class AA and Class E departures at TMS 21, 22 and 24.

Response: *This issue is addressed in Section 3.1.5, Noise, Mitigation Measures.*

Comment: The EIR should make clear that the noise levels identified in the NOP and initial study were maximum suggested levels and that the noise levels adopted may be less than those presented in the initial analysis. If agreement for the maximum permitted noise levels can be reached before circulation of the Draft EIR, those levels should be set forth in the Draft EIR.

Response: *This issue is addressed in Section 3.1, Noise.*

Comment: The initial study indicates that the Class A maximum noise levels are being driven by the MD-80 aircraft. The Draft EIR should allow for separate maximum noise levels to be set for the MD-80 aircraft. In that way, the Class A aircraft noise levels can be set based on other aircraft such as the A-320, B-737 and B-757 aircraft.

Response: *This issues is addressed in Section 3.1, Noise.*

Comment: The EIR should indicate that a condition precedent to implementing the proposed project is entering into a binding agreement with the FAA to preserve the grandfathered status of the Phase 2 Access Plan.

Response: *This issue is addressed in Section 3.1.5 regarding mitigation measures adopted as part of the proposed project.*

THE WILDLIFE SOCIETY, SOUTHERN CALIFORNIA CHAPTER

Comment: The EIR should include a discussion of the impact the increased noise levels may have on wildlife in the Newport Bay Ecological Reserve.

Response: *This issue is addressed in Section 3.3, Biological Resources.*

CITY OF COSTA MESA

Comment: The EIR should include an analysis of the changes to the CNEL noise contours anticipated in the Costa Mesa area and its sphere of influence. The EIR should discuss: (1) whether the proposed noise increases will require general plan amendments in the eastern portions of Costa Mesa; and (2) whether it will be necessary to restrict more properties to disallow sensitive receptors such as day care centers, schools, congregate care centers, etc.

Response: *This issue is addressed in Section 3.1, Noise.*

Comment: The City believes that the new noise criteria should be placed at the following levels: (1) Class A aircraft - 101.0 at RMS 1, 101.0 at RMS 2, 100.0 at RMS 3 and 92 at RMS 6; (2) Class AA aircraft - 92.5 at RMS 1, 92.5 at RMS 2, 90.2 at RMS 3 and 82.0 at RMS 6; (3) Class E aircraft - none proposed at this time. The proposed criteria are based on an MD-80 with a gross takeoff weight of 125,000 lbs. and a 737-300 using a 800 foot cut-back procedure.

Response: *The issue of maximum permitted noise levels is addressed throughout the EIR, and particularly in Section 3.1, Noise, and in Appendix D to the EIR, which contain an extended discussion and analysis of the proposed and alternative maximum permitted noise levels. The proposal to set lower maximum permitted noise levels for Class AA and Class E Aircraft south of RMS 3 is addressed in Section 3.1.5, Noise, Mitigation Measures.*

Comment: If higher maximum noise levels are allowed, the EIR should address what the possibility is that heavier and noisier aircraft will be able to use the airport.

Response: *This issue is addressed in Section 3.1, Noise. See also Appendix D to the EIR.*

Comment: If the proposed noise limits as set forth in the initial study are adopted as the proposed project, the EIR should also address the following issues:

(1) the potential impacts of 39 MD-80s departing from JWA at average gross takeoff weights sufficient to reach St. Louis and similar distant airports;

(2) the potential impacts that may result if airlines elect an 800 foot cut-back altitude, with higher gross takeoff weights, instead of a 1500 foot cut-back altitude, at lower gross takeoff weights; and

(3) the potential impacts that increases in gross takeoff weights may create, including increases in peak hour vehicle flows, parking requirements and related air quality impacts.

Response: *The noise related issues are addressed in Section 3.1, Noise. The issues relating to vehicle flows, parking requirements and related air quality impacts are addressed in Section 6.0, Effects Found Not To Be Significant.*

PRINTEMPS & KAUFMAN (REPRESENTING THE BACK BAY COMMUNITY ASSOCIATION)

Comment: The project objectives are formulated in such a way as to limit options and preclude certain alternatives. The project objective should be to continue operation of the airport while accommodating the FAA's concerns.

Response: *This comment is not entirely clear. The project objectives are not "formulated" to avoid consideration of alternatives to the proposed project. The statement that "[t]he project objective should be to continue operation of the airport while accommodating the FAA's concerns" appears to be a restatement of the project objectives as defined in the NOP and the EIR.*

Comment: The project objectives should not be stated in such a way as to: (1) preclude the possibility of establishing new operational capacities in order to preserve the current residential uses; and (2) preclude exploration of the proposed third alternative.

Response: *The first suggestion is ambiguous - its not clear what the commentator means by "new operational capacities." However, it is not an objective of the project to establish "new" operational capacities at JWA, but to preserve the operational capacity established by the 1985 Settlement Agreement. Alternative 3 is explored in Section 4.0, Alternatives.*

Comment: The draft EIR should provide a thorough discussion of the third alternative.

Response: *The third alternative is discussed and analyzed in Section 4.0, Alternatives. However, it is the conclusion of the EIR that Alternative 3 is not reasonable or feasible.*

Comment: The EIR should discuss the feasibility of moving the runway further back toward the 405 freeway.

Response: *This issue is addressed in Section 3.1, Noise.*

Comment: The EIR should address the impacts of the proposed project and its alternatives on the Santa Ana Heights Specific Plan.

Response: *This issue is addressed in Section 3.2, Land Use.*

CONCERNED HOMEOWNERS OF SANTA ANA HEIGHTS ("C.H.O.S.E.")

Comment: The initial study states that the proposed project involves the amendment of noise limits. This implies a predetermined conclusion which discourages public input.

Response: *The purpose of the initial study and notice of preparation is to notify the public of the project to be considered and evaluated in the environmental document, specifically for the purpose of* encouraging *public input into the process. The identification of the proposed project in the initial study and NOP does not signal a predetermined conclusion by the County, but is a statutory requirement of CEQA. Identification of the proposed project does not foreclose consideration of alternatives, including the "no-project" alternative, under which no amendments would be made to the* PHASE 2 ACCESS PLAN.

Comment: The initial study states that the EIR will propose new noise limits. This action precludes consideration of alternatives to the problem and "shuts the door" to public participation.

Response: *As discussed above, identification of the proposed project in the initial study and NOP is a requirement of CEQA and does not "preclude" consideration of project alternatives. The EIR contains an extensive analysis of a range of alternatives to the proposed project. The initial study and NOP stage of the CEQA process* encourages *public participation by soliciting public comment and input at an early stage of the environmental process. Circulation of the draft EIR for public comment, and the proceedings before the Planning Commission, the Airport Commission and the Board of Supervisors all provide opportunities for public input and participation in consideration of the environmental effects of the proposed project and its alternatives.*

Comment: The EIR should seek to find alternatives to the problem, rather than simply raising the noise limits.

Response: *It is not clear what this commentator means by "find[ing] alternatives to the problem." The EIR has analyzed three alternatives to the proposed project. These alternatives are addressed in Section 4.0 of the EIR. The potential noise impacts of the proposed project are discussed in Section 3.1, Noise.*

UNITED STATES DEPARTMENT OF THE INTERIOR -- FISH AND WILDLIFE SERVICE, FISH AND WILDLIFE ENHANCEMENT

Comment: The EIR should include a discussion of the following:

(1) The purpose and need for the project;

(2) The proposed project and its alternatives;

(3) Specific acreage and descriptions of the types of riparian, coastal sage scrub and other sensitive habitats that will or may be indirectly impacted by the proposed project or the project alternatives;

(4) The biological resources associated with each habitat type, including both qualitative and quantitative assessments of the resources present on the proposed project site and alternative sites;

(5) An assessment of direct, indirect and cumulative project impacts to fish, wildlife and associated habitats;

(6) A list and detailed discussion of Federal candidate, proposed or listed species, state-listed species and locally sensitive species that may be affected by the proposed project. The discussion should include information pertaining to these species local status and distribution, as well as their susceptibility to noise impacts. The Service is particularly interested in information relating to the light-footed clapper rail, California least tern, brown pelican, peregrine falcon, least Bell's vireo, California gnatcatcher and the elegant tern; and

(7) A discussion of specific mitigation or species conservation plans to fully offset project-related impacts, including proposals for mitigating project-related and cumulative impacts of the proposed project. Precise descriptions of the proposed mitigation measures and clear identification of the agency or persons that will guarantee the successful implementation of the mitigation plan should be provided.

Response: *A discussion of the purpose and need for the project is provided in Section 1.2, Purpose and Scope of EIR and Section 2.4, Project Objectives.*

A description of the proposed project and its alternatives is provided in Section 2.0, Project Description and Section 4.0, Project Alternatives.

A discussion of the types of habitat which may be impacted by the proposed project is provided in Section 3.3, Biological Resources.

A description of the biological resources associated with each habitat type is provided in Section 3.3, Biological Resources.

An assessment of the potential impacts on fish, wildlife and associated habitats is provided in Section 3.3, Biological Resources.

A discussion of the potential impacts on federal candidate, proposed or listed species, state-listed species and locally sensitive species that may be affected by the project is provided in Section 3.3, Biological Resources.

The proposed project is not expected to result in a significant impact on biological resources. Therefore, no mitigation measures are required for the proposed project.

Comment: The Service is concerned about the project-related potential noise impacts to listed species and other public fish and wildlife resources. The Service has developed an extensive bibliography pertaining to known impacts of noise on wildlife and is ready to assist the County and the FAA in avoiding or appropriately mitigating noise-related impacts to listed species and other sensitive taxa.

Response: *As discussed in Section 3.3, Biological Resources, neither the proposed project, nor any of the project alternatives, would result in any significant adverse environmental impacts to listed species or sensitive taxa.*

CITY OF SANTA ANA

Comment: The City of Santa Ana voiced concern on any Access Plan amendments which may affect current flight patterns over the City of Santa Ana. The EIR should discuss the existing and proposed flight patterns over or near the City of Santa Ana boundaries.

Response: *This issue is discussed at a number of points in the EIR, including Section 3.1, Noise. As noted in the EIR, neither the proposed project, nor any of the alternatives, would affect current flight patterns over the City of Santa Ana.*

APPENDIX D

NOISE TECHNICAL APPENDIX

JOHN WAYNE AIRPORT DEPARTURE NOISE DEMONSTRATION PROGRAM

NOISE TECHNICAL APPENDIX

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MARCH 1993

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JOHN WAYNE AIRPORT DEPARTURE NOISE DEMONSTRATION PROGRAM

NOISE TECHNICAL APPENDIX

MESTRE GREVE ASSOCIATES

MARCH 1993

1.0 INTRODUCTION

Aircraft departures from John Wayne/Orange County Airport (SNA) generate noise in the residential areas south of the airport. To meet strict noise limits set by the County of Orange to reduce the noise impacts on these communities, commercial aircraft departing the airport have modified their departure procedures, flight profiles and power settings while flying over the most adversely affected neighborhoods. The most common modification is a thrust reduction or cutback prior to the aircraft reaching these areas. These takeoff profiles, used prior to April 1992, have raised questions about safety and the need for nationwide standardization of aircraft noise abatement departure procedures. In response to these questions the FAA has proposed an Advisory Circular that includes limits on the altitude at which aircraft can cutback power for noise abatement purposes and the amount of cutback that can be used.

The purpose of the John Wayne Airport Departure Noise Demonstration Program was to determine the effects of various alternative departure flight profiles, which comply with the limits of the proposed Advisory Circular, on the noise exposure to the impacted noise sensitive residential areas.

The demonstration program was originally scheduled to run from January 1, through September 30, 1992. It was subsequently extended to beyond October, 1992. The operations from January 1 through March 31, 1992 were used for establishing baseline levels. The operational procedures during this period were unchanged from normal operations. Starting April 1, 1992, Phase 1 of the operational procedure changes commenced, and starting July 1, 1992, Phase 2 of the operational procedure changes began. On October 1, 1992 a third phase of demonstration was begun to provide supplemental data as determined during Phase 2. On December 1, 1992, Phase 3 was modified for the MD80 aircraft. This modification standardized all MD80 aircraft departure procedures to a 800 foot cutback altitude.

The measurement program was designed to provide a database of noise, weather, aircraft location, and flight information for a variety of alternative departure procedures. The information contained in this database was used to provide a basis for identifying optimum noise control departure procedures, the need for and the amount of change in airport noise limits to accommodate these procedures, and to provide information needed for any necessary environmental documentation needed as part of the process of changing the airport noise limits.

The measurement component of the noise demonstration program consists of three major elements; the airport's permanent noise monitoring system, a network of eight temporary noise monitors installed specifically for this program, and a radar tracking system. A schematic diagram of the measurement system is shown in Exhibit 1.

2.0 DESIGN OF THE NOISE DATABASE

The database was designed to provide the information needed to evaluate aircraft departure procedures, set noise limits and provide information for the environmental documents. The database consists of a record for each "flight planned" departure from the airport. "Flight planned" refers to operations which have a FAA flight plan filed with ATC. These include all commercial operations and most general aviation turbojet operations. Each record includes 69 data fields which provide information about individual flights including date and time of the flight, airline, type of aircraft, flight number, departure procedure used, weight, takeoff flap settings, noise levels at each of the permanent and temporary sites, slant range distance to each microphone at closest point of approach, weather data, and, for three locations along the flight track, the aircraft altitude, distance from the 'reference flight track,' and finally the computed ground velocity and climb gradient along the flight track. Table 1 provides a detailed description of the structure of the database and contents of each field. It is important to note that the airlines participating in this program agreed to provide the weight information for each flight on the condition that these data are confidential and proprietary and only long term average weight data may be publicly disclosed.

3.0 DEMONSTRATION PROCEDURES

Alternative flight procedures were selected for each aircraft. The number of procedures selected for each aircraft type depended on the number of carriers operating a given aircraft type at John Wayne Airport. The procedures were selected through discussions with the airlines, airframe manufacturers, and the FAA. Proposed procedures were discussed with the community prior to commencement of the test. Table 2 lists the procedures used during Phase 1 for aircraft that changed on April 1, 1992. These included only aircraft that were operating with procedures that did not meet the requirements specified in the proposed Advisory Circular. Table 3 lists the procedures used during Phase 2 beginning July 1, 1992. Table 4 lists the procedures used during Phase 3 beginning October 1, 1992. In reference to Tables 2, 3, and 4, it should be noted that where the power setting indicates 'engine out climb gradient' this refers to the power setting that for the given takeoff weight, ambient temperature, and wind conditions would produce the specified climb gradient with one engine not operating. 'Cleanup' refers generally to the retraction of flaps. The difference between a 'close-in' and 'distant' procedure is determined by whether the power cutback occurs prior to or after the retraction of flaps (cleanup).

4.0 MEASUREMENT SITE LOCATIONS

There are nine Permanent Remote Monitoring Sites (RMS) located in the arrival and departure corridors for John Wayne Airport. Sites 1 - 6 are located south of the airport. These sites are used during normal operations to monitor aircraft departure noise. Sites 7 - 9 are located north of the airport and are used to monitor aircraft arrival noise. These sites are used to provide data to the John Wayne Airport Noise Abatement Office. Refer to Exhibit 2 for a map showing the location of the measurement positions. The site numbers and corresponding addresses are listed on the following page in Table 5.

Table 5
Permanent Remote Site Addresses

SITE NUMBER	ADDRESS
1	3100 Irvine Ave., Newport Beach
2	20152 S. W. Birch St., Newport Beach
3	2139 Anniversary Lane, Newport Beach
4	1907 Tradewinds Lane, Newport Beach
5	2601 Vista del Oro, Newport Beach
6	1311 Back Bay Drive, Newport Beach
7	17952 Beneta Way, Tustin
8	1300 S. Grand Ave., Santa Ana
9	17372 Eastman St., Irvine

There are eight Temporary Monitoring Sites (TMS) located along the departure flight path between the airport and the coastline. These eight sites are all residential properties selected because of their proximity to the departure flight path. They are located on both sides of the departure path, from the upper Newport Bay to Balboa Island. A noise monitoring system was installed at each site that stores the noise level data for each event in a computer. Refer to Exhibit 2 for a map showing the location of the measurement positions. Each temporary site is identified with a two digit site number such as "21". The first of the two digits, the "2", means that the site is a "Temporary Monitoring Site (TMS)". The second digit, the "1", is the site number designation. The site numbers and corresponding addresses are listed on the following page in Table 6.

Table 6
Temporary Site Addresses

SITE NUMBER	ADDRESS
21	223 Nata, Newport Beach
22	2338 Tustin Ave., Newport Beach
23	305 Esperanza, Newport Beach
24	1918 Santiago, Newport Beach
25	2 Hampshire Ct., Newport Beach
26	420 Kings Rd, Newport Beach
27	2027 Altura, Newport Beach
28	225 Coral, Newport Beach

5.0 NOISE MONITORING SYSTEM

The noise monitoring system consist of two independent monitoring systems, the permanent monitoring system and the temporary monitoring system. Detailed information about the permanent monitoring system can be found in the Installation and Service Manual for Tracor Type TA-3030 Noise Monitoring Terminal and Associated Equipment available at John Wayne Airport. Information about the temporary monitoring system is contained in the following sections.

5.1 Temporary Noise Monitoring System Equipment

The noise monitoring installations at each of the eight temporary sites required custom design, but the noise monitoring equipment used were similar at all of the sites. The noise monitoring system at each of the eight sites consisted of a 1/2 inch free-field condenser microphone, preamp, rain guard for the microphone, wind/rain screen, dehumidifier, bird spikes to deter birds from remaining perched on the microphone, a microphone cable, a noise monitor, an interface cable between the noise monitor and the laptop computer, and a laptop computer. The noise monitoring system configuration is shown in Exhibit 3. All of the noise monitoring equipment used during the measurement survey, with the exception of the lap-top computers and some interface cables, were manufactured by Brüel & Kjær of Nærum, Denmark. These measurement systems satisfy the ANSI (American National Standards Institute) Standards 1.4 for Type 1 precision sound level meters. The noise monitoring systems were calibrated during the initial installation, and re-calibrated the first week of every month during the measurement program (refer to Section 6.0). Table 7 lists the specific equipment installed at each measurement location. Table 8 includes the dates certain pieces of equipment were replaced. Replacement was done to optimize compatibility between computers and sound analyzers and for the repair and maintenance of equipment.

5.2 Temporary Noise Monitoring System Computer Hardware

At each temporary monitoring location, one of three different noise monitors (either a B&K Type 2230 Sound Level Meter, a B&K Type 2231 Sound Level Meter, or a B&K Type 4427 Noise Analyzer) was connected to a laptop computer. In all cases, either the sound level meter or the noise analyzer was used to process the microphone signal. All three types of monitors perform the same types of data processing relative to data collected as part of this program. The computer was used to store the noise event information measured by the sound level meters. The computers used include the Texas Instruments Travelmate 2000 laptop, the Toshiba T1000SE laptop, and a Compaq LTE 286 laptop computer.. The computers were connected directly to the 4427 Noise Level Analyzers with an RS-232 9-25 pin cable, and to the 2230 & 2231 SLMs with the Brüel & Kjær ZI 9101 Interface Module or the Brüel & Kjær ZI 9100 Interface Module. For the Texas Instrument computers, the data was stored on the hard-drive of the computer and the data files were downloaded onto a floppy disk during the weekly data download period. All other computers collected data directly onto the floppy disks and these disks were exchanged with new disks weekly. The Texas Instrument computers do not have built-in floppy disk drives.

5.3 Temporary Noise Monitoring System Software

There are several 'levels' of software used in the demonstration program. These consisted of the software used at the noise monitor to collect and store data, software used to build the demonstration database from noise, tracking, flight and weather data, and the software used to analyze the data. This section describes the data collection software. The other levels of software are described in later sections. The data collection software used at each site was the Brüel & Kjær Type 7636 Noise Analysis Software. This software would read the one-second sound levels measured by the noise monitor and displayed them on the screen in real time. While this information was being displayed, the noise event as well as the hourly statistical data were being stored either on the hard-drive or the floppy disk, depending on the computer. Each noise event was stored onto the disk (either hard-drive or floppy disk) at the end of each event. The hourly statistical data was stored onto the disk at the end of each hour and the daily statistical data was stored onto the disk after midnight every day. Thus, at the end of the measurement period, which was approximately one week between data downloads, two files are saved. The two files saved are the EVENT.MBX file, which is the individual noise event data, and the STATIS.MBX file which is the hourly and daily statistical data. This statistical data includes the Leq's for the ambient levels. The noise events data stored included the maximum noise level, the SENEL, the time the event started, the time of the maximum noise level, and the duration of the event along with the sound level for each second of the event; thus a complete time history of each noise event was saved.

6.0 TEMPORARY NOISE MONITORING SYSTEM EQUIPMENT INSTALLATION

The equipment needed to be installed in such a way as to ensure the accurate collection of data as well as the protection of the hardware. This usually resulted with the installation of the microphones in the rear yard and the placement of the monitoring equipment in the garage. In order to ensure that the microphone measured accurate data from the noise sources, the microphone had to be located where it had uninterrupted line of sight to the passing aircraft. It was also located at least 10 feet from any structure in order to reduce the level of reflected aircraft sound. The total height of the microphones were in the range of 20 and 30 feet above local ground level. To protect the microphone from rain and moisture condensation, the microphone element was covered with a rain hat and attached to a dehumidifier. In addition, the microphone was covered with a rain/wind screen and topped with bird spikes. The following lists the specific details about the installations at each of the monitoring locations.

SITE 21: 223 Nata - This site is located on western edge of Eastbluff. The rear yard of the lot overlooks the north end of Newport Bay which provides an unobstructed line of sight to the departing aircraft. The house is two stories tall, therefore the microphone needed to be mounted at least 30 feet above the ground in order to be at least 10 feet from a reflecting surface. The microphone was mounted to the end of a steel telescoping antenna mast which was extended to a height of 30'. The tubular mast was mounted to one of the primary beams of the patio cover, at a height of approximately 10 feet, with an 'L' bracket and a 'U' bolt. The base of the mast was double bolted to a steel rod driven 3' into the ground. Three guy wires were secured to the mast at a height of 20 feet above the ground in order to eliminate any swaying of the mast. The noise monitor and the computer were located in the garage on the opposite side of the house. The microphone extension cable connecting the microphone to the monitoring equipment totaled 40 meters in length.

SITE 22: 2338 Tustin Avenue - Site 22 is located on Westcliff. From the rear yard of this single story residence, the departing aircraft may be clearly observed. The microphone was mounted on top of an aluminum mast about 20 feet in height. The mast was mounted to the top of the patio cover with an 'L' bracket and a 'U' bolt at a height of 10 feet. The base of the mast was also mounted to a stud of the patio cover with an 'L' bracket and a 'U' bolt. The monitoring equipment was located inside the garage approximately 30 feet from the location of the mast. The microphone was connected to the equipment with 20 meters of microphone extension cable.

SITE 23: 305 Esperanza - This single story residence overlooks the east side of Newport Bay. The microphone was mounted on the top of a telescoping antenna mast extended to a height of 24 feet. The mast was mounted adjacent to the wall of the garage, secured to a 4" x 8" beam which spans the patio between the house and the garage at a height of 8 feet. Two guy wires are connected to the mast at a height of 16 feet. The monitoring equipment was located in the garage on the opposite side of the wall of the tubular steel mast. The microphone is separated from the equipment by a 10 meter microphone extension cable.

SITE 24: 1918 Santiago Drive - Aircraft departing the airport can be seen unobstructed from the rear yard of this single story residence. The microphone was mounted to the top of a 20 feet high telescoping antenna mast in the rear yard overlooking the back bay. The mast was mounted to the fence at points 1 foot and 8 feet above the ground. At both points, the mast was secured using 'L' brackets and 'U' bolts. The monitoring equipment was located on the garage on the west side of the house. The extension cable between the microphone and the equipment was 40 meters long.

SITE 25: 2 Hampshire Court. - The microphone was located in the center of the rear yard east of the two story home with direct line of site to the aircraft flying overhead. The mast supporting the microphone consisted of a 20 feet high aluminum pole supported by a 3-leg aluminum tripod. The pole was stabilized with three guy wires which were secured half way up the mast and to 3 feet long steel stakes anchored into the ground. The monitoring equipment was located inside the garage about 20 feet away from the mast.

SITE 26: 420 Kings Road - The mast supporting the microphone was mounted to the railing of a second floor sun deck outside a living unit built over the garage. The edge of the roof over the living area was at a height of about 8 feet above the deck. The microphone mast consisted of two sections of steel television antenna tubing bolted together, with a total height of approximately 16 feet. This assembly was then mounted to another section of antenna mast which was clamped to the metal railing and bolted to the facing boards along the roof. The equipment was housed in the storage closet directly below the decking. The extension cable between the microphone and the monitor was 10 meters in length.

SITE 27: 2027 Altura Drive - The microphone was mounted on the top of a steel telescoping antenna mast located on the patio on the west side of this single story house. The mast was extended to a height of 20 feet. It was secured at the base where it was mounted to a fence post using a 'U' bolt and an 'L' bracket, and at a height of 8 feet where it was secured to the facing board on the roof. The monitoring equipment was placed in the garage, and separated from the microphone by a 30 meter extension cable.

SITE 28: 225 Coral Avenue - This site is located on Balboa Island. The houses on Balboa Island are situated very close together and most have little or no rear yards. The best place to mount an antenna mast at this location was on the roof of the one story portion of this two story home. The pole supporting the microphone consisted of a telescoping antenna mast extended to a height of 16 feet. The base of the mast was mounted to a metal plate which supported the existing television antenna. The mast was also secured at a point 7 feet above the base at the facial boards of the roof of the second floor. In both places, the pole was mounted using 'U' bolts and 'L' brackets. The monitoring equipment was housed inside the garage which was attached to the west side of the house. The microphone was connected to the noise monitor by an extension cable 30 meters in length.

After all of the temporary monitoring sites were operational, the John Wayne Airport Noise Abatement Office sent a survey crew to determine the precise geographical location of each monitoring position.

7.0 TEMPORARY NOISE MONITORING SYSTEM DATA COLLECTION

The first part of the data download process begins by downloading the data at each of the temporary sites to floppy disks on a weekly basis. This data downloading usually occurred each Monday. As mentioned previously, some sites had computers that stored the data directly onto floppy disks while others had computers that stored the data onto the hard-drive of the computer. For the sites where the computer stored the data directly onto floppy disks, the week old disks with all the data were merely exchanged with new disks ready for another week of data collection. For the sites where the computer stored the data onto the hard-drive of the computer, the data was copied from the hard-drive onto floppy disks. In all cases, two files were obtained at the end of the measurement period. These two files are the EVENT.MBX and the STATIS.MBX. As the names of these files suggest, the EVENT.MBX file stores the individual noise events that met the specified noise event parameters and the STATIS.MBX file stores both the hourly and the daily statistical data.

At the beginning of the software program, the clock in each of the computers installed at the temporary sites was synchronized with a portable digital clock that was then used as a 'master clock.' The master clock was first synchronized with the John Wayne Airport's NOVA computer clock. The NOVA is the central computer for the JWA permanent noise monitoring system. The master clock was used at all of the sites during the data download period. This was done to allow matching of noise events by time after all the noise event data for the temporary sites and the permanent sites had been loaded into the database. Also, before the software program is executed, the start date, start time, and the current software version used were recorded on a log sheet for each site. Before the software program was stopped, the end date, end time, and the time drift of the software program compared to the master clock, which was again calibrated with the John Wayne Airport's NOVA computer clock, was marked on the log sheet for each site. Table 9 shows a list of the time drift data for the measurements made during the first quarter of the year. Any additional comments such as equipment exchanges or equipment malfunctions were noted as well. Note that early in the measurement program there was substantial clock drift in the temporary noise measurement systems. This drift was accounted for by correcting the time data with the observed drift when the data were matched to the permanent systems events in the matching software. The drift was substantially reduced in the latter part of the program by modifying the software used at the temporary site computers. In fact, the various versions of the temporary site software were developed specifically to reduce the time drift.

There were several other data sets that were loaded into the database. Some of these items had to be typed in by hand and yet others had to be downloaded from the John Wayne Airport's NOVA computer. The computer time drift data, the meteorological data, and the aircraft weight data were typed in by hand on a weekly basis and saved as an ASCII text file. The flight strip data from the John Wayne Airport Tower, for each day of the week were loaded in the central computer from the "DX files". These files are created daily by airport noise abatement staff from ATC flight strips. Lastly, the noise event data for the permanent monitoring sites were downloaded from the John Wayne Airport's NOVA computer on a weekly basis. These files, as well as the EVENT.MBX and STATIS.MBX files, are loaded into the SUN Sparcstation computer database. From here, all the flights are "built" according to a list of event matching and correlation criteria. This criteria specify minimum and maximum time differences between the time of aircraft closest approach to the microphone and the time of recorded maximum noise level for the event. If there was more than one event that matched the time criteria or multiple events inside a 20 second window, then the event was not correlated to a flight due to the uncertainty of positively identifying the aircraft event or possible ambient contamination of the aircraft event by local non aircraft noise events. Once the component data sets are correlated to each other, the compiled database is loaded onto a floppy disk. This disk is then converted into a dBase database file and checked for data consistency. Data consistency was reviewed by comparing aircraft weight data for each flight with the aircraft type indicated and flagging weights that were out of range. This was done to identify equipment substitutions that airlines sometimes make in the flight schedule and to verify the validity of the database.

8.0 TEMPORARY NOISE MONITORING SYSTEM CALIBRATION

The noise monitoring equipment was calibrated when the temporary systems were initially installed. Once a month, each noise level monitor is calibrated with a sound pressure level calibrator. The calibrator used was a Brüel & Kjær Type 4230 Sound Level Calibrator (S/N 1576855), with calibration traceable to the National Bureau of Standards. Calibration for the calibrator is certified through the duration of the measurements by Brüel & Kjær.

The process of calibrating the systems requires the removal of the masts from the mounting hardware and lowering the microphone to a workable height. A protective screen is attached to the microphone element in place of the rain hat, and the calibrator is snugly fitted over the protective screen. When the calibrator is activated, it generates a direct sound pressure level of 93.8 dB SPL (re. 20μPa) at 1 KHz at the microphone element. The sound pressure level is displayed on the noise analyzer, and the drift from the original level, if any, is noted. If the drift is significant (more than 1.0 dB), then the system is recalibrated to the new sound level.

9.0 RADAR TRACKING EQUIPMENT AND INSTALLATION

All of the commercial aircraft departing the airport use an instrument departure procedure that is nominally down the center of Newport Bay. Since each aircraft will deviate from the reference flight track to some degree, it is important to know the location and altitude of the aircraft at any location. In order to obtain this information, radar location data for each flight was required. John Wayne Airport does not have it's own radar facility, so it obtains the information from the regional radar installation at the Marine Corps Air Station at El Toro (Coast TRACON, or Terminal Radar Control facility) located about eight miles east of the airport.

A passive radar system, eavesdropping on the ATC radar, was installed. The passive radar receives information from the radar system via an antenna which monitored the radar signal reflected from the aircraft. A system developed by Megadata Corporation was used for this purpose. The antenna and receiving equipment were located in an commercial office building adjacent to the air station radar (Exhibit 4). A mast supporting three antennae was mounted on the roof of the building. The antenna cables were run through a ventilation shaft into the ceiling plenum, then into the break room of one of the offices.

The ground display system installed in this office for tracking aircraft consists of two radio receivers which are controlled by a computer that also activates a monitor showing the air traffic control data. The equipment also includes a radio receiver tuned to WWV in Colorado, a radar frequency demodulator, and a modem.

The reflected radar signal is processed by software developed by Megadata Corp. and yields the location of each aircraft arriving and departing John Wayne airport (Exhibit 5), the aircraft transponder code, and the current altitude and groundspeed of the aircraft; all on a color monitor. This information was sent to the airport noise abatement office hourly via modem.

The system is capable of tracking up to 80 aircraft at any time and displays the following information: the four digit transponder code (squawk) adjacent to the associated aircraft, the altitude of the aircraft to within 50 feet up to a height of 100,00 feet, flight track plot in two dimensions, and the range and azimuth of all aircraft.

This system was designed as a secondary surveillance system to aid in airborne collision avoidance, and as a passive ground display and tracking system for air traffic control and aircraft noise monitoring. This system is marketed by Brüel & Kjær under the trade name PASSUR.

10.0 INTEGRATION OF NOISE, FLIGHT, AND TRACKING DATA

The JWA Demonstration measurement system consists of three major components including the Permanent Noise Monitoring System, the eight temporary noise monitoring sites, and the radar tracking system. In addition there are three additional data components which include the weather data, aircraft takeoff weight and flaps data, and aircraft identification data. These latter data are described below followed by a description of how all the data are brought together into the JWA Demonstration database.

The weather data is obtained from the tower daily by JWA noise abatement office personnel. It consists of hourly logs written by FAA tower personnel. The weather data is entered into a data file manually by MGA. Parameters entered include temperature, wind speed, wind direction, cloud cover, and ceiling height. The flight data including takeoff weight and flaps are logged by airline personnel for each flight by flight number. These logs are kept on 'blue sheets' supplied by the JWA noise abatement office. These logs are collected daily by JWA noise abatement personnel and provided to MGA and entered into a data file. Flight data including aircraft type, airline, flight number, departure time, runway used, and transponder code are obtained from the tower daily in the form of 'flight strips.' These are the printed records that the tower uses to track aircraft operations. JWA personnel obtain the strips daily from the tower and enter the data into a data file. Copies of the data file diskettes are provided to MGA.

The task of integrating the flight information, noise event data from the permanent and temporary monitors, weather data, and weight and flaps data is a process that is called 'flight building'. Two distinct and separate methods of flight building were used during this program. For the first three months of 1992, prior to the installation and operation of the radar tracking system, the flight building was done using the built flight information provided by the JWA noise abatement office. JWA builds flights using the flight strip data and the noise events from the six permanent noise monitors. MGA wrote software which took the built flight data from the permanent noise monitoring system and integrated these with the temporary noise monitor data, weather data, and aircraft weight and flaps data. The temporary noise monitor data was matched with flights by examining the time difference between the time of the temporary noise event and time of the flight. A series of 'rules' were developed for matching the temporary site events to a known flight based on comparing the time of the temporary site event and the events at the permanent sites. For this reason the time drift at each of the temporary site measuring systems was carefully logged and entered into the computer along with noise event data so that the time could be adjusted for the observed drift. After the temporary site noise data was integrated with the flights built by permanent monitoring system, the weather data was integrated from the weather data files based on the time of the event. The aircraft weight and flaps data were integrated from the weight/flaps data files based on date and flight number.

Once the radar tracking system was installed and operating (April 1, 1992), the tracking data were used to build flights. Instead of using the built flights developed by JWA personnel using the permanent noise monitoring system, the workstation that is the core of the radar tracking system was used to build flights. All of the data cited above was obtained as before except that instead of downloading built flight data from the permanent noise monitors only the noise event data for the permanent sites were downloaded from the permanent noise monitoring system. The data along with the temporary noise monitoring site data, weather data, weight and flaps, and the flight strip data were loaded into the Sun workstation. Software written by The Flood Group, a software engineering firm, was used to integrate these data into built flights including aircraft location data as obtained from the radar tracking system.

Once the data were built into flight information in the form of the JWA Demonstration database, it was evaluated to locate possible errors in the data. To do this, two programs were written in the dBase code to check the database for errors. One program looked at the aircraft weights and procedure numbers. The weight and procedure data given for each flight were compared with the allowable values for that aircraft type, or the case of procedure number for that aircraft/airline combination. If a potential conflict was identified then a printout was generated for each suspect data field. A second program examined noise levels at each site. This program compared the noise levels at each site with a range of acceptable values at each site for each aircraft type. Suspect values were listed. Generally, one or two suspect noise values were identified each week. Approximately, one half were valid and no change was made. However, approximately one noise value per week was deleted due to some contamination. This was identified when the SENEL value exceeded the Lmax value by large amount, usually 20 dB. This corresponded to events with durations well over a minute and were probably noise sources such as lawn mowers, leaf blowers, or other non aircraft noise sources.

Once the database was built, the data were analyzed. These analyses are described in the next section.

11.0 STATISTICAL ANALYSES OF SENEL DATA

In order to examine the trends in the SENEL data, a computer program was written to compile the SENEL data. The software was written by MGA in Microsoft Quickbasic. This program reads a copy of the database file and prints a summary of SENEL statistics for each site and includes temperature data and aircraft location data. These statistical summary data are provided in tables for the first, second and third quarter of 1992. These are Tables 10, 11, and 12. Table 10 for the first quarter serves as a baseline condition prior to the beginning of the Demonstration program. Table 11 for the second quarter includes data for aircraft which had not changed procedures as well as several aircraft which had changed procedures. The third quarter data, shown in Table 12, contains data which is exclusively demonstration procedures. Table 13 shows the results of the fourth quarter. The structure of these tables is as follows:

Column	Heading	Contents
1	AR	Airline name (blank in this report)
2	AC	Aircraft type
3	#	Site Number (1-6 permanent, 21-28 temporary)
4	N	Number of events measured
5	AVE	Arithmetic average SENEL
6	MIN	Minimum SENEL observed
7	MAX	Maximum SENEL observed
8	SD	Standard Deviation of SENEL
9	ENAVE	Energy average SENEL
10	SRD	Average slant range distance
11	WGHT	Average weight
12	TEMP	Average Temperature F
13	Y1	Average horizontal distance from Gate 1(neg is west)
14	ALT1	Average altitude at Gate 1
15	Y2	Average horizontal distance from Gate 2(neg is west)
16	ALT2	Average altitude at Gate 2
17	Y3	Average horizontal distance form Gate 3(neg is west)
18	ALT3	Average altitude at Gate 3
19	V1	Average ground speed Gate 1 to 2,nm/hr
20	V2	Average ground speed Gate 2 to 3, nm/hr
21	CG1	Average climb gradient Gate 1 to 2, %
22	CG2	Average climb gradient Gate 2 to 3, %

*Note that flight tracking data are not available for first quarter 1992.

The SENEL data for the third quarter is plotted against the SENEL data for the first quarter in Exhibits 6a through 6m. In these Exhibits the SENEL for the 3rd quarter for each unique aircraft type/procedure is compared to the SENEL data of the first quarter for the same airline and aircraft. These show the change in single event noise level for each procedure relative to the pre-demonstration procedures. Where an aircraft flew in the first quarter as both an A and AA class aircraft the 3rd quarter data is compared against each. The data in these exhibits should be regarded with caution as the data have not been normalized to a constant weight. Weight data that corresponds to these data can be found above in statistical summary Tables 10 and 12.

12.0 MULTIPLE REGRESSION ANALYSIS OF DATABASE VARIABLES

The JWA Demonstration database contains records for each air carrier departure since early January 1992. Included with the noise data for each of these flights are other variables which describe the flight including aircraft weight, ambient air temperature at the time of departure, airport reported wind speed and direction, amount of cloud cover, ceiling height, and slant range distance between the aircraft and the microphone at the point at which the aircraft is closest to the microphone. The purpose of including these variables in the database was to determine the extent to which these variables affect noise levels. The importance of knowing the effects of these variables is to ensure that noise level differences identified between alternative departure profiles are in fact due to differences in procedure and not variances in other variables. It has long been known that weight has an important effect on noise levels. The effects of temperature, wind and cloud cover are less well known.

As a preliminary analysis, a statistical analysis of the effect of these variables on noise levels was completed for a sample of aircraft and procedures. A statistical method for relating the effects of multiple variables on a given phenomena is the multiple regression analysis. In this case, it is desired to know how the independent variables of weight, temperature, slant range distance, wind speed, and cloud cover affect the dependent variable, Single Event Noise Exposure Level (SENEL).

While it is not practical to provide a detailed explanation of statistical techniques and terminology here, a simple description of the goal of multiple regression analyses completed here is to quantify the amount of variation observed in the SENEL that can be accounted for by the observed variation in weight, slant range distance, temperature, wind speed, and cloud cover. The degree to which any one of these independent variables accounts for the variation in SENEL is measured by the correlation coefficient. A correlation coefficient of 1 for an independent variable means that this variable caused all of the observed variation in the dependent variable. The smaller the correlation coefficient, the less relation there is between the dependent and independent variables. Tables 14, 15, 16 and 17 show the correlation coefficients for four cases used in this analysis. The cases analyzed here include B757 flying Procedure 2 (1000 foot cutback to 1.2% engine out climb gradient) at Sites 1, 21, and 28, and MD80's at Site 1 using the pre-demonstration procedures. Appendix 1 presents a statistical summary of each of the variables used in the analysis including detailed descriptions of distribution and characteristics of the data.

The multiple regression data clearly show a very good correlation between weight and SENEL. It is the single most important variable. Slant range distance, temperature, wind speed, and cloud have much smaller effects, generally having correlation coefficients less than 0.5. Weight had correlation coefficients as high as 0.8 at the close in measurement sites. An interesting observation is the degree to which some weather variables are correlated. For example, temperature and wind speed show a correlation coefficient of 0.6 relative to each other. Another interesting observation is that random variation in some variables will result in some observed correlation, even though such correlation is nonsense. For example, aircraft weight and cloud cover showed correlation coefficients as high as 0.17, implying that 17% of the observed weight variation can be accounted for by cloud cover (this correlation also showed coefficients as low as 0.03). This example indicates that correlation coefficients have more meaning as their value approaches one, and should be regarded very cautiously when low. An example plot of a low correlation variable, temperature, is shown in Exhibit 7. There clearly is no strong relation between temperature and SENEL at monitoring site 1.

On the basis of the above preliminary analysis, it was concluded that detailed evaluation of weight and SENEL effects should be completed for all aircraft and procedures and measurement sites. Further, it was concluded when comparing noise levels associated with alternative departure procedures, it is very important to adjust the noise data to a constant aircraft weight. The effect of differing aircraft weights in the data set could cause incorrect conclusions about differences in noise levels between procedures unless data are normalized to constant weights.

The following section examines weight and SENEL effects in detail for all demonstration procedures and aircraft at all sites.

13.0 LINEAR REGRESSION OF WEIGHT AND SENEL DATA

A very important aspect of the database relative to comparing pre-demonstration procedures to demonstration procedures is the effect that aircraft weight has on measured noise levels. For example, the base period was the first quarter of 1992 and the primary demonstration database is for the third quarter of 1992. Airlines generally fly heavier weights during the summer months than during the winter months. The summer of 1992 certainly was a special case because of the airfare price reductions in effect and the noise limits at the airport were in abeyance for this demonstration.

In order to estimate the affects of aircraft weight on noise levels a linear regression of weight and noise level was completed. Specifically, weight was regressed against the SENEL at each measurement location for each unique procedure. The data are presented in Table 18 for the third quarter data and Table 19 for the entire demonstration period. The data included in Tables 18 and 19 are described as follows:

Column	Heading	Contents
1	Case	Aircraft type and procedure
2	Site	Monitoring site number
3	N	Number of flights in sample (sample size)
4	AVWT	The average weight of aircraft in sample
5	ENAVE	Energy average SENEL as measured
6	R	Correlation Coefficient (0.0 to 1.0)
7	YINT	Y intercept for linear equation (b in the equation y = mx +b)
8	SLOPE	Slope of the best fit straight line (m in the equation y = mx +b)
9	MINWT	Minimum weight in the sample
10	MAXWT	Maximum weight in the sample

The data clearly show a very strong relation between SENEL and weight. The procedures can be compared more fairly if each procedure data were normalized to a constant weight. These normalized data are presented in the following section.

14.0 COMPARISON OF SENEL BY PROCEDURES, WEIGHT ADJUSTED

Using the linear regression constants developed in the previous section, the SENEL data for each procedure for each aircraft were normalized to constant weights. The SENEL data for each procedure and aircraft are presented in the charts shown in Exhibits 8a through 8h. The weights used for the comparison are as follows:

Aircraft	Normalizing Weight
MD80	132,000 lbs
B757	222,000 lbs
B737	120,000 lbs
A320	146,000 lbs
BAe146	86,000 lbs

The above weights are at or near the heaviest weights used at the airport and therefore are worst case noise levels for each procedure. At lower weights the noise levels would be proportionately less per the coefficients provided in Tables 17 and 18.

The data shown in Exhibits 8a - 8h represent a comparison of procedures at the maximum weight allowable on the JWA runway. In that sense they are worst case noise levels and represent a substantial increase in weights over weights historically flown at the airport. Another scenario is one in which weights remain at or near the weights flown historically at the airport. Exhibit 8i compares the 800 foot procedures for the MD-80 and 800 and 1500 foot procedures for the B737 and B757. For the MD-80 and B737 data each line represents a different airline. However for each airline the demo data are compared to that same airlines first quarter data. For the B757 the data shown for each common shaped symbol (hollow square and filled square) are for the same airline, one set being 1500 foot data the other for 800 foot data. However, the triangle data points (hollow and filled) are for different airlines.

The data in Exhibit 8i are very interesting. For the MD-80 the increases at RMS 1 (located at the Y axis) are very small and 2 airlines show essentially no change or slight decreases in noise southerly down the bay. One airline data shows increases southerly down the bay and that is because that airline historically was the quietest MD-80 operator at JWA and with the new procedure now produces noise levels comparable to the other operators. It is not known why this airline historically has been so much quieter than the other MD-80 operators (as seen in JWA quarterly reports) as power settings and cutback altitudes prior to the demonstration are not known. It is known that for the demo procedures they are the same as the other MD-80 operators and that represents a greater noise increase for them than for other operators.

The B737 data shown in Exhibit 8i show the affects of weights on the demo data. The solid line shows a large increase because that operator flew a E class departure in the B737 and was probably performing the deepest cutback. The new procedure had the largest increase in noise on the E class B737 operator. South down the bay the difference between and 800 foot and 1500 foot cutback can easily be seen.

The B757 data shown in Exhibit 8i is interesting. There were a large number of operators of B757 aircraft trying the 800 and 1500 foot procedures so there are more data for this aircraft than others. At RMS 1 the larger increase in noise with the 1500 foot versus the 800 foot procedure can easily be seen. Southerly at TMS 24 the benefit of the 1500 foot over the 800 foot cutback is generally clear. However, At RMS 6 and TMS 28 the relative benefit of the 1500 foot procedure diminishes substantially. This should not have occurred. It is suspected that the reason the benefits of the 1500 foot procedure were lost by the time aircraft reached RMS 6 is that the pilots or flight computers of the B757 aircraft were reapplying power at 3000 feet altitude instead of 1 mile off the coast. The B757 aircraft climbs very fast and would typically reach 3000 feet between monitors 24 and 6. These data clearly indicate the need to restrict reapplication of power to 1 mile off the coast as potential noise benefits of the new procedures are not being fully realized at southerly points down the bay.

15.0 DEVELOPMENT OF ALTERNATIVE SENEL LIMITS

The result of the change in departure minimum altitudes and power settings at John Wayne Airport is a need to modify the Air Carrier Access Plan noise level limits to accommodate these new minimums. To the extent that the noise level limits can be used to ensure that air carriers use the optimum departure procedure for the communities around JWA, accomplishing the optimum procedure should be the goal of the revisions to access plan noise limits. Several alternative noise level limits have been developed for evaluation. These are listed in Table 20 and include a 'no project' alternative which is simply the existing pretest noise level limits. Another alternative which is not listed here is a runway extension to the north end of Runway 19R. This alternative is discussed in later sections. The alternatives shown in Table 20 include two basic alternative strategies; optimizing noise levels in Santa Ana Heights and optimizing noise levels for all points south of Santa Ana Heights (generally Newport Beach). Generally, Santa Ana Heights is exposed to the lowest noise levels with an 800 foot cutback. Points further south are exposed to lower noise levels with a 1500 foot cutback. The exception to this conclusion is the MD80 aircraft for which an 800 foot cutback is preferred for all locations. The MD80 cutbacks at higher altitude showed no beneficial impacts on the ground until the aircraft reached the Newport Dunes area nearly 4 miles south of the airport. For all aircraft the cutback power should be the minimum permitted in the proposed Advisory Circular (1.2% engine out climb gradient for 2 engine aircraft). Alternative 1 is the noise levels needed to accommodate the 1500 foot cutback for all aircraft except the MD80. Alternative 2 is the noise limits needed to accommodate the 800 foot cutback for all aircraft.

Alternatives 1 and 2 are based upon aircraft cutback altitude and a Class "A" SENEL limit of 103 dBA at monitors 1 and 2. Alternatives 1A and 2A are based upon identical aircraft cutback altitude assumptions as alternatives 1 and 2 respectively; however, these alternatives are predicated on a Class "A" SENEL limit of 101.5 dBA at monitors 1 and 2.

Table 20
Alternative SENEL Limits Including No Project

	Alternative 1			Alternative 2			Existing/No Project		
Noise Monitor	A	AA	E	A	AA	E	A	AA	E
1	103	94.0	92.0	103	92.5	89.9	100.8	90.3	86.8
2	103	94.0	92.5	103	92.5	89.9	100.9	90.4	86.9
3	100.5	91.0	89.0	100.5	90.2	88.3	98.5	89.5	86.0
21									
22									
24									
4		89.5	86.0		89.5	86.0		89.5	86.0
5		89.5	86.0		89.5	86.0		89.5	86.0
6		89.5	86.0		89.5	86.0		89.5	86.0

	Alternative 1A			Alternative 2A		
Noise Monitor	A	AA	E	A	AA	E
1	101.5	94.0	92.0	101.5	92.5	89.9
2	101.5	94.0	92.5	101.5	92.5	89.9
3	100.5	91.0	89.0	100.5	90.2	88.3
21						
22						
24						
4		89.5	86.0		89.5	86.0
5		89.5	86.0		89.5	86.0
6		89.5	86.0		89.5	86.0

Currently the access plan limits noise for A Class aircraft at monitors 1, 2, and 3. Class AA and E are limited at all departure corridor monitors (1 through 6). Of the temporary noise monitors that have been used for this demonstration, Sites 21, 22, and 24 would appear the most likely candidates for supplementing the monitors at 1,2, and 3. These monitors form a triangle similar to the triangle formed by monitors 1, 2, and 3 and thus would encompass departing aircraft including the effects of flight track dispersion.

The limits shown in Table 20 were developed from the linear regression data provided in Table 18 and 19 shown previously. Alternative 1 is based on a 800 foot cutback for MD80 aircraft and 1500 feet for the Boeing and Airbus aircraft. Alternative 2 is based on a 800 foot cutback for all aircraft. The assumed weights for the AA class limits were based on the historical record of weights by class flown by the airlines prior to the demonstration. The weight data for the first and second quarters of 1992, neglecting those aircraft that started the demonstration in April 1992, were examined and the noise level limits shown in Table 20 were regressed using the maximum quarterly average weights found during the first two quarters of 1992. Thus, these limits should preserve the level of service occurring prior to the demonstration. This means that airlines will have to continue blocking seats on AA and E Class aircraft to limit weight in order to comply with the noise level limits. The extent to which this creates a demand for additional flights is not known, but it is not trivial as evidenced by the carriers strong desire to not have to limit aircraft weight on departing flights.

The alternative E Class limits in Table 20 were developed through an attempt to find a procedure that kept the E limit to less than 90 SENEL. This was done to minimize the increase in single event noise as a result of the procedure change. While it was initially desired to keep the E limit change to less than 3 dB, it was seen that this was not possible while maintaining the B737 as an E Class aircraft. Keeping the E limit to less than 90 was very difficult and may be possible only for the 800 foot cutback procedure. The E Class aircraft had been performing the deepest cutbacks and the lowest altitude cutbacks and thus experience the largest single event noise increase with the new change in procedure minimums.

16.0 IMPACT ASSOCIATED WITH CHANGE IN DEPARTURE PROCEDURE MINIMUMS

The impact of changing the access plan noise level limits was evaluated by comparing single event noise contours for the alternative procedures as well as the development of CNEL contours for alternative procedures. These are presented in the following sections.

16.1 SENEL CONTOURS FOR ALTERNATIVE PROCEDURES

One of the first steps in evaluating the alternative noise limit strategies is to compare the single event noise contours for alternative cutback altitudes. Single event noise is important because the community around JWA has long been concerned that cumulative noise metrics like CNEL do not adequately reflect the effects of high single events associated with jet overflights. In response to this concern, the community requested that EIR 508 done in 1985 for the JWA Master Plan include SENEL contours. The 85 SENEL contour was used as defining a boundary where single event noise stood out demonstrably from other ambient noise sources and marked aircraft noise a major concern. An 85 SENEL would typically result from a flyover maximum noise level of 75 dBA and last about 40 seconds. A loud automobile or truck would produce similar noise levels on a local street, close to the street, but would have a shorter duration. While there is no other scientific or regulatory guideline for using the 85 SENEL single event contour data, this technique does provide a valid comparison of aircraft noise levels by aircraft type, and for the purpose of this study, by departure procedure.

Single event contours were produced using the NOISEMAP computer model. NOISEMAP was written by the U. S. Air force for producing noise contours around military and civilian airports. NOISEMAP has been used historically for generating noise contours around JWA.

The noise measurement data for each procedure and normalized to alternative weights were used to develop departure profiles for input to the NOISEMAP model. For each case run with NOISEMAP, a takeoff profile based on power setting, altitude along flight track, aircraft speed, and cutback altitude was developed. The model was run and the SENEL values predicted for that profile at the demonstration program measurement points were compared to the measured noise levels. The profiles were modified so as to produce a predicted SENEL that matched as closely as possible the measured results. Once the model produced SENEL values that matched the measured results, the model was used to generate sets of 85 SENEL contours. Exhibits 9a through 9e show the resulting SENEL contours. Table 21 below provides a key to identifying the SENEL contour runs made.

Table 21
Exhibit Numbers for SENEL Contours

Exhibit Number	Aircraft	Cutback Altitude	Weights		
9a	B757	800 feet	174,000	184,000	222,000
9b	B757	1500 feet	174,000	184,000	222,000
9c	B737	800 feet	92,000	104,000	120,000
9d	B737	1500 feet	92,000	104,000	120,000
9e	MD80	800 feet	132,000	134,000	

The noise contours shown in Exhibits 9a - 9e show a very clear trend. The MD80 is the loudest aircraft at the airport. For the B757 and B737 aircraft the 800 foot cutback produces a narrower but longer contour, while the 1500 foot cutback produces a fatter but shorter contour. This is consistent with the conclusions drawn earlier about which communities benefit from an 800 foot cutback and which benefit from a 1500 cutback.

16.2 OPERATIONS/FLEET MIX/TRACK DATA FOR CNEL COMPARISONS

The noise metric CNEL is related to the SENEL metric by the number and time of noise events. The Airline Access Plan for JWA limits A Class average daily departures (ADD's) to 39. The combined A and AA Class operations are limited to 73 ADD's. There are no specific limits on E Class ADD's except that total annual enplaned passengers cannot exceed 8.4 million. Additionally, the peak hour capacity of the single air carrier runway provides an upper limit on operations. Table 22 shows the average daily departures over the last six quarters in terms of aircraft type and class. MD80 aircraft can only meet A Class limits. The B757 and B737 can easily meet AA Class limits at certain weights. The B737 and BAe146 can meet E Class limits. However, the B737 must operate at light weights to meet the E limits. The A320 has operated mostly as an A Class aircraft, although it can operate as an AA Class, weight limited. The B757 has qualified as an E Class, but never has operated regularly as such.

The data in Table 22 reflect a relatively constant fleet mix over the last 6 quarters. The one exception is that one operator, American Airlines, discontinued operation of the B737 aircraft at the end of the first quarter of 1992. These were aircraft obtained as part of the acquisition of Air California. The B737 aircraft were replaced by a smaller number of B757 aircraft. Rather than use a six quarter average for establishing a base case fleet mix, the second and third quarters of 1992 were averaged. This was done to account for the transition of B737 aircraft to B757 aircraft associated with the American Airlines elimination of B737's from its fleet. The base case fleet mix, meant to represent existing conditions is shown in Table 23.

It is important to note that at the present time MD80 aircraft represent 12 to 14 ADD's even though 39 are permitted. The MD80 is the noisiest aircraft at the airport. The overall noise level at the airport is currently lower than allowed as a result of the lower than permitted number of MD80 operations.

In order to develop CNEL contours for the alternative noise limits proposed for the access plan, a set of fleet mix assumptions were developed. Clearly the base case fleet mix developed above serves as the basis for the fleet mix assumptions. There are two other considerations that must be considered in the development of the CNEL contours. The first is that MD80 operations are permitted to increase to 39 per day. A consideration of the impacts of the change in departure procedures should include the potential 39 MD80 fleet mix. The second consideration is a potential increase in E Class operations. The proposed changes in departure procedures and corresponding change in noise limits may affect the number or E operations. If all 39 A Class ADD's are MD80's, the fleet mix shown in Table 23 is simply modified by eliminating all A Class non-MD80 operations and increasing the MD80 operations to 39. The effect of E Class operations can be estimated by determining the number of ADD's needed to increase airport passenger counts to 8.4 million. Using a fleet wide load factor of 70%, the number of additional B757, B737, and BAe146 operations needed to reach 8.4 million operations was calculated. If all additional E Class operations were B757 operations the increase would be 15 ADD's. If all were B737's the increase in ADD's would be 23 and, if the increase were all BAe146 aircraft the increase would be 37 ADD's. A more likely, but unknown and unpredictable, mix was assumed to 12 B737 and 8 B757 ADD's. This assumption divides E Class passengers evenly between the B757 and B737. The ADD's are different for each because the B757 has a much larger passenger capacity. Two alternative future fleet mixes were considered in addition to the base case. These are shown in Table 23 and include a case for existing MD80 operations and a case for 39 MD80 operations. Each includes an increase in E Class ADD's to reach 8.4 million annual passengers.

Flight tracks used to develop the CNEL contours are shown in Exhibit 10. These tracks were developed from radar tracking data and include multiple tracks in the departure corridor to simulate flight track dispersion.

CNEL contours for these operational assumptions for various noise limits are presented in the next section.

16.3 DEVELOPMENT OF CNEL CONTOURS FOR ALTERNATIVES

The airport publishes noise contours four times per year. These are published in the John Wayne Airport Noise Abatement Program Quarterly Report. The last quarterly report that did not include the effects of this demonstration was the quarterly report published for the first quarter of 1992. The noise contours presented in each quarterly report represent the CNEL for the four previous quarters. In each quarterly report a 1:7200 scale map showing the 65 CNEL contour in the Santa Ana Heights area is provided. Once a year as part of the fourth quarter report an annual set of noise contours is published that shows the 70, 65, and 60 CNEL contours for the entire airport environs in addition to the Santa Ana Heights map. The latest annual contours, representing calendar year 1991 are provided in Exhibit 11. The latest Santa Ana Heights contour map is for the twelve month period ending June 30,1992. These contours are shown in Exhibit 11. The latest residential impact summary for the airport includes 14 homes which account for 35 people inside the 65 CNEL contour.

There is another CNEL contour of interest in this analysis. That is the 'project case' CNEL contours presented in EIR 508 for the JWA Master Plan. The project case contours are presented in Exhibit 13. The project case was based on 73 ADD's which included a fleet mix of 50 B767 aircraft, 17 B757 aircraft, and 6 MD80 aircraft per day. These contours formed the basis for the land use plans in Santa Ana Heights including the acquisition, purchase assurance and home insulation programs.

CNEL contours were developed for each of the SENEL limit alternatives described in Section 15.0 above and considered two different operational alternatives; existing MD80 operations and 39 daily MD80 operations. These include the additional Class E operations to bring passenger counts to 8.4 million annually. The CNEL cases are described on the following page in Table 24 and the resulting CNEL contours are shown in Exhibits 14a through 14l.

Table 24
CNEL Cases Analyzed - Key to Exhibits

			A Class ADD's			AA Class ADD's		E Class ADD's		
Case	Exhibit	M1 Class A Limit	MD80	B757	B737	B757	B737	B757	B737	Cutback Altitude*
1	14a	101.5	13.3	11.3	8.3	16.0	12.0	0	10.3	800'
2	14b	101.5	13.3	11.3	8.3	16.0	12.0	8	22.3	800'
3	14c	101.5	39.0	0	0	16.0	12.0	8	22.3	800'
4	14d	101.5	13.3	11.3	8.3	16.0	12.0	0	10.3	1500'
5	14e	101.5	13.3	11.3	8.3	16.0	12.0	8	22.3	1500'
6	14f	101.5	39.0	0	0	16.0	12.0	8	22.3	1500'
7	14g	103.0	13.3	11.3	8.3	16.0	12.0	0	10.3	800'
8	14h	103.0	13.3	11.3	8.3	16.0	12.0	8	22.3	800'
9	14i	103.0	39.0	0	0	16.0	12.0	8	22.3	800'
10	14j	103.0	13.3	11.3	8.3	16.0	12.0	0	10.3	1500'
11	14k	103.0	13.3	11.3	8.3	16.0	12.0	8	22.3	1500'
12	14l	103.0	39.0	0	0	16.0	12.0	8	22.3	1500'

Note: All weights in thousands of pounds.
* Cutback Altitude for B737 and B757, all MD80 aircraft cutback at 800'.

16.3.1 Runway Extension Alternatives

As part of the CNEL contour analysis contours were developed to analyze the effects of an extension to the north end of Runway 19R. This is the primary air carrier runway at JWA. Runway 19R is currently 5,700 feet long. Runway extensions of 750 feet and 1000 feet were examined.

The primary benefit of the runway extension is to move the aircraft departure point north of its current location. This places it farther away form the noise sensitive residential areas south of the airport and results in higher aircraft overflight altitudes at these locations.

The reduction in aircraft noise associated with these alternatives was projected by the NOISEMAP computer model. CNEL Case 4 was selected to be used as a base case for comparison. Aircraft departure profiles, flight tracks, and operational assumptions were identical for each of these alternatives. The only change was the extension of the runway in the NOISEMAP model. From this process, the changes in noise levels attributable to the extension of the runway were projected. CNEL contours for the base case and alternatives are shown in Exhibits 15a through 15c. A summary of the projected noise reduction at the monitoring sites is presented in Table 25.

Table 25
Projected Noise Reduction at Monitoring Sites

Site	ΔdB(750' Extension)	ΔdB(1000' Extension)
1	1.3 dBA	1.8 dBA
2	.9 dBA	1.3 dBA
3	.9 dBA	.8 dBA
4	.2 dBA	.6 dBA
5	.2 dBA	.2 dBA
6	-	-
7	-	-
8	-	-
9	-	-
21	.3 dBA	.5 dBA
22	.2 dBA	.4 dBA
23	.5 dBA	.4 dBA
24	.2 dBA	.4 dBA
25	.1 dBA	.2 dBA
26	-	.2 dBA
27	-	.1 dBA
28	-	.1 dBA

- Indicates reduction is less than .1 dBA

17.0 Change in Altitude for Alternative Cutback Altitudes

The change in cutback altitudes and the establishment of minimum cutback power setting will increase the altitude of aircraft departing JWA. The change in altitude depends on the aircraft type and procedure used. The data contained in the JWA Departure Demonstration database included aircraft altitude at three locations south of the airport. The first is a location where the aircraft passes over monitors 1 and 2. The second altitude reported is the altitude over monitoring sites 21 and 22. The third altitude reported is over monitoring site 28 on Balboa Island. The altitudes before the demonstration and including the demonstration procedures are plotted in Exhibit 16 for the MD80, Exhibit 17 for the B737, and Exhibit 18 for the B757. These increases in altitude, particularly in the vicinity of Balboa Island and Balboa Peninsula are easily noticeable to the community.

18.0 NOISE COMPLAINT DATA PRIOR TO AND DURING THE DEMONSTRATION

The JWA Noise Abatement Office logs and publishes noise complaint data. A summary of these data are presented in Table 26. It is important to note that on April 1, 1992 some aircraft began demonstration procedures. These included 2 of the MD80 operators and 1 of the B737 operators. On July 1, 1992 all aircraft flew demonstration procedures. On October 1, 1992 the procedures that were noisiest and not candidates for consideration for long term use were eliminated and all aircraft flew one of more likely candidate procedures.

JOHN WAYNE AIRPORT DEPARTURE NOISE DEMONSTRATION PROGRAM

TABLES

prepared by
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MARCH 1993

Table 1

Structure for database: MGA IICX:JWAHOLD:JWA3RDC.DBF
Number of data records: 11810
Date of last update: 10/14/92

Field	Field Name	Type	Width	Dec
1	date	Character	8	
2	time	Character	8	
3	airline	Character	2	
4	flight	Character	7	
5	aircraft	Character	4	
6	procedure	Character	3	
7	weight	Numeric	3	
8	flaps	Numeric	2	
9	lmax1	Numeric	5	1
10	senel1	Numeric	5	1
11	lmax2	Numeric	5	1
12	senel2	Numeric	5	1
13	lmax3	Numeric	5	1
14	senel3	Numeric	5	1
15	lmax4	Numeric	5	1
16	senel4	Numeric	5	1
17	lmax5	Numeric	5	1
18	senel5	Numeric	5	1
19	lmax6	Numeric	5	1
20	senel6	Numeric	5	1
21	lmax21	Numeric	5	1
22	senel21	Numeric	5	1
23	lmax22	Numeric	5	1
24	senel22	Numeric	5	1
25	lmax23	Numeric	5	1
26	senel23	Numeric	5	1
27	lmax24	Numeric	5	1
28	senel24	Numeric	5	1
29	lmax25	Numeric	5	1
30	senel25	Numeric	5	1
31	lmax26	Numeric	5	1
32	senel26	Numeric	5	1
33	lmax27	Numeric	5	1
34	senel27	Numeric	5	1
35	lmax28	Numeric	5	1
36	senel28	Numeric	5	1
37	temp	Numeric	3	
38	wdir	Numeric	3	
39	wspd	Numeric	2	
40	ceiling	Numeric	3	
41	cloud	Character	8	
42	y1	Numeric	5	
43	t1	Character	8	
44	alt1	Numeric	4	
45	y2	Numeric	5	
46	t2	Character	8	
47	alt2	Numeric	4	
48	y3	Numeric	5	
49	t3	Character	8	
50	alt3	Numeric	4	
51	srd1	Numeric	5	
52	srd2	Numeric	5	
53	srd3	Numeric	5	
54	srd4	Numeric	5	
55	srd5	Numeric	5	
56	srd6	Numeric	5	
57	srd21	Numeric	5	
58	srd22	Numeric	5	
59	srd23	Numeric	5	
60	srd24	Numeric	5	
61	srd25	Numeric	5	
62	srd26	Numeric	5	
63	srd27	Numeric	5	
64	srd28	Numeric	5	
65	v1	Numeric	3	
66	v2	Numeric	3	
67	cg1	Numeric	3	
68	cg2	Numeric	3	
69	comments	Character	20	
** Total **			350	

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Table 2

JOHN WAYNE AIRPORT

Noise Abatement Departure Demonstration Test Phase 1 Procedures

PROCEDURE NUMBER	AIRCRAFT TYPE	CUTBACK ALTITUDE	E/O CLIMB GRADIENT	CLEANUP ALTITUDE	PROCEDURE DESCRIPTION
3	B737	1500'	1.2%	3000'	Close-in
1	MD80	after cleanup	1.2%	800'	Distant
2	MD80	800'	1.2%	3000'	Close-in
3	MD80	after cleanup	1.2%	1500'	Distant

MESTRE GREVE ASSOCIATES

Table 3

JOHN WAYNE AIRPORT

Noise Abatement Departure Demonstration Test Phase 2 Procedures

PROCEDURE NUMBER	AIRCRAFT TYPE	CUTBACK ALTITUDE	E/O CLIMB GRADIENT	CLEANUP ALTITUDE	PROCEDURE DESCRIPTION
1	A320	1000'	climb power	after cutback	Modified Close-in
2	A320	1500'	climb power	1500'	Modified Close-in
1	B737	800'	1.2%	3000'	Close-in
2	B737	1000'	1.2%	3000'	Close-in
3	B737	1500'	1.2%	3000'	Close-in
4	B737	1000'	max climb power	after cutback	Modified Close-in
5	B737	1000'	max climb power	3000'	Close-in
1	B757	800'	1.2%	3000'	Close-in
2	B757	1000'	1.2%	3000'	Close-in
3	B757	1500'	1.2%	3000'	Close-in
4	B757	1000'	1.2%	after cutback	Modified Close-in
5	B757	1000'	max climb power	3000'	Close-in
1	BAe-146	3000'	1.7%	clear coast	Distant 2
2	BAe-146	1000'	1.7%	1000'	Distant 1
1	MD80	after clean	1.2%	800'	Close-in
2	MD80	800'	1.2%	3000'	Close-in
3	MD80	after clean	1.2%	1500'	Close-in

Table 4

JOHN WAYNE AIRPORT

Noise Abatement Departure Demonstration Test Phase 3 Procedures

PROCEDURE NUMBER	AIRCRAFT TYPE	CUTBACK ALTITUDE	E/O CLIMB GRADIENT	CLEANUP ALTITUDE	PROCEDURE DESCRIPTION
1	A320	1000'	climb power	after cutback	Modified Close-in
2	A320	1500'	climb power	after cutback	Modified Close-in
1	B737	800'	1.2%	3000'	Close-in
2	B737	1000'	DR2	3000'	Close-in
3	B737	1500'	1.2%	3000'	Close-in
4	B737	1000'	max climb power	after cutback	Close-in
1	B757	800'	1.2%	3000'	Close-in
3	B757	1500'	1.2%	3000'	Close-in
A	BAe-146	800'	1.7%	3000'	Close-in
2	MD80	800'	1.2%	3000'	Close-in
B	MD80	800'	1.2%	3000'	Close-in

MESTRE GREVE ASSOCIATES

Table 7
NOISE MONITORING SYSTEM AT EACH SITE

EQUIPMENT	SITE 21	SITE 22	SITE 23	SITE 24	SITE 25	SITE 26	SITE 27	SITE 28
MICROPHONE	Type 4155	Type 4155	Type 4155	Type 4155	Type 4155	Type 4155	Type 4155	Type 4155
RAIN COVER	UA 0393	UA 0393	UA 0393	UA 0393	UA 0393	UA 0393	UA 0393	UA 0393
WINDSCREEN	UA 0570	UA 0570	UA 0570	UA 0570	UA 0570	UA 0570	UA 0570	UA 0570
DEHUMIDIFIER	UA 0308	UA 0308	UA 0308	UA 0308	UA 0308	UA 0308	UA 0308	UA 0308
PRE-AMP	ZC 0020	Type 2639	ZC 0020	Type 2639	ZC 0020	Type 2639	Type 2639	Type 2639
MICROPHONE CABLE (LENGTH)	AO 0029 (30 meter)	AO 0028 (10 meter)	AO 0028 (10 meter)	AO 0029 (30 meter)	AO 0029 (30 meter)	AO 0028 (10 meter)	AO 0029 (30 meter)	AO 0029 (30 meter)
NOISE MONITOR	Type 2231	Type 4427	Type 2230	Type 4427	Type 2231	Type 4427	Type 4427	Type 4427
INTERFACE CABLE	ZI 9101	9-25 pin Connector *	ZI 9101	9-25 pin Connector *	ZI 9100	9-25 pin Connector *	9-25 pin Connector *	9-25 pin Connector *
LAPTOP COMPUTER *	TI Travelmate 2000	Compaq LTE 286	TI Travelmate 2000	Toshiba T1000SE	TI Travelmate 2000	Toshiba T1000SE	Toshiba T1000SE	Toshiba T1000SE
CALIBRATOR	TYPE 4230	TYPE 4230	TYPE 4230	TYPE 4230	TYPE 4230	TYPE 4230	TYPE 4230	TYPE 4230

* *All pieces of equipment are manufactured by Brüel & Kjær of Denmark except those items marked with an asterisk.*

MESTRE GREVE ASSOCIATES

Table 8
HISTORY OF INSTALLATION AND REPLACEMENT OF NOISE MONITORING EQUIPMENT AT EACH SITE

SITE	DATE	NOISE MONITOR TYPE	NOISE MONITOR SERIAL NO.	1/2" MICROPHONE TYPE	1/2" MICROPHONE SERIAL NO.	LAPTOP COMPUTER	SOFTWARE VERSION
21	**January 9, 92**	**2231**	**1437402**	**4155**	**1453412**	**TI Travelmate 2000**	**7636 A**
	January 28, 92						7636 B
	June 1, 92			4155	1394349		
	June 15, 92						7636 C
22	**March 25, 92**	**4427**	**1167015**	**4155**	**1603967**	**Compaq LTE 286**	**7636 B**
	June 15, 92						7636 C
23	**December 31, 91**	**2230**	**1236239**	**4155**	**1603714**	**TI Travelmate 2000**	**7636 A**
	January 28, 92						7636 B
	June 15, 92						7636 C
24	**January 22, 92**	**4427**	**1166961**	**4155**	**1424379**	**Toshiba T1000 SE**	**7636 A**
	January 28, 92					TI Travelmate 2000	7636 B
	March 9, 92					Toshiba T1000 SE	
	June 15, 92						7636 C
25	**December 12, 91**	**2231**	**1470158**	**4155**	**1453396**	**TI Travelmate 2000**	**7636 A**
	January 28, 92						7636 B
	May 26, 92	2231	1437387	4155	1675640		
	June 15, 92						7636 C
26	**December 16, 91**	**4427**	**1167046**	**4166**	**1330655**	**Toshiba T1000 SE**	**7636 A**
	January 28, 92						7636 B
	March 10, 92			4165	1621816		
	March 24, 92			4155	1669743		
	June 15, 92						7636 C
27	**December 24, 91**	**4427**	**1166959**	**4166**	**1330672**	**Toshiba T1000 SE**	**7636 A**
	January 28, 92						7636 B
	February 20, 92			4149	1264781		
	March 24, 92			4155	1669742		
	June 15, 92						7636 C
28	**December 18, 91**	**4427**	**1166957**	**4166**	**1330667**	**Toshiba T1000 SE**	**7636 A**
	January 28, 92						7636 B
	April 20, 92			4155	1669483		
	June 15, 92						7636 C

* *The installation dates and equipment used are in bold.*
The remaining items are replacement dates and equipment.
No entry means that no replacement was made.

Table 9

JWA DEMONSTRATION TEST TIME DRIFT LOG										
TIME PERIOD:		7/13 - 7/19								
DATE:	7/21/92									
SITE	TIME CAL DATE PRECEEDING DATA PERIOD	1ST TIME CAL DATE WITHIN DATA PERIOD	END HOUR	DRIFT (sec)	NEXT DATE	END HOUR	DRIFT (sec)	1ST TIME CAL AFTER DATE PERIOD	END HOUR	DRIFT (sec)
1	706	713	12	5	720	11	2			
2	706	713	12	-33	720	11	-38			
3	706	713	11	6	720	11	2			
4	706	713	12	-9	720	12	-13			
5	706	713	12	7	720	12	4			
6	706	713	13	-21	720	12	-25			
7	706	713	11	-5	720	10	-8			
8	706	713	11	-28	720	10	-31			

FIRST QUARTER 1992 SUMMARY

Table 10

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	WGHT	°F
	B757	A	1	484	92	84	101	2.4	92.3	191	59
			2	429	91	89	102	2.4	91.8		
			3	411	89	81	100	2.7	89.7		
			4	390	83	83	95.5	2.4	83.7		
			5	199	82	78	96.6	2.9	83.2		
			6	294	82	79	92.4	2.5	82.7		
			21	374	85	82	101	2.8	86.4		
			22	47	85	83	94.9	2.2	85.8		
			23	314	85	81	95.8	2.9	86.3		
			24	150	87	86	95.7	2.4	87.5		
			25	418	83	76	93.4	2.8	83.8		
			26	66	81	0	101	6.5	88.2		
			27	46	79	0	91	3.8	81		
			28	335	83	0	98.1	3	83.7		
	B757	AA	1	98	90	86	95.9	1.9	90.2	176	62
			2	82	89	87	96.3	2.2	90		
			3	90	87	83	93.3	2.5	88		
			4	58	81	81	84.8	2.1	81.6		
			5	41	82	76	95	3.3	83.8		
			6	42	81	81	84.2	1.9	81		
			21	87	84	82	88.4	2.3	84.6		
			22	14	82	77	86.3	2.6	83.1		
			23	76	84	82	88.8	2.5	84.5		
			24	43	85	82	87.4	1.5	84.9		
			25	79	81	81	85.9	2.7	81.7		
			26	17	80	0	90.2	4.9	83.2		
			27	11	76	0	78.5	1.6	76.5		
			28	67	82	0	84.9	2.1	82		
	MD80	A	1	288	97	94	103	2.1	97.9	117	60
			2	251	97	95	102	2	97.1		
			3	274	97	85	101	2.3	97.6		
			4	277	92	90	96.9	2.4	92.2		
			5	239	88	86	94.7	2.6	88.6		
			6	172	90	87	95.2	2.8	90.9		
			21	235	92	90	97.9	2.3	92.3		
			22	47	91	89	94.8	1.6	91.7		
			23	219	93	91	99.6	2.3	93.4		
			24	155	94	92	105	2.1	94.3		
			25	253	91	86	96.3	2.6	91.5		
			26	128	85	81	99.6	3.9	86.6		
			27	145	81	81	92.7	3.3	82.5		
			28	238	89	88	94.4	2.8	89.5		

FIRST QUARTER 1992 SUMMARY

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	WGHT	°F
'	B757	A	1	182	92	77	98	2.2	92.1	191	60
			2	164	91	89	99.5	2	91.6		
			3	152	89	86	94.6	2.2	89.2		
			4	158	83	83	86.7	2.1	83.2		
			5	70	81	80	89	2.8	81.8		
			6	117	81	79	87.3	2.2	81.2		
			21	151	84	84	94.7	2.7	84.6		
			22	18	84	81	85.8	1.1	84.5		
			23	115	84	83	92.2	2.4	84.9		
			24	54	86	83	99.5	2.5	87.5		
			25	156	82	78	86.3	2.1	82.5		
			26	28	79	0	97.2	5.5	84.9		
			27	12	80	0	103	7.8	92.1		
			28	121	81	0	95.4	3.3	82.5		
	B757	AA	1	435	89	85	95.8	2.1	89.6	174	60
			2	382	89	86	94.6	2.2	89.4		
			3	375	86	84	99.1	2.5	87.2		
			4	320	81	77	88.6	2	81.9		
			5	134	80	0	94.8	2.7	81.6		
			6	167	80	0	95.2	2.8	81.9		
			21	363	83	79	96	2.6	83.5		
			22	40	83	78	85.3	2	82.9		
			23	297	83	81	97.6	2.7	83.8		
			24	137	84	81	90.9	2.2	84		
			25	335	80	76	96.2	3	81.8		
			26	45	79	0	91.9	4.3	82.1		
			27	27	80	0	98.4	4.8	85.8		
			28	235	80	0	99.1	3.8	83.2		
	BA14	E	1	452	85	80	95.1	2.3	86	72.6	61
			2	389	84	81	91	2	84.9		
			3	377	84	78	92.8	2	85		
			4	139	79	0	84.6	1.5	79.4		
			5	9	82	0	87.8	3.8	83.8		
			6	140	80	0	83.6	1.4	80.3		
			21	349	79	77	89	2.1	79.5		
			22	41	78	77	80.5	1.3	78.1		
			23	301	83	81	97.3	2.4	83.3		
			24	140	84	82	90.4	1.6	83.9		
			25	334	80	76	87.9	2.3	80.9		
			26	33	83	0	94.6	5.5	86.3		
			27	9	82	0	89.1	4.9	84.7		
			28	119	79	78	92.6	2.4	80.1		

FIRST QUARTER 1992 SUMMARY

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	WGHT	°F
	B757	A	1	79	90	87	97.1	2	90.2	174	56
			2	70	89	87	95.8	1.8	89.9		
			3	71	88	83	92.6	1.8	88.3		
			4	56	82	82	90.4	1.9	82.6		
			5	42	80	0	87.5	2.8	81		
			6	39	81	78	89.7	2.5	82.1		
			21	61	84	83	92.7	2	85		
			22	11	83	80	86.2	2.1	83.5		
			23	56	85	84	96.8	2.8	86.3		
			24	39	85	83	89.7	1.8	85.2		
			25	63	82	76	91.4	2.6	82.5		
			26	6	80	0	93.3	6.3	86.2		
			27	6	78	0	80.3	2	78.3		
			28	48	82	0	86.5	2.4	82.2		
	B737	A	1	44	90	85	95.5	2.5	90.4	101	60
			2	38	89	84	94.4	2.3	89.4		
			3	35	87	83	89	1.7	86.8		
			4	38	82	78	89.4	2.5	82.7		
			5	9	80	0	82.6	1.7	80.2		
			6	40	83	0	87.1	2.2	83.6		
			21	37	82	82	88.8	2.4	83.1		
			22	1	82	82	81.5	0	81.5		
			23	25	85	0	87	1.6	85		
			24	1	88	88	87.8	0	87.8		
			25	41	84	80	87.5	2	84.2		
			26	5	81	0	86	3.4	82.5		
			27	2	78	0	80.1	1.7	78.8		
			28	36	83	88	88.4	3.2	84.1		
	B737	AA	1	701	88	81	97.5	2.4	88.7	97.9	62
			2	599	88	84	98.4	2.3	88.4		
			3	585	86	84	95.9	2.2	86.3		
			4	545	82	79	90.8	2.4	82.7		
			5	129	80	0	96	3.2	82.8		
			6	459	83	78	90.5	1.9	83.4		
			21	568	82	80	92	2.5	82.6		
			22	63	82	79	86.6	2.1	82.2		
			23	469	84	77	93.1	2.1	84.9		
			24	224	86	83	93.4	1.8	86.5		
			25	602	84	79	92.9	2.1	84.2		
			26	70	81	0	98.8	6.1	86.4		
			27	28	80	0	89.8	4.6	82.9		
			28	509	83	0	94.3	2.5	83.8		

FIRST QUARTER 1992 SUMMARY

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	WGHT	°F
	B737	E	1	491	86	83	96.2	1.7	86.8	93.7	61
			2	431	86	84	93.6	1.6	86.4		
			3	411	84	83	94.7	1.6	84.8		
			4	348	81	78	89.2	2	81.7		
			5	58	80	0	96.6	4.1	84.5		
			6	312	82	81	87.4	1.5	82.7		
			21	386	81	77	89.8	2.3	81.9		
			22	49	81	78	85	1.7	81.5		
			23	334	84	81	97.5	2.1	84.4		
			24	158	85	83	88.2	1.8	85.2		
			25	404	83	79	87.7	1.9	83.1		
			26	29	79	0	90.9	5.4	83.5		
			27	10	77	0	86.8	3.8	79.3		
			28	319	83	82	90	1.8	83.1		
	A320	AA	1	1	91	91	91.4	0	91.4	0	0
			2	1	91	91	91	0	91		
			3	1	86	86	85.6	0	85.6		
			4	1	85	85	84.7	0	84.7		
			5	0	0	0	0	0	0		
			6	1	83	83	83.3	0	83.3		
			21	0	0	0	0	0	0		
			22	0	0	0	0	0	0		
			23	1	86	86	85.8	0	85.8		
			24	0	0	0	0	0	0		
			25	1	86	86	85.8	0	85.8		
			26	0	0	0	0	0	0		
			27	0	0	0	0	0	0		
			28	0	0	0	0	0	0		
	MD80	A	1	334	97	87	104	3.3	98.3	119	61
			2	292	97	94	102	3	97.4		
			3	297	93	83	102	4.7	95		
			4	216	83	79	95	3.4	84.8		
			5	155	82	79	97.3	3.2	83.6		
			6	249	85	84	98.9	2.8	86.5		
			21	237	84	84	97.2	3.7	85.8		
			22	29	84	82	95.6	3.8	86.5		
			23	225	87	85	98.3	3.4	88.2		
			24	103	88	85	96.1	3.4	89.3		
			25	304	85	79	94.6	3.3	86		
			26	46	80	0	96	4.5	83.5		
			27	54	79	0	86.8	3.3	80.4		
			28	282	86	0	97.1	3	86.9		

FIRST QUARTER 1992 SUMMARY

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	WGHT	°F
	B737	A	1	495	92	89	99.4	2.1	92.9	106	61
			2	435	92	91	100	1.6	92.5		
			3	431	91	85	98.1	2	91.1		
			4	466	86	83	92.4	2.2	86		
			5	384	83	83	96.8	2.4	84		
			6	357	84	83	89.2	1.9	84.1		
			21	419	87	86	92.2	1.9	87.4		
			22	45	86	86	89.2	1.4	86.6		
			23	338	88	88	92.7	2.2	88		
			24	163	89	86	91.6	1.5	88.9		
			25	445	85	83	91.1	1.8	85.4		
			26	127	80	0	96.9	4.5	83.7		
			27	124	78	0	88.2	2.8	79.6		
			28	383	83	0	91.4	2.4	83.5		
	MD80	A	1	4	97	97	97.5	0.2	97.1	122	64
			2	3	96	95	96.7	0.9	95.6		
			3	4	97	96	97.3	0.4	96.8		
			4	4	90	87	92.3	1.8	90.2		
			5	4	88	86	90.3	1.7	88.2		
			6	4	91	91	91.8	0.4	91.2		
			21	2	92	92	92.5	0.4	92.1		
			22	0	0	0	0	0	0		
			23	3	94	93	96.2	1.4	94.7		
			24	0	0	0	0	0	0		
			25	4	92	90	93	1	91.8		
			26	0	0	0	0	0	0		
			27	3	84	83	84.3	0.7	83.7		
			28	2	91	92	91.9	1	91.1		
	B757	A	1	131	91	90	95.9	1.7	91	184	59
			2	113	90	89	95.3	1.4	90.5		
			3	114	89	85	92.8	1.8	89.2		
			4	121	83	81	86.4	1.9	83.6		
			5	75	81	78	87.1	2.2	81.4		
			6	82	80	78	84.5	1.7	80.7		
			21	101	84	83	90	1.9	84.9		
			22	11	85	84	86.6	1.1	85.1		
			23	81	85	84	94	2.2	85.7		
			24	39	86	85	88.5	2	86.1		
			25	112	82	80	86.8	2	82.4		
			26	21	81	0	99.9	5.6	87.8		
			27	4	79	0	90.8	6.6	85.2		
			28	96	80	0	84.4	2	80.1		

FIRST QUARTER 1992 SUMMARY

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	WGHT	°F
	B757	AA	1	274	89	88	94.1	1.3	89.2	168	62
			2	239	89	88	95.6	1.4	89.2		
			3	238	87	87	92.8	1.8	87.5		
			4	245	82	80	86.5	1.7	82.3		
			5	146	81	0	90.6	2.4	81.5		
			6	112	80	79	91.7	3.2	82		
			21	234	84	82	89.1	1.7	83.9		
			22	27	84	83	86.6	0.9	84.3		
			23	198	83	83	88.8	1.5	83.6		
			24	89	84	83	90.4	2	84.3		
			25	229	80	0	86.3	2.2	80.6		
			26	33	79	0	93.2	4.7	83.4		
			27	9	80	0	92.3	4.6	84.3		
			28	161	79	0	95.5	3.8	82.1		
	B737	A	1	68	94	86	97.1	1.9	94	107	65
			2	61	93	90	97.6	1.5	93.2		
			3	60	91	89	96	2	91.1		
			4	63	85	81	88.1	1.8	85.4		
			5	38	82	0	85.2	1.6	82		
			6	48	83	82	86.8	1.9	83.4		
			21	59	85	73	90	2.6	85.8		
			22	7	86	85	87.6	0.9	86.5		
			23	49	87	81	90.6	1.7	87		
			24	21	88	86	89.4	0.9	88.2		
			25	62	85	81	87.9	1.7	84.9		
			26	15	81	0	95.5	5.1	86.1		
			27	17	78	0	81.4	2.1	78.1		
			28	55	83	0	89.9	2.3	83.8		
	B737	AA	1	1	86	86	85.5	0	85.5	0	0
			2	1	85	85	85.2	0	85.2		
			3	1	82	82	82.3	0	82.3		
			4	1	79	79	78.6	0	78.6		
			5	0	0	0	0	0	0		
			6	0	0	0	0	0	0		
			21	0	0	0	0	0	0		
			22	0	0	0	0	0	0		
			23	0	0	0	0	0	0		
			24	0	0	0	0	0	0		
			25	1	74	74	74.2	0	74.2		
			26	0	0	0	0	0	0		
			27	0	0	0	0	0	0		
			28	0	0	0	0	0	0		
	A320	A	1	319	92	89	97.5	1.9	92.2	135	61
			2	280	91	89	96.8	1.6	91.4		
			3	277	90	88	94.1	2.5	90.2		

FIRST QUARTER 1992 SUMMARY

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	WGHT	°F
			4	256	84	87	93.7	2.5	85.1		
			5	191	83	84	94.9	2.8	83.8		
			6	210	82	80	92.1	2.4	83.1		
			21	257	86	84	90.7	2.4	86.2		
			22	31	86	83	89.4	1.7	86.8		
			23	213	86	87	92.5	2.5	86.7		
			24	98	87	86	92.5	2.1	87.7		
			25	263	84	81	89.9	2.4	84.3		
			26	47	79	0	91.3	4.1	81.5		
			27	38	78	0	87.1	3.6	79.8		
			28	224	82	0	87	2.6	83		
	A320	AA	1	33	87	78	90.3	2.2	87.8	112	58
			2	30	87	84	89.9	2	87.4		
			3	25	84	79	86.8	2.1	84.2		
			4	20	80	78	83.4	1.6	80.5		
			5	6	80	0	84.9	2.6	80.6		
			6	10	79	0	80.4	0.9	79.3		
			21	30	82	0	85.7	2	82.3		
			22	0	0	0	0	0	0		
			23	21	81	0	84	1.7	81		
			24	0	0	0	0	0	0		
			25	21	78	0	82.1	2.7	79		
			26	4	80	0	87.8	4.6	82.9		
			27	0	0	0	0	0	0		
			28	14	80	0	82.3	2.1	80		
	MD80	A	1	180	97	91	103	2.8	97.6	120	60
			2	159	96	93	103	2.5	96.3		
			3	151	96	91	103	3.2	97		
			4	175	91	84	96.4	2.7	91.3		
			5	132	85	80	94	3.5	86.6		
			6	136	90	85	94.6	2.8	90.4		
			21	149	90	84	98.7	3.4	90.8		
			22	12	91	89	94.5	2.6	91.6		
			23	120	91	84	97.4	3.3	92.4		
			24	52	94	88	99.4	2.6	94.9		
			25	160	91	82	97.5	2.7	91.3		
			26	69	83	0	93.1	4.6	85.4		
			27	39	81	0	95	4.3	83.4		
			28	121	89	0	93.9	3.3	89.8		
END	11392	33192									

2ND QUARTER, 1992 V1.1 AVERAGE SENEL SUMMARY

Table 11

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
	B757	A	1	461	92.4	83.3	98.6	2.0	92.9	1461	204.6	67.2.	29	824	23	1723	-233	2925	156	164	16	9
			2	461	92.3	87.9	98.8	2.0	92.8	1397												
			3	470	90.6	86.1	96.8	1.5	90.8	1392												
			4	291	84.1	76.7	89.0	2.1	84.5	2875												
			5	303	82.1	77.0	94.2	2.7	83.2	3382												
			6	373	81.0	76.3	85.5	1.8	81.4	2652												
			21	553	84.7	75.3	95.0	2.7	85.5	2280												
			22	565	84.9	75.1	91.4	1.9	85.3	2911												
			23	509	86.9	80.0	93.8	1.7	87.3	2102												
			24	541	85.7	76.1	93.0	2.3	86.2	2198												
			25	560	83.7	76.8	90.9	2.4	84.4	2430												
			26	22	79.4	74.0	83.9	2.7	80.2	4402												
			27	16	78.7	73.8	84.9	3.1	79.9	4210												
			28	532	82.6	74.3	89.8	2.4	83.1	3058												
	B757	AA	1	300	89.8	85.0	103.5	2.0	90.5	1625	183.6	69.1.	64	1068	96	1955	-81	3061	151	164	16	8
			2	295	90.0	79.1	103.3	2.2	90.7	1519												
			3	303	88.2	79.8	94.4	1.9	88.6	1518												
			4	147	82.6	77.1	86.9	2.1	83.1	2957												
			5	134	81.2	76.8	99.1	2.7	83.1	3268												
			6	143	80.1	76.7	85.8	2.0	80.6	2807												
			21	378	83.3	74.6	90.1	2.7	84.1	2356												
			22	376	83.2	73.8	92.5	2.3	83.8	3034												
			23	348	85.1	73.6	97.6	2.4	85.8	2205												
			24	371	83.6	75.3	90.5	2.7	84.4	2399												
			25	367	82.0	73.1	87.8	2.7	82.8	2600												
			26	11	78.5	73.9	87.3	3.9	80.6	4200												
			27	13	77.9	74.0	81.2	2.3	78.5	4323												
			28	326	81.4	73.7	94.8	2.8	82.3	3145												
	MD80	A	1	3	102.1	100.4	103.6	1.3	102.3	1208	129.7	69.3.	-24	633	-256	1333	-580	2667	145	159	13	9
			2	3	100.4	99.9	101.2	0.6	100.4	1380												
			3	3	100.1	98.5	101.6	1.3	100.2	1013												
			4	3	94.8	93.0	95.9	1.3	95.0	2339												
			5	1	86.1	86.1	86.1	0.0	86.1	3633												
			6	3	90.5	88.1	93.1	2.0	91.0	2416												

MESTRE GREVE ASSOCIATES

2ND QUARTER, 1992 V1.1 AVERAGE SENEL SUMMARY

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
			21	1	89.3	89.3	89.3	0.0	89.3	2153												
			22	3	94.1	92.3	95.2	1.3	94.3	2486												
			23	3	94.2	92.2	95.6	1.4	94.4	2021												
			24	3	95.3	91.9	97.4	2.4	95.8	1718												
			25	3	93.8	92.1	95.2	1.3	93.9	2001												
			26	0	0.0	0.0	0.0	0.0	0.0	0												
			27	0	0.0	0.0	0.0	0.0	0.0	0												
			28	3	90.9	89.8	92.0	0.9	91.0	2886												
	MD80	2	1	355	97.6	83.3	102.5	2.2	98.2	1377	120.7	69.2.	33	775	-93	1588	-452	2936	148	159	15	10
			2	354	97.4	93.3	103.1	1.8	97.7	1323												
			3	358	97.0	93.8	101.7	1.3	97.2	1191												
			4	258	91.2	82.7	95.8	1.7	91.5	2681												
			5	140	87.1	78.4	96.9	2.6	87.9	3446												
			6	338	87.6	80.5	94.8	2.0	88.1	2659												
			21	433	89.6	73.2	104.5	2.9	90.5	2226												
			22	398	91.0	72.9	95.8	2.2	91.4	2706												
			23	402	92.3	81.0	96.6	1.7	92.6	2039												
			24	434	92.1	80.5	97.0	1.9	92.5	2016												
			25	448	89.9	76.5	95.2	2.1	90.3	2342												
			26	1	87.2	87.2	87.2	0.0	87.2	4378												
			27	1	74.0	74.0	74.0	0.0	74.0	4130												
			28	250	88.3	73.8	92.1	2.1	88.7	2959												
	B757	A	1	181	92.6	88.3	103.4	1.9	93.1	1427	198.5	68.1.	8	932	-35	1663	-260	2916	142	159	14	10
			2	179	92.1	87.8	101.6	1.8	92.5	1371												
			3	186	90.1	86.2	94.3	1.5	90.4	1281												
			4	111	83.5	77.7	88.7	2.0	83.9	2738												
			5	84	81.2	76.5	94.1	2.9	82.6	3233												
			6	118	79.8	76.3	89.7	1.9	80.4	2636												
			21	230	82.9	73.6	88.9	2.7	83.7	2193												
			22	219	84.0	77.0	87.3	1.7	84.3	2753												
			23	210	85.6	80.8	93.8	1.7	85.9	2003												
			24	222	84.8	77.7	88.6	2.0	85.2	2099												
			25	229	82.6	75.2	86.3	2.1	83.1	2380												
			26	2	79.9	78.8	80.9	1.0	80.0	4044												

2ND QUARTER, 1992 V1.1 AVERAGE SENEL SUMMARY

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
			27	6	78.2	75.3	82.9	2.6	79.1	4431												
			28	185	80.7	74.4	96.3	2.1	81.7	3029												
	B757	AA	1	431	89.5	83.2	94.5	1.9	89.9	1600	177.7	68.6.	63	1060	15	1847	-232	3149	148	168	14	9
			2	427	89.5	85.4	96.0	1.9	89.9	1539												
			3	428	87.7	81.3	93.5	1.6	88.0	1503												
			4	207	81.9	76.8	87.5	1.8	82.3	2971												
			5	112	79.9	75.7	85.8	2.1	80.5	3285												
			6	80	78.9	76.3	93.2	2.3	80.3	2827												
			21	498	81.3	72.9	93.3	2.7	82.1	2373												
			22	471	82.6	73.6	97.5	2.2	83.4	2937												
			23	473	83.5	76.7	101.8	2.1	84.7	2255												
			24	484	82.2	74.3	92.1	2.5	82.9	2393												
			25	500	79.8	73.0	89.1	2.5	80.4	2692												
			26	4	81.7	79.3	83.8	1.9	82.1	3325												
			27	6	77.3	74.1	83.5	3.2	78.6	4207												
			28	314	78.6	73.7	92.3	2.5	79.6	3167												
	BA14	E	1	437	85.8	79.4	92.2	2.4	86.5	1600	73.3	68.6.	281	779	199	1207	275	2094	128	134	8	6
			2	396	85.6	79.2	94.1	2.0	86.1	1171												
			3	441	85.2	81.7	91.6	1.6	85.5	1087												
			4	113	79.2	76.6	83.5	1.3	79.4	2629												
			5	8	82.3	76.9	95.2	6.0	87.6	2842												
			6	82	79.8	77.4	87.9	1.4	80.1	1925												
			21	449	77.2	72.3	85.8	2.3	77.9	1767												
			22	483	77.7	73.1	86.9	1.6	78.0	2760												
			23	451	83.0	73.6	97.6	1.9	83.6	1461												
			24	491	82.0	74.2	87.4	2.1	82.5	1828												
			25	509	80.2	73.5	86.3	2.1	80.7	1886												
			26	0	0.0	0.0	0.0	0.0	0.0	0												
			27	13	77.1	74.9	79.5	1.7	77.4	4161												
			28	495	79.0	73.1	84.3	1.8	79.3	2175												
	B757	A	1	72	89.9	86.2	94.6	1.8	90.3	1803	175.2	64.3.	-103	1356	-36	1985	9	2967	138	161	13	8
			2	75	90.0	85.7	94.0	1.7	90.4	1627												
			3	74	88.4	82.3	94.0	2.0	88.8	1607												
			4	36	82.0	77.5	86.1	2.1	82.6	3084												

2ND QUARTER, 1992 V1.1 AVERAGE SENEL SUMMARY

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
			5	34	80.9	76.7	84.9	2.2	81.4	3253												
			6	36	79.9	76.9	83.8	1.7	80.3	2620												
			21	86	82.9	77.9	87.4	2.3	83.4	2305												
			22	89	82.8	75.7	87.3	2.1	83.3	2998												
			23	83	84.8	75.1	89.5	2.0	85.1	2137												
			24	85	83.4	76.5	88.3	2.5	84.1	2344												
			25	88	80.9	74.2	85.9	2.6	81.7	2542												
			26	0	0.0	0.0	0.0	0.0	0.0	0												
			27	3	74.3	73.8	75.1	0.6	74.3	4608												
			28	78	80.6	74.0	85.1	2.5	81.3	2969												
	B757	AA	1	0	0.0	0.0	0.0	0.0	0.0	0	165.0	63.0.	25	1300	-244	1600	-317	2700	156	170	5	8
			2	0	0.0	0.0	0.0	0.0	0.0	0												
			3	0	0.0	0.0	0.0	0.0	0.0	0												
			4	0	0.0	0.0	0.0	0.0	0.0	0												
			5	0	0.0	0.0	0.0	0.0	0.0	0												
			6	0	0.0	0.0	0.0	0.0	0.0	0												
			21	1	83.2	83.2	83.2	0.0	83.2	2190												
			22	1	82.3	82.3	82.3	0.0	82.3	2794												
			23	1	84.8	84.8	84.8	0.0	84.8	1718												
			24	1	85.5	85.5	85.5	0.0	85.5	2064												
			25	1	80.9	80.9	80.9	0.0	80.9	2138												
			26	0	0.0	0.0	0.0	0.0	0.0	0												
			27	0	0.0	0.0	0.0	0.0	0.0	0												
			28	1	80.0	80.0	80.0	0.0	80.0	2799												
	B737	A	1	29	90.8	87.1	96.2	2.1	91.3	1525	102.4	69.5.	-237	1471	-320	1986	-421	2755	168	155	10	8
			2	29	90.8	87.5	94.8	1.9	91.3	1544												
			3	31	89.1	86.0	92.0	1.6	89.4	1351												
			4	22	85.2	82.3	89.3	2.2	85.8	2596												
			5	13	81.0	77.0	90.2	2.9	82.6	3180												
			6	25	80.9	78.6	84.5	1.6	81.2	2336												
			21	32	80.9	74.7	86.5	2.9	81.7	2274												
			22	32	84.8	81.5	88.8	1.8	85.2	2631												
			23	25	86.0	79.5	88.7	2.0	86.4	1891												
			24	30	85.4	80.3	88.2	2.1	85.9	1884												

2ND QUARTER, 1992 V1.1 AVERAGE SENEL SUMMARY

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
			25	33	83.7	78.5	86.9	2.0	84.1	2079												
			26	0	0.0	0.0	0.0	0.0	0.0	0												
			27	0	0.0	0.0	0.0	0.0	0.0	0												
			28	32	81.5	77.5	85.4	2.3	82.0	2635												
	B737	AA	1	844	88.8	80.4	95.7	1.6	89.1	1635	96.5	70.2.	58	1148	-53	1647	-228	2673	153	163	9	8
			2	834	89.0	83.2	97.9	1.7	89.3	1598												
			3	838	87.4	81.0	94.2	1.6	87.7	1419												
			4	605	83.6	77.7	90.5	1.8	84.0	2732												
			5	294	80.3	76.3	96.6	2.3	81.6	3272												
			6	527	80.3	76.5	94.5	1.7	80.8	2405												
			21	###	82.3	75.0	91.5	2.4	82.9	2260												
			22	###	83.6	73.8	90.2	1.7	83.9	2761												
			23	###	84.7	77.8	90.9	1.6	85.0	2009												
			24	###	84.4	76.5	95.6	1.9	84.9	2065												
			25	###	82.3	73.9	91.9	1.9	82.7	2234												
			26	8	80.4	76.9	84.2	2.4	81.1	4406												
			27	14	77.6	73.9	83.9	2.9	78.8	4152												
			28	###	80.6	73.4	94.6	1.9	81.1	2756												
	A320	A	1	12	91.4	88.0	95.0	1.8	91.8	1551	126.8	74.4.	151	1159	-118	1696	-261	2776	140	185	15	7
			2	12	91.7	88.4	95.0	1.7	92.1	1503												
			3	12	90.2	83.1	94.0	2.5	90.8	1420												
			4	11	84.7	82.1	86.8	1.3	84.8	3151												
			5	7	80.9	78.4	83.2	1.5	81.1	3638												
			6	6	81.2	78.6	83.7	2.0	81.7	2495												
			21	26	85.0	76.9	90.5	2.8	85.8	2363												
			22	22	84.7	73.3	87.6	3.3	85.4	2912												
			23	25	85.2	74.7	89.9	2.8	85.9	2210												
			24	27	85.2	80.2	88.1	2.0	85.5	2234												
			25	27	82.6	75.6	86.1	2.7	83.3	2354												
			26	1	77.2	77.2	77.2	0.0	77.2	3219												
			27	1	75.1	75.1	75.1	0.0	75.1	4355												
			28	23	80.3	74.8	83.7	2.5	81.0	2874												
	A320	AA	1	1	89.6	89.6	89.6	0.0	89.6	1495	129.0	70.0.	225	900	-101	1700	0	0	126	25	13	0
			2	1	89.9	89.9	89.9	0.0	89.9	1527												

2ND QUARTER, 1992 V1.1 AVERAGE SENEL SUMMARY

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
			3	1	87.5	87.5	87.5	0.0	87.5	1505												
			4	1	82.1	82.1	82.1	0.0	82.1	2722												
			5	0	0.0	0.0	0.0	0.0	0.0	0												
			6	1	78.0	78.0	78.0	0.0	78.0	2416												
			21	1	82.4	82.4	82.4	0.0	82.4	2322												
			22	1	82.5	82.5	82.5	0.0	82.5	2824												
			23	1	85.2	85.2	85.2	0.0	85.2	2100												
			24	1	84.6	84.6	84.6	0.0	84.6	1981												
			25	1	79.9	79.9	79.9	0.0	79.9	2218												
			26	1	96.5	96.5	96.5	0.0	96.5	5081												
			27	0	0.0	0.0	0.0	0.0	0.0	0												
			28	1	79.3	79.3	79.3	0.0	79.3	2786												
	B737	A	1	5	90.3	87.3	97.1	3.5	92.1	1487	100.1	71.9.	16	1014	583	1286	714	2533	151	161	10	9
			2	5	89.8	87.0	96.7	3.5	91.7	1505												
			3	5	87.8	86.1	89.5	1.2	88.0	1245												
			4	1	82.2	82.2	82.2	0.0	82.2	3003												
			5	5	81.6	79.9	82.6	0.9	81.7	2641												
			6	5	78.5	77.7	80.2	0.9	78.6	2520												
			21	7	85.4	83.6	87.2	1.3	85.6	1583												
			22	5	81.6	78.8	83.6	1.7	81.9	3167												
			23	7	86.0	84.6	87.9	1.2	86.2	1619												
			24	6	84.2	82.4	85.9	1.1	84.4	2347												
			25	5	82.3	80.9	83.4	0.8	82.3	2381												
			26	0	0.0	0.0	0.0	0.0	0.0	0												
			27	0	0.0	0.0	0.0	0.0	0.0	0												
			28	7	81.2	79.8	84.7	1.6	81.5	2701												
	B737	AA	1	84	88.9	82.6	97.6	1.7	89.3	1656	102.8	70.9.	130	1002	579	1481	857	2790	150	167	10	9
			2	83	89.4	86.1	98.0	1.4	89.7	1471												
			3	84	88.5	83.8	95.2	1.6	88.8	1373												
			4	24	82.1	78.3	85.4	2.1	82.6	3152												
			5	76	82.8	77.3	97.7	2.9	84.5	2692												
			6	56	79.9	77.1	83.0	1.4	80.2	2642												
			21	112	84.3	75.9	90.4	2.7	85.1	1841												
			22	84	82.4	78.0	87.4	2.1	82.9	3057												

2ND QUARTER, 1992 V1.1 AVERAGE SENEL SUMMARY

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
			23	96	86.1	81.5	91.1	1.4	86.3	1800												
			24	95	84.4	77.6	88.3	2.0	84.8	2465												
			25	102	82.0	76.9	87.7	2.0	82.4	2611												
			26	1	79.9	79.9	79.9	0.0	79.9	2933												
			27	9	77.7	75.8	81.2	1.4	78.0	3782												
			28	92	80.3	73.4	84.6	1.9	80.7	2913												
	MD80	A	1	301	97.4	80.9	103.9	3.2	98.3	1417	120.6	68.6.	69	696	144	1182	240	1579	153	160	9	3
			2	303	96.9	78.1	102.3	3.0	97.7	1298												
			3	300	93.7	82.9	103.5	4.4	95.6	1095												
			4	160	83.0	76.7	93.3	2.8	84.0	2637												
			5	133	82.2	77.3	97.2	3.1	84.0	2787												
			6	298	84.3	76.9	99.9	2.7	85.5	1688												
			21	362	82.7	72.8	96.9	4.5	85.3	1786												
			22	333	81.5	73.1	98.9	4.3	84.1	2710												
			23	345	87.0	73.1	98.6	3.7	88.6	1430												
			24	366	85.6	74.0	98.6	3.5	87.1	1828												
			25	383	84.4	74.8	96.4	3.1	85.6	1750												
			26	1	81.3	81.3	81.3	0.0	81.3	3024												
			27	30	79.3	73.7	89.4	3.0	80.7	3580												
			28	376	86.5	79.4	100.1	2.5	87.3	1771												
	B737	A	1	361	92.2	81.8	97.2	2.1	92.7	1494	106.7	69.7.	27	1001	6	1600	185	2775	139	153	11	9
			2	365	92.1	83.3	99.0	1.7	92.4	1428												
			3	370	91.2	85.9	95.5	1.7	91.6	1235												
			4	277	85.3	77.5	91.3	2.3	85.9	2911												
			5	285	83.1	77.0	99.2	2.5	84.2	3276												
			6	364	82.1	77.5	89.0	1.8	82.5	2587												
			21	454	85.4	75.2	92.3	2.4	86.0	2132												
			22	438	85.8	75.6	92.1	2.0	86.3	2790												
			23	409	88.1	83.5	91.7	1.4	88.3	1877												
			24	440	87.0	73.2	94.5	2.2	87.5	2107												
			25	458	84.7	76.4	89.1	2.2	85.2	2338												
			26	1	82.1	82.1	82.1	0.0	82.1	4350												
			27	24	79.6	74.3	89.8	2.8	80.9	4221												
			28	432	83.3	77.1	89.0	1.6	83.6	2872												

2ND QUARTER, 1992 V1.1 AVERAGE SENEL SUMMARY

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
	B737	AA	1	58	90.9	86.1	95.6	2.3	91.6	1475	103.7	66.5.	33	941	-11	1392	-49	2315	138	146	9	7
			2	58	90.7	80.5	95.3	2.3	91.2	1429												
			3	57	89.8	84.9	94.0	1.9	90.2	1198												
			4	16	83.7	79.7	86.3	2.1	84.1	2643												
			5	32	81.3	77.7	85.9	2.0	81.8	3340												
			6	53	82.4	77.9	85.7	1.4	82.7	2239												
			21	72	83.4	77.1	98.2	2.8	85.1	2076												
			22	73	84.4	79.5	88.7	2.0	84.9	2685												
			23	66	86.8	83.1	90.5	1.3	87.0	1782												
			24	69	86.3	81.4	90.0	2.0	86.7	1823												
			25	73	84.4	71.9	89.3	2.5	85.0	1982												
			26	0	0.0	0.0	0.0	0.0	0.0	0												
			27	4	78.6	76.1	79.7	1.5	78.9	2750												
			28	73	83.0	78.7	88.2	1.8	83.4	2442												
	MD80	A	1	0	0.0	0.0	0.0	0.0	0.0	0	117.0	73.0.	-301	900	14	1900	-114	2300	150	214	16	3
			2	0	0.0	0.0	0.0	0.0	0.0	0												
			3	0	0.0	0.0	0.0	0.0	0.0	0												
			4	0	0.0	0.0	0.0	0.0	0.0	0												
			5	0	0.0	0.0	0.0	0.0	0.0	0												
			6	0	0.0	0.0	0.0	0.0	0.0	0												
			21	1	95.8	95.8	95.8	0.0	95.8	2433												
			22	1	95.2	95.2	95.2	0.0	95.2	2963												
			23	1	97.9	97.9	97.9	0.0	97.9	2081												
			24	1	96.7	96.7	96.7	0.0	96.7	2315												
			25	1	88.7	88.7	88.7	0.0	88.7	2322												
			26	0	0.0	0.0	0.0	0.0	0.0	0												
			27	0	0.0	0.0	0.0	0.0	0.0	0												
			28	1	87.1	87.1	87.1	0.0	87.1	2347												
	B757	A	1	138	91.1	88.9	95.2	1.2	91.3	1514	188.8	66.9.	37	861	-24	1587	-220	3013	147	166	13	10
			2	139	90.6	79.9	94.7	1.4	90.8	1456												
			3	140	90.0	87.2	92.2	1.0	90.1	1319												
			4	96	84.1	79.3	88.1	1.6	84.4	2879												
			5	76	80.5	77.2	87.4	2.1	81.1	3463												
			6	75	79.6	76.5	90.5	2.1	80.4	2749												

2ND QUARTER, 1992 V1.1 AVERAGE SENEL SUMMARY

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
			21	167	83.2	75.3	88.2	2.4	83.8	2234												
			22	167	84.3	77.4	91.4	1.4	84.5	2790												
			23	154	85.7	81.5	90.1	1.5	86.0	2061												
			24	169	84.8	79.2	92.8	2.0	85.2	2169												
			25	171	82.2	76.8	89.5	2.1	82.7	2505												
			26	0	0.0	0.0	0.0	0.0	0.0	0												
			27	1	78.6	78.6	78.6	0.0	78.6	4611												
			28	143	80.1	74.8	95.0	2.4	81.4	3080												
	B757	AA	1	284	88.6	85.3	92.4	1.1	88.8	1708	165.1	69.1.	77	1228	99	2124	-14	3265	143	175	17	9
			2	285	88.9	85.6	101.6	1.5	89.4	1556												
			3	288	87.6	83.5	92.0	1.3	87.8	1543												
			4	128	82.4	77.9	85.4	1.7	82.7	3137												
			5	115	80.1	75.7	94.8	2.5	81.4	3462												
			6	21	80.3	76.9	91.0	3.8	82.8	3129												
			21	356	82.0	73.3	88.9	2.5	82.6	2503												
			22	304	82.9	74.0	87.6	1.8	83.3	3127												
			23	321	83.3	74.9	92.4	1.8	83.6	2464												
			24	330	81.8	73.8	92.5	2.5	82.5	2650												
			25	327	79.0	73.0	84.2	2.3	79.6	2972												
			26	1	84.0	84.0	84.0	0.0	84.0	4448												
			27	2	78.0	75.6	80.4	2.4	78.6	4268												
			28	148	77.7	73.8	87.8	2.2	78.4	3305												
	B737	A	1	67	94.0	90.3	96.6	1.6	94.3	1478	109.3	73.3.	35	931	95	1475	166	2745	150	164	13	9
			2	64	93.2	90.1	95.3	1.2	93.4	1317												
			3	66	91.5	87.9	95.6	1.6	91.8	1165												
			4	49	84.7	79.9	87.7	1.5	85.0	2852												
			5	48	81.9	78.2	85.2	1.6	82.2	3224												
			6	65	81.4	78.7	85.8	1.5	81.7	2495												
			21	85	84.9	76.8	89.9	2.6	85.6	2033												
			22	84	85.3	74.5	89.3	1.9	85.6	2809												
			23	75	87.7	84.7	90.3	1.1	87.9	1784												
			24	80	86.7	80.2	90.1	2.0	87.1	2022												
			25	85	84.1	75.6	87.7	1.9	84.5	2226												
			26	0	0.0	0.0	0.0	0.0	0.0	0												

2ND QUARTER, 1992 V1.1 AVERAGE SENEL SUMMARY

AR	AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
			27	3	83.0	77.8	91.9	6.3	87.5	4039												
			28	78	83.2	78.0	86.0	1.4	83.4	2835												
	A320	A	1	311	91.7	78.7	95.6	1.9	92.0	1526	135.2	69.0.	89	929	-20	1642	-69	2958	131	148	14	10
			2	313	91.4	87.4	98.7	1.7	91.7	1398												
			3	320	90.5	85.8	94.0	2.0	90.9	1317												
			4	215	84.6	78.3	89.0	2.0	85.1	2901												
			5	228	82.4	76.1	95.3	2.7	83.4	3461												
			6	225	81.2	76.5	92.7	2.2	81.9	2694												
			21	397	84.5	73.7	90.7	2.8	85.2	2238												
			22	391	85.5	74.8	89.3	1.9	85.8	2796												
			23	371	86.6	77.0	95.7	2.0	87.1	2072												
			24	393	85.8	77.7	92.6	2.5	86.4	2157												
			25	406	83.4	73.2	91.3	2.6	84.1	2461												
			26	2	81.4	78.8	83.9	2.5	82.1	4741												
			27	10	78.0	74.7	85.8	3.3	79.5	4396												
			28	382	82.0	73.7	95.6	2.3	82.7	3008												
	MD80	3	1	177	102.1	81.8	104.6	2.2	102.4	1444	121.4	69.2.	110	743	44	1675	-255	2512	143	193	17	6
			2	178	101.8	91.5	104.5	1.4	102.0	1283												
			3	180	102.2	94.3	105.0	2.0	102.6	1245												
			4	93	94.8	87.9	100.0	2.5	95.5	2802												
			5	85	91.6	78.8	99.6	2.9	92.5	3272												
			6	155	89.0	78.0	96.8	4.7	91.0	2349												
			21	218	94.5	73.7	99.5	3.6	95.4	2211												
			22	177	95.9	74.6	99.6	2.6	96.4	2817												
			23	201	96.3	73.0	102.9	3.1	97.0	2042												
			24	209	95.6	84.4	100.0	3.3	96.5	2132												
			25	215	92.3	77.7	99.0	4.5	93.9	2245												
			26	2	79.2	75.3	83.0	3.9	80.7	2232												
			27	12	82.2	73.5	90.2	3.9	84.0	4296												
			28	155	88.1	74.6	96.1	3.9	89.6	2528												
END	40192	63092																				

THIRD QUARTER 1992 AVERAGE SENEL SUMMARY

Table 12

AR	AC	PROC	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
	B757	2	1	910	93.0	84	98.8	2.9	93.9	1525	194.5	74.3	38	856	131	1795	78	3086	158	166	17	10
			2	886	92.8	85	98.1	2.8	93.7	1378												
			3	907	89.7	81	96.8	2.2	90.3	1414												
			4	768	83.0	77	97.5	2.2	83.6	2929												
			5	511	81.2	76	91.5	2.5	81.9	3337												
			6	766	81.5	76	98.1	2.1	82.1	2721												
			21	945	85.3	77	94.3	2.3	85.9	2280												
			22	978	83.7	73	99.8	2.6	84.5	2992												
			23	1026	85.0	73	91.3	2.5	85.7	2126												
			24	950	84.6	74	93	2.6	85.3	2262												
			25	1019	83.0	72	92.6	2.7	83.7	2509												
			26	36	79.5	74	90.2	4.2	81.8	4690												
			27	19	78.0	74	91.4	4	81.2	4394												
			28	865	81.0	74	87.5	2.3	81.5	3153												
	MD80	2	1	388	98.3	80	104	2.4	98.9	1382	119.2	75.9	17	685	13	1490	-211	2908	150	159	15	10
			2	376	97.8	79	103	2.3	98.3	1252												
			3	391	97.1	82	103	1.8	97.5	1139												
			4	390	90.7	83	95	1.9	91.1	2691												
			5	279	86.2	78	94.9	2.4	86.8	3439												
			6	401	89.0	81	94.9	2	89.4	2590												
			21	410	90.7	73	96.8	3.1	91.3	2133												
			22	417	90.4	74	95.5	2.6	90.9	2739												
			23	446	91.6	76	97.7	2.1	92	1957												
			24	425	92.2	84	96.1	1.8	92.6	1964												
			25	462	90.4	73	94.7	2.1	90.8	2283												
			26	16	84.7	80	88.7	2.4	85.4	4801												
			27	22	81.7	78	85.9	2.2	82.3	4613												
			28	385	87.6	78	92	1.9	88	3013												

MESTRE GREVE ASSOCIATES

THIRD QUARTER 1992 AVERAGE SENEL SUMMARY

AR	AC	PROC	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
	B757	3	1	445	92.3	80	95	1.7	92.5	1572	179.7	75.2	57	970	163	2005	5	3368	150	167	19	10
			2	429	92.1	85	94.2	1.4	92.3	1417												
			3	445	89.3	78	93.6	2.3	89.8	1499												
			4	357	81.1	77	87.1	1.8	81.5	3079												
			5	94	78.9	76	84.9	2	79.5	3363												
			6	133	78.7	76	93.6	2.2	79.9	3061												
			21	464	82.4	74	88.6	2	82.9	2449												
			22	460	82.2	74	88.1	2.5	82.8	3098												
			23	502	81.4	73	87.7	2.1	81.8	2394												
			24	464	81.1	74	89	2.4	81.7	2536												
			25	479	79.0	73	85.6	2.3	79.6	2858												
			26	17	77.1	74	81	2.2	77.6	4430												
			27	3	75.4	74	76.3	0.9	75.5	4529												
			28	181	77.4	73	84.6	2	77.9	3290												
	B757	4B	1	219	94.1	79	96.1	1.6	94.3	1420	204.0	74.9	95	850	157	1605	19	2504	153	182	14	7
			2	210	93.1	89	95.1	1	93.2	1282												
			3	220	91.6	85	95.8	1.8	92	1157												
			4	202	83.2	78	89.4	2.1	83.7	2727												
			5	97	80.5	76	89	2.4	81.3	3202												
			6	211	81.6	77	85.5	1.8	81.9	2272												
			21	227	84.8	74	91.7	2.2	85.3	2103												
			22	230	83.9	74	92.5	2.4	84.6	2782												
			23	244	85.2	78	90.7	2	85.6	1888												
			24	231	85.6	74	90.4	2.1	86	1947												
			25	249	83.7	76	92.6	2	84.1	2120												
			26	15	78.5	73	83.7	3	79.5	4693												
			27	2	74.7	75	74.8	0.1	74.7	5039												
			28	218	80.2	75	83.7	1.9	80.6	2637												

THIRD QUARTER 1992 AVERAGE SENEL SUMMARY

AR	AC	PROC	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
	B737	4	1	85	91.1	87	95.1	1.5	91.3	1764	90.6	79.6	28	1169	82	2210	-366	3994	159	208	19	14
			2	84	91.8	81	95	1.9	92.1	1624												
			3	84	89.6	84	94.1	1.8	90	1693												
			4	72	84.1	78	90.6	2	84.6	3337												
			5	66	82.9	78	88.7	2.1	83.4	3746												
			6	54	80.1	77	83.6	1.5	80.4	3594												
			21	87	85.7	75	90.6	2.7	86.3	2664												
			22	79	85.9	80	89.6	1.9	86.3	3252												
			23	90	84.7	76	90.4	2.4	85.3	2707												
			24	89	84.1	75	89.8	2.1	84.6	2865												
			25	87	81.5	73	88	2.6	82.2	3215												
			26	11	79.0	75	83.6	2.6	79.8	5333												
			27	3	76.6	74	78.9	1.9	77	4937												
			28	41	77.9	74	81.3	2	78.4	3871												
	BA14	1	1	213	90.4	88	92.7	0.9	90.5	1630	75.4	77.0	251	774	267	1535	514	3199	133	142	15	13
			2	212	89.6	86	91.3	1	89.7	1092												
			3	217	90.6	86	93.6	1.4	90.8	1151												
			4	184	83.3	78	87	1.9	83.7	3115												
			5	94	79.7	77	85.6	1.6	80.1	3255												
			6	89	80.6	76	96.9	2.7	82.9	2665												
			21	237	84.9	77	96.9	1.9	85.5	1989												
			22	223	83.8	76	89.3	1.8	84.1	2985												
			23	240	85.5	75	89.2	1.9	85.8	1965												
			24	241	85.0	77	88.8	1.9	85.4	2308												
			25	217	81.8	73	86.4	2.9	82.5	2594												
			26	2	86.8	83	90.9	4.2	88.5	5963												
			27	3	83.2	74	92.7	7.8	88.4	4643												
			28	38	78.0	73	81.3	2.3	78.5	2918												

THIRD QUARTER 1992 AVERAGE SENEL SUMMARY

AR	AC	PROC	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
	BA14	2	1	191	90.5	84	93.1	1.3	90.6	1573	75.2	75.7	182	684	234	1197	421	2312	143	166	10	8
			2	187	89.3	84	92.3	1.3	89.4	1119												
			3	192	90.7	82	94.5	2	91.1	1015												
			4	130	81.4	77	85.7	2.1	81.9	2811												
			5	39	80.2	77	85.2	2.1	80.8	3068												
			6	71	81.2	78	90.6	1.8	81.7	2099												
			21	192	81.5	74	88.5	3.2	82.7	1802												
			22	209	80.8	74	86.9	3	81.8	2784												
			23	227	83.6	75	89.5	2.8	84.4	1577												
			24	205	84.4	78	88.7	2.2	84.8	1894												
			25	229	81.4	74	86.7	2.6	82.1	2022												
			26	1	77.0	77	77	0	77	3943												
			27	1	77.5	78	77.5	0	77.5	2925												
			28	135	78.2	74	88.5	2.5	79.1	2084												
	B757	1	1	32	89.8	86	94.7	1.5	90.1	1651	176.5	69.2	72	979	84	1642	-23	2879	148	159	11	9
			2	31	89.2	84	94.7	1.8	89.6	1451												
			3	32	88.3	83	90.7	1.5	88.5	1435												
			4	21	82.0	78	85	2.1	82.4	2858												
			5	4	78.0	76	79.4	1.1	78.1	3669												
			6	23	80.2	77	83.3	1.7	80.5	2623												
			21	34	83.7	78	88.5	2.2	84.2	2278												
			22	33	82.6	77	86.2	2.3	83.1	2892												
			23	35	83.7	78	88.5	2.2	84.2	2039												
			24	35	83.0	74	86.2	2.8	83.7	2141												
			25	35	82.0	74	85.1	2.4	82.5	2346												
			26	0	0.0	0	0	0	0	0												
			27	0	0.0	0	0	0	0	0												
			28	23	79.3	75	84.1	2.3	79.9	2961												

THIRD QUARTER 1992 AVERAGE SENEL SUMMARY

AR	AC	PROC	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
	B757	5	1	29	92.6	90	95.4	1.4	92.8	1636	174.9	66.6	83	957	91	2031	-10	3632	156	175	20	12
			2	28	92.5	89	95.5	1.5	92.8	1453												
			3	30	90.6	87	94.4	1.7	91	1519												
			4	29	83.0	79	86.3	1.9	83.3	3331												
			5	25	81.6	76	87.4	2.7	82.4	3707												
			6	14	79.3	77	81.6	1.3	79.5	3310												
			21	31	85.7	80	91	2	86.2	2548												
			22	34	85.0	81	88.1	1.8	85.3	3058												
			23	37	84.5	80	87.9	1.7	84.8	2577												
			24	31	82.9	78	85.8	1.8	83.3	2750												
			25	37	81.0	73	84.9	2.3	81.5	3145												
			26	2	78.1	78	78.2	0.1	78.1	4350												
			27	0	0.0	0	0	0	0	0												
			28	18	78.2	75	80.1	1.6	78.5	3658												
	B737	3	1	1300	91.2	80	96.6	2.3	91.8	1691	95.8	75.8	45	1120	95	1897	4	2960	152	163	14	8
			2	1268	91.4	80	96.2	2.3	92	1542												
			3	1313	87.2	78	104	2.5	88.1	1594												
			4	1181	82.3	77	91.4	1.8	82.7	2996												
			5	532	79.6	76	86.9	1.8	80.1	3347												
			6	976	80.1	76	99.1	1.9	81	2674												
			21	1355	82.9	73	90.4	2	83.4	2375												
			22	1401	82.3	73	95.1	2.3	82.9	3004												
			23	1493	82.8	74	96.5	2	83.3	2196												
			24	1409	82.9	75	91.1	1.9	83.3	2320												
			25	1511	81.1	74	92.3	1.9	81.5	2508												
			26	33	78.3	74	86.6	2.8	79.4	4769												
			27	29	77.0	73	94.1	4.3	81.6	4451												
			28	1235	78.5	73	88	1.9	78.9	3017												

THIRD QUARTER 1992 AVERAGE SENEL SUMMARY

AR	AC	PROC	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
	A320	1	1	71	91.4	89	94.9	1.5	91.7	1586	126.3	79.7	-26	1072	-98	1807	-265	2955	142	183	15	9
			2	71	91.0	79	94.5	2.1	91.4	1333												
			3	75	89.3	84	92.9	1.5	89.5	1408												
			4	73	83.3	79	87	1.8	83.7	2776												
			5	27	80.3	77	86	2.5	81.1	3562												
			6	71	81.5	77	85	2	81.9	2586												
			21	78	83.8	78	87.9	1.8	84.2	2336												
			22	75	84.2	78	95.1	2.4	85.1	2895												
			23	83	83.9	77	88	2	84.3	2196												
			24	78	84.7	80	89.1	1.8	85.1	2142												
			25	85	83.3	76	87.8	2	83.7	2377												
			26	7	77.6	75	83.7	3	78.8	5095												
			27	2	77.1	74	80.2	3.1	78.1	5059												
			28	70	80.3	75	84.8	2.3	80.8	3096												
	B737	2	1	133	88.8	86	92.6	1.1	89	1675	101.8	76.7	76	1011	433	1557	671	2784	150	167	11	9
			2	137	89.1	86	94.1	1.1	89.2	1471												
			3	137	87.8	84	91.8	1.3	88	1400												
			4	86	81.8	78	86.7	2.1	82.4	3187												
			5	111	82.0	78	87.8	2.1	82.5	2841												
			6	124	80.4	77	85	1.4	80.7	2745												
			21	143	85.1	81	88.9	1.4	85.3	1936												
			22	141	82.0	74	89.6	2.3	82.5	3143												
			23	155	84.7	81	89.6	1.4	85	1878												
			24	148	84.0	75	88.5	2	84.4	2491												
			25	155	81.9	76	86.9	1.8	82.3	2589												
			26	0	0.0	0	0	0	0	0												
			27	19	76.6	74	80.3	1.7	76.9	4192												
			28	140	79.0	73	83.9	1.7	79.4	2924												

THIRD QUARTER 1992 AVERAGE SENEL SUMMARY

AR	AC	PROC	#	N	AVE	MIN	MAX	SD	ENAVE	SPD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
	MD80	1	1	341	101.6	88	105	1.9	102	1435	122.8	74.0	16	656	186	1399	78	2709	157	193	13	9
			2	336	100.8	88	103	1.7	101	1240												
			3	341	101.9	86	104	2.1	102	1110												
			4	299	92.5	78	100	3.7	93.7	2870												
			5	261	89.6	80	97.1	3	90.6	3190												
			6	339	88.5	78	96	3.9	89.9	2519												
			21	341	94.8	75	101	2.9	95.5	2007												
			22	332	93.6	76	99.5	3.3	94.5	2832												
			23	380	95.1	82	101	3.4	96.1	1838												
			24	358	94.5	80	100	3.7	95.7	2074												
			25	375	91.5	79	97.1	4	92.9	2239												
			26	22	81.0	74	85.1	3	81.8	4758												
			27	43	79.6	75	85	2.8	80.5	4547												
			28	304	85.7	74	94.2	3.5	87	2809												
	B737	5	1	463	94.4	88	100	1.6	94.6	1485	106.1	76.2	22	857	95	1706	138	3303	149	168	16	12
			2	446	93.8	79	100	1.5	94	1317												
			3	459	92.6	86	99	1.9	93	1258												
			4	441	86.5	77	90.8	2	86.9	3025												
			5	411	83.8	77	90.5	2.3	84.4	3443												
			6	455	83.0	77	95.4	2	83.6	2984												
			21	487	87.8	73	94.9	2.1	88.2	2223												
			22	505	87.0	74	91.3	2.2	87.4	2893												
			23	530	87.5	81	93.8	1.9	87.9	2130												
			24	485	87.1	75	91.8	2.1	87.6	2327												
			25	533	84.8	75	90	2.2	85.3	2679												
			26	17	79.5	74	83.9	2.9	80.4	5247												
			27	75	77.6	74	82	1.7	77.9	5042												
			28	457	81.5	74	85.4	2.1	81.9	3359												

THIRD QUARTER 1992 AVERAGE SENEL SUMMARY

AR	AC	PROC	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
	MD80	3	1	118	101.7	80	104	2.8	102	1399	121.7	76.2	23	730	116	1766	253	2831	147	184	18	9
			2	117	101.5	97	104	1	102	1231												
			3	119	102.1	81	105	2.2	102	1139												
			4	85	93.1	84	98.2	2.6	93.7	3188												
			5	88	92.6	85	96.5	2.2	93.1	3267												
			6	116	88.9	79	97.3	3.5	90.2	2736												
			21	112	96.0	73	100	3.3	96.6	2182												
			22	103	95.3	89	99.7	1.8	95.7	2865												
			23	123	96.2	91	100	1.6	96.5	2048												
			24	121	95.0	86	99	2.1	95.4	2400												
			25	125	91.5	83	97.4	2.9	92.3	2593												
			26	4	79.5	76	83.5	3.2	80.6	4946												
			27	22	79.6	74	84.5	2.7	80.3	4724												
			28	98	85.2	77	91.6	2.9	86.3	2944												
	B757	4A	1	520	90.0	81	95.7	2.4	90.6	1674	172.8	73.8	78	1057	151	1872	-40	3126	147	186	15	10
			2	502	89.8	81	103	2.2	90.4	1448												
			3	518	87.9	82	94.8	2	88.4	1444												
			4	434	81.7	76	90.2	2	82.2	3006												
			5	208	79.7	76	88.3	2.2	80.3	3349												
			6	254	80.3	77	88.4	1.9	80.8	2554												
			21	526	83.4	76	89.9	2	83.9	2325												
			22	528	82.4	75	95.2	2.2	83	3036												
			23	583	82.9	76	94	2.4	83.5	2236												
			24	546	82.7	75	92.2	2.8	83.6	2360												
			25	581	80.6	73	87.3	2.8	81.4	2588												
			26	7	79.4	75	84.8	3.4	80.6	5598												
			27	3	74.8	74	76.7	###	75	4589												
			28	250	78.4	73	86.6	2.2	79	2911												

THIRD QUARTER 1992 AVERAGE SENEL SUMMARY

AR	AC	PROC	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
	B737	1	1	74	94.0	88	96.3	1.5	94.3	1421	111.8	79.9	11	741	109	1392	90	2663	151	164	11	9
			2	75	92.9	88	95.2	1.2	93	1195												
			3	76	91.9	87	95.6	1.4	92.1	1105												
			4	74	85.1	81	89.3	1.8	85.5	2773												
			5	49	81.4	78	84.9	1.8	81.8	3147												
			6	75	84.1	80	88.3	1.5	84.3	2303												
			21	79	86.3	81	89.9	1.7	86.6	1889												
			22	82	85.5	81	89.2	1.6	85.8	2756												
			23	86	87.8	82	91	1.6	88	1656												
			24	82	88.1	84	90.4	1.3	88.2	1866												
			25	87	85.7	79	88.8	1.6	86	2052												
			26	2	77.7	76	79.1	1.4	77.9	5131												
			27	16	76.6	74	83.4	2.6	77.5	4466												
			28	79	82.8	74	86.3	1.6	83.1	2698												
	A320	2	1	375	95.1	92	96.7	0.8	95.1	1426	139.8	76.0	27	787	-8	1812	-381	2691	140	172	19	6
			2	361	93.8	80	95.7	1.1	93.9	1247												
			3	381	93.6	88	95.9	1.2	93.7	1211												
			4	372	85.3	79	90	1.5	85.6	2783												
			5	288	81.8	77	88.7	2.2	82.3	3573												
			6	375	82.7	78	86.7	1.6	83	2511												
			21	388	86.5	79	90.8	1.4	86.7	2334												
			22	404	86.9	74	95.1	1.7	87.2	2876												
			23	423	85.6	75	91.2	1.8	85.9	2228												
			24	406	86.0	74	91.4	1.8	86.3	2149												
			25	427	84.6	75	89.5	1.7	84.9	2337												
			26	32	79.2	74	87.5	3.6	80.8	4492												
			27	9	77.9	75	83.7	3.1	79.2	4315												
			28	388	82.7	75	87	1.8	83.1	2809												

THIRD QUARTER 1992 AVERAGE SENEL SUMMARY

AR	AC	PROC	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
	MD80	1	1	212	101.9	94	105	1.8	102	1486	120.9	75.9	74	749	108	1389	-309	2085	156	208	11	5
			2	209	101.2	93	104	1.4	101	1164												
			3	215	101.9	92	105	2	102	1089												
			4	205	92.2	80	101	4.5	94.1	2518												
			5	169	86.8	79	94.2	2.8	87.7	3282												
			6	212	87.1	80	95.5	3.5	88.5	2022												
			21	219	93.1	75	99.6	3.4	94.1	1943												
			22	218	93.7	76	100	3.6	94.8	2753												
			23	238	93.1	74	101	4.4	94.8	1726												
			24	224	94.6	78	101	4.7	96.5	1694												
			25	236	90.0	80	100	4.1	91.9	1819												
			26	22	81.6	76	90	3.5	83.2	4408												
			27	5	77.5	76	79.6	1.6	77.8	4154												
			28	198	85.8	76	94.2	3.4	87	2262												
END	70192																					

Table 15

FOURTH QUARTER, 1992 AVERAGE SENEL SUMMARY

AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
B757	3	1	885	94.1	82.1	100	2.65	94.79	1595	186	62.9	105	888	633	2122	1349	3422	154	183	23.6	11.7
		2	898	94.6	83.4	99.1	2.7	95.3	1440												
		3	894	90	80.6	98.9	3.25	91.18	1618												
		4	713	82.4	76.5	91.8	2.32	83.06	3216												
		5	348	81.1	75.9	88.8	2.75	82.01	3611												
		6	729	80.8	76.1	88.3	2.06	81.26	3225												
		21	769	84	73.3	93.1	2.6	84.67	2611												
		22	603	83.1	73.7	92.5	2.82	83.92	3208												
		23	797	83.2	73.3	91.9	2.85	84.03	2555												
		24	689	82.7	73.6	92.1	2.89	83.54	2666												
		25	575	81.5	73.1	89.6	2.71	82.29	2958												
		26	51	79.9	73.6	91.6	4.04	82.1	5339												
		27	34	77.8	73.3	89.1	4.13	80.38	4590												
		28	562	80.5	73.5	94	2.83	81.51	3591												
MD80	2	1	376	97.8	80.5	103	2.59	98.43	1434	117	64.7	167	746	601	1773	1159	3794	153	150	17.6	13.9
		2	373	97.5	79.3	103	2.16	98.01	1263												
		3	369	96.3	82	103	2.14	96.78	1195												
		4	382	91	80.1	97.5	2.07	91.49	2824												
		5	297	86.8	77.6	95.3	2.3	87.42	3439												
		6	389	89.1	78.3	96.9	2.19	89.57	2814												
		21	320	90.6	73.9	97.6	2.3	91.03	2196												
		22	237	89.8	73.8	94.9	2.71	90.38	2794												
		23	324	91.4	79.6	98.9	2.36	92	2086												
		24	288	91.8	74.3	99.3	2.45	92.35	2112												
		25	243	90	73.3	95.6	2.34	90.5	2449												
		26	65	81.7	73.8	89	3.23	82.75	5499												
		27	73	79.9	73.8	101	3.99	84.61	5052												
		28	284	87.4	73.5	92.6	2.41	87.97	3134												

MESTRE GREVE ASSOCIATES

FOURTH QUARTER, 1992 AVERAGE SENEL SUMMARY

AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
B757	1	1	449	90.8	81.9	96.1	2.42	91.46	1575	182	61.4	244	955	1093	2023	1626	3089	148	183	19.2	11.3
		2	449	90.6	80.8	95.9	2.22	91.15	1419												
		3	451	88	79.4	94.8	2.44	88.64	1482												
		4	402	82.3	76.9	88.4	2.14	82.83	3057												
		5	220	80	75.9	86	2.03	80.49	3365												
		6	294	79.8	76	92	2.13	80.47	2971												
		21	332	82.7	75.6	95.8	2.3	83.41	2373												
		22	208	82.1	74	90.7	2.61	82.79	3022												
		23	350	83.1	75.5	97.5	2.56	83.93	2324												
		24	280	82.4	73.3	91.9	2.78	83.22	2441												
		25	194	80.6	73	87	2.53	81.25	2807												
		26	16	77.9	74.3	82.9	2.74	78.75	4501												
		27	7	78.6	75.2	83.1	3.51	80.02	4442												
		28	147	78.1	73.5	91.8	2.34	79.06	3194												
B737	4	1	29	90.8	87.8	92.6	1.01	90.96	1761	87.3	72.8	132	978	296	1889	1259	3663	156	290	18.6	11.5
		2	30	91.8	89.8	94.1	0.89	91.85	1563												
		3	31	89.4	86.3	94	1.55	89.67	1689												
		4	29	84.9	82.6	87.9	1.39	85.1	3265												
		5	22	82.7	77.3	86.1	2.11	83.17	3736												
		6	17	79.9	77.8	86.6	2.24	80.65	4021												
		21	24	85.5	81.5	88	1.6	85.73	2542												
		22	21	85.3	83.7	87.7	1.15	85.44	3270												
		23	27	83.3	79.4	86.7	1.43	83.56	2655												
		24	23	83.3	80.4	87.2	1.43	83.57	2929												
		25	26	81.2	77.9	84	1.27	81.38	3394												
		26	10	78	72.7	82.5	3.2	79.08	0												
		27	2	76.3	75.2	77.4	1.1	76.44	3984												
		28	15	78	73.7	83	2.25	78.55	4132												

FOURTH QUARTER, 1992 AVERAGE SENEL SUMMARY

AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
BA14	A	1	368	87.5	77.6	95.2	2.73	88.31	1577	75.8	65.1	200	799	401	1311	1358	2536	139	151	10.4	8.42
		2	367	86.8	80.6	95.9	2.35	87.47	1165												
		3	367	86.1	80.9	93.9	2.57	87.01	1108												
		4	188	79.6	76.7	86.8	1.74	80.06	2667												
		5	13	80.2	77.2	87.1	2.71	81.22	3029												
		6	220	80.3	76.5	86.7	1.35	80.51	2020												
		21	303	79.2	73.4	86.6	2.3	79.81	1830												
		22	224	78	73.4	85.7	2.45	78.82	2762												
		23	317	82.6	74.7	97.6	2.48	83.63	1565												
		24	280	82.9	75.4	97.1	2.59	83.93	1792												
		25	235	80.9	73.6	87.1	2.37	81.48	1911												
		26	9	81	73.8	93.4	5.14	85.29	0												
		27	4	77.3	74.7	79.9	1.84	77.66	2935												
		28	238	78.7	73.4	84.1	2.24	79.25	2227												
B757	3	1	27	92	86.7	95	1.84	92.3	1721	173	63.4	85.7	980	43.8	2110	846	3455	154	233	20	13
		2	28	92.5	86.5	95.4	2.01	92.9	1528												
		3	27	87.9	82.2	92.4	2.05	88.37	1706												
		4	24	81.8	77.4	87	2.09	82.35	3132												
		5	10	80	78.5	82.7	1.49	80.3	3852												
		6	14	79.5	77.1	82.5	1.77	79.82	3071												
		21	25	83.4	77.7	86.6	2.35	83.9	2629												
		22	21	82.5	77.9	88.9	2.52	83.28	3165												
		23	25	82	74.9	86.8	2.47	82.61	2481												
		24	23	81.6	73.9	88.1	2.87	82.45	2629												
		25	23	80.3	76.5	84.9	2.26	80.86	2902												
		26	1	82.6	82.6	82.6	0	82.6	0												
		27	2	77.1	76.1	78.2	1.05	77.28	0												
		28	16	80.1	75.4	83.5	2.14	80.58	3592												

FOURTH QUARTER, 1992 AVERAGE SENEL SUMMARY

AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
B737	3	1	1272	91.5	77.9	96.9	2.27	92.04	1706	95.7	64.4	193	1057	653	2015	1215	3150	152	184	17.6	10.4
		2	1275	92	78.5	100	2.18	92.48	1531												
		3	1298	87.1	78.6	98.4	2.56	87.96	1685												
		4	1252	82.9	77.4	92.1	1.83	83.29	3094												
		5	678	79.8	75.9	89.3	1.8	80.21	3483												
		6	1066	79.9	76.3	93.3	1.7	80.43	2918												
		21	1097	82.6	72.6	92.6	2.32	83.18	2487												
		22	816	82	73.3	91.5	2.34	82.6	3040												
		23	1138	82.6	74.6	92	2.08	83.16	2335												
		24	988	82.6	73.4	93.8	2.2	83.22	2433												
		25	820	80.8	73.1	97.9	2.07	81.48	2699												
		26	59	79.4	73.5	88.3	3.55	80.96	4778												
		27	39	77.1	73	88.5	2.88	78.55	4393												
		28	881	78.6	73.3	86.9	2.1	79.11	3193												
A320	1	1	60	92.2	88.1	95.1	1.68	92.51	1513	128	61.3	123	1300	165	1945	317	3009	154	198	15.6	10.2
		2	58	92	88.6	94.7	1.38	92.19	1322												
		3	58	90	85.8	92.9	1.36	90.16	1420												
		4	61	85	79.6	88.8	1.75	85.34	2665												
		5	33	81.1	76.8	87.2	2.02	81.63	3651												
		6	63	82.6	76.9	85.7	1.88	83.01	2927												
		21	50	84.5	76.7	87.6	1.7	84.74	2308												
		22	37	84.8	77.2	87.7	1.88	85.14	2851												
		23	51	84.5	79	88.4	1.84	84.92	2234												
		24	41	85.5	80.9	90.5	1.79	85.88	2011												
		25	44	84.3	77.6	87.5	1.78	84.63	2355												
		26	10	77.9	73.4	83.6	3.02	78.89	4983												
		27	1	73.7	73.7	73.7	0	73.7	5279												
		28	42	81.1	74.7	85.7	2.57	81.78	3252												

FOURTH QUARTER, 1992 AVERAGE SENEL SUMMARY

AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
B737	1	1	163	88.5	83.6	95.5	1.99	89.02	1662	98.5	65.4	128	956	1039	1645	1452	2881	153	173	12.8	10.9
		2	161	89	84.9	94.5	1.62	89.39	1430												
		3	159	87.5	80.6	95.2	2.07	88.08	1400												
		4	110	82.4	77.1	89.9	2.45	83.15	3261												
		5	138	82.3	76.8	88.5	2.16	82.8	2834												
		6	135	80.8	77.1	89.6	2	81.4	2887												
		21	133	84.6	77	89.2	1.88	84.97	1953												
		22	89	81.5	73.7	91.1	2.89	82.47	3184												
		23	137	84.4	79.7	89.5	1.87	84.83	2012												
		24	115	83.2	76.8	88.3	2.2	83.69	2672												
		25	93	81.4	75	87.6	2.02	81.91	2719												
		26	8	82.4	78.5	92	4.2	85.13	5058												
		27	14	76.8	74.3	80.7	1.84	77.22	3748												
		28	105	79.2	73.1	90.2	2.73	80.26	3117												
MD80	2	1	82	98	93.5	104	2.72	98.86	1482	120	55.8	186	769	534	1455	1369	3243	152	154	13.7	12.7
		2	81	97.3	92.8	104	2.33	97.98	1274												
		3	73	96.7	90.6	103	2.79	97.68	1127												
		4	75	90.7	82.3	96.3	2.9	91.69	2925												
		5	73	88.1	82.3	95.9	3.16	89.46	3187												
		6	84	89.8	83	95.4	2.27	90.44	2741												
		21	65	91.1	82.6	98.1	2.48	91.93	2046												
		22	35	90	75.5	95.7	3.98	91.34	2771												
		23	67	92.5	86.1	100	2.22	93.22	1899												
		24	44	91.2	84.6	97.5	2.66	92.03	2216												
		25	62	90.2	84.7	95.5	2.23	90.76	2439												
		26	0	0	0	0	0	0	0												
		27	9	85.1	82.3	89.4	2.15	85.69	4459												
		28	41	87.6	85.1	92.3	1.63	87.98	3049												

FOURTH QUARTER, 1992 AVERAGE SENEL SUMMARY

AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
MD80	B	1	160	101	86.6	104	2.58	101.2	1412	122	67.1	146	661	453	1500	1142	3634	148	151	15.2	13
		2	161	100	88.3	104	2.24	100.6	1216												
		3	163	99.1	84.7	105	3.59	100.2	1106												
		4	153	90.2	80.8	96.9	2.71	91.1	2889												
		5	137	87.4	77.4	96.8	2.9	88.4	3146												
		6	165	89.1	78.5	95.6	2.92	89.96	2629												
		21	140	90.9	73.6	99.3	3.56	92.06	2024												
		22	115	89.8	76.6	96.7	3.18	90.78	2826												
		23	143	91.8	74.7	99.2	3.29	92.93	1843												
		24	139	91.5	81.3	98.3	2.99	92.51	2145												
		25	92	89.9	76.3	95.8	3.09	90.82	2323												
		26	34	80.7	74.6	87.1	3.38	82.03	0												
		27	34	80.7	73.6	87.5	3.39	81.9	4215												
		28	141	87.8	75	93.2	3.23	88.78	2965												
B737	2	1	517	93.4	76.7	98.2	2.57	94.02	1520	105	64.7	72.4	802	254	1686	964	3068	147	179	18.6	11.5
		2	522	93.2	79.5	97.5	1.97	93.54	1354												
		3	515	91	79.5	96.9	2.25	91.6	1347												
		4	515	86.1	80.1	92.3	1.93	86.49	3023												
		5	451	83.1	76.8	89.2	1.99	83.54	3485												
		6	525	82.6	76.5	88.8	1.95	83	2957												
		21	430	86.5	80	92.7	1.71	86.87	2286												
		22	344	85.7	74.3	95.1	2.1	86.2	2926												
		23	445	86.5	80.8	91.5	1.84	86.89	2187												
		24	392	86.2	75.5	98.3	2.22	86.83	2380												
		25	321	84.2	76.7	90.5	1.9	84.63	2640												
		26	48	77.7	73.5	84.4	2.95	78.75	5717												
		27	66	77.6	73.9	82.7	1.83	77.99	4840												
		28	377	81.1	74.5	90.3	2.23	81.69	3291												

FOURTH QUARTER, 1992 AVERAGE SENEL SUMMARY

AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
B757	3	1	459	91	81.7	99	2.28	91.58	1720	170	62.6	169	1047	593	2072	1311	3333	142	203	21.5	11.6
		2	456	91.2	85.5	104	2.11	91.79	1530												
		3	453	87.9	80.5	100	2.56	88.83	1637												
		4	430	82.2	77.3	94.3	1.96	82.71	3348												
		5	244	80	75.8	92.9	2.2	80.73	3706												
		6	220	79.1	75.8	93.1	2.3	80.3	3305												
		21	381	83	74.3	93.6	2.12	83.57	2662												
		22	291	82.5	74	92.7	2.29	83.15	3222												
		23	392	82.1	73.6	92.2	2.42	82.85	2649												
		24	340	81.5	73.2	95.4	2.83	82.61	2787												
		25	275	79.4	72.9	92.5	2.62	80.26	3092												
		26	24	79.3	73.4	91.4	4	81.83	5044												
		27	6	78	74.5	81.8	2.39	78.66	4985												
		28	132	78.1	72.8	93	2.86	79.78	3464												
B737	1	1	67	93.2	90.8	96.1	1.42	93.42	1505	108	68.8	328	785	815	1585	1457	2726	162	174	13.1	10.6
		2	68	92.6	90.4	95.8	1.26	92.83	1240												
		3	63	90.7	87.9	94.1	1.54	91	1243												
		4	68	85	81.3	88	1.52	85.22	2807												
		5	49	81.4	77.8	85.7	1.8	81.74	3249												
		6	70	83	78.7	86.3	1.59	83.29	2557												
		21	54	85.3	76.1	89.8	2.21	85.77	2057												
		22	38	84.2	75.6	87.3	1.87	84.55	2745												
		23	55	86.7	83.5	89.5	1.32	86.89	1834												
		24	46	86.6	73.6	89.8	2.43	87.01	1978												
		25	40	84.5	81.5	87.2	1.29	84.68	2375												
		26	2	77.5	77.3	77.7	0.2	77.51	0												
		27	8	78.4	74.7	82.5	2.17	78.97	4327												
		28	51	82.4	77.7	87.2	1.99	82.89	2966												

FOURTH QUARTER, 1992 AVERAGE SENEL SUMMARY

AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
B757	1	1	98	90.1	86.3	95.6	1.85	90.52	1600	180	63	261	1076	1328	1834	1924	2751	148	188	14.7	10.5
		2	100	89.8	86.1	94.7	1.81	90.24	1454												
		3	100	88.3	84.3	92.2	1.48	88.52	1391												
		4	92	83	78.3	86.5	1.65	83.28	2881												
		5	39	80.2	76.3	85.3	2.16	80.76	3312												
		6	82	80	76.5	83.3	1.52	80.25	2810												
		21	79	83	79.3	86.8	1.7	83.38	2255												
		22	56	82.7	77.2	86.3	2.11	83.13	2890												
		23	82	83.8	78.4	87.2	1.73	84.12	2155												
		24	72	83.7	79.3	87.8	1.96	84.13	2308												
		25	51	81.8	76.5	90.4	2.15	82.45	2636												
		26	2	80.1	79.2	81.1	0.95	80.25	4999												
		27	1	79.7	79.7	79.7	0	79.7	4569												
		28	51	79.1	74.3	84.4	2.2	79.62	3208												
A320	2	1	213	94.9	90	97.7	1.16	95.03	1447	138	64.2	360	873	1022	1899	946	2624	142	177	19.9	7.72
		2	214	94	88	97	0.94	94.1	1207												
		3	211	93	86.9	95.9	1.64	93.24	1212												
		4	214	85.9	79.7	89.9	1.69	86.18	2841												
		5	145	82.1	76.9	86.9	2.09	82.56	3525												
		6	217	83.3	77.4	87.1	1.73	83.61	2622												
		21	179	86.2	80.1	89.7	1.51	86.4	2299												
		22	135	86.5	75.9	91.3	1.93	86.83	2929												
		23	179	85.6	74	90.4	1.86	85.94	2238												
		24	153	85.8	74.9	96.8	2.13	86.37	2236												
		25	136	84.4	76.4	87.6	1.84	84.71	2391												
		26	15	77.9	74	85.3	3.15	79.28	4552												
		27	12	77.8	76	80.5	1.35	77.98	4231												
		28	166	83	75	86.5	1.92	83.4	2897												

FOURTH QUARTER, 1992 AVERAGE SENEL SUMMARY

AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
MD80	2	1	69	94.5	91.8	101	2.47	95.44	1721	105	62.3	318	981	222	1670	320	2774	135	148	14.5	10.5
		2	70	95	91.6	102	2.22	95.71	1205												
		3	71	94.4	91.2	101	2.15	95.08	1343												
		4	61	89.6	83.2	96.1	2.52	90.29	3075												
		5	60	86.9	83.7	91.3	1.81	87.32	3163												
		6	71	87.6	82.8	93.3	1.99	88.02	2850												
		21	57	90.3	87.5	95.7	1.79	90.74	2034												
		22	40	88.5	83.2	95.4	2.72	89.38	2996												
		23	58	90.7	86.5	98.3	2.38	91.53	1998												
		24	52	89.5	73.6	96.6	3.37	90.58	2472												
		25	43	88	83.7	93	2.01	88.5	2715												
		26	11	81.6	76	91.1	4.36	84.26	5412												
		27	10	80.4	74.8	85.8	3.6	81.81	3977												
		28	52	86	77.1	91.1	2.17	86.43	3161												
MD80	2	1	141	99.8	92.8	104	2.85	100.6	1427	126	63.9	142	759	257	1444	761	2574	146	149	14.3	9.92
		2	143	98.9	80.3	105	2.96	99.64	1172												
		3	135	98.7	89.8	103	2.49	99.29	1018												
		4	142	92.6	87.1	98.6	2.69	93.37	2800												
		5	120	89.2	80.8	97.4	2.97	90.13	3190												
		6	145	91.8	79	95.7	2.48	92.41	2402												
		21	113	92.9	74.9	97.8	3.19	93.74	1972												
		22	93	91.6	75.9	98.6	3.16	92.52	2756												
		23	120	94.2	86.5	99	2.88	95.04	1732												
		24	112	94.1	87.8	99	2.57	94.75	1964												
		25	92	92.2	86.7	96.5	2.53	92.86	2179												
		26	40	83	73.7	94.7	4.72	85.53	4324												
		27	34	83.1	74.1	93.5	4.18	85.06	3962												
		28	110	90.6	80.5	96.2	2.27	91.1	2800												

FOURTH QUARTER, 1992 AVERAGE SENEL SUMMARY

AC	CLASS	#	N	AVE	MIN	MAX	SD	ENAVE	SRD	WGHT	TEMP	Y1	ALT1	Y2	ALT2	Y3	ALT3	V1	V2	CG1	CG2
B737	3	1	133	95.9	89.9	99.1	1.15	96.04	1395	113	61.3	313	788	693	1648	1551	2694	165	201	19.8	9.95
		2	136	95	82.7	97.3	1.81	95.29	1289												
		3	137	93.1	85.6	98	2.45	93.69	1163												
		4	135	84.5	79.1	88.4	1.95	84.87	3005												
		5	129	82	76.6	87.2	2.1	82.45	3367												
		6	135	82	76.9	92.4	1.75	82.48	2732												
		21	118	85.9	73.5	93.1	2.23	86.38	2235												
		22	93	84.2	73.4	88.2	2.64	84.76	2972												
		23	121	85.6	80.2	90.4	1.94	86.04	2067												
		24	105	85	74.3	92.2	2.14	85.5	2309												
		25	88	83.5	78.3	86.9	1.49	83.7	2467												
		26	4	80.4	73.6	87	5.08	82.96	5653												
		27	20	77.1	74.2	81.9	1.84	77.54	4646												
		28	104	81.4	75.8	90.9	2.4	82.32	3138												

Table 14

	SENEL1	WEIGHT	SRD1	TEMP	WSPD	CLOUD
SENEL1	1					
WEIGHT	0.76828546	1				
SRD1	-0.53870258	-0.51375835	1			
TEMP	-0.15389046	-0.00965028	0.15774361	1		
WSPD	-0.34904486	-0.19042366	0.19450582	0.57898875	1	
CLOUD	0.27154326	0.14944729	-0.21062017	-0.32104047	-0.2618457	1

Table 15

	SENEL21	WEIGHT	SRD21	TEMP	WSPD	CLOUD
SENEL21	1					
WEIGHT	0.59858051	1				
SRD21	-0.43500618	-0.24783418	1			
TEMP	-0.03574461	-0.02005403	0.00591114	1		
WSPD	-0.0709983	-0.20621329	0.06807909	0.57679382	1	
CLOUD	0.0264388	0.16695935	-0.0432321	-0.32323604	-0.2727164	1

Table 16

	SENEL28	WEIGHT	SRD28	TEMP	WSPD	CLOUD
SENEL28	1					
WEIGHT	0.42243564	1				
SRD28	-0.30959092	-0.21403887	1			
TEMP	0.05363419	-0.00529671	0.08856807	1		
WSPD	-0.00160792	-0.18995968	0.17178965	0.58580358	1	
CLOUD	-0.00874306	0.12686925	-0.02673467	-0.26190565	-0.25240312	1

Table 17

	SENEL1	WEIGHT	SRD1	TEMP	WSPD	CLOUD
SENEL1	1					
WEIGHT	0.7070401	1				
SRD1	-0.26604266	-0.24337995	1			
TEMP	-0.1957912	-0.00145843	0.05526355	1		
WSPD	-0.07411925	0.12588894	-0.01294174	0.37020956	1	
CLOUD	0.09109524	0.03153381	-0.03333921	-0.36943664	-0.20295663	1

3RD QUARTER LINEAR REGRESSION SUMMARY

Table 18

CASE	SITE	N	AVWT	ENAVE	R	YINT	SLOPE	MINWT	MAXWT
A320 1	1	71	127.0	91.7	0.69	66.9	0.193	116	138
A320 2	1	375	139.8	95.1	0.74	77.9	0.123	122	148
B737 1	1	73	111.9	94.3	0.70	68.3	0.230	96	118
B737 2	1	132	101.4	89.0	0.73	73.3	0.153	91	130
B737 3	1	1296	96.0	91.8	0.68	66.5	0.257	82	123
B737 4	1	233	102.6	94.3	0.91	73.2	0.200	80	121
B737 5	1	456	106.4	94.6	0.79	73.9	0.192	87	119
B757 1	1	32	176.1	90.1	0.55	69.9	0.113	148	187
B757 2	1	905	194.6	93.9	0.79	64.0	0.149	154	222
B757 3	1	456	180.3	92.6	0.66	71.7	0.114	153	205
B757 4/	1	513	173.1	90.6	0.83	68.1	0.126	147	204
B757 4E	1	219	204.1	94.3	0.31	75.3	0.092	175	214
B757 5	1	29	173.5	92.8	0.67	68.1	0.141	152	186
BA14 1	1	189	75.4	90.5	0.46	83.2	0.096	64	86
BA14 2	1	176	75.3	90.6	0.53	80.1	0.137	53	86
MD80 1	1	543	122.0	102.0	0.80	85.1	0.136	95	133
MD80 2	1	387	118.9	98.9	0.44	80.9	0.147	99	201
MD80 3	1	118	121.8	102.1	0.28	85.6	0.132	95	132
A320 1	2	71	127.1	91.4	0.44	69.6	0.169	116	138
A320 2	2	361	139.7	93.9	0.32	83.9	0.071	122	148
B737 1	2	74	112.1	93.1	0.54	75.5	0.155	96	118
B737 2	2	136	101.5	89.2	0.65	75.4	0.135	91	130
B737 3	2	1264	96.0	92.0	0.63	68.5	0.238	82	123
B737 4	2	228	102.6	93.8	0.77	79.8	0.133	80	121
B737 5	2	438	106.3	94.0	0.51	82.3	0.108	87	119
B757 1	2	31	176.0	89.6	0.51	66.8	0.127	148	187
B757 2	2	881	194.6	93.7	0.77	65.1	0.142	154	222
B757 3	2	439	180.4	92.3	0.71	74.1	0.100	153	202
B757 4/	2	496	173.1	90.4	0.75	71.5	0.105	147	204
B757 4E	2	210	204.1	93.2	0.32	80.9	0.060	175	214
B757 5	2	28	173.6	92.8	0.62	67.8	0.143	152	186
BA14 1	2	188	75.4	89.7	-0.13	91.7	-0.029	64	86
BA14 2	2	172	75.3	89.4	0.18	85.8	0.046	53	86
MD80 1	2	535	121.9	101.2	0.52	91.6	0.077	97	133
MD80 2	2	375	119.2	98.3	0.34	84.6	0.111	99	201
MD80 3	2	117	121.8	101.7	0.48	92.1	0.078	95	132
A320 1	3	75	126.7	89.5	0.50	72.6	0.132	111	138
A320 2	3	380	139.9	93.7	0.79	65.9	0.198	122	148
B737 1	3	75	112.0	92.1	0.75	64.8	0.242	96	118
B737 2	3	136	101.5	88.0	0.65	72.4	0.153	91	130
B737 3	3	1309	96.0	88.1	0.69	59.5	0.288	82	123
B737 4	3	234	102.7	92.4	0.87	73.7	0.178	80	121
B737 5	3	451	106.4	92.9	0.74	71.3	0.200	87	119
B757 1	3	32	176.1	88.5	0.74	60.2	0.160	148	187

3RD QUARTER LINEAR REGRESSION SUMMARY

CASE	SITE	N	AVWT	ENAVE	R	YINT	SLOPE	MINWT	MAXWT
B757 2	3	902	194.8	90.3	0.83	66.0	0.122	154	222
B757 3	3	456	180.3	90.0	0.73	58.6	0.171	153	205
B757 4/	3	511	173.1	88.4	0.81	69.7	0.105	147	204
B757 4E	3	220	204.1	92.0	0.52	56.2	0.173	175	214
B757 5	3	30	173.6	91.0	0.52	67.0	0.136	152	186
BA14 1	3	192	75.4	90.9	0.71	73.3	0.230	64	86
BA14 2	3	177	75.3	91.1	0.66	71.9	0.250	53	86
MD80 1	3	546	122.0	102.3	0.75	84.2	0.145	97	133
MD80 2	3	390	119.1	97.5	0.31	87.3	0.083	99	201
MD80 3	3	119	121.8	102.4	0.35	86.4	0.129	95	132
A320 1	4	73	127.1	83.7	0.20	75.1	0.065	116	138
A320 2	4	371	139.8	85.6	0.43	66.3	0.136	122	148
B737 1	4	73	111.9	85.5	0.43	65.7	0.174	96	118
B737 2	4	85	102.1	82.4	0.11	77.2	0.046	91	120
B737 3	4	1177	96.3	82.7	0.39	71.3	0.115	82	123
B737 4	4	210	103.1	86.8	0.77	69.5	0.163	80	121
B737 5	4	432	106.5	86.9	0.39	73.9	0.118	90	119
B757 1	4	21	178.3	82.4	0.20	66.5	0.087	168	187
B757 2	4	763	197.3	83.6	0.57	64.5	0.094	154	222
B757 3	4	367	181.8	81.4	0.36	68.2	0.071	153	205
B757 4/	4	427	175.1	82.2	0.55	69.0	0.073	147	204
B757 4E	4	202	204.1	83.7	0.19	68.0	0.075	175	211
B757 5	4	29	174.3	83.3	0.27	69.1	0.080	152	186
BA14 1	4	165	75.7	83.7	0.29	73.7	0.127	64	86
BA14 2	4	121	76.5	82.0	0.12	77.2	0.056	62	86
MD80 1	4	496	122.5	93.9	0.64	62.6	0.243	95	133
MD80 2	4	389	119.1	91.1	0.28	81.5	0.077	99	201
MD80 3	4	85	121.8	93.7	0.27	79.6	0.111	95	132
A320 1	5	27	127.4	81.1	-0.26	95.2	-0.117	118	137
A320 2	5	287	140.5	82.3	0.17	70.3	0.082	123	146
B737 1	5	49	112.2	81.8	0.35	64.1	0.155	96	117
B737 2	5	110	101.3	82.5	-0.04	83.4	-0.014	92	130
B737 3	5	531	97.2	80.1	0.26	71.8	0.080	83	114
B737 4	5	183	103.1	84.2	0.43	75.0	0.085	80	121
B737 5	5	402	106.5	84.3	0.19	77.0	0.064	87	119
B757 1	5	4	177.5	78.1	0.33	67.3	0.060	169	186
B757 2	5	511	199.2	81.9	0.23	71.8	0.047	157	221
B757 3	5	97	181.7	79.5	0.23	70.8	0.045	156	202
B757 4/	5	206	176.4	80.3	0.26	72.9	0.039	147	204
B757 4E	5	97	205.3	81.3	0.13	66.9	0.067	182	214
B757 5	5	25	174.4	82.4	0.10	71.9	0.056	165	186
BA14 1	5	80	73.9	80.0	-0.01	80.0	-0.004	64	84
BA14 2	5	38	75.9	80.8	0.09	76.6	0.048	66	84
MD80 1	5	421	121.3	89.7	0.38	74.9	0.112	97	133

3RD QUARTER LINEAR REGRESSION SUMMARY

CASE	SITE	N	AVWT	ENAVE	R	YINT	SLOPE	MINWT	MAXWT
MD80 2	5	279	119.0	86.8	0.06	83.8	0.020	101	201
MD80 3	5	88	122.1	93.1	0.38	76.4	0.133	95	132
A320 1	6	71	127.4	81.9	0.60	53.1	0.223	116	138
A320 2	6	374	140.0	83.0	0.44	62.6	0.144	122	148
B737 1	6	74	112.2	84.3	0.77	52.1	0.285	98	118
B737 2	6	123	101.9	80.7	0.51	67.2	0.130	91	130
B737 3	6	973	97.7	81.0	0.43	66.5	0.139	82	114
B737 4	6	200	105.3	83.0	0.82	62.8	0.188	83	121
B737 5	6	446	106.8	83.5	0.68	60.5	0.211	90	119
B757 1	6	23	177.9	80.5	0.19	68.7	0.065	168	187
B757 2	6	762	198.3	82.1	0.58	62.4	0.096	154	222
B757 3	6	138	186.1	79.8	0.24	66.9	0.063	158	202
B757 4/	6	252	183.9	80.7	0.54	64.2	0.087	154	204
B757 4E	6	211	204.2	81.9	0.37	55.9	0.126	182	214
B757 5	6	14	175.8	79.5	0.02	78.4	0.005	168	186
BA14 1	6	80	78.2	83.1	0.22	65.0	0.201	67	85
BA14 2	6	63	78.0	81.8	0.28	72.0	0.118	62	86
MD80 1	6	541	122.2	89.5	0.75	55.7	0.264	95	133
MD80 2	6	400	119.1	89.4	0.39	75.7	0.112	99	201
MD80 3	6	116	122.0	90.2	0.41	59.8	0.238	95	132
A320 1	21	77	126.8	84.1	0.42	67.3	0.130	111	138
A320 2	21	387	139.6	86.7	0.53	65.5	0.150	122	148
B737 1	21	77	111.5	86.6	0.46	68.0	0.164	96	118
B737 2	21	141	101.6	85.3	0.28	77.5	0.075	91	130
B737 3	21	1343	95.9	83.4	0.41	69.7	0.138	82	123
B737 4	21	234	102.6	88.0	0.53	74.5	0.125	80	121
B737 5	21	478	106.2	88.2	0.36	76.0	0.111	87	119
B757 1	21	34	176.6	84.2	0.66	47.5	0.205	148	187
B757 2	21	938	194.6	85.9	0.67	65.5	0.102	147	222
B757 3	21	472	180.3	82.9	0.39	68.4	0.078	153	205
B757 4/	21	516	173.0	83.8	0.55	71.5	0.069	140	204
B757 4E	21	227	203.8	85.3	0.42	51.4	0.164	175	214
B757 5	21	31	174.3	86.2	0.39	65.4	0.116	152	186
BA14 1	21	209	75.4	85.4	0.02	84.1	0.010	64	86
BA14 2	21	172	75.3	82.8	0.29	68.2	0.180	53	86
MD80 1	21	550	122.2	95.0	0.46	77.2	0.139	95	133
MD80 2	21	407	119.1	91.3	0.17	81.5	0.077	99	201
MD80 3	21	111	122.1	96.6	0.30	75.3	0.169	95	132
A320 1	22	74	126.6	85.0	0.32	68.1	0.127	111	138
A320 2	22	401	139.8	87.1	0.34	70.2	0.119	122	148
B737 1	22	80	111.6	85.8	0.45	67.8	0.159	96	118
B737 2	22	141	101.5	82.5	0.35	66.5	0.152	91	130
B737 3	22	1387	95.8	82.9	0.40	67.4	0.156	82	123
B737 4	22	229	103.2	87.6	0.62	75.7	0.111	80	121

3RD QUARTER LINEAR REGRESSION SUMMARY

CASE	SITE	N	AVWT	ENAVE	R	YINT	SLOPE	MINWT	MAXWT
B737 5	22	494	106.2	87.4	0.32	75.9	0.104	87	119
B757 1	22	33	176.6	83.1	0.46	56.3	0.149	148	187
B757 2	22	969	195.2	84.5	0.62	62.0	0.111	154	222
B757 3	22	473	180.3	82.8	0.33	68.0	0.079	153	205
B757 4/	22	520	173.1	83.0	0.47	71.0	0.066	140	204
B757 4E	22	229	204.0	84.6	0.29	57.0	0.132	175	214
B757 5	22	34	174.4	85.3	0.45	63.7	0.122	152	186
BA14 1	22	198	75.6	84.2	0.05	82.2	0.022	64	86
BA14 2	22	186	75.4	81.9	0.37	64.0	0.226	59	86
MD80 1	22	539	122.6	94.6	0.47	75.0	0.153	95	133
MD80 2	22	413	119.0	91.0	0.26	78.8	0.097	99	201
MD80 3	22	102	122.1	95.7	0.28	85.4	0.081	95	132
A320 1	23	82	126.6	84.3	0.37	67.6	0.129	111	138
A320 2	23	417	139.8	85.9	0.33	69.0	0.119	122	148
B737 1	23	83	111.8	88.0	0.55	66.4	0.190	96	118
B737 2	23	152	101.7	84.9	0.36	75.1	0.095	91	130
B737 3	23	1471	95.9	83.3	0.49	67.2	0.163	82	123
B737 4	23	248	102.7	87.7	0.77	68.4	0.181	80	121
B737 5	23	515	106.2	87.9	0.60	69.6	0.168	87	119
B757 1	23	35	176.5	84.2	0.45	59.2	0.139	148	187
B757 2	23	1009	194.6	85.7	0.67	63.5	0.111	147	222
B757 3	23	511	180.1	81.8	0.41	65.9	0.086	153	205
B757 4/	23	567	173.0	83.5	0.67	65.2	0.102	140	204
B757 4E	23	241	204.0	85.6	0.40	56.3	0.141	175	214
B757 5	23	36	174.7	84.8	0.42	64.9	0.112	152	186
BA14 1	23	212	75.4	85.9	0.38	74.1	0.152	64	86
BA14 2	23	203	75.3	84.5	0.42	66.2	0.232	53	86
MD80 1	23	602	122.1	95.7	0.64	66.3	0.231	95	133
MD80 2	23	440	119.0	92.0	0.32	79.9	0.098	99	201
MD80 3	23	121	122.0	96.5	0.41	82.9	0.109	95	132
A320 1	24	77	126.6	85.1	0.39	68.4	0.129	116	138
A320 2	24	400	139.9	86.3	0.39	65.1	0.149	122	148
B737 1	24	79	112.1	88.2	0.73	63.0	0.224	98	118
B737 2	24	145	101.7	84.4	0.44	65.5	0.182	91	120
B737 3	24	1388	96.0	83.3	0.57	65.3	0.183	82	123
B737 4	24	238	102.6	87.2	0.83	66.3	0.197	80	121
B737 5	24	470	106.4	87.5	0.64	66.3	0.196	87	119
B757 1	24	35	176.5	83.7	0.60	40.6	0.240	148	187
B757 2	24	933	195.5	85.3	0.70	60.4	0.124	152	222
B757 3	24	473	180.4	81.6	0.51	59.7	0.118	153	205
B757 4/	24	532	173.5	83.6	0.73	60.2	0.130	140	204
B757 4E	24	228	204.3	86.0	0.32	59.4	0.128	175	214
B757 5	24	30	175.1	83.2	0.37	65.4	0.099	152	186
BA14 1	24	214	75.4	85.4	0.69	63.3	0.288	64	86

3RD QUARTER LINEAR REGRESSION SUMMARY

CASE	SITE	N	AVWT	ENAVE	R	YINT	SLOPE	MINWT	MAXWT
BA14 2	24	179	75.3	84.9	0.59	65.8	0.247	53	86
MD80 1	24	565	122.3	96.0	0.76	59.3	0.289	95	133
MD80 2	24	418	119.2	92.6	0.45	77.8	0.121	99	201
MD80 3	24	119	121.9	95.4	0.45	75.8	0.157	95	132
A320 1	25	84	126.8	83.7	0.43	63.3	0.157	116	138
A320 2	25	421	139.7	84.8	0.50	61.0	0.168	122	148
B737 1	25	84	111.7	86.0	0.80	54.6	0.279	96	118
B737 2	25	152	101.7	82.3	0.47	66.0	0.157	91	130
B737 3	25	1489	95.9	81.5	0.61	62.8	0.192	82	123
B737 4	25	248	103.0	85.0	0.83	61.8	0.218	80	121
B737 5	25	518	106.2	85.3	0.68	61.4	0.221	87	119
B757 1	25	35	176.5	82.5	0.66	41.7	0.228	148	187
B757 2	25	1002	194.9	83.6	0.72	57.9	0.128	147	222
B757 3	25	488	180.8	79.6	0.59	54.9	0.133	153	205
B757 4/	25	566	173.3	81.4	0.79	55.9	0.142	140	204
B757 4E	25	246	204.0	84.1	0.41	53.9	0.146	175	214
B757 5	25	36	174.7	81.4	0.55	46.8	0.195	152	186
BA14 1	25	196	76.1	82.5	0.61	48.5	0.437	64	86
BA14 2	25	203	75.4	82.1	0.65	56.0	0.337	53	86
MD80 1	25	595	122.4	92.6	0.77	54.6	0.298	95	133
MD80 2	25	455	119.1	90.8	0.40	76.1	0.120	99	201
MD80 3	25	124	121.9	92.3	0.38	68.8	0.186	95	132
A320 1	26	7	128.0	78.8	-0.25	90.4	-0.100	117	138
A320 2	26	30	140.2	80.8	-0.28	117.5	-0.274	127	145
B737 1	26	2	115.5	77.9	1.00	-245.7	2.800	115	116
4	26								
	0								
B737 3	26	32	95.9	79.5	0.51	53.0	0.264	88	109
B737 4	26	21	99.5	81.6	0.56	60.8	0.194	84	114
B737 5	26	17	106.6	80.4	0.35	61.0	0.174	92	114
8	26								
	0								
B757 2	26	36	198.3	81.8	-0.05	82.4	-0.015	162	221
B757 3	26	16	186.4	77.4	-0.06	79.4	-0.014	162	198
B757 4/	26	7	178.1	80.6	0.24	68.9	0.059	155	201
B757 4E	26	14	205.7	79.7	0.05	64.1	0.071	200	209
B757 5	26	2	178.0	78.1	-1.00	95.9	-0.100	177	179
BA14 1	26	2	76.5	88.5	-1.00	298.4	-2.767	75	78
BA14 2	26	1	75.0	77.0	********	********	********	75	75
MD80 1	26	42	124.5	82.6	0.11	76.7	0.037	101	133
MD80 2	26	16	117.4	85.4	0.46	65.6	0.163	106	130
MD80 3	26	4	118.3	80.6	-0.18	161.2	-0.691	117	119
A320 1	27	2	123.5	78.1	1.00	-701.0	6.300	123	124
A320 2	27	8	137.6	79.4	-0.78	128.6	-0.368	127	144

3RD QUARTER LINEAR REGRESSION SUMMARY

CASE	SITE	N	AVWT	ENAVE	R	YINT	SLOPE	MINWT	MAXWT
B737 1	27	15	113.0	77.7	0.56	35.4	0.366	104	117
B737 2	27	19	102.6	76.9	0.23	68.3	0.080	96	113
B737 3	27	28	100.6	81.7	-0.17	89.1	-0.121	82	112
B737 4	27	26	109.5	78.2	0.24	67.4	0.090	97	120
B737 5	27	68	108.6	77.8	0.21	71.4	0.056	93	118
8	27								
	0								
B757 2	27	19	197.6	81.2	-0.02	78.9	-0.004	171	221
B757 3	27	4	187.5	82.4	-0.35	117.1	-0.206	177	198
B757 4/	27	3	167.3	75.0	-0.95	97.3	-0.135	154	176
B757 4E	27	2	200.0	74.7	-1.00	77.4	-0.014	189	211
13	27								
	0								
BA14 1	27	2	79.5	89.7	1.00	#####	19.200	79	80
BA14 2	27	1	75.0	77.5	********	********	********	75	75
MD80 1	27	45	124.2	80.3	0.08	76.6	0.022	98	132
MD80 2	27	22	119.2	82.3	0.53	54.5	0.228	106	126
MD80 3	27	21	121.8	80.4	-0.02	80.6	-0.006	95	132
A320 1	28	69	126.5	80.8	0.61	49.0	0.247	114	138
A320 2	28	383	139.9	83.0	0.42	60.7	0.157	122	148
B737 1	28	76	112.0	83.0	0.26	72.0	0.096	98	118
B737 2	28	137	101.8	79.3	0.48	63.9	0.149	91	130
B737 3	28	1213	96.5	78.9	0.47	63.3	0.157	83	114
B737 4	28	185	106.1	81.3	0.71	60.0	0.195	83	120
B737 5	28	443	106.4	81.9	0.63	60.2	0.200	90	119
B757 1	28	23	178.3	79.9	0.22	58.7	0.116	168	187
B757 2	28	849	196.2	81.5	0.50	65.3	0.080	154	222
B757 3	28	175	183.8	77.8	0.13	72.4	0.027	153	205
B757 4/	28	243	184.6	79.0	0.62	56.4	0.119	148	204
B757 4E	28	215	204.2	80.6	0.21	65.2	0.074	182	214
B757 5	28	17	176.1	78.4	-0.21	92.6	-0.082	168	183
BA14 1	28	36	78.4	78.6	0.00	78.0	0.001	66	85
BA14 2	28	117	75.7	79.1	0.43	62.8	0.203	53	86
MD80 1	28	489	122.6	87.0	0.64	60.0	0.209	95	133
MD80 2	28	378	119.2	88.0	0.28	78.5	0.076	99	201
MD80 3	28	96	122.1	86.3	0.48	53.4	0.261	102	132

Table 19

All Quarters Linear Regression (All Data Regressed For Calendar Year 1992)

		------------ MEASURED DATA SUMMARY -------------							
Aircraft/CB	SITE	N	AVWT	ENAVE	R	YINT	SLOPE	MINWT	MAXWT
B737 800	1	100	111.1	94.1	0.7296	68.2	0.2308	96	118
B737 800	1	156	97.9	88.9	0.6292	69.1	0.197	87	123
B737 800	1	43	88.9	91.9	0.8909	74.9	0.1843	81	120
B737 150	1	2540	95.6	91.9	0.6693	67.8	0.2461	82	123
B737 150	1	125	111.8	96	0.7367	80.5	0.1374	93	123
B757 800	1	32	176.1	90.1	0.5454	69.9	0.1132	148	187
B757 800	1	422	180.8	91.4	0.7037	68.5	0.1232	148	212
B757 800	1	94	179.7	90.5	0.4594	70.9	0.1065	141	197
B757 150	1	27	172.5	92.3	0.623	64.3	0.1606	154	182
B757 150	1	862	185.1	94.8	0.777	68.4	0.1387	146	216
B757 150	1	429	169.7	91.5	0.7592	69.1	0.1285	145	200
B757 150	1	578	179.3	92.5	0.6835	71.5	0.1154	152	205
BA14 OLD	1	559	73.1	86.6	0.7666	59	0.3679	63	95
BA14 NEW	1	325	75.7	88.4	0.5843	64	0.3122	53	90
MD80 800	1	800	122.1	99.1	0.1856	88	0.0866	115	201
MD80 800	1	116	128.9	101.1	0.606	60.6	0.3108	116	135
MD80 800	1	59	123.3	99.7	0.6945	62	0.2999	115	134
B737 800	2	102	111.2	93.1	0.5535	76.9	0.1435	96	118
B737 800	2	154	98	89.3	0.5772	74.4	0.1495	87	123
B737 800	2	41	89.2	92.4	0.7953	81.1	0.1238	81	120
B737 150	2	2509	95.6	92.2	0.6182	70.2	0.2244	82	123
B737 150	2	127	111.8	95.3	0.088	92.2	0.0258	93	123
B757 800	2	31	176	89.6	0.5064	66.8	0.1271	148	187
B757 800	2	423	180.7	91.1	0.587	73.5	0.0943	148	212
B757 800	2	96	179.5	90.2	0.385	73.8	0.0891	141	197
B757 150	2	28	172.8	92.9	0.6384	61.6	0.1787	154	182
B757 150	2	874	185.1	95.3	0.7143	70.5	0.1301	146	216
B757 150	2	427	169.6	91.8	0.7002	72.7	0.1089	145	200
B757 150	2	565	179.2	92.3	0.6926	74.5	0.0983	152	202
BA14 OLD	2	492	73.3	85.9	0.6611	65.1	0.278	63	95
BA14 NEW	2	324	75.6	87.5	0.5092	69.3	0.2329	53	90
MD80 800	2	798	122.1	98.5	0.1467	90.2	0.0638	115	201
MD80 800	2	118	129.1	99.9	0.1902	82.6	0.1302	116	135
MD80 800	2	59	123.3	98.6	0.6379	66.9	0.2524	115	134

MESTRE GREVE ASSOCIATES

All Quarters Linear Regression (All Data Regressed For Calendar Year 1992)

		------------ MEASURED DATA SUMMARY -------------							
Aircraft/CB	SITE	N	AVWT	ENAVE	R	YINT	SLOPE	MINWT	MAXWT
B737 800	3	102	111.2	91.9	0.7282	66.3	0.2281	96	118
B737 800	3	152	98.1	87.9	0.5091	71.2	0.1652	87	123
B737 800	3	41	88.6	90.2	0.6481	76.7	0.1469	81	120
B737 150	3	2575	95.6	88.1	0.6946	60	0.2843	82	123
B737 150	3	128	111.9	93.6	0.714	61.7	0.2798	93	123
B757 800	3	32	176.1	88.5	0.7366	60.2	0.1595	148	187
B757 800	3	424	180.6	88.6	0.6827	66.8	0.1171	148	212
B757 800	3	96	179.7	88.5	0.4595	73.1	0.0844	141	197
B757 150	3	27	172.9	88.4	0.6604	55.6	0.1867	154	182
B757 150	3	872	184.9	91.1	0.707	61.5	0.1536	146	218
B757 150	3	424	169.6	88.8	0.7339	64.5	0.1376	145	200
B757 150	3	584	179.2	89.8	0.721	59	0.1685	152	205
BA14 OLD	3	562	73.1	85.5	0.6736	68.2	0.2316	63	95
BA14 NEW	3	322	75.8	87	0.431	69.6	0.2191	53	90
MD80 800	3	797	122.1	97.6	0.1683	89.2	0.0658	115	201
MD80 800	3	110	129	99.7	0.5741	67.4	0.2476	116	135
MD80 800	3	51	123.7	98.5	0.6824	55.9	0.3364	115	134
B737 800	4	101	111.1	85.4	0.4242	67.5	0.1576	96	118
B737 800	4	104	98.9	82.9	0.2595	72.4	0.0988	87	115
B737 800	4	40	89.1	85.7	0.671	74.2	0.1249	81	120
B737 150	4	2399	95.8	83	0.3824	71.8	0.1127	82	123
B737 150	4	125	112	84.8	0.3854	71.7	0.1142	93	123
B757 800	4	21	178.3	82.4	0.2006	66.5	0.0868	168	187
B757 800	4	379	181.8	82.8	0.4578	69.7	0.0694	148	212
B757 800	4	90	179.9	83.3	0.2635	73.2	0.0545	141	195
B757 150	4	24	172.8	82.3	0.4612	60.2	0.1253	154	182
B757 150	4	692	187.4	83.1	0.4981	67	0.0823	146	218
B757 150	4	400	170.3	82.7	0.5525	68.8	0.0786	145	200
B757 150	4	474	180.6	81.5	0.3156	70.4	0.0596	152	205
BA14 OLD	4	159	74.5	79.4	0.2085	75	0.0562	63	95
BA14 NEW	4	167	76.7	80.1	0.0769	77.6	0.0268	53	90
MD80 800	4	738	121.9	91.6	0.128	84.7	0.0531	115	201
MD80 800	4	118	128.9	93.8	0.3694	64.2	0.2248	116	135
MD80 800	4	53	123.1	92.3	0.6258	49.1	0.3429	115	134

All Quarters Linear Regression (All Data Regressed For Calendar Year 1992)

		------------- MEASURED DATA SUMMARY -------------							
Aircraft/CB	SITE	N	AVWT	ENAVE	R	YINT	SLOPE	MINWT	MAXWT
B737 800	21	97	110.9	86.6	0.4117	71.3	0.1349	96	118
B737 800	21	132	97.6	85	0.3705	73	0.1189	89	123
B737 800	21	40	88.8	86.6	0.5088	77.3	0.1006	81	120
B737 150	21	2432	95.5	83.3	0.3996	69.4	0.1406	82	123
B737 150	21	111	111.7	86.4	0.4427	67.3	0.1663	95	122
B757 800	21	34	176.6	84.2	0.6579	47.5	0.2055	148	187
B757 800	21	324	180.3	83.4	0.3562	72.3	0.0577	148	212
B757 800	21	78	178.9	83.4	0.1222	78.5	0.0257	141	197
B757 150	21	25	172.8	83.9	0.0906	78.1	0.0303	154	182
B757 150	21	765	185.3	84.7	0.5311	66.6	0.0937	146	218
B757 150	21	360	169.3	83.4	0.4613	71.2	0.0692	145	199
B757 150	21	597	179.2	82.9	0.355	69.7	0.0711	152	205
BA14 OLD	21	493	73.1	78.2	0.1164	73.5	0.0567	63	84
BA14 NEW	21	274	75.5	79.8	0.0908	76.1	0.0405	53	90
MD80 800	21	854	122.3	91.3	0.0663	85.1	0.0438	115	201
MD80 800	21	93	128.8	94.1	0.2005	72.9	0.1585	116	135
MD80 800	21	42	121.8	92.4	0.6467	48.9	0.3484	115	134
B737 800	22	97	111.1	85.6	0.4777	67.3	0.1618	96	118
B737 800	22	88	97.8	82.5	0.161	73.8	0.078	89	123
B737 800	22	25	89.7	86.5	0.7295	76.3	0.1096	81	120
B737 150	22	2195	95.5	82.8	0.3668	68.8	0.1405	82	123
B737 150	22	87	111.2	84.7	0.4351	62.1	0.1983	99	121
B757 800	22	33	176.6	83.1	0.4628	56.3	0.1488	148	187
B757 800	22	205	180.1	82.8	0.2816	72.7	0.0517	148	212
B757 800	22	56	179.8	83.1	0.2139	71.3	0.0634	169	197
B757 150	22	21	172.3	83.3	0.1366	74.4	0.0474	154	182
B757 150	22	598	185.5	83.9	0.5605	63.4	0.106	149	218
B757 150	22	277	169.7	83.1	0.3954	71.3	0.0657	145	199
B757 150	22	594	179.3	82.7	0.3387	67.9	0.0793	152	205
BA14 OLD	22	422	73.4	78.1	0.204	73	0.0652	63	95
BA14 NEW	22	203	75.7	78.7	0.1468	72.4	0.0738	53	89
MD80 800	22	791	122.1	91.3	0.152	80.9	0.0811	115	201
MD80 800	22	73	128.9	92.9	0.1642	76.1	0.1247	116	135
MD80 800	22	26	122.7	91.9	0.5461	37.3	0.4329	116	134

All Quarters Linear Regression (All Data Regressed For Calendar Year 1992)

		------------ MEASURED DATA SUMMARY -------------							
Aircraft/CB	SITE	N	AVWT	ENAVE	R	YINT	SLOPE	MINWT	MAXWT
B737 800	5	73	111.2	81.8	0.2034	72.1	0.0832	96	117
B737 800	5	136	98.2	82.8	0.1189	78.1	0.0424	90	123
B737 800	5	40	88.7	84.2	0.3166	76.7	0.0777	81	120
B737 150	5	1208	96.9	80.1	0.3094	70.9	0.0909	82	114
B737 150	5	122	112.1	82.4	0.2858	71.2	0.0956	93	123
B757 800	5	4	177.5	78.1	0.3284	67.3	0.0604	169	186
B757 800	5	214	182.8	80.5	0.0548	78.4	0.0085	153	212
B757 800	5	37	179.7	80.8	0.0279	79	0.0066	141	195
B757 150	5	10	174.4	80.3	-0.147	86.5	-0.037	164	182
B757 150	5	347	190.3	82	0.0906	77.5	0.0189	152	216
B757 150	5	232	171.9	80.8	0.2261	73.5	0.038	146	200
B757 150	5	138	179.8	79.6	0.1183	75	0.0229	155	202
BA14 OLD	5	12	74.8	86.8	0.2325	63.3	0.256	67	81
BA14 NEW	5	12	74.8	81.2	-0.369	94.7	-0.195	66	84
MD80 800	5	509	121.9	87.5	0.1019	80.5	0.0508	115	201
MD80 800	5	99	128.9	90.5	0.2735	67.7	0.1708	116	134
MD80 800	5	50	123.4	90	0.6058	44.4	0.3561	115	134
B737 800	6	103	111.2	84.2	0.7487	57.8	0.2351	98	118
B737 800	6	128	98.6	81.2	0.4275	68.1	0.1272	87	123
B737 800	6	28	91.3	80.7	0.8002	66.6	0.1497	81	120
B737 150	6	2018	96.9	80.7	0.4747	66.3	0.1409	82	114
B737 150	6	125	112.1	82.4	0.4964	66.2	0.1406	93	123
B757 800	6	23	177.9	80.5	0.1877	68.7	0.0649	168	187
B757 800	6	276	186.1	80.5	0.5369	62.6	0.0922	153	212
B757 800	6	79	180.3	80.2	0.2419	72	0.0437	141	195
B757 150	6	14	175.3	79.8	0.3063	60.3	0.1092	164	182
B757 150	6	710	188	81.3	0.3542	70.7	0.0538	150	218
B757 150	6	199	177.6	80.4	0.2337	71	0.046	148	200
B757 150	6	183	184.6	79.6	0.2623	67.6	0.0599	158	202
BA14 OLD	6	119	74.4	80.1	0.3701	71.9	0.1065	63	84
BA14 NEW	6	203	77.3	80.5	0.4482	69.2	0.1438	65	90
MD80 800	6	814	122	89.5	0.1072	83.3	0.0472	115	201
MD80 800	6	121	129	92.8	0.3507	68.5	0.1853	116	135
MD80 800	6	57	123.2	91	0.7328	54.5	0.2912	115	134

All Quarters Linear Regression (All Data Regressed For Calendar Year 1992)

		------------ MEASURED DATA SUMMARY -------------							
Aircraft/CB	SITE	N	AVWT	ENAVE	R	YINT	SLOPE	MINWT	MAXWT
B737 800	23	104	111.1	87.8	0.5675	67.5	0.1808	96	118
B737 800	23	136	97.4	84.8	0.3615	73.3	0.1144	87	123
B737 800	23	42	88.6	86.5	0.544	75.4	0.1195	81	120
B737 150	23	2601	95.4	83.2	0.5199	66.2	0.1736	82	123
B737 150	23	114	111.8	86	0.523	67.2	0.1647	93	122
B757 800	23	35	176.5	84.2	0.4496	59.2	0.1389	148	187
B757 800	23	339	180.1	83.9	0.5463	65.3	0.0985	148	212
B757 800	23	81	178.9	84.1	-0.016	84.4	-0.003	141	197
B757 150	23	25	172.8	82.6	0.1685	71.8	0.0592	154	182
B757 150	23	791	185.3	84	0.5554	63.5	0.1066	146	218
B757 150	23	371	169.3	82.8	0.572	64.4	0.1048	145	199
B757 150	23	638	179.1	81.7	0.4125	65.7	0.0866	152	205
BA14 OLD	23	500	73.1	83.8	0.3205	73.1	0.1357	63	95
BA14 NEW	23	286	75.5	83.7	0.382	68.8	0.1837	53	90
MD80 800	23	854	122.1	92.6	0.201	80.9	0.0914	115	201
MD80 800	23	98	128.7	95.5	0.4333	62.2	0.2547	116	135
MD80 800	23	43	122	93.8	0.6321	56.5	0.2992	115	134
B737 800	24	101	111.4	88	0.4693	65.5	0.1998	98	118
B737 800	24	114	97.5	83.7	0.3157	72	0.1152	89	123
B737 800	24	32	88	85	0.7099	75.2	0.1079	81	120
B737 150	24	2368	95.6	83.3	0.564	64.7	0.1897	82	123
B737 150	24	98	111.5	85.5	0.4347	67.4	0.1579	98	122
B757 800	24	35	176.5	83.7	0.5976	40.6	0.2402	148	187
B757 800	24	272	180.3	83.2	0.6715	57.9	0.1354	148	212
B757 800	24	71	178.5	84.2	0.1834	75.9	0.0439	141	197
B757 150	24	23	173.3	82.5	0.275	61.5	0.1159	154	182
B757 150	24	685	185.6	83.6	0.5898	61.1	0.1164	146	216
B757 150	24	328	169.4	82.6	0.575	60.7	0.123	145	199
B757 150	24	595	179.3	81.6	0.5108	60.1	0.1166	152	205
BA14 OLD	24	506	73.1	82.8	0.4394	67.9	0.1972	63	95
BA14 NEW	24	253	75.5	84	0.4162	66.7	0.214	53	90
MD80 800	24	844	122.3	92.9	0.1043	87.3	0.0426	115	201
MD80 800	24	90	128.6	95.3	0.4642	65	0.2329	116	134
MD80 800	24	25	121.6	92.9	0.7051	51.4	0.3349	115	134

All Quarters Linear Regression (All Data Regressed For Calendar Year 1992)

		------------ MEASURED DATA SUMMARY -------------							
Aircraft/CB	SITE	N	AVWT	ENAVE	R	YINT	SLOPE	MINWT	MAXWT
B737 800	25	106	111	85.8	0.7957	57.6	0.2516	96	118
B737 800	25	92	98.3	81.9	0.368	69.5	0.121	89	123
B737 800	25	21	90.3	82.3	0.6918	64.8	0.1832	82	120
B737 150	25	2304	95.4	81.5	0.5806	63.1	0.1874	82	123
B737 150	25	82	112.5	83.7	0.2501	76.1	0.0656	98	121
B757 800	25	35	176.5	82.5	0.6631	41.7	0.228	148	187
B757 800	25	189	181.5	81.2	0.6574	59.6	0.1154	148	212
B757 800	25	51	180.1	82.5	-0.148	88.5	-0.037	141	197
B757 150	25	23	172.6	80.9	0.367	60	0.1178	154	182
B757 150	25	570	185.7	82.3	0.4956	64.9	0.0894	146	218
B757 150	25	257	169.8	80.3	0.6448	57.6	0.1279	145	197
B757 150	25	609	179.8	79.6	0.5569	56.4	0.126	153	205
BA14 OLD	25	547	73.1	80.7	0.4513	65.3	0.2031	63	95
BA14 NEW	25	208	75.7	81.6	0.4887	64.6	0.218	53	90
MD80 800	25	866	122.2	90.9	0.1174	84.1	0.0525	115	201
MD80 800	25	70	128.4	93.6	0.4916	63.2	0.2333	116	135
MD80 800	25	40	121.9	91.5	0.6235	58.4	0.2661	115	134
B737 800	26	4	115.5	77.7	0.796	-107	1.6	115	116
B737 800	26	8	99.1	85.1	-0.169	99.4	-0.172	93	105
B737 150	26	91	95.7	80.5	0.0628	75.7	0.0347	83	109
B737 150	26	4	107.5	83	0.964	-28.8	1.016	102	115
B757 800	26	16	181.3	78.7	0.0427	76.5	0.0078	148	208
B757 800	26	2	180	80.3	*****	*****	*****	180	180
B757 150	26	1	181	82.6	*****	*****	*****	181	181
B757 150	26	49	185.8	82.2	-0.142	86.5	-0.036	152	211
B757 150	26	24	175.6	81.8	-0.297	93.4	-0.08	149	196
B757 150	26	22	183	78.3	-0.28	91	-0.076	162	198
BA14 OLD	26	9	72.6	85.8	0.2724	60.3	0.2991	67	82
BA14 NEW	26	9	76.7	85.3	0.1589	68.9	0.1581	66	83
MD80 800	26	48	120.9	84.3	0.135	70.6	0.1046	115	130
MD80 800	26	29	127.3	86.5	0.4528	20.9	0.497	119	133

All Quarters Linear Regression (All Data Regressed For Calendar Year 1992)

		------------ MEASURED DATA SUMMARY -------------							
Aircraft/CB	SITE	N	AVWT	ENAVE	R	YINT	SLOPE	MINWT	MAXWT
B737 800	27	19	111.9	77.7	0.356	56.3	0.1842	103	117
B737 800	27	14	97.5	77.2	-0.305	88	-0.115	90	107
B737 800	27	2	101	78.8	-1	94.4	-0.156	93	109
B737 150	27	67	99.9	80.1	-0.068	81.1	-0.041	82	112
B737 150	27	19	114.4	77.5	0.0926	73.5	0.0306	103	122
B757 800	27	7	182.3	80	0.4756	53.5	0.1378	160	202
B757 800	27	1	171	79.7	*****	*****	*****	171	171
B757 150	27	2	181.5	77.3	-1	458.3	-2.1	181	182
B757 150	27	34	188.8	80.4	-0.112	84.7	-0.036	162	212
B757 150	27	6	173.2	78.7	0.5122	59.4	0.1072	158	186
B757 150	27	7	185	81	-0.221	98.4	-0.11	174	198
BA14 OLD	27	17	73.7	80.7	-0.1	84.4	-0.081	66	81
BA14 NEW	27	4	73.3	77.7	0.5233	64.5	0.1737	68	81
MD80 800	27	59	121.2	82	0.3275	48.3	0.2682	115	129
MD80 800	27	29	128.1	85.5	0.0881	72.2	0.09	119	134
MD80 800	27	3	122.3	85.4	-0.264	95.9	-0.088	116	127
B737 800	28	99	111.1	83.3	0.217	74.9	0.0732	98	118
B737 800	28	104	98	80.3	0.4133	60.2	0.1938	90	123
B737 800	28	13	92.9	78.3	0.8382	59.3	0.1956	82	115
B737 150	28	2093	96.1	79	0.4348	64.4	0.1468	82	114
B737 150	28	97	112.1	82.3	0.1452	74.6	0.0606	98	122
B757 800	28	23	178.3	79.9	0.2175	58.7	0.1155	168	187
B757 800	28	144	186	79	0.2898	68.5	0.0511	152	212
B757 800	28	51	179.7	79.6	0.0483	76.9	0.0122	141	193
B757 150	28	16	173	80.6	0.4635	47.7	0.1871	161	181
B757 150	28	559	188.3	81.5	0.3254	67.7	0.0677	150	218
B757 150	28	125	177.4	79.9	0.173	70.9	0.0409	147	199
B757 150	28	257	181.8	78.2	0.1295	72.6	0.0281	153	205
BA14 OLD	28	451	73.6	79.4	0.54	64.9	0.1923	63	95
BA14 NEW	28	216	76.2	79.3	0.3383	66.4	0.1625	57	90
MD80 800	28	694	122.2	88.5	0.1713	79.3	0.0723	115	201
MD80 800	28	90	129	91.5	0.206	76.4	0.1133	119	135
MD80 800	28	25	122.8	88.4	0.8032	56.9	0.2534	115	132

Table 21

SENEL CONTOUR EXHIBITS

EXHIBIT NUMBER	EXHIBIT DESCRIPTION
9A	MD80 85 SENEL 800' Cutback Altitude
9B	B737 85 SENEL 800' Cutback Altitude
9C	B737 85 SENEL 1500' Cutback Altitude
9D	B757 85 SENEL 800' Cutback Altitude
9E	B757 85 SENEL1500' Cutback Altitude

MESTRE GREVE ASSOCIATES

Table 22

FLEET MIX: SIX QUARTER HISTORY
(Average Daily Departures)

	1991 LAST 3 QUARTERS			1992 FIRST 3 QUARTERS			6 QUARTER	AVERAGE
Aircraft/Class	2nd	3rd	4th	1st	2nd	3rd	AVERAGE	2nd,3rd 1992
MD80 A	12.35	12.6	12.2	11.56	12.59	14.15	12.58	13.37
B737 A	5.49	5.46	6.82	8.73	9.58	7.09	7.20	8.34
B737 AA	16.94	17.41	18.43	18.04	10.65	13.5	15.83	12.08
B737 E	12.03	12.11	8.54	7.26	11.8	8.81	10.09	10.31
B757 A	12.54	13.56	13.34	13.24	11.37	11.34	12.57	11.36
B757 AA	10.4	10.97	10.92	11.45	14.89	17.23	12.64	16.06
B757 E	0	0	0.42				0.14	
A320 A	4.6	4.95	5.09	4.78	5.24	5.54	5.03	5.39
A320 AA	1.76	2.54	2.58	0.63	0.01	0.29	1.30	0.15
BA146 A	0.01						0.01	
BA146 AA	0.03						0.03	
BA146 E	6.19	7.09	6.54	6.43	6.18	5.46	6.32	5.82
Total:	82.34	86.69	84.88	82.12	82.31	83.41	83.73	82.86

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Table 23

FLEET MIX: BASE CASE AND TWO FUTURE CASES
(Average Daily Departures)

Aircraft/Class	BASE CASE	ADDITIONAL CLASS E'S	FUTURE CASE 1	BASE CASE	CLASS A ALL MD80'S	ADDITIONAL CLASS E'S	FUTURE CASE 2
MD80 A	13.37		13.37	13.37	39		39.00
B737 A	8.34		8.34	8.34	0		0.00
B737 AA	12.08		12.08	12.08			12.08
B737 E	10.31	15	25.31	10.31		15	25.31
B757 A	11.36		11.36	11.36	0		0.00
B757 AA	16.06		16.06	16.06			16.06
B757 E		8	8.00			8	8.00
A320 A	5.39		5.39	5.39	0		0.00
A320 AA	0.15		0.15	0.15			0.15
BA146 A			0.00				0.00
BA146 AA			0.00				0.00
BA146 E	5.82		5.82	5.82			5.82
Total:	82.86	23	105.86	82.86		23	106.41

MESTRE GREVE ASSOCIATES

Table 26

JOHN WAYNE AIRPORT

Summary of Calls to Noise Abatement Office

(April 1991 through September 1992)

TIME PERIOD	4/91 - 6/91	7/91 - 9/91	10/91 - 12/91	1/92 - 3/92	4/92 - 6/92	7/92 - 9/92	TOTAL FOR
COMMUNITY							COMMUNITY
Tustin/Orange	28	70	24	52	91	63	328
Santa Ana	24	34	18	16	49	31	172
Santa Ana Heights	33	21	15	28	108	281	486
Costa Mesa	43	8	14	25	96	129	315
Westcliff	173	165	54	61	355	637	1,445
Eastbluff	71	153	38	40	514	587	1,403
Balboa/Corona del Mar	314	314	139	124	500	301	1,692
Other	31	48	25	18	37	39	198
TOTAL FOR PERIOD	717	813	327	364	1,750	2,068	6,039

MESTRE GREVE ASSOCIATES

JOHN WAYNE AIRPORT DEPARTURE NOISE DEMONSTRATION PROGRAM

EXHIBITS

prepared by
MESTRE GREVE ASSOCIATES
280 Newport Center Drive
Suite 230
Newport Beach, CA 92660

MARCH 1993

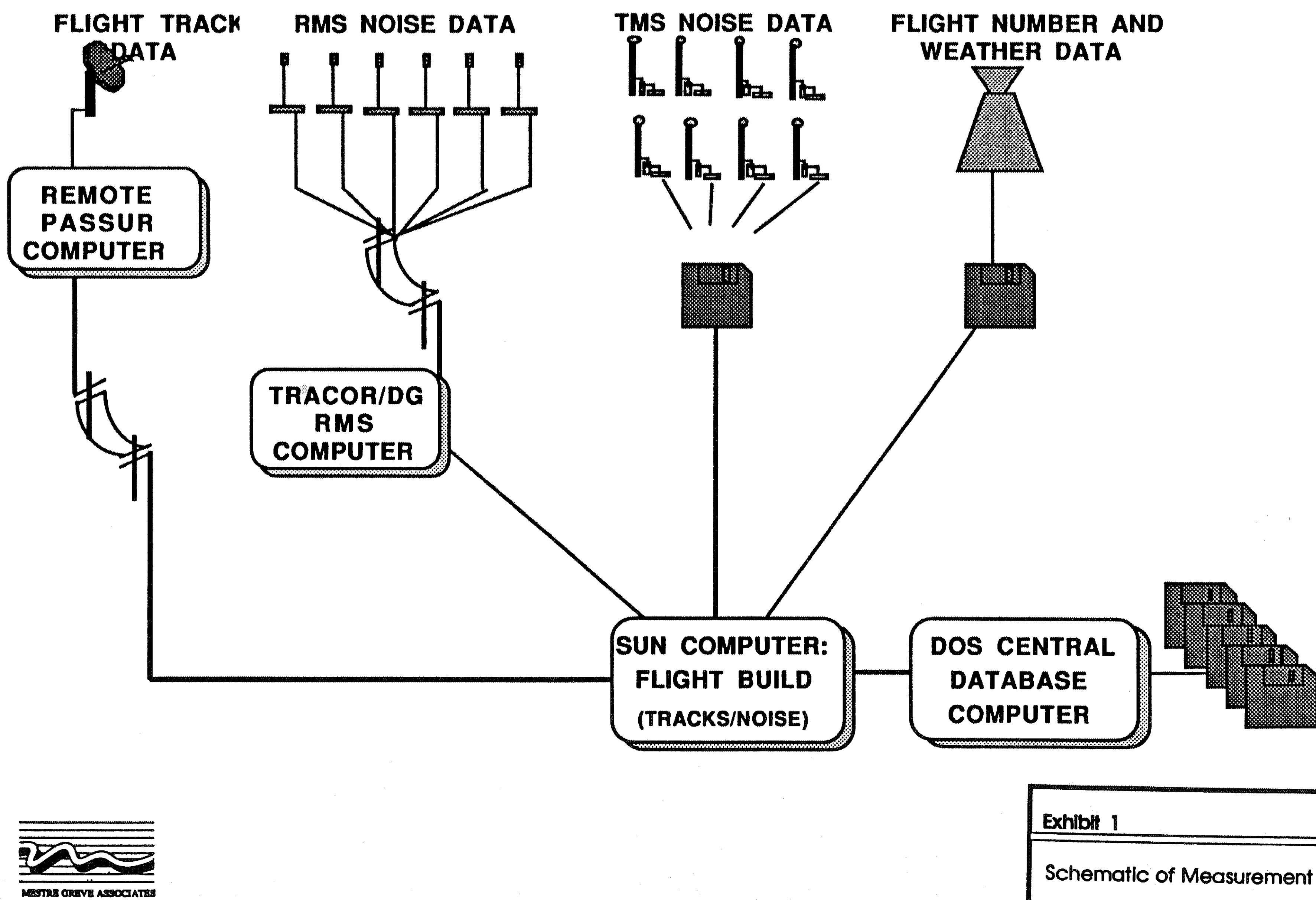

Exhibit 1

Schematic of Measurement System

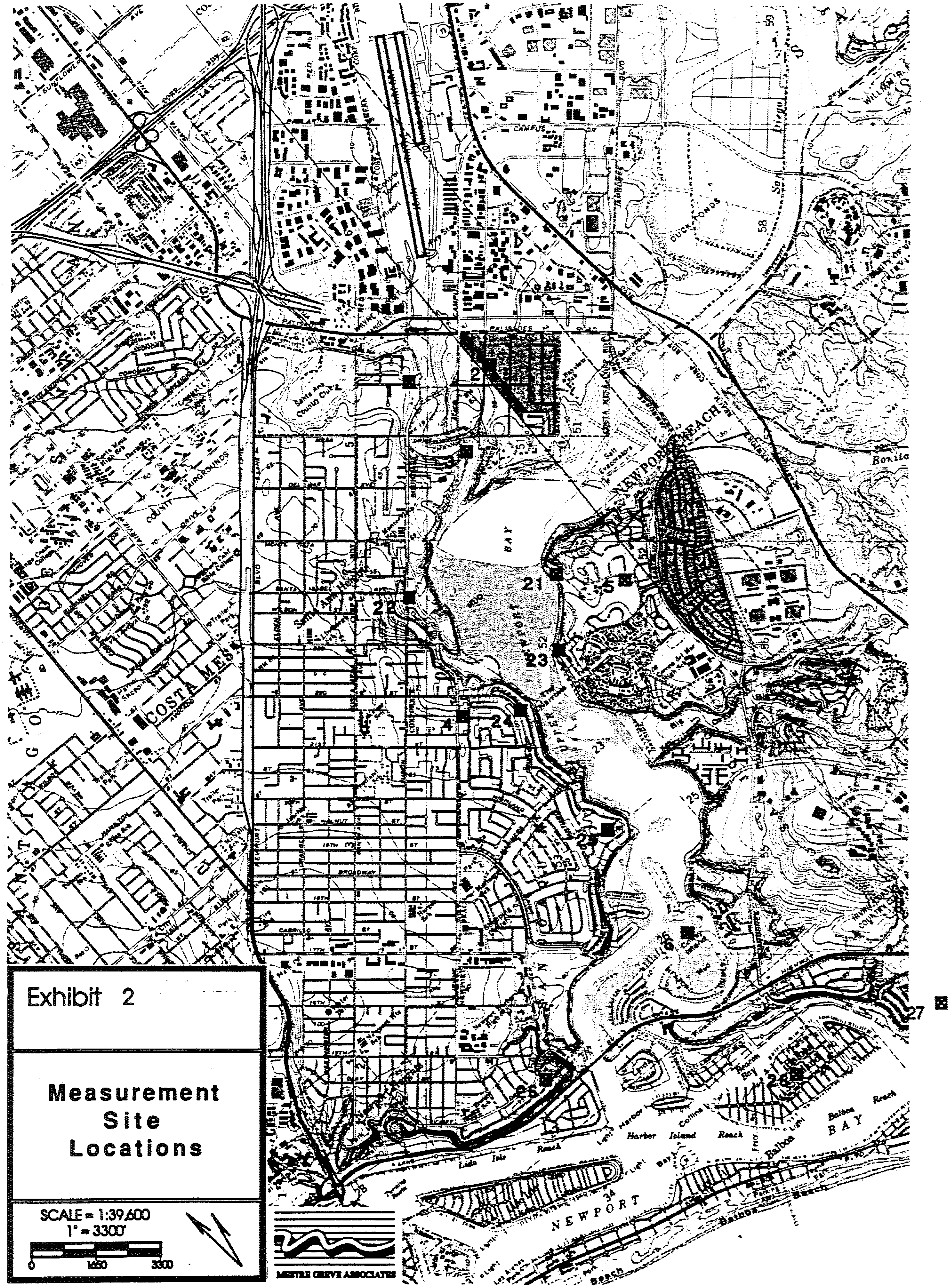

Exhibit 2

Measurement Site Locations

Table 22

FLEET MIX: SIX QUARTER HISTORY
(Average Daily Departures)

Aircraft/Class	1991 LAST 3 QUARTERS 2nd	3rd	4th	1992 FIRST 3 QUARTERS 1st	2nd	3rd	6 QUARTER AVERAGE	AVERAGE 2nd,3rd 1992
MD80 A	12.35	12.6	12.2	11.56	12.59	14.15	12.58	13.37
B737 A	5.49	5.46	6.82	8.73	9.58	7.09	7.20	8.34
B737 AA	16.94	17.41	18.43	18.04	10.65	13.5	15.83	12.08
B737 E	12.03	12.11	8.54	7.26	11.8	8.81	10.09	10.31
B757 A	12.54	13.56	13.34	13.24	11.37	11.34	12.57	11.36
B757 AA	10.4	10.97	10.92	11.45	14.89	17.23	12.64	16.06
B757 E	0	0	0.42				0.14	
A320 A	4.6	4.95	5.09	4.78	5.24	5.54	5.03	5.39
A320 AA	1.76	2.54	2.58	0.63	0.01	0.29	1.30	0.15
BA146 A	0.01						0.01	
BA146 AA	0.03						0.03	
BA146 E	6.19	7.09	6.54	6.43	6.18	5.46	6.32	5.82
Total:	82.34	86.69	84.88	82.12	82.31	83.41	83.73	82.86

MESTRE GREVE ASSOCIATES

Table 23

FLEET MIX: BASE CASE AND TWO FUTURE CASES
(Average Daily Departures)

Aircraft/Class	BASE CASE	ADDITIONAL CLASS E'S	FUTURE CASE 1	BASE CASE	CLASS A ALL MD80'S	ADDITIONAL CLASS E'S	FUTURE CASE 2
MD80 A	13.37		13.37	13.37	39		39.00
B737 A	8.34		8.34	8.34	0		0.00
B737 AA	12.08		12.08	12.08			12.08
B737 E	10.31	15	25.31	10.31		15	25.31
B757 A	11.36		11.36	11.36	0		0.00
B757 AA	16.06		16.06	16.06			16.06
B757 E		8	8.00			8	8.00
A320 A	5.39		5.39	5.39	0		0.00
A320 AA	0.15		0.15	0.15			0.15
BA146 A			0.00				0.00
BA146 AA			0.00				0.00
BA146 E	5.82		5.82	5.82			5.82
Total:	82.86	23	105.86	82.86		23	106.41

MESTRE GREVE ASSOCIATES

NOISE MONITORING SYSTEM

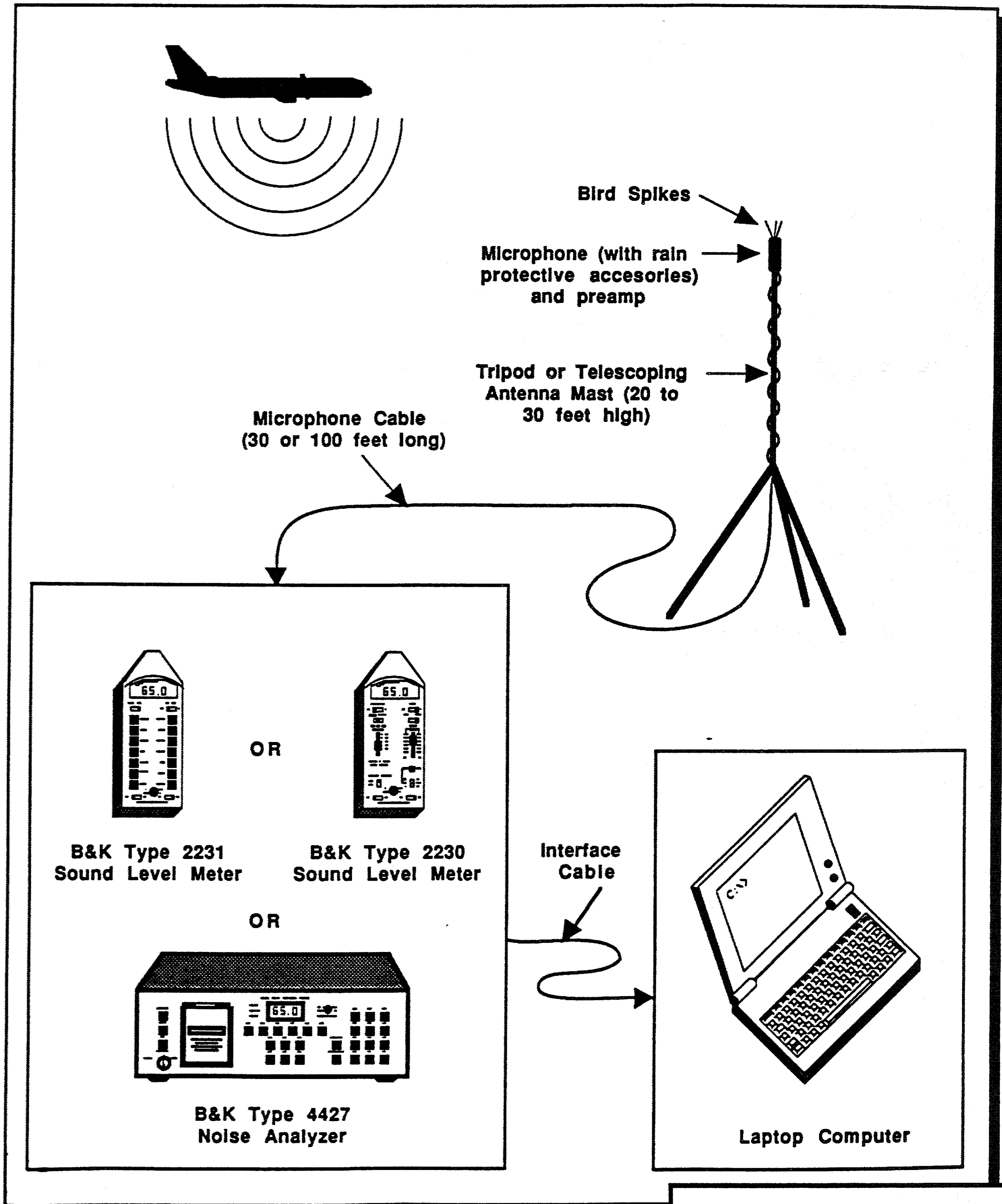

Exhibit 3

Noise Monitoring System Configuration

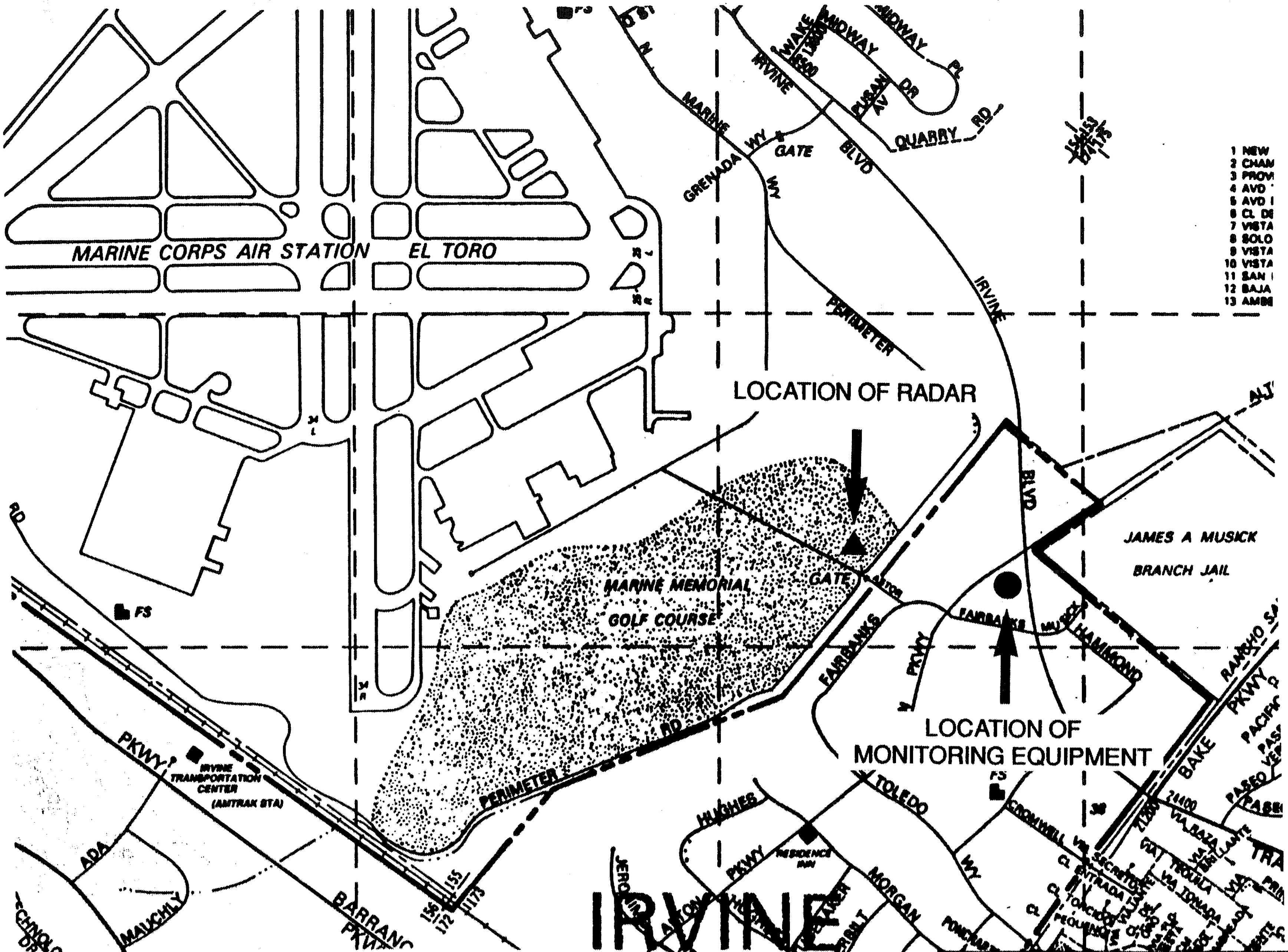

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Exhibit 4

Location of Radar and Monitoring Equipment

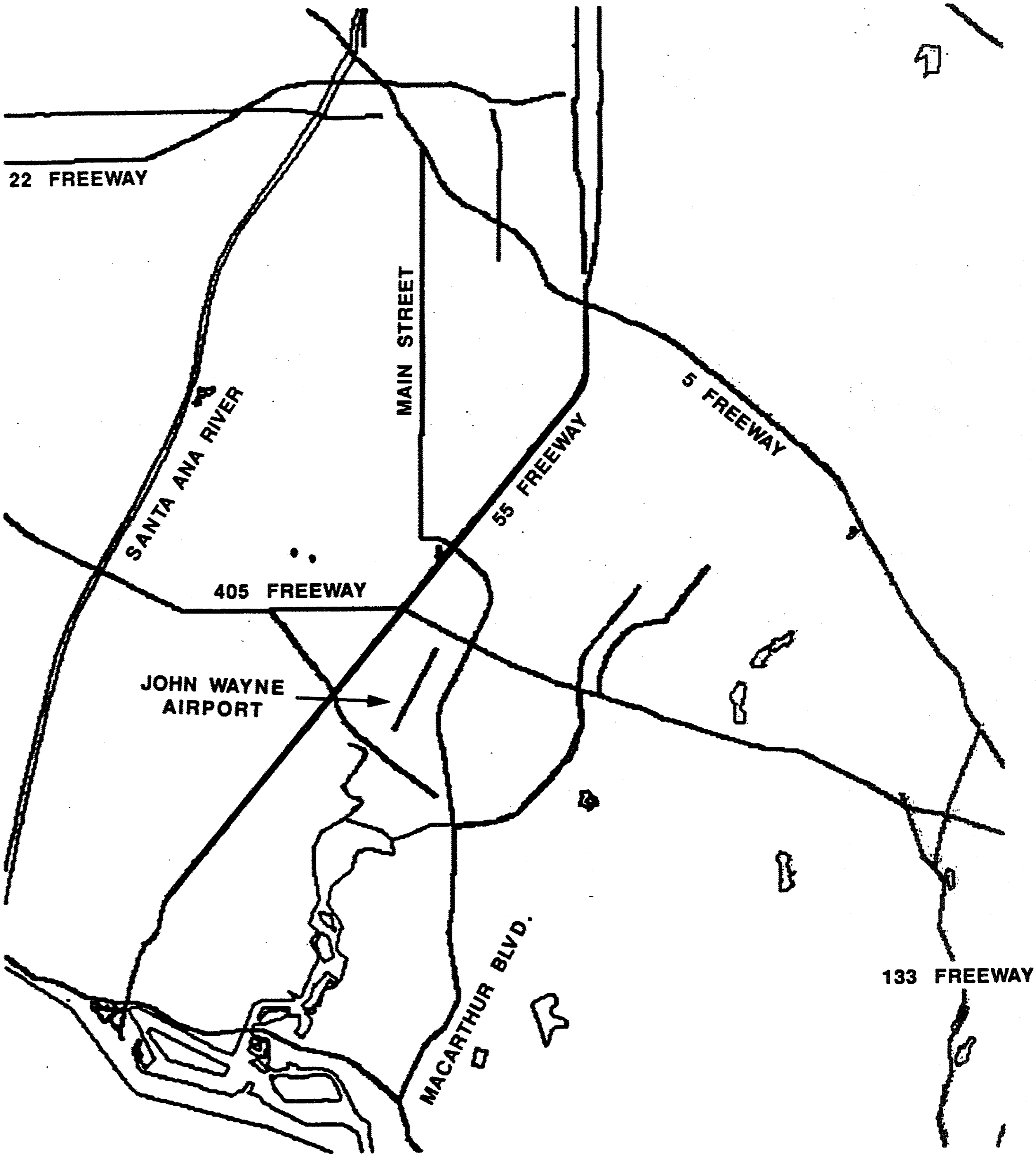
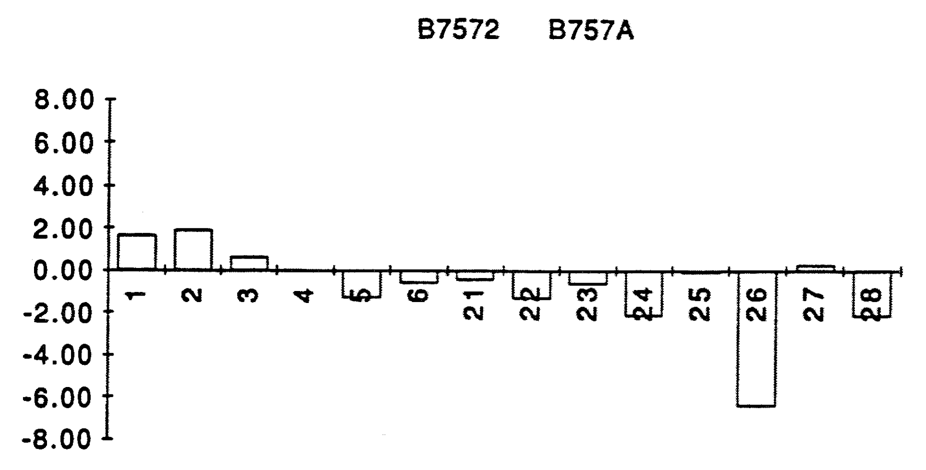


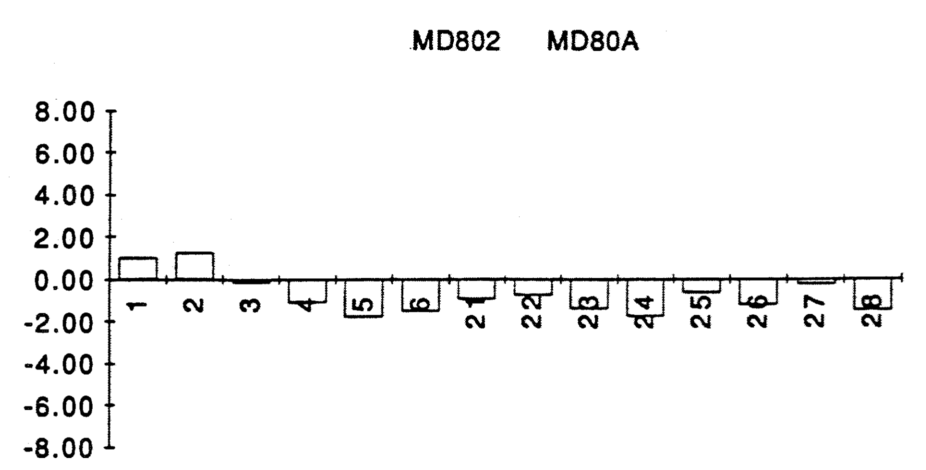
Exhibit 5

Range of Radar Around John Wayne Airport

3RD QTR RELATIVE TO 1ST QTR 1992

70192	93092
11392	33192
CHANGE	B7572:A
1	1.67
2	1.89
3	0.63
4	-0.04
5	-1.31
6	-0.62
21	-0.47
22	-1.34
23	-0.64
24	-2.16
25	-0.10
26	-6.41
27	0.29
28	-2.16
CHANGE	B7572
1	3.72
2	3.63
3	2.31
4	2.05
5	-1.81
6	1.17
21	1.24
22	1.37
23	1.15
24	0.44
25	1.99
26	-1.38
27	4.75
28	-0.49
CHANGE	MD802
1	1.03
2	1.25
3	-0.16
4	-1.12
5	-1.79
6	-1.53
21	-0.93
22	-0.76
23	-1.38
24	-1.76
25	-0.65
26	-1.22
27	-0.25
28	-1.48





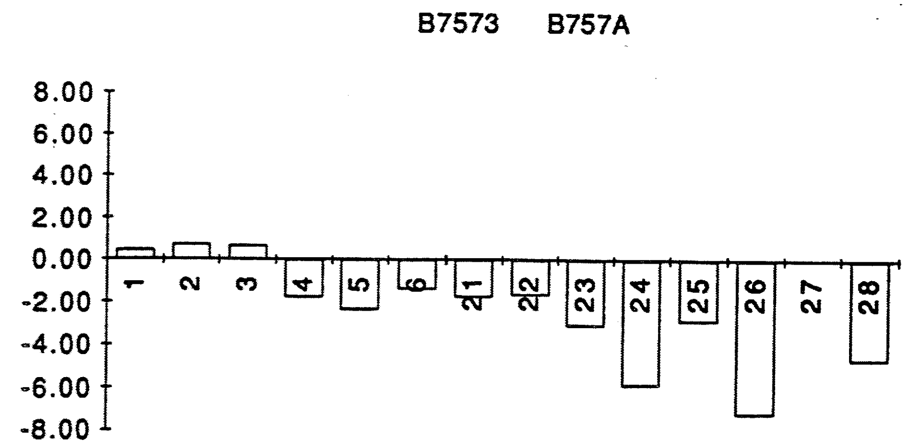
MESTRE GREVE ASSOCIATES

Exhibit 6-a

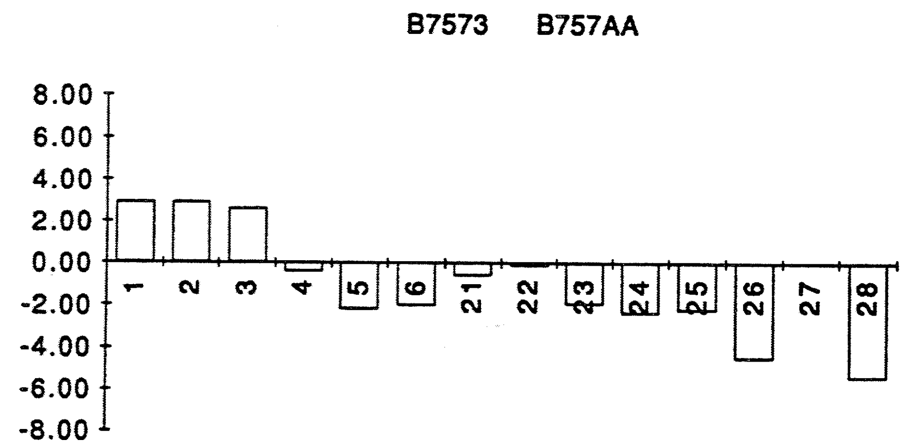
Change in SENEL Relative to First Quarter

3RD QTR RELATIVE TO 1ST QTR 1992

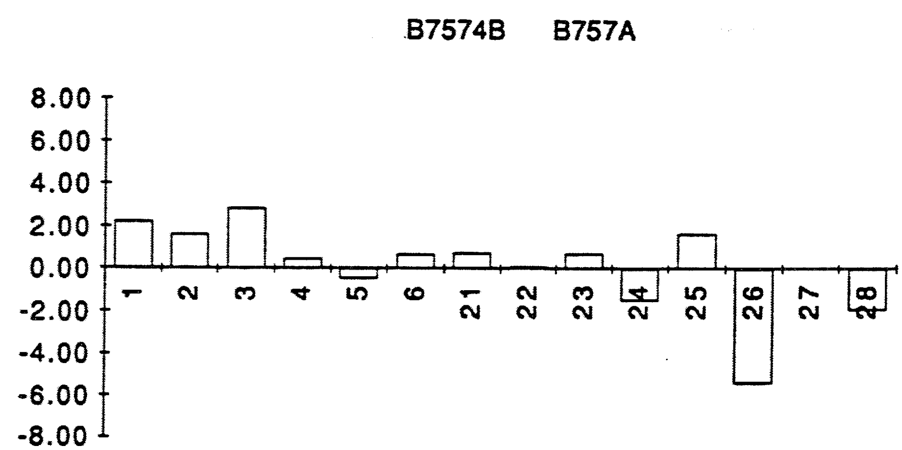
CHANGE	B7573
1	0.47
2	0.73
3	0.68
4	-1.76
5	-2.35
6	-1.37
21	-1.73
22	-1.66
23	-3.06
24	-5.85
25	-2.87
26	-7.24
27	0.00
28	-4.68



CHANGE	B7573
1	2.92
2	2.91
3	2.64
4	-0.40
5	-2.17
6	-2.01
21	-0.59
22	-0.14
23	-1.94
24	-2.36
25	-2.19
26	-4.46
27	0.00
28	-5.38



CHANGE	B7574B
1	2.24
2	1.63
3	2.86
4	0.47
5	-0.46
6	0.67
21	0.74
22	0.11
23	0.70
24	-1.51
25	1.66
26	-5.38
27	0.00
28	-1.94



MESTRE GREVE ASSOCIATES

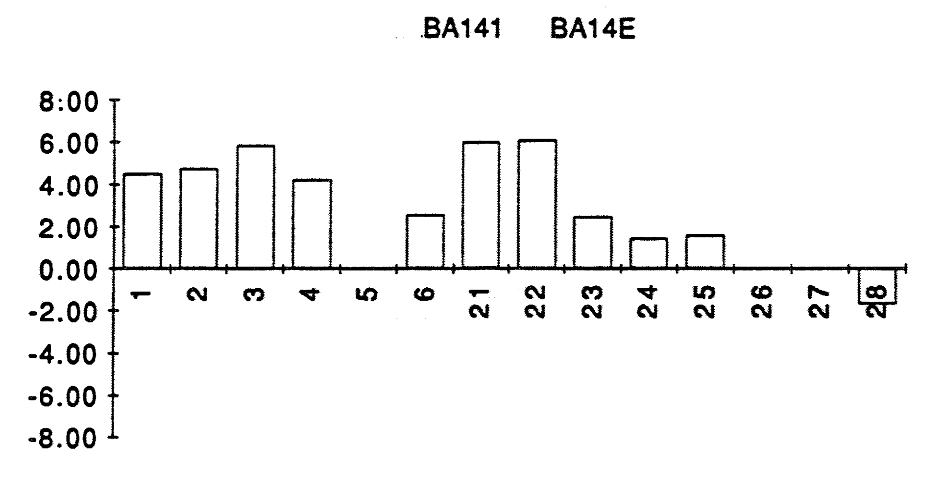
Exhibit 6-b

Change in SENEL Relative to First Quarter

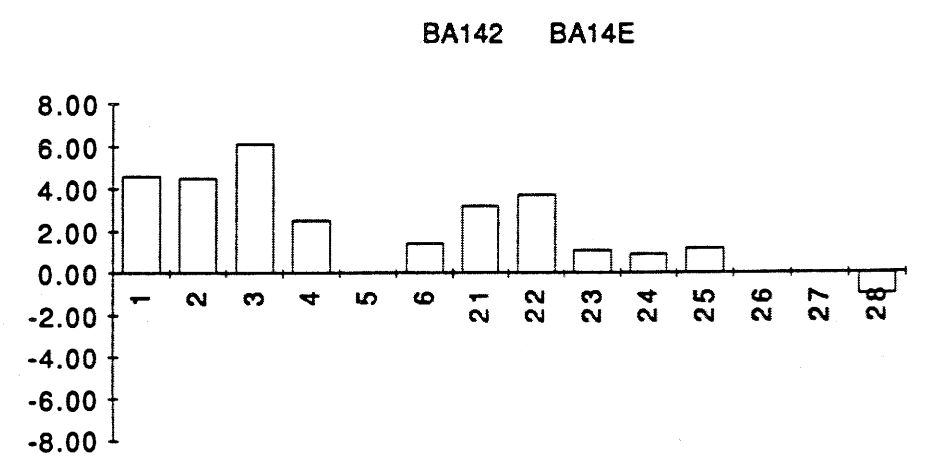
3RD QTR RELATIVE TO 1ST QTR 1992

CHANGE	B7574B
1	4.70
2	3.81
3	4.82
4	1.83
5	-0.28
6	0.04
21	1.88
22	1.62
23	1.82
24	1.99
25	2.34
26	-2.60
27	0.00
28	-2.64

CHANGE	BA141
1	4.52
2	4.76
3	5.85
4	4.23
5	0.00
6	2.57
21	6.00
22	6.08
23	2.49
24	1.45
25	1.60
26	0.00
27	0.00
28	-1.64



CHANGE	BA142
1	4.63
2	4.53
3	6.14
4	2.51
5	0.00
6	1.43
21	3.22
22	3.72
23	1.10
24	0.92
25	1.21
26	0.00
27	0.00
28	-1.03



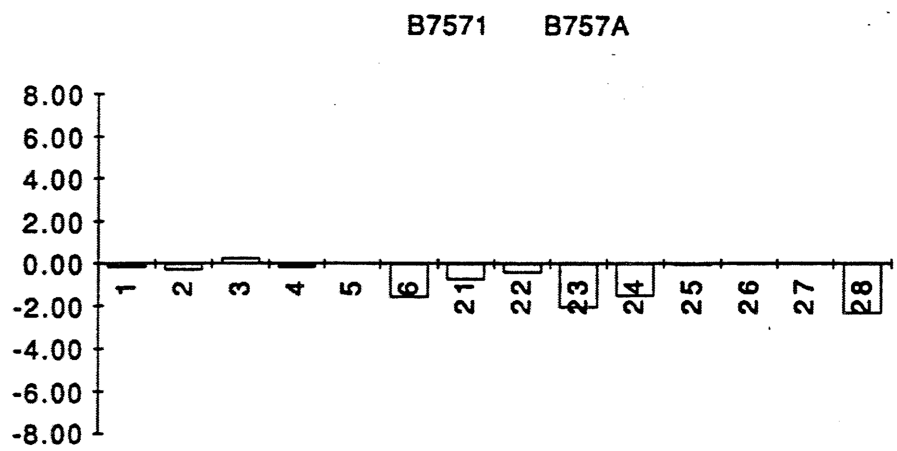
MESTRE GREVE ASSOCIATES

Exhibit 6-c

Change in SENEL Relative to First Quarter

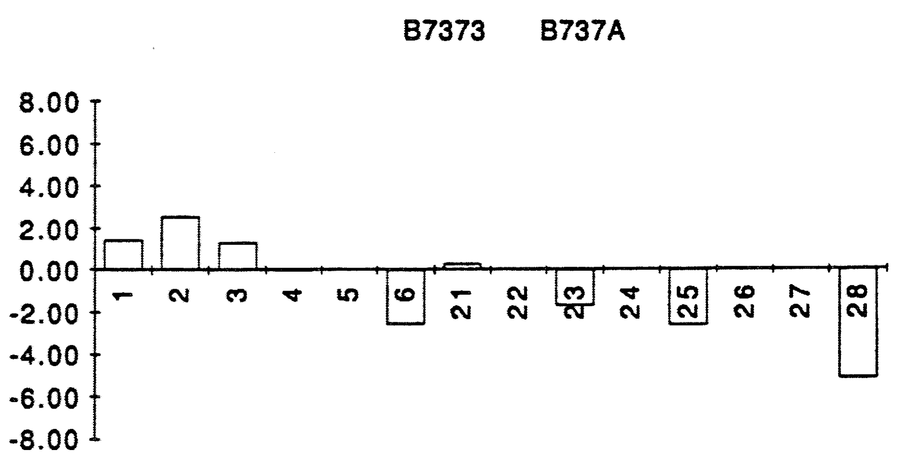
3RD QTR RELATIVE TO 1ST QTR 1992

CHANGE	B7571
1	-0.16
2	-0.31
3	0.26
4	-0.17
5	0.00
6	-1.61
21	-0.74
22	-0.42
23	-2.09
24	-1.52
25	-0.04
26	0.00
27	0.00
28	-2.35



CHANGE	B7575
1	2.56
2	2.87
3	2.73
4	0.75
5	1.38
6	-2.67
21	1.19
22	1.83
23	-1.45
24	-1.95
25	-1.05
26	0.00
27	0.00
28	-3.73

CHANGE	B7373
1	1.41
2	2.54
3	1.31
4	0.02
5	0.00
6	-2.61
21	0.29
22	0.00
23	-1.71
24	0.00
25	-2.66
26	0.00
27	0.00
28	-5.19



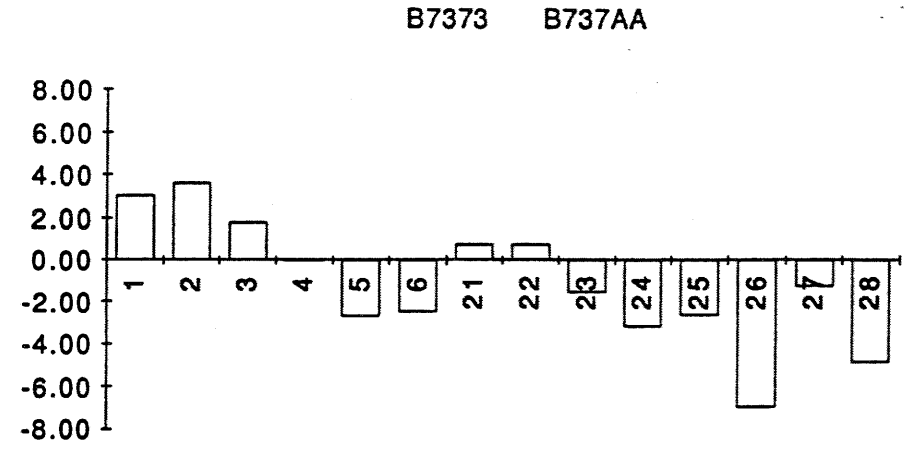
MESTRE GREVE ASSOCIATES

Exhibit 6-d

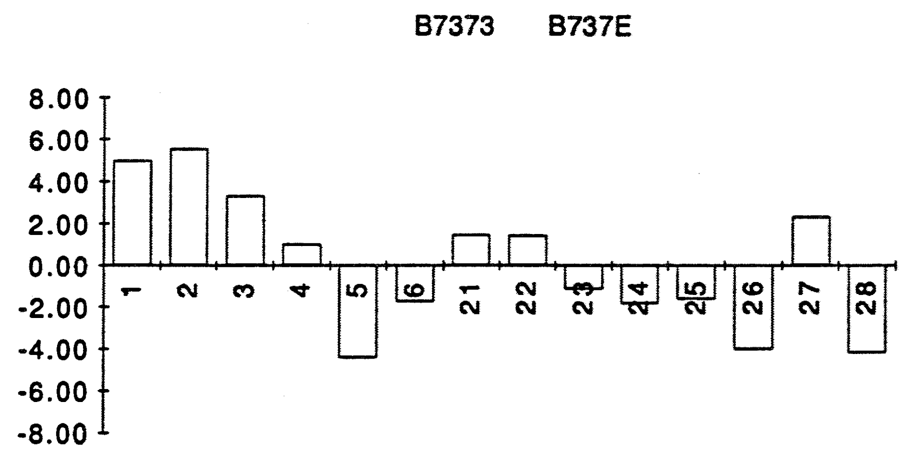
Change in SENEL Relative to First Quarter

3RD QTR RELATIVE TO 1ST QTR 1992

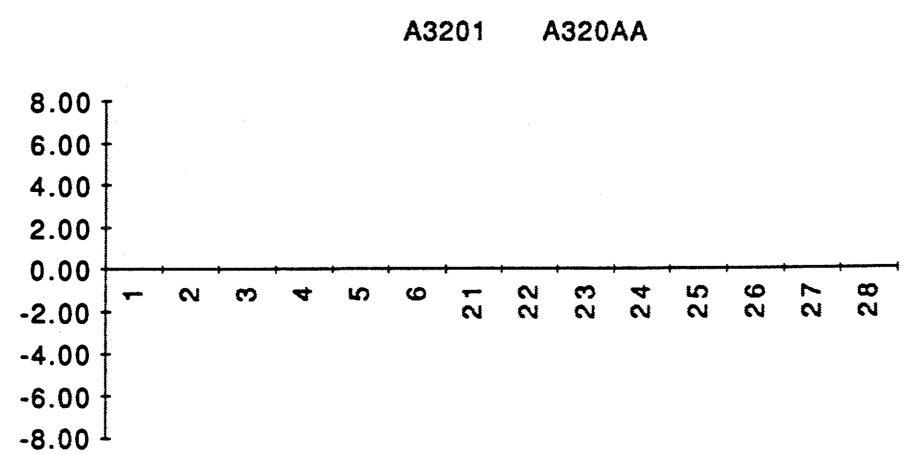
CHANGE	AWB7373
1	3.04
2	3.61
3	1.81
4	0.02
5	-2.73
6	-2.49
21	0.76
22	0.76
23	-1.57
24	-3.20
25	-2.65
26	-6.98
27	-1.26
28	-4.85



CHANGE	B7373
1	5.00
2	5.55
3	3.33
4	1.01
5	-4.41
6	-1.74
21	1.49
22	1.45
23	-1.13
24	-1.83
25	-1.59
26	-4.04
27	2.35
28	-4.21



CHANGE	A3201
1	0.00
2	0.00
3	0.00
4	0.00
5	0.00
6	0.00
21	0.00
22	0.00
23	0.00
24	0.00
25	0.00
26	0.00
27	0.00
28	0.00



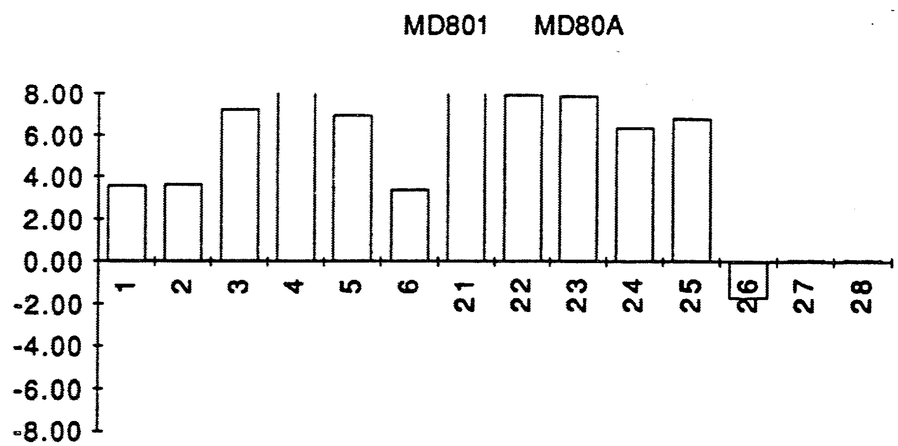
MESTRE GREVE ASSOCIATES

Exhibit 6-e

Change in SENEL Relative to First Quarter

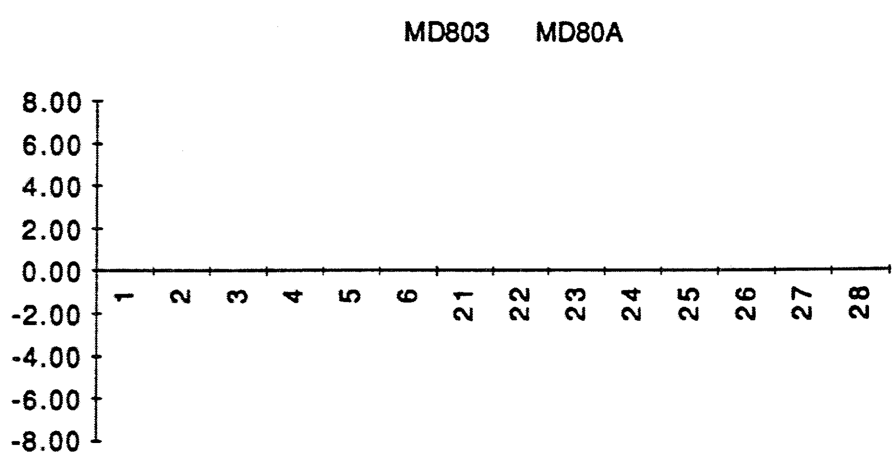
3RD QTR RELATIVE TO 1ST QTR 1992

CHANGE	MD801
1	3.57
2	3.64
3	7.23
4	8.98
5	6.94
6	3.42
21	9.71
22	7.98
23	7.92
24	6.36
25	6.82
26	-1.72
27	0.09
28	0.10



CHANGE	B7375
1	1.71
2	1.52
3	1.86
4	0.85
5	0.37
6	-0.54
21	0.86
22	0.89
23	-0.08
24	-1.28
25	-0.09
26	-3.24
27	-1.63
28	-1.63

CHANGE	MD803
1	0.00
2	0.00
3	0.00
4	0.00
5	0.00
6	0.00
21	0.00
22	0.00
23	0.00
24	0.00
25	0.00
26	0.00
27	0.00
28	0.00



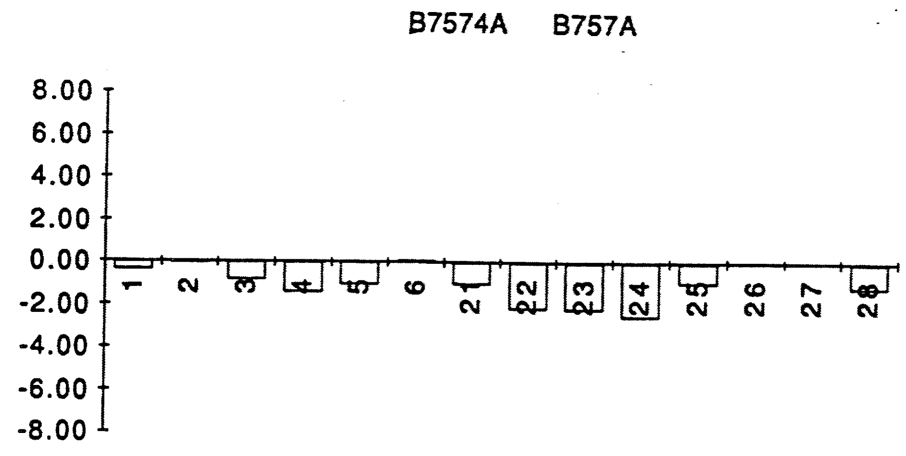
MESTRE GREVE ASSOCIATES

Exhibit 6-f

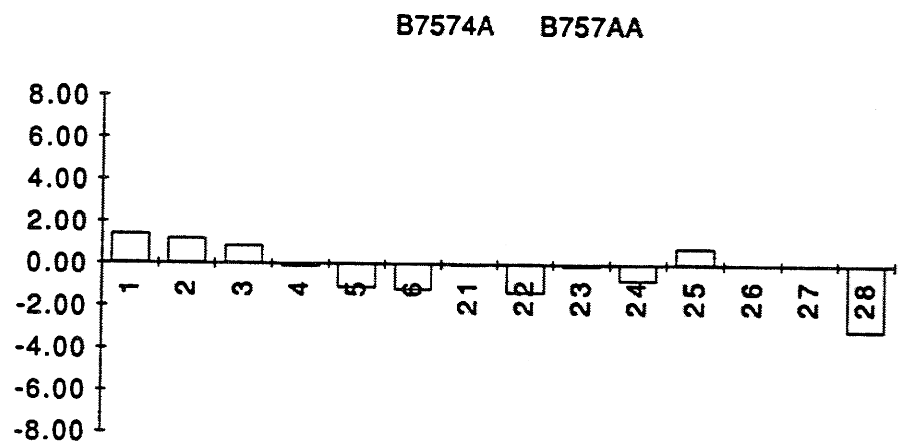
Change in SENEL Relative to First Quarter

3RD QTR RELATIVE TO 1ST QTR 1992

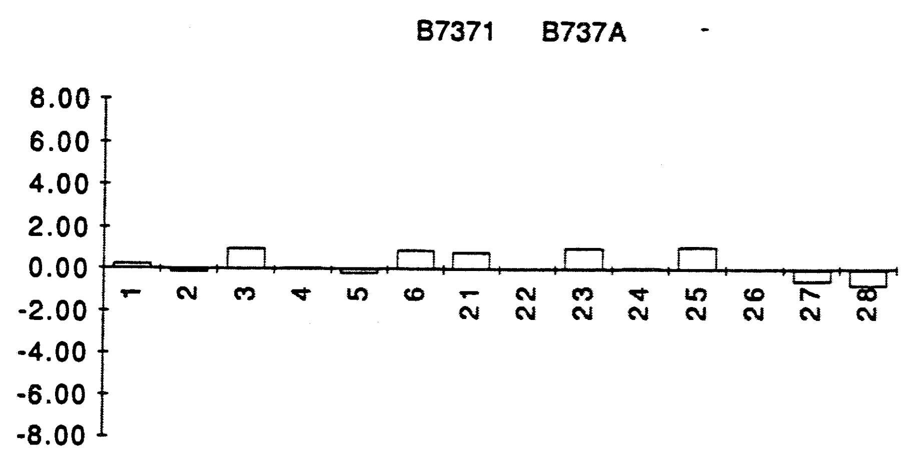
CHANGE	B7574A
1	-0.40
2	-0.04
3	-0.82
4	-1.39
5	-1.05
6	0.10
21	-1.01
22	-2.18
23	-2.20
24	-2.51
25	-0.98
26	0.00
27	0.00
28	-1.17



CHANGE	B7574A
1	1.43
2	1.24
3	0.87
4	-0.14
5	-1.15
6	-1.21
21	-0.04
22	-1.34
23	-0.11
24	-0.76
25	0.81
26	0.00
27	0.00
28	-3.11



CHANGE	B7371
1	0.25
2	-0.12
3	1.02
4	0.08
5	-0.19
6	0.91
21	0.82
22	0.00
23	1.06
24	0.09
25	1.10
26	0.00
27	-0.57
28	-0.75



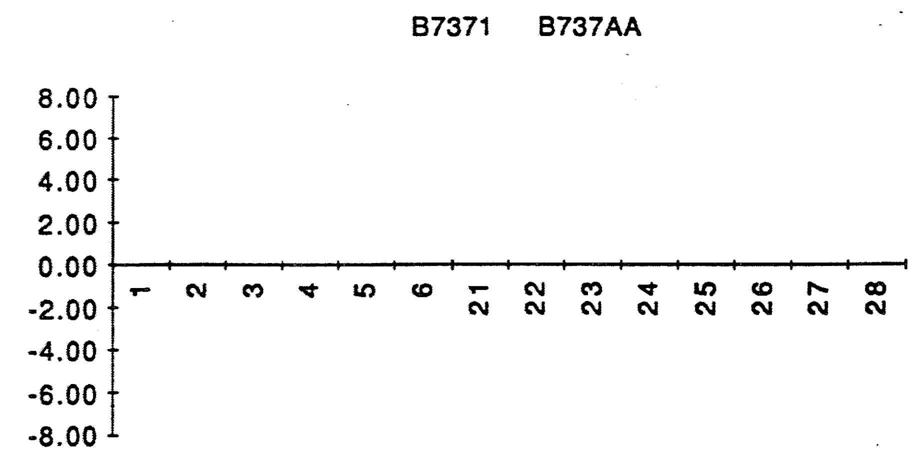
MESTRE GREVE ASSOCIATES

Exhibit 6-g

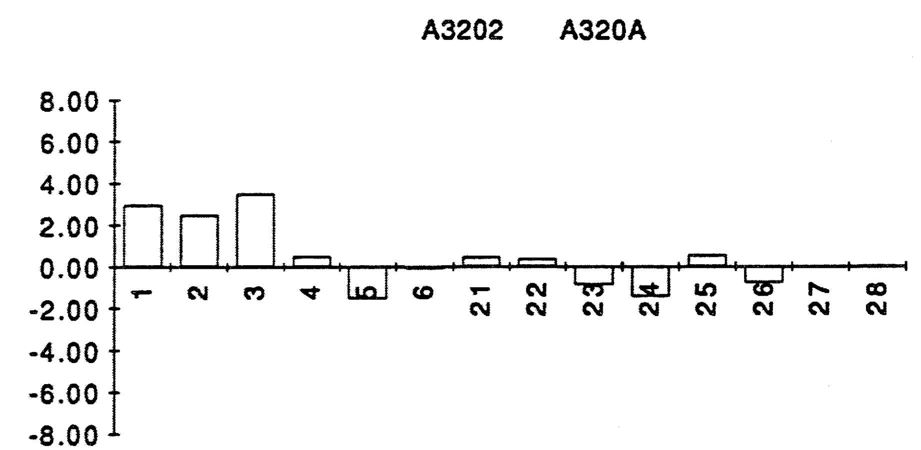
Change in SENEL Relative to First Quarter

3RD QTR RELATIVE TO 1ST QTR 1992

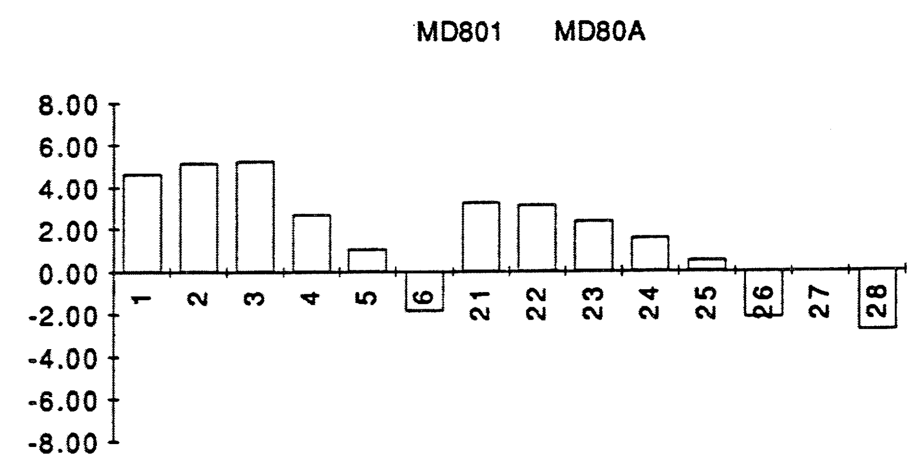
CHANGE	B7371
1	0.00
2	0.00
3	0.00
4	0.00
5	0.00
6	0.00
21	0.00
22	0.00
23	0.00
24	0.00
25	0.00
26	0.00
27	0.00
28	0.00



CHANGE	A3202
1	2.95
2	2.49
3	3.48
4	0.51
5	-1.49
6	-0.09
21	0.47
22	0.38
23	-0.82
24	-1.42
25	0.57
26	-0.75
27	0.00
28	0.03



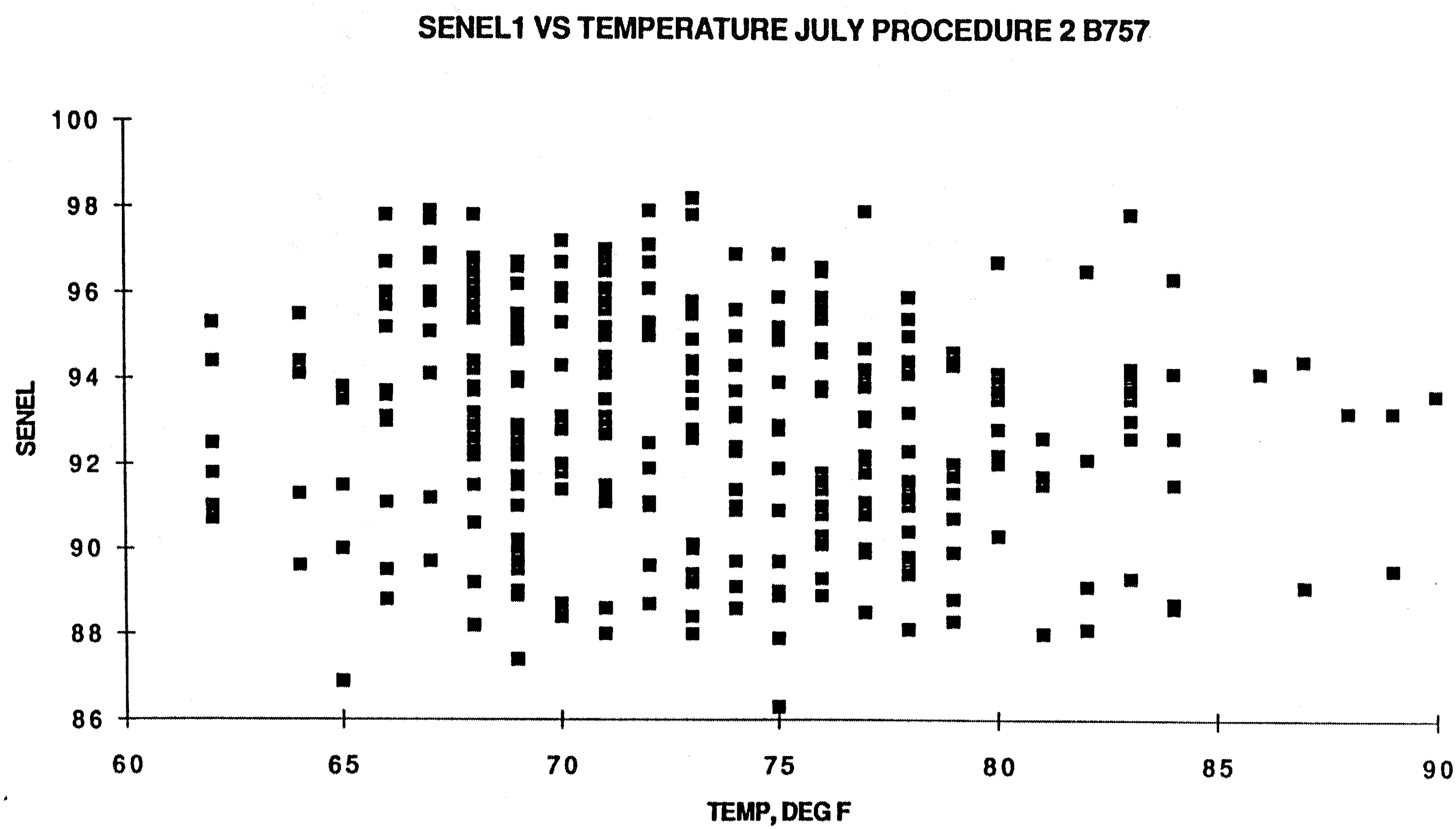
CHANGE	MD80A
1	4.65
2	5.13
3	5.26
4	2.71
5	1.06
6	-1.87
21	3.28
22	3.15
23	2.38
24	1.58
25	0.52
26	-2.20
27	0.00
28	-2.82



MESTRE GREVE ASSOCIATES

Exhibit 6-h

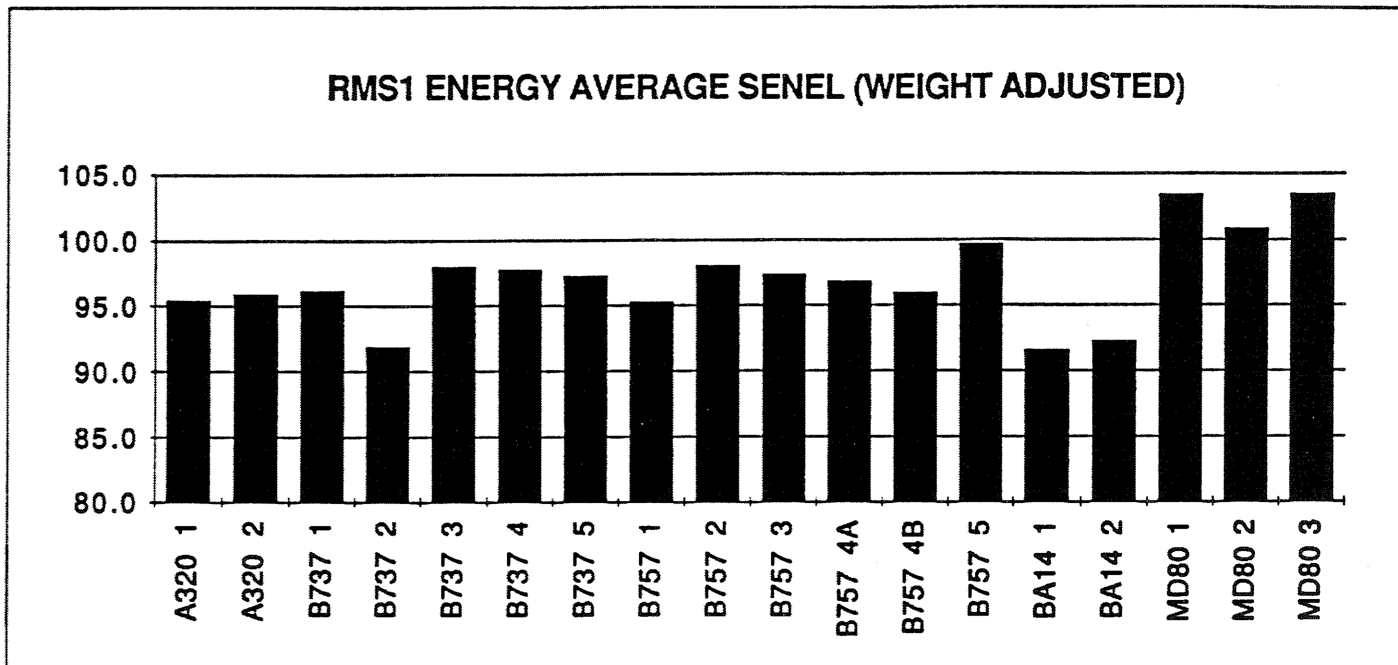
Change in SENEL Relative to First Quarter

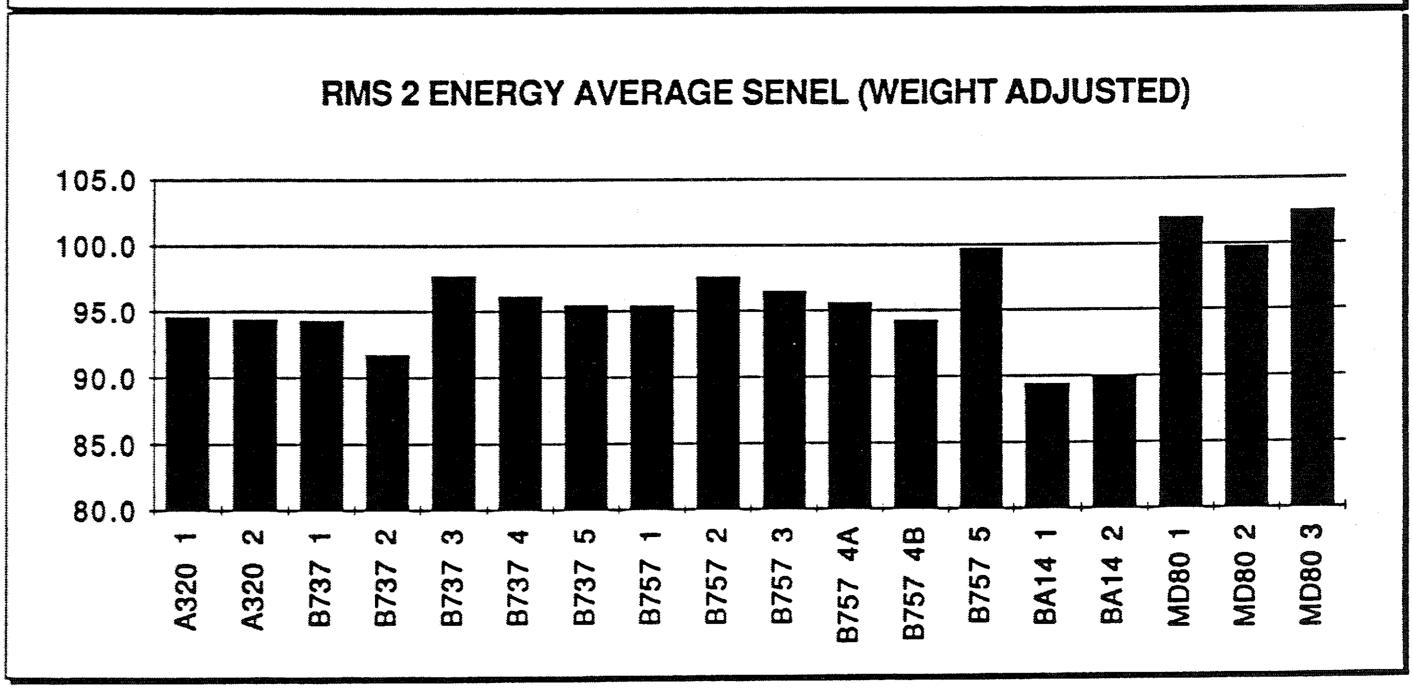


MESTRE GREVE ASSOCIATES

Exhibit 7

Example of Temperature Effects on SENEL at RMS #1

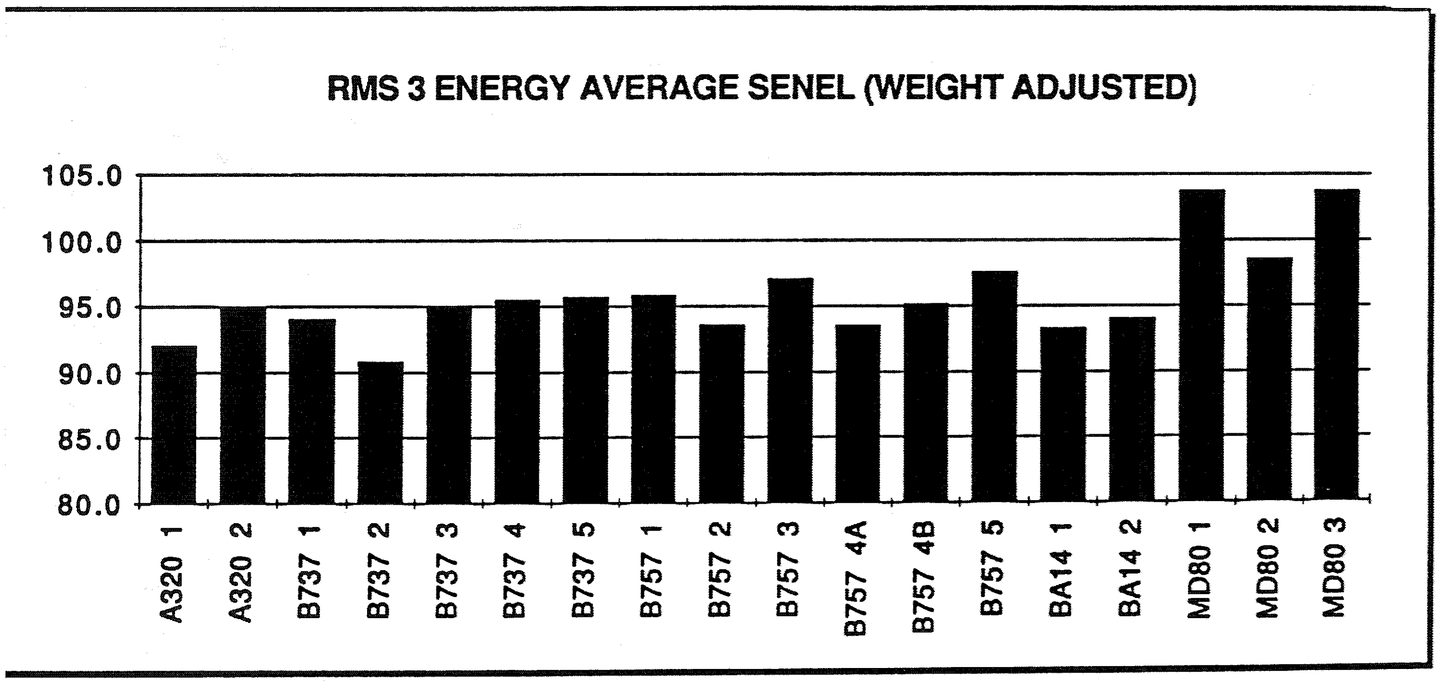




MESTRE GREVE ASSOCIATES

Exhibit 8-a

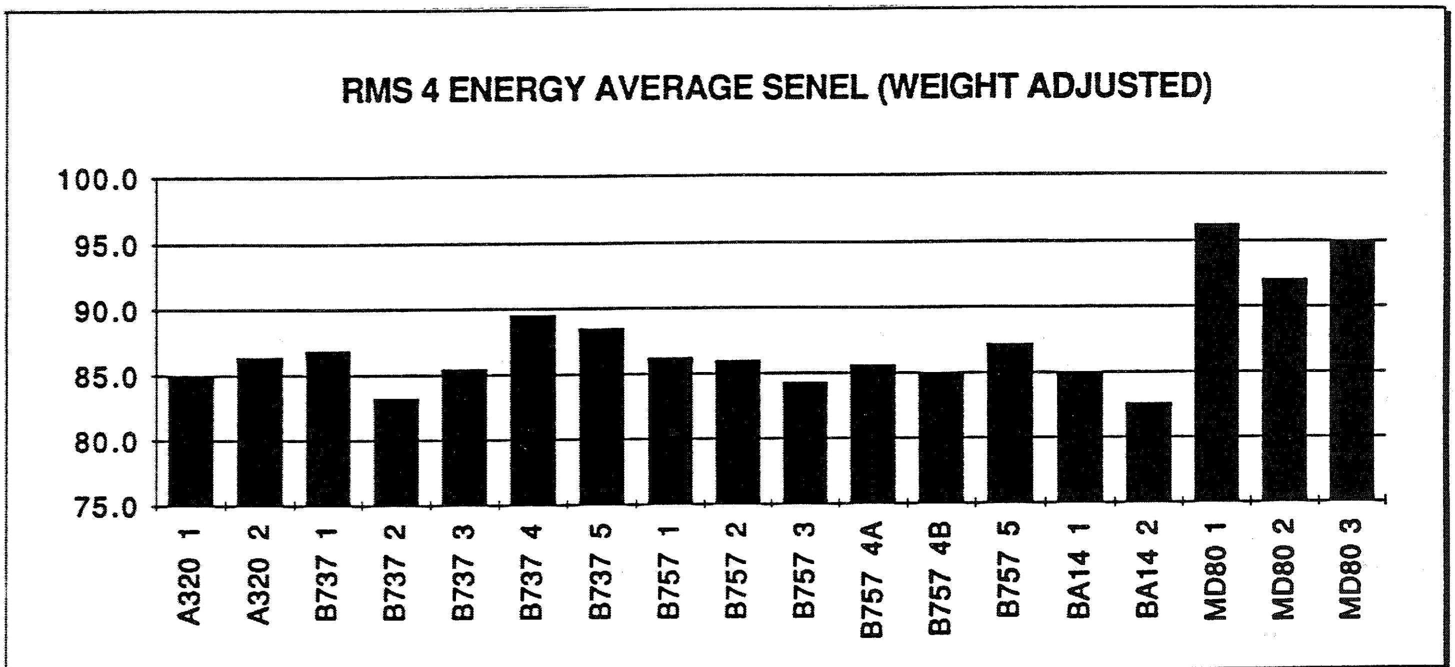
Normalized SENEL Third Quarter

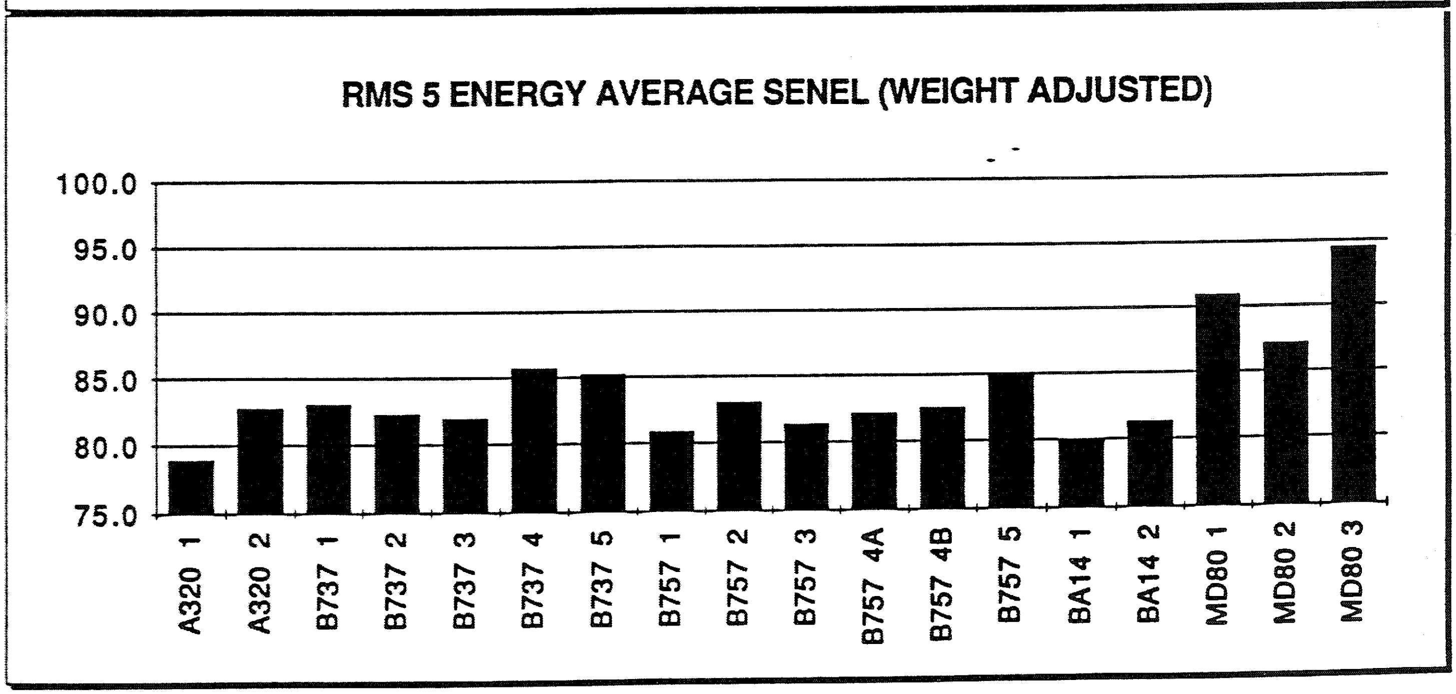


MESTRE GREVE ASSOCIATES

Exhibit 8-b

Normalized SENEL Third Quarter

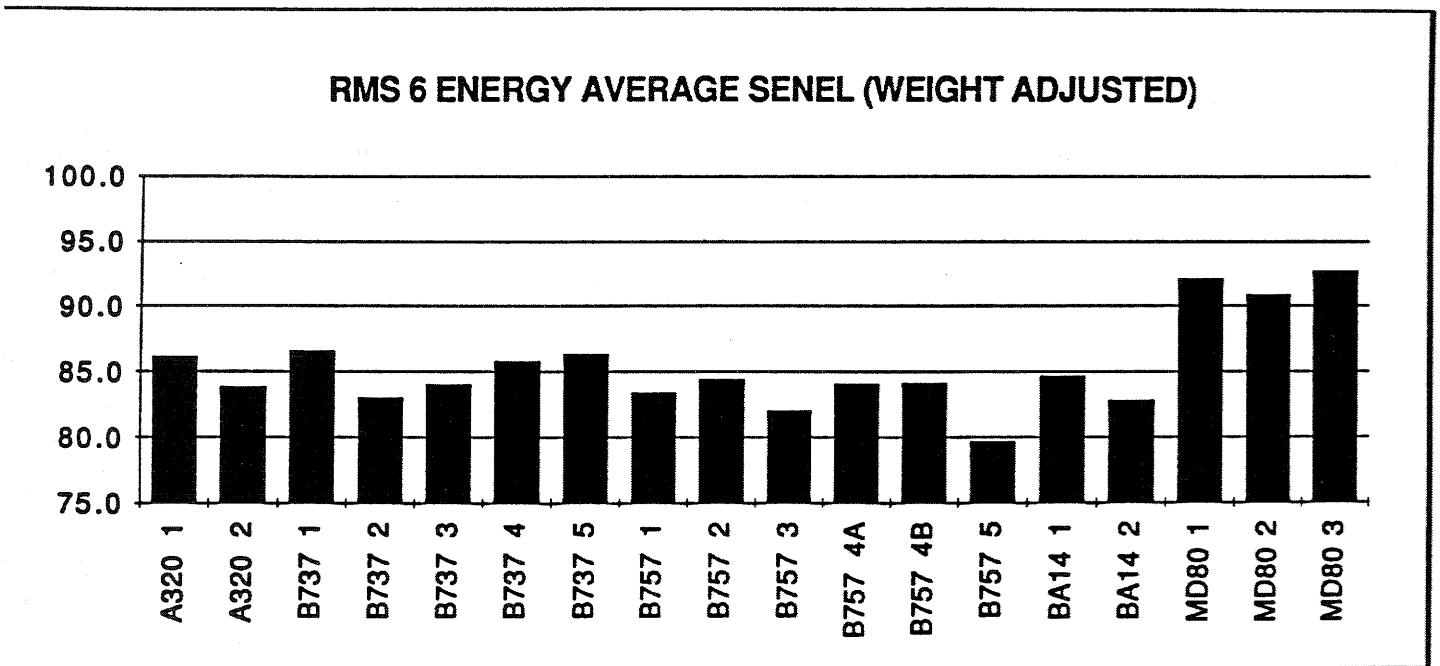




MESTRE GREVE ASSOCIATES

Exhibit 8-c

Normalized SENEL Third Quarter

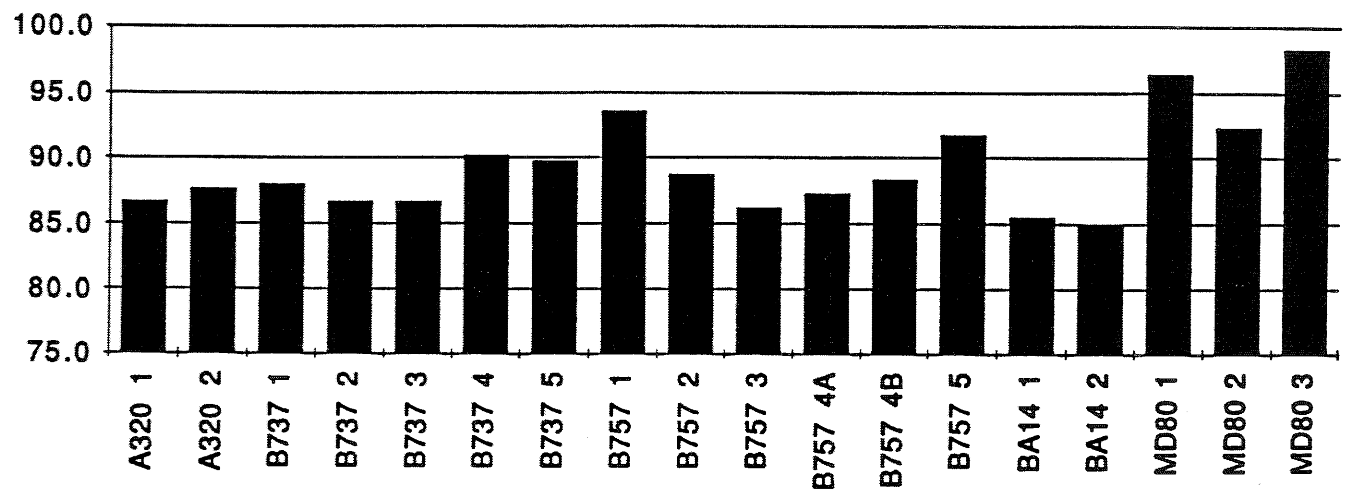


MESTRE GREVE ASSOCIATES

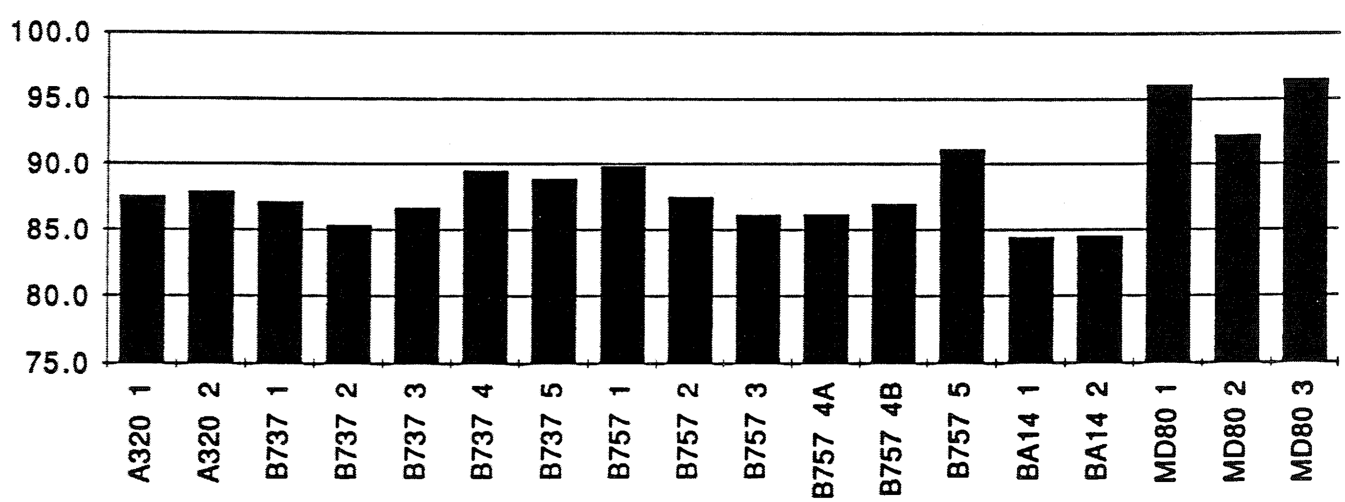
Exhibit 8-d

Normalized SENEL Third Quarter

RMS 21 ENERGY AVERAGE SENEL (WEIGHT ADJUSTED)



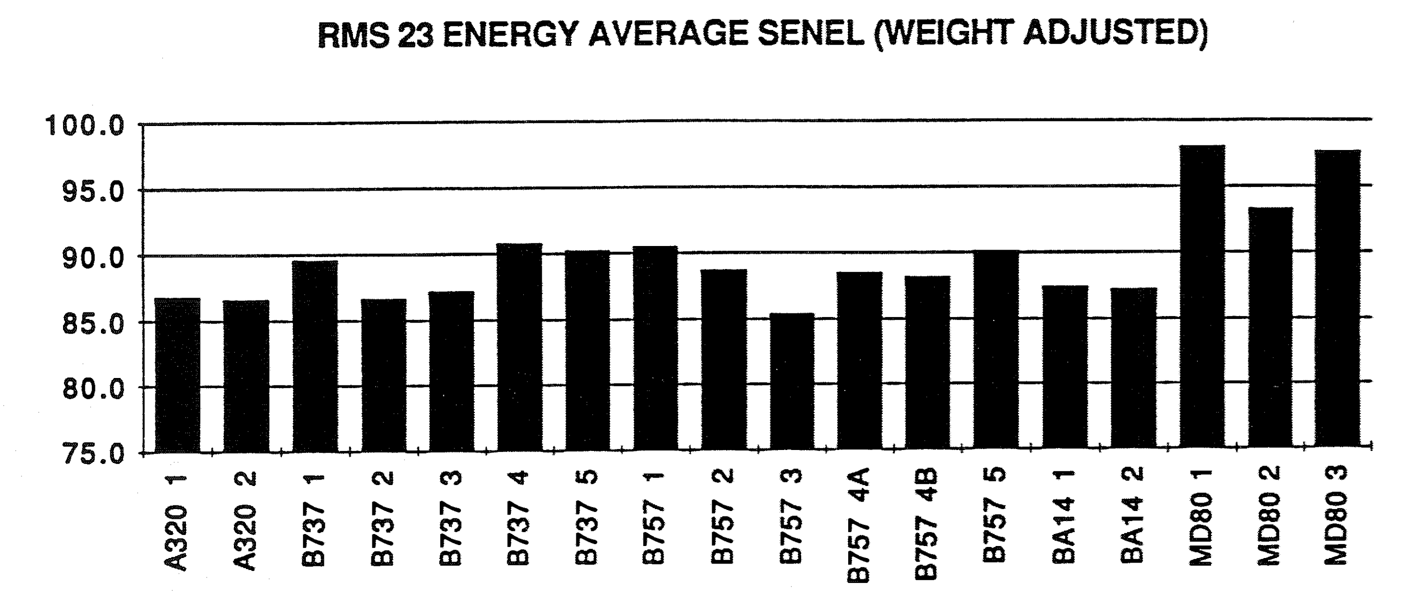
RMS 22 ENERGY AVERAGE SENEL (WEIGHT ADJUSTED)

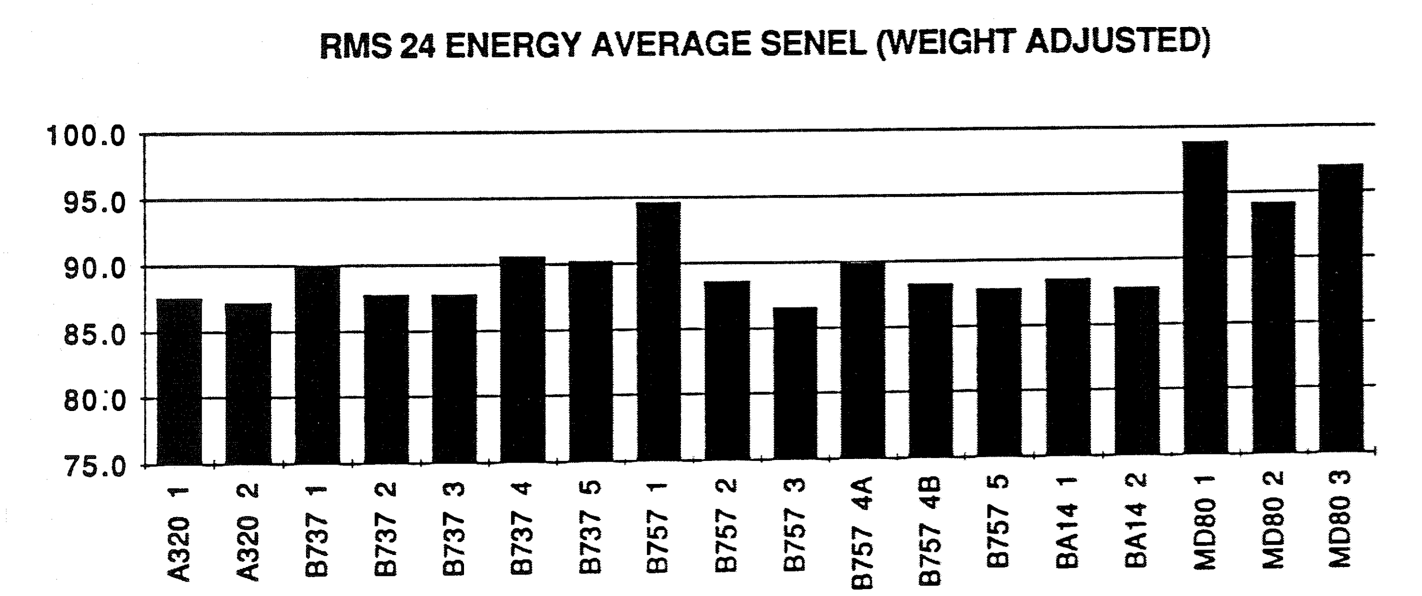


MESTRE GREVE ASSOCIATES

Exhibit 8-e

Normalized SENEL Third Quarter

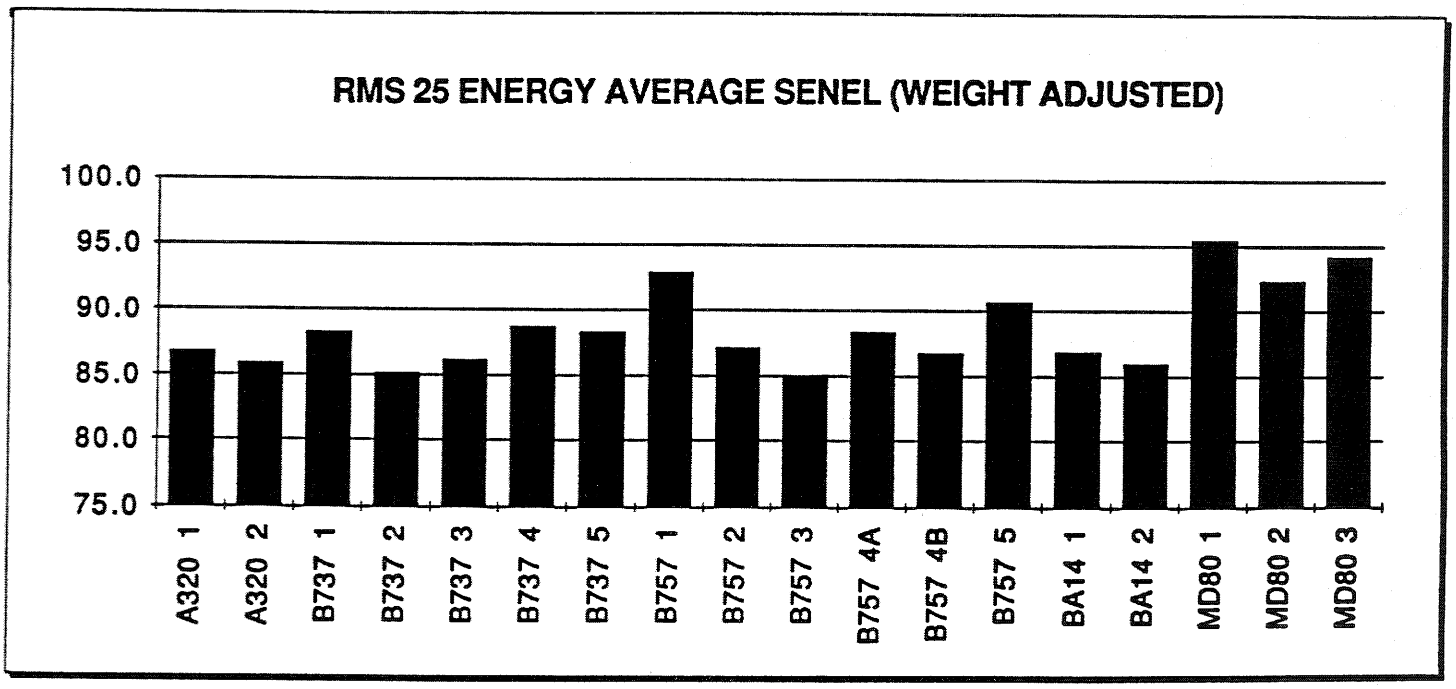




MESTRE GREVE ASSOCIATES

Exhibit 8-f

Normalized SENEL Third Quarter



MESTRE GREVE ASSOCIATES

Exhibit 8-g

Normalized SENEL Third Quarter