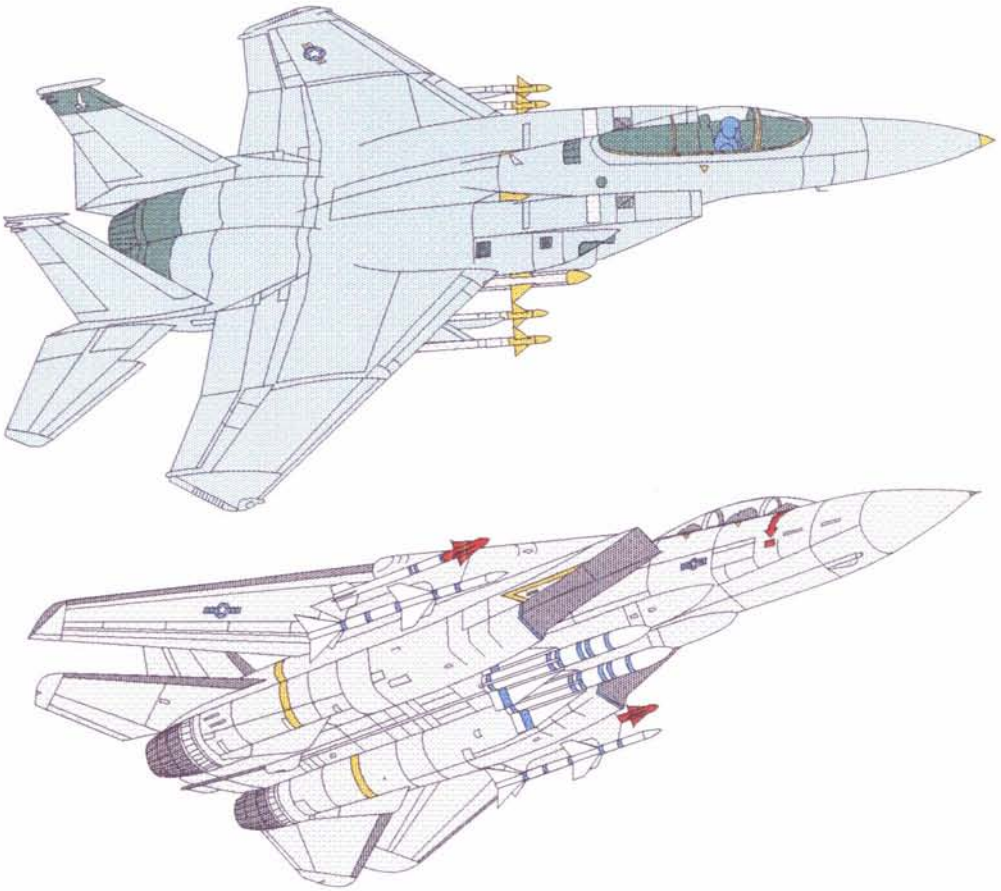
DCN 1231

MOAMAP

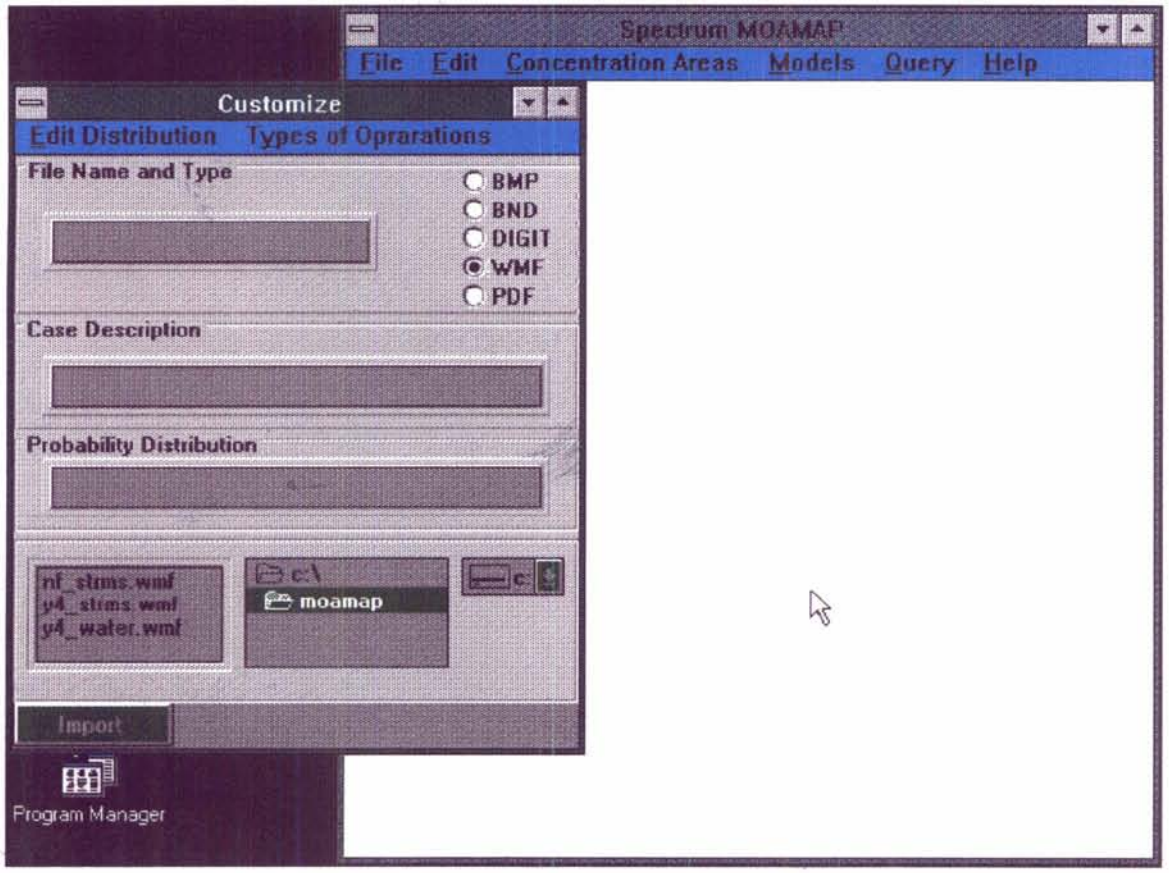
A MODEL FOR AIRCRAFT NOISE IMPACT ASSESSMENTS WITHIN MILITARY OPERATIONS AREAS (MOAs) AND AIR-TO-GROUND WEAPON RANGES



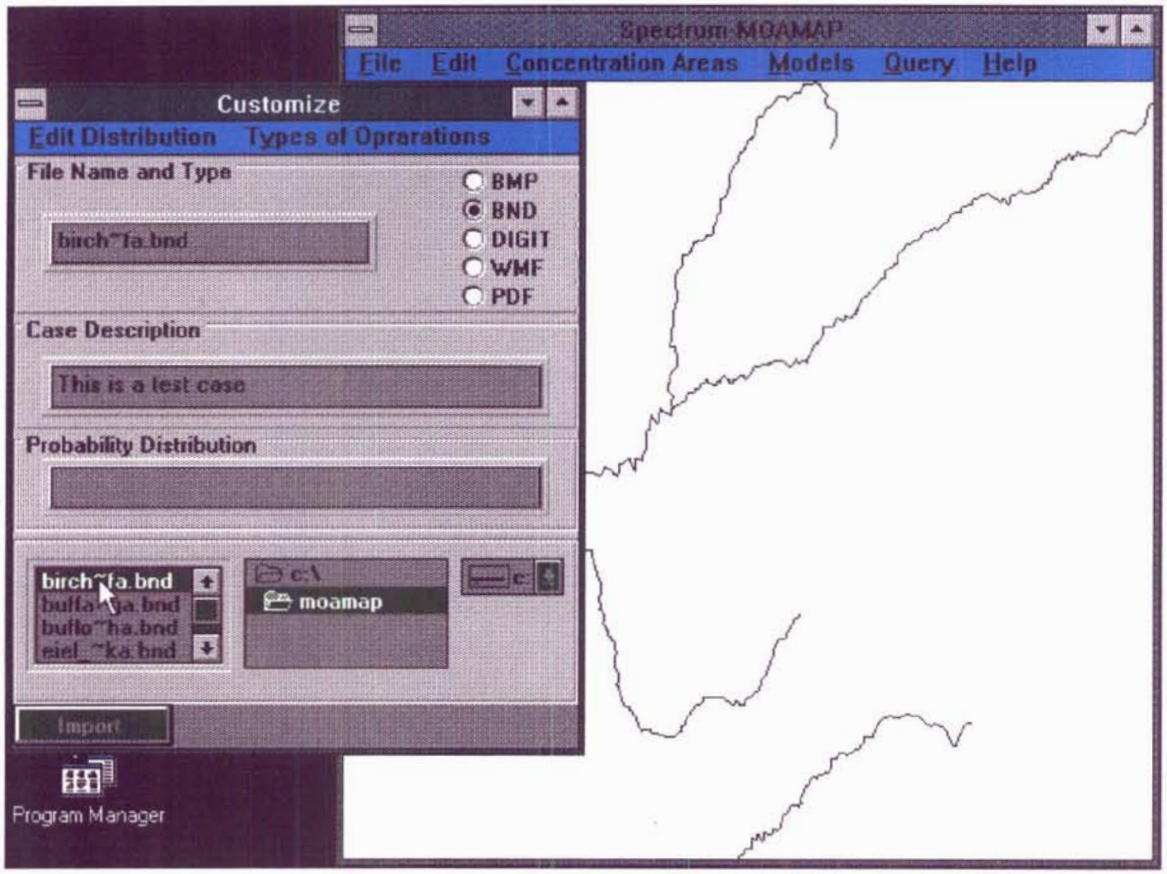
SPECTRUM
SCIENCES & SOFTWARE, INC.

Project GENISIS

- Developed in response to a recognized need
- Started over 2-1/2 years ago
- Over 1-1/2 years of refinement through real problem application
- Continues to evolve in response to end user needs

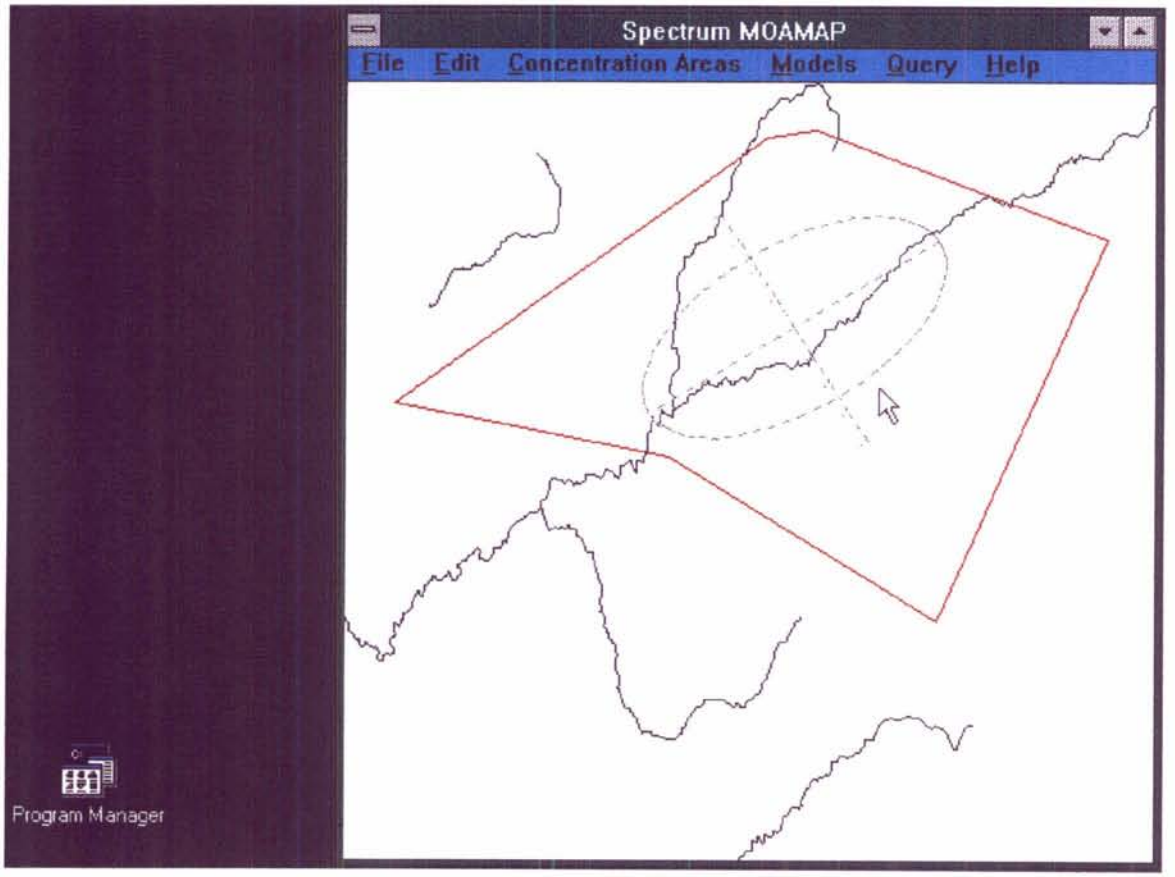


Topographical information can be brought into MOAMAP as Windows MetaFiles. These are used for reference and orientation.

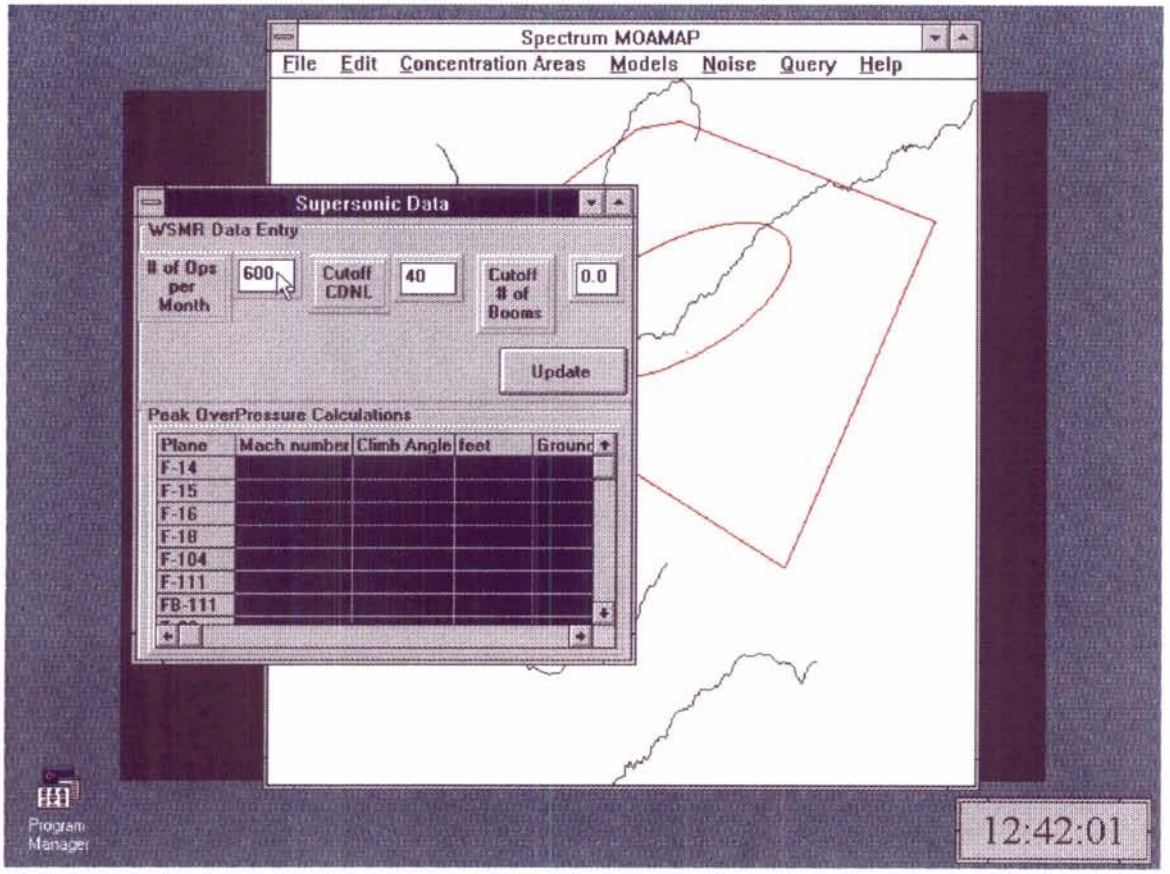


Once the topographic information is displayed the MOA's boundary file is brought in.

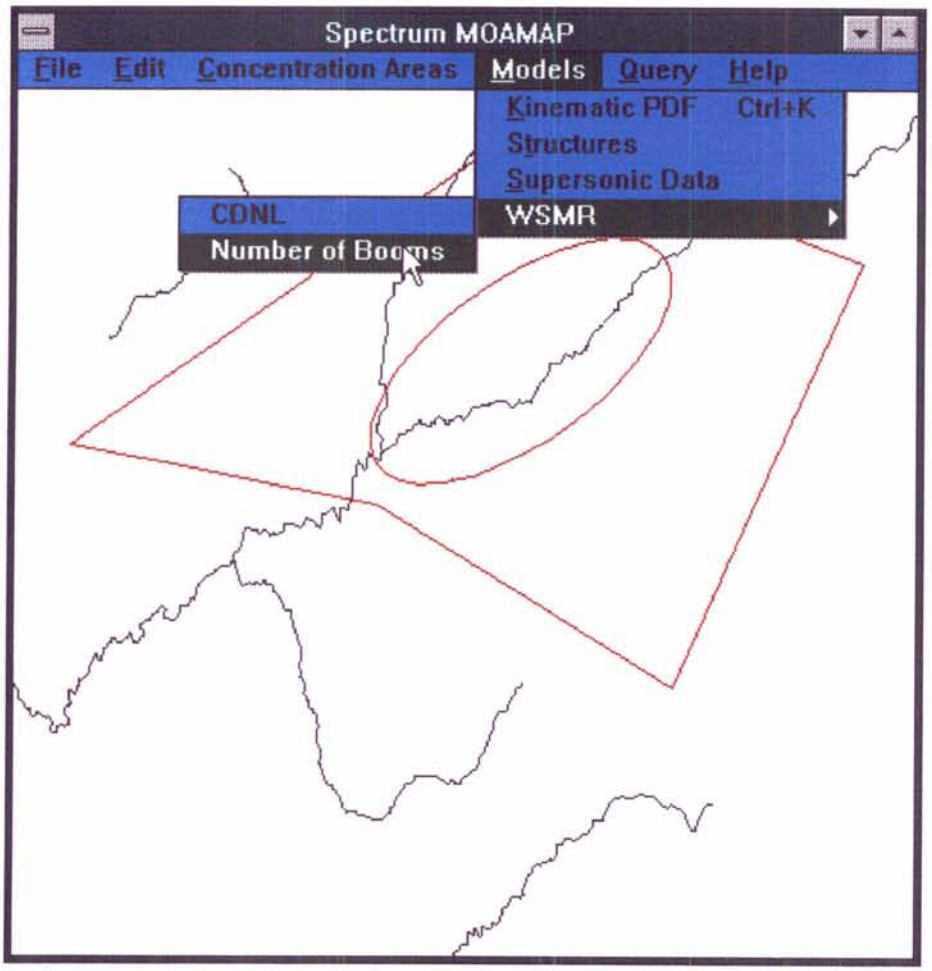
The whole MOA can be used in the generation of the probability distribution used for noise analyses. This is used in cases where little is known about specific areas of concentration, or where the concentration areas change often.



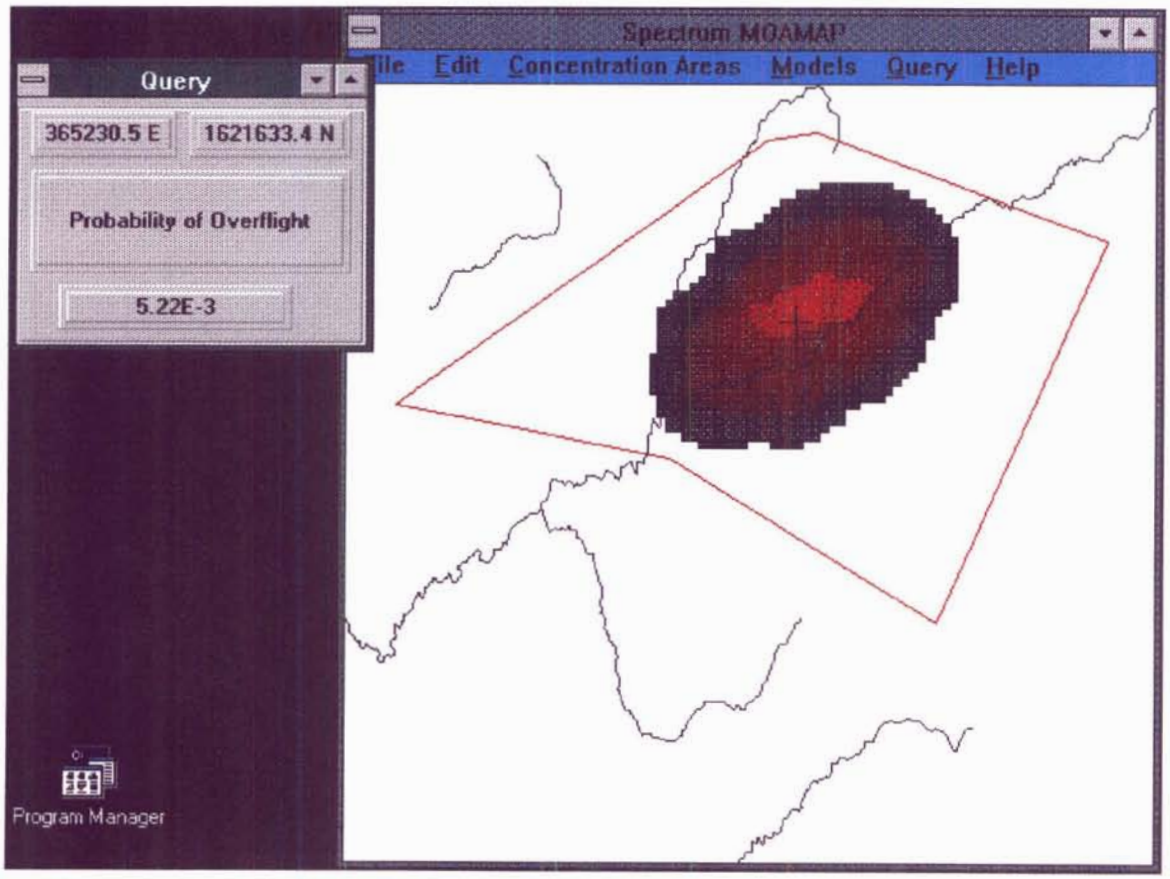
An ellipse can be drawn covering any area of the MOA. This ellipse can be used to calculate a probability distribution to be used for subsonic noise calculations on it can be used to calculate sonic boom metrics.



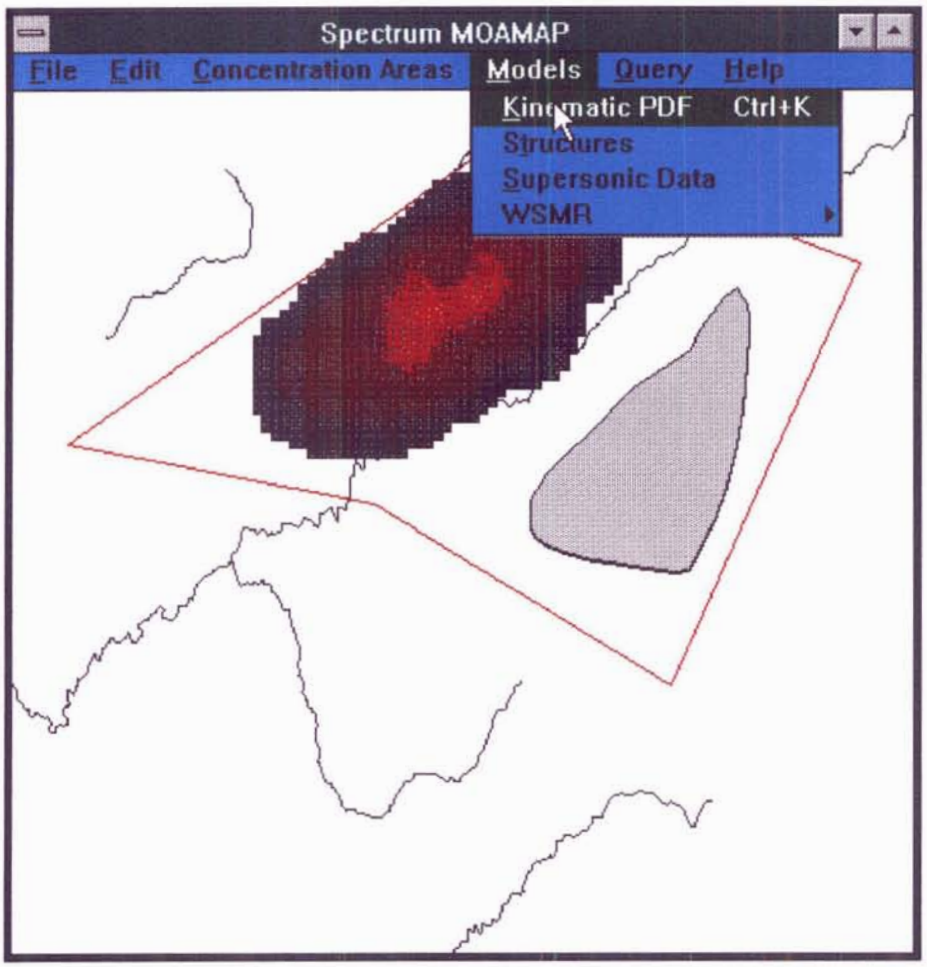
Choosing Supersonic Data for the Models Menu allows the user to input the number of operations per month to be used by the supersonic model. Peak overpressures can also be calculated in this window.



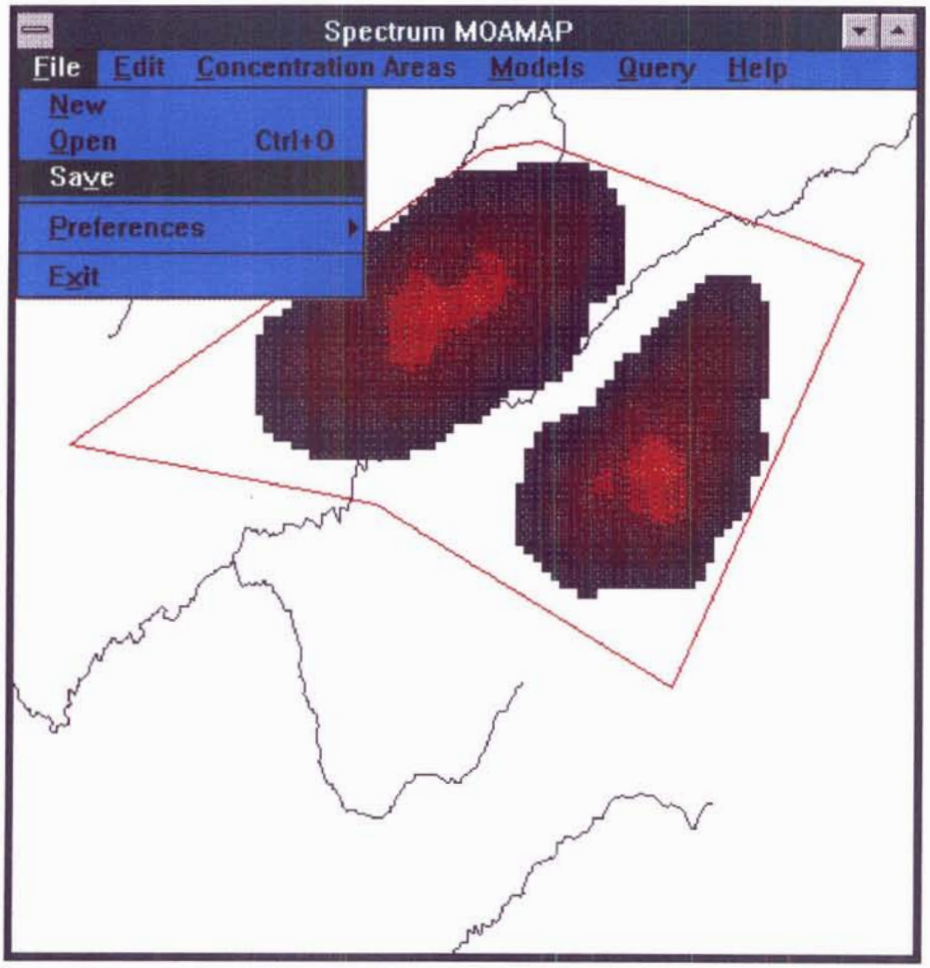
After an ellipse is drawn within the MOA, the White Sands Missile Range Model for supersonic impacts can be executed.



The Query menu option allows the user to determine the probability of overflight, number of booms per day, L_{cdn}, and any of three subsonic noise metrics for a particular location in a MOA. The location coordinates can be given as either Albers (meters) or Latitude/Longitude (degrees).

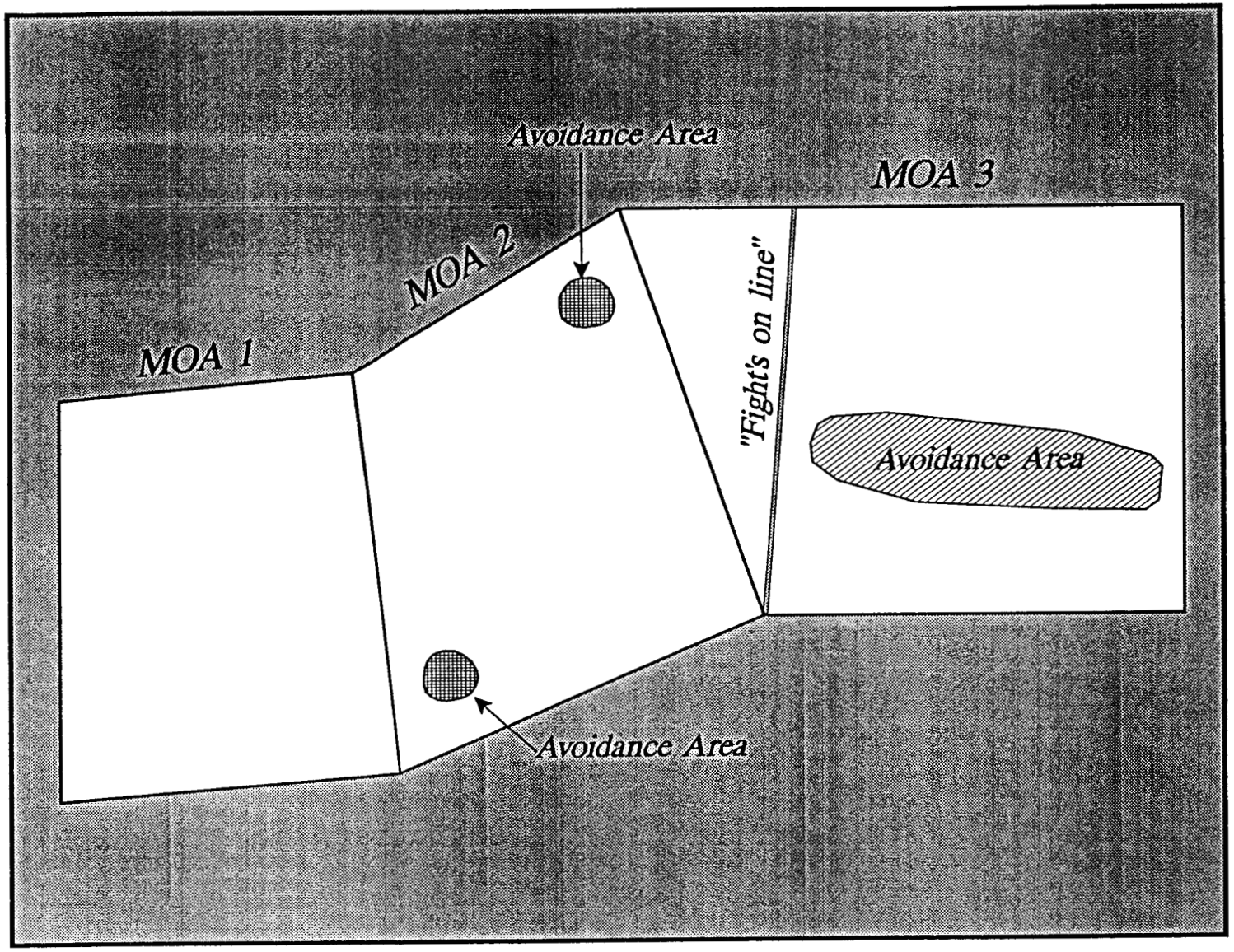


The Kinematic PDF menu option allows the user to simulate the ground tracks of aircraft constrained to the chosen area within the MOA.

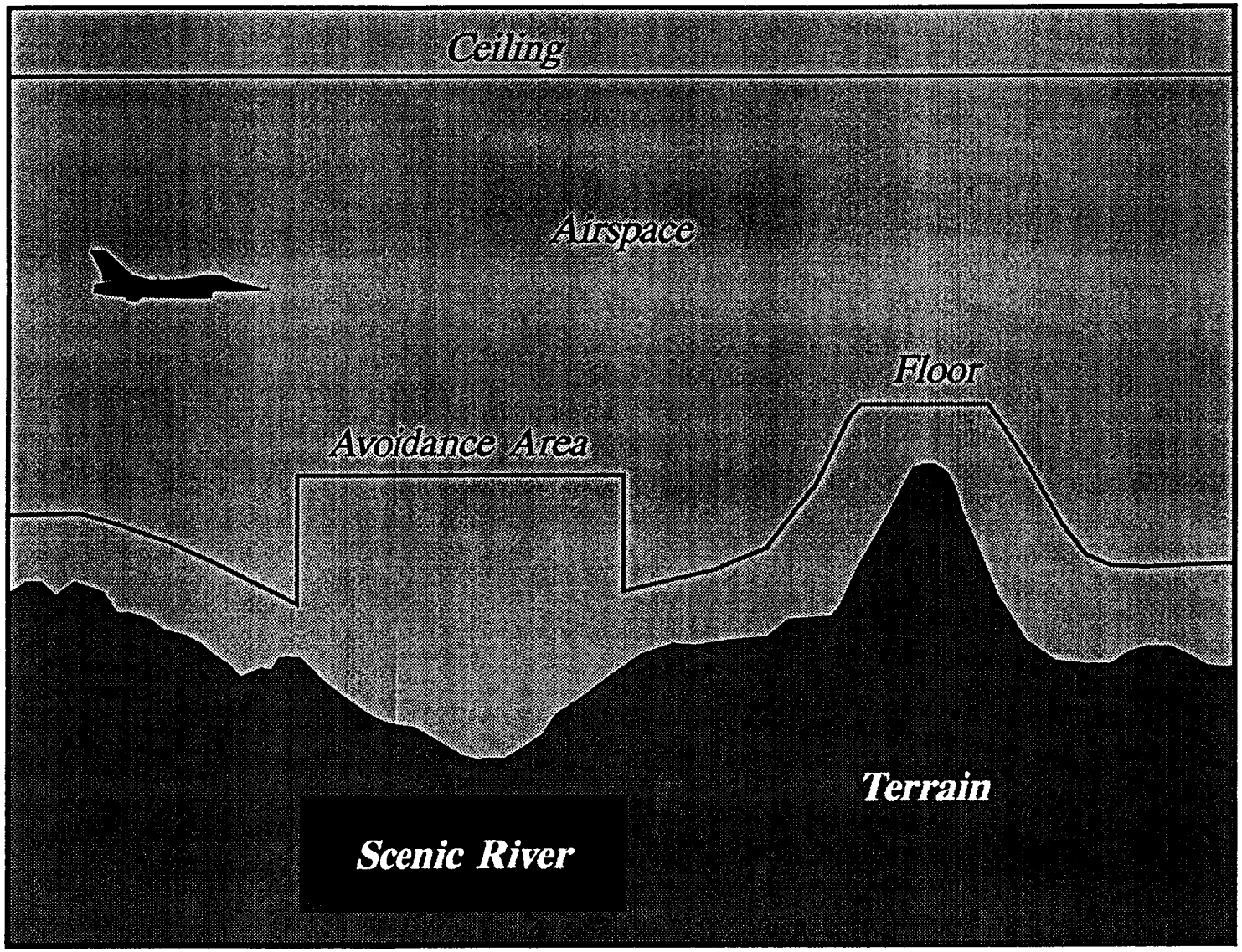


This option allows the user to save the probability distributions or the noise generated using these probability distributions.

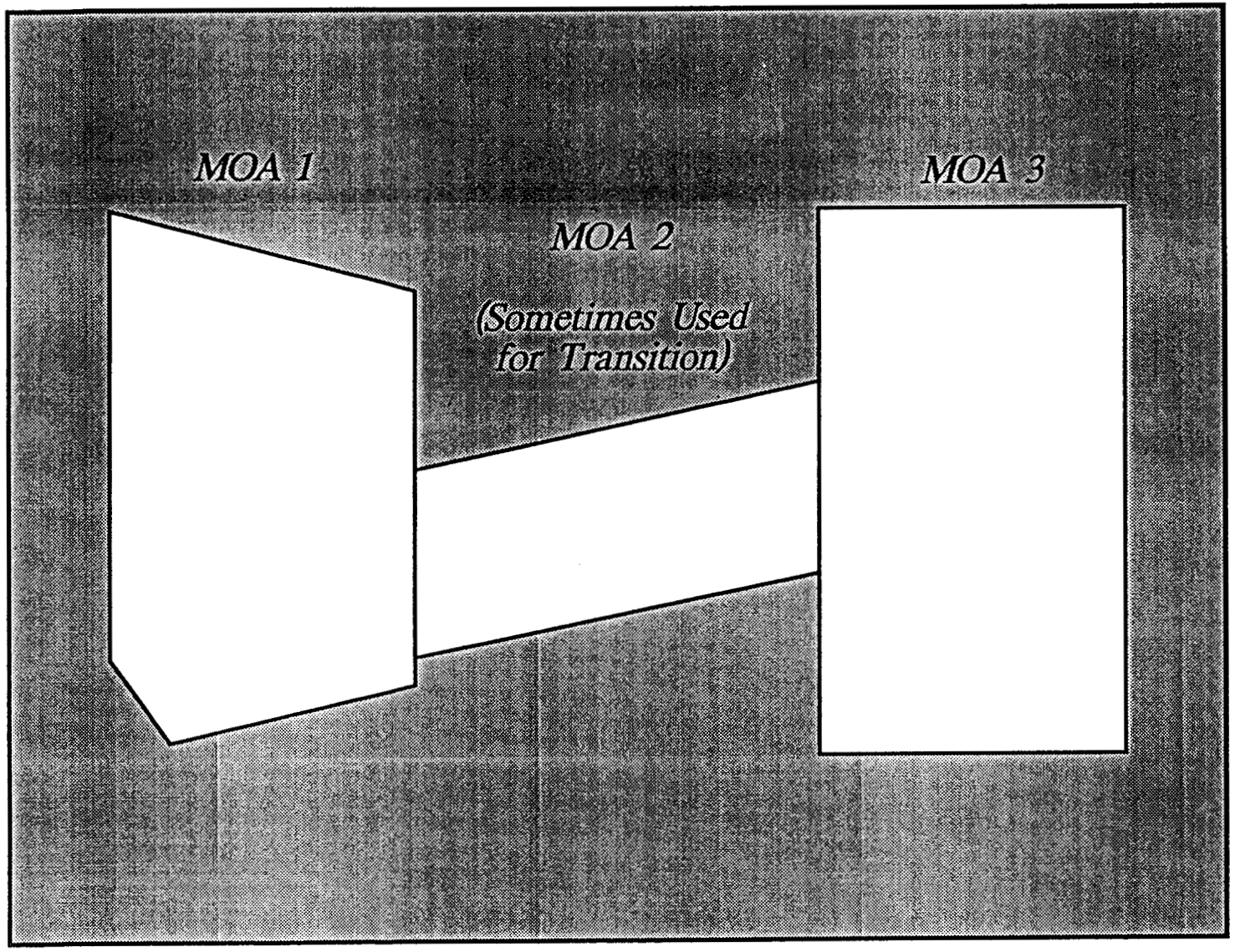
Combined MOA Plan View



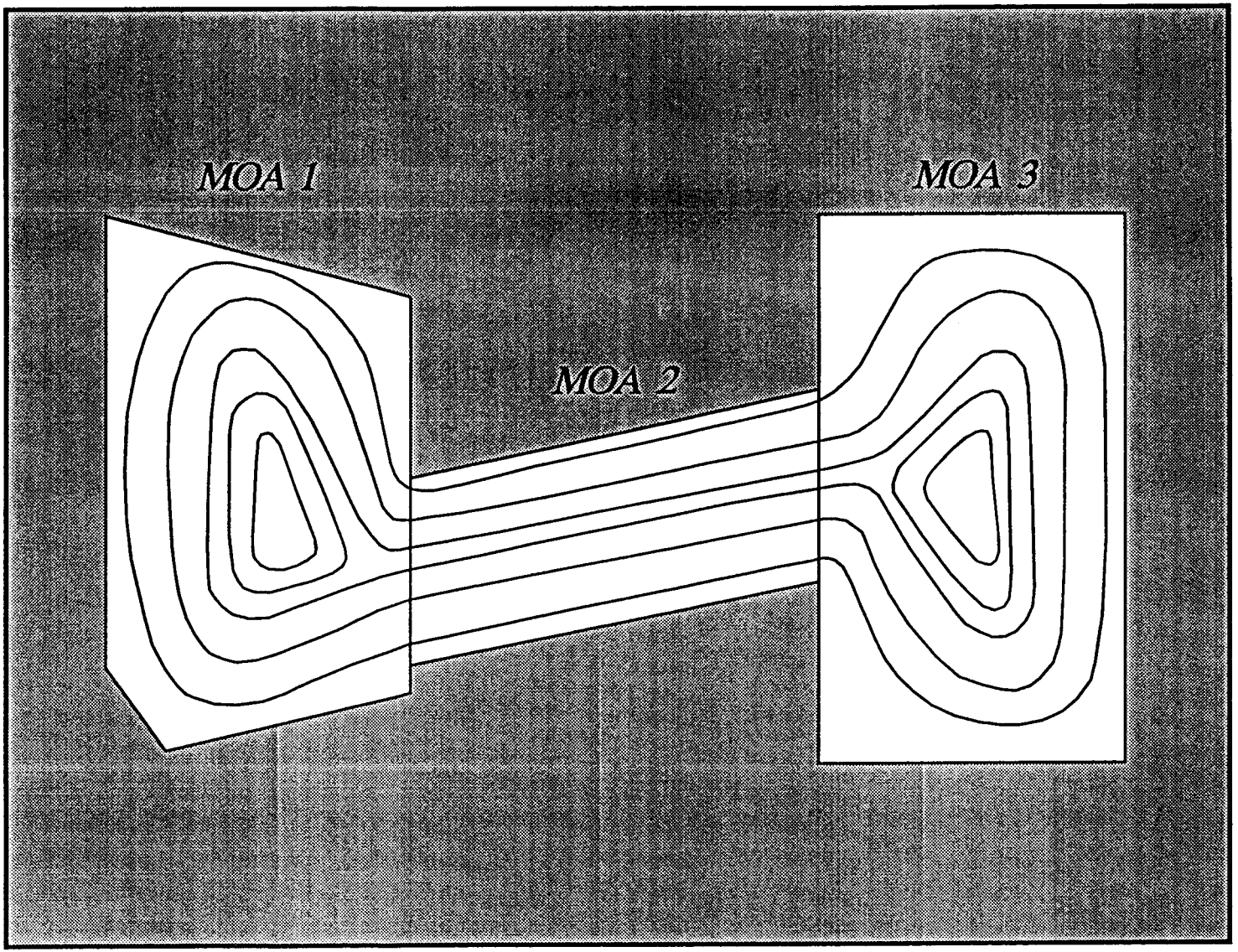
Cross Section of MOA



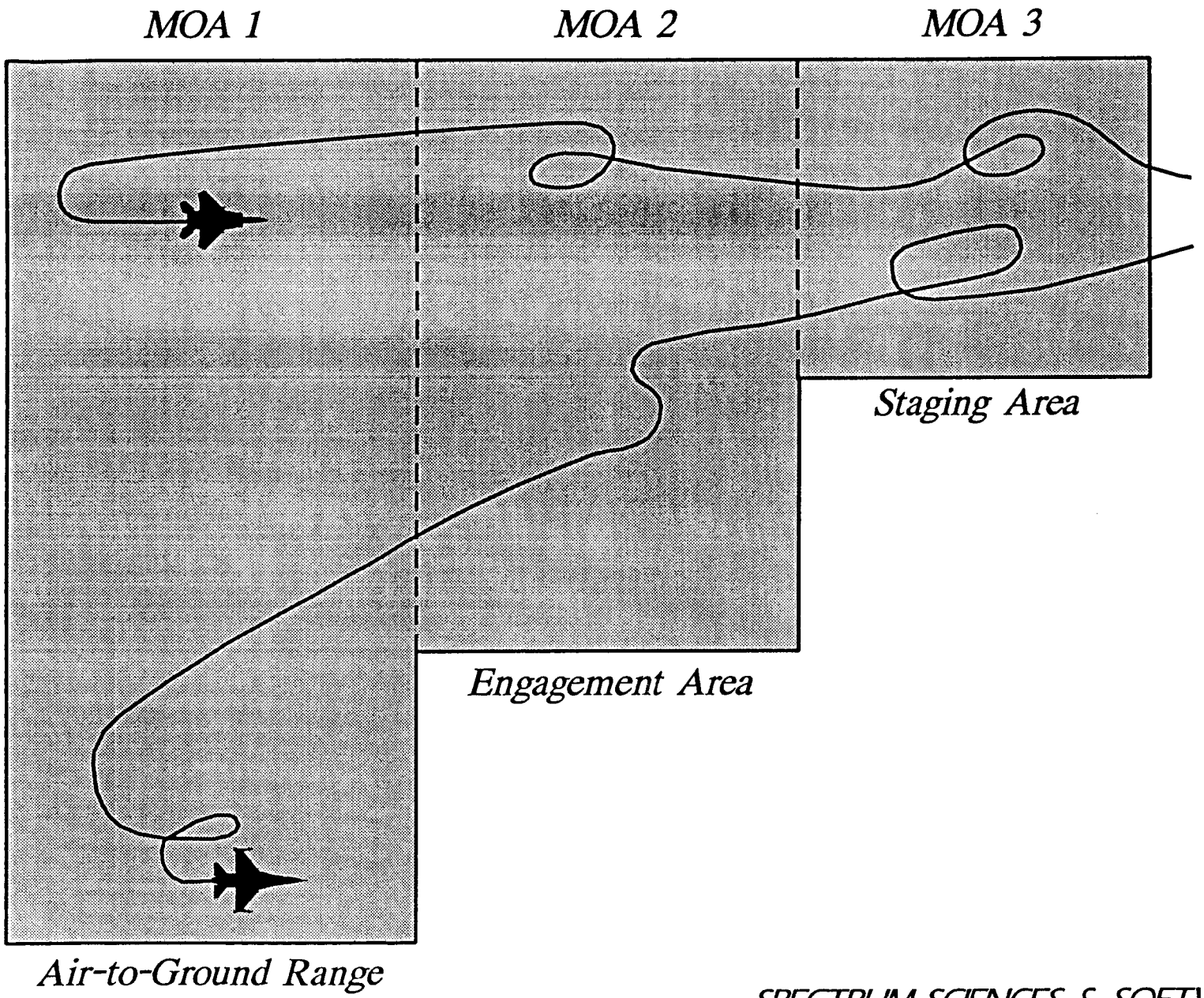
MOA Complex with Transition Corridor



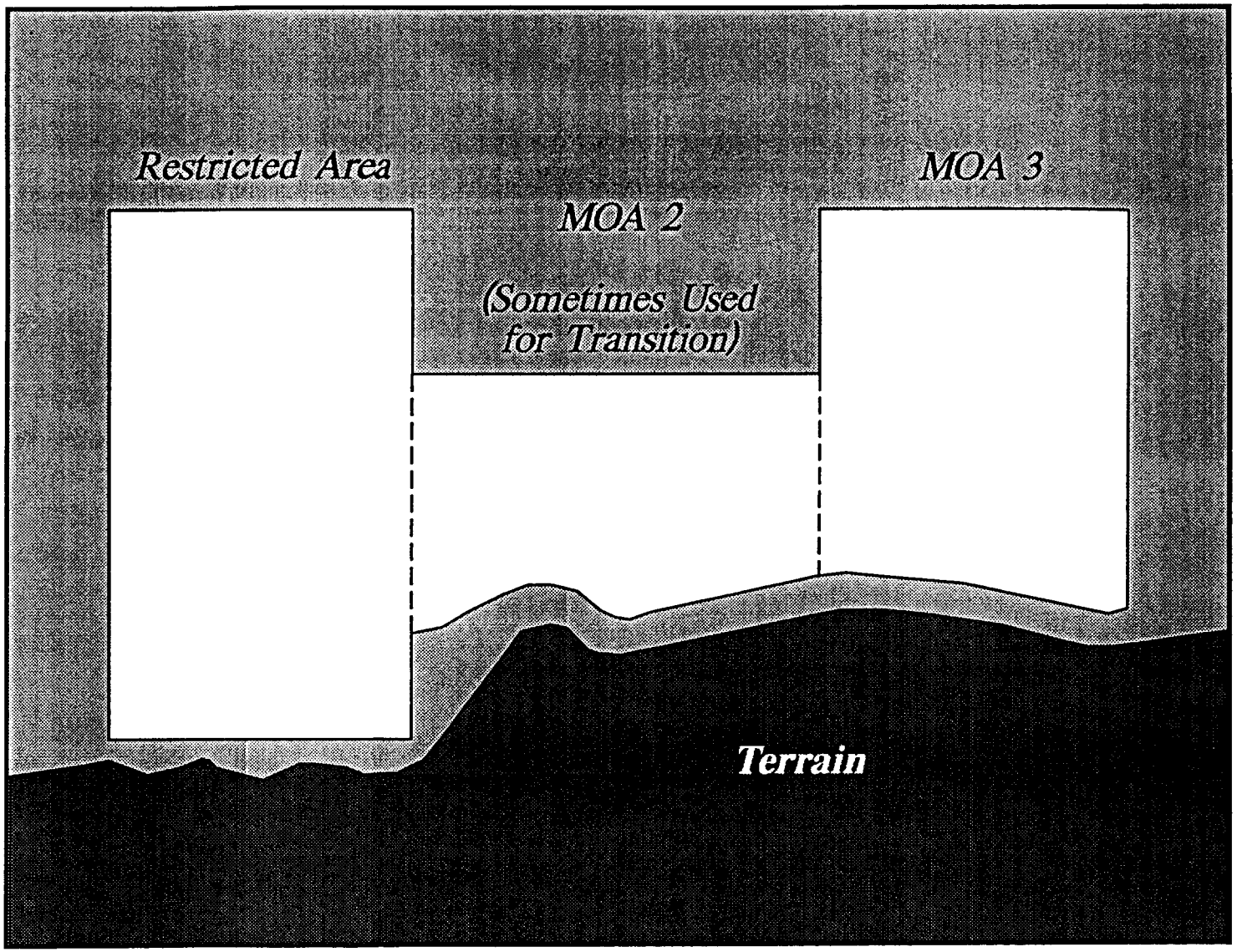
Distribution of Flights



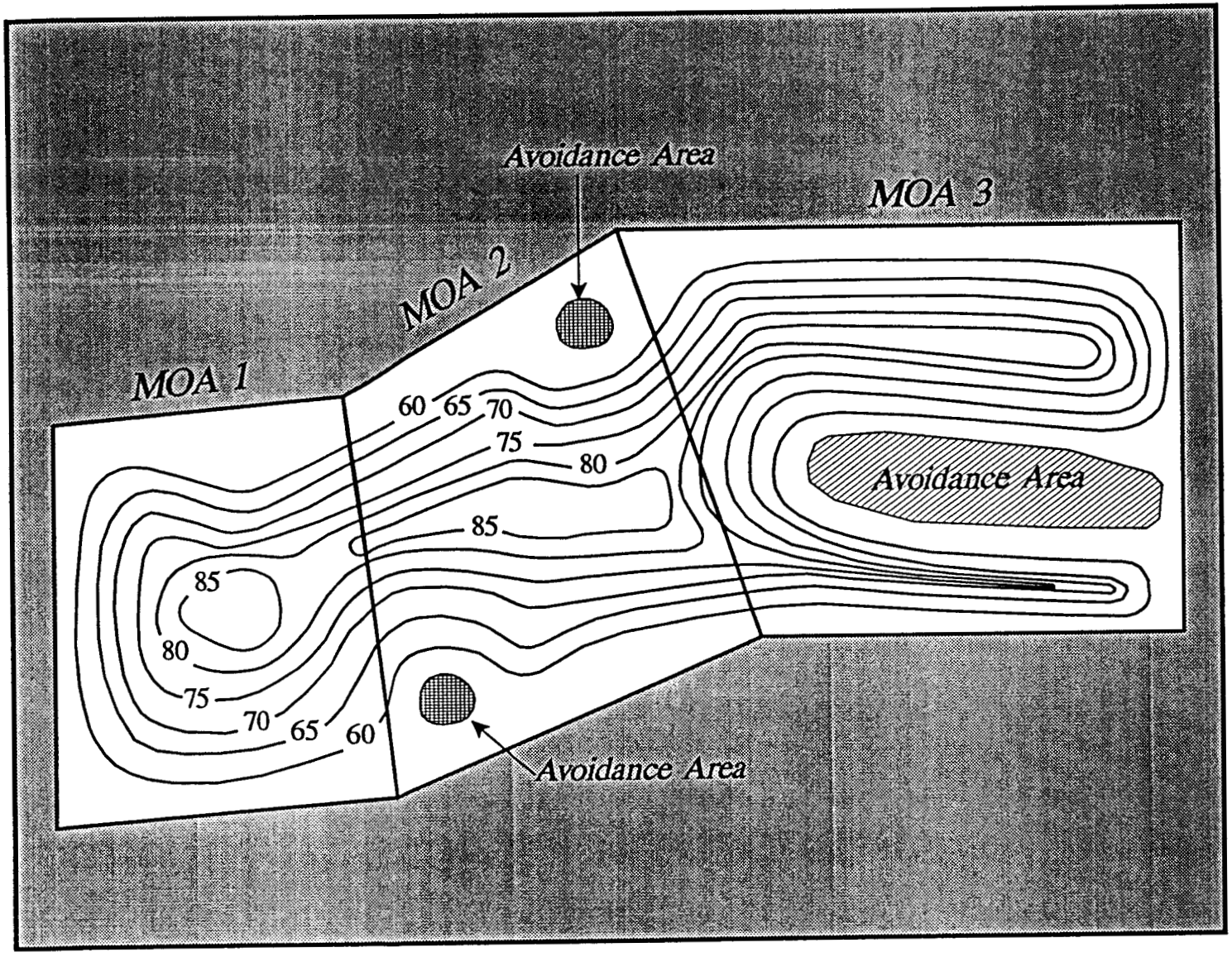
Combined MOA Vertical



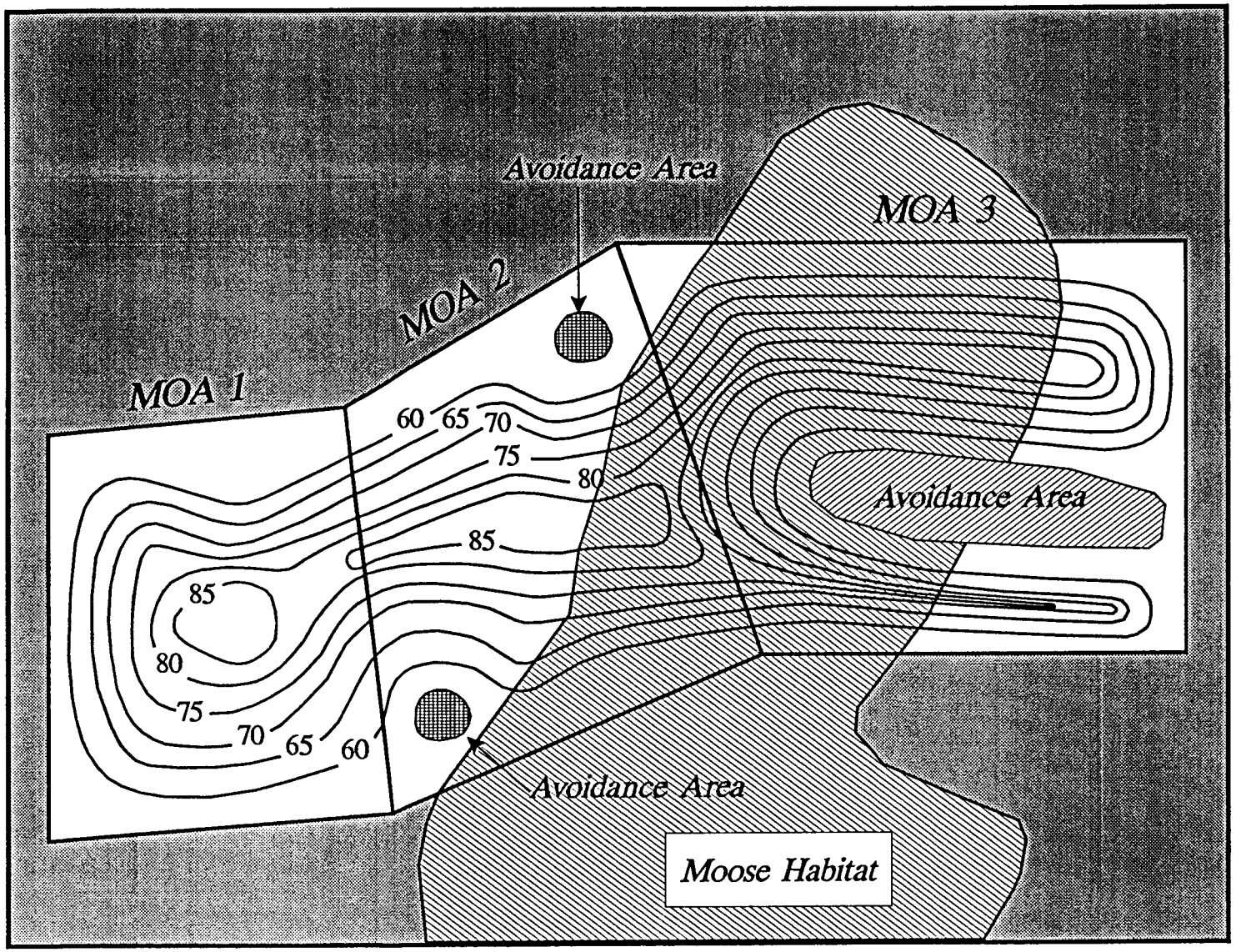
Altitude Layout for MOA Complex



Combined MOA Noise



Combined Noise & Moose Habitat



DEVELOPMENT OF MOAMAP - A MODEL FOR AIRCRAFT NOISE IMPACT ASSESSMENTS WITHIN MILITARY OPERATIONS AREAS (MOAs) AND AIR-TO-GROUND WEAPON RANGES

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Fort Walton, Beach, Florida 32547

THE SPECTRUM MOAMAP NOISE ANALYSIS MODEL

The Department of Defense (DoD) conducts a variety of air combat training operations in Special Use Airspace (SUA) designated as a Military Operation Area (MOA) or Restricted Area (RA) by the Federal Aviation Administration (FAA). These air combat training scenarios range from simple familiarization flights to complex Air Combat Maneuvering (ACM) exercises. Airspace and environmental planners must not only determine the effect of individual events on the noise environment under a MOA, but must also be able to address the variability inherent in this type of operating environment in evaluating cumulative effects. Issues which complicate the simulation of the noise environment in such an area include the possibility of sonic booms occurring during certain types of training such as ACM, and the variation in flying operations from MOA to MOA.

The Spectrum Sciences and Software, Inc. (SPECTRUM) MOAMAP program addresses all these, and is designed to operate in a Windows ™ operating environment with dialogue boxes and pull-down menus to enhance the user interface. SPECTRUM MOAMAP has been accepted for use in two major Air Force environmental analyses: an Environmental Assessment (EA) for Major Flying Exercises in Alaska and an Environmental Impact Statement (EIS) for Improvements to Airspace in Alaska.

The model focuses on the problem of adequately depicting the three-dimensional distribution of aircraft operations within a MOA. SPECTRUM MOAMAP uses the noise prediction algorithms and L_{dnmr} metric developed by the Air Force for use in the ROUTEMAP Program. Since its inception and first use over two years ago, our MOAMAP has continued to be refined in response to the requirements to effectively address the real world issues inherent in preparation of an EIS for one of the largest airspace actions ever undertaken by the DoD. To accomplish this, the model has had to be flexible enough to deal not only with routine ACM, but also with Major Flying Exercises (MFEs) involving large numbers of aircraft and conducted across a number of MOAs within a MOA complex, and further complicated by "no-fly" or exclusion areas, high speed transit corridors between MOAs, and operations which often terminate in restricted airspace at air-to-ground weapons ranges. The continuing evolution of the SPECTRUM MOAMAP model is the result of an

integration of inputs from an interdisciplinary team of scientists, computer programmers, environmental and airspace planners, noise analysts, and a variety of governmental agencies and DoD clients.

SPECTRUM MOAMAP can predict noise levels associated with both subsonic and supersonic fixed-wing aircraft operations in terms of a variety of metrics. Subsonic metrics include the maximum A-weighted sound level (L_{max}), the A-weighted average sound level (L_{eq}); the A-weighted, day-night average sound level [DNL or (L_{dn})]; and the onset rate adjusted, A-weighted day-night average sound level (L_{dnmr}). The model calculates these metrics using algorithms similar to those used in the USAF's ROUTEMAP program. The model also uses the statistical methodology derived at Holloman AFB to estimate the C-weighted average day-night sound levels (L_{cdn}) values from sonic booms. The elliptical contours from this sonic boom model are turned into a raster file by MOAMAP and referenced to a particular set of setup areas for supersonic operations.

The outputs of our MOAMAP are georeferenced raster files containing any one of the subsonic metrics alluded to previously, supersonic metrics including C-weighted day-night average sound level (CDNL) and number of booms per day, and probability of overflight. All the raster files created by SPECTRUM MOAMAP can be displayed on a standard VGA computer screen, saved as a MS-Windows device independent bitmap (DIB) graphics file, output to an ASCII file containing an array of values on an equally spaced grid, and output to a Geographic Information System (GIS) compatible raster file.

SPECTRUM MOAMAP uses a stochastic kinematic simulation of aircraft operations to create a three dimensional probability distribution (PD) for the aircraft position. This Probability Distribution expresses the probability that the aircraft will be found directly above a particular spot on the earth's surface inside a pre-defined polygon such as a MOA (or, as will be discussed later, within a user-defined sub-area within a MOA). The model does not assume any particular map projection and the noise calculations are simply based on a rectangular grid.

The SPECTRUM MOAMAP program is composed of several modules that simulate different aspects of a MOA or other operating area where the variability of the noise sources in both time and space precludes using available deterministic noise models. Because the data available for various MOAs may differ in quality and level of detail, the model has built-in flexibility to accept a variety of information about the way pilots fly and the constraints by which they have to abide. The User Input Module takes user input about the meteorological conditions in the MOA and the aircraft mix including the number of operations for day and night periods. If data are available on the distribution of aircraft with altitude, the user has the option to fit one of a set of different probability distribution functions to the data. The parameters obtained from this fit can then be used by the model to create a discrete probability distribution (PD) of aircraft versus altitude. The user also has the option to create his own discrete distribution of aircraft with altitude, and for each altitude range in this distribution the aircraft parameters of airspeed, power setting, and power configuration are specified based upon the flying activity. The latter three

parameters are used by the by the Air Force's OMEGA programs to determine the SEL versus slant range data.

The SPECTRUM MOAMAP's Area Module allows the user to interactively define sub-areas within the MOA by using a mouse to specify the major and minor axes of an ellipse or by freehand sketching of the area on a map displaying the MOA boundary and salient terrain features. The ellipses can be used to model sonic boom occurrence, and they can also be used to model subsonic noise. If the user defined area drawing feature is used, only subsonic noise can be calculated.

The outputs from the User Input Module and the Area Module are used to calculate the noise by kinematically simulating flying operations. The kinematic approach uses previous knowledge, to whatever level it is available, to create a simulation of the flights appropriate to the area in question. The kinematic simulation defaults to constraining the aircraft to fly only within the MOA boundaries. The basic knowledge that the flights are constrained to the airspace volume defined by the MOA allows a probability distribution estimate to be created by simulating random flights within such a volume. The estimates asymptotically approach a distribution that is characterized by: (1) a central tendency, (2) multimodal concentrations, and (3) is strongly dependent on the boundary's shape. The distributional limit is obtained by transforming the spatial distribution into the frequency domain and filtering it using a Butterworth Low Pass Filter to remove high frequency components, in effect smoothing the fluctuations derived from the finite kinematic simulation. If more detailed information on the distribution of operations is available, (i.e. from Radar, ACMI output tapes, etc.) it can be included.

Such a first approximation can be modified by knowledge of factors that may constrain operations within a subarea of the MOA or any constraints on the directional tendencies of flights within the MOA. For instance, when they are a part of a MOA complex some smaller MOAs can be used operationally as large access or transition corridors to larger MOAs which provide the best engagement areas. In such a case, a directional quality can be introduced into the computer generated flights. The end result of such a modification is that the noise spills over into other contiguous MOAs and does not decrease as the boundary is approached.

The program is capable of displaying topographic information including Corps of Engineers Geographic Resource and Analysis Support System (GRASS) vector format files so that the user can view visual reference points and estimate flight paths used in Simulated Surface Attack Training and Low Altitude Tactical Navigation. As with other user interface functions, this will be accomplished by choosing the Windows ™ menu option Set Path and clicking the mouse on the features used in training in the sequence they are used, or if the usual sequence is unknown, the Randomize option will provide a network of all possible paths. In either case a Gaussian probability distribution can be assigned to the paths. This requires the user to choose a standard deviation for the distribution which will be centered along the arcs of the network. The user sees the distribution as a colored strip centered on the arcs of the network.

EXAMPLE CASES USED FOR KINEMATIC MODELING OF MOAS

Some of the different scenarios that can be modeled using the kinematic approach are listed below:

Low Altitude Tactical Navigation and Simulated Surface Attack. Low Altitude Tactical Navigation and Simulated Surface Attack Training can be based on several turning points and various ranges of altitude. The types of turning points used are usually bridges, roads, other physical landmarks, and landscape features such as peaks, valleys, rivers, and river confluence's. The flight between these points follows the terrain, and the number of aircraft involved in this type of training can vary from 1 to 4 but generally involves 3 or 4 aircraft.

Low Altitude Air-to-Air Training. This scenario includes a few aircraft at low altitude, engaged by aggressors coming in at high altitude (>=5,000 ft AGL). The aggressors could engage aircraft doing familiarization training or low altitude tactical navigation training. The engagements last a few minutes, and consist of one or two passes after which the air-to air aircraft disengage.

Air Combat Training. The air combat training scenario where 2 to 4 or sometimes 8 aircraft engage in air-to-air combat above 5,000 ft AGL is another example. The altitude of these engagements is normally between 20 and 30 thousand feet. In this scenario, supersonic events can occur either in closing a distance, or in escape maneuvers. The staging areas for the two groups vary from 50 to 150 nautical miles apart. In these engagements, dog fights ("fur balls") of a few minutes duration can occur, after which the aircraft break off, and return to a setup region for subsequent engagements. As this type of exercise proceeds, the distance between setup points for the two flights may decrease.

Major Flying Exercise (MFE). A final type of exercise is the large engagement type (Composite Air Wing Training) where 100+ aircraft may participate in an integrated combat scenario applying all aspects of air-to-ground and air-to-air training over a MOA complex. This large composite group would normally include a strike force of air-to-ground aircraft attacking ground. targets, and air-to-air assets involved in either protecting or intercepting this strike force. Air-to-ground attack aircraft may be flying at very low altitudes (around 500 ft AGL) up to the high "teens". Air-to-air engagements would generally start at higher altitudes and progress to lower levels as the strike aircraft near the target areas. The elevation in such a case is from 500 to 2,000 feet AGL and involves protection of air-to-ground attack aircraft by Combat Air Patrols against interceptor Combat Air Patrols. The protecting CAP normally sweeps out 4 to 5 minutes ahead of the air-to-ground attack aircraft.

Air-to-Ground Weapons Range Exercises. In a number of routine air combat training or exercise scenarios, complex air-to-air operations conducted in MOAs terminate in the RAs which overlay air-to-ground weapons ranges. The conventional or scored ranges may have established patterns for various delivery scenarios and these may be modeled using the NOISEMAP model. Tactical ranges,

however, offer a much more complex scenario to model. Often these ranges may be entered from a variety of directions, by multiple aircraft, and sometimes under the direct control of airborne controllers. The tactical scenario may also call for a particular delivery criteria. SPECTRUM MOA MAP accommodates these scenarios, and has the ability to model not only the associated MOA operations which lead into the RAs, but also the RA airborne activity and the cumulative impact of the aircraft noise in both MOA and RA.

In addition to the type of exercise, another important aspect of a kinematic model deals with the rules used to return the aircraft to the airspace once they approach the boundary. The type of control exerted over the airspace within the MOA depends on where the MOA is located relative to ground based radar, and the local topography of the area (how good are radio communications). This Tactical Control can be exerted by military radar units, either ground radars or airborne radars (e.g. E-3 Sentry Airborne Warning and Control System (AWACS) aircraft). The control exerted depends on the rules of engagement for a particular MOA and on the airspace restrictions within the MOA. For MOAs that can be monitored by radio or by radar, the rules of engagement might call for breaking off engagements that come within 5 to 10 nautical miles of the MOA boundary, or within 500 ft of the floor or ceiling of the airspace. For the lateral boundaries, the kinematic model can be set to return the aircraft into the airspace at various rates depending upon how rigorously the MOA boundaries are to be enforced. This choice affects how rapidly the PDF falls off as the boundary is approached and thus it will affect the calculated spillover noise.

For many of the cases outlined above, participating aircraft will have common entry points into the MOA. These "gates" should also be taken into account in a kinematic model. This is done by superimposing a short distance path and specifying the standard deviation for the aircraft distribution based on the user's knowledge of the aircraft operations. The individual contributions to the overall Probability Distribution are summed, and then the overall Probability Distribution is filtered and normalized. The final result of this step is a multidimensional Probability Distribution where the dimensions include:

- The altitude distribution interval
- The aircraft type
- Power Setting
- Velocity

The array containing the discrete Probability Distribution is the input into the noise calculating routines which produce normalized tables for different slant ranges. These SEL values are then used to calculate the contributions of all the neighboring airspace grid points to a point on the ground. In other words the SEL table is associated with each cell in the "n" dimensional PDF and the probability is

utilized to modify the total number of operations in the calculation of the actual SEL versus Slant range table for each point in the airspace.

CONCLUSIONS:

The SPECTRUM MOAMAP model builds upon the U.S. Air Force ROUTEMAP L_{dnmr} metric and noise prediction algorithms. It accounts for complex distributions of aircraft operations in a realistic manner. It also permits the identification of various noise exposure levels within a MOA, RA, or MOA/RA complex. This approach allows the analyst to address the long-term average locational distribution of aircraft operations within a MOA or MOA subarea in calculating the L_{dnmr} or other metrics. In addition to its noise calculation function, SPECTRUM's MOAMAP is fully GIS compatible. These GIS compatible outputs permit detailed analysis of various levels of noise impacts on a variety of resources, i.e. humans, animals, structures, multiple land uses, animal habitat, animal/human population distributions, cultural resources, etc. The SPECTRUM MOAMAP model is continually being refined as new issues for analysis evolve and new code is written to provide analysts with the necessary tools to address these issues.

10. Use this space to provide any additional information or description of resources supporting your firm's qualifications for the proposed project.

GIS/Computer Center

SPECTRUM's GIS/Computer Center located in Fort Walton Beach was established in 1982 to provide support for: Geographic Information Systems (GIS); Research using Remotely Sensed Data; Noise Assessment and Studies; Environmental Studies; Mathematical Modeling; Computer Aided Drafting and Mapping; and Computer Research and Development. The center supports daily office computer operations including document preparation, desktop publishing, and accounting. The GIS/Computer Center interconnects SPECTRUM's offices through high speed modems and provides additional computer capabilities to all offices.

The GIS/Computer Center is served by a four-processor 126 MIP Sun SPARC 630MP file server with over 10 gigabytes of mass storage. The client systems are connected to the server via an ethernet network and include three Sun 4/75 Sparc 2 workstations, a Sun Sparc 1+, a dual processor Data General Aviion, four 486/50 Mhz Graphic/CAD workstations, a 486/66 Mhz EISA Unix Workstation, a Graphics Workstation with scanner and high resolution printer, and fifteen 386 based PC computers. The system also has two SUN 3/280s backup servers providing an additional 2.2 gigabytes of mass storage. Also connected to the server is a centralized BBS which provides inter-office communications using a 14.4 Kilobaud high speed modem. The GIS/Computer Center also has a variety of peripheral devices including: two CD-ROM drives, an additional 5 gigabytes of mass storage, a HP XL300 inkjet printer, four HP Laserjet III printers, and tape drive devices for archiving data (8mm 2.3 gigabyte, 6250/1600 bpi 9 track, QIC 150/350/80).

The Sun Sparc 2 workstations are used for GIS support, noise analyses, and environmental planning. The Data General Aviion is utilized for running computationally intense programs and processing remotely sensed data. The software programs used by these workstations include: GRASS 4.1, the Image Processing Workbench (IPW), NOISEMAP, and MOAMAP.

The CAD workstations are equipped with high resolution digitizers (two Summagraphics Accugrid 24x36 digitizers, a Numonics 24x36 digitizer, and Numonics 48x60 digitizer) for digitizing hard copy maps. The workstations are also interconnected to an HP MX Draftmaster large format plotter with a 20 megabyte spool for high production plotting. The principle CAD and mapping packages used on the workstations are AutoCAD release 12 and a suite of Spectrum proprietary software for cartography support. AutoCAD and Spectrum's mapping suite generate high accuracy maps which can be converted and shared with the Sun workstations for GIS analysis.

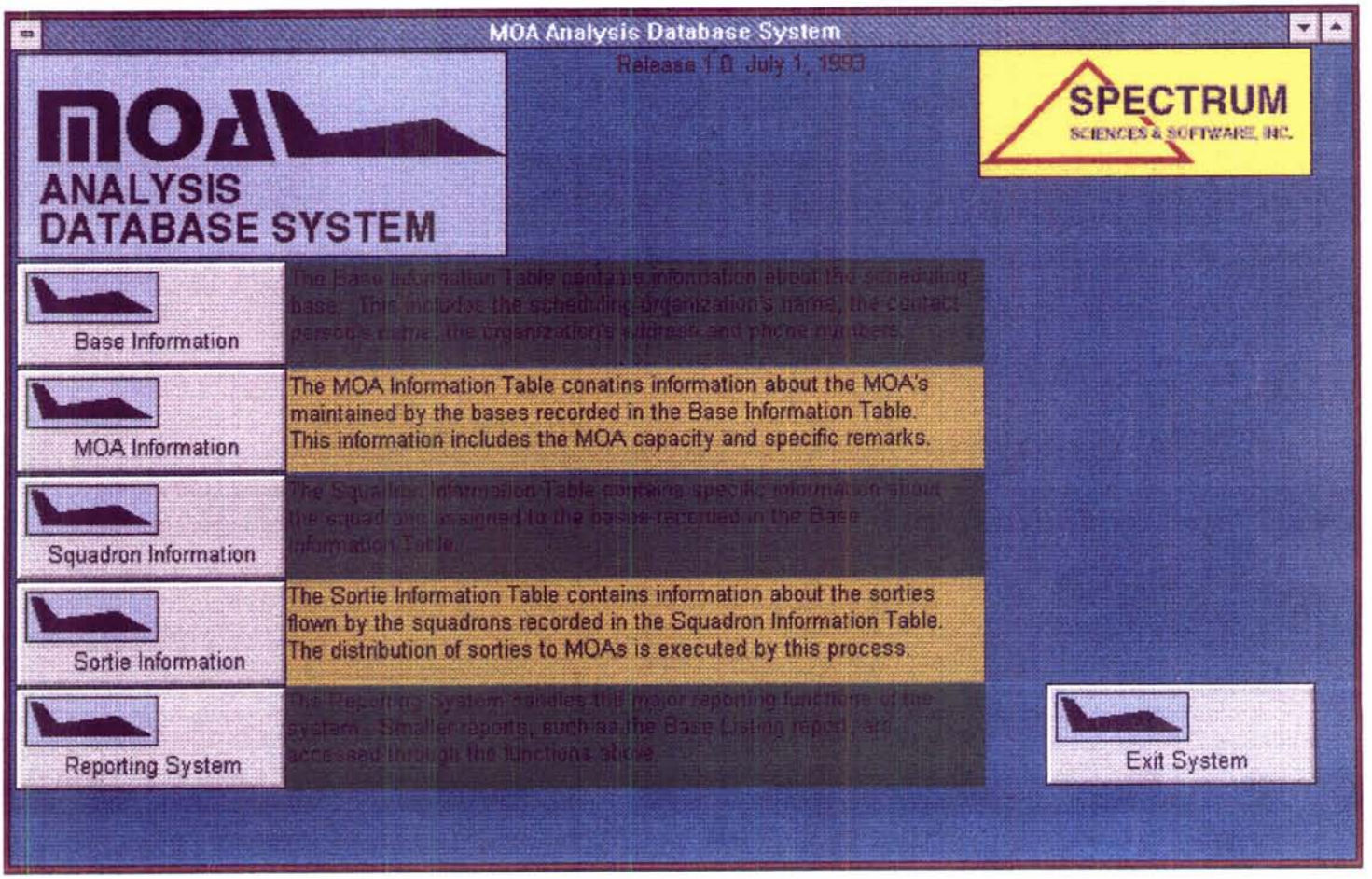
The computer network integrates several Operating Systems including SUN OS UNIX, Data General System V UNIX, Linix and Interactive UNIX for Intel Processors, Microsoft DOS, Windows, and Windows NT. To take advantage of this heterogenous environment, the computer center also provides a variety of software development tools for all the platforms on the network. Development tools include compilers and debuggers for: C++/C, FORTRAN, Pascal, Microsoft BASIC 7.0, Visual Basic/C++, and Assembler. The center also supports database development in several database formats including: Paradox, Oracle, Dbase IV, Access, FoxPro, and Btrieve. In order to provide software with user friendly software packages, the center has tools for developing windows programs for: Sun Xview, Motif, X-Windows, Windows 3.1, and Windows NT.

In addition to off-the-self software, the GIS/Computer Center also has a large variety of in-house software libraries and programs available. For environmental planning and analysis the center provides users access to several programs including: the Bird Avoidance Model, the Hazard Analysis Program, the Geographic Resource Analysis Support System (GRASS), and a comprehensive suite of noise analysis and airspace management programs. An assortment of libraries are also available for program development including: trajectory analysis, noise modeling, landuse planning, support analysis, and data conversions. Special GIS applications can also be developed at SPECTRUM using GRASS's GIS development libraries.

Document Separator

AIRSPACE ESTIMATION UTILITY

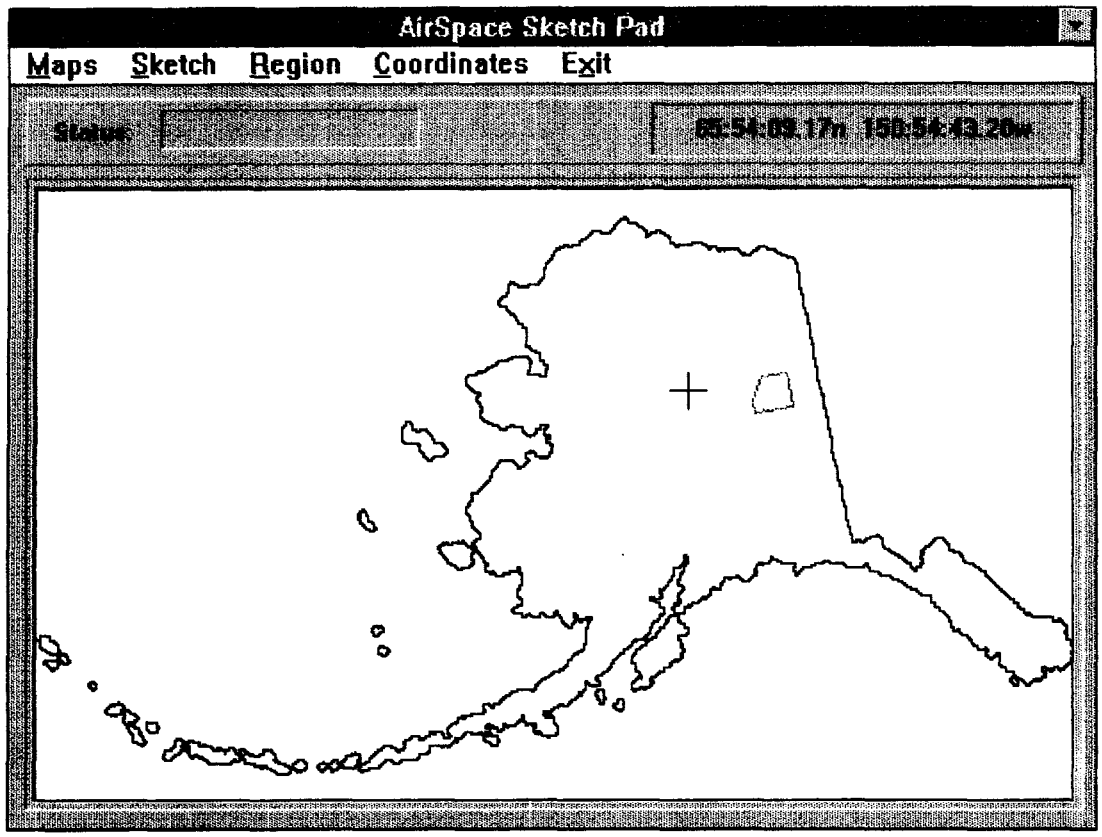
The AIRSPACE ESTIMATION UTILITY application is a SPECTRUM Sciences & Software, Inc. software program developed in house as an airspace management tool for a number of possible uses. Its primary purpose is to be used to calculate certain airspace capacity numbers. Data on published and/or proposed parcels of airspace can be stored in the utility and recalled and printed for specific requirements. The sketch pad tool will draw the stored airspace in the correct geographic location for use as required. The sketch pad utility can also be used to create a parcel of airspace in its proposed geographic location, then reverse the analysis process to calculate its size, etc.


MOA Analysis Database System
Release 1.0 July 1, 1993
MOA
ANALYSIS
DATABASE SYSTEM
SPECTRUM
SCIENCES & SOFTWARE, INC.
Base Information
The Base Information Table contains information about the scheduling base. This includes the scheduling organization's name, the contact person's name, the organization's address and phone numbers.
MOA Information
The MOA Information Table conatins information about the MOA's maintained by the bases recorded in the Base Information Table. This information includes the MOA capacity and specific remarks.
Squadron Information
The Squadron Information Table contains specific information about the squadrons assigned to the bases recorded in the Base Information Table.
Sortie Information
The Sortie Information Table contains information about the sorties flown by the squadrons recorded in the Squadron Information Table. The distribution of sorties to MOAs is executed by this process.
Reporting System
The Reporting System handles the major reporting functions of the system. Smaller reports, such as the Base Listing report, are accessed through the functions above.
Exit System

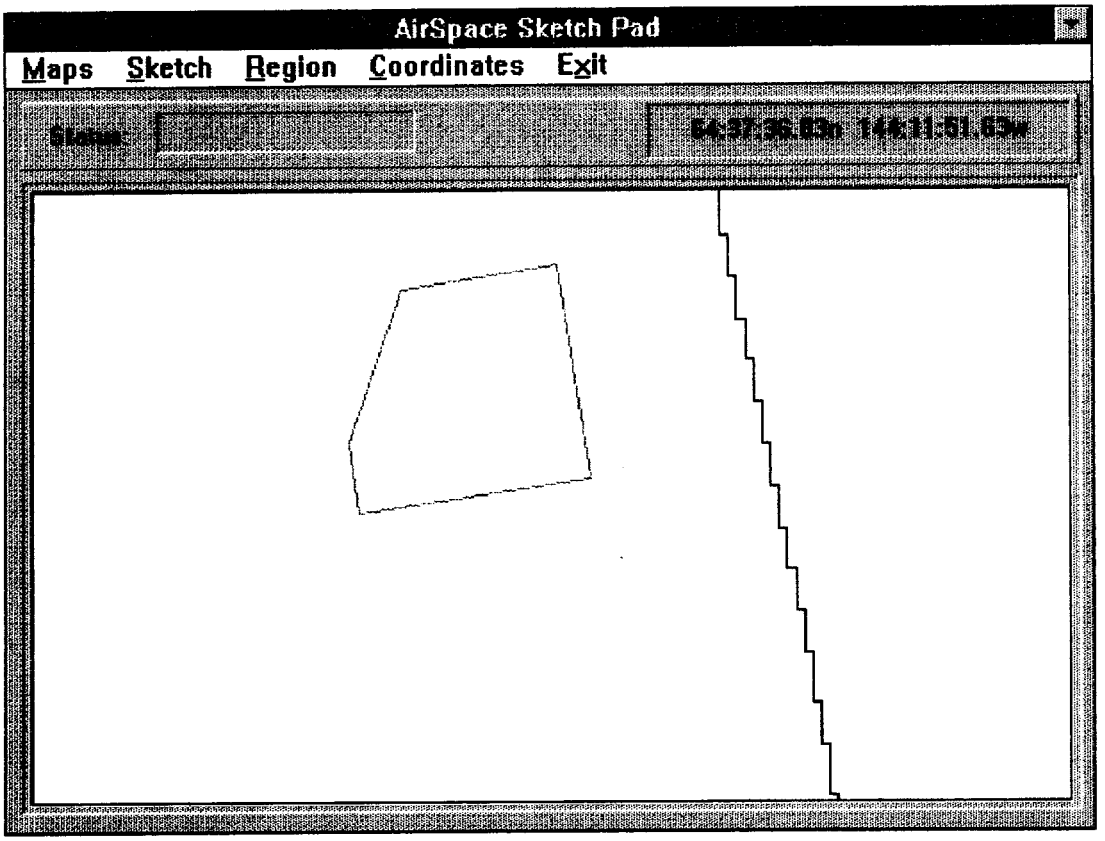
MOA ANALYSIS DATABASE

The MOA ANALYSIS DATABASE application is a SPECTRUM Sciences & Software, Inc. software program developed in house as an airspace management tool for maintaining the required data on a Military Operations Area type airspace (ie., MOA, ATCAA, Restricted Area, Warning Area, and so on). Its primary purpose is to be used to perform a capacity analysis on present and/or future possible uses of the airspace.

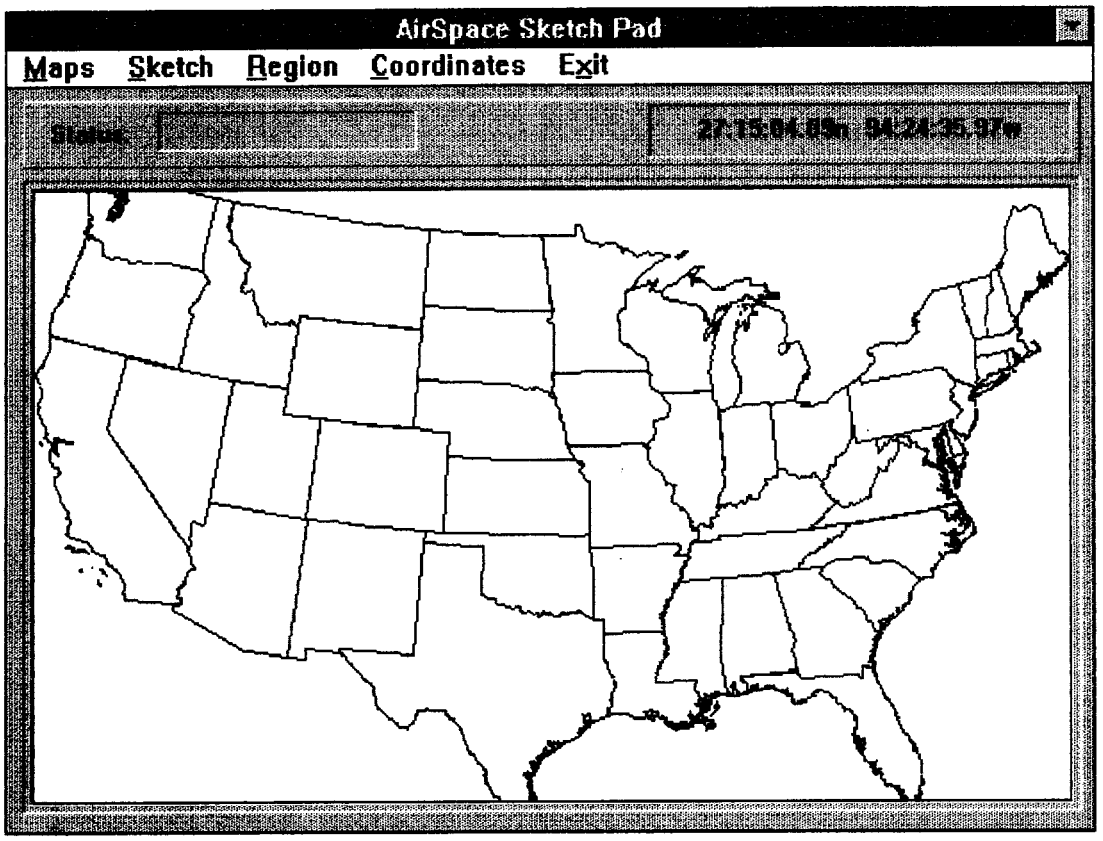
The airspace analysis can be for an existing parcel of airspace or for a proposed parcel of airspace. Detailed data maintained on the base, squadron(s), and sortie rates can then be applied to specific airspace data to perform capacity analysis routines. Summary analysis information can then be printed for use as desired.



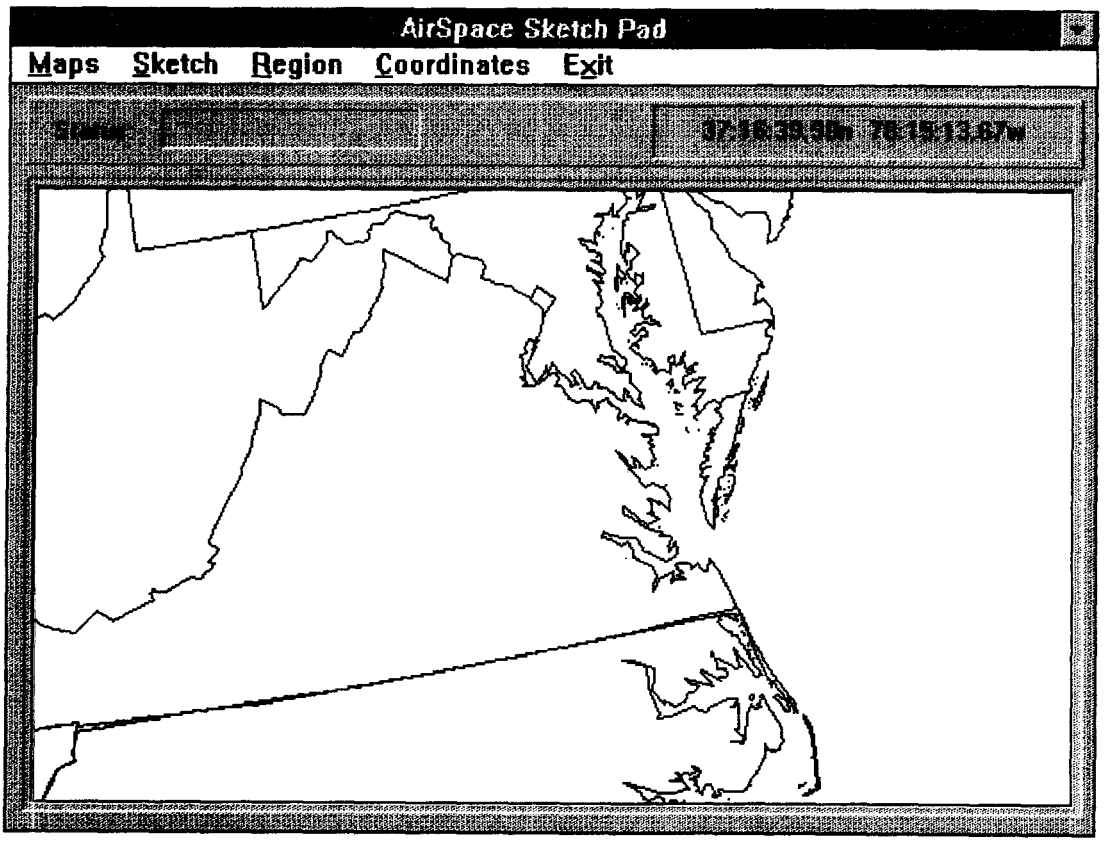
Retrieving the data from the selected file (or the proposed airspace) is automatically drawn to show the exact location of the airspace.



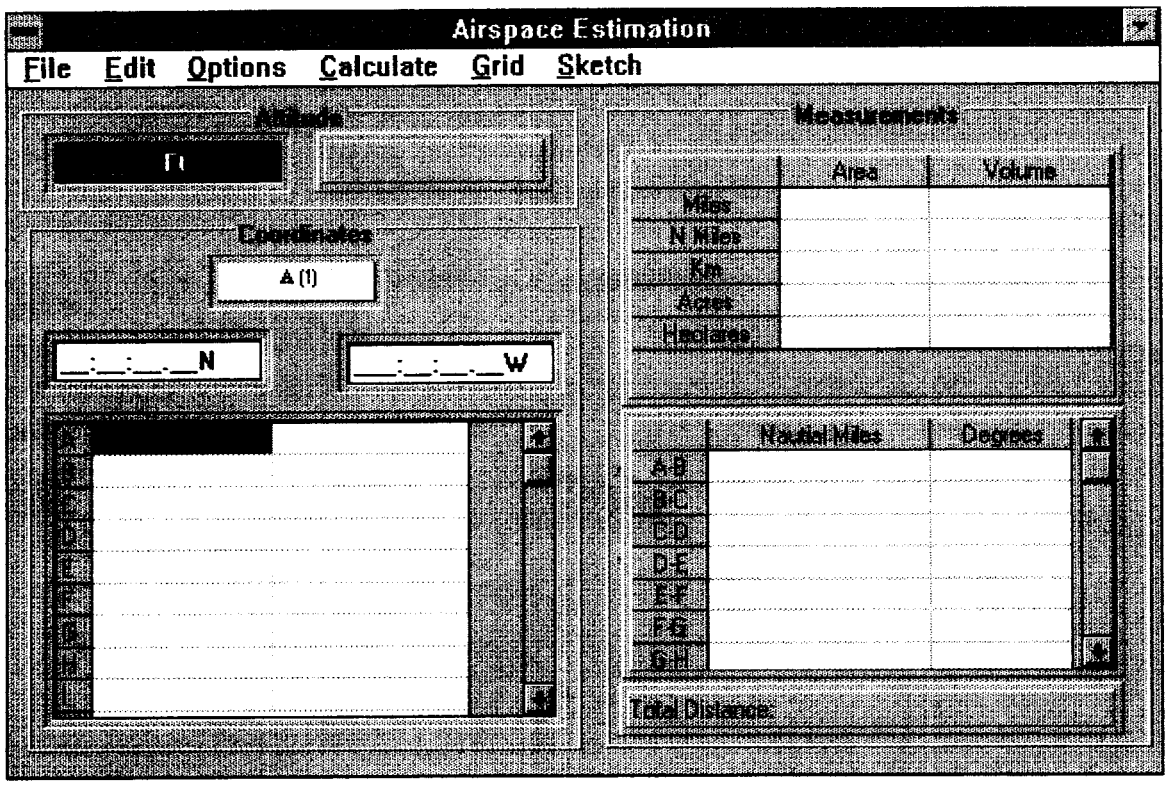
A infinite zoom feature allows scaling the display to the required size the particular use.



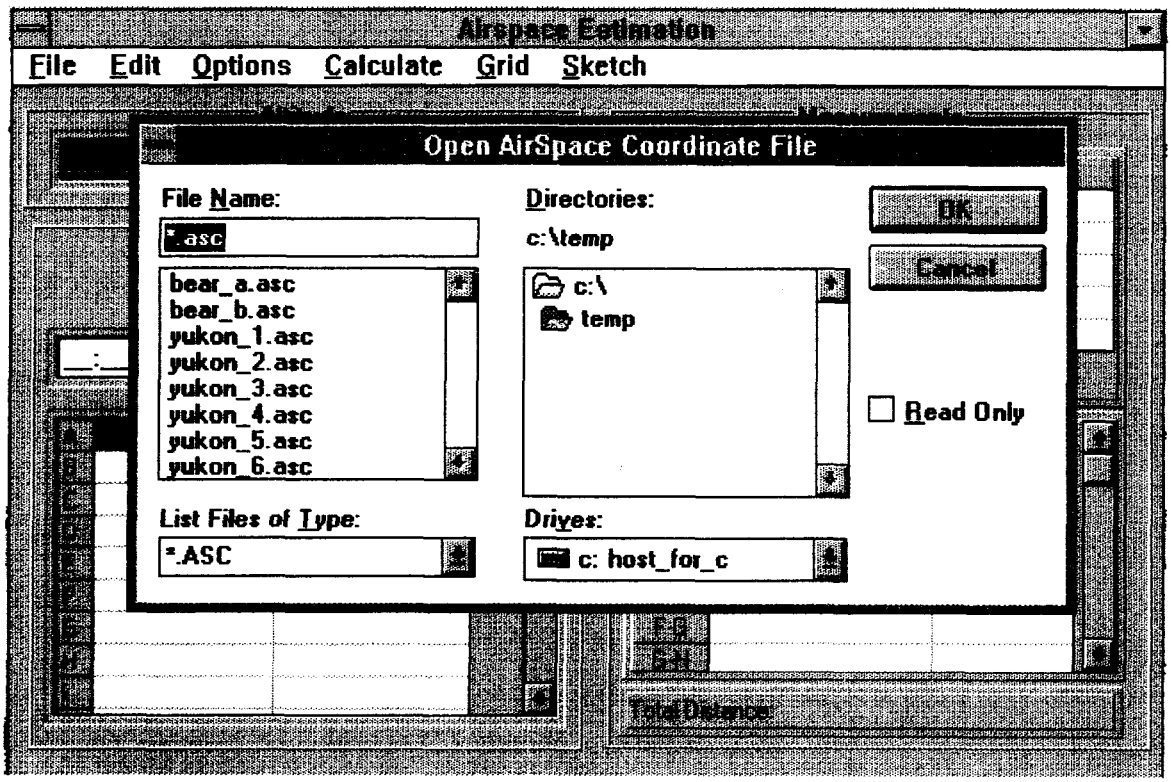
The entire continental US can be displayed to show the location of airspace also. The sketch pad is also used to draw proposed airspace using the sketch utility. The proposed airspace can than be applied to the first part of the application in order to calculate the area and distance measurements and to save the proposal as a file for future reference.



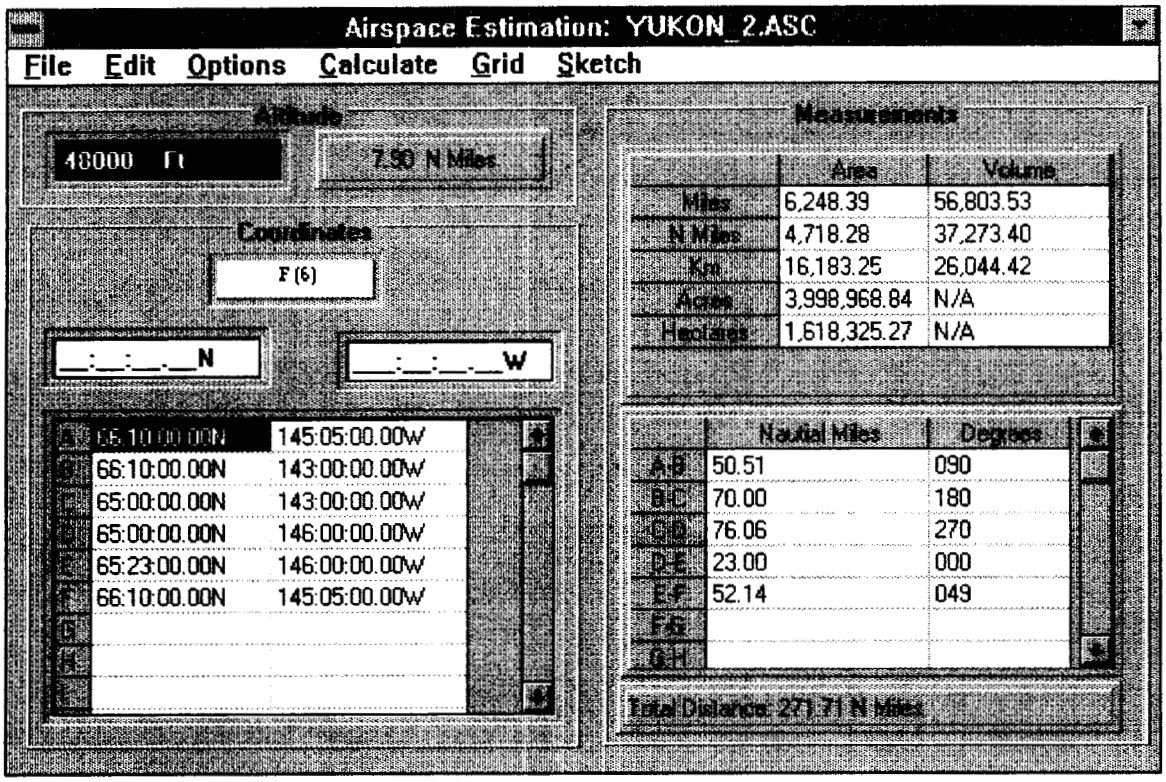
The airspace zoom feature can be used to zero in on the desired location and a printed drawing of the airspace can be selected.



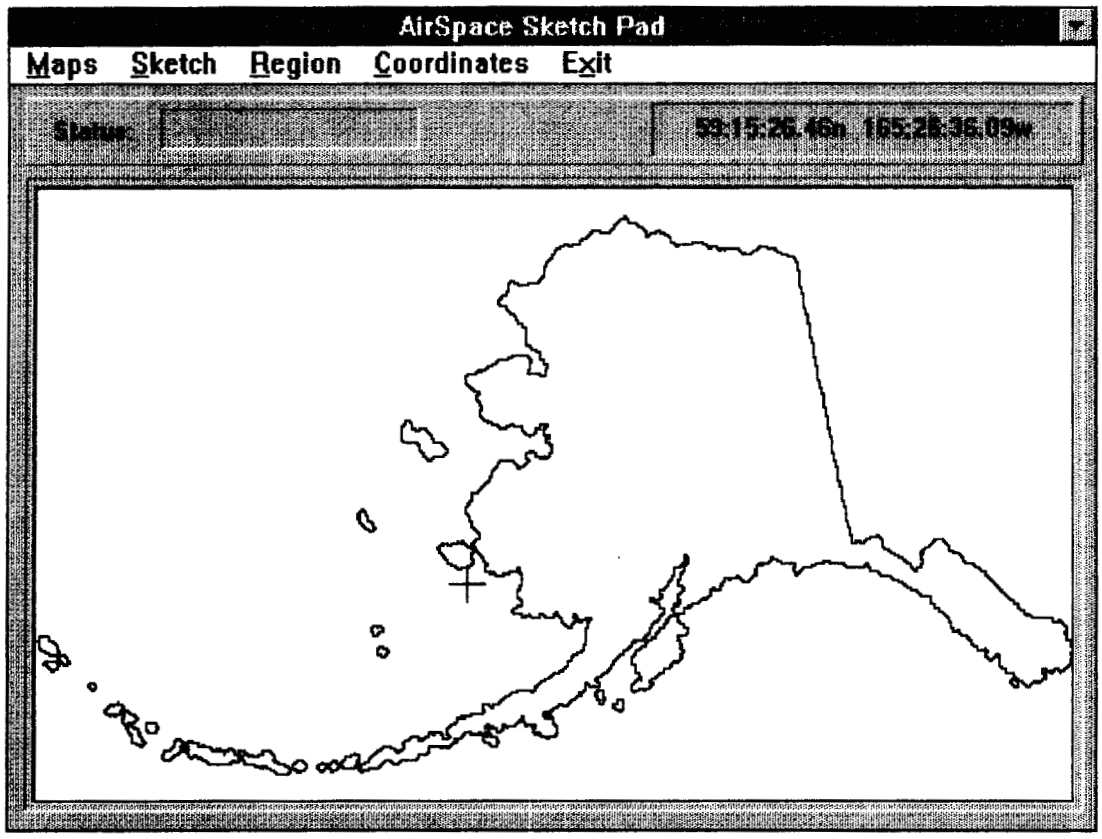
This application is designed to be used as an airspace management and planning tool for unit, command, and other personnel to use to help automate the airspace process.



The first aspect of the application can be used to recall specific data on individual parcels of airspace. The data can be retained for existing airspace or airspace designed by this application.

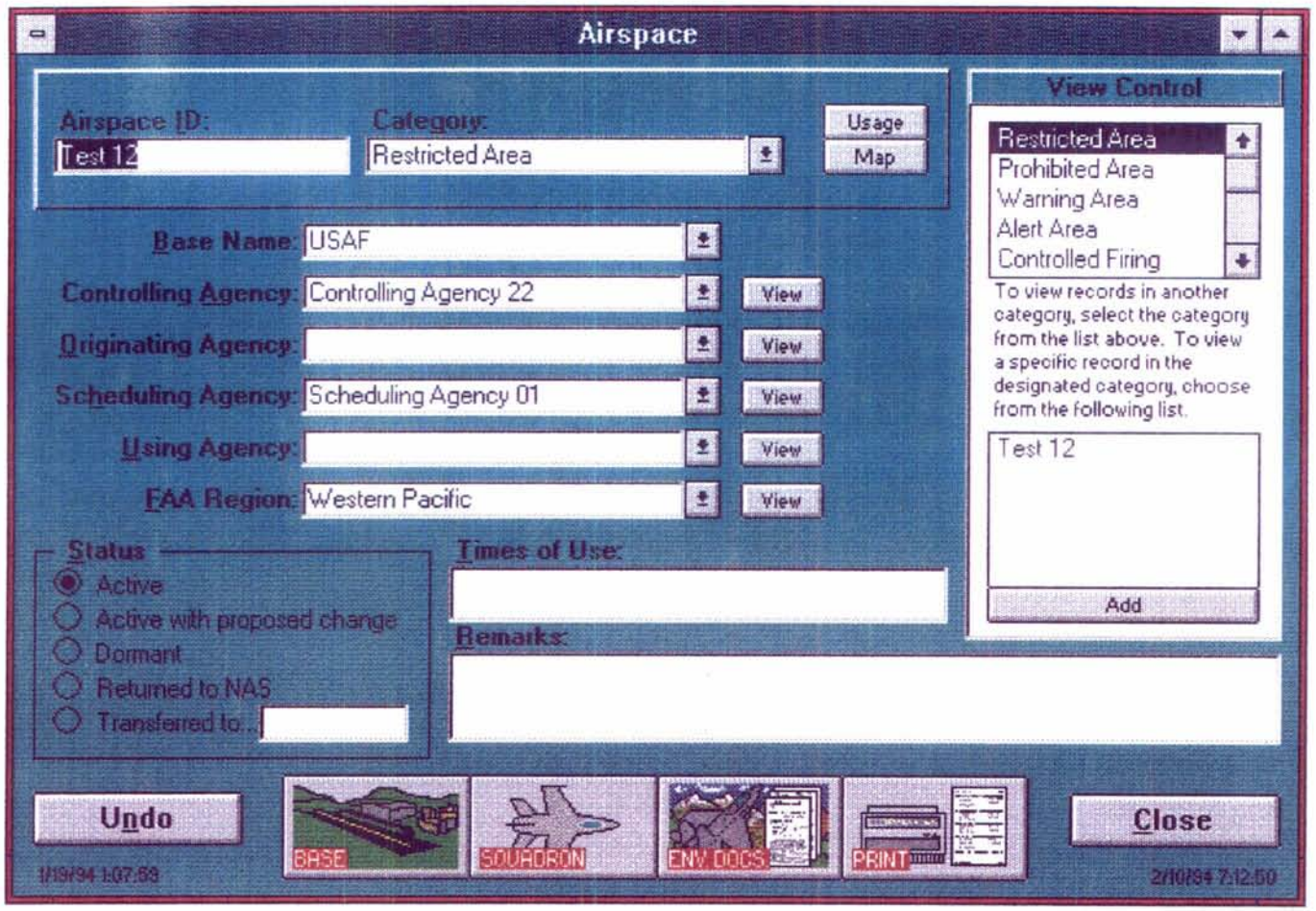


Data is retrieved from a file or entered directly on the left side of the screen to include the coordinates of the airspace and the altitude block in feet. The right side of the screen shows the calculations which are made for area and volume of the airspace and the distance and True North heading from each point to the next. The total distance represents the perimeter of the airspace boundary in the case of MOA-type airspace, and distance from start to finish for a low level navigation route.

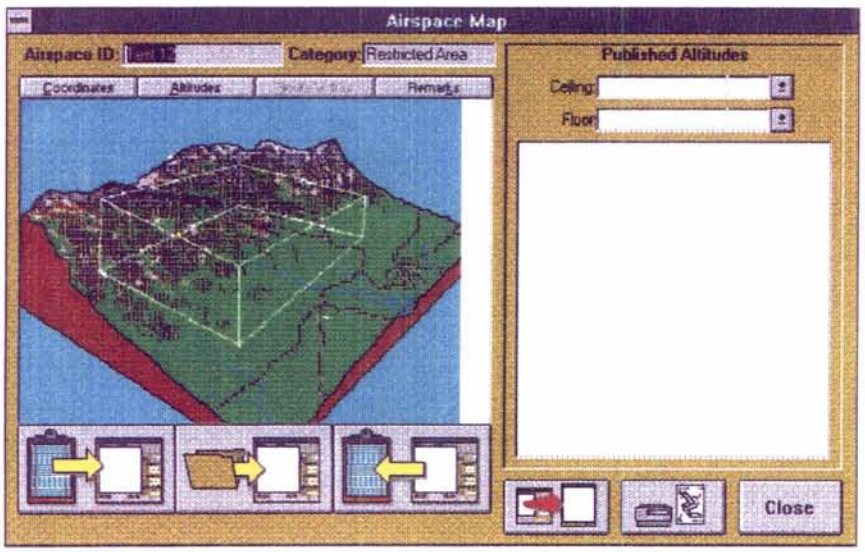


The second aspect of the application is the airspace sketch pad. Specific areas can be recalled, as in this case the State of Alaska. The cursor will show real time lat/long information.

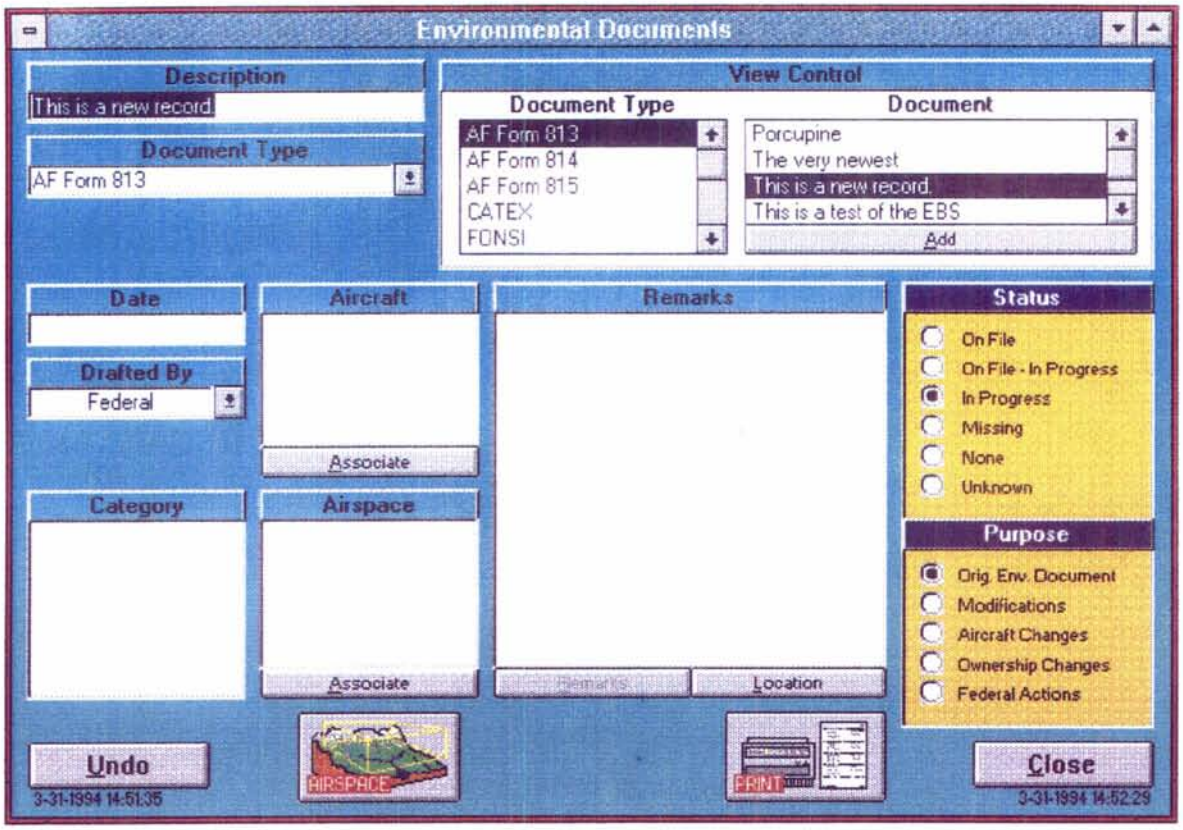
The AFRES Airspace Database is a system designed to aid HQ AFRES, Airspace Management and Environmental Office, with the storage and retrieval of documented data pertaining to airspace scheduled or used by AFRES units. The system provides tools for scanning data based upon controlling base, specific airspace, using squadron, or environmental document. The system also provides great flexibility in reporting as it is implemented as a Microsoft Access application. The user can create custom reports using the tools provided by the Access framework making the AFRES Airspace Database easy to customize.



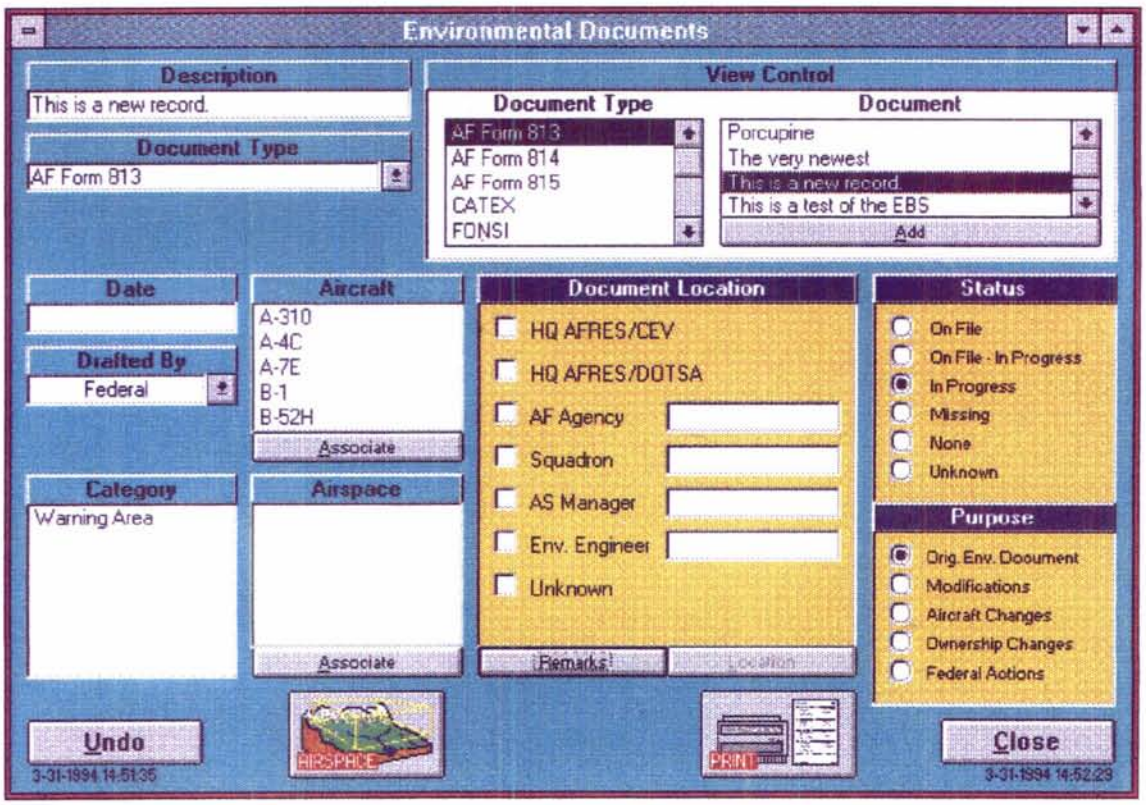
The form shown above is the Airspace form. On this form the user enters descriptive information about a specific piece of airspace. From this form the user can traverse to many different areas of the database system without returning to the main switchboard form shown previously.

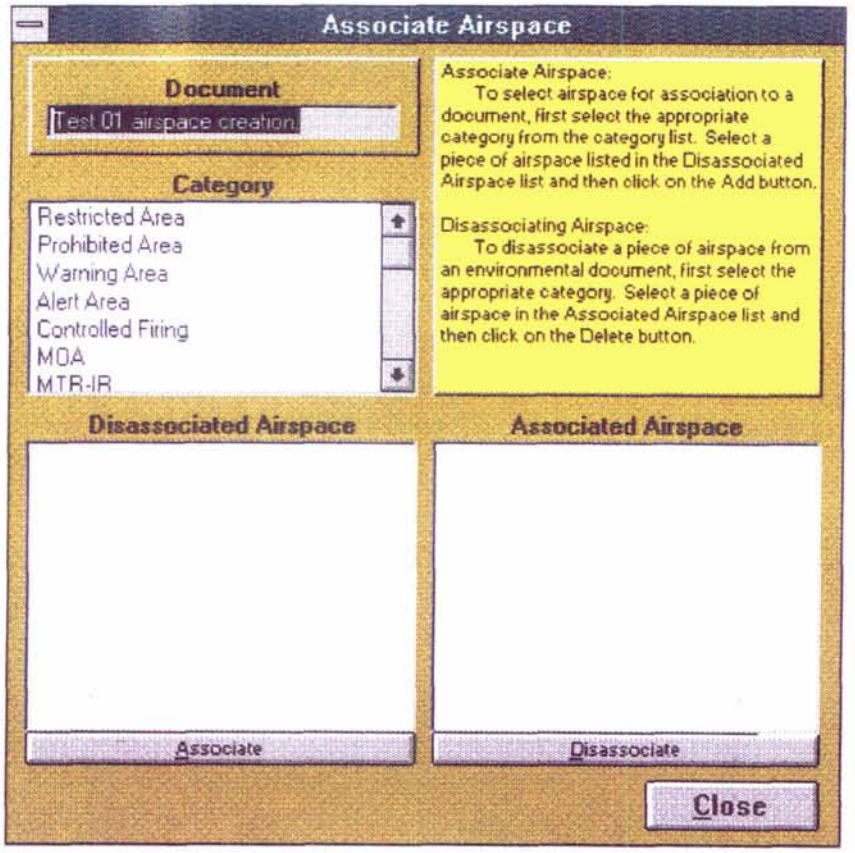


The figure to the left is a copy of the Airspace Map form. This form is only accessed from the Airspace form. It is designed to display the detailed information about a piece of airspace. It includes such fields as an airspace map field, latitude and longitude fields, route width fields, and airspace altitude fields.



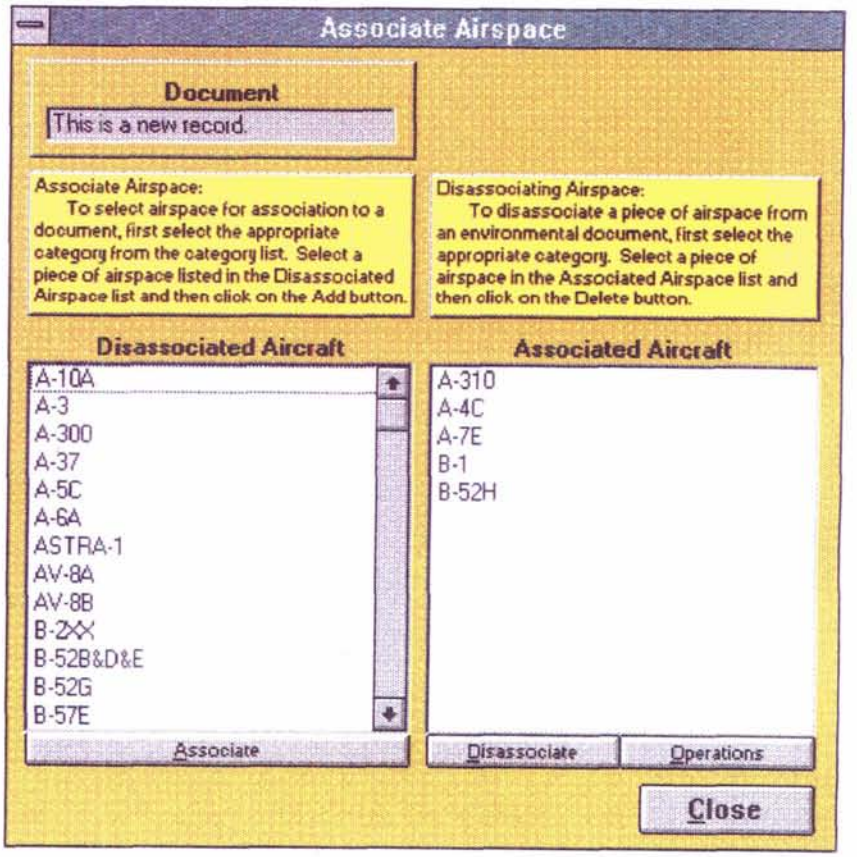
The form shown above and below is one of the most crucial forms in the system. This form, the Environmental Documents form, displays data about a specific environmental document created a specific set or piece of airspace.

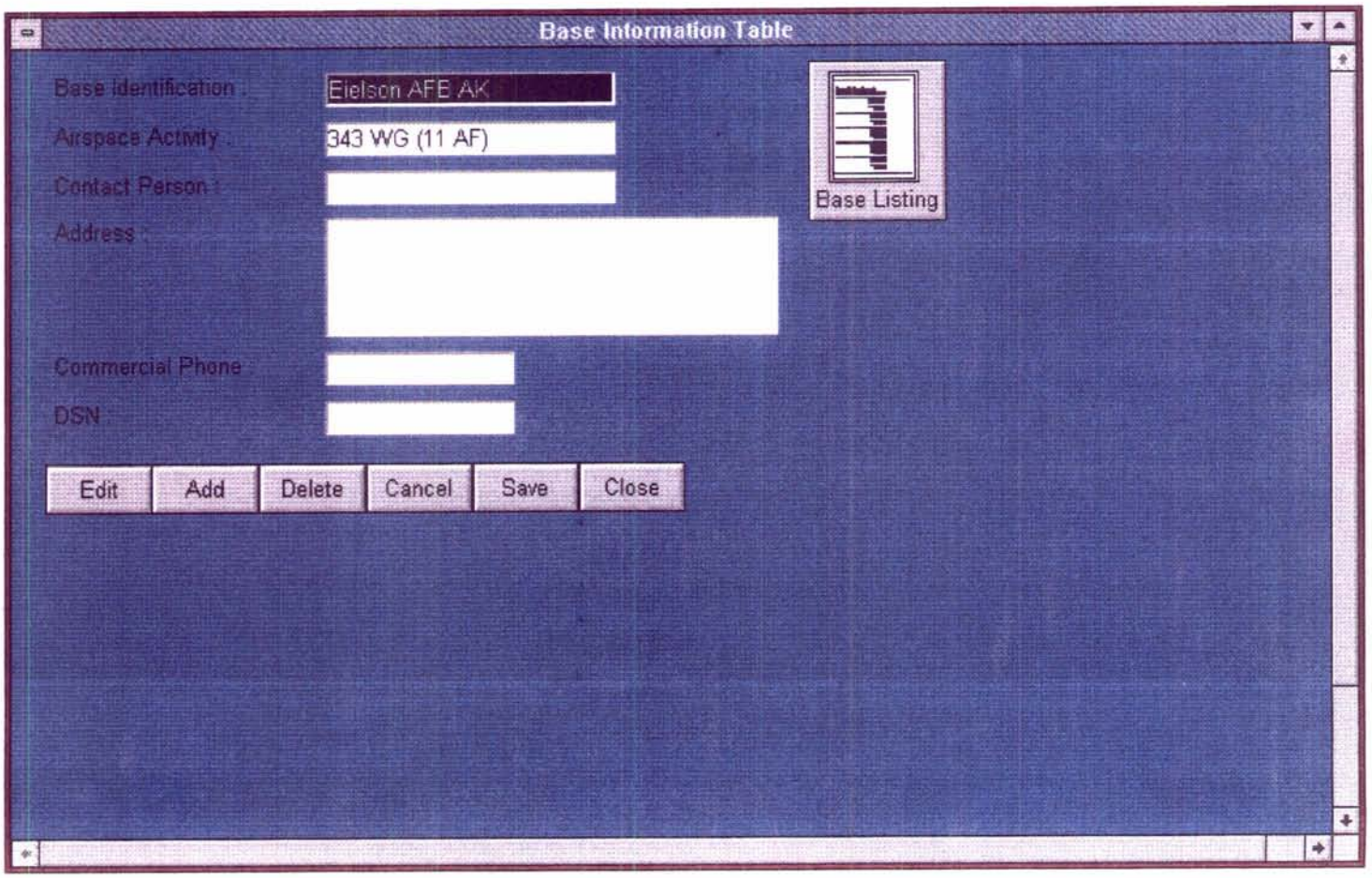


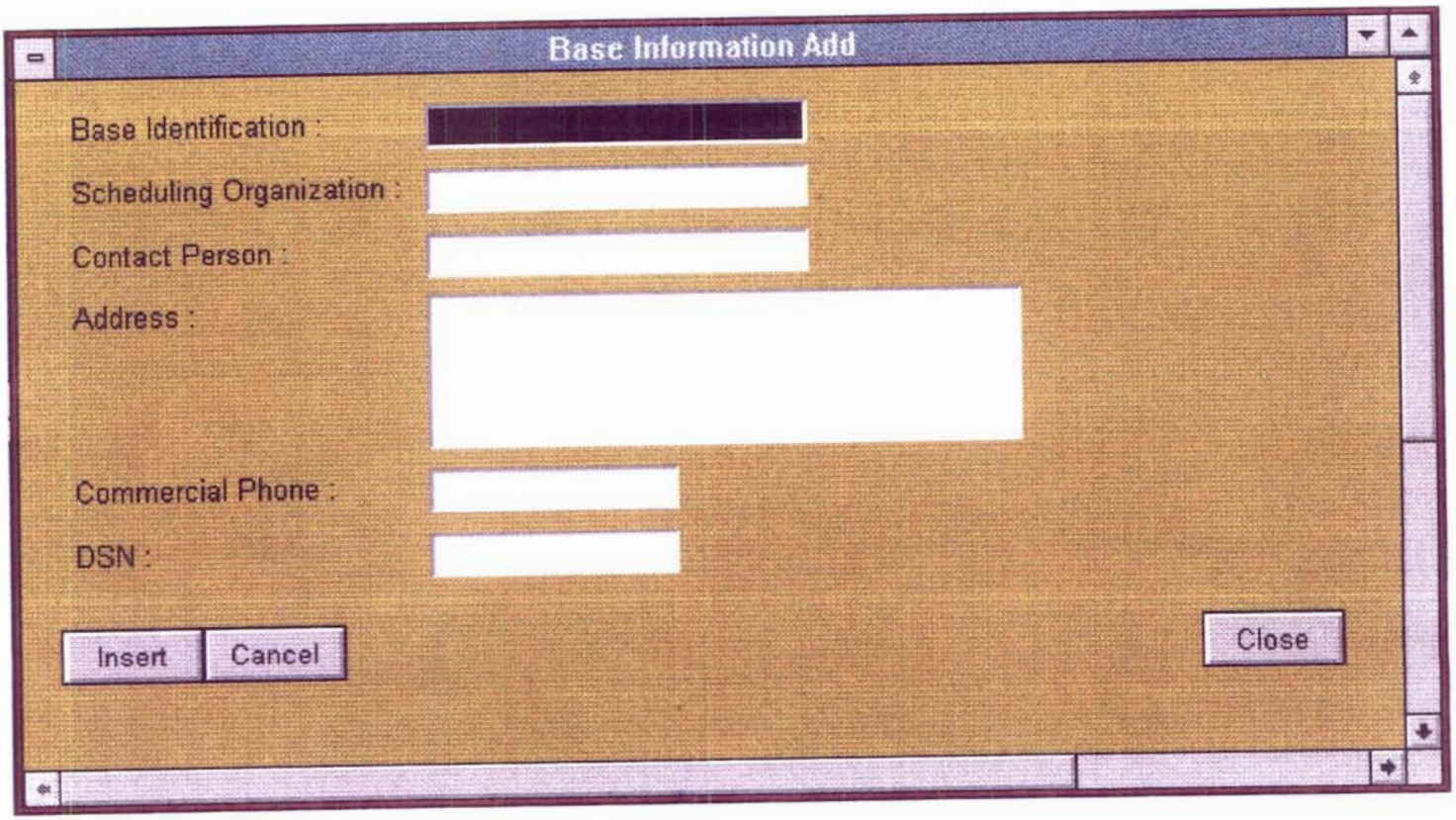


The user can associate as many pieces of airspace with one document as needed. The form in the figure to the left is the Associate Airspace form. The user can specify which pieces of airspace are associated with the designated document by adding the airspace to the associated airspace list. This done simply by choosing a disassociated piece of airspace and clicking on the button that associates the airspace to the document.

Not only can the user associate airspace to a document, they can also associate aircraft. The process of associating aircraft is the same as associating airspace. The user simply selects an aircraft type and associates it with the designated document.




Base Information Table
Base identification :
Eielson AFB AK
Airspace Activity :
343 WG (11 AF)
Contact Person :
Address :
Commercial Phone :
DSN :
Base Listing
Edit
Add
Delete
Cancel
Save
Close


Base Information Add
Base Identification :
Scheduling Organization :
Contact Person :
Address :
Commercial Phone :
DSN :
Insert
Cancel
Close

MOA Information

Base Identification : Eielson AFB AK

MOA Identification : BIG DELTA ATCAA

Total Hours Available : 2,400.00

Remarks :

Scheduling Organization : 343 WG (11 AF)

Contact Person :

Address :

Commercial Phone :

DSN :

Edit | Add | Delete | Cancel | Save | Close

MOA Information Add

Base Identification :

MOA Identification :

Total Hours Available :

Remarks :

Scheduling Organization :

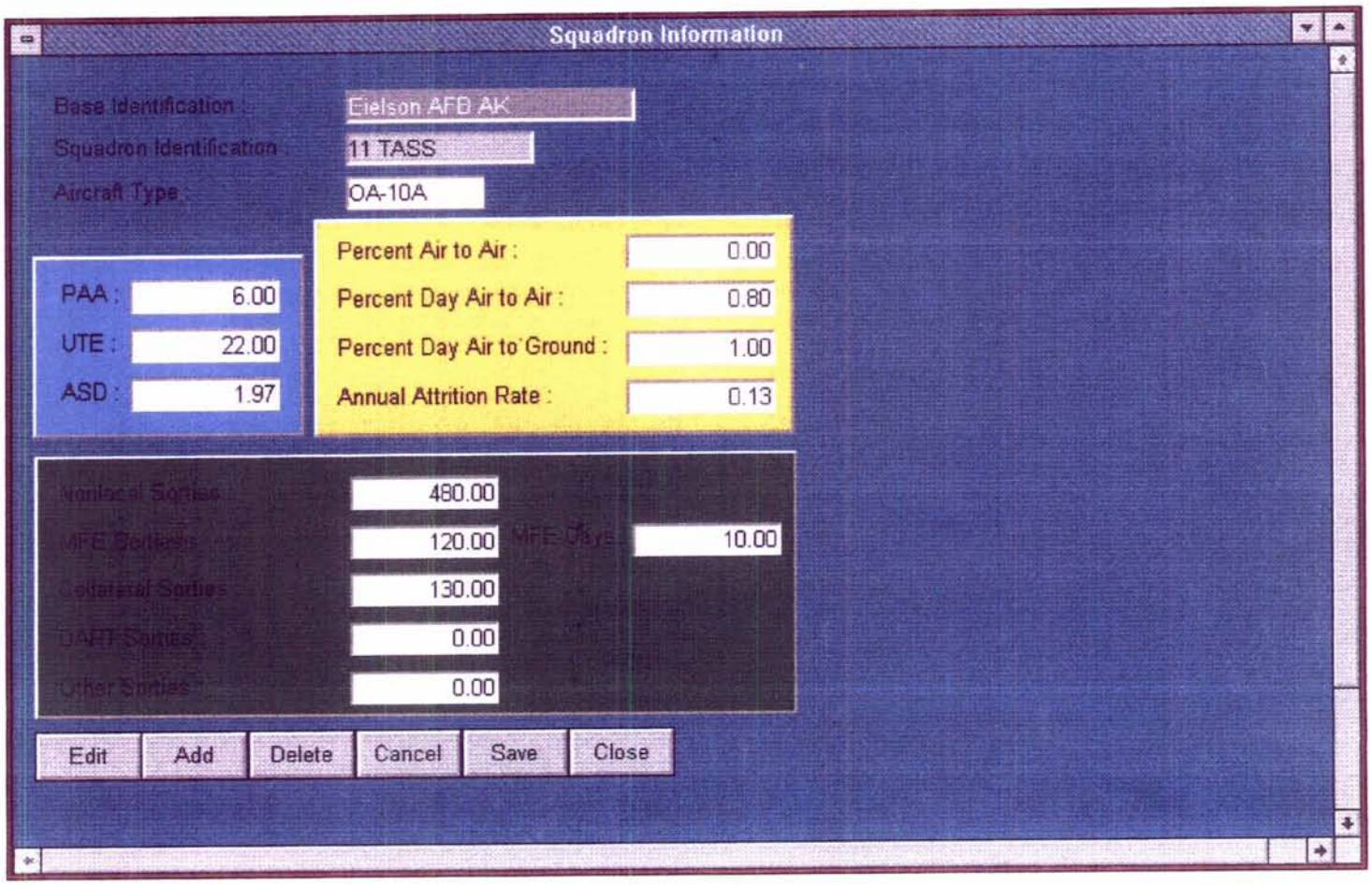
Contact Person :

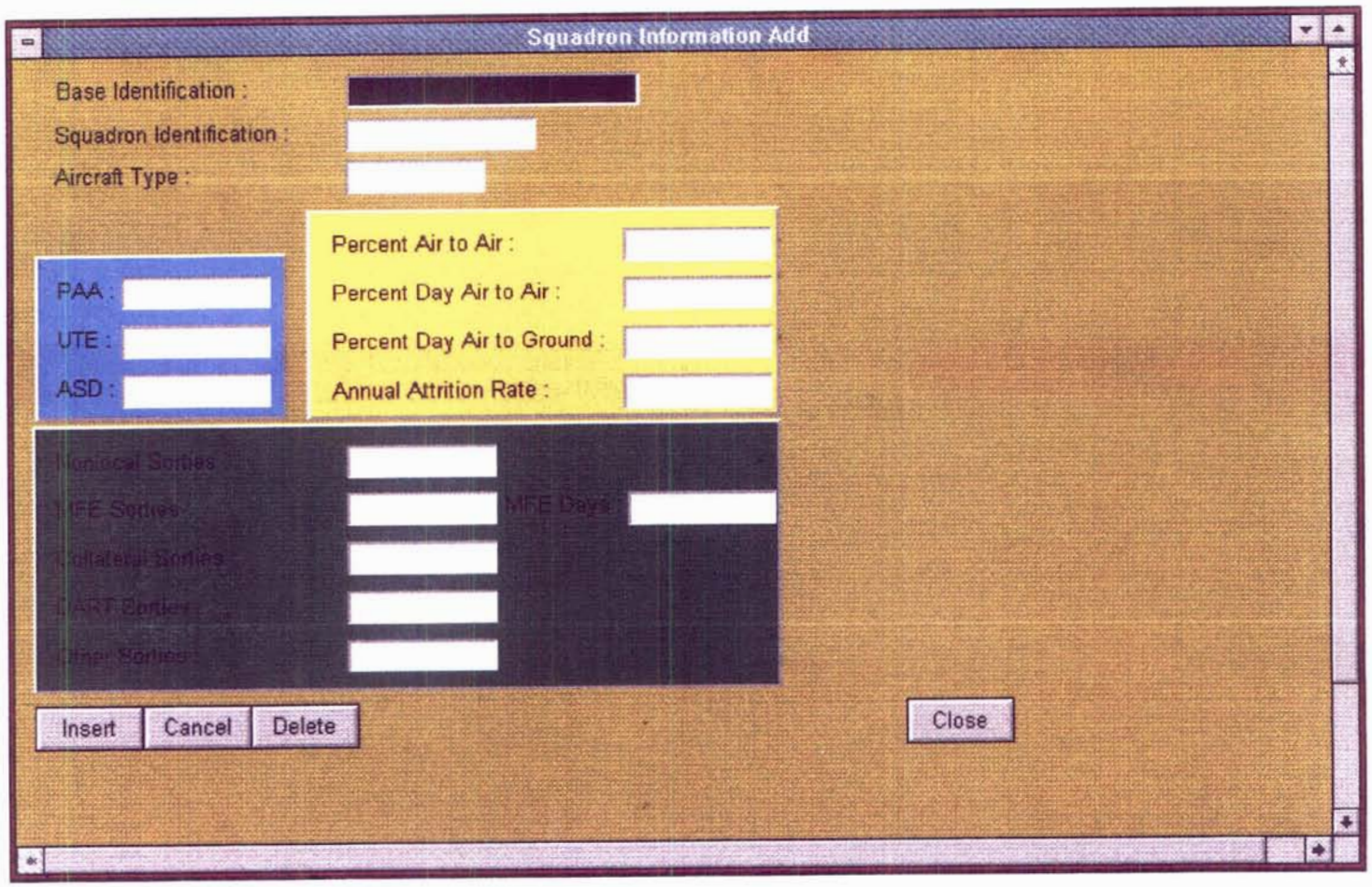
Address :

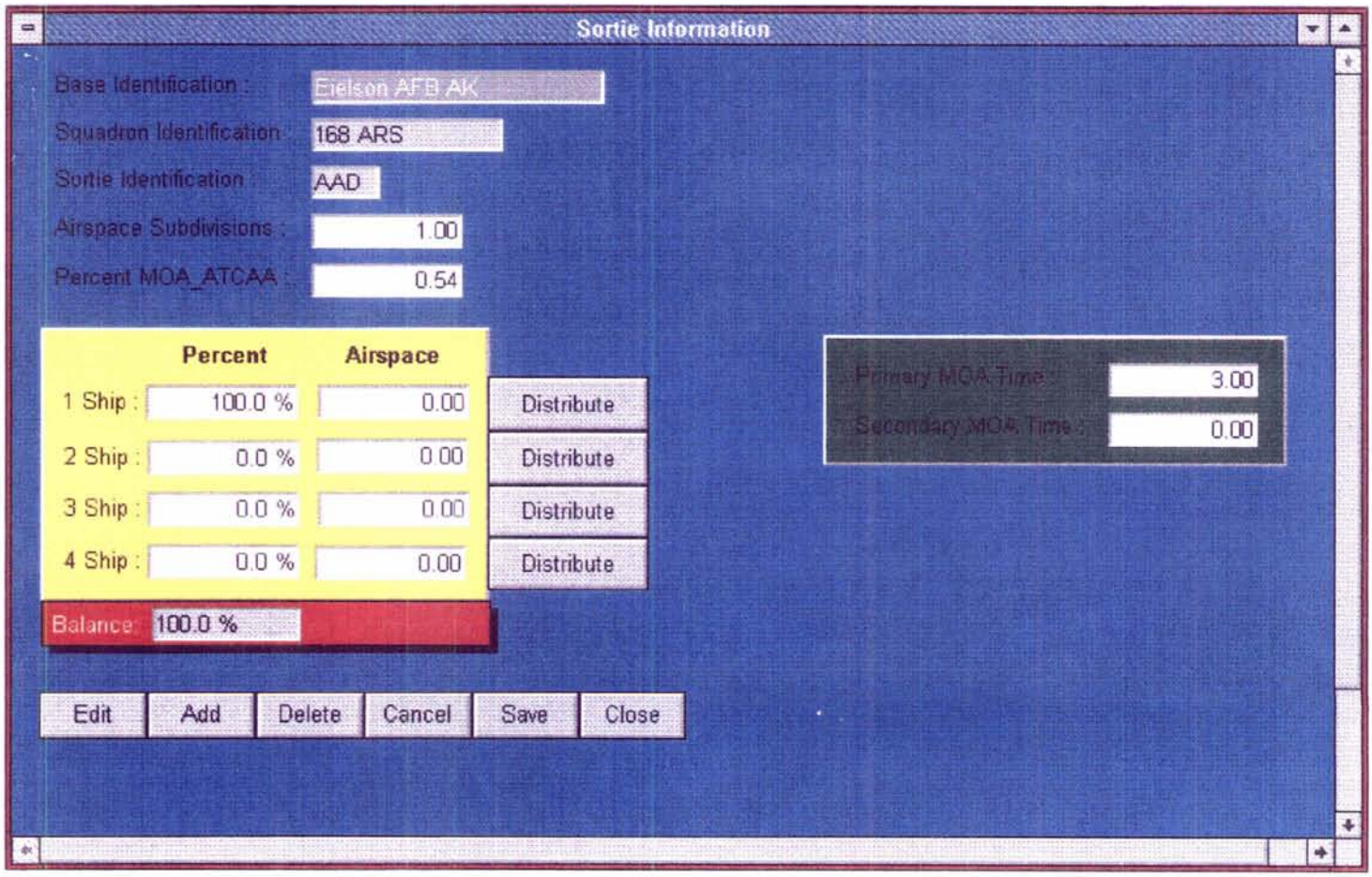
Commercial Phone :

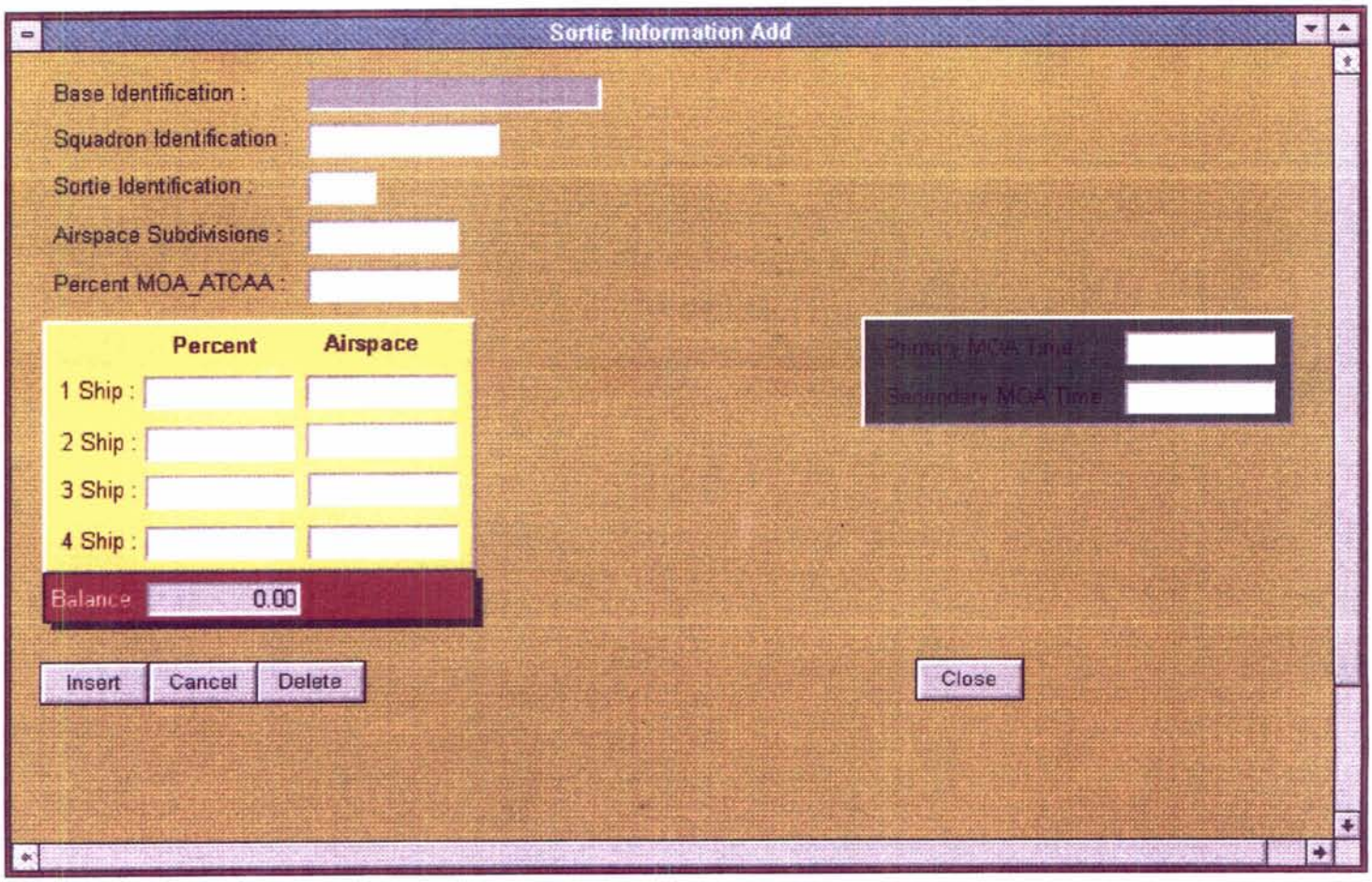
DSN :

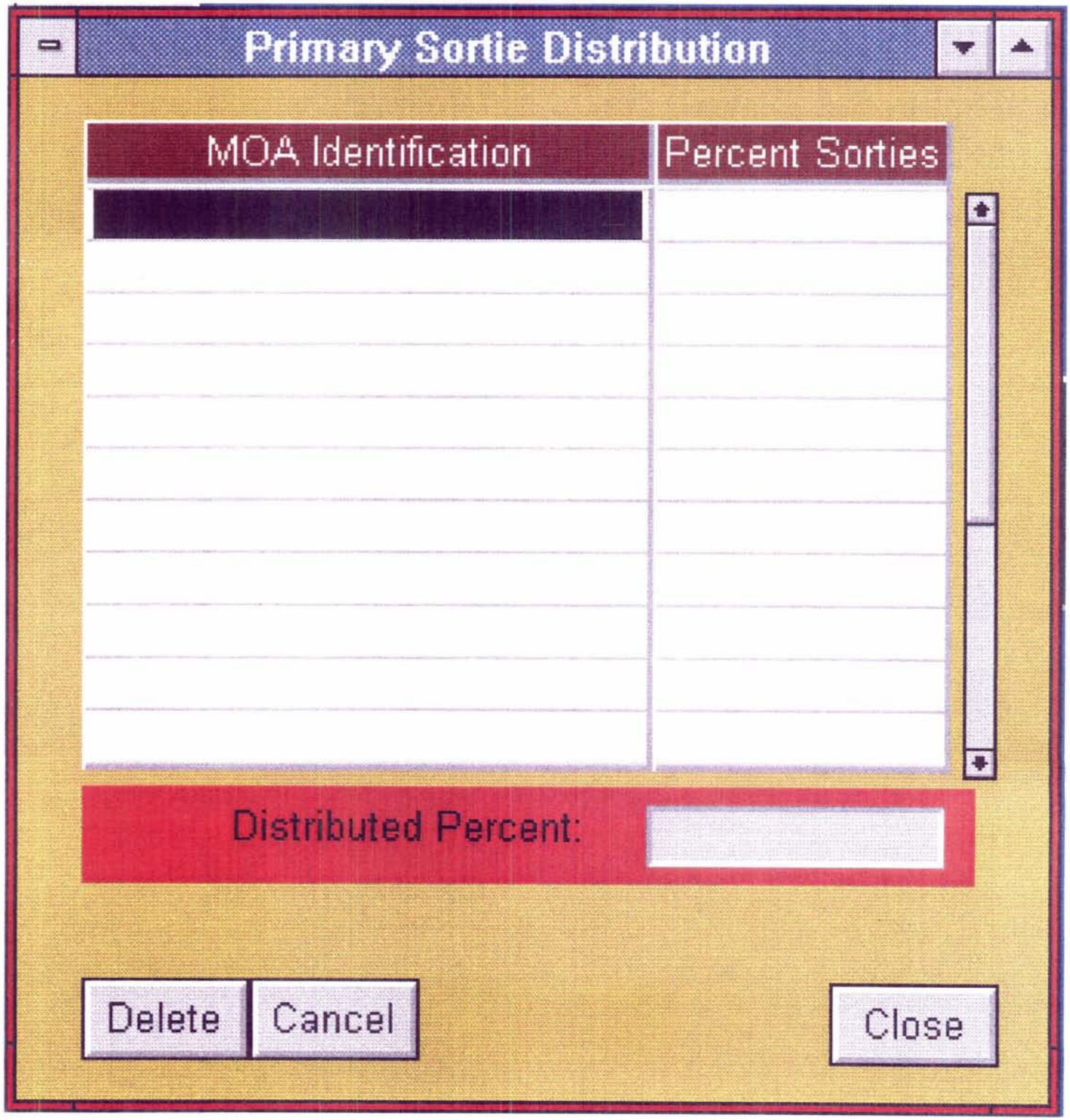
Insert | Cancel | Delete | Close

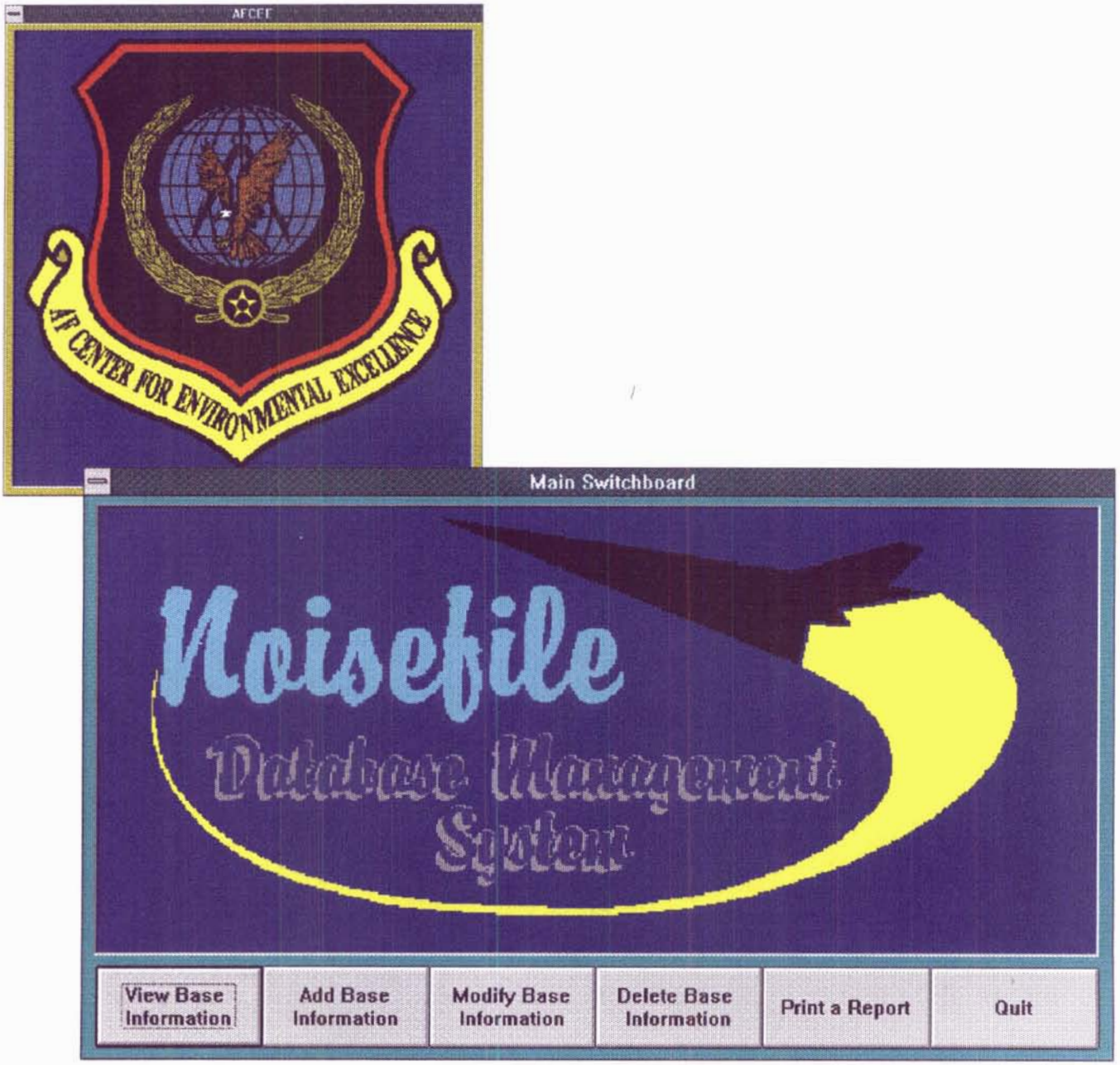

Squadron Information
Base Identification :
Eielson AFB AK
Squadron Identification :
11 TASS
Aircraft Type :
OA-10A
PAA :
6.00
UTE :
22.00
ASD :
1.97
Percent Air to Air :
0.00
Percent Day Air to Air :
0.80
Percent Day Air to Ground :
1.00
Annual Attrition Rate :
0.13
Nonlocal Sorties :
480.00
MFE Sorties :
120.00
MFE Days :
10.00
Collateral Sorties :
130.00
DART Sorties :
0.00
Other Sorties :
0.00
Edit
Add
Delete
Cancel
Save
Close


Squadron Information Add
Base Identification :
Squadron Identification :
Aircraft Type :
Percent Air to Air :
Percent Day Air to Air :
Percent Day Air to Ground :
Annual Attrition Rate :
PAA :
UTE :
ASD :
Monocal Sorties :
MFE Sorties :
MFE Days :
Collateral Sorties :
DART Sorties :
Other Sorties :
Insert
Cancel
Delete
Close


Sortie Information
Base Identification : Eielson AFB AK
Squadron Identification : 168 ARS
Sortie Identification : AAD
Airspace Subdivisions : 1.00
Percent MOA_ATCAA : 0.54
Percent
Airspace
1 Ship : 100.0 % 0.00 Distribute
2 Ship : 0.0 % 0.00 Distribute
3 Ship : 0.0 % 0.00 Distribute
4 Ship : 0.0 % 0.00 Distribute
Balance: 100.0 %
Primary MOA Time : 3.00
Secondary MOA Time : 0.00
Edit
Add
Delete
Cancel
Save
Close

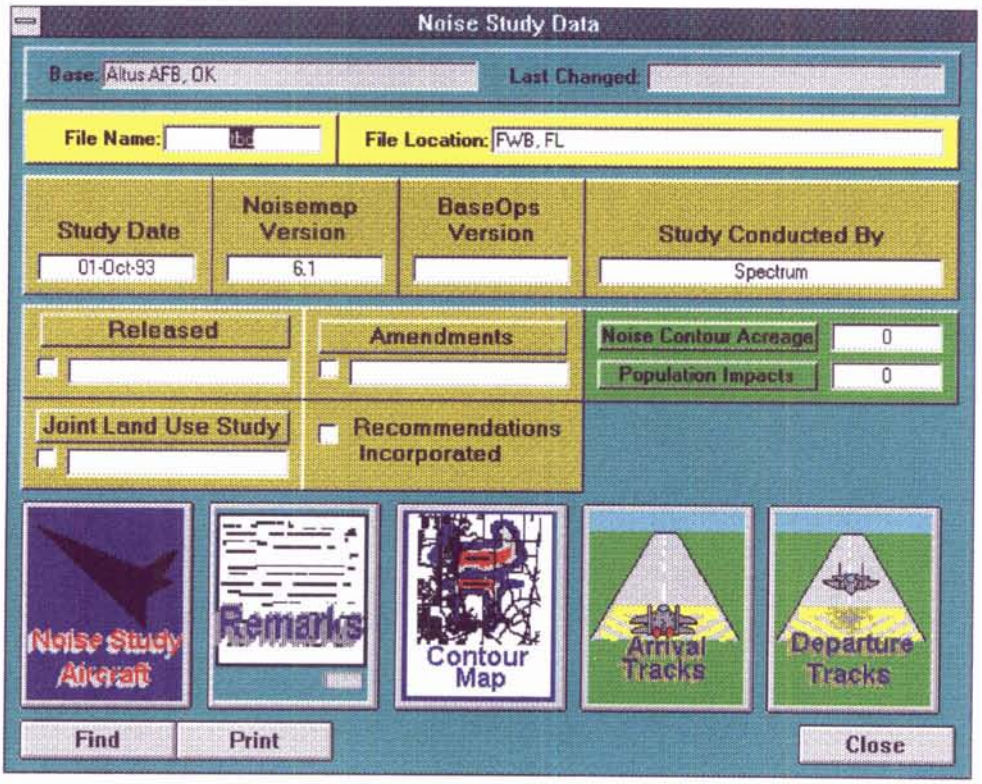

Sortie Information Add
Base Identification :
Squadron Identification :
Sortie Identification :
Airspace Subdivisions :
Percent MOA_ATCAA :
Percent
Airspace
1 Ship :
2 Ship :
3 Ship :
4 Ship :
Balance
0.00
Primary MOA Time :
Secondary MOA Time :
Insert
Cancel
Delete
Close


Primary Sortie Distribution
MOA Identification
Percent Sorties
Distributed Percent:
Delete
Cancel
Close



The **Noisefile Database Management System** (NDBMS) was designed in cooperation with the *Air Force Center for Environmental Excellence* (AFCEE) with the objective to maintain summarized information concerning noise studies completed, or in process at air force bases world wide. Through the use of the database, the users can answer questions about the individual studies completed or in process for each base recorded in the database. The AFCEE office could also obtain reports from the system detailing the bases historical records of noise studies.

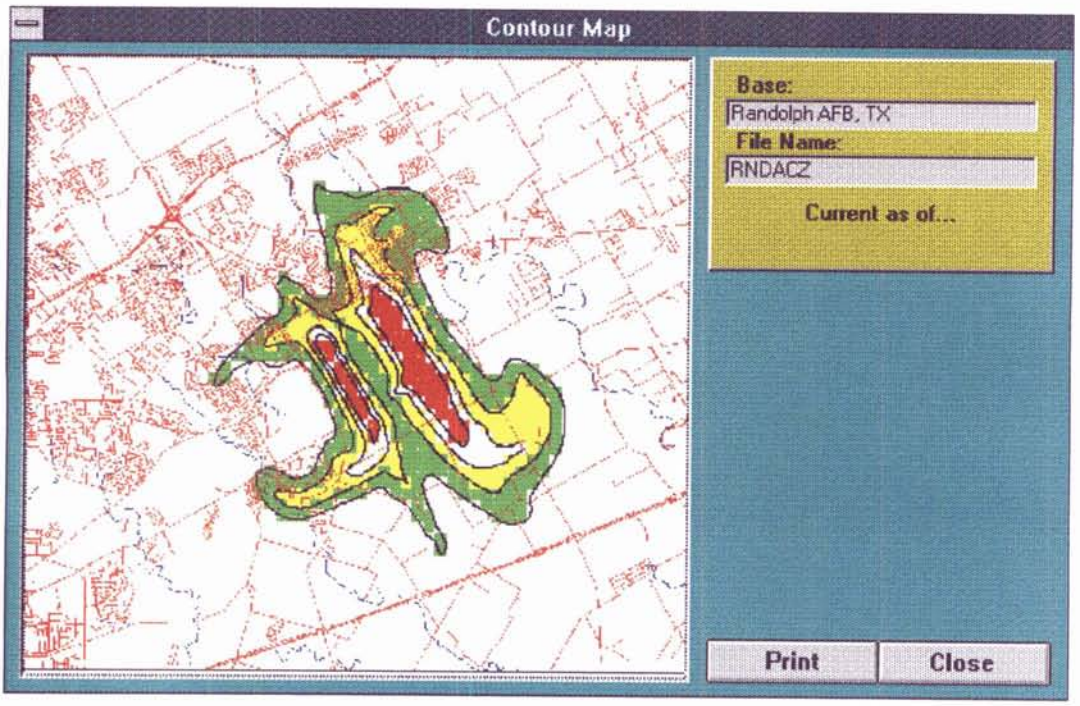
The system maintains not only textual data, but also graphical information. It is possible for the AFCEE office to import a scanned image of the runways as well as a noise study contour map into the database. These images can then be reporoduced on any **Microsoft Windows** compatible color or black-and-white printer.

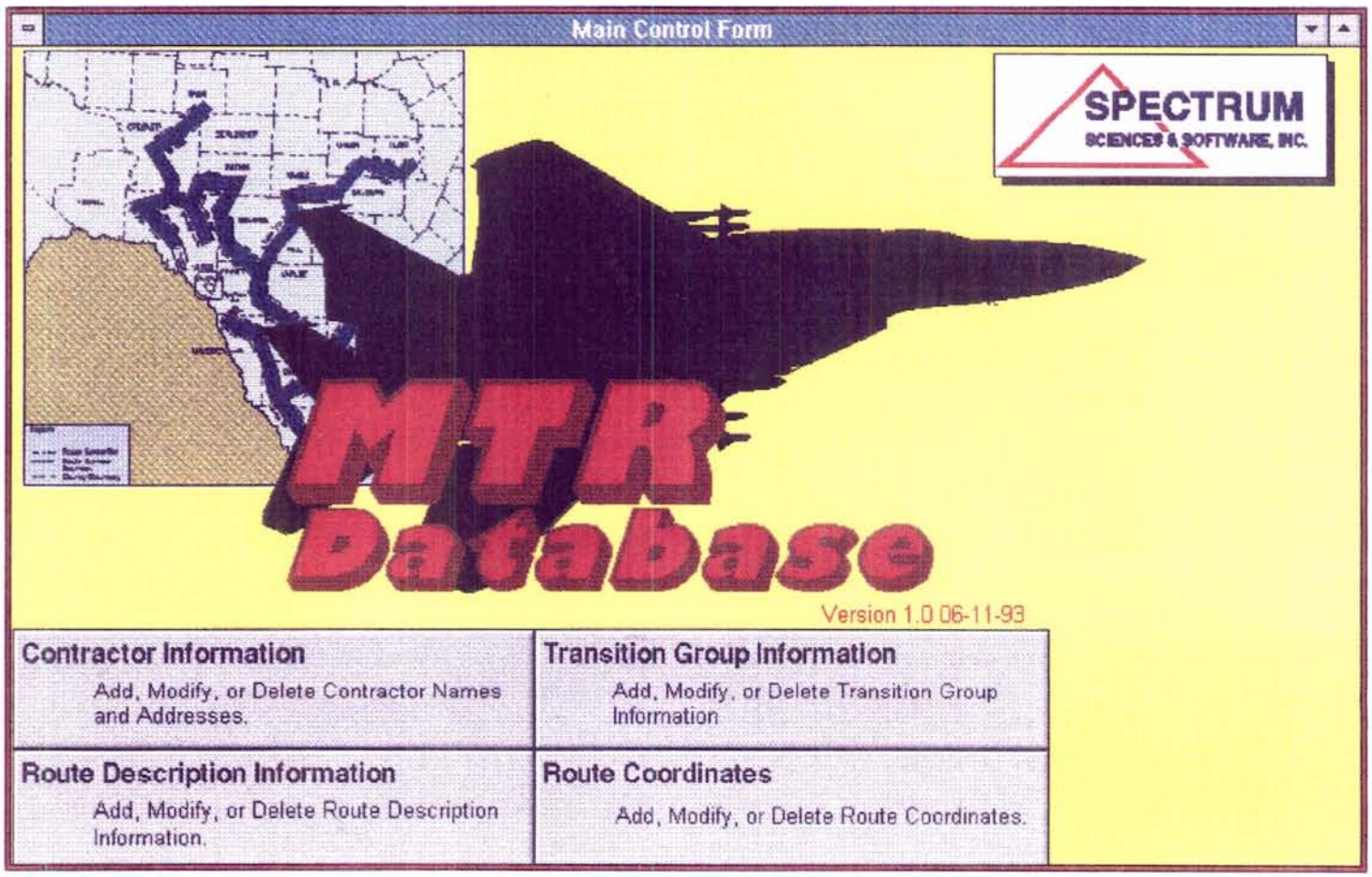


Each study is recorded in the database in the Noise Study Data form as pictured to the left. From this form the user can open the Contour Map form revealing the resulting contour map based upon the study results.

The user can also store arrival and departure flight track maps within the database. These graphic images can be entered in their own coresponding forms accesed from the Noise Study Data form.

A typical contour map is displayed below. A user can view this graphical map from the Noise Study Data form by clicking on the Contour Map button. Once the user has access to this form, they can reproduce the image by printing it. Depending upon the system installation, the user can either reproduce the system as a color or black-and-white image.




Main Control Form
SPECTRUM
SCIENCES & SOFTWARE, INC.
MTR
Database
Version 1.0 06-11-93
Contractor Information
Add, Modify, or Delete Contractor Names and Addresses.
Transition Group Information
Add, Modify, or Delete Transition Group Information
Route Description Information
Add, Modify, or Delete Route Description Information.
Route Coordinates
Add, Modify, or Delete Route Coordinates.

MTR DATABASE

The MTR DATABASE application is a SPECTRUM Sciences & Software, Inc. software program developed in house for maintaining the required data on a low level navigation route (MTR or SR).

The route information can be for an existing route, or as in the example attached, for a proposed route. The information can then be printed directly from the application to a SPECTRUM reproduced FAA Form 7110-4 for submission as a formal airspace proposal.

Contractor: Laughlin AFB

Originating Activity

47 OSS/DOOR
Laughlin AFB, TX
78843-5222

CMCL (210) 298-5864
(210) 298-5337

SCHD_ADDRESS :

85 FTS/DO
Laughlin AFB, TX
78843-5220

CMCL (210) 298-5121
(210) 298-5429

AUTOVON : DSN 732-5864

AUTOVON : DSN 732-5121

Print Forms

New

Edit

Find

Delete

Save

Cancel

Close

Contractor: Laughlin AFB

ROUTE

☑ Established

☐ Modified

Effective Date: Thursday, 16 Sep 1993

Hours of Operation: Official Sunrise to Sunset Daily

Route Designator: SR 281

Originating Activity:

47 OSS/DOOR
Laughlin AFB, TX
78843-5222

CMCL (210) 298-5864
(210) 298-5337

AUTOVON: DSN 732-5864

Scheduling Activity:

85 FTS/DO
Laughlin AFB, TX
78843-5220

CMCL (210) 298-5121
(210) 298-5429

AUTOVON: DSN 732-5121

Terrain Follwing Operations: None

Route Width: 3NM L/R from A to B; 3NM L/R from B to C; 3NM L and 4NM R from C to D; 4NM L/R from D to E; 2NM L and 5NM R from E to F; 4NM L and 3NM R from F to G; 4NM L/R from G to H; 4NM L/R from H to I; 4NM L/R from I to J; 4NM L/R from I to J; 4NM L/R from K to L; 4NM L/R from L to M; 4NM L/R from M to N; 4NM L/R from N to O; 3NM L and 4NM R from O to P;

Special Operating Procedures:
(1) Tie-in FSS: San Angelo (NOTAM-SJT)
(2) Primary Entry A; Alternate Entry C, H, I, and J; Primary Exit P; Alternate Exists E-2, E-3, E-4, F-2, F-4, H, I, J, J-7, and O-1
(3) Users MUST contact the Scheduling Agency to determine the daily status of the route segments, to

FAA Region: Southwest ARTCC: Houston

Edit | New | Delete | Cancel | Save | Close | Print

Contractor: Laughlin AFB

Route Designator: SR 281

Sequence: 1

Transition Group: Primary Entry Fix:

Edit | New | Delete | Cancel | Save | Close | Print

CONTRACT_ID: Laughlin AFB

RTE_DESIGN: SR 281

RTE_GROUP: Primary Entry Fix:

Route Entry

Edit | New | Delete | Cancel | Save | Close | Print

ALTITUDE_DATA	POINT	FACILITY	LAT DEG	LAT MIN	LON DEG	LON MIN
Descend VFR to 15AGL direct to	A	DLF*C	29	2.8	100	36.3
05AGL B 15AGL	B	DLF*C	28	57.5	100	24
05AGL B 15AGL (Alternate Entry: Enter Route at 15AGL)	C	DLF*C	28	53	100	10
05AGL B 15AGL	D	DLF*C	28	37.3	100	2.7
05AGL B 15AGL	E	DLF*C	28	18.7	99	57.7
05AGL B 15AGL	F	DLF*C	28	32	99	24

MILITARY TRAINING ROUTE DATA

ROUTE	EFFECTIVE DATE (COMPATIBLE WITH DOD FLIP AP/1B CHARTING DATE)	ORIGINATING ACTIVITY (DESIGNATION AND ADDRESS)	SCHEDULING ACTIVITY (DESIGNATION AND ADDRESS)
[X] ESTABLISHED [ ] MODIFIED	16 September 93	47 OSS/DOOR Laughlin AFB, TX 78843-5222 CMCL (210) 298-5864 (210) 298-5337	85 FTS/DO Laughlin AFB, TX 78843-5220 CMCL (210) 298-5121 (210) 298-5429
ROUTE DESIGNATION (ASSIGNED BY REG. MILITARY REPRESENT) SR 281	HOURS OF OPERATION (ENTER HOURS AND/OR DAYS. SPECIFY LOCAL OR GMT). Official Sunrise to Sunset Daily	AUTOVON NO.: DSN 732-5864	AUTOVON NO.: DSN 732-5121

ROUTE DESCRIPTION

NFDC USE	ALTITUDE DATA	POINT	FACILITY	RADIAL DISTANCE (NFDC USE)	LATITUDE	LONGITUDE
	Primary Entry Fix: DLF 130/025					
	Descend VFR to 15AGL direct to Entry at	A	DLF*C		29° 2.8' N	100° 36.3' W
	05AGL B 15AGL	B	DLF*C		28° 57.5' N	100° 24.0' W
	05AGL B 15AGL (Alternate Entry: Enter Route at 15AGL)	C	DLF*C		28° 53.0' N	100° 10.0' W
	05AGL B 15AGL	D	DLF*C		28° 37.3' N	100° 2.7' W
	05AGL B 15AGL	E	DLF*C		28° 18.7' N	99° 57.7' W
	05AGL B 15AGL	F	DLF*C		28° 32.0' N	99° 24.0' W
	05AGL B 15AGL	G	DLF*C		28° 52.5' N	99° 36.0' W
	05AGL B 15AGL (Alternate Entry/Exit: Enter/Exit Route at 15AGL)	H	DLF*C		29° 5.8' N	99° 56.2' W
	05AGL B 15AGL (Alternate Entry/Exit: Enter/Exit Route at 15AGL)	I	DLF*C		29° 14.7' N	100° 12.1' W
	05AGL B 15AGL (Alternate Entry/Exit: Enter/Exit Route at 15AGL)	J	DLF*C		29° 29.8' N	100° 12.0' W
	05AGL B 15AGL	K	DLF*C		29° 48.7' N	100° 35.5' W
	05AGL B 15AGL	L	DLF*C		30° 7.5' N	100° 41.7' W
	05AGL B 15AGL	M	DLF*C		30° 24.3' N	100° 31.0' W
	05AGL B 15AGL	N	DLF*C		30° 24.0' N	100° 56.5' W
	05AGL B 15AGL	O	DLF*C		30° 10.7' N	101° 1.0' W
	05AGL B 15AGL (Exit)	P	DLF*C		29° 48.8' N	100° 48.0' W
	LAREDO TNX					
	05AGL B 15AGL	E	DLF*C		28° 18.7' N	99° 57.7' W

NFDC USE	ALTITUDE DATA	POINT	FACILITY	RADIAL DISTANCE (NFDC USE)	LATITUDE	LONGITUDE
	05AGL B 15AGL	E-1	LRD*C		27° 58.7' N	99° 40.5' W
	05AGL B 15AGL (Alternate Exit: Exit Route at 15AGL)	E-2	LRD*C		27° 55.9' N	99° 23.3' W
	05AGL B 15AGL (Alternate Exit: Exit Route at 15AGL)	E-3	LRD*C		27° 39.8' N	99° 8.0' W
	05AGL B 15AGL (Exit)	E-4	LRD*C		27° 28.5' N	99° 9.5' W
	PLEASANTON TNX					
	05AGL B 15 AGL	F	DLF*C		28° 32.0' N	99° 24.0' W
	05AGL B 15AGL	F-1	SAT*C		28° 39.2' N	99° 25.0' W
	05AGL B 15AGL (Alternate Exit: Exit Route at 15AGL)	F-2	SAT*C		29° 1.4' N	99° 8.5' W
	05AGL B 15AGL	F-3	SAT*C		28° 59.0' N	98° 51.5' W
	05AGL B 15AGL (Exit)	F-4	SAT*C		29° 8.8' N	98° 35.5' W
	LLANO TNX					
	05AGL B 15AGL	J	DLF*C		29° 29.8' N	100° 12.0' W
	05AGL B 15AGL	J-1	CSI*C		29° 46.5' N	100° 4.7' W
	05AGL B 15AGL	J-2	CSI*C		30° 2.5' N	99° 50.3' W
	05AGL B 15AGL	J-3	CSI*C		30° 18.2' N	99° 54.5' W
	05AGL B 15AGL	J-4	CSI*C		30° 21.7' N	99° 23.7' W
	05AGL B 15AGL	J-5	CSI*C		30° 38.5' N	99° 5.9' W
	05AGL B 15AGL	J-6	CSI*C		30° 33.0' N	98° 42.3' W
	05AGL B 15AGL (Exit)	J-7	CSI*C		30° 40.9' N	98° 29.0' W
	SAN ANGELO TNX					
	05AGL B 15AGL	O	DLF*C		30° 10.7' N	101° 1.0' W
	05AGL B 15AGL (Exit)	O-1	DLF*C		30° 14.1' N	101° 15.3' W

TERRAIN FOLLOWING OPERATIONS. (EXPLAIN PROCEDURES TO BE FOLLOWED. IF APPROPRIATE, SHOW POINT IN SEQUENTIAL ORDER; VFR OR IFR CRITERIA AND ALTITUDES; AND OTHER INFORMATION AS NECESSARY.)

None

ROUTE WIDTH (DESCRIBE THE WIDTH OF ALL ROUTES AND TRACKS SEGMENTS IN TERMS OF MILES EITHER SIDE OF TRACK. SPECIFY WHETHER LEFT OR RIGHT OF CENTERLINE.)

3NM L/R from A to B; 3NM L/R from B to C; 3NM L and 4NM R from C to D; 4NM L/R from D to E; 2NM L and 5NM R from E to F; 4NM L and 3NM R from F to G; 4NM L/R from G to H; 4NM L/R from H to I; 3NM L and 4NM R from I to J; 3NM L and 4NM R from J to K; 4NM L/R from K to L; 4NM L/R from L to M; 4NM L/R from M to N; 4NM L/R from N to O; 3NM L and 4NM R from O to P; LAREDO TNX: 4NM L/R from E to E-1; 3NM L and 4NM R from E-1 to E-2; 4NM L/R from E-2 to E-3; 4NM L/R from E-3 to E-4; PLEASANTON TNX: 3NM L and 4NM R from F to F-1; 4NM L/R from F-1 to F-2; 3NM L and 4NM R from F-2 to F-3; 3NM L and 4NM R from F-3 to F-4; LLANO TNX: 3NM L and 4NM R from J to J-1; 3NM L and 4NM R from J-1 to J-2; 4NM L/R from J-2 to J-3; 4NM L/R from J-3 to J-4; 3NM L and 4NM R from J-4 to J-5; 4NM L and 3NM R from J-5 to J-6; 2NM L and 3NM R from J-6 to J-7; SAN ANGELO TNX: 4NM L/R from O to O-1.

SPECIAL OPERATING PROCEDURES (ENTER ALL SPECIAL PROCEDURES AND/OR REMARKS THAT ARE GENERAL IN NATURE AND NOT APPLICABLE TO ANY SPECIFIC ROUTE SEGMENT, INCLUDING THE FOLLOWING: (1) TURN RADIUS INSTRUCTIONS, IF REQUIRED; (2) TIE-IN FLIGHT SERVICE STATION LOCATION IDENTIFIER; (3) ALL PRIMARY AND ALTERNATE ENTRY POINTS; (4) ALL PRIMARY AND ALTERNATE EXIT POINTS.)

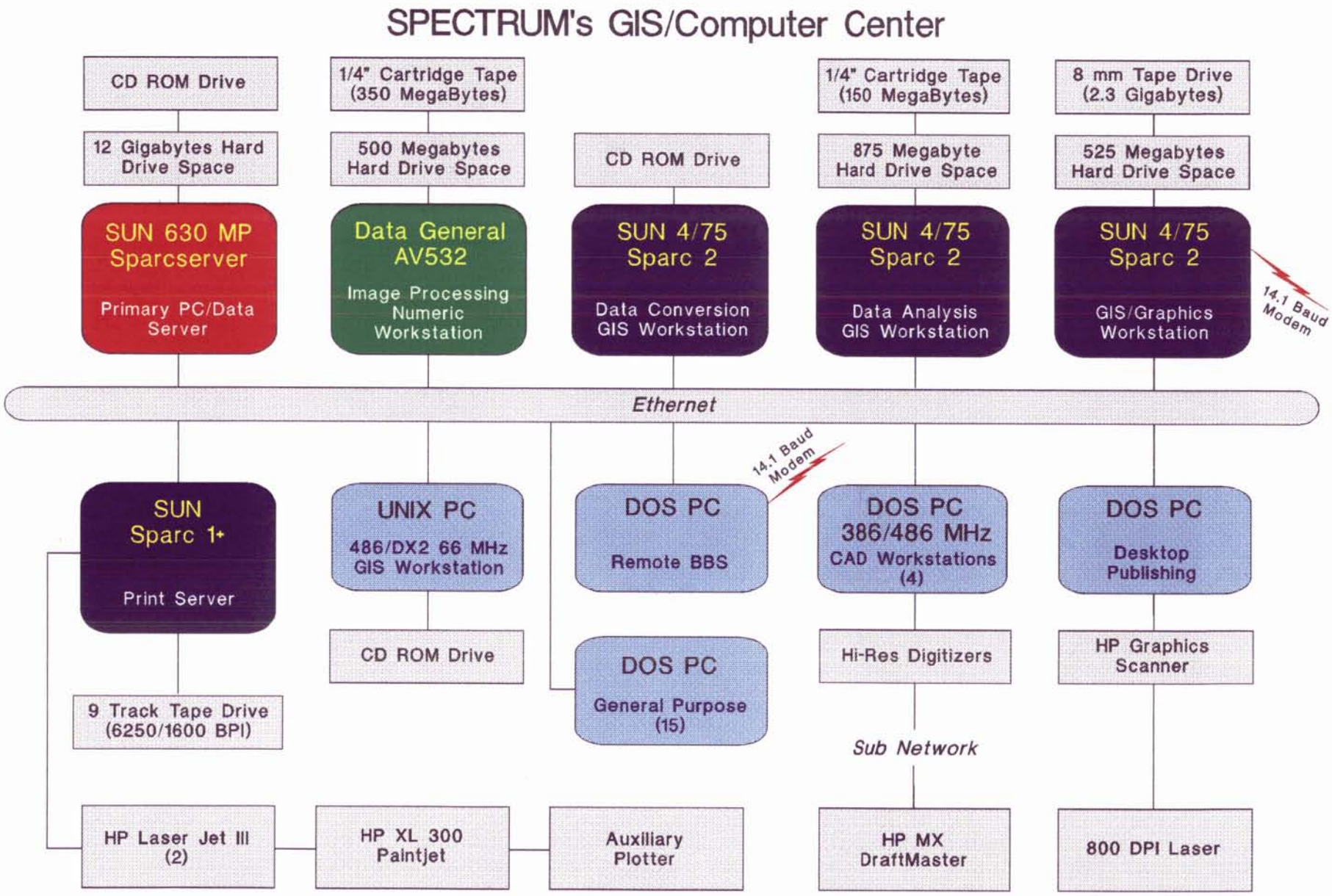
(1) Tie-in FSS: San Angelo (NOTAM-SJT)
(2) Primary Entry A; Alternate Entry C, H, I, and J; Primary Exit P; Alternate Exits E-2, E-3, E-4, F-2, F-4, H, I, J, J-7, and O-1
(3) Users MUST contact the Scheduling Agency to determine the daily status of the route segments, to deconflict crossing routes, and to obtain bird activity status.
(4) Aircraft separation controlled by scheduled entry times; like aircraft expect ten minute minimum separation; route is VMC only; "See and Avoid" at route crossing points.
(5) Users MUST cancel IFR and attempt contact with FSS upon route entry; monitor 255.4 MHz when on route; all entry/alternate entry and exit/ alternate exit points are compulsory reporting points.
(6) Contact Del Rio Approach upon exit at H, I, J, or P; contact Houston Center upon exit at E-2, E-3, E-4, or J-7; contact San Antonio Approach upon exit at F-2 or F-4.
(7) Due to environmental considerations, route is limited to T-37 and T-1A (250 Knots Max) operations only.
(8) Route is reverse of SR 282; both routes cannot be scheduled concurrently.
(9) Use of SAN ANGELO TNX requires simultaneous scheduling of SR 283.
(10) Avoid overflight of communities of Batesville between G and H; Cline between H and I; Callaghan between E-2 and E-3; Moore between F-2 and F-3; Barksdale between J and J-1; Vance between J-1 and J-2; Telegraph between J-3 and J-4; Hilda between J-4 and J-5; Loyal Valley between J-5 and J-6; and Juno between O and O-1.
(11) Altitude restricted to 1,500 feet AGL between O and P from 15 March thru 15 August.

ROUTE ORIGINATION		FLIGHT SERVICE STATIONS (FOR NFDC USE)
FAA REGION Southwest	ARTCC Houston	

TYPED NAME AND SIGNATURE OF APPROVING OFFICIALS

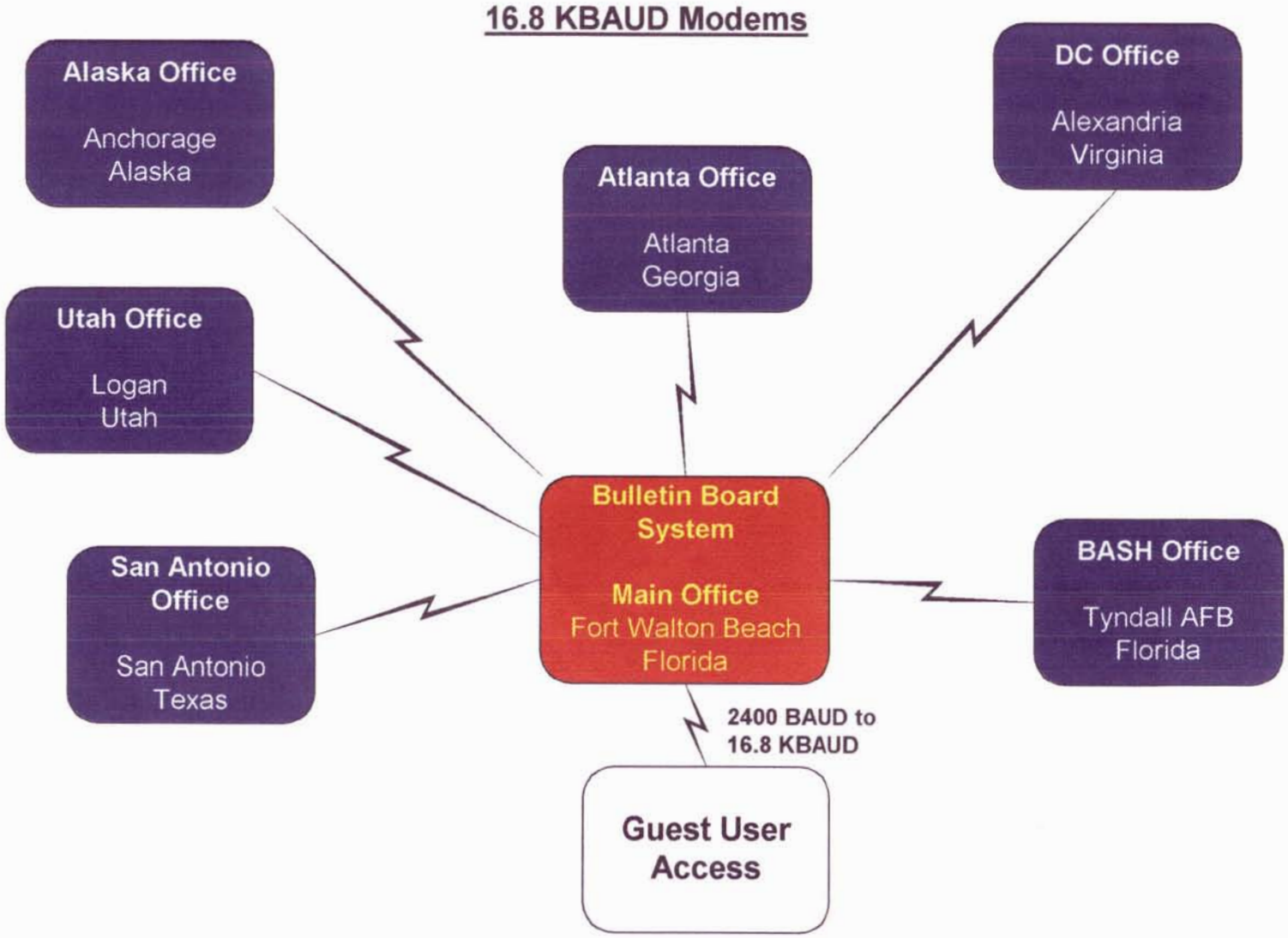
DATE	OFFICE SYMBOL	ORIGINATING ACTIVITY ☐ Concur ☐ Nonconcur	DATE	OFFICE SYMBOL	AIR ROUTE TRAFFIC CONTROL CENTER ☐ Concur ☐ Nonconcur
DATE	OFFICE SYMBOL	MILITARY/MAJOR/TYPE COMMAND ☐ Concur ☐ Nonconcur	DATE	OFFICE SYMBOL	REGIONAL MILITARY REPRESENTATIVE ☐ Concur ☐ Nonconcur
DATE	OFFICE SYMBOL	REGIONAL REPRESENTATIVE ☐ Concur ☐ Nonconcur	DATE	OFFICE SYMBOL	REGIONAL AIR TRAFFIC DIVISION ☐ Concur ☐ Nonconcur

10. Use this space to provide any additional information or description of resources supporting your firm's qualifications for the proposed project.

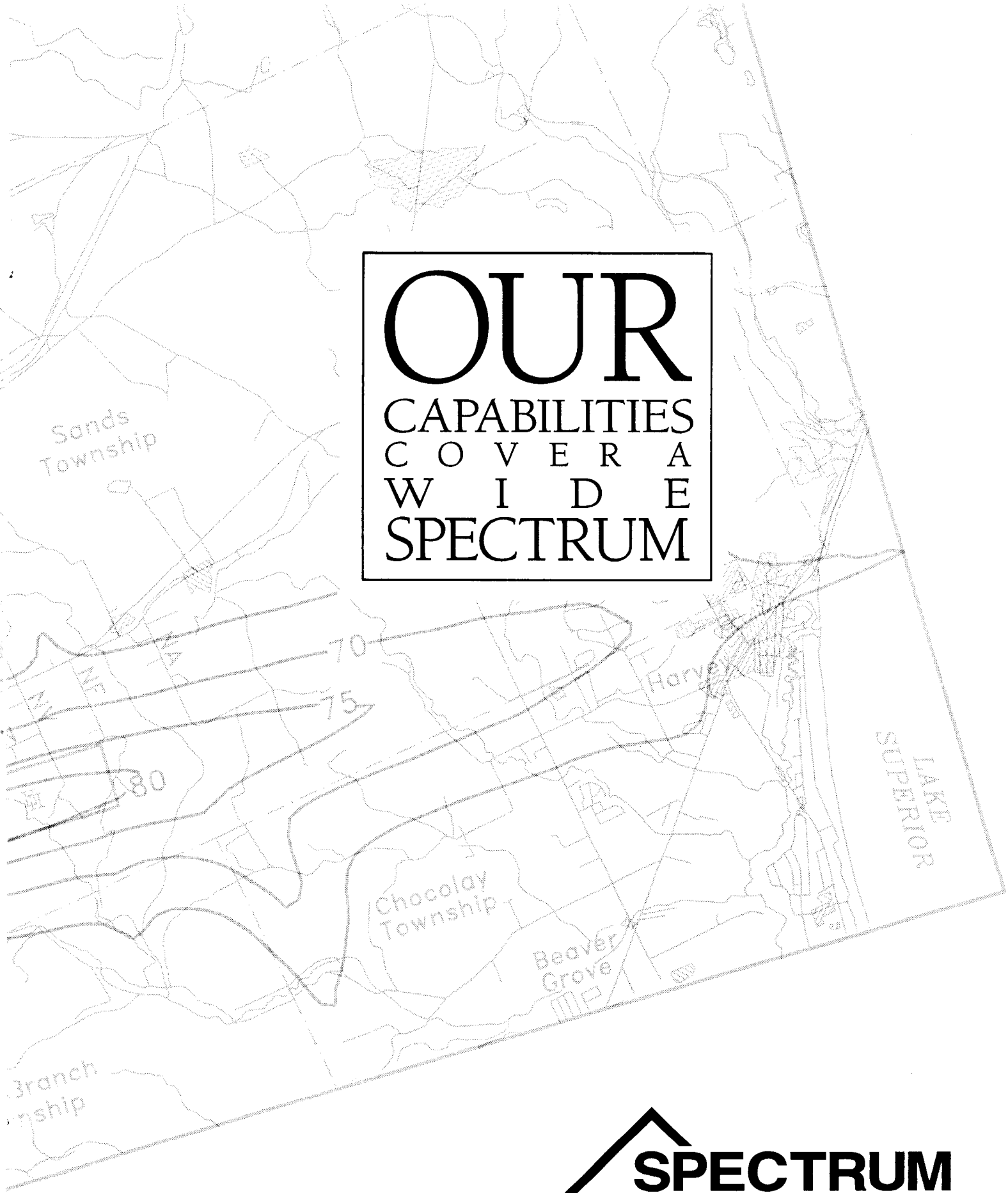


10. Use this space to provide any additional information or description of resources supporting your firm's qualifications for the proposed project.

SPECTRUM'S CENTRALIZED BULLETIN BOARD SYSTEM



Document Separator



OUR CAPABILITIES COVER A WIDE SPECTRUM

SPECTRUM
SCIENCES & SOFTWARE, INC.

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Corporate Leadership

Corporate Overview

Spectrum Sciences & Software, Inc. (SPECTRUM) is a technical service organization providing customers with diversified and cost-effective capabilities in a variety of advanced technologies. We have an established record of making professional contributions toward the solution of problems which directly affect our nation's well-being. SPECTRUM's capabilities span a wide range of disciplines, sciences, and technologies.

Our staff includes professionals who are experienced in providing technical and professional support to a diverse range of clients from the private and industrial sector to the highest levels of the U.S. Government. SPECTRUM's corporate goal is to continue offering superior professional services over a wide range of multi-disciplinary projects, while at the same time providing total personal commitment and dedication to our clients.

Environmental Policy, Planning and Technical Support

Aircraft Noise Assessments

Analytical, Technical, and Software Support

Range and Airspace Policy, Design, and Planning Support

Cartography, GIS

Computer Sciences and Programming

Range Safety and Weapon Systems Sciences

Environmental Sciences

Land Use and Airport Master Planning

Range Operations and Maintenance

Facility Operations and Maintenance

Operational Tests and Evaluation

Comprehensive Planning

Bird Aircraft Strike Hazard Analysis

Audio/Video Production

Wetland Sciences

Commercial Printing and Graphic Arts

Heavy Equipment Operation and Services

Environmental Audits

Pollution Prevention Services

IRP/Superfund Services

Environmental Training

Wildlife Studies

Botanical Surveys

Responsive and Flexible Management

Organizationally Efficient

Experienced and Professionally Educated Personnel

Technically and Professionally Diverse

Geographically Well Positioned Near Clients

SPECTRUM was founded in 1982 and has grown to become a corporation with offices nationwide. SPECTRUM has a corporate organizational structure that focuses our broad technical capabilities, while at the same time maintaining a commitment to total quality management. Functionally, SPECTRUM is organized into groups and regional offices. Each group is headed and staffed by individuals with distinguished backgrounds, education, and professional experience to fully support the group's technology and the area's focus. Each individual takes pride in his contributions and is responsible for the quality of his work. The regional offices are established near our principal customers and staffed to support their specific requirements.

At SPECTRUM we fully understand the necessity for maintaining responsive, knowledgable, and effective corporate management. This ensures the cost effectiveness, technical quality, and timeliness of the support that we provide our clients.

SPECTRUM SCIENCES & SOFTWARE, Inc.
Corporate Office - Ft. Walton Beach, Florida

Donal R. Myrick
President

Business Development

Donald L. Garrison
Sr. Vice President

Larry W. McGlothlin
Vice President

Quality Assurance

ADMINISTRATION DEPARTMENT

Personnel & Benefit Management	Industrial Security	Financial Management & Accounting	Contracts & MIS Management

OPERATING GROUPS

Computer Sciences Support Group	Environmental Services Group	Range Technology Group	Special Projects Group
Kenneth D. Shepardson *Group Manager*	**Larry W. McGlothlin** *Group Manager*	**Donald L. Garrison** *Group Manager*	**Donal R. Myrick** *Group Manager*
• Systems Branch • Programming Branch • CAD/GIS Branch • Graphic Arts Branch	• Planning Branch • Airspace Branch • Noise Branch • NEPA Support Branch	• Range Planning Branch • Range Operations - Grand Bay Range - Clairborne Range - Saylor Creek Range	• BASH Team Support Section • Biotechnology Laboratories • Marine & Wildlife Sciences • Commercial Operations

REGIONAL OFFICES

Washington, DC • Atlanta, Georgia • Anchorage, Alaska
San Antonio, Texas • Panama City, Florida

Range Planning Support

SPECTRUM personnel have been continuously associated with the Air Force Range Planning Program since its inception in 1978. Since then, we have been responsible for the development of the HAZARD computer program, the descriptor libraries and the geographical data bases - which together comprise the core of the Air Force's Range Hazard Analysis methodology. This integrated methodology is described in Air Force Regulation (AFR) 50-46, "Training Weapons Ranges," and has been applied to the most recent Air Force and Navy air-to-ground range planning projects.

Range Design and Planning

Range Hazard Analysis

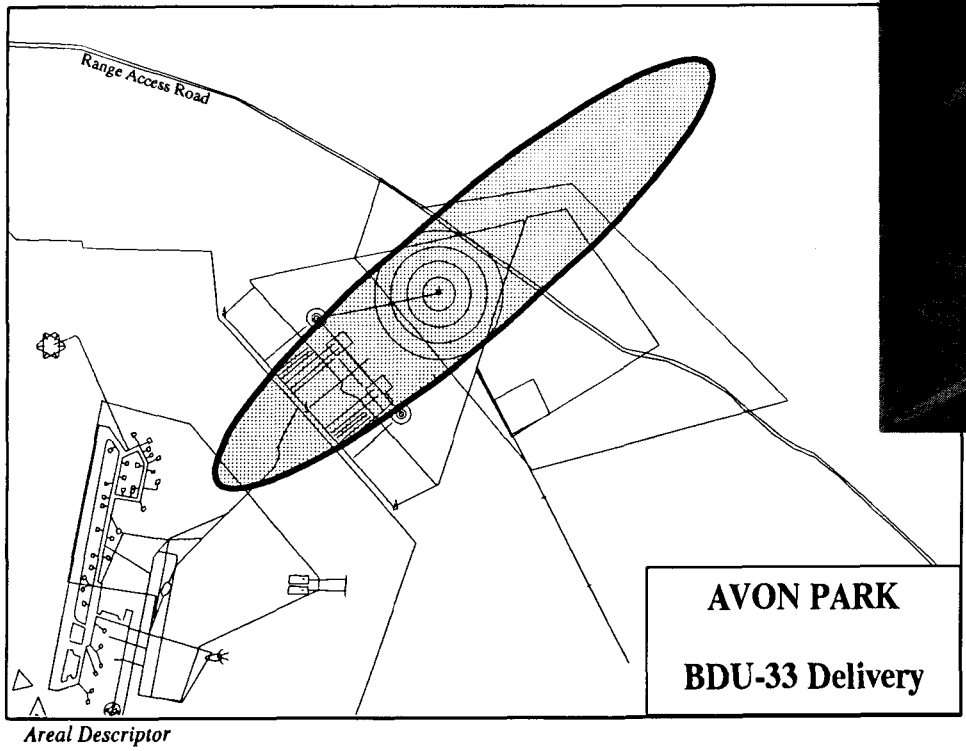
Airspace Policy Analysis

Airspace Proposals

Airspace Planning

SPECTRUM has integrated the HAZARD Methodology with current state-of-the-art GIS tools to provide the range planner with maximum access to nationally developed and maintained databases for geographic, landuse, land cover, wildlife, and political boundry information. These technologies have been applied to the solution of many range realignments, expansions and new designs including the proposed new Idaho Training Range.

Strafe Run-In Line at Grand Bay Range



Areal Descriptor

Bombing Range Operation and Maintenance (O&M)

- *O&M Grand Bay*
- *O&M Saylor Creek*

TOSS/M2 Scoring

Scoring Software

Target Design/Maintenance

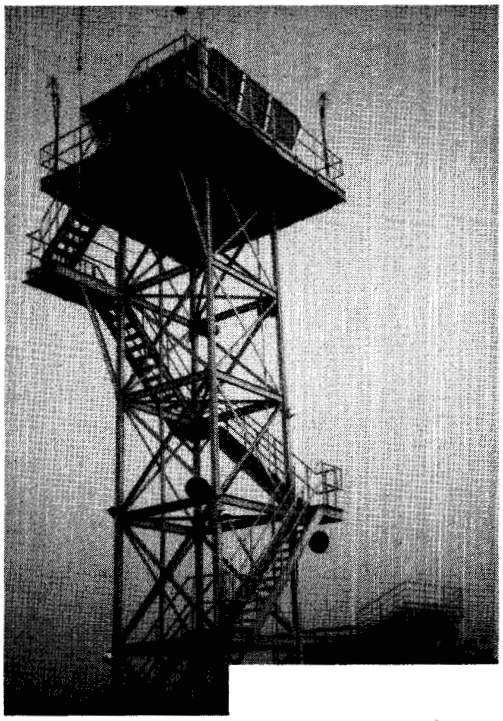
Fire Fighting

Clean Up

RCO

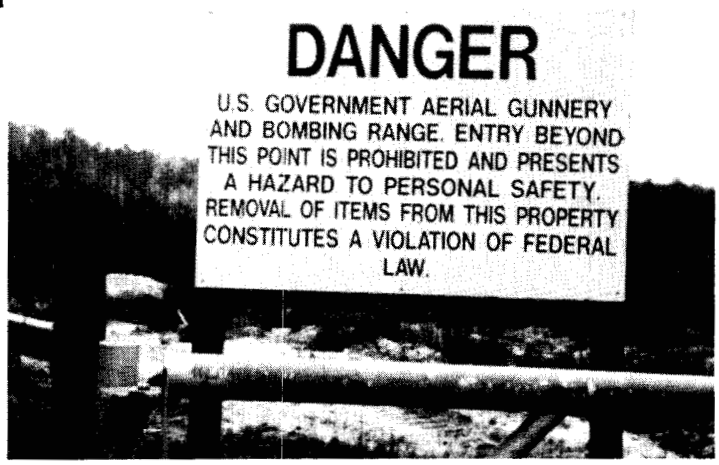
Range Safety

SPECTRUM operates and maintains the Air Force Grand Bay Range near Moody AFB, Georgia and the Saylor Creek Range near Mountain Home, Idaho. Our O&M duties include range control, range safety, air traffic control, facility maintenance, electronic equipment maintenance, heavy equipment maintenance, weapon impact scoring, target design and construction, target maintenance, fire-fighting and fire prevention. Our operation and maintenance of the Television Ordnance Scoring System (TOSS) at Saylor Creek Range has provided near 100 percent availability of this resource during the tenure of our service. As an adjunct to our daily O&M functions, we have developed and implemented several new advanced technology procedures for weapon scoring, hazard management, range maintenance, fast attack fire-fighting and crash response. These procedures are under consideration by the Air Force for implementation at other training ranges.



Tower at Grand Bay Range

Smoky Sam Launch



Bombing Range Entrance

Range and Airspace Policy and Planning

Policy

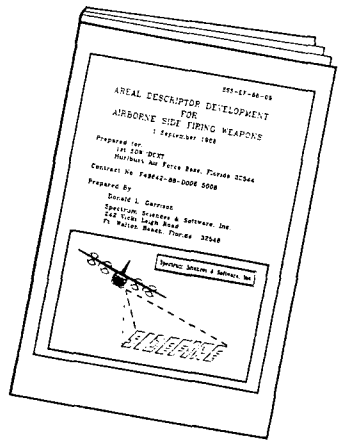
Planning

Design

SPECTRUM has demonstrated expertise in the application of scientific methodologies in the resolution of the complex, multi-attribute planning problems associated with the design, acquisition, development, operation and maintenance of the air-to-ground test and training ranges and their associated airspaces.

SPECTRUM's involvements have included such diverse contributions as:

- *Range Policy*
  - *Preparation of Draft Policy Directives*
  - *Preparation of Revised AFR 50-46 (Training Weapons Ranges)*
  - *Range Conference Preparation and Support*
- *Range Planning*
  - *Evaluating Range Designs*
  - *Developing Comprehensive Range Plans*
  - *Specifying Target Locations and Permissible Attack Headings*
  - *Identifying New Instrumentation Sites*
  - *Performing Site Surveys for New Ranges*
  - *Developing Compatible Use Management Plans*
  - *Developing Extensive Digitized Geographical Data Bases*
  - *Evaluating New Range Missions*
  - *Delineating Total Hazard Areas*
- *Airspace Design and Planning*
  - *Developing Comprehensive Airspace Plans*
  - *Conducting Air Operations Analysis*
  - *Developing Airspace Proposals for Submission to FAA*
  - *Coordination Support Between FAA and DoD*
  - *EIAP Support*



In support of these diverse range planning functions, SPECTRUM has been and continues to be a pioneer in the development and use of digital geographic data bases, advanced computational and weapon simulation techniques, geographic information systems, and computer aided design and drafting procedures. SPECTRUM's data bases and computer codes are in current use at all Air Force Air Combat Command CONUS and Alaskan ranges. Additionally, specialized versions are in current use by the Air Force Special Operations Command (AFSOC) and by the U.S. Navy. New data bases and specialized versions of our software are being prepared for use by other DoD and government organizations.

Environmental Policy, Planning, and Technical Support

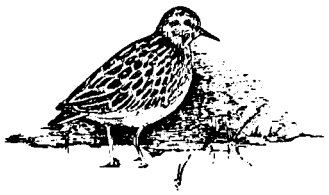
Federally funded actions require under the National Environmental Policy Act (NEPA) evaluation of the impact of proposed actions and alternatives upon the natural environment. SPECTRUM is well qualified to support the proponent of a proposed action to assure compliance with all required analyses. Our professionals can complete every step of the environmental permitting and environmental impact assessment process in a timely and cost-effective manner.

SPECTRUM has been involved in all aspects of environmental impact assessment and planning. These activities include accomplishing studies in support of permits for environmentally sound and non-obtrusive uranium mines near the Grand Canyon, conducting wildlife and botanical surveys, developing environmental policy statements for the AFR 19-2 revision, developing handbooks and associated training course materials for USAF decision makers, evaluating of noise impacts on the environment, preparing environmental impact assessments of aircraft conversions and proposed airspace actions, and preparing full environmental assessments (EAs) and environmental impact statements (EISs).

SPECTRUM's environmental technical support includes research, process evaluation, software development, analyses, and documentation.

Great Blue Heron

New Born Green Turtle (Endangered)



We provide environmental research support for a variety of activities including: hazardous waste remediation, site evaluation, site monitoring, bioremediation, constructed wetlands, and waste-to-energy technology, as well as preliminary laboratory evaluations for application of specific environmental and biological technologies.

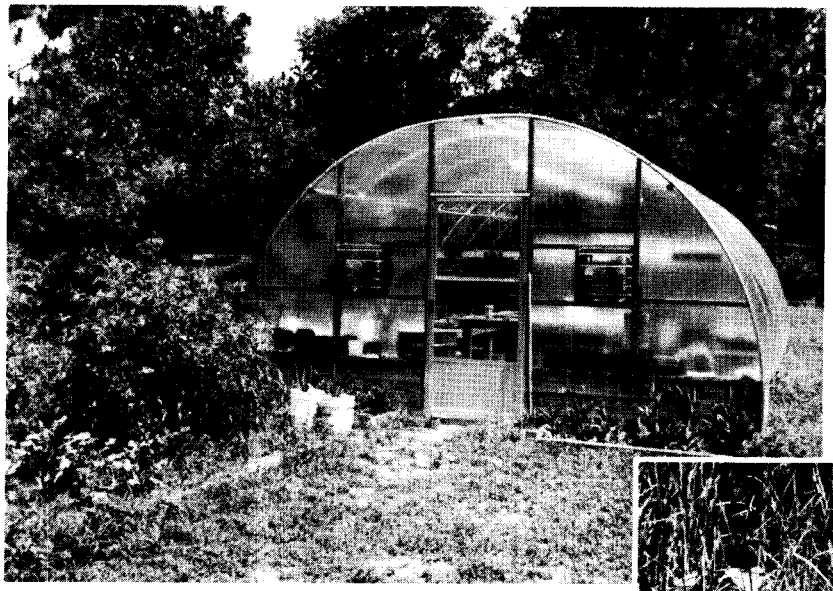
Policies

Training Courses

Assessments

Surveys

Studies



Research Greenhouse

Bioremediation

- *White Rot Fungus*
- *Accumulator Plants*
- *Bioreactors*

Soil Analysis

Wetland Plant Cultivation

Constructed Wetland for Research

Analytical, Technical, and Software Support

System Modeling

Database Design

Programming

Cartography

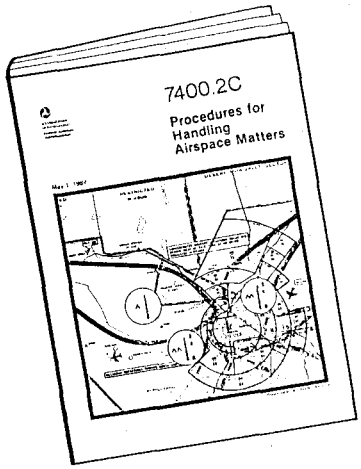
Surveys

EA/EIS

SPECTRUM's staff of dedicated professionals provides support for a variety of technical tasks. Members of the staff hold degrees in computer science, mathematics, physics, biology, and engineering. They are specialists in performing all forms of technical analyses, and are trained in the use of state-of-the-art computer hardware and software. Our experience and technical expertise in conjunction with our computer resources, ensures a timely product which is cost competitive and fully responsive to the customer's needs.

The staff of SPECTRUM has a history of providing superb analytical/technical support on a wide variety of projects for various branches of the government, defense contractors, and commercial clients. Our past experience includes many projects which involve a wide range of professional disciplines. Areas of proven performance include:

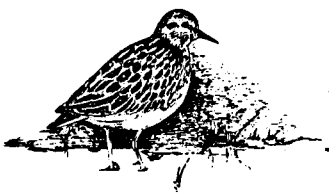
- *Computer Hardware and Software*
  - *System Simulation and Modeling*
  - *Database Design, Development and Maintenance*
  - *Data Reduction and Analysis*
  - *Computer Aided Design (CAD) and Drafting*
- *Cartography and Geodesy*
- *Wildlife/Botanical Surveys*
- *Environmental Impact Analysis*



Additionally, SPECTRUM is continually developing custom software to aid our technical staff in the performance of their analyses. Our specialized application software library includes hundreds of programs for environmental analysis, weapon system analysis, ballistic analysis, trajectory generation, noise analysis, map generation, and general numerical and statistical analysis. These programs provide our engineers and scientists the capability to manage data between applications for maximum efficiency of analysis.

Software developed by SPECTRUM provide the capability to support investigations in many specialized areas such as:

- *Aircraft Hazard Evaluation*
- *Comprehensive Land Use Planning*
- *Ballistic Analysis*
- *Data Archiving/Retrieval*
- *Safety Analysis*
- *Cartography and Geography*
- *Decision Support Systems*
- *Test Design and Evaluation*
- *Graphics and Image Processing*



Airspace and Land Use Planning

SPECTRUM's expertise in airspace planning and design has gained national recognition. SPECTRUM personnel have extensive backgrounds in Special Use Airspace (SUA) management, analysis, planning, design, coordination, development, and the approval process. We provide support from start to finish for both the aeronautical proposal documentation and the associated Environmental Impact Assessment Process (EIAP) documentation. SPECTRUM personnel are familiar with Federal Aviation Administration (FAA) requirements for proposing and processing SUA requests, as described in FAA Handbook 7400.2 and 7610.4, and with AFR 55-2, MAJCOM airspace regulations, and the Air Force Airspace Master Plan, all of which describe the Airspace Management Program. We have supported the Air Force, the Air Force Reserves, and the Air National Guard in numerous airspace initiatives including, in Alaska, the Air Force's largest ever single airspace restructuring effort. We have developed a comprehensive airspace capacity analysis program, and a military training route (MTR) database program for use in designing and documenting low level MTRs. Key personnel have operational experience as pilots, navigators, and air traffic facility managers, as well as FAA liaison backgrounds at the national and regional levels. Most of our airspace specialists are graduates of the Air Force Management School, Keesler AFB, Mississippi.

Comprehensive Land Use Planning

Development of Land Use Regulations

Airspace Policy Analysis

Airspace Design and Planning

Airspace Proposals

Airspace Use and Capacity Analysis

Public Participation Support

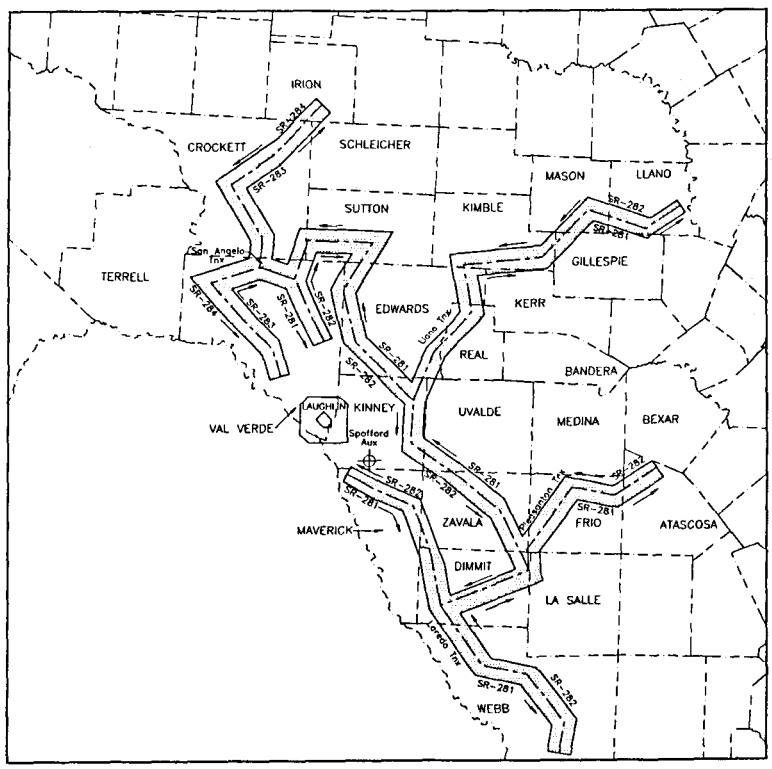
Airport Master Plans

FAA Part 150

Air Installation Compatible Use Zone (AICUZ)

Surface Transportation Analysis

SPECTRUM's professional planning staff includes experienced and certified land use and environmental planners. This staff has served as an interdisciplinary team for the accomplishment of numerous AICUZ studies for the USAF. Staff members have experience in Local Government Comprehensive Planning, Airport Master Planning, FAA Part 150 Land Use Compatibility Studies, development of Federal Grants-in-Aid Applications, and support for public hearings. SPECTRUM's team members have also written a variety of land use regulations and have participated with the local governments in the implementation process. We can provide full planning support to our clients.



Planned Low Level Route

Aircraft Noise Assessment

Policy Analysis

Airport Analysis

Low Level Route Analysis

MOA Analysis

Sonic Boom Analysis

Noise Effects Analysis

- *People*
- *Wildlife*
- *Domestic Animals*
- *Structures*

Baseops

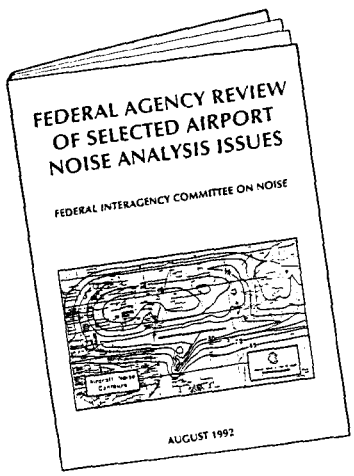
Noisemap

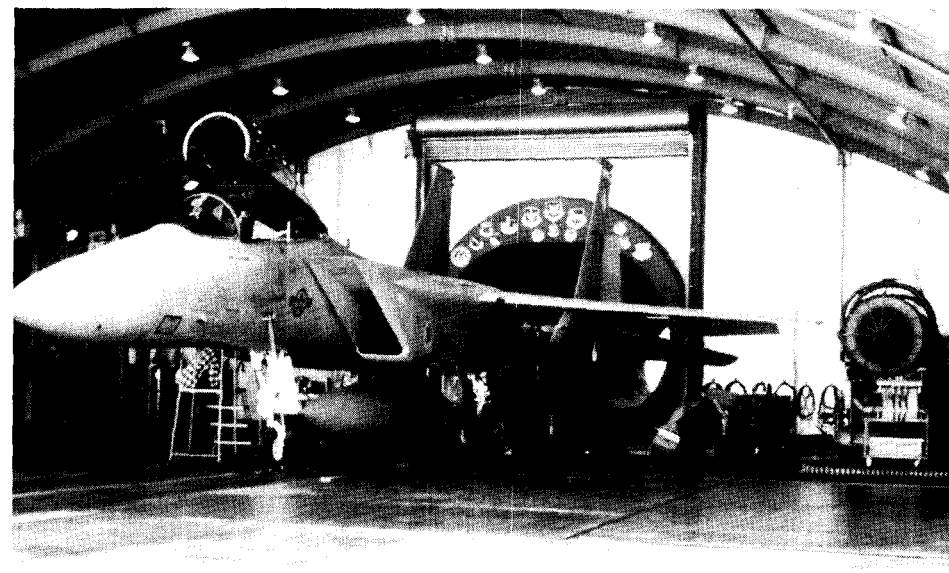
MOAmap

INM

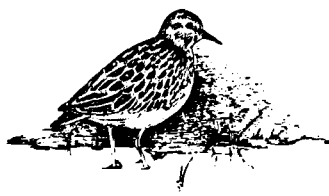
SPECTRUM sets the industry standard for the integration of multiple technologies and systems in the aircraft noise analysis process. The integration of multiple data sources using the Geographical Resources Analysis Support System (GRASS) with improved noise models enables SPECTRUM's analysts to depict and analyze noise impact on land use and people within various airspace environs. These tools allow the analyst to evalute current alternatives and to model future operational impacts.

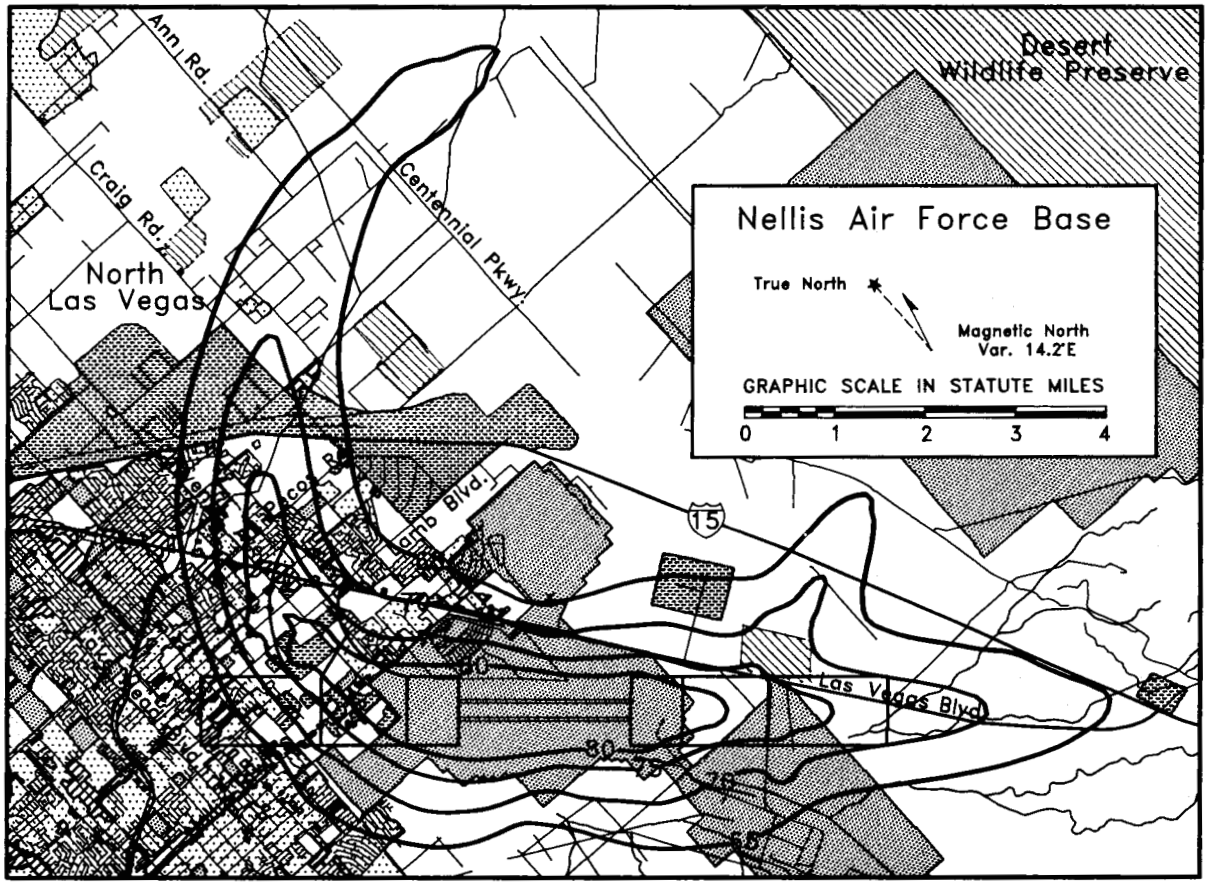
SPECTRUM provides aircraft noise assessments for all facets of aircraft operations including engine ground run ups, airport operations, low level flight and subsonic/supersonic flight. SPECTRUM uses state-of-the-art DoD and FAA computer programs to assess aircraft noise associated with airfield operations, military training routes (MTRs) and special use airspace such as military operations areas (MOAs). SPECTRUM served the 1992 Federal Interagency Committee on Noise (FICON) as the executive secretary, one of their technical consultants, and as the editor and publisher of the FICON Final Report.





Hush House





Noise Contours

Consistent with its commitment to excellence, SPECTRUM has developed improvements to both the subsonic and supersonic noise assessment software, producing state-of-the-art graphic displays for portraying environmental noise in accurate and easy-to-comprehend fashions. SPECTRUM's integration of environmental noise data with the Geographical Resources Analysis Support System (GRASS), Geographical Information System (GIS) and the U.S. Census Bureau Tiger and demographic data bases enables analysis of any area within the United States. With appropriate demographic data, SPECTRUM can perform this function for other areas of the world.

SPECTRUM's aircraft noise assessment activities include research and development of assessment models, participation in the formulation of national agency policies regarding aircraft noise assessment metrics and methodologies, and application of these metrics and methologies in the assessment of aircraft noise impacts on humans, animals and structures.

Aircraft Bird Strike Hazard Support

Airdrome Analysis

Low Level Route Evaluation

Bird Hazard Control

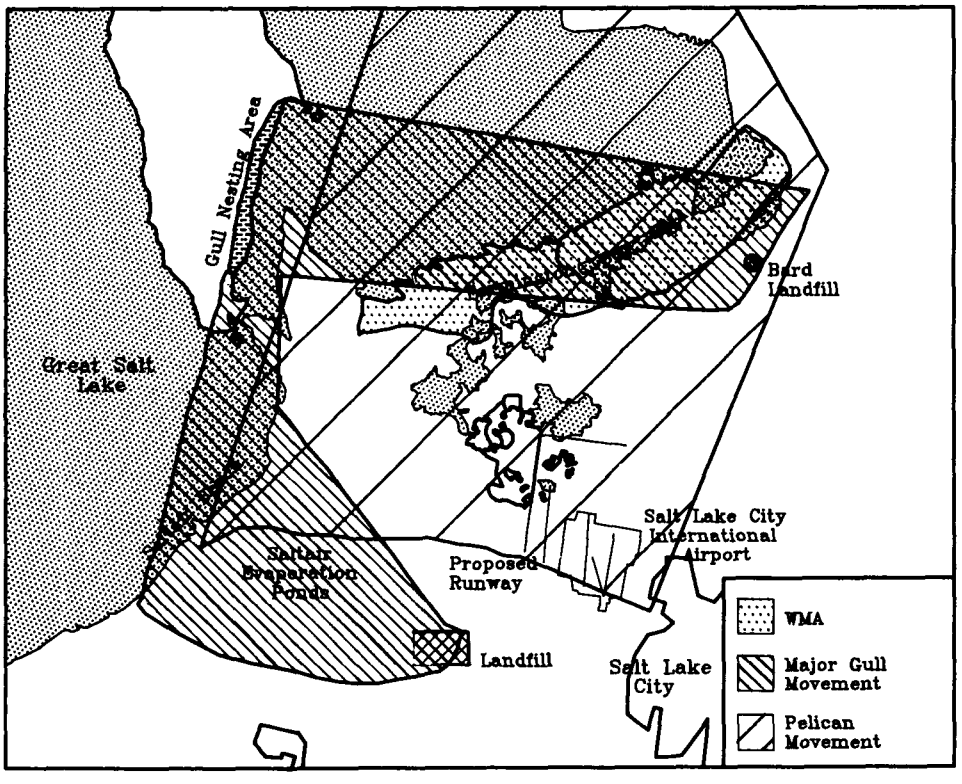
Planning/Education

BASH Consulting

SPECTRUM employs a team in support of the U.S. Air Force's Bird Aircraft Strike Hazard (BASH) Reduction Program. The team, with over 25 years of experience in the field of flight safety, provides bird hazard assessments and impact mitigation for bird and wildlife attractions at airfields worldwide. SPECTRUM also conducts airspace evaluations, Bird Avoidance Model (BAM) development and direct client consultation. SPECTRUM maintains the USAF Bird Strike Database containing all Air Force bird aircraft collisions since 1974.

Canadian Geese Near An Air Base

Gull/Pelican Movements



Predicted Bird Movements Near Airport

BASH Modelling

Environmental Assessments

BASH Mitigation

SPECTRUM's BASH reduction specialists also provide solutions to civil aviation bird hazards. Hazard potential is evaluated using the latest Geographic Information System (GIS) technology, integrating bird population and airport traffic dynamics. SPECTRUM provides airport management personnel and environmental planners with essential information to prevent costly and catastrophic losses of aircraft and lives.

New FAA and EPA regulations concerning the placement of waste disposal sites near airports have required landfill operators to demonstrate that these facilities do not represent significant bird strike hazards to aircraft operations. The environmental scientists at SPECTRUM assess the flight safety hazards associated with these and other land uses (wetlands, sewage treatment facilities, borrow pits, etc.) near airports, and recommend appropriate mitigation measures.

Spectrum's Office Facilities

Professional Offices

Audio/Video Studio

Conference Facilities

Laboratories

Print Shop

SPECTRUM maintains office facilities nationwide to meet the needs of our customers. Corporate headquarters are located in Fort Walton Beach, Florida and other office facilities are located in Alexandria, Virginia; San Antonio, Texas; Atlanta, Georgia; Panama City, Florida; and Anchorage, Alaska. Additionally, SPECTRUM is provided space in government-owned facilities at the ranges we operate at Grand Bay Range, Georgia; Saylor Creek Range, Idaho; and Clairborne Range, Louisiana.

Document and Video Production

SPECTRUM currently operates a document processing facility and offset printing shop to provide MIL STD 847A document processing capabilities required to support DoD standard reporting tasks.

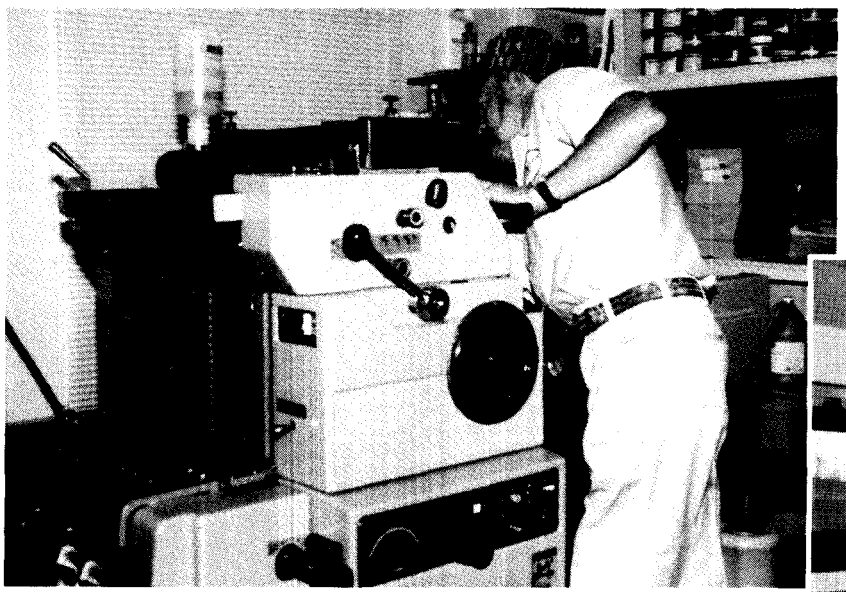
SPECTRUM's print shop features a Ryobi 500N offset printing press equipped to support high speed, high volume printing. The print shop is supported with a variety of equipment and facilities including a dark room, a high speed rotary collator, a paper folder, an electric paper drill, a hydraulic paper cutter, an automatic bindery stitching machine, and a perfect binder.

Document Production
- *Word Processing*
- *Layout & Typesetting*
- *Computer Aided Graphics*
- *Drafting*
- *Photography*

Printing Production
- *Offset Multi-color Printing*
- *Perfect Binding*

Video Production
- *Amiga System*
- *Super VHS*
- *M-II*
- *Hi-8mm*
- *U-Matic*

Audio Production
- *MIDI Systems*
- *Roland Music System*
- *Digital Audio*



Ryobi Offset Printing Press

SPECTRUM is a video producer for public relations, education, legal documentation, natural resource management, and computer software applications/training/documentation. Our video production facility features equipment for taping, editing, and production in VHS, S-VHS, Hi-8mm, M-II, and UMatic formats.

Full broadcast quality digital video effects and SMPTE frame, accurate video editing are provided by our Amilink- controlled Video Toaster, hosted on our Amiga 2000 computer. Full audio support is provided by MIDI-controlled sound generation and digital audio recording systems.

Video Editing Equipment

SPECTRUM's Computer Facility

Sparc Stations

PC Workstations

EtherNets

Multi-Gigabyte Storage

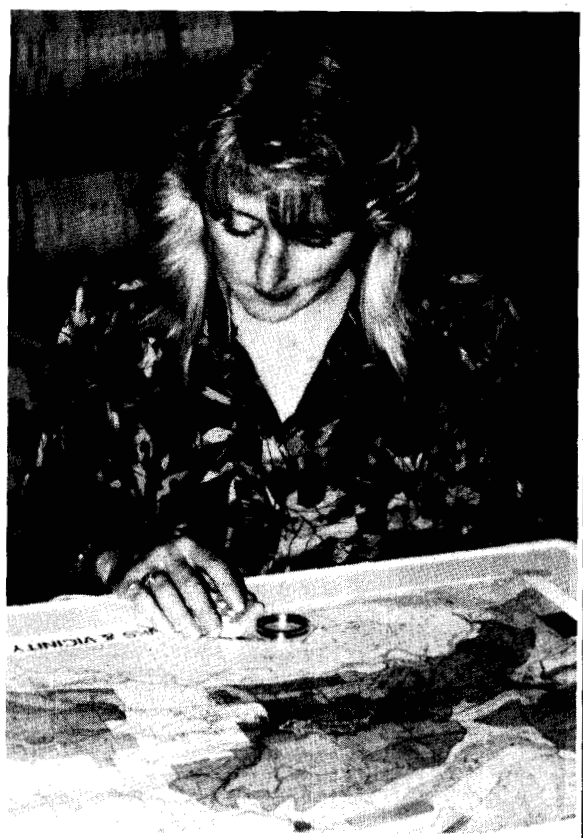
Remote Access

Graphics Workstations

Remote Bulletin Board System

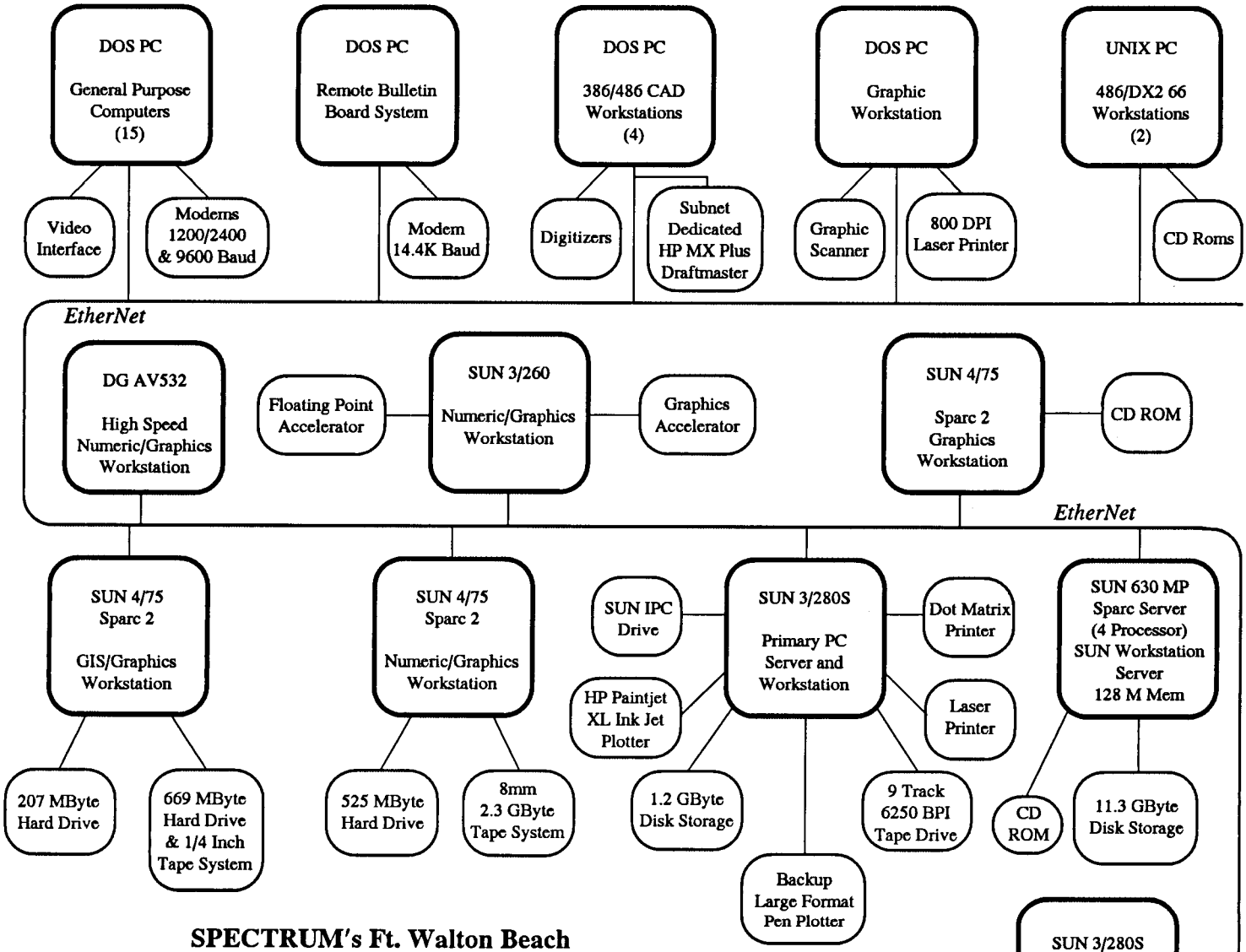
SPECTRUM's computer center integrates a vast array of computing resources into a highly functional, powerful and cost-effective computer and data processing system. The computer center supports two operating system environments. The first is the PC-based DOS environment, which provides full access to the wealth of available DOS applications software, and is an exceptional environment for program development. The second is the UNIX environment, hosted on PC and SUN Workstation platforms. The UNIX environment provides access to exceptional graphics and computing power. The SPECTRUM computer center uses a SUN 630 MP/140 Sparc Server and three SUN 3/280 Servers to manage networking of the heterogeneous hardware and software. This provides the systems with access to peripheral devices, backups, file transfer, and over fifteen gigabytes of disk storage. Several SUN Sparc 2's and a Data General Aviion 532 provide high speed numeric and graphics processing.

SPECTRUM's computer center quality peripheral devices include a Hewlett-Packard Scanner, several HP Laser Printers, a large format HP Draftmaster MX Plus multi-pen plotter, a backup OCI large format pen plotter, a HP PaintJet XL color inkjet graphics printer, several Numonics Accugrid digitizers and numerous modems. Additionally, the center provides several peripheral devices for data acquisition and interchange including: CD-ROM Drivers, 9 Track Tape Drives, 1/4 inch Tape Drives and a state-of-the-art 8mm high density tape system.

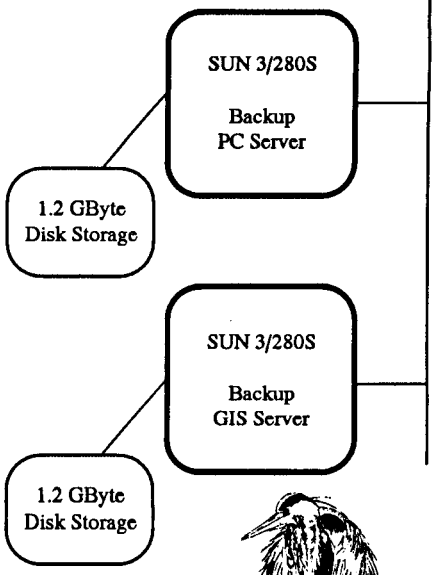


Cartographic Support

SUN Network Server



SPECTRUM's Ft. Walton Beach Computer Center



The power of SPECTRUM's computer center is realized through the hundreds of DOS and UNIX application programs resident in the system's program library to support the end user's application computing requirements. SPECTRUM's software library provides capabilities for virtually every facet of data processing. Included are software to support High-Order Language programming (FORTRAN, C, C++, Pascal, BASIC, and COBOL) for writing, editing, compiling, linking and debugging software. Software are also available for word processing, desktop publishing, database management, spreadsheets, and accounting. For more robust applications, software are available for statistical analysis, Geographic Information Systems (GIS), CAD/CAM, cartography, environmental simulation, broadcast quality video processing, analytical modeling, noise analysis, safety and hazard analysis, and numerical analysis.

Library Facilities

SPECTRUM maintains a large technical library, supplemented by the personal libraries of individual employees and consultants. SPECTRUM's library and database of several thousand technical citations are managed using the ProCite® software. SPECTRUM's library consists of hundreds of hard cover technical volumes, numerous classified and unclassified technical reports, and journal publications used or generated for previous or related work. SPECTRUM subscribes to many leading technical and professional trade journals.

SPECTRUM has the capability of performing on-line data services and disseminating data via our electronic bulletin board system.

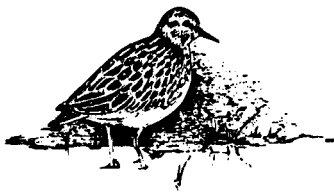
Partial List of Clients

Hq United States Air Force
Air National Guard Bureau
Air Combat Command
Air Training Command
11th Air Force (Alaska)
Moody Air Force Base
Navy Civil Engineering Laboratory
U.S. Environmental Protection Agency
U.S. Federal Aviation Adminstration

Air Force Reserves
Hq Air Force Engineering Service Ctr.
Air Mobility Command
Air Force Material Command
Mountain Home Air Force Base
United States Navy (OP55)
U.S. Army Corps of Engineers Waterways Experiment Station
Jackson Guard (Eglin AFB)

Planning Research Corporation
ENSR
Energy Fuels Nuclear
Salt Lake City Airport Authority
Utah State University
Colorado State University

Wyle Laboratories
Systems Research Laboratory
Paiute Indian Tribe
Pioneer Environmental
Explosive Ordnance Disposal Worldwide Services, Inc.



Spectrum Sciences & Software, Inc.

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Washington, D.C. Office:	535-A East Braddock Road Alexandria, VA 22314 Tel: (703) 684-2905 Fax: (703) 684-2908
Alaska Office:	1007 West 3rd Avenue, Suite 301 Anchorage, AK 99501 Tel: (907) 276-4408 Fax: (907) 276-4453
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Georgia Office:	1827 Powers Ferry Road Bldg. 20, Suite 225 Marietta, GA 30067 Tel: (404) 951-2181 Fax: (404) 951-2187
Georgia Range:	Grand Bay Range P.O. Box 427 Hahira, GA 31632 Tel: (912) 333-2765 Fax: (912) 333-2764
Idaho Range:	Saylor Creek Range P.O. Box 663 Mountain Home, ID 83647 Tel: (208) 828-2448 Fax: (208) 828-4229
Louisiana Range:	Clairborne Range P.O. Box 12177 Alexandria, LA 71315 Tel: (318) 487-0378 Fax: (318) 487-0577

e 7-2

Sawyer AFB
Generalized
ure Land Use
Harvey Area

nd:

Residential

Commercial

Industrial

Public/Quasi-Public

Recreational

Open/Agricultural/
Low Density

Accident Potential
Zone I

Accident Potential
Zone II

SOURCES:
(1) Bureau of the Census
TIGER/Line Data-1990
(2) NOISEMAP Version 6.0-1992
(3) Michigan Resource Information
System, Michigan Department
of Natural Resources-1979
(4) Marquette County
Comprehensive Plan-1982
(5) Chocholay Township
Comprehensive Plan-1990

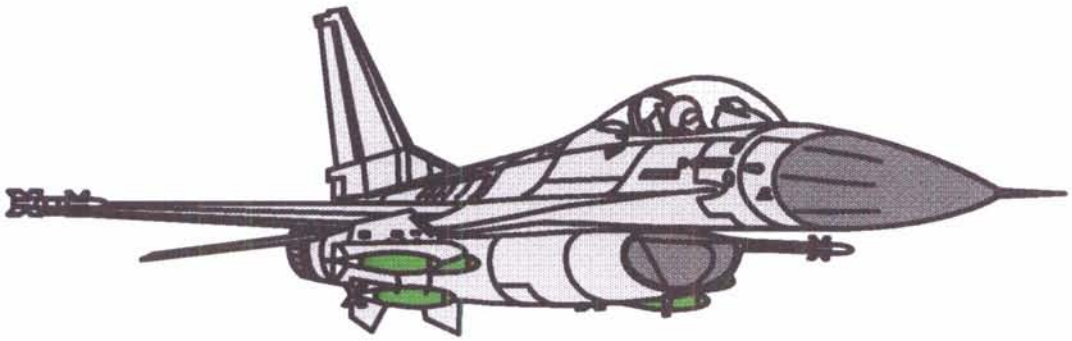
Magnetic North
Var. 3.4°W
Oct 1992

True North

SCALE IN STATUTE MILES

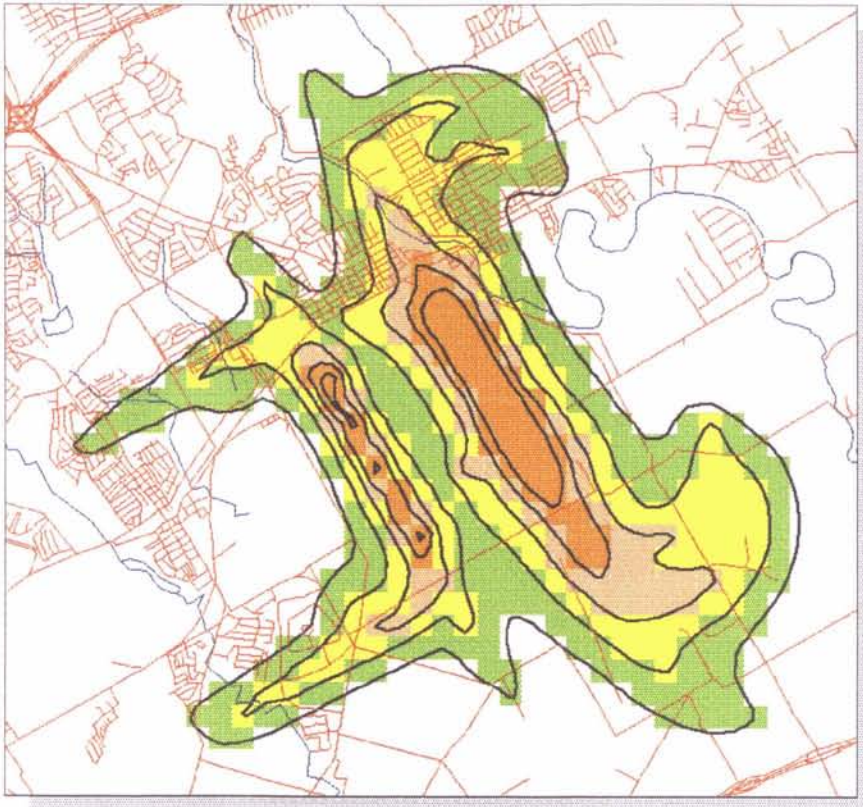
Document Separator

INTEGRATION OF NOISE MODELS AND GRASS TO ENHANCE NOISE STUDIES AND ENVIRONMENTAL ASSESSMENTS



Kenneth Shepardson
Spectrum Sciences & Software, Inc.

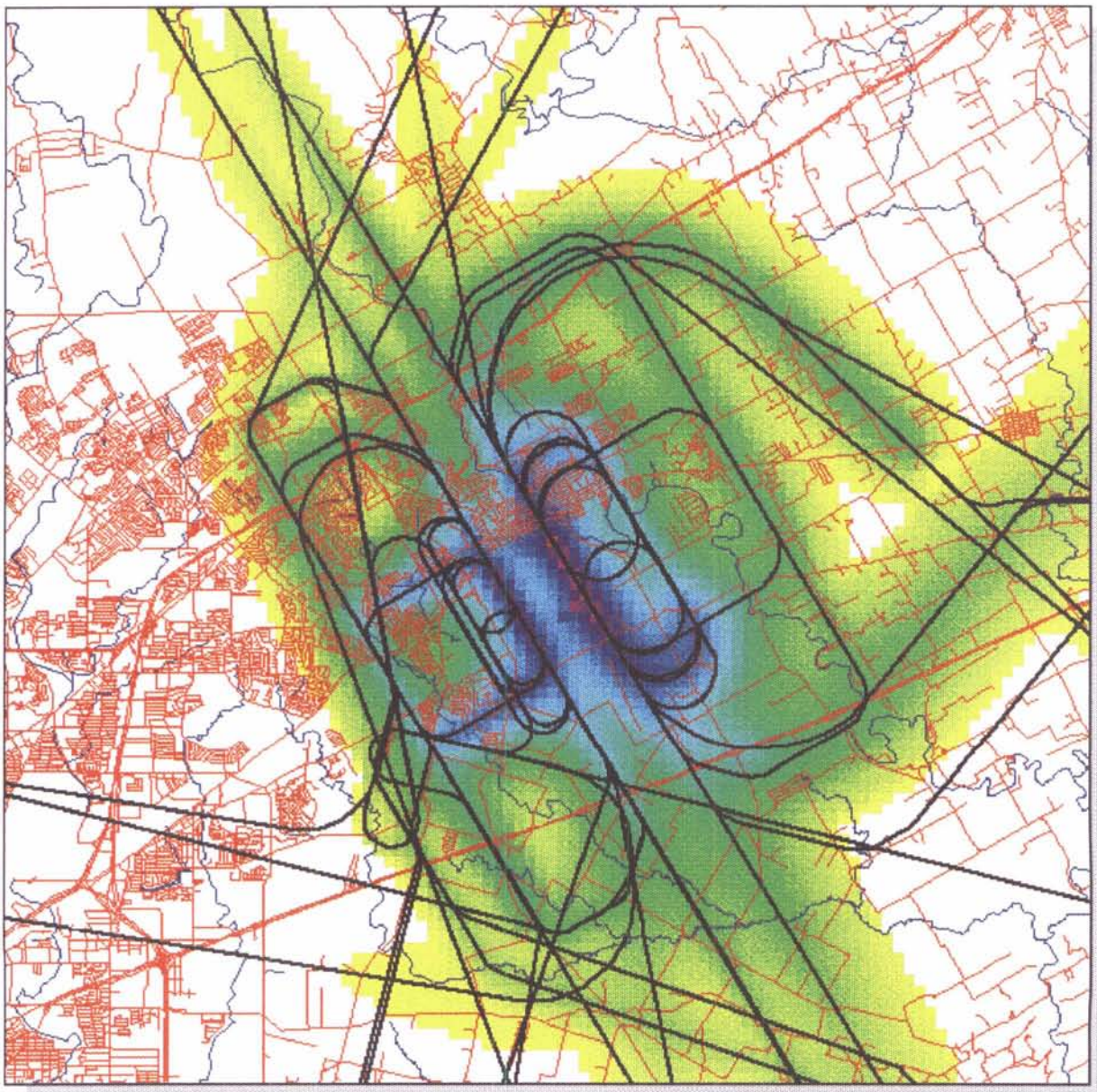
Reclass of Original
NOISEMAP Grid File
(1000 ft Resolution)



Grid Smoothing of Original
NOISEMAP Grid File
(255 ft Resolution)

- The NOISEMAP grid data smoothed using bilinear interpolation to increase resolution of raster data.
- Smoothed raster data accurately replicates NMPLOT Contours

Aircraft Flight Tracks & Noise for AICUZ Baseline Study



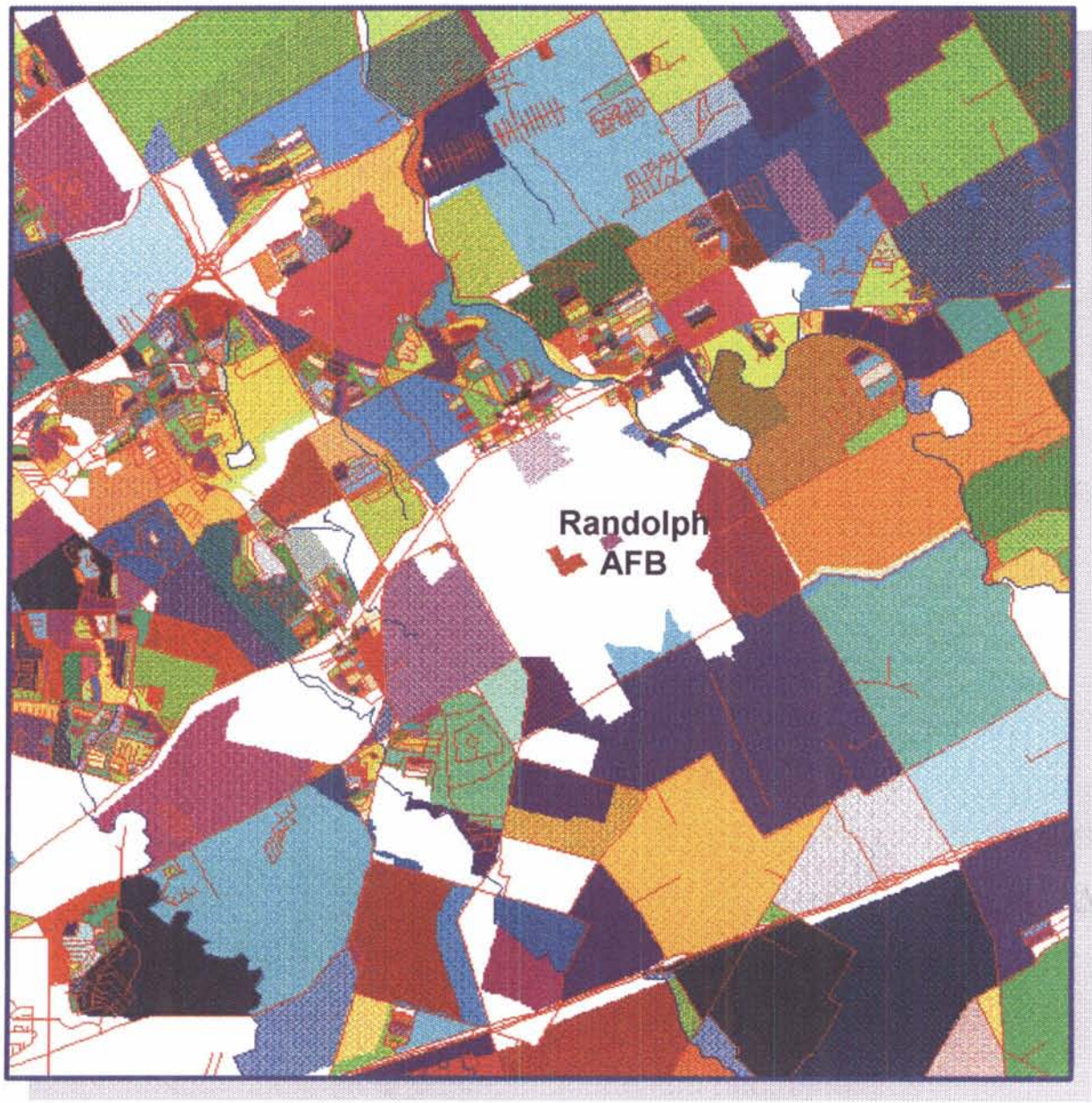
- **Resulting Noise Grid generated by NOISEMAP using input from BASEOPs**

Reclassified Noise Grid with Contour Lines

65 - 69 dB	74 - 79 dB
70 - 74 dB	> 80 dB

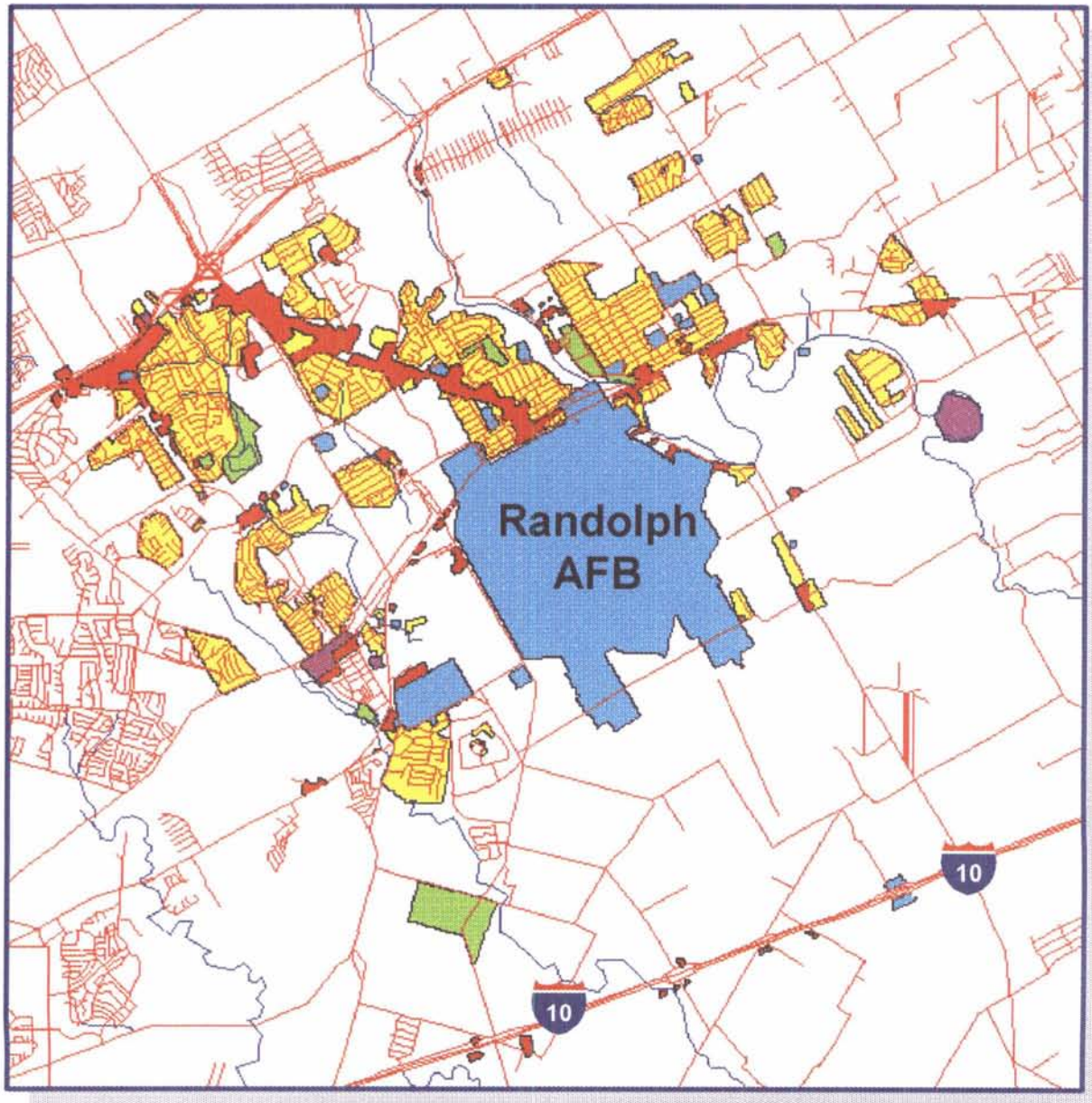
- Contours generated by the NMPLOT smoothing package

US Census Blocks with Assigned Population Attributes



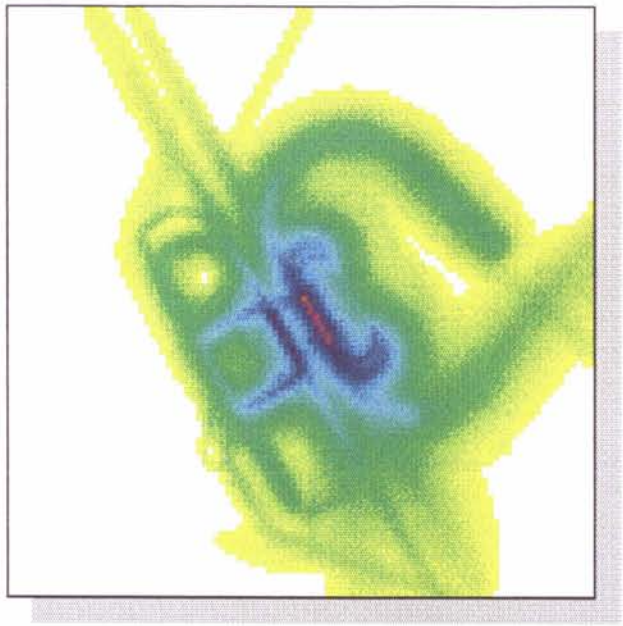
- A Census block contains the total population count
- Areas have been assigned random colors bases on population within a block

Thematic Land Use Map

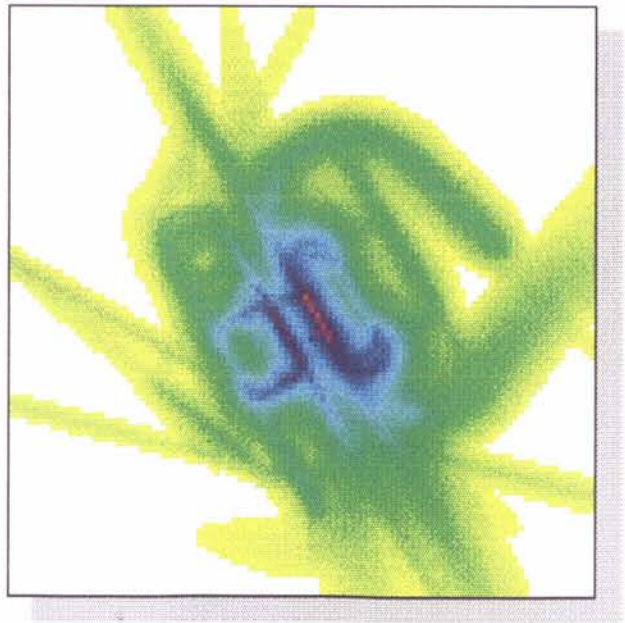


- Commercial
- Industrial
- Quasi-Public
- Recreational
- Residential

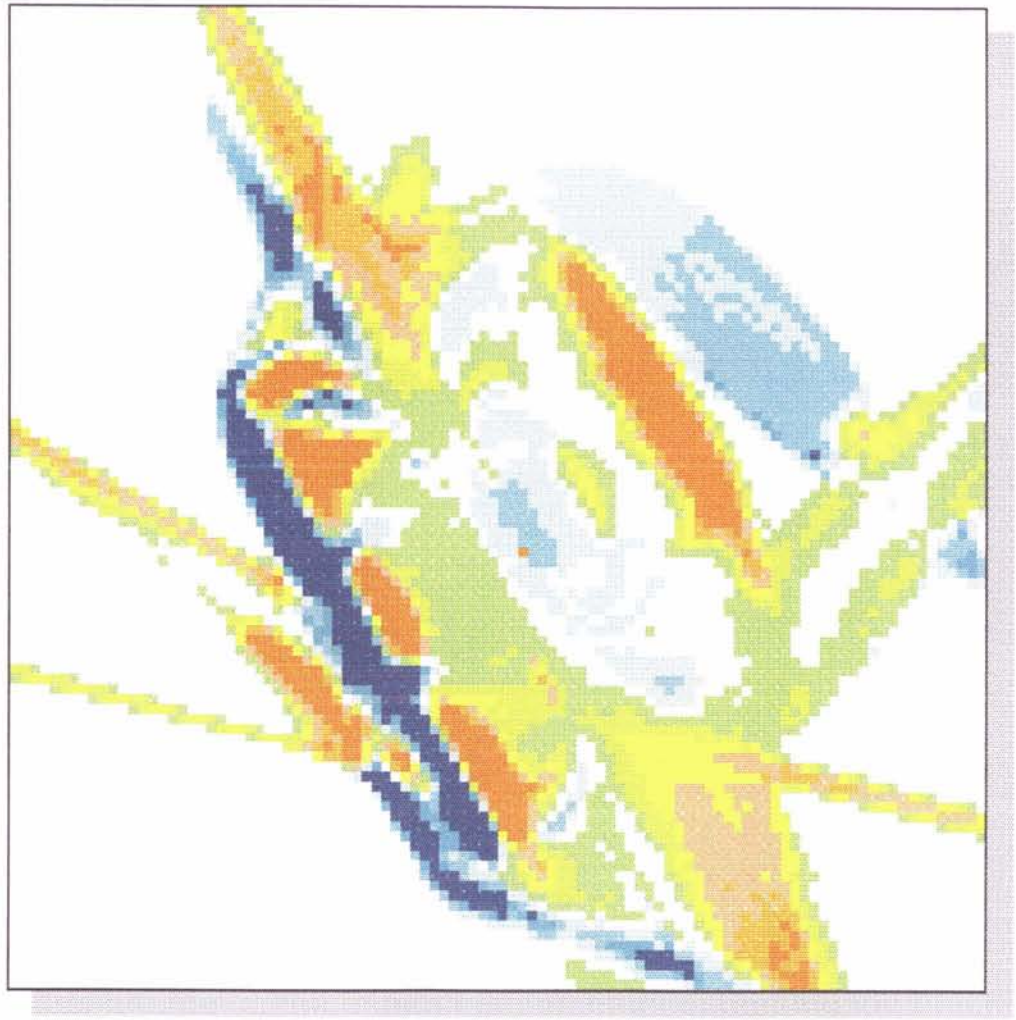
Noise Comparison
Baseline vs. Proposed Case



Baseline Case

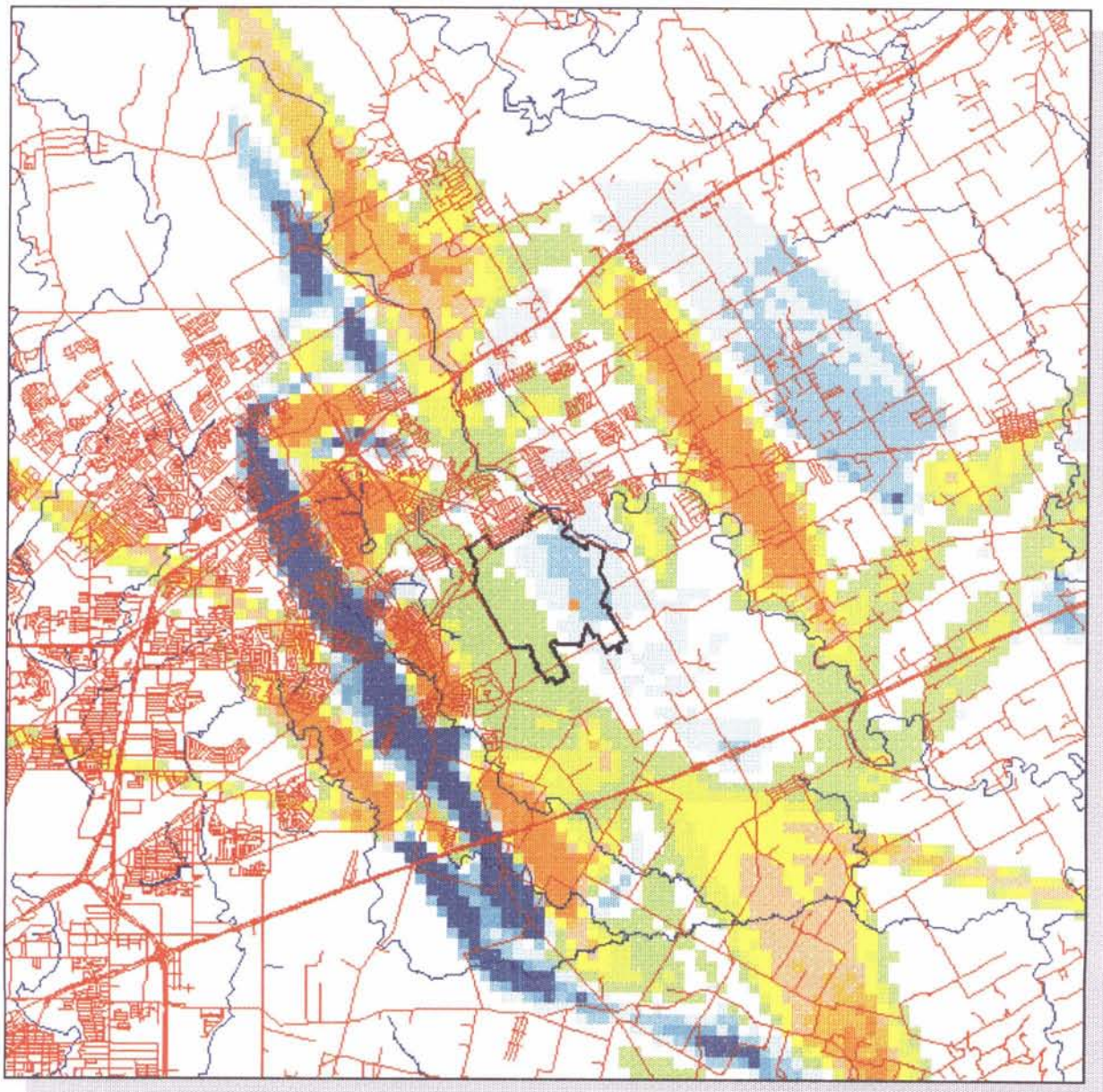


Proposed Case



Noise Comparison (difference)
for BackGround Noise Levels
> 40 dB

Noise Comparison for Background Noise Levels > 40 dB



Decreased (-) Noise Levels

Increased (+) Noise Levels

INTEGRATING NOISEMAP WITH THE GEOGRAPHIC RESOURCE ANALYSIS SUPPORT SYSTEM (GRASS) TO ENHANCE ENVIRONMENTAL IMPACT ANALYSES AND LAND USE COMPATIBILITY STUDIES

Kenneth Shepardson

Spectrum Sciences & Software, Inc.
242 Vicki Leigh Road.
Fort Walton Beach, Florida 32547

BACKGROUND

As a result of increasing development in areas surrounding military installations which are subject to aircraft noise and accident hazards, the Department of Defense developed the Air Installation Compatible Use Zone (AICUZ) program concept to assist in the Base Comprehensive Planning (BCP) process and to promote compatible land use in non-government areas around military airfields. Part of the program involves predicting the noise levels associated with military aircraft operations. This information is then presented to local governmental entities surrounding the airfield for their use in developing land use controls. The collection of actual aircraft noise data for analysis, however, can be expensive in both time and money. Measurement of noise levels requires specialized equipment designed to sample and record noise over extended periods of time. Representative samples must then be compared with known quantifying variables such as altitude, airspeed, route of travel and atmospheric data. The application of measured noise data to determine noise impacts for current and future operations can be difficult if not impossible.

The National Environmental Policy Act of 1969 (NEPA) requires federal agencies to evaluate the environmental impacts of proposed actions and to prepare detailed Environmental Impact Statements (EISs) for those actions which may be expected to result in significant impacts. To comply with the requirements of NEPA, the Air Force has established the Environmental Impact Analysis Process (EIAP) which specifies requirements for environmental analysis of proposed Air Force actions. For those actions which have not been categorically excluded from requirements for further environmental analysis or identified as normally requiring preparation of an EIS, an Environmental Assessment (EA) is prepared to determine whether the proposed action may result in significant environmental impacts requiring preparation of an EIS. Evaluating the potential noise impacts of actions which involve changes in the number and/or type of aircraft operations is a major component of the EIAP process for many Air Force actions.

To support the AICUZ and EIAP programs, the U.S. Air Force developed a group of noise prediction and modeling programs, collectively called NOISEMAP, which predict aircraft noise levels based on detailed flight operations data collected directly from flight operations personnel. NOISEMAP utilizes the operations data to calculate aircraft noise levels at points on a regularly spaced 100x100 point grid. The grid is normally centered on the installation but may be shifted to focus on specific areas. The grid points are normally spaced at an interval of 1000 feet; however, the spacing may be reduced to provide more detail or increased to encompass larger areas. The output from the NOISEMAP program is a grid file which contains a two-dimensional array, denoted by **n(x,y)**, where the value of **n** at the spatial coordinates **(x,y)** gives the noise level at that point. Historically, the grid data is smoothed using a contouring program, called NMPLOT, to create vector noise contours. The contours can be plotted at standard map scales such as 1:100,000 and overlaid onto existing land use maps for compatibility studies.

Spectrum Sciences & Software, Inc. (SPECTRUM) has developed methodologies to extend the capabilities for noise analysis by utilizing a Geographic Information System (GIS) to integrate the output from existing noise models such as the Air Force's NOISEMAP and the FAA's Integrated Noise Model (INM) with a variety of geographically referenced data including demographic and land use data as well as information on wildlife habitats and other environmentally sensitive areas. This in-house development activity was initiated in 1990 shortly after the release of the pre-census **Topologically Integrated Geographic Encoding and Referencing (TIGER) system Line Data** by the Census Bureau. The results of this advance development effort permitted the system to be used to provide detailed population impact estimates for use in preparation of the Special Environmental Assessment for Operation Desert Storm Support Operations at Westover Air Force Base, Massachusetts in April 1991, less than one month after release of the 1990 Census data on magnetic media. Since that time, SPECTRUM has continued to develop additional tools and procedures to support the noise analysis process. These tools have been successfully used in the preparation of numerous Environmental Assessments, Environmental Impact Statements and approximately 40 AICUZ studies. These procedures have been reviewed by the General Accounting Office (GAO) and the DoD Inspector General during the recent Base Realignment and Closure (BRAC) Round III deliberations and the results were successfully verified.

THE GEOGRAPHIC RESOURCE ANALYSIS SUPPORT SYSTEM

SPECTRUM has selected the **Geographic Resource Analysis Support System (GRASS)** developed by the U.S. Army Corps of Engineers. GRASS is a public domain, raster based Geographic Information System (GIS) designed to accomplish complex spatial analyses on two-dimensional images. GRASS stores raster data as spatial digital image and associated support files describing the image. The principle support file is the **Cell Header** file which defines map projection, real world location, and resolution of the data contained in the image. The image is divided into cells which contain a value identifying the type of data contained within the region of the cell. The resolution of the image determines the total area converted by an individual cell and therefore affects the accuracy of the data which may be associated with each cell. GRASS provides many generic spatial analysis tools and algorithms. SPECTRUM has enhanced the capabilities inherent in the GRASS system through in-house development of UNIX shell scripts and "C" programs specifically designed to facilitate noise analysis.

NOISEMAP grid files are converted to GRASS raster files through the SPECTRUM developed **r.in.noisemap**. Using the NOISEMAP grid output file, this program assigns the noise levels at each spatial coordinate **(x,y)** to the appropriate cells within the raster image. The resulting noise raster image contains the actual noise levels calculated by NOISEMAP. If the study area encompasses a nearby civilian airport, noise levels calculated by the INM model can be logarithmically summed with the military noise case giving combined noise raster data.

To simplify presentation of the results of a noise study, the noise raster image is usually divided or reclassified into a range of noise levels depending on the requirements of the study. The noise level ranges correlate directly to contour lines extracted by NMPLOT. Typically, the noise levels are reclassified into 65-69 dB, 70-74 dB, 75-79 dB, and >80 dB noise ranges. If a more detailed analysis is required, noise may be examined in increments of 1 dB or less, and the results of multiple NOISEMAP runs for different areas may be combined to provide coverage of large areas.

DATA COLLECTION AND VALIDATION

A primary concern in both EIAP analyses and AICUZ studies is evaluation of aircraft noise impacts on the communities surrounding the installation. SPECTRUM currently uses the **U.S. Census Bureau's (TIGER) system Line Data** and **Public Law 94-171 Population and Housing Data** to estimate the number of persons exposed to various levels of aircraft noise in the areas around the military installation. TIGER data is composed in part of the U.S. Geologic Survey's **1:100,000 Digital Line Graph (DLG)** data modified to include demographic line

boundaries at both the census tract and census block level. For an AICUZ study, data is extracted at the block level and converted to the GRASS vector format.

Since the TIGER data contains no demographic information, population information must be extracted from the PL 94-171 database of population count data. The PL 94-171 data identifies each census tract or block within a county by a number which corresponds to the areas delineated by the TIGER data. The population counts for each block are extracted from the PL 94-171 data and assigned as a category label to the appropriate block. The resulting labeled GRASS vector file is converted to a population raster file. Areas for each block are then calculated and applied to the population data to create a population density raster file which can be used for noise impact analysis.

Although the TIGER and PL 94-171 data represent the most accurate and up-to-date demographic data available for the United States, the population counts were made in 1990 and the data files may contain digitizing errors, errors in labeling of blocks, or erroneous population numbers. To ensure accuracy, the population data must be verified and corrected in a similar manner to land use data.

Reconstructing demographic data requires modifying existing blocks and correcting the population numbers. As an example, the on-base population is typically represented by a single block which encompasses the entire base. Before an accurate impact study can be performed, the population count must be redistributed for the installation. Housing areas are digitized from existing maps and population counts obtained from the military installation area assigned to the areas. The vector data is converted to a population mask which is then used to correct the raster population density files. For large census blocks typical of suburban areas, calculation of population density based on the entire block area may result in significant errors in the apparent population distribution. This is particularly important in areas close to the installation where aircraft noise levels decrease rapidly with distance. In such areas. additional masks may be created to more accurately reflect the actual population distribution.

If updated population data or projections are available, they may be applied to the census data. Depending on the level of information available, data may be updated on the basis of political subdivisions (counties, cities or towns) or at the census tract or block level.

The purpose of an AICUZ study is to determine the compatibility of existing and future land use and zoning with flight operations and to provide information and recommendations to surrounding communities for use in preventing incompatible development. Compatibility with existing and projected land uses is also an important factor in evaluating the environmental impacts of proposed Air Force actions. Before a land use compatibility analysis can begin, land use data must be obtained from appropriate local agencies. Although digital land use and zoning data are occasionally available, most land use data must be manually digitized from hard copy maps collected from various agencies. Land use data is digitized by SPECTRUM's **Computer Aided Drafting (CAD)** personnel and registered to

features data (e.g. roads, water, political boundaries) extracted from the U.S. Census Bureau's **TIGER Line Data (TIGER)** imported into either AutoCad or Intergraph. The digitized land use data is then converted to GRASS's digital vector format and the areas are assigned one of the following category labels: (1) residential, (2) commercial, (3) industrial, (4) public, or (5) recreational. The labeled vector files are then converted to land use and zoning raster files for spatial analysis.

Because existing land use and zoning maps may contain out-dated information, AICUZ data collection teams must verify land use by site surveys. To minimize time required to verify the land use data, SPECTRUM provides the collection team with detailed *road maps* (created from TIGER data) overlaid with worst case **Pre-Data Collection (PDC)** noise contour lines generated by NOISEMAP and NMPLOT. A PDC noise case allows the collection team to focus only on areas which may be exposed to high noise levels. This results in savings of both time and money.

DATA ANALYSIS USING GRASS

An AICUZ study using GRASS as an analysis tool involves mapping the noise intensity function **n(x,y)** onto supplementary spatial data sets and compiling or *binning* the results based on the different noise levels contained within **n(x,y)**. Binning can include any common statistical operation which can be performed on the spatial data contained within the noise bins. As noted previously, GRASS provides many generic spatial correlation tools and algorithms and SPECTRUM has expanded these tools to directly support noise analysis.

The SPECTRUM developed **n.pop** tool computes a spatial correlation between a range of noise levels (i.e. reclassified raster noise file) and the population density data. The **n.pop** program runs the spatial correlation and produces a table showing the total population within each noise level range (e.g. 65-69 dB, etc.). An output raster file depicting noise levels versus population is also created which permits displaying the location of the population exposed to various noise levels. This information can be used to estimate the impact of flight operations on the population and as a basis for identification of potential mitigation measures. Once potential mitigation measures have been identified, the GIS system may be used to provide a quantitative comparison of the effectiveness of various alternatives.

The approach described above is also applied to land use data using the SPECTRUM developed **n.landuse tool**. The **n.landuse** program runs a spatial correlation between a range of noise levels and land use. The resulting output table displays the percentage of the area within each noise level range which is assigned to each land use category. This tool is extremely valuable for determining the compatibility of future land use and zoning with flight operations. If planned land use or zoning are found to be incompatible with future flight operations, the military and the civilian community cooperatively examine solutions to avoid problems which may

adversely impact both the military installation's mission and the surrounding community.

Although the AICUZ study generally only addresses impacts on land use and population, GRASS's analytical capabilities can be extended to other types of data to support environmental impact analyses for proposed actions. Environmental information such as wildlife habitat and concentration areas and noise sensitive areas such as parks, recreation areas, or preserves can be used to estimate the impact of noise on wildlife and recreation. Site specific data, such as nesting areas of endangered species of birds, can be used to query noise raster data to determine the overall impact of flight operations at specific locations of significance.

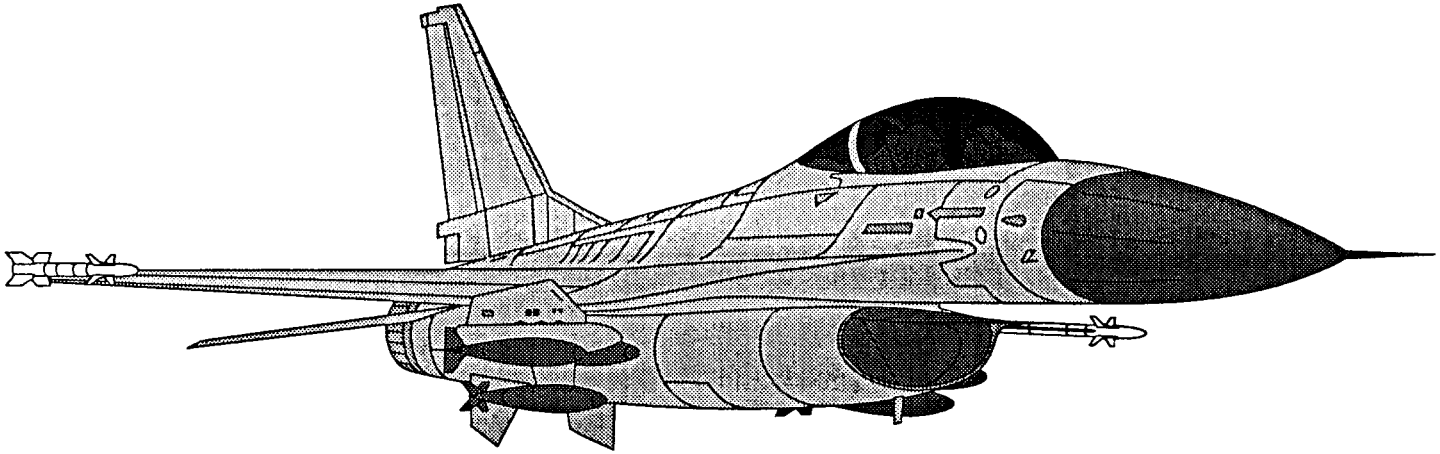
For Environmental Assessments (EA) and Environmental Impact Statements (EIS), spatial correlations may also be calculated between a baseline noise case and alternative noise cases derived from proposed flight operations. SPECTRUM has developed differencing algorithms which allow noise cases to be compared based on the change in noise levels caused by different flight operations. The SPECTRUM developed **n.diff** tool generates noise difference raster data and output tables which allow the baseline noise case to be compared to alternative noise cases. Using this data, a informed decision concerning the proposed operations can be made by the military installation.

CONCLUSIONS

The integration of a Geographic Information System (GIS) with noise models such as NOISEMAP and INM enhances the ability to quantify the impacts of flight operations on the surrounding community and the environment. Use of a GIS such as GRASS in combination with proven noise models such as NOISEMAP and INM and the P.L. 94-174 census data and TIGER Line Data provides the basic tools necessary to rapidly complete complex noise analyses. Additionally, because each individual impact analysis requires only a small labor effort, a large number of potential alternative noise cases can be compared quantitatively to evaluate the effectiveness of mitigation measures in reducing noise impacts. This approach allows the military installation to adjust operations in order to decrease noise impacts and still fulfill its mission.

SPECTRUM has supplemented the basic tools provided by the GRASS program by developing additional tools specifically to support the integration of the output of proven noise models and a variety of geographic data to support the Air Force's AICUZ and EIAP programs. The procedures developed by SPECTRUM have been successfully applied in the development of numerous AICUZ studies, Environmental Assessments and Environmental Impact Statements. The bottom line is that the integration of the noise programs with the GRASS GIS enables the accomplishment of detailed analysis of multiple alternatives in a minimal time period with enhanced quality.

INTEGRATION OF NOISE MODELS WITH GIS TO ENHANCE ENVIRONMENTAL ASSESSMENTS AND NOISE STUDIES



SPECTRUM
SCIENCES & SOFTWARE, INC.

Kenneth Shepardson

OVERVIEW

Integration of GIS and Aircraft Noise Models

- Application of GIS for Noise Studies and Environmental Assessments using spatial data sets

- Integrates existing Noise Models with GRASS
  - Military Airport Noise (NOISEMAP)
  - Civilian Airport Noise (INM)
  - Military Operations Areas (MOAMAP)

- Enhances existing GRASS analysis capabilities for Noise Analysis
  - Population Impacts
  - Landuse Compatibility
  - Environmental Impacts
  - Comparison of Different Aircraft Operations for mitigation
  - Wildlife Populations and Habitat

SPECTRUM
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HISTORY

- Originally developed in 1990 to support the Special Environmental Assessment for Operation Desert Storm at Westover AFB

- Methodology used to provide analyses for:
  - Environmental Assessments (EA)
  - Environmental Impact Studies (EIS)
  - Over 40 Air Installation Compatible Use Zone (AICUZ) Studies

- Results of procedures successfully verified by the:
  - U.S. General Accounting Office
  - U.S. DoD Inspector General

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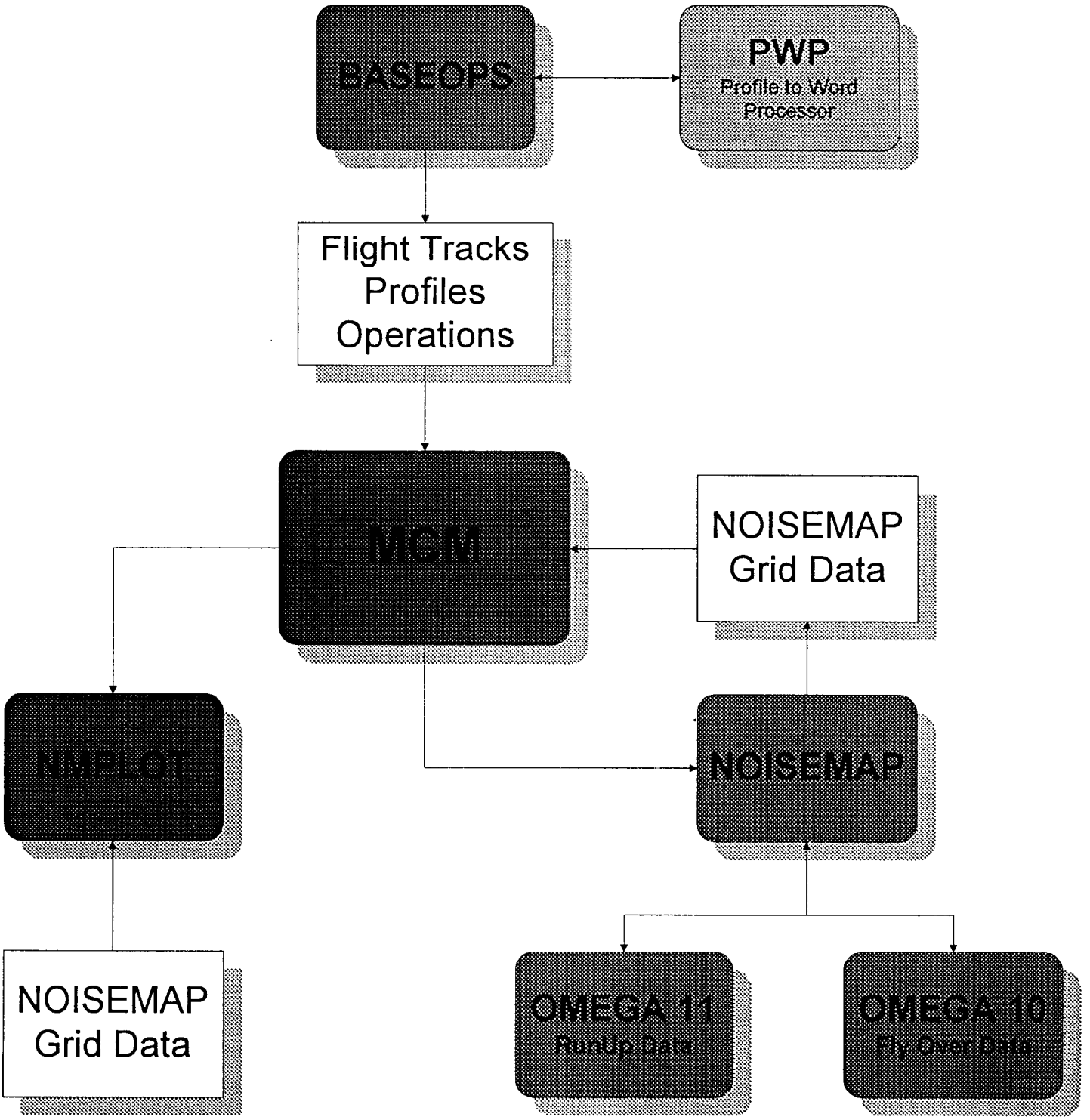
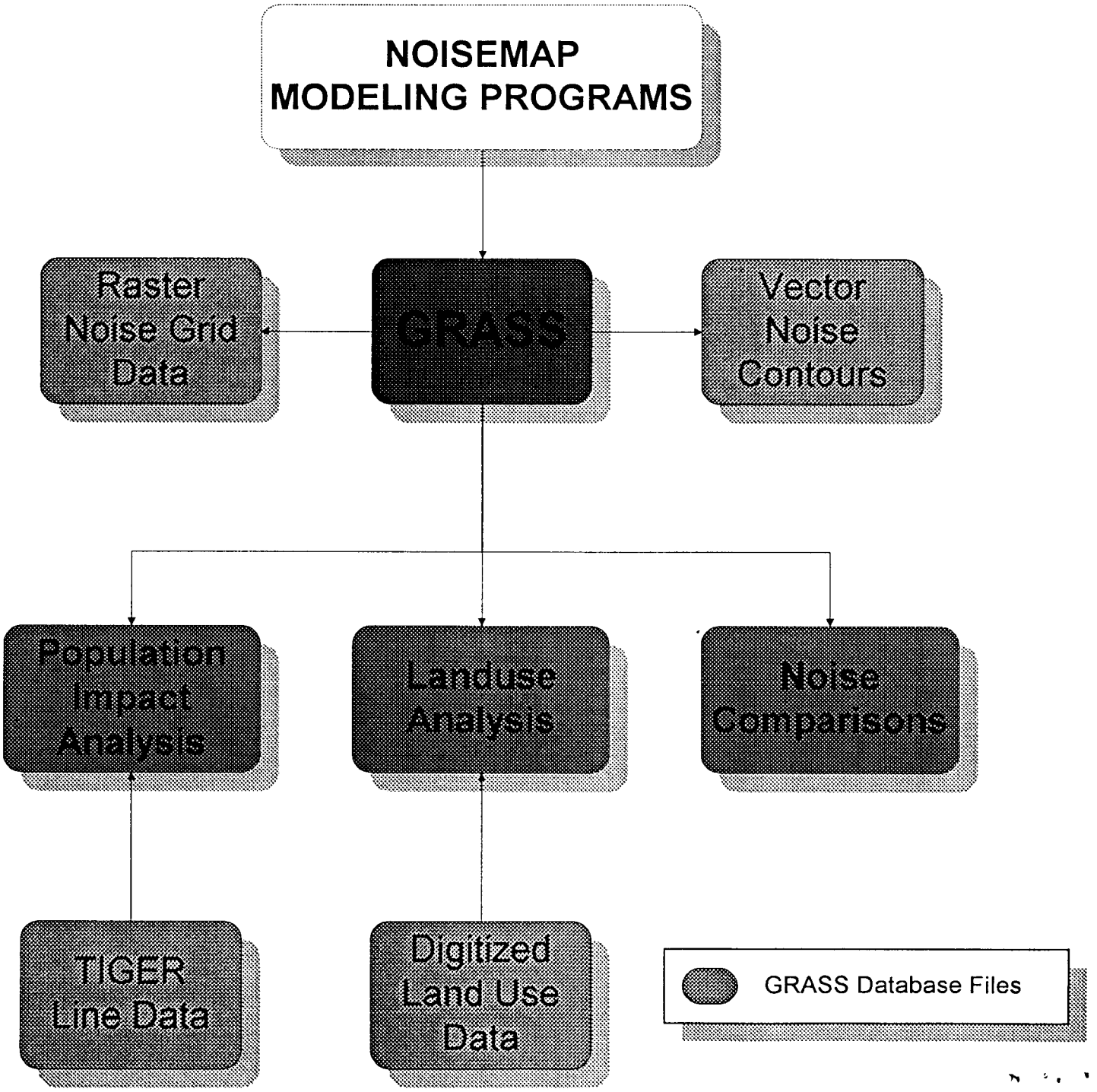
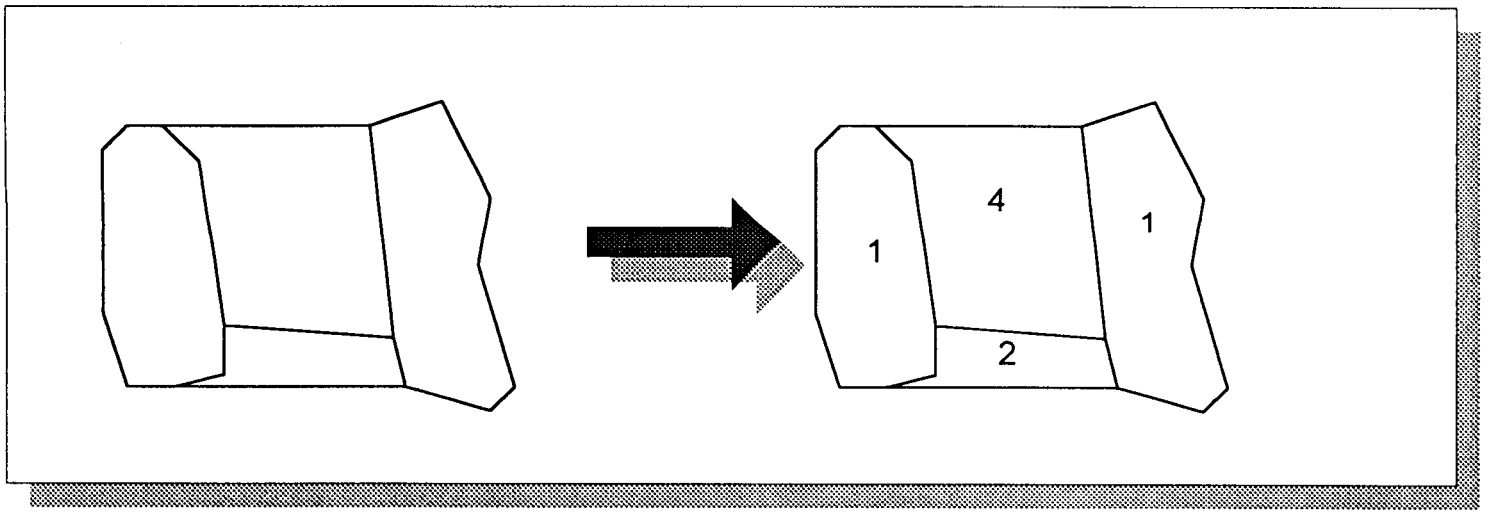
NOISEMAP
Noise Collection and Support Programs



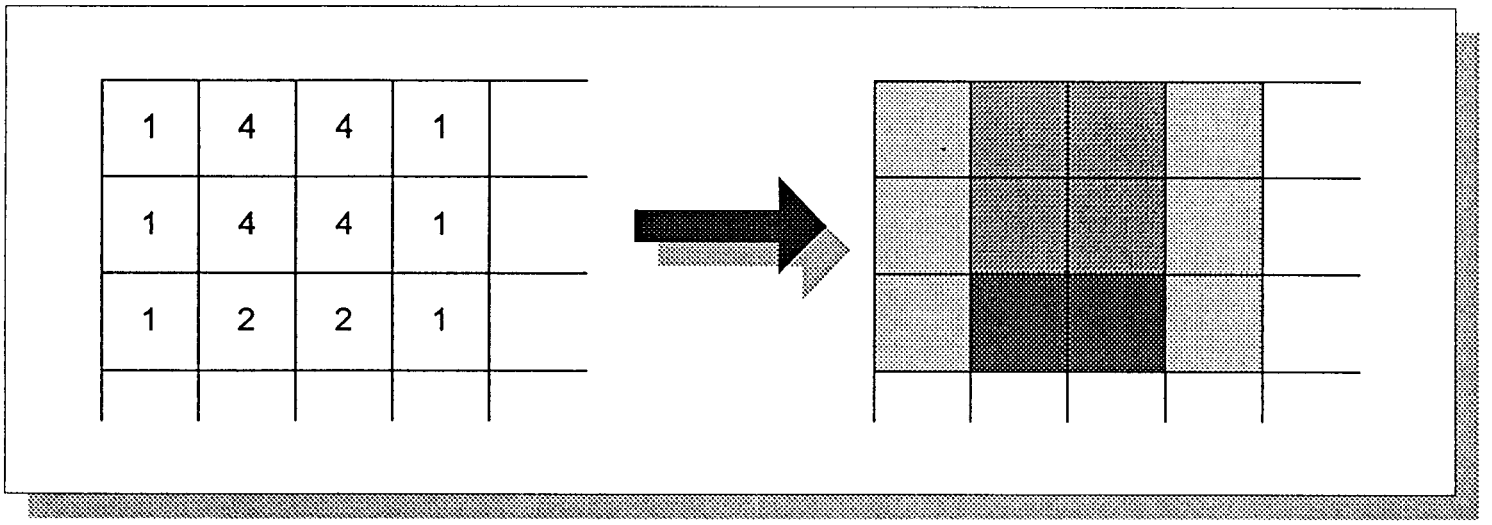
NOISE MODELING with (GRASS)



GRASS
Geographic Resources Analysis Support System
DATA FORMATS



GRASS Digital Vector Data
Land Use Representation



GRASS Raster Data
Land Use Representation

Document Separator

Noisefile Database Management System

User's Manual

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Introduction

The Noisefile Database Management System (NDMS) is a Microsoft Access application designed for the storage and retrieval of summarized noise study data. The Air Force Center for Environmental Excellence (AFCEE) is responsible for the collection and distribution of noise study data that is maintained in the system, therefore, AFCEE will be the agency responsible for the maintenance of the system.

The NDMS is a relational database that utilizes the Microsoft Windows environment to facilitate data entry and presentation methods. With the multitasking capabilities of Microsoft Windows, it is possible to run other applications while maintaining quick access to the NDMS. Microsoft Windows also provides a large selection of compatible printers which provides the NDMS with optimal portability. The clipboard features of Windows allows for the easy graphical image importing into the NDMS.

Because of the dependency upon the attributes of Microsoft Windows, advanced Microsoft Windows users will find the NDMS easy to use. Knowledgeable Microsoft Access users will find some routines constraining, however, the intent of the system is to provide basic computer users with a powerful database tool.

This manual is designed to aid the beginning user. Many advanced features are not mentioned in this manual in order to reduce confusion for new users. Advanced features can be learned by gaining a thorough understanding of Microsoft Access by reading the Microsoft Access manuals. With the right security privileges, one could enhance the NDMS by creating their own application interface in Microsoft Access.

Part 1: Setting Up, Starting and Quitting

Noisefile Database Management System Requirements

To use the Noisefile Database Management System (NDMS), you will need the following:

- IBM-compatible personal computer running Microsoft Access for Windows
- 10 megabytes or more of free space on a hard drive
- SVGA monitor and Microsoft Windows operating in SVGA mode.

The NDMS is a Microsoft Access application that is designed to be used only in SVGA mode. All forms were designed to utilize the 800 X 600 resolution in order to present more data on a single form. The application can run in 640 X 480 mode, but many of the forms will not be completly visible. It is highly recommended that you run the application only in the 800 X 600 resolution mode.

Because Microsoft Access is a Windows based application, all Windows compatible printers can be used with the NDMS. It is important to note, however, that some printers require extra memory to print large graphic images. The NDMS does print large graphics images (airport diagrams and contour maps). A minimal printer memory requirement cannot be specified because the images stored in the NDMS vary in size based upon the scaling methods used to import the graphic images. The example reports contained within this manual were all printed on a Hewlett Packard LaserJet III with 1.5 megabytes of random access memory, this does not mean that you will be able to produce all reports on a similar system after importing your own images.

Preparing Windows for the NDMS

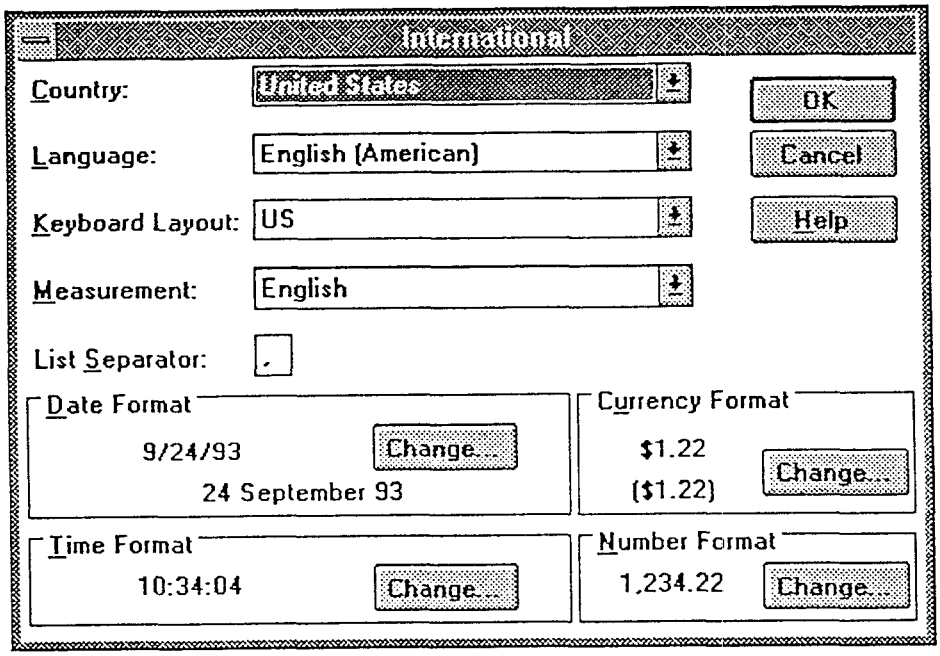
Prior to installing the NDMS, you will first need to ensure that Microsoft Access is installed on your machine, and Microsoft Windows is configured to run the NDMS. Configuring Microsoft Windows involves setting the clock to the 24 hour mode in order for the time/date stamp of the NDMS to work properly.

To install Microsoft Access, refer to the Microsoft Access User's Guide that accompanies your copy of the NDMS. A minimal installation is all that is required, however, if you intend to create custom reports installing the Forms Wizard option is recommended.

To configure the system clock as a 24-hour clock:

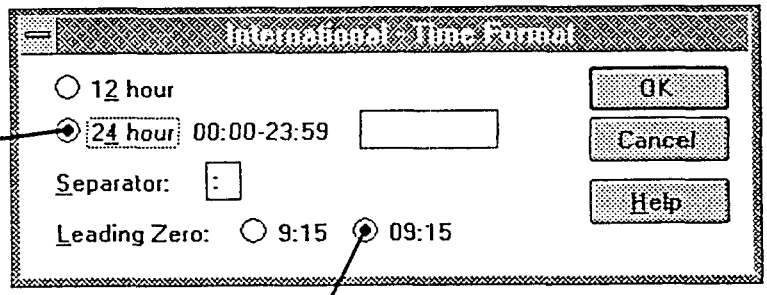
1. In the Windows Program Manager, open the program group that contains the Control Panel icon.
2. Double-click on the Control Panel icon.
3. Double-click on the International icon.

The following dialog box appears:



In the Time Format option box, select the Change button. The International - Time Format dialog box appears as follows:

Click on the 24 hour option button to configure the system clock as a 24 hour clock.



Click on this option button to configure the time format with leading zeros.

By clicking on the 24 hour option button, you can change the system clock configuration to a 24 hour clock format. After selecting the 24 hour clock option, select the Leading Zero option button to format the time with a leading zero.

After you have changed the settings, select the OK button. The International dialog box will become the active window. You will then need to select the OK button to save the changes you have made.

Setting Up and Starting the NDMS

Use the Setup Program (SETUP.EXE) to install the NDMS on your computer.

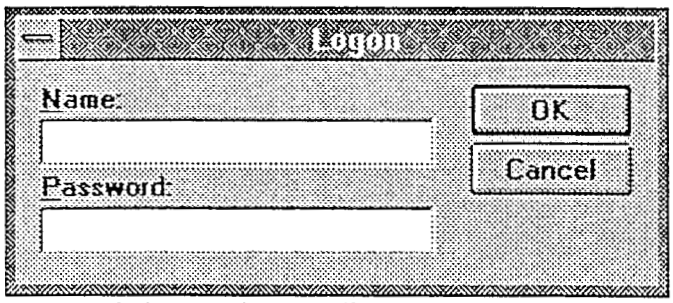
To set up the NDMS do the following:

1. Insert Disk 1 in drive A:
2. Start Windows
3. In the Windows Program Manager, choose Run from the File menu
4. Type **a:setup** in the Command Line box
5. Choose the OK button

After installing the files, you will need to restart Windows to see the program group that contains the NDMS icons. Exit from Windows completely to the DOS prompt, and then restart Windows.

To start the NDMS do the following:

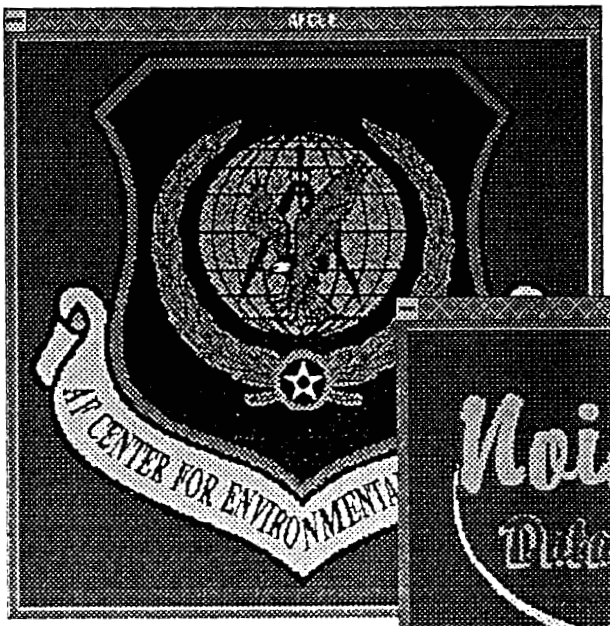
1. In the Windows Program Manager, open the program group that contains the Noisefile DBMS icon. The program group will be titled Noisefile.
2. If you are the assigned systems administrator and are entering the database system in order to record users and passwords, double-click the Noisefile Customization icon (refer to the packaged SysAdmin card for the default Name and Password) and then refer to **Part 8: Noisefile Database Management System Administration and Security**. If you are entering the database system in order to view, add or edit data, then double-click the Noisefile DBMS icon.



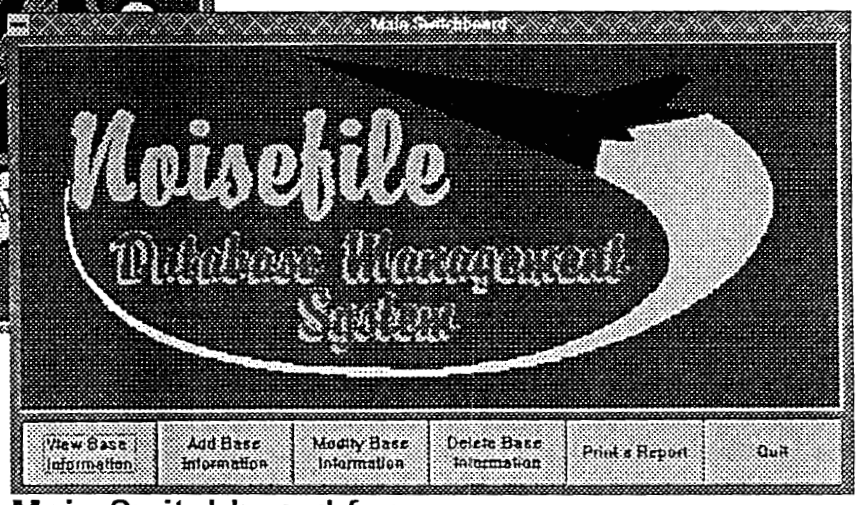
Microsoft Access Logon dialog box.

Microsoft Access will start by first asking for your name and password. The first person to enter the NDMS for the first time should have been the assigned systems administrator. This person should have entered all of the names of the users with their passwords. If you are denied access to the NDMS after entering your name and password, contact your systems administrator for assistance.

After entering Microsoft Access, the first form displayed by the NDMS is the AFCEE logo form. This form will remain on the screen for approximately 5 seconds. Once it times out, the Main Switchboard form will appear.



AFCEE logo form



Main Switchboard form

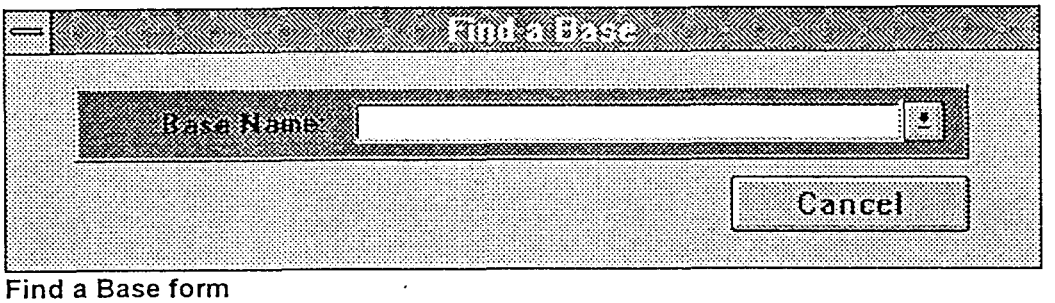
To exit the NDMS just select the **Quit** button located on the Main Switchboard. Microsoft Access will terminate revealing the next active program.

Part 2: Viewing Base Information

One of the most usable features of an electronic database is the ability to view information rapidly. The Noisefile Database Management System (NDMS) offers the user this capability through the View Base Information forms. Not only does the system allow the user to view the data, but many quick reports are available from the View Base Information forms as well.

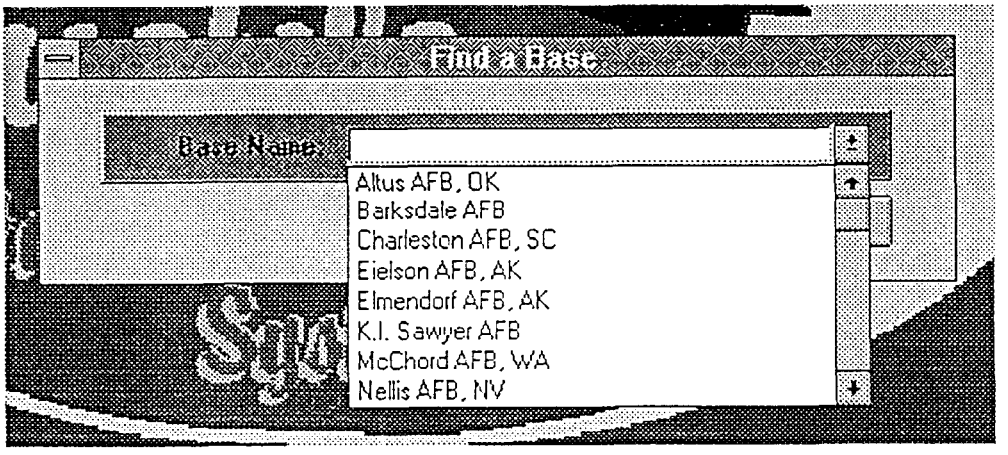
Opening the View Base Information Forms

To open the View Base Information forms, from the Main Switchboard click on the **View Base Information** button. The Find a Base dialog box appears on the screen requesting a base name. If the complete base



Find a Base form

name is known, then type the name in the text box provided and press **[Enter]**. If the complete base name is not known, then use the pull-down list to choose the base name. Click on the pull-down arrow located at the right end of the text box to reveal the pull-down list. All bases in the



NDMS are in the pull-down list. To select a base, click on the desired base name. The NDMS will locate the records associated with the selected base before continuing.

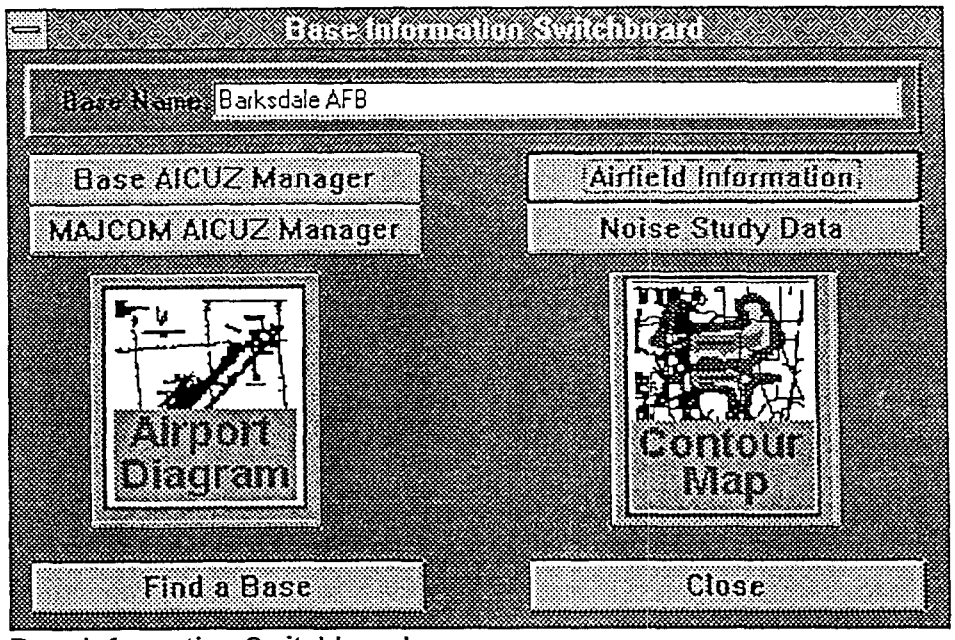
If you enter the wrong base name by typing it and you wish to change it before pressing the **[Enter]** key, pressing the **[Esc]** key once will clear the field. You can then enter the correct base name.

Base Information Switchboard

Once you have selected a base, the NDMS will display the Base Information Switchboard. From this form you may choose to view many details about the selected base, or you can reference a different base.

The Base Information form is composed of nine different objects. One of the objects is the Base Name text box. The remaining eight objects are command buttons that allow you to access different data view forms.

The Base Name text box contains the name of the selected base. You cannot edit the base name from this screen. It is there to provide a reference to the selected base .



Base Information Switchboard

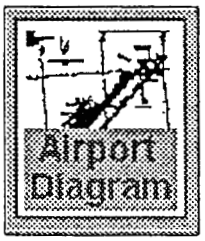
The **Base AICUZ Manager** and **MAJCOM AICUZ Manager** buttons, when clicked, allow you to view the contact information for the base or MAJCOM AICUZ managers. Information concerning runways, heliports, clear zone and accident potential zone land ownership, zoning jurisdictions, and noise suppression can be accessed by first clicking on the **Airfield Information** button. Information related to a specific noise study can be viewed by clicking on the **Noise Study Data** button.

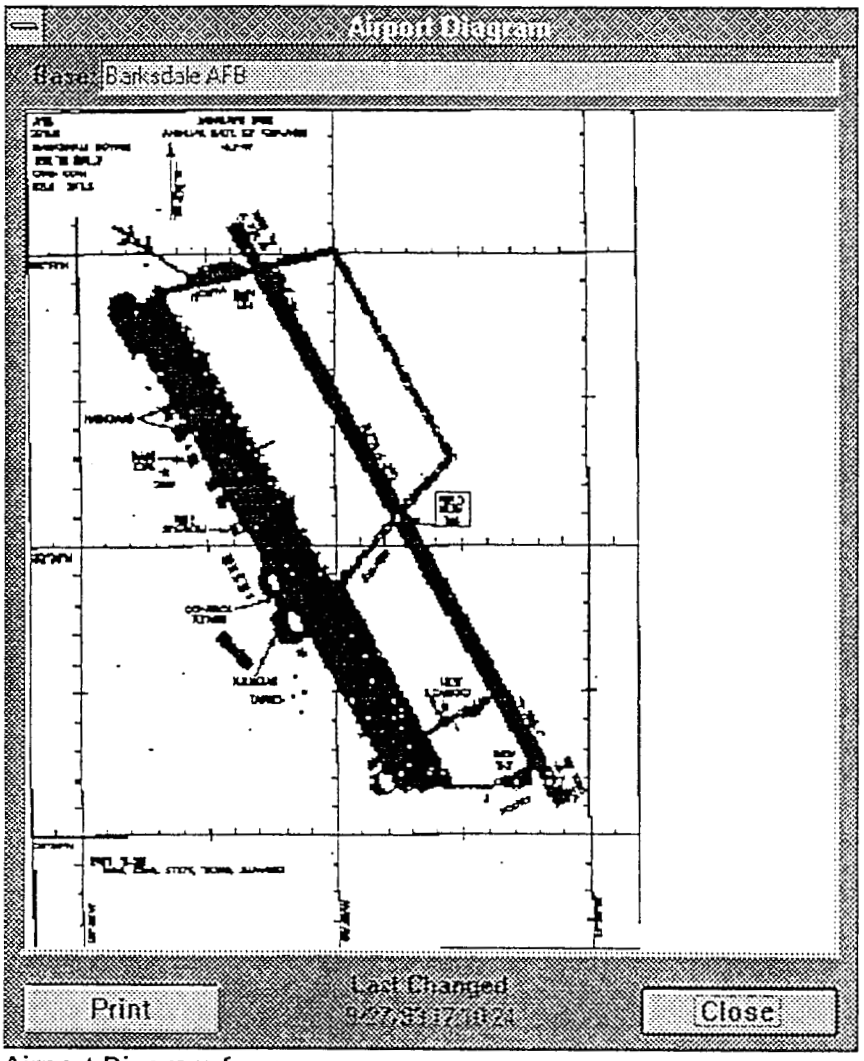
For quick access, the two buttons, **Airport Diagram** and **Contour Map**, have been added to this form. The **Airport Diagram** button, when clicked, causes the Airport Diagram form to open. This form displays a scanned image of the airport (runway) layout stored in the NDMS. The most current contour map generated by a noise study can be viewed by clicking on the **Contour Map** button.

If you want to view information about another base, use the **Find a Base** button to display the **Find a Base** dialog box. This is identical to the box that appeared when you entered View Base Information.

Airport Diagram

If the Airport Diagram for the base specified in the record has been imported into the database, the diagram can be viewed simply by clicking on the **Airport Diagram** button. The image displayed cannot be magnified or edited, but it can be printed.





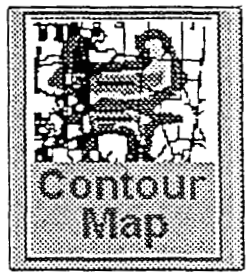
Airport Diagram form

You will notice that there are two command buttons on the form. The first button is the **Print** button. This button executes a quick report of the data displayed on the Airport Diagram form. The second button, the **Close** button, closes the Airport Diagram form and opens the Base Information form.

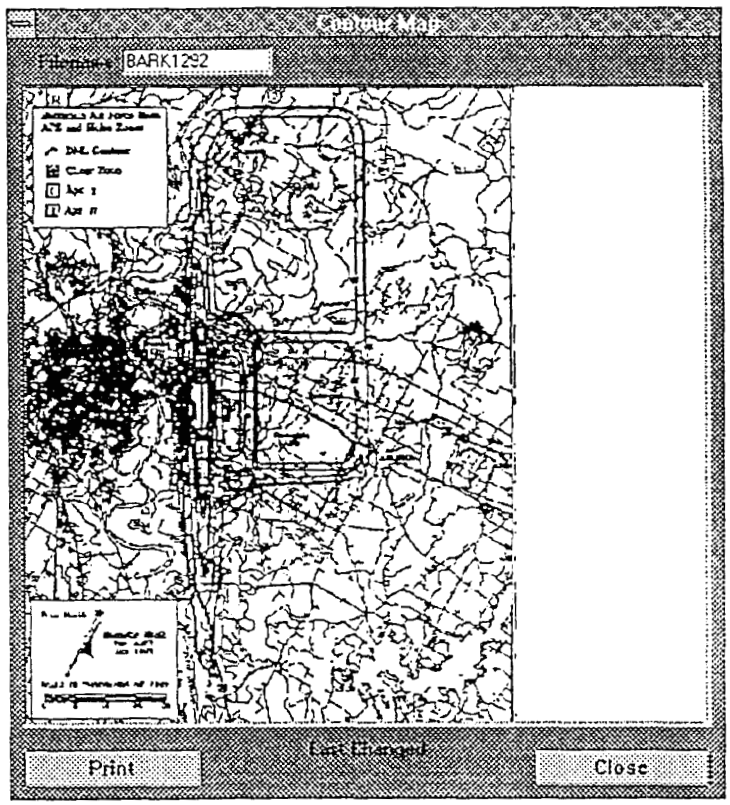
To close the Airport Diagram form, click on the **Close** button. The Airport Diagram form will close and the Base Information form will reappear on the screen.

The **Airport Diagram** button is located on many forms. Any time you click on the **Airport Diagram** button, the Airport Diagram form will appear. Basic differences are only found when you are either adding to the database or modifying the database. These differences will be covered in **Part 3: Adding Base Information** and **Part 4: Modifying Base Information**.

Contour Map



Another graphical capability of the NDMS is to maintain contour maps for all recorded noise studies for each base. The **Contour Map** button on the Base Information form allows you to view the most current contour map recorded for the selected base.



(Current) Contour Map form

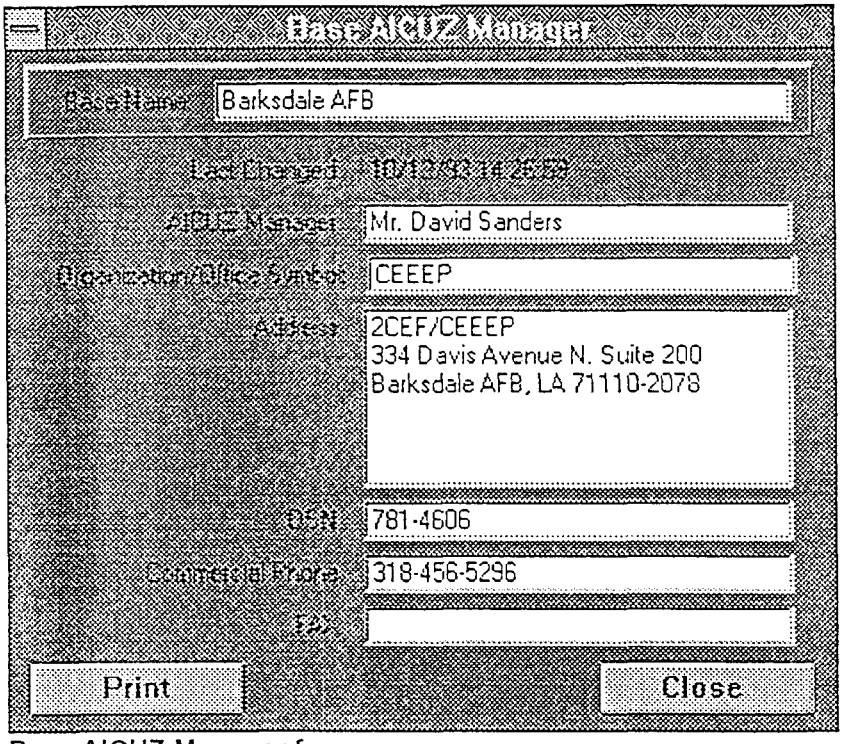
There are two command buttons on the Contour Map form. The **Print** command button allows you to print the current contour map on your printer. The **Close** command button closes the Contour Map form and re-displays the Base Information form.

Any time that you are viewing data in the NDMS and you click on the **Contour Map** button, the Contour Map form will be displayed. The difference between any of the forms is that the **Contour Map** button

located on the Base Information form will display the most current contour map. All other occurrences of the Contour Map button will display the contour map associated with the noise file in reference.

Base AICUZ Manager

The Base AICUZ Manager form is a read-only form that displays the contact information for the base AICUZ manager affiliated with the specified base. It also provides a **Print** button in order to print the



Base AICUZ Manager form

displayed information.

The first field displayed on the form is the Base Name field. It is displayed as a reference to the base that you have selected.

The second field on the form is the Last Changed field. This field will either be blank or contain a date/time stamp. If the field is blank, then the data in the form has never been changed. If a date/time stamp is in the field then some of the data on the form was changed at the specified time.

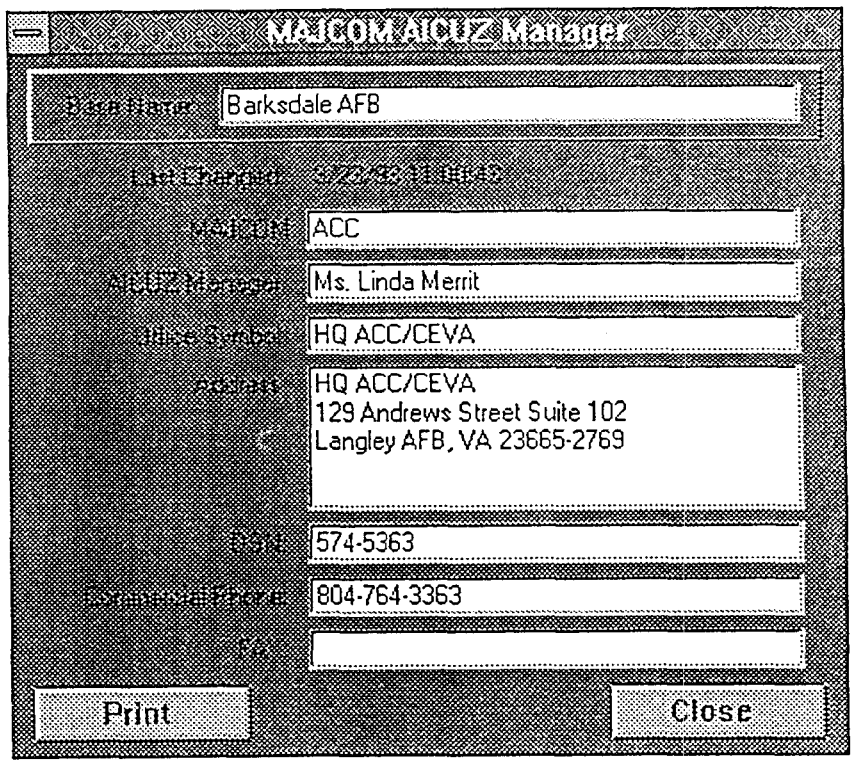
The AICUZ manager's name is the next field. This field should contain the name of the current AICUZ manager for the specified base. The remaining fields contain the address information and DSN, commercial phone and FAX line numbers.

The NDMS will produce a report of the Base AICUZ Manager information when the **Print** button is clicked. The report consists of the information displayed in the Base AICUZ Manager form.

Once through viewing the information, click on the **Close** button. The Base AICUZ Manager form will be closed and the Base Information Switchboard will reappear.

MAJCOM AICUZ Manager

Similar to the Base AICUZ Manager form is the MAJCOM AICUZ Manager form. It is also a read-only form. The information displayed, however, is the contact information stored in the NDMS for the MAJCOM AICUZ Managers.



MAJCOM AICUZ Manager form

The first field displayed on the form is the Base Name field. It is displayed to as a reference to the base that you have selected.

The second field on the form is the Last Changed field. This field will either be blank or contain a date/time stamp. If the field is blank, then the data in the form has never been changed. If a date/time stamp is in the field then some of the data on the form was changed at the specified time.

The AICUZ manager's name is the next field. This field should contain the name of the current MAJCOM AICUZ manager for the specified MAJCOM. The remaining fields contain the address information and DSN, commercial phone and FAX line numbers.

The NDMS will produce a quick report of the base AICUZ manager information when the **Print** button is clicked. The information on the

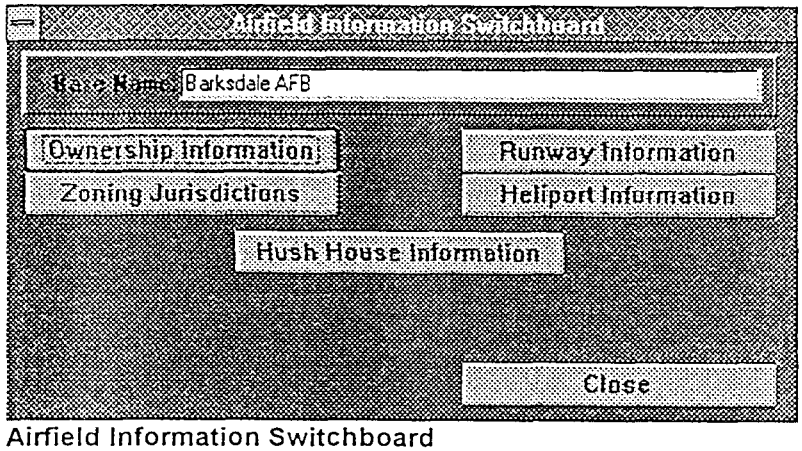
report is the same information that is displayed in the MAJCOM AICUZ Manager form.

Once through viewing the information, click on the **Close** button. The MAJCOM AICUZ Manager form will close and the Base Information Switchboard will reappear.

Airfield Information

The Airfield Information form is another switchboard that allows you to view information related to a base's airfield. This information includes CZ and APZ land ownership, zoning jurisdictions, runway, heliport, and hush house information. All forms accessed from this switchboard are read-only forms. Data can only be edited when using the forms accessed from the **Modify Base Information** button on the Main Switchboard.

To view any of the information, click on the button with the topic of your



Airfield Information Switchboard

choice. The Airfield Information form will disappear and the appropriate form will appear. To exit from the Airfield Information form and return to the Base Information form, click on the **Close** button.

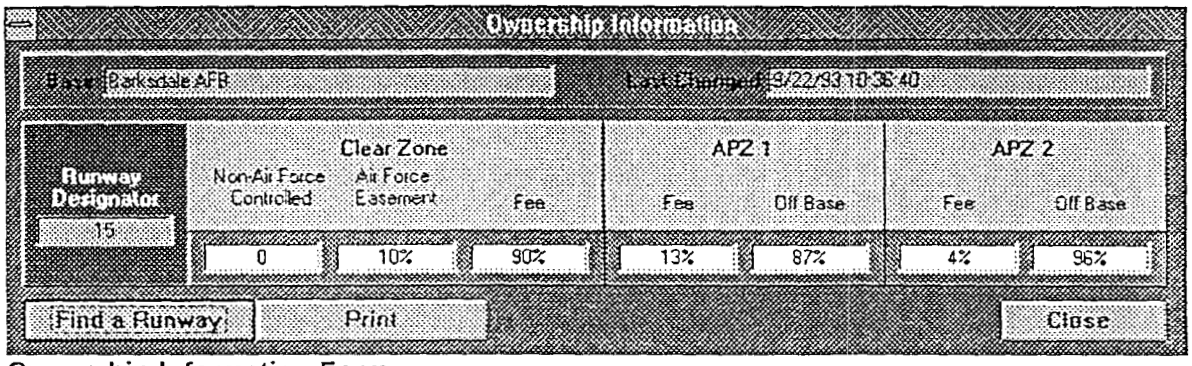
It is possible that for some bases not all of the data is recorded in the NDMS. This could be for various reasons. For example, during the time that a base was being added to the NDMS, it was not known how many heliports existed at the base. Without knowledge of how many heliports and where they were located at a specific base, the data entry person could not add heliport records to the NDMS. In these instances, a message specifying that records do not exists for the selected topic will appear on the screen.

Ownership Information

Associated with each base runway are clear zones (CZ) and accident potential zones (APZ1 and APZ2). These zones are located at the approach and departure end of the runway. To avoid confusion in the NDMS, these zones are referenced to the approach end of the runway.

Ownership and control of these zones varies from base to base. The NDMS allows for the recording of these differences in the Ownership Information form.

To view this information, select the **Ownership Information** button on the Airfield Information Switchboard. If there are ownership information records in the NDMS for the specified base, the Ownership Information form will appear.



Ownership Information Form

The Ownership Information form is divided into five sections. At the top of the form in the first section is the base name and date/time stamp. The Runway Designator field is in the second section with the CZ and APZ information in the third, fourth and fifth sections.

In the Clear Zone section you will find the percentages for control of land use in the CZ associated with the specified runway. There are three entries in this section. Each entry is normally designated with a percentage, however, the NDMS allows for text data in these fields as well as numeric data.

The first entry in the CZ section refers to non-Air Force controlled lands. The second entry refers to those lands for which the Air Force has obtained easements. The percentage of the land in the CZ purchased by the Air Force is designated in the Fee column.

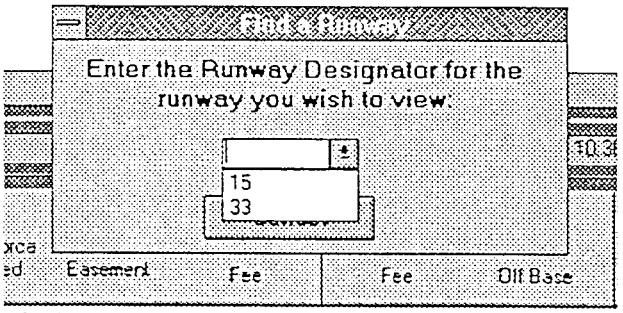
Both the APZ1 and APZ2 sections have two entries. The entry in the Fee column designates the percentage of the land that is owned by the Air Force. The remaining portion of the land is referenced by a percentage in the Off Base column.

There are three command buttons on the Ownership Information form. The **Find a Runway** button allows viewing of ownership information for another runway located at the specified base. The **Print** button allows you to print a report of the ownership information for the base specified in the Base field. To close the Ownership Information form and return to the Airfield Information form, select the **Close** button.

Selecting the **Find a Runway** button causes the following form to appear:

Find a Runway form

If you know the runway designator for the CZ and APZ parcels you want to review, enter the designator in the text box provided and press **[Enter]**.

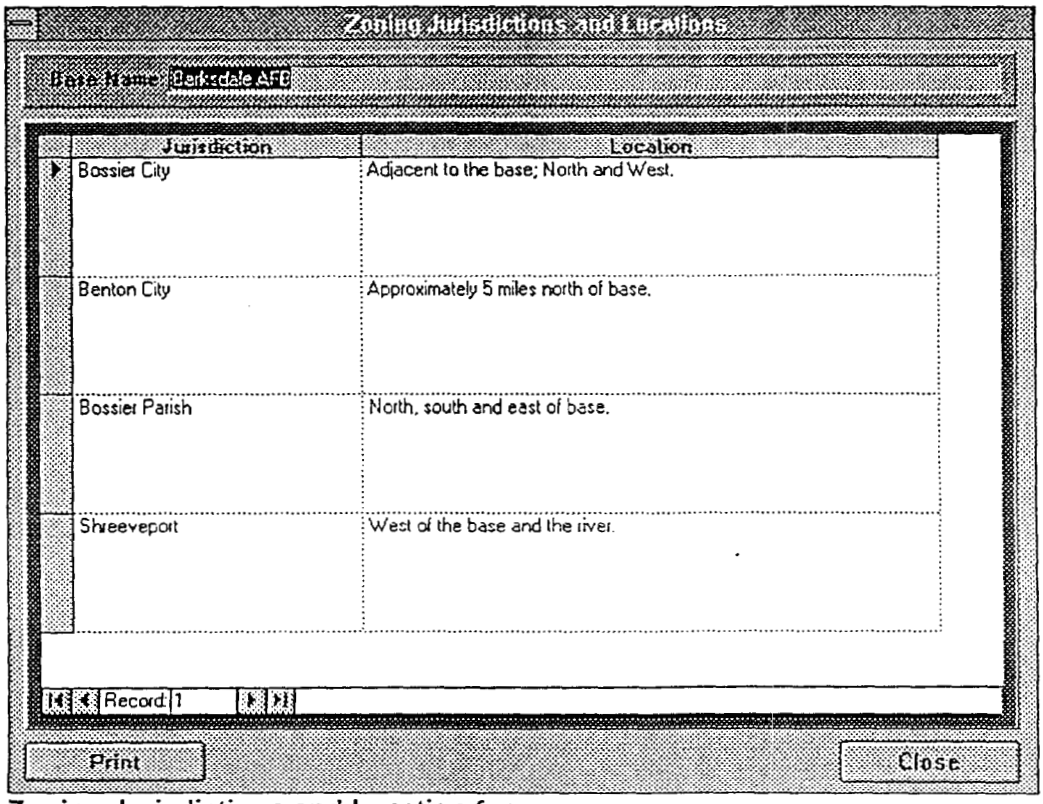


Find a Runway Pull-down List

If you are not sure of a runway designator, use the pull-down list arrow to display the designators for the recorded runways. It is possible that the list of designators may exceed the allowable viewing space. If this is the case, a vertical slide bar will appear on the right edge of the pull-down list. Dragging the button on the slide bar up or down will allow you to scroll through the list of designators. When you are ready to select a runway designator listed in the pull-down list, click on the designator. The NDMS will locate the information for the selected runway and display the information in the Ownership Information form. Clicking outside of the pull-down list will collapse the pull-down list allowing you to gain access to the **Cancel** button. Selecting the **Cancel** button will close the form and return focus to the Ownership Information form.

Zoning Jurisdictions

If you select the **Zoning Jurisdictions Information** button from the Airfield Information form and there are no zoning jurisdictions records recorded in the NDMS for the specified base, then a message will appear specifying the non-existence of zoning jurisdictions records. If there are zoning jurisdictions records in the NDMS, the Zoning Jurisdictions and Location form will appear on the screen.



Zoning Jurisdictions and Location form

The Zoning Jurisdictions form contains information about local governments that have land use authority over lands within the CZ and APZ environs. Each governing body is represented in the NDMS with two fields. The name of the governing body is recorded in the Jurisdiction field. A memo field contains location information.

The two fields are in a scrollable table. This allows for an unlimited number of jurisdictions or governing bodies to be recorded in the NDMS for the specified base. If the list is so long that all of the records cannot be displayed in the window, a vertical scroll-bar will be placed on the right edge of the viewing window. Records not visible in the viewing window can be displayed by using the slide button to position the view window.

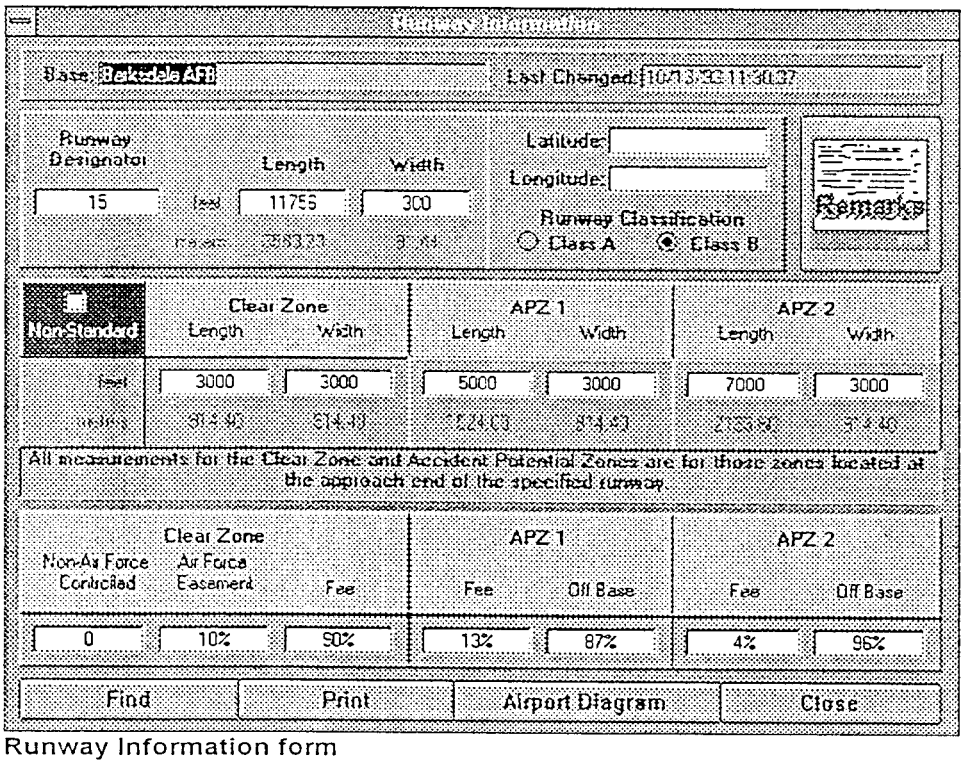
In some cases, the location information may exceed the available space in the form. To view the information, place the mouse pointer in the memo field you wish to view and click the left button on the mouse. Using the cursor control keys, you can scroll up or down through the memo field revealing any hidden text.

Selecting the **Print** button on the Zoning Jurisdictions and Locations form, provides a printed report detailing the jurisdictions names and locations for the specified base. To obtain a complete listing of zoning jurisdictions and locations for all bases, use the appropriate reporting option found in the Reports Options form.

Runway Information

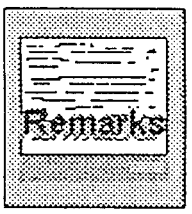
If you select the **Runway Information** button in the Airfield Information form and there are no runways recorded in the NDMS, then a message will appear specifying the non-existence of runway records. If you select the **Runway Information** button on the Airfield Information form and there are runways recorded in the NDMS, the Runway Information form will appear on the screen.

The Runway Information form consists of four different sections of data. The base identification and date/time stamp appear in the first section. The second section consists of the Runway Designator; Length and Width fields; the Latitude and Longitude fields for the approach end of the

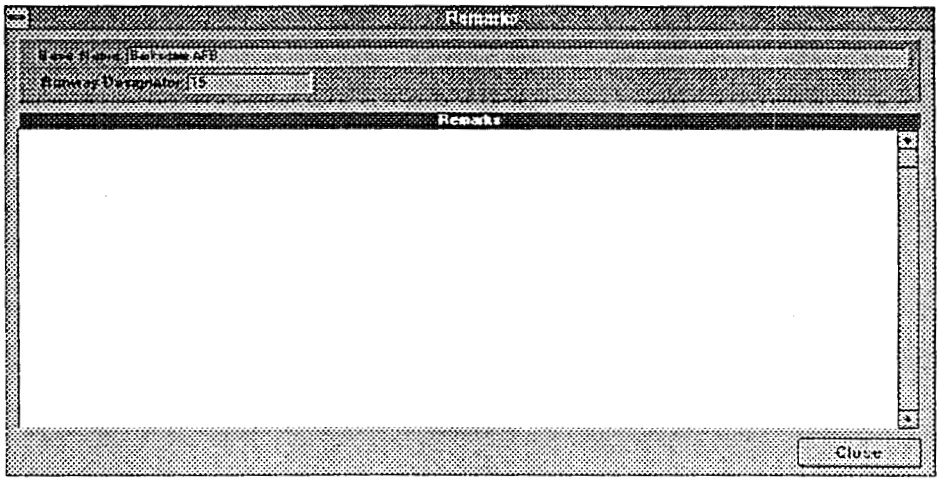


Runway Information form

runway; and the Runway Classification. The CZ and APZ dimensions, as well as a non-standard indicator are grouped into another section. The last section consists of ownership information.

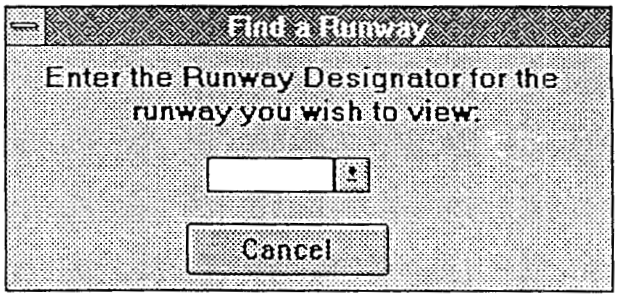


This form also includes several command buttons. The first command button is the **Remarks** button. Clicking on this button will make the NDMS display the Runway Remarks form. The Remarks form displays a large memo field that might contain some notes about the specified runway. If the remarks field is bordered on its right edge by a vertical scroll bar, some text may exists below the visible window. Use the slide-button on the scroll bar to adjust the viewing area in the window.



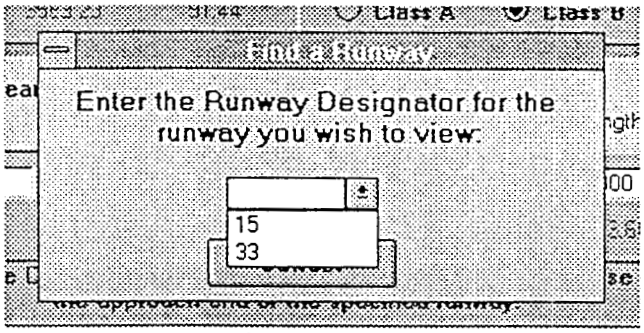
Remarks form

The second command button is the **Find a Runway** button which allows you to view the information recorded for another runway located at the specified base. Selecting the **Find a Runway** button will cause the following form to appear:



Find a Runway form

You can select a runway by either entering the runway designator in the text box provided and pressing **[Enter]**; or by selecting a runway designator from the pull-down selection list. To activate the pull-down



Find a Runway pull-down list

selection list, select the pull-down list arrow at the right end of the text field. If the list is longer than the allowable list display length, a vertical scroll bar will appear at the right edge of the pull-down list. Use the slide button or arrows to scroll through the available runway designators. When you see the designator of the runway you wish to study, click on

the designator. The NDMS will locate the record and display the data in the Runway Information form.

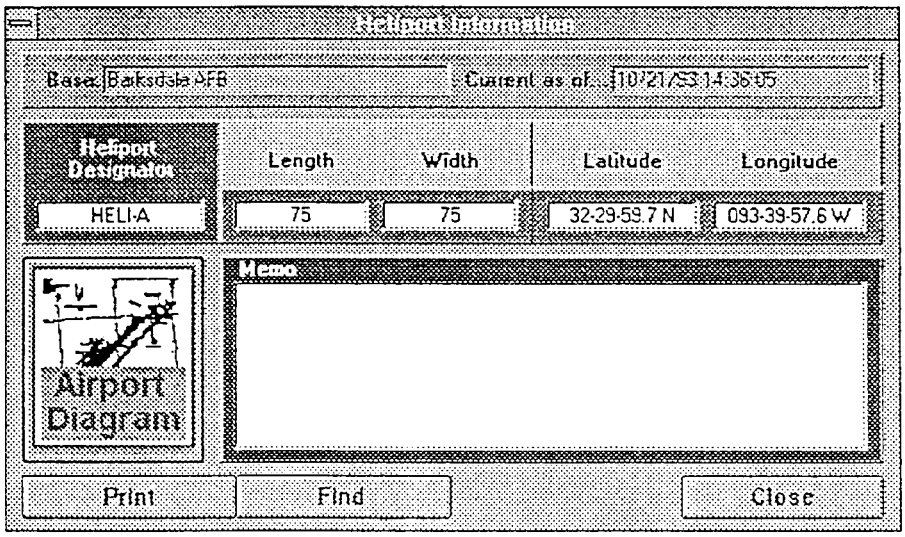
The **Print** button provides a report of the runway information for the specified base. All of the information displayed on the Runway Information form is included in the report along with the remarks. The Airport Diagram is not printed.

If the runway layout has been imported into the database, it can be viewed by clicking on the **Airport Diagram** button. If the airport diagram for the base has not been scanned and imported into the database, a diagram will not be seen in the Airport Diagram form.

Heliport Information

Another button on the Airfield Information form is the **Heliport Information** button. By clicking on this button you can view the heliport information recorded for the specified base.

When you click on the **Heliport Information** button, the Heliport Information form will be displayed. The form is divided into four sections. The first section contains the name of the selected base. The second contains the Heliport Designator. The dimensions and location of the



Heliport Information form

heliport are recorded in the third section followed by a memo field for remarks.

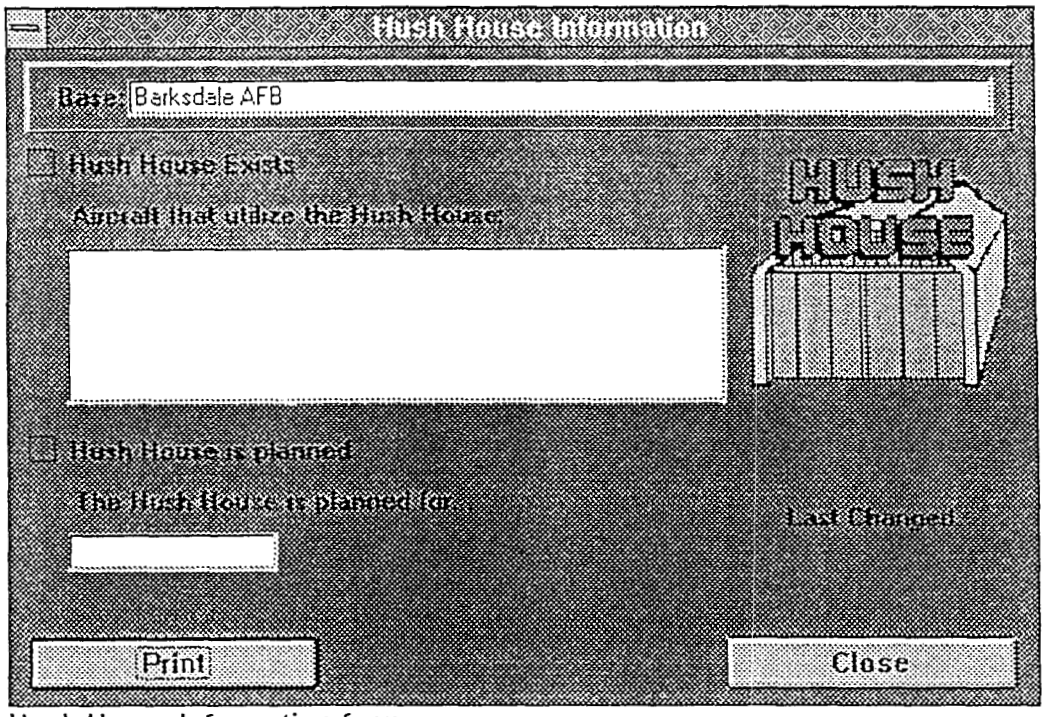
The form contains four command buttons. The **Airport Diagram** command button, when clicked, allows you to view the scanned image of the airport (runway) layout at the specified base. The **Find a Heliport** command button allows you to select a heliport for which you wish to view information. To print the heliport information for the specified base, click on the **Print** command button. To close the Heliport Information form and

return to the Airfield Information form, click on the **Close** command button.

Hush House Information

The **Hush House Information** button on the Airfield Information form allows you to view information related to noise suppression recorded for the specified base. When the **Hush House Information** button is clicked the Hush House Information form is displayed.

The Hush House Information form consists of a header section that contains the name of the selected base, and a section that contains two check boxes with related text fields.



Hush House Information form

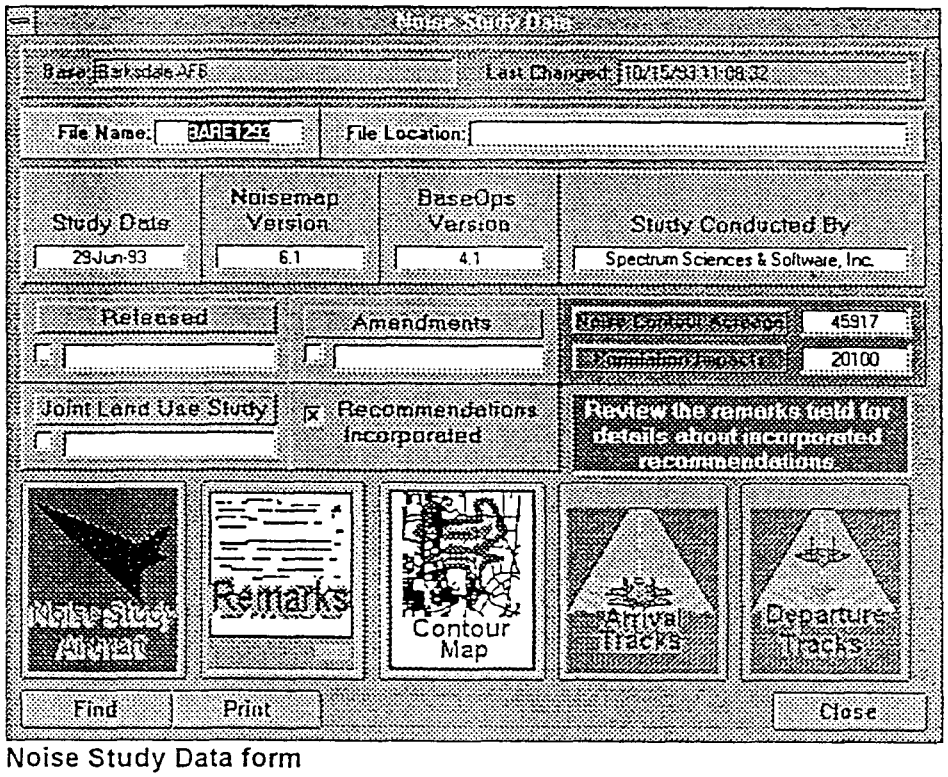
The **Hush House Exists** check box designates if a hush house exists at the specified base. If the box is marked with an "x", then a hush house does exist. The memo field just below the Hush House Exists check box is designed to contain any remarks about the aircraft that use the hush house facility. If the remarks stored in the field are larger than the allowable viewing space, a vertical scroll bar will appear on the right edge of the field.

The **Hush House is planned** check box designates the projected plan for building a hush house at the specified base. If the box is marked with an "x", then a hush house is planned for the specified base. The proposed date for the building of a hush house is recorded in the date field just below the check box.

Noise Study Data

A major objective of the NDMS is to catalog noise studies for designated bases. The noise study data cataloged in the NDMS can be viewed by clicking on the **Noise Study Data** button on the Base Information form. When clicked the Noise Study Data form is displayed.

The Noise Study Data form consists of seven different sections. The first section displays the Base and the Last Changed fields. The second section highlights the noise filename and the location of the file. The Study Date, Noisemap Version, BaseOps Version and Study Conducted By fields are in the third section. Four check boxes are in the fourth section highlighting the study release date, the joint land use status, the amendment date, and the incorporation of recommendations. Statistical information concerning the noise contours is displayed in the fifth section with references to the acreage and population statistics. A subform creates the sixth section by displaying the aircraft assigned to the selected base at the time of the study. The last section consists of a memo field which displays recorded comments.



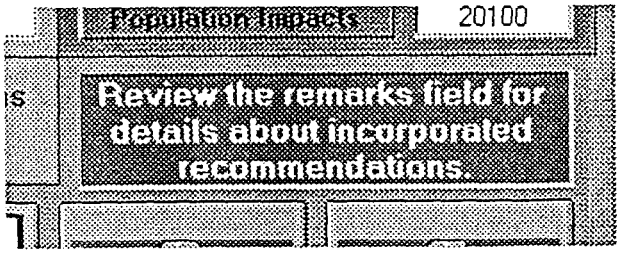
Noise Study Data form

Eight command buttons are on the Noise Study Data form. The **Find** command button allows you to select a study to review. The **Print** button executes a quick report of noise study data for the selected base. To exit from the Noise Study Data form, click on the **Close** button. The **Noise Study Aircraft** button allows you to view the Noise Study Aircraft form. The **Remarks** button displays the Noise Study Remarks form which may contain remarks about the study specified in the Noise Study form. To

display the contour map associated with the specified study, click on the **Contour Map** button. The arrival flight tracks or the departure flight tracks can be viewed by clicking on either the **Arrival Tracks** or **Departure Tracks** buttons respectively.

At the top of the form is the Current as of.. field. The date and time recorded in this field designates the last time any changes were made to the data displayed on the Noise Study Data form. If the field is empty, the data displayed is the original data entered when the study was first entered in the NDMS.

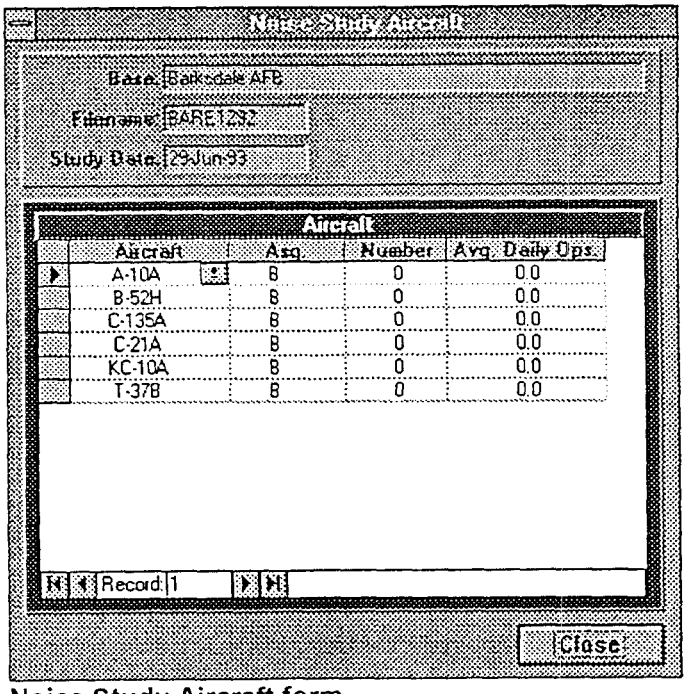
When the Recommendations Incorporated check box is marked, the following message will be displayed:



If any details are recorded about the recommendations that were incorporated, they will be recorded in the remarks field. You can view the remarks that are recorded by clicking on the **Remarks** button.

Noise Study Aircraft

The Noise Study Aircraft form consists of two sections. The first sections contains the base name, the file name, and the study date for the study specified on the Noise Study Data form. The second section is a scrollable table that contains the assigned aircraft records.



Noise Study Aircraft form

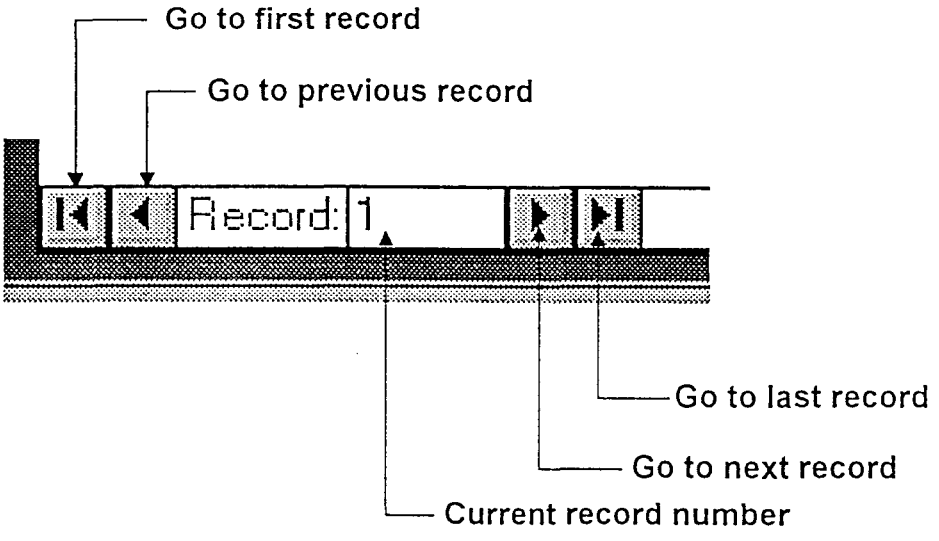
The scrollable table consists of four columns. The type of aircraft is listed in the Aircraft column. The aircraft assignment (i.e. **T** - transient or **B** - based) is listed in the Asg. column. The Number column contains the number of specified aircraft included in the study. The average daily operations for each type of aircraft in the study is listed in the last column of the table.

You cannot edit any of the data in the scrollable table on this form. To edit the data, you must enter the Noise Study Aircraft form through the **Modify Base Information** button on the Main Switchboard.

If the table is larger than the allowable view size, a scroll-bar will appear on the right edge of the view window. You can adjust the view area by dragging the slide-button from one position to another along the scroll bar. You may also click in one of the table cells with the mouse pointer and then use the cursor control keys to scroll through the table.

If you click in either the Aircraft column or the Asg. column cells, a pull-down list arrow will appear in the cell. By clicking on the pull-down arrow a scrollable list will appear containing the possible values for the selected field. Selecting any of the values will not change the data in the table. You must be in Edit mode to change any of the values.

At the lower left corner of the table are several control buttons. The following illustration defines the buttons and their functions.

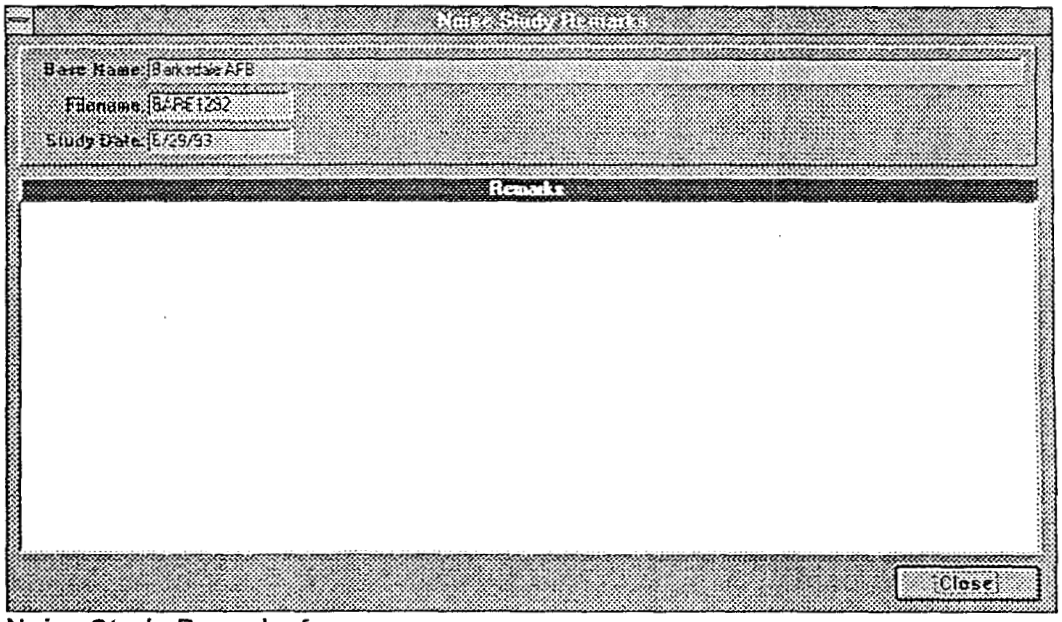


The buttons described above correlate with the movement of the record pointer in the Assigned Aircraft table. As you click on one of the control buttons, notice the movement of the record pointer located at the left edge of the table.

Noise Study Remarks

The Noise Study Remarks form displays the remarks recorded for the noise study specified on the Noise Study Data form. In the first section on the form, the base name, study file name, and study date are listed. Any remarks are displayed in the viewing window. If the amount of text recorded for the noise study is larger than the allowable viewing window size, a scroll bar will appear on the right edge of the remarks field. Using the scroll bar, you adjust the view area to display the hidden text.

Clicking on the **Remarks** button on the Noise Study Data form opens the Noise Study Remarks form as seen below:



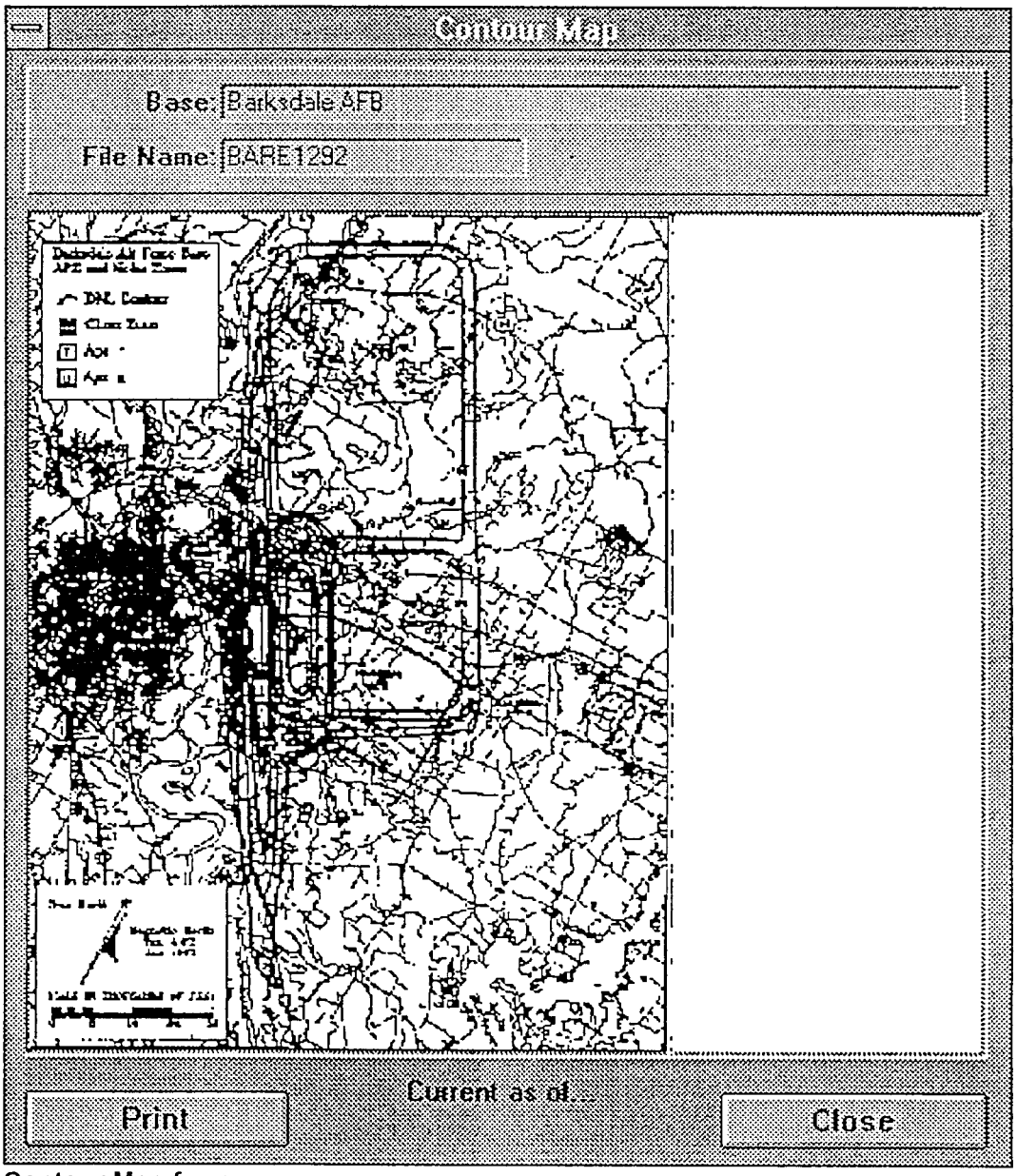
Noise Study Remarks form

Contour Map

Clicking on the **Contour Map** button will open the Contour Map form. This form displays a PCX to BMP image of the noise contours recorded for the specified study. You cannot edit the image displayed, but you can print it by clicking on the **Print** button.

Located at the bottom of the form are two command buttons and the Current as of.. field. The Current as of... field contains the date and time the image displayed was imported into the NDMS. The **Print** button allows you to produce a quick report of the noise contours. To leave the Contours Map form and return to the Noise Study Data form, click on the **Close** button.

NOTE: The detail and clarity of the image in the Contour Map form depends upon the method used to import the BMP or PCX file into the NDMS. The import method described in this manual is designed to be easily understood. An advanced Microsoft Access user can import highly detailed and accurate renderings of all graphic images maintained in the NDMS. The drawback to highly detailed images is in the storage and reproduction requirements. A typical contour map may exceed one megabyte in file size. Importing several of these detailed images into the NDMS could require excessive disk space and may not print on your printer.



Contour Map form

Arrival/Departure Flight Tracks

To view either the arrival flight tracks or the departure flight tracks established for the study, click on either the **Arrival Tracks** button or the **Departure Tracks** button. The appropriate form will be opened.

The Arrival Flight Tracks form as well as the Departure Flight Tracks form are identical to the Contour Map form. Each has two command buttons. One button allows you to print a quick report, and the other to close the form.

Part 3: Adding Base Information

The ability to add new records to a database is very important, but a distinction between adding completely new records and modifying current records needs to be defined when working with a relational database. Addition of new data to the NDMS can be done in two different ways, but It is very important that you choose the appropriate method.

Adding new noise study records to the database is a routine addition of new data to the NDMS. In most instances, when you add a new noise study record to the NDMS, the NDMS will already contain a base information record for the associated base. Whenever this is the case, you are modifying the NDMS. It is a modification because the new noise study record will contain data elements that should already be recorded in the NDMS. Because of the relational structure of the NDMS, the appropriate elements will be copied from one table to another without your intervention. You will only need to fill in the empty fields.

If the base for which the new noise study is to be recorded is not in the NDMS, a base information record will need to be created. In this case, a complete base addition will need to be done before the noise study record can be recorded. Examining the relational structure of the NDMS will provide some clarification.

The parent file for the entire system is called the Base Information Table. This table contains information that is unique to a base. Each record in the table represents a single base and no two records have the same base name in the Base Name field.

There are four child tables associated with the Base Information Table. The Runway/Ownership Table contains information about base runways and CZ/APZ land ownership information. The Noise Study Data table contains summary data about noise studies. Data concerning heliport dimensions and locations at bases recorded in the Base Information Table is recorded in the Heliports Information Table. A bases adjoining zoning and jurisdictions organizations or governments are recorded in the Zoning Jurisdictions Table.

The Noise Study Data table also has a child table. The Assigned Aircraft table is a child table of the Noise Study Data table. It contains a listing of the aircraft assigned to a specific base when a specified noise study was conducted.

When adding a new base to the NDMS, all that is required to make an entry is to complete a record in the Base Information Table for the new base. Once completed, any addition or changes in the data associated with the base is considered a modification to the NDMS. The modification is based upon the fact that before any child records existed for the base, relational links were not defined for the base record. As soon as supporting data is added to the NDMS for the base, the relational links are defined and updated to link the base (parent) record with its child records.

The NDMS handles all relational definitions and links. That is to say that whenever a link needs to be defined between one record in a table and other records in another table, the NDMS will automatically create the links. You will not need to know how or when to define these links. The relational procedures and functions of the NDMS are intended to be transparent to the user in order to prevent complications. It is important, however, that a basic understanding of how relational databases function be achieved in order to obtain maximum efficiency out of the NDMS.

The real question is "when do I add, or when do I modify?" This is really an easy question to answer. If you intend to enter a new base into the NDMS, add. If you intend to add or change supporting data for a base currently in the NDMS, modify.

Cursor Control and Editing Methods

To move from one field to another as you enter data into the NDMS, you can use the cursor control keys, the **[Enter]** key, or the **[Tab]** key. You can also use the mouse to click in the field for which you wish to enter data.

Deleting characters from a field requires the use of the **[Backspace]** and **[Delete]** key. Using the **[Backspace]** key will cause the cursor to move one space to the left dragging all text from its right to the end of the field with it. Pressing the **[Delete]** key will erase the character just to the right of the blinking cursor and drag all characters to the right of the deleted character on space to the left.

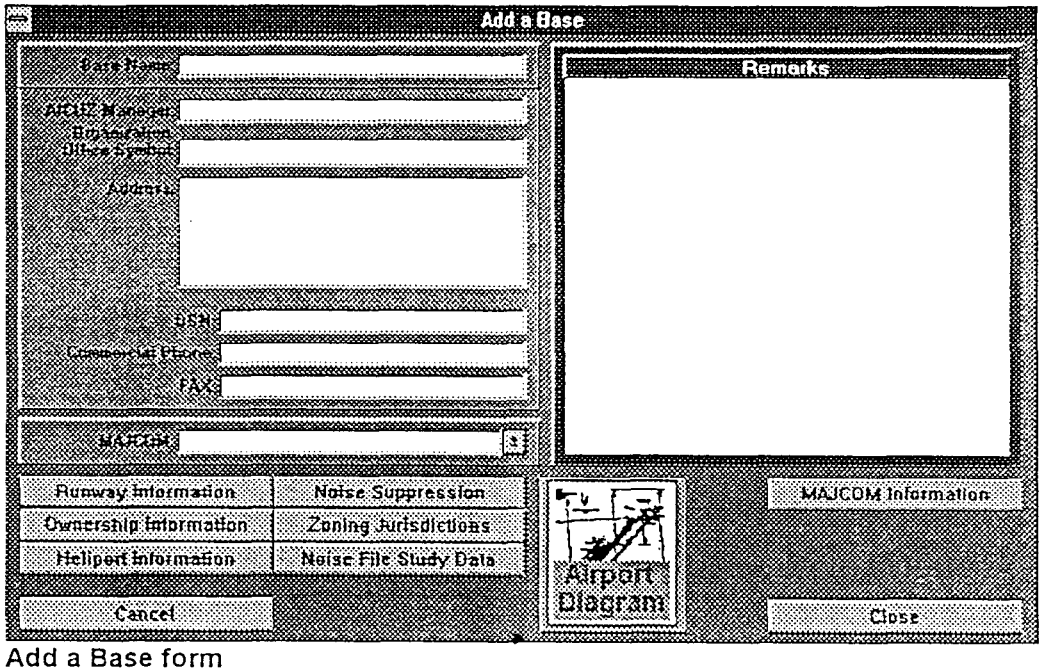
Moving within a memo field, such as the Address fields, is a little more complicated. Once you enter the field, either by using cursor control keys or other methods, you will need to click the mouse pointer in the field once to place the blinking cursor in the editing position of your choice. Once in edit mode, the cursor control keys will allow you to move from one character to the next. To insert a hard return, hold down the **[Ctrl]** key, press the **[Enter]** key.

Clicking on the field name will block-highlight the data in the field allowing you to replace the entire entry simply by typing over the data. If you make a mistake, clicking on the restore button will cancel all changes made in the record and return the record to its original values. Since you are adding records, the original values should be null values.

Installation Section

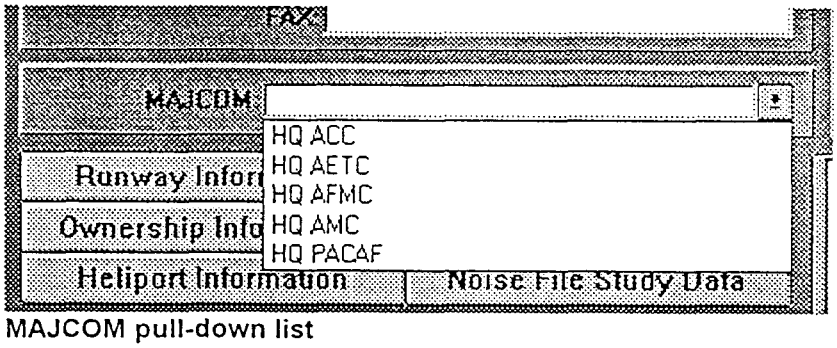
When you add a new base to the NDMS, the first form that you will see is the Add a Base form. This form allows you to enter basic information that is unique to a base into the NDMS.

At the top of the form is the base name field. Here you enter the base name in the format you wish for it to appear on reports and in the NDMS. Just below the base name field begins the Base AICUZ Manager section. The contact information you enter in the appropriate fields should be for the current AICUZ manager located at the base you entered in the base name field. Adjacent to the Base AICUZ Manager section is remarks field. You may enter as much text as you wish in this field.



Add a Base form

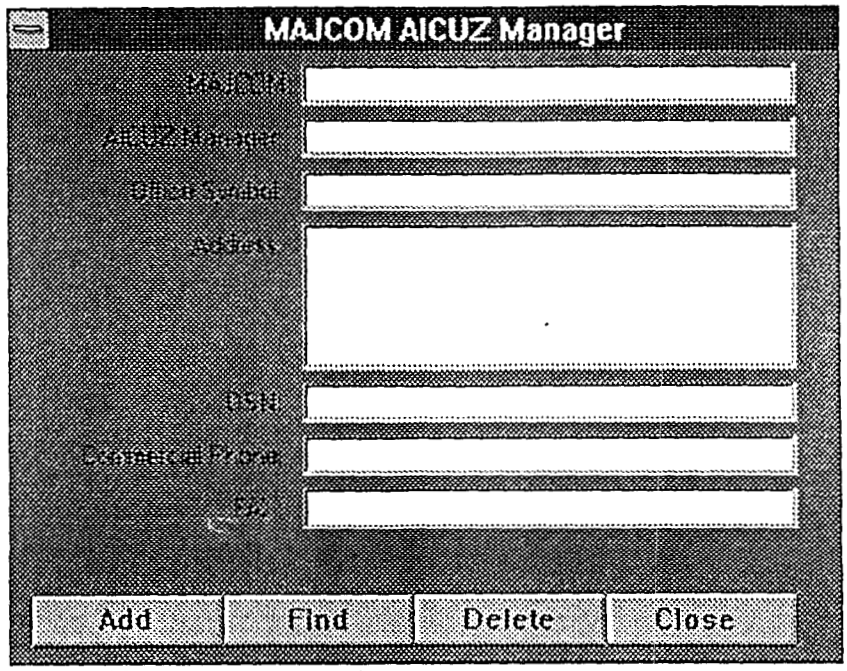
Below the AICUZ manager information fields is the field for the base's MAJCOM. Enter the MAJCOM acronym or use the pull-down list to select from the recorded MAJCOMs.



MAJCOM pull-down list

If the list of MAJCOMs is longer than the allowable view space, a vertical scroll-bar will appear on the right edge of the pull-down list. Use the slide-button to position the scrollable list making the desirable MAJCOM acronym visible. Select the MAJCOM by clicking on the acronym.

If the acronym for the base's MAJCOM does not exist in the list, click on the **MAJCOM Information** button. If you have not entered a value in the MAJCOM field, the MAJCOM AICUZ Manager form will appear. Enter the requested information in the provided text boxes and click on the **Close** button. When the Add a Base form reopens, select the MAJCOM acronym from the MAJCOM pull-down list.

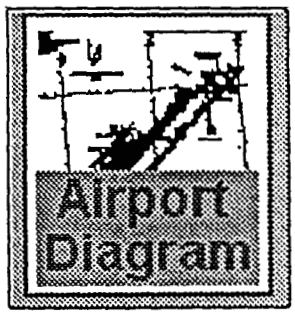


MAJCOM AICUZ Manager form

Several other command buttons appear on the Add a Base form. Each button, other than the **Cancel** or **Close** buttons, will lead you to another form that allows you to continue the data entry process. There is one important rule that must be followed, however, before using any of these buttons. In order for the NDMS to establish the proper relational links, a base name must be entered in the base name field. The base name that you enter must not already exist in the NDMS. If it does, you will be prompted of the error and an opportunity to correct the problem will be offered to you.

The next seven sections details the functions of each of the buttons located on the Add a Base form.

Airport Diagram



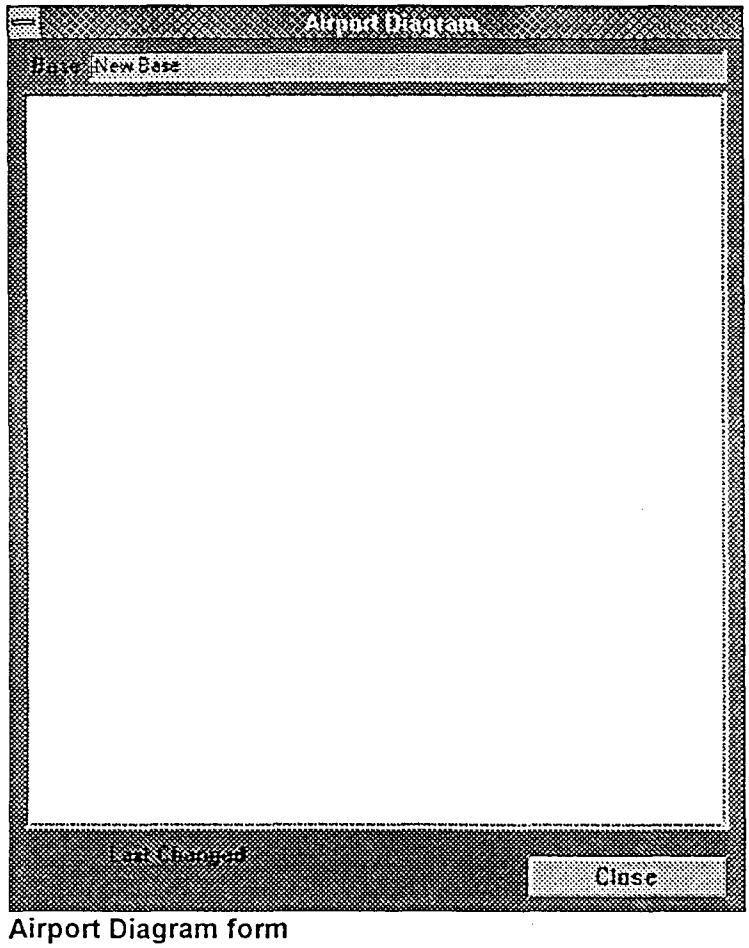
Clicking on the **Airport Diagram** command button will display the Airport Diagram form. From this form, you can insert a BMP or PCX image of the airport (runway) layout for the specified base. You cannot edit the graphic image, but you can replace it with another image. If you are familiar with Microsoft Windows Paintbrush, then you can edit the original BMP or PCX file and then paste the

edited image into the database.

If the Airport Diagram for the base specified in the record has been scanned and stored as a BMP or PCX file, then the diagram can be imported into the NDMS. The process requires the use of Paintbrush as distributed with Microsoft Windows and some mathematics to determine scaling size.

You will notice on the Airport Diagram form that there is only one command button. This button allows you to close the Airport Diagram form. When you select the **Close** button, the Airport Diagram form closes and the Add a Base form opens. If you have imported a diagram into the form, the diagram will be saved when you close the form.

NOTE: The detail and clarity of the image in the Airport Diagram form depends upon the method used to import the BMP or PCX file into the NDMS. The import method described in this manual is designed to be easily understood. An advanced Microsoft Access user can import highly detailed and accurate renderings of all graphic images maintained in the NDMS. The drawback to highly detailed images is in the storage and reproduction requirements. A typical contour map may exceed one megabyte in file size. Importing several of these detailed images into the NDMS could require excessive disk space and may not print on your printer.



Airport Diagram form

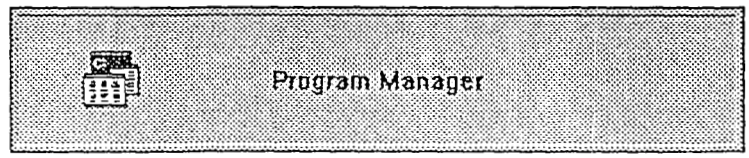
If you have a BMP or PCX file of the airport diagram, you can import the image into the NDMS by using the cut and paste features of Microsoft Windows. During the cut and paste process most images will probably need to be scaled to a manageable size before pasting to the NDMS. The Paintbrush program included in Microsoft Windows will be the tool to scale the image as well as load the image to the clipboard. Once loaded to the clipboard, all you will need to do is paste the image to the Airport Diagram form.

The multitasking capabilities of Microsoft Windows allows you to keep the NDMS active while loading the clipboard with the airport diagram. To switch from one active program to another you will need to use the Microsoft Windows keyboard commands. While holding the **[Alt]** key down and pressing the **[Tab]** key, a dialog box will appear in the center of the screen revealing the next active program in the Microsoft Windows stack. If you only release the **[Tab]** key and then press it again, the next program in the stack will be displayed in the dialog box. You can "loop" through the entire stack using this method until you release both keys. Releasing both keys will cause Microsoft Windows to shift processor focus to the program displayed in the dialog box. While importing the airport diagram, you will be switching between the NDMS and the Paintbrush program.

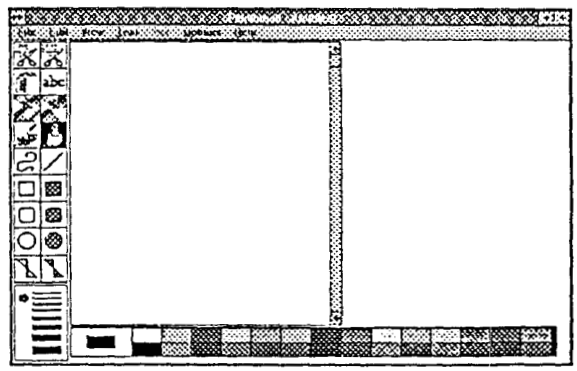
To import the airport image do the following:

1. Using the Windows switching methods, switch to the Program Manager.

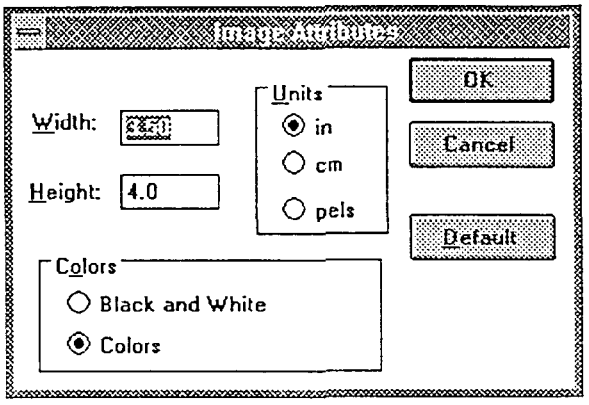
   The following dialog box should be seen before releasing both the **[Alt]** and **[Tab]** keys.



2. Start the Paintbrush program.
   When you start the program, the Paintbrush program window will be displayed.



3. Select image attributes from the Options menu option.
4. Set the image width to 3.5 inches.



5. Using a ruler, measure the width and length of the original copy of the airport diagram.

6. Using the following formula, determine the image attribute height setting for the Paintbrush program.

   Height = (3.5 * Original Height)/Original Width

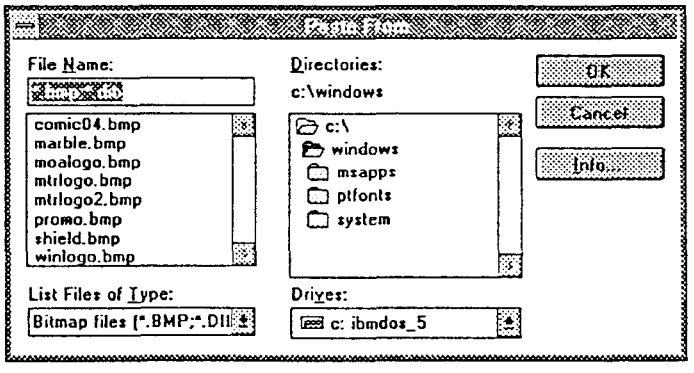
7. Set the image attribute height setting to the value determined in the previous step.

8. Select the **OK** button on the Image Attributes dialog box.

9. If you have drawn an image in the image box, Windows will notify you that changes are being made that could destroy the image currently loaded in to the Paintbrush program. If you have not made any changes in the drawing area, the image attributes will be changed without notice.

> NOTE: If you cannot see all of the image box, reduce 3.5 in the formula to 3.25 or less and then recalculate for the new image height.

10. Select **Paste from...** in the Edit menu option. The Paste From window will appear on the screen.



Using the directory tree, drive select and file types selection boxes, select the file you wish to import into the NDMS.

11. Select the **OK** button in the Paste From dialog box.

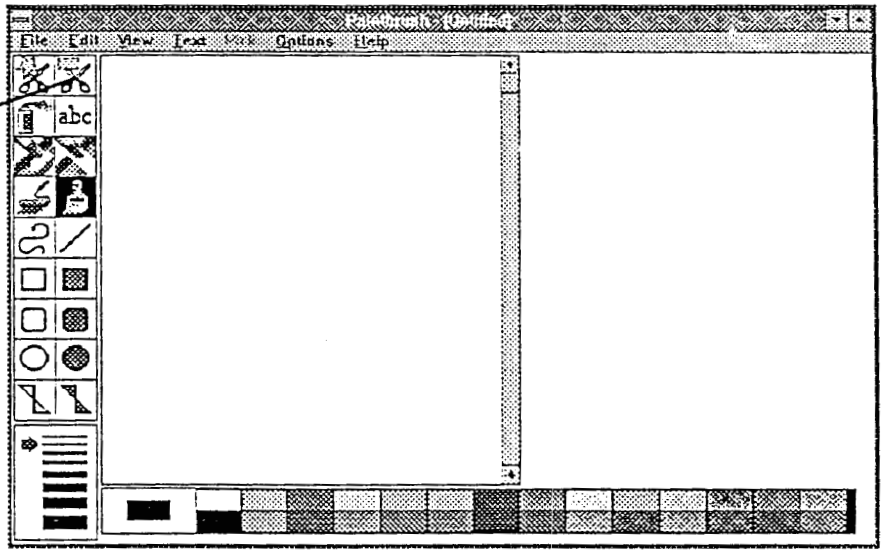
12. Wait for the image to be loaded into the Paintbrush program. **DO NOT CLICK THE MOUSE AT ANY TIME DURING THE TIME THE IMAGE IS BEING LOADED.**

13. Select **Shrink + Grow** from the Pick menu.

14. Place the cross-hair pointer in the top left corner of the image box.

15. Drag the pointer to the bottom right corner of the image box and release the mouse button. The image will automatically be re-sized.

16. Select the Box Crop tool from the tool bar.

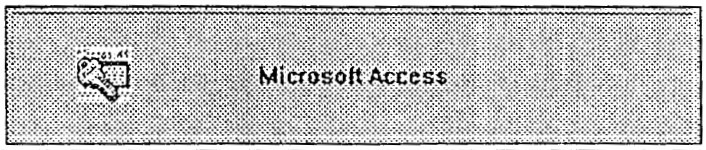


17. Position the cross-hair pointer in the top left corner of the image box and drag the pointer to the bottom right corner. A dotted box should appear completely around the image.

18. Select **Copy** from the Edit menu option.

19. Switch to Microsoft Access.

You should see the following dialog box before releasing both the **[Alt]** and **[Tab]** keys:



20. Position the pointer in the airport diagram field.

21. While holding the **[Shift]** key press the **[Insert]** key. The image should be pasted directly to the field.

Runway Information

The Runway Information form consists of three sections. The runway designator, dimensions, geographical position, and classification define the first section. The second section consists of the dimensions for the CZ and APZ rectangles. In the last section, ownership information fields for the CZ and APZ lands are displayed.

All measurements of length and width are to be entered in units of feet. The metric conversion is displayed just below the data entry field.

The latitude and longitude readings are the coordinates for the approach end of the runway. The recommended format for entering the readings is as follows:

Latitude:	***degrees - minutes - seconds N or S***	i.e. 32-29-59.1 N
Longitude:	***degrees - minutes - seconds E or W***	i.e. 093-39-57.6 W

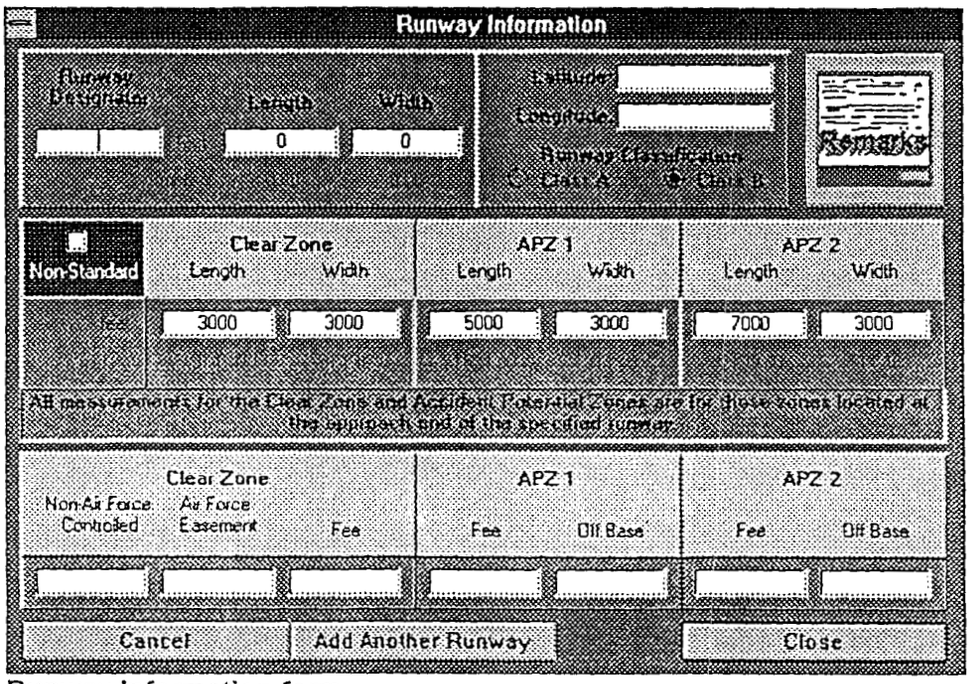
When entering the measurements for the Clear Zone and Accident Potential Zones, you must enter the measurements of the zones located at the approach end of the runway. The standard measurements for the different zones are default values in the NDMS. You will only need to enter different values for the non-standard zones. If you change any of the measurements, you should click the Non-standard check box to mark the runway as having non-standard clear zones. It is not necessary to mark the Non-standard check box, but if you do, you will be able to do advanced queries and customized reporting with greater ease.

The Runway Designator field is a three character field. You may enter numeric as well as alphabetic characters in the field. Generally, a runway designator will be a two digit number defined by the first two digits of the runway heading. If there is more than one runway with the same heading, the two digit number will be followed by a letter. Examples of common runway designators are listed below:

33
14L
14R
32L
32R

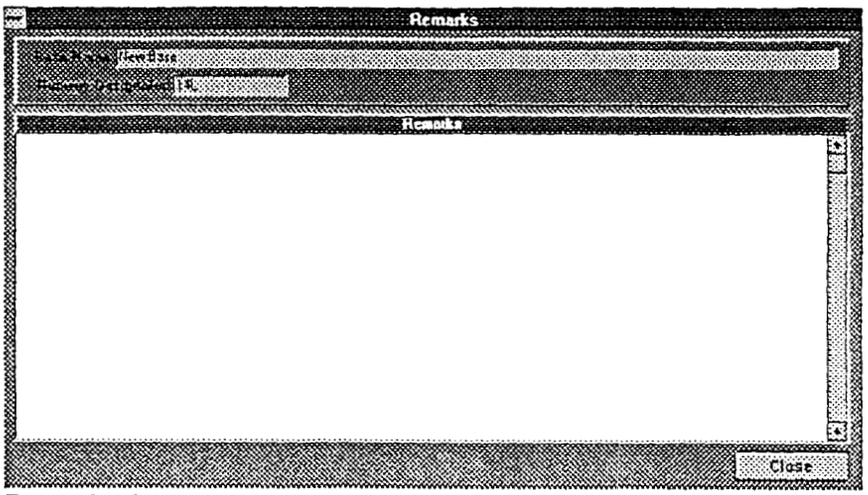
The fields concerned with land ownership and control are text fields. You may enter up to ten characters of information in each field. In general,

most entries will be percentages, but you may want to use some alphabetic characters to represent different values.



Runway Information form

Remarks or notes can be entered in the a memo field that is accessed by clicking on the **Remarks** button. You are not limited to the space provided in the form. If you enter text that is too large to fit in the provided space, a vertical scroll bar will appear at the right edge of the field allowing you to scroll through the text.



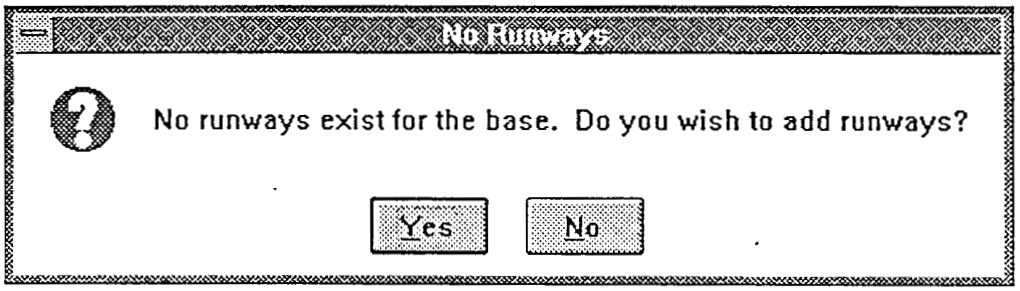
Remarks form

There are three command buttons on the Runway Information form. The **Cancel** button will cancel the add and return you to the Add a Base form. The **Add Another Runway** command button stores the current valid record and then opens a new record for data entry. The **Close** button will save the current record and then return control to the Add a Base form.

Ownership Information

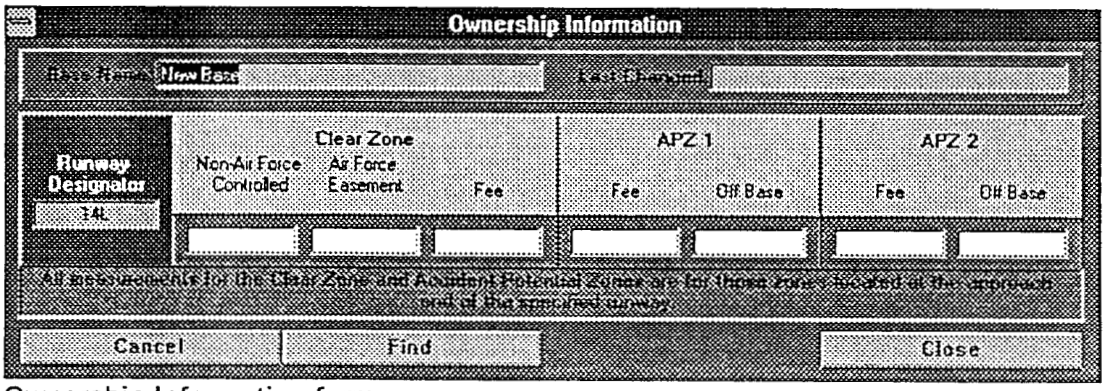
If you did not enter the land ownership information on the Runway Information form, then you can enter the land ownership information in the Ownership Information form. There is no difference in the function when land ownership data is entered in either the Runway Information form or the Ownership Information form.

If you have not entered any runways, the following dialog box will appear:



By clicking on the **Yes** button, you will be able to add runways using the Runway Information form. If you click on the **No** button, the error message will disappear and focus will return to the Add a Base form.

If runways have already been entered into the database system, then the following form will appear:



Ownership Information form

The data entry fields are text fields. You may enter up to ten characters of information in each field. In general, most entries will be percentages, but you may want to use some alphabetic characters to represent different values.

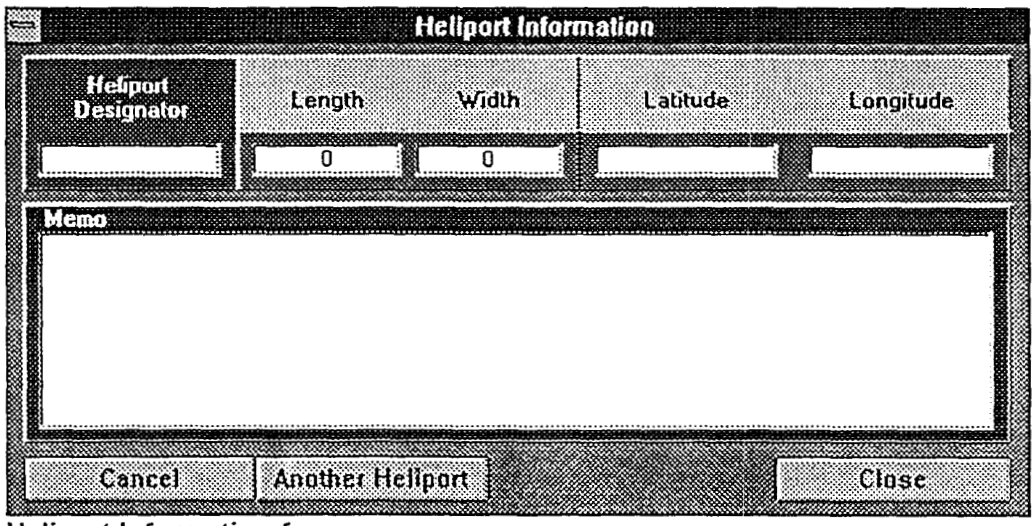
When the Ownership Information form opens, the first runway in the database recorded for the specified base will appear in the Runway Designator field. If you want to enter data for a different runway, use the **Find a Runway** command button. When the following form is displayed

you can enter a runway designator in the text box provided or use the pull-down list to select a runway to view. The NDMS will locate the correct runway record and display the current data in the form.

When you have completed entering the data, you can close the Ownership Information form by clicking on the **Close** button. Closing the form will cause the NDMS to save the data as displayed on the form and return focus to the Add a Base form.

Heliport Information

The **Heliport Information** button allows you to enter heliport records in the NDMS. When you click on the button the following form will be displayed:



Heliport Information form

The first field on the form is the Heliport Designator field. This field will allow you to enter up to five characters for a heliport designator. You cannot list the same designator twice for a single base. Each heliport must have its own unique designator.

The length and width fields are text fields. You may enter up to ten characters of information in each field.

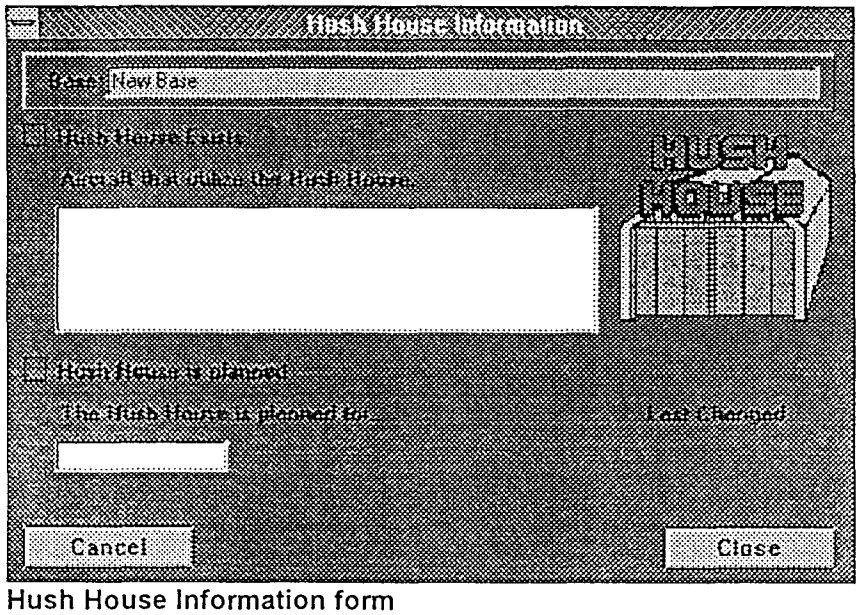
The latitude and longitude fields are also text fields. The intent is to enter the coordinates for the heliport, but other data can be entered in the fields.

The first command button on the form is the **Cancel** button. Clicking on this button will cancel the add process and return focus to the Add a Base form.

After you have completed entering data for a heliport, you can either close the Heliport Information form, or you can add another heliport to the NDMS. Clicking on the **Another Heliport** command button will cause the NDMS to save the current record and then allow you to enter a new heliport record. If you select the **Close** button, the Heliport Information form will close and the Add a Base form will become the active form.

Noise Suppression Information

In reference to the data collection forms, noise suppression information refers to the use of hush houses. When you select the **Noise Suppression** command button the form that is opened is the Hush House Information form.



Hush House Information form

The Hush House Information form consists of six fields. The first field displays the name of the base you have selected to add noise suppression data. Just below the Base name field is the Hush House Exists field and a memo field to record the types of aircraft that use the hush house. If a hush house is planned for the base, the check box next to the statement "Hush House is planned" can be marked. If you mark the planned hush house check box, you may want to record the planned date

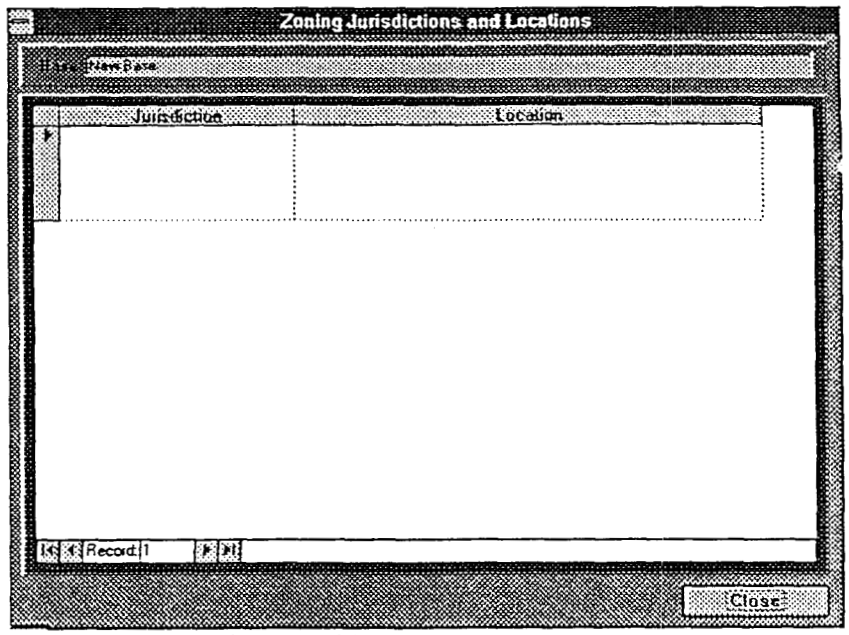
in the designated field. The NDMS uses this same form for both adding and modifying information, therefore, the Last Changed field is displayed.

Clicking on the **Cancel** button does not close the Hush House Information form. It does, however, clear any fields that you have edited. If you want to close the Hush House Information form, click on the **Close** button.

Zoning Jurisdictions Information

Lands in clear zones and accident potential zones are not always completely maintained, controlled or owned by the government. Different agencies and governing bodies control the use of portions of land within clear zones and accident potential zones at many bases. The NDMS helps track which agencies or governing bodies control these lands by providing records for zoning jurisdictions.

To add zoning jurisdiction information to the NDMS, select the **Zoning Jurisdictions** button on the Add a Base form. The following form should appear on the screen:



Zoning Jurisdictions and Locations form

This form consists of a scrollable table. The first field in the table is for the name of the agency or governing body. For lack of a better term this field has been named the Jurisdiction field. The second field is a memo field that allows you type a short narrative about the location of the specified jurisdiction.

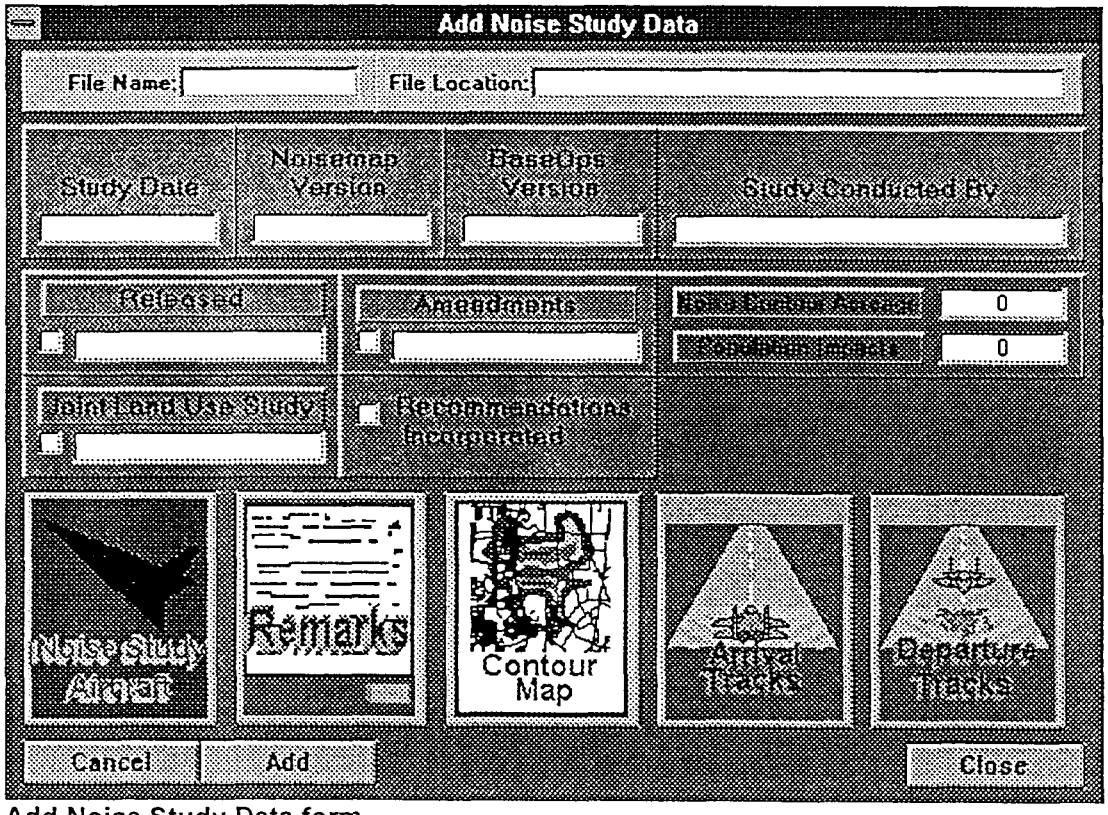
If you want to save the data that you have entered and return to the Add a Base form, click on the **Close** button. The Zoning Jurisdictions and Locations form will close and focus will return to the Add a Base form.

After you have entered the data for a jurisdiction you may either close the form and return to the Add a Base form, or you may add another

jurisdiction record to the NDMS. If you want to add another record to the NDMS, select the **Another Jurisdiction** button. A blank form will appear for you to enter a new record.

Noise File Study Data

A major objective of the NDMS is to track noise studies. The bulk of the data maintained in the database system is stored in the Noise Study Data table. To add noise studies to this table you will need to use the Noise Study Data form.



Add Noise Study Data form

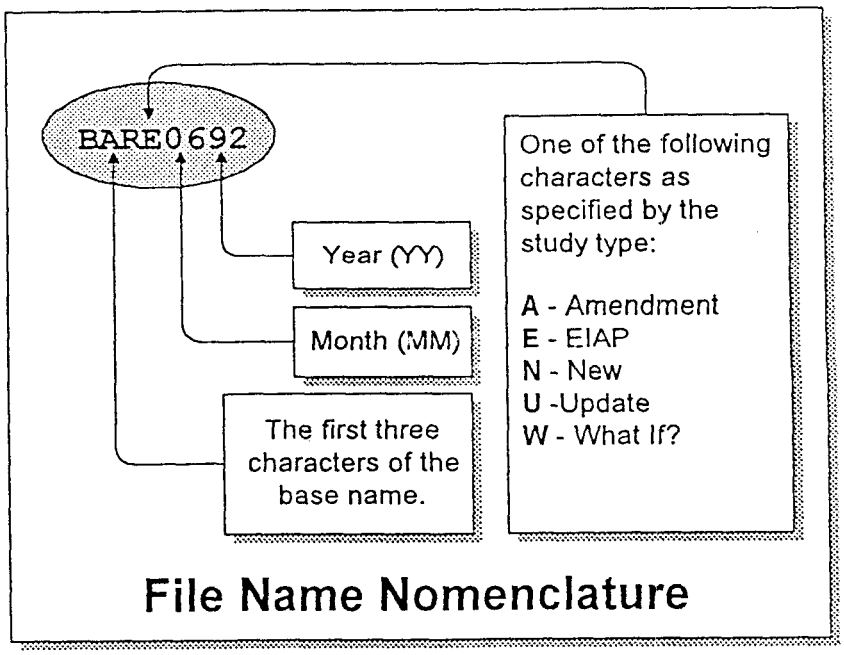
The Noise Study Data form consists of fields for the following data elements:

- Noise File Name and Noise File Location
- Study Date
- Noisemap Program Version
- BaseOps Program Version
- Who (What Organization) Performed the Study
- Study Released Designator and Study Released Date
- Joint Land Use Study Designator and Date of Joint Land Use Study
- Amendments Designator
- Date of Amendments
- Noise Contour Acreage
- Population Impacts
- Assigned Aircraft
- Aircraft Assignment
- Number of Type of Aircraft Assigned to the Base During the Study
- Average Daily Operations

- Remarks/Memo
- Contour Map
- Arrival Flight Tracks
- Departure Flight Tracks

Of these fields, two are required for the NDMS to properly save any data entered. The Noise File Name and Study Date are the two fields. The file name is required to link the appropriate records in the Assigned Aircraft table to the appropriate Noise Study Data table record. The Study Date is required in order to sort the noise study records into chronological lists for reporting purposes.

The File Name field is a text field that allows you to enter up to twelve characters. A standard format for the noise file name has been established. The following diagram illustrates the naming standard defined by AFCEE:



The File Location field is simply a text field. You may enter up to fifty characters describing the location of the noise file.

The Study Date field is a date field. You can enter the date into the field in two different formats, but the only format that will be displayed is as follows:

dd-mmm-yy i.e. 6-Jun-62

The data entry formats that you can use are as follows:

mm/dd/yy or ***dd-mmm-yy***

Both the Noisemap and BaseOps Version fields are text fields. You enter up to ten characters in each field to designate the version of the programs used to create the noise file data.

The Study Conducted By field is a text field. You may enter up to fifty characters in this field to describe the agency/organization that conducted the noise study.

The Released, Joint Land Use Study and Amendments fields are two component fields. The first component is a check box. The second component is a date field.

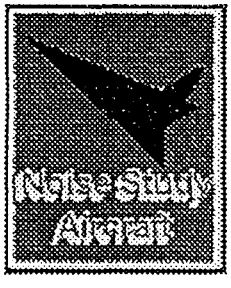
The check box is used as a "Yes/No" indicator. If the box is left blank, then the field value in the table is set to "No." Clicking in the check box changes the value to "Yes." If a study has been released then you will want to click in the check box associated with the Released field. If the study was a Joint Land Use Study then click in the check box associated with the Joint Land Use Study field. The Amendments check box works the same way as the Released and the Joint Land Use Study fields. If amendments have been made to a study, then make sure the check box is marked.

The date fields associated with the Released, Joint Land Use Study and Amendments fields are used to designate the date of the specified actions. The fields will accept the same formats for input as the Study Date field mentioned earlier. Each field will display the entered date in the same format as the Study Date field.

The Recommendations Incorporated field is simply a check box. If the recommendations derived from the study have been incorporated into the land use plans of the surrounding jurisdictions, then you will want to make sure that the box is marked. A blank box signifies that the recommendations have not been incorporated into the land use plans.

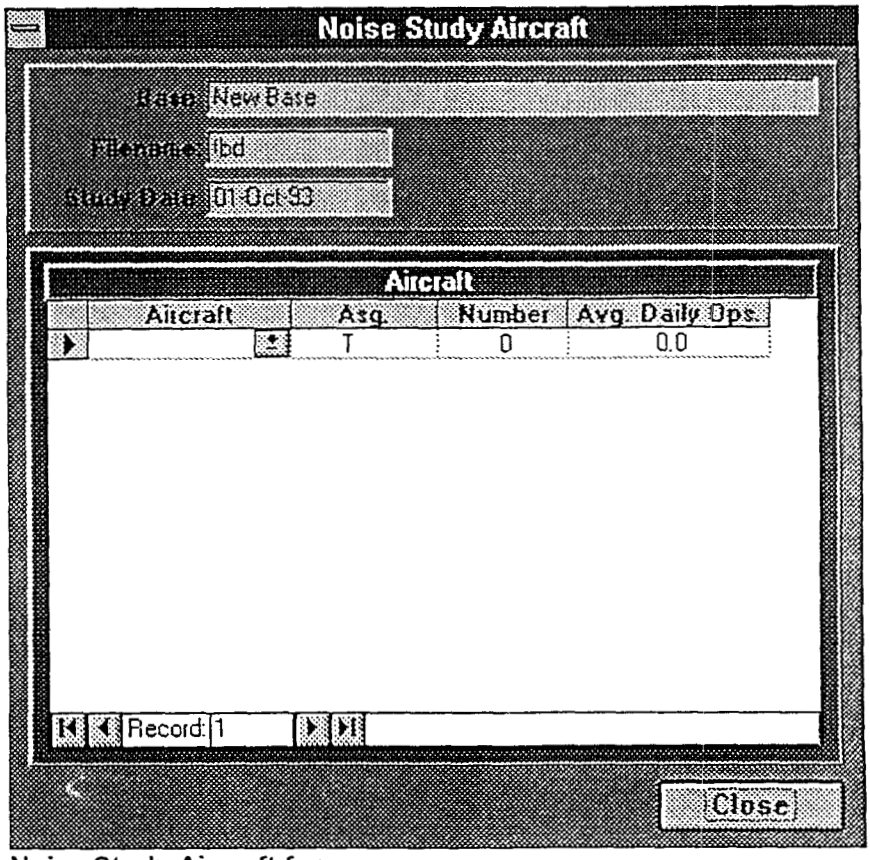
If the Recommendation Incorporated box is checked, a message will appear on the form. This message tells the viewer that remarks concerning the incorporation of recommendations exist in the remarks field. If you need to enter any remarks about the recommendations that were incorporated, click on the **Remarks** button to access the remarks field.

The Noise Contour Acreage and Population Impacts fields are numeric fields. You cannot place alphabetic characters into either of these fields. The default value for the fields is zero.



On the Add Noise Study Data form is a **Noise Study Aircraft** button. Clicking on this button will open the Noise Study Aircraft form. In this form you can record the types of aircraft, if each aircraft was transient or based, how many of each aircraft were included in the study, and the average number of daily

operations for each aircraft. All of this data is recorded in a scrollable table.



Noise Study Aircraft form

The Aircraft table is expandable based upon the number of types of aircraft listed in the table. When you first enter aircraft into the table only one record is visible in the form. This is a blank record that is ready for you to enter data.

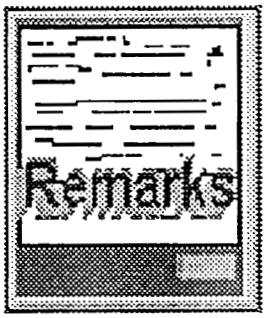
Start entering data into the Assigned Aircraft table by positioning the cursor in the Aircraft field. Enter the aircraft type designator, such as C-130. You can use the pull-down list to select an aircraft type from the current aircraft list included with the NDMS. Next, move to the Ag. field and enter a **T** if the specified aircraft is a transient aircraft, or **B** if the aircraft is a based aircraft. The NDMS will not allow you to enter two records for the same aircraft type and assignment type. You will get a duplicate index or key value error message if you attempt to enter a duplicate record for a specific aircraft.

In the Number field, you can enter the number of the specified aircraft that were assigned to the base at the time of the study. After you enter a number of aircraft you press the **[Enter]** or **[Tab]** key to move to the Average Daily Operations (Avg. Daily Ops.) field.

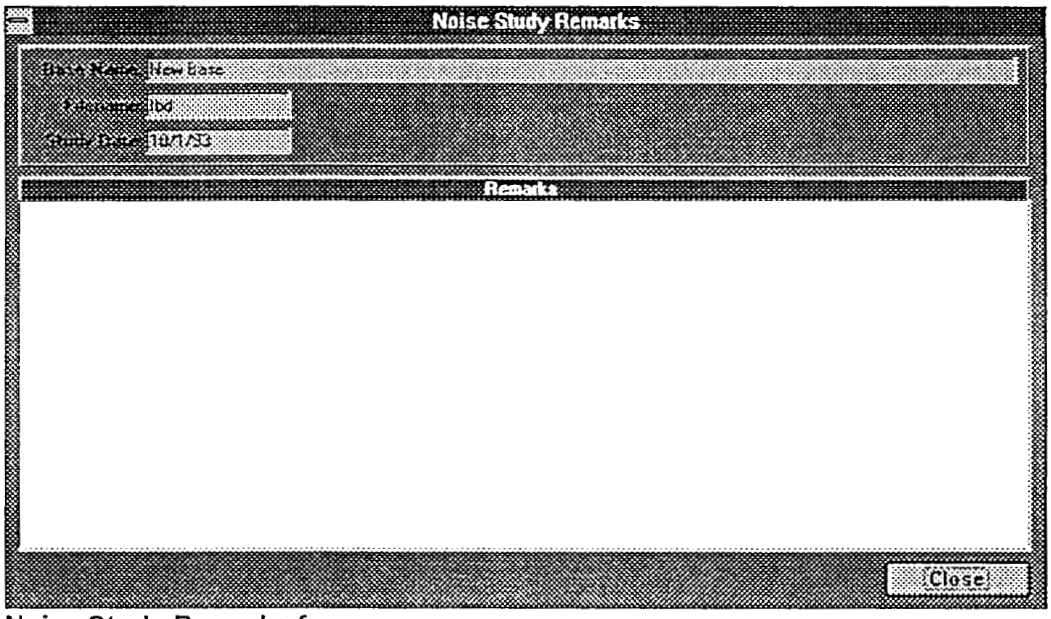
The Avg. Daily Ops. field is pre-formatted to three digits with a one digit decimal place. Trying to enter a number outside of the formatted range will result in an error.

Pressing **[Enter]** or **[Tab]** after entering the Avg. Daily Ops. will move the cursor to the next record in the table. If you do not want to enter any more assigned aircraft records, position the pointer in another field on the form or select one of the command buttons to perform the associated action.

As you enter aircraft into the assigned aircraft table, the table will expand vertically. When the size of the table exceeds the size of the view window, a vertical scroll bar will appear on the right edge of the view window. You can use this scroll bar to view any records that are out of the view window.



The remarks field is a memo field accessed by clicking on the **Remarks** button. You may enter any text you want into this field. There is no limit to the amount of text that you can enter other than the space available on the computer hard drive. If the text that you enter exceeds the size of the view window, a vertical scroll bar will appear on the right edge of the view window. You can use this scroll bar to scan the text that you have entered.



Noise Study Remarks form

Contour Map, Arrival Tracks, and Departure Tracks command buttons

The Contour Map, Arrival Tracks, and Departure Tracks command buttons on the Add Noise Study Data form allow you to import a contour maps, arrival flight tracks, and departure flight tracks into the NDMS. The process for importing graphics for these items is described in detail in the next section, **Importing Contour Maps, Arrival Tracks, and Departure Tracks**.

The **Cancel** button will clear all data fields that you have edited. After clearing the fields it will close the Noise File Study Data form and return focus to the Add a Base form. Once you have completed data entry for a study, you can add another record by selecting the **Add Another Study** button.

The **Close** button will close the Noise Study Data form and return control to the Add a Base form. All of the data that you have entered on the form will be saved before the form is closed.

The NDMS will not let you enter the same study file name twice. It will scan the Noise Study Data table for duplicate records based upon the File Name. If a duplicate record is found, you will be notified of its existence in the system. You will then be able to examine the data for errors to correct or cancel the entry.

Importing Contour Maps, Arrival Tracks, and Departure Tracks

If you have a BMP or PCX file of the contour map, arrival flight tracks, or departure flight tracks; you can import the image into the NDMS by using the cut and paste features of Microsoft Windows. During the cut and paste process most images will probably need to be scaled to a manageable size before pasting to the NDMS. The Paintbrush program included in Microsoft Windows will be the tool to scale the image as well as load the image to the clipboard. Once loaded to the clipboard, all you will need to do is paste the image to the appropriate form.

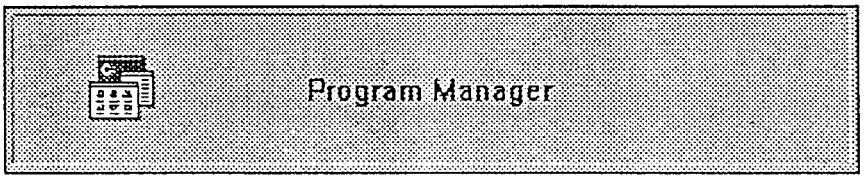
As an example, the following procedure outlines the import process for contour maps. The process is the same for both arrival flight tracks and departure flight tracks.

NOTE: The detail and clarity of the image in the Airport Diagram form depends upon the method used to import the BMP or PCX file into the NDMS. The import method described in this manual is designed to be easily understood. An advanced Microsoft Access user can import highly detailed and accurate renderings of all graphic images maintained in the NDMS. The drawback to highly detailed images is in the storage and reproduction requirements. A typical contour map may exceed one megabyte in file size. Importing several of these detailed images into the NDMS could require excessive disk space and may not print on your printer.

To import the contour map do the following:

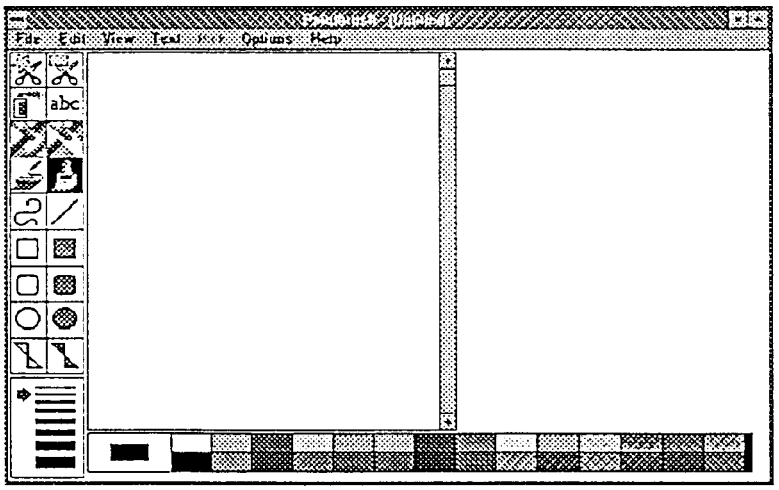
1. Using the Windows switching methods, switch to the Program Manager.

   The following dialog box should be seen before releasing both the **[Alt]** and **[Tab]** keys.



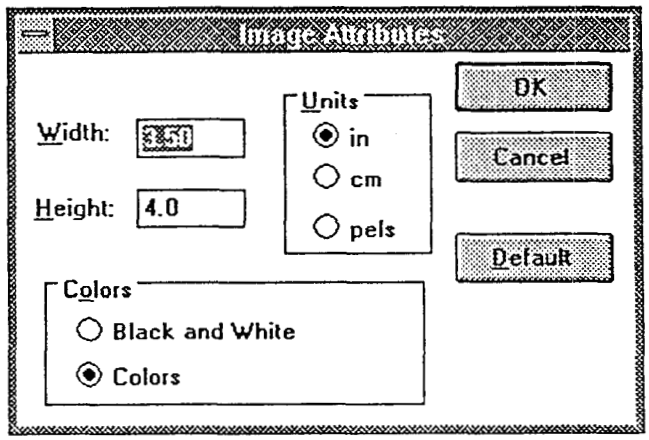
2. Start the Paintbrush program.

   When you start the program, the Paintbrush program window will be displayed.



3. Select image attributes from the Options menu option.

4. Set the image width to 3.5 inches.



5. Using a ruler, measure the width and length of the original copy of the airport diagram.

6. Using the following formula, determine the image attribute height setting for the Paintbrush program.

   Height = (3.5 * Original Height)/Original Width

7. Set the image attribute height setting to the value determined in the previous step.

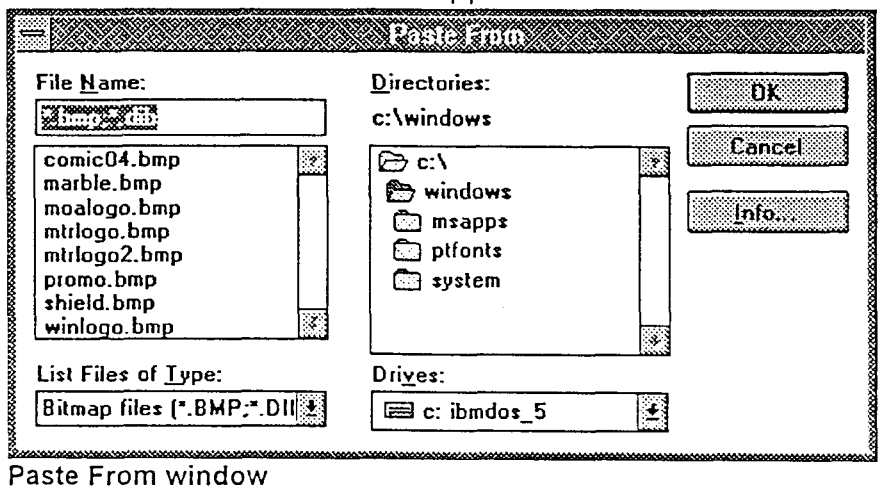
8. Select the **OK** button on the Image Attributes dialog box.

9. If you have drawn an image in the image box, Windows will notify you that changes are being made that could destroy the image currently loaded in to the Paintbrush program. If you have not made any changes in the drawing area, the image attributes will be changed without notice.

> **NOTE:** If you cannot see all of the image box, reduce 3.5 in the formula to 3.25 or less and then recalculate for the new image height.

10. Select **Paste from...** in the Edit menu option.

The Paste From window will appear on the screen.



Paste From window

Using the directory tree, drive select and file types selection boxes, select the file you wish to import into the NDMS.

11. Select the **OK** button in the Paste From dialog box.

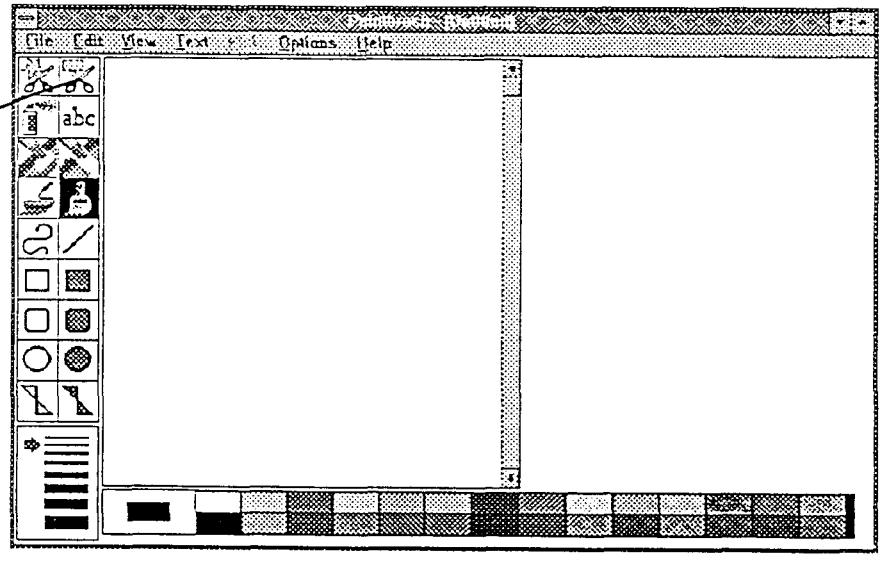
12. Wait for the image to be loaded into the Paintbrush program. **DO NOT CLICK THE MOUSE AT ANY TIME DURING THE TIME THE IMAGE IS BEING LOADED.**

13. Select **Shrink + Grow** from the Pick menu.

14. Place the cross-hair pointer in the top left corner of the image box.

15. Drag the pointer to the bottom right corner of the image box and release the mouse button. The image will automatically be re-sized.

16. Select the Box Crop tool from the tool bar.

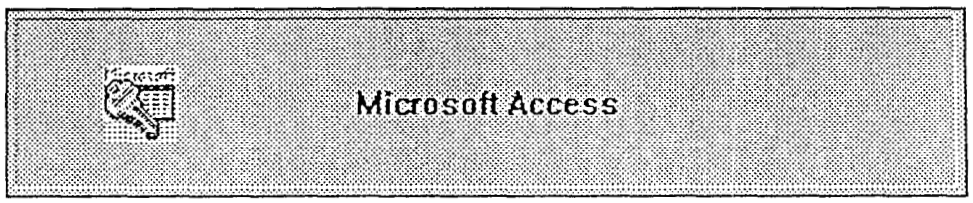


17. Position the cross-hair pointer in the top left corner of the image box and drag the pointer to the bottom right corner. A dotted box should appear completely around the image.

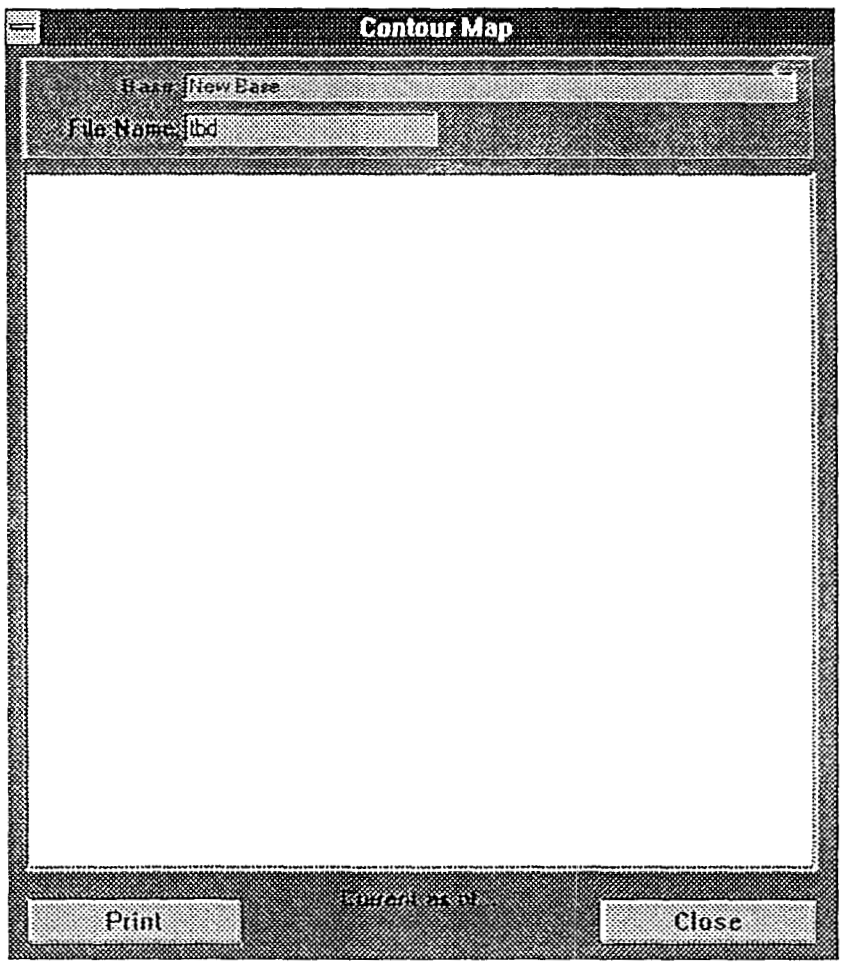
18. Select **Copy** from the Edit menu option.

19. Switch to Microsoft Access.

    You should see the following dialog box before releasing both the **[Alt]** and **[Tab]** keys:



20. Position the pointer in the contour map field.



Contour Map form

21. While holding the [Shift] key press the [Insert] key. The image should be pasted directly to the field.

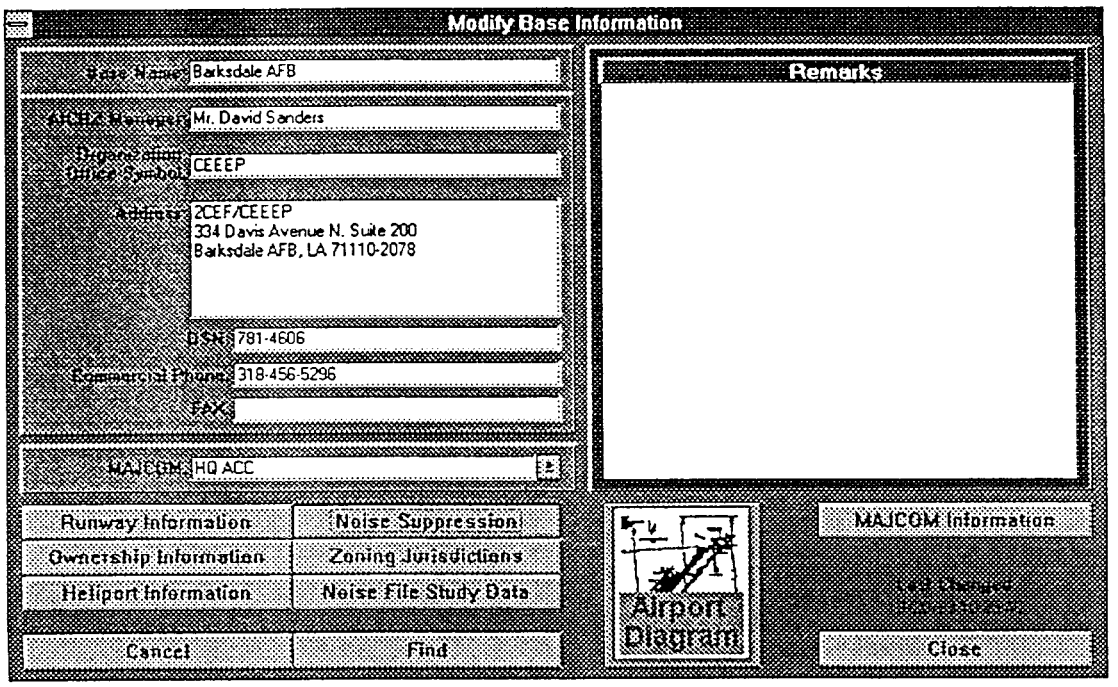
Part 4: Modifying Base Information

At the beginning of **Part 3: Adding Base Information**, a distinction between adding and modifying the NDMS is defined. As explained, modifying the NDMS is not always changing data that exists in the database system, but sometimes includes adding new child records to the database. It is the intent of **Part 4: Modifying Base Information** to detail the modification process.

Before you begin to modify data in the database, check the system date and time. During the modification process date/time stamps are modified. This helps the administrator track changes to specific records or portions of records. By monitoring date/time stamps the NDMS can be kept up-to-date with minimal effort.

Installation Section

When you select the Modify Base Information command button on the Main Switchboard form, the first form displayed is the Installation Section form. This form is very similar to the Add a Base form. The difference between the two forms is in the command buttons. All of the fields are the same.



Modify a Base form

Several command buttons appear on this form. Each button, other than the **Cancel** or **Close** buttons, will lead you to another form that allows you to continue the data modification process. There is one important

rule that must be followed, however, before using any of these buttons. In order for the NDMS to maintain the proper relational links, a base name must be in the base name field. If you edit the base name, the new base name must not already exist in the NDMS. If it does, you will be prompted of the duplicate base name error and an opportunity to correct the problem will be offered to you.

The next eight sections detail the functions of each of the buttons located on the Modify a Base form.

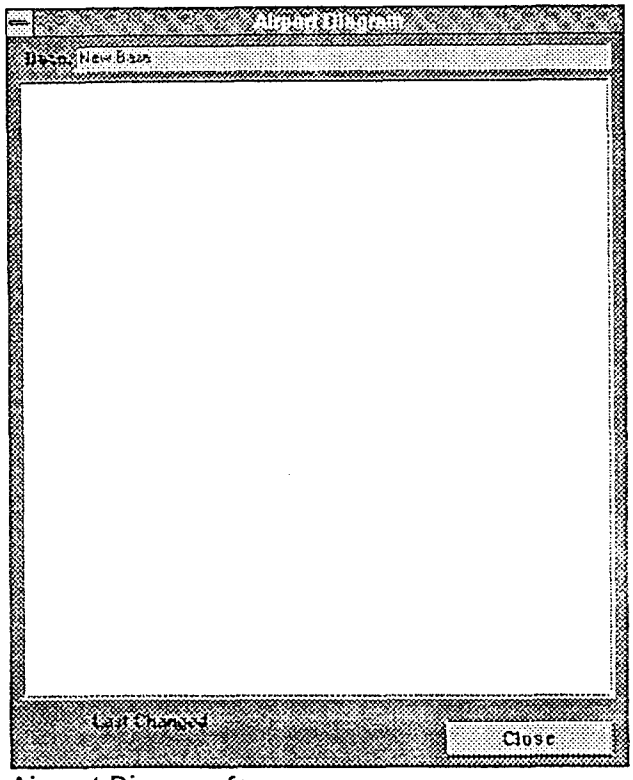
Airport Diagram

Clicking on the Airport Diagram command button will display the Airport Diagram form. From this form, you can insert a BMP or PCX image of the airport (runway) layout for the specified base. You cannot edit the graphic image that already exists, but you can replace it with another image. If you are familiar with Microsoft Windows Paintbrush, then you can edit the original BMP or PCX file and then paste the edited image into the database.

You will notice that there is only one command button on the Airport Diagram form. This button allows you to close the Airport Diagram form. When you select the Close button, the Airport Diagram form closes and the Add a Base form opens. If you have imported a diagram into the form, the diagram will be saved when you close the form.

If the Airport Diagram for the base specified in the record has been scanned and stored as a BMP or PCX file, it can be imported into the NDMS. The process requires the use of Paintbrush as distributed with Microsoft Windows and some mathematics to determine scaling size.

NOTE: The detail and clarity of the image in the Airport Diagram form depends upon the method used to import the BMP or PCX file into the NDMS. The import method described in this manual is designed to be easily understood. An advanced Microsoft Access user can import highly detailed and accurate renderings of all graphic images maintained in the NDMS. The drawback to highly detailed images is in the storage and reproduction requirements. A typical contour map may exceed one megabyte in file size. Importing several of these detailed images into the NDMS could require excessive disk space and may not print on your printer.

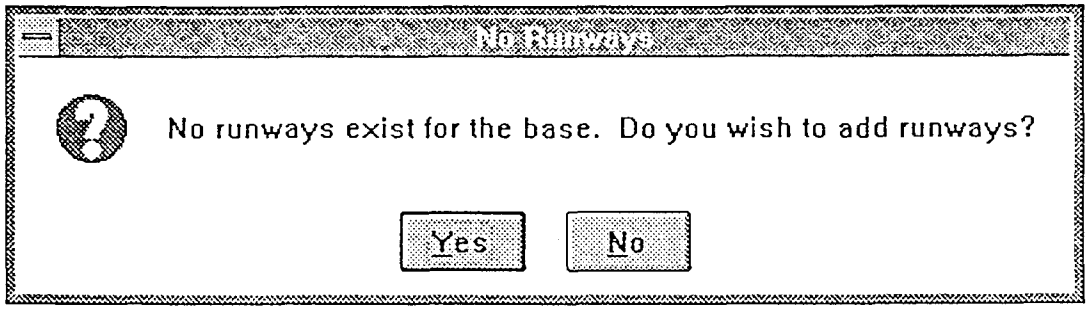


Airport Diagram form

Refer to the Airport Diagram section of **Part 3: Adding Base Information** for directions on importing an airport diagram into the Airport Diagram form.

Runway Information

Before a runway record can be modified, it must exist in the NDMS. If there are no runway records for the selected base in the NDMS and you have selected the Runway Information button on the Modify a Base form, the following dialog box will appear:



By clicking on the Yes button, you will be able to add runways using the Runway Information form. If you click on the No button, the error message will disappear and focus will return to the Modify a Base form.

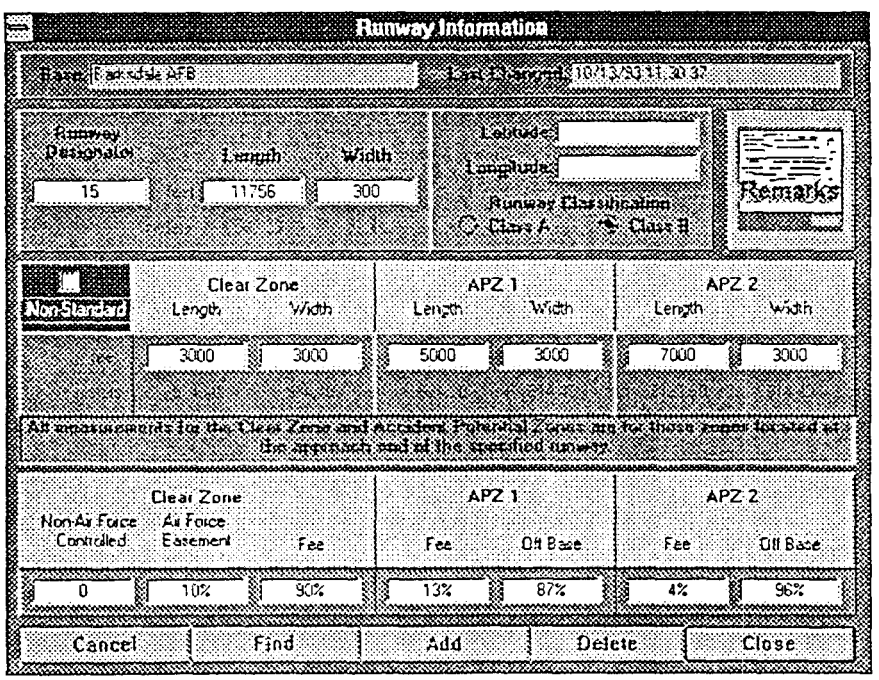
When editing the measurements for the clear zone and accident potential zones, be aware that the measurements are for the zones located at the approach end of the runway. The standard measurements for the clear zone and accident potential zones are as follows:

Zone	Length	Width
Clear Zone	3000	3000
APZ 1	3000	5000
APZ 2	3000	7000

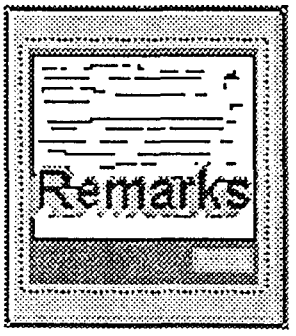
The standard measurements for the different zones are default values in the NDMS. You will only need to enter different values for the non-standard zones. If you change any of the measurements, you will need to click the Non-standard check box to mark the runway as having non-standard clear zones. It is not necessary to mark the Non-standard check box, but if you do, you will be able to do advanced queries and customized reporting with greater ease.

The Runway Designator field is a three character field. You may enter numeric as well as alphabetic characters in the field. The NDMS will not allow you to enter a runway designator twice. If you attempt to do so, the NDMS will display a "runway already exists" message.

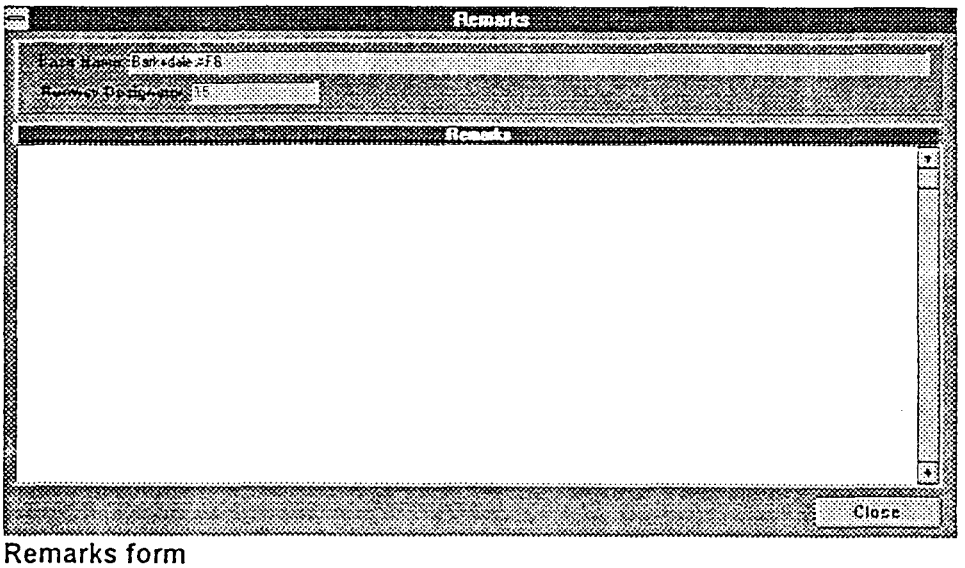
The fields concerned with land ownership and control are text fields. You may enter up to ten characters of information in each field. In general, most entries will be percentages, but you may want to use some alphabetic characters to represent different values.



Runway Information form



Remarks or notes about a specific runway can be entered in the a memo field that is accessed by clicking on the **Remarks** button. The memo field is displayed in a form that also includes the base name and runway designator fields. You are not limited to the space provided in the form for text. The memo field is a scrollable field. If you enter text that is too large to fit in the provided space, a vertical scroll bar will appear at the right edge of the field allowing you to scroll through the text.



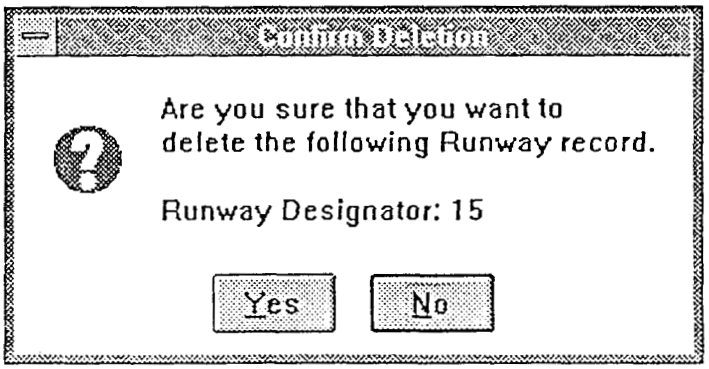
Remarks form

Of the five command buttons on the form, the **Cancel** button will cancel any of the changes you have made to the data on the form and return the fields to their original values. If you make changes to a runway record and then edit another runway record, you will not be able to cancel any changes on the first record. Microsoft Access commits data to the database when you change from one record to another.

The **Find** button allows you locate the data for a specific runway. When the Find a Runway form appears on the screen, you can enter a runway designator in the text box provided. If you are not sure of the runway designators for the selected base, use the pull-down list to select a runway designator.

If you need to add a runway record to the NDMS for the selected base, the **Add** button opens the Runway Information form in add mode. Refer to the Runway Information section in **Part 3: Adding Base Information** for instructions on adding runway records.

To delete a runway, select the **Delete** button. The following form will appear:



If you are sure that you want to delete the runway record, select the **Yes** button. The NDMS will delete the record and return focus to the Runway Information form. Once you delete the last runway, the NDMS will return focus to the Modify a Base form.

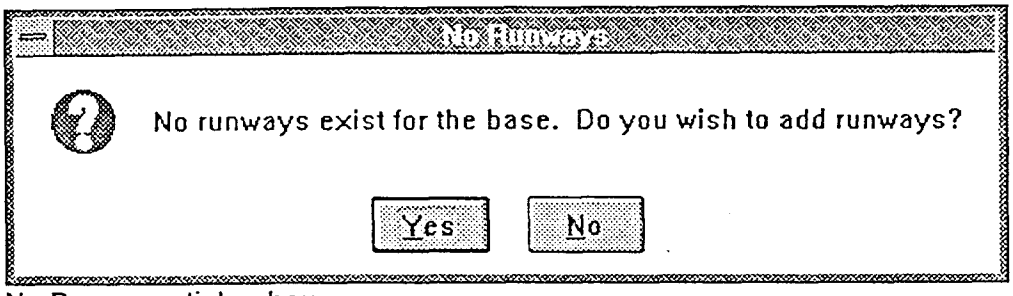
Selecting the **Close** button on the Runway Information form will save all changes made to the current record and then close the Runway Information form. If changes have been made to the record, the date/time stamp will be updated when the form closes. Focus will be returned to the Modify a Base form.

Ownership Information

Another command button on the Modify Base form is the **Ownership Information** button. Clicking on this button allows you to edit the ownership information associated with a selected runway in the Ownership Information form.

Ownership information can be edited in either the Runway Information form or the Ownership Information form. If you edit the ownership information in the Runway Information form, the date/time stamp for the Runway Information form will be updated and not the Ownership Information date/time stamp. If you edit the ownership information in the Ownership Information form, the Ownership Information date/time stamp will be updated.

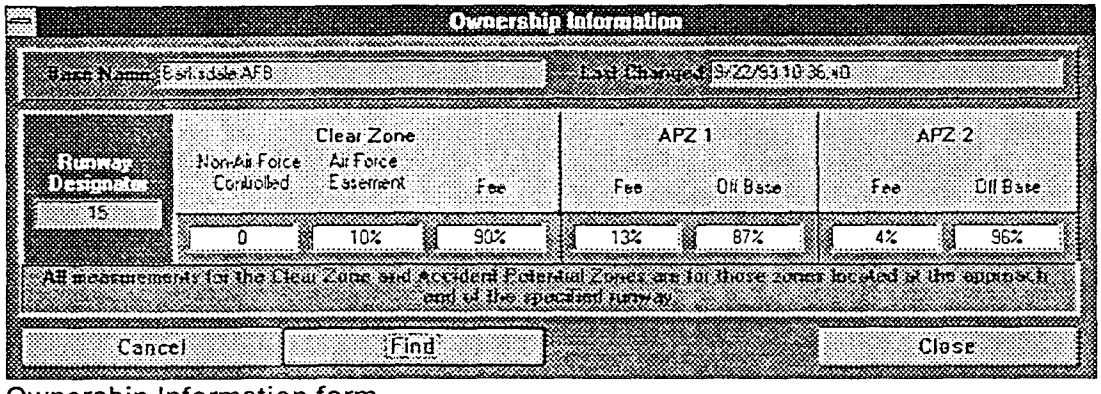
Because ownership information is directly related to the clear zone and accident potential zones of a runway, a runway must exist in the database system before you can edit the associated ownership information. If there are no runways in the NDMS for the selected base and you have selected the **Ownership Information** button on the Modify a Base form, the No Runways dialog box will appear.



No Runways dialog box

By clicking on the **Yes** button, you will be able to add runways using the Runway Information form. If you click on the No button, the error message will disappear and focus will return to the Modify a Base form.

If runways have already been entered into the database system, then the Ownership Information form will appear:



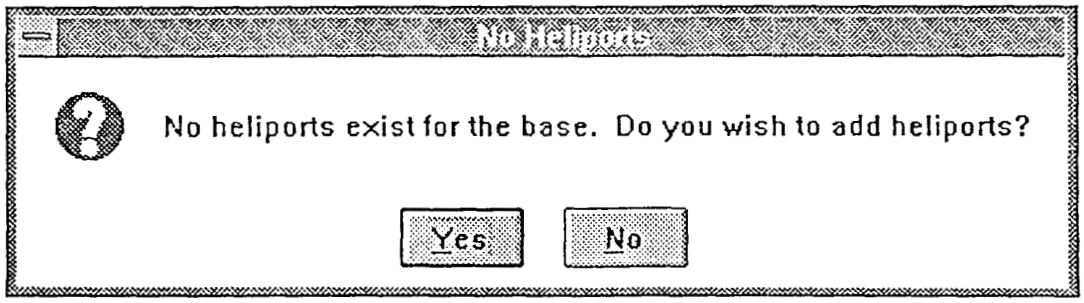
Ownership Information form

When the Ownership Information form opens, the first runway in the database recorded for the specified base will appear in the Runway Designator field. If you want to enter data for a different runway, use the **Find** command button. After entering a runway designator in the text box, the NDMS will locate the runway record and display the current data in the form.

When you have completed editing the data, you can close the Ownership Information form by clicking on the **Close** button. Closing the form will cause the NDMS to save the data as displayed on the form and return focus to the Modify a Base form.

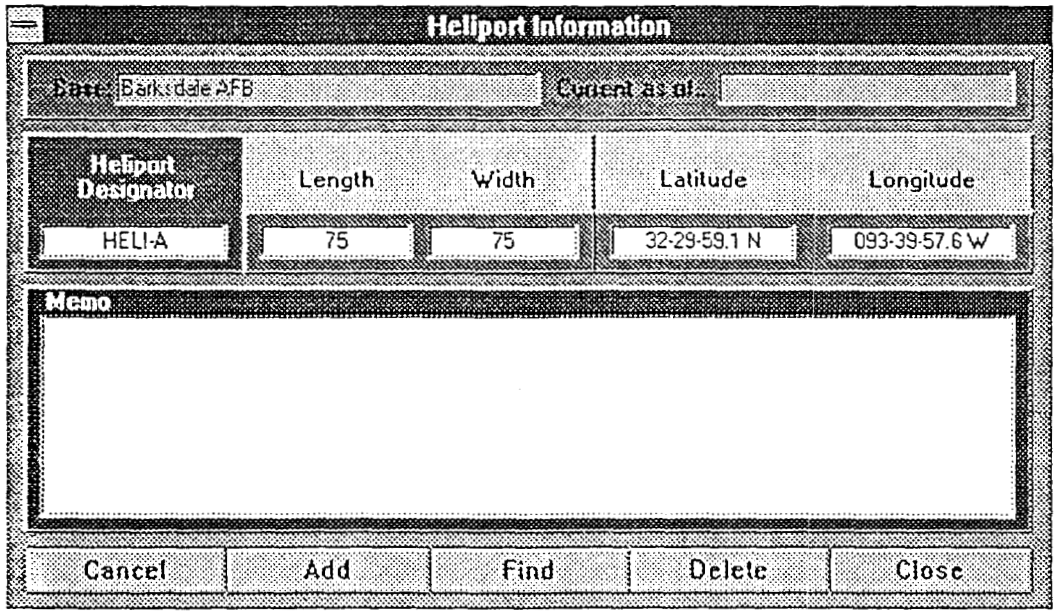
Heliport Information

The **Heliport Information** button allows you to edit heliport records in the NDMS. Just like runway records, heliport records for the selected base must exist in the database before they can be edited. If there are no heliport records for the selected base, the NDMS will display the No Heliports dialog box.



If you want to add heliport records to the NDMS, click on the **Yes** button in the No Heliports dialog box. You will be able to enter new heliport records into the NDMS using the Heliport Information form.

If heliport records already exist in the system, the Heliport Information form will be displayed. Using this form you will be able to modify any of the fields other than the base name field, add new heliport records, or delete current heliport records.



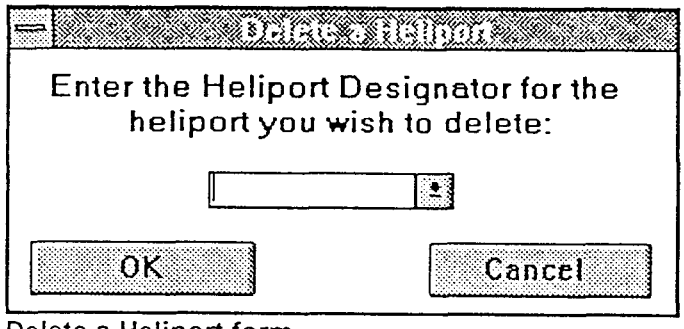
Heliport Information form

The first command button on the form is the **Cancel** button. Clicking on this button will restore all edited fields to their original values. If you move to a different record and then return, the **Cancel** button will not restore the fields. Whenever you move from one record to another, Microsoft Access commits any changes made on a form to the underlying record. All changes then become permanent.

If you need to add more heliports to the NDMS for the selected base, click on the **Add** button. Using the Heliport Information form, you will be able to add more heliports to the NDMS.

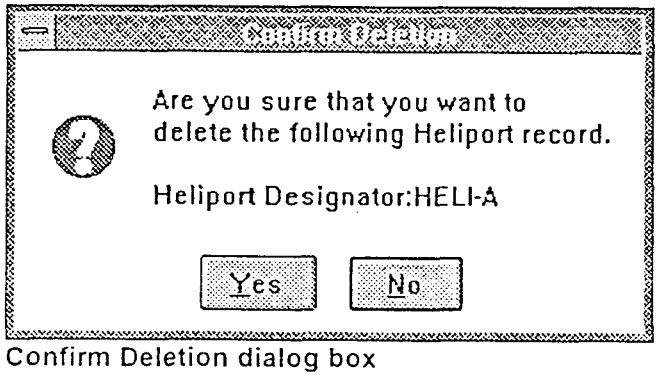
If you want to edit a heliport record in the NDMS that is not displayed in the form, click on the **Find** button. The Find a Heliport form will appear on the screen. In the box provided, enter a heliport designator (the pull-down list is available for you to select from the currently recorded heliports). The NDMS will display the selected heliport information in the form for editing.

You can delete a heliport record by selecting the **Delete** button. After selecting the button, the Delete a Heliport form will be displayed. Using



Delete a Heliport form

this form, enter the Heliport Designator for the record you wish to delete and then select the OK button. Before the NDMS deletes the record, you will need to confirm the deletion by clicking on the **Yes** button in the Confirm Deletion dialog box.

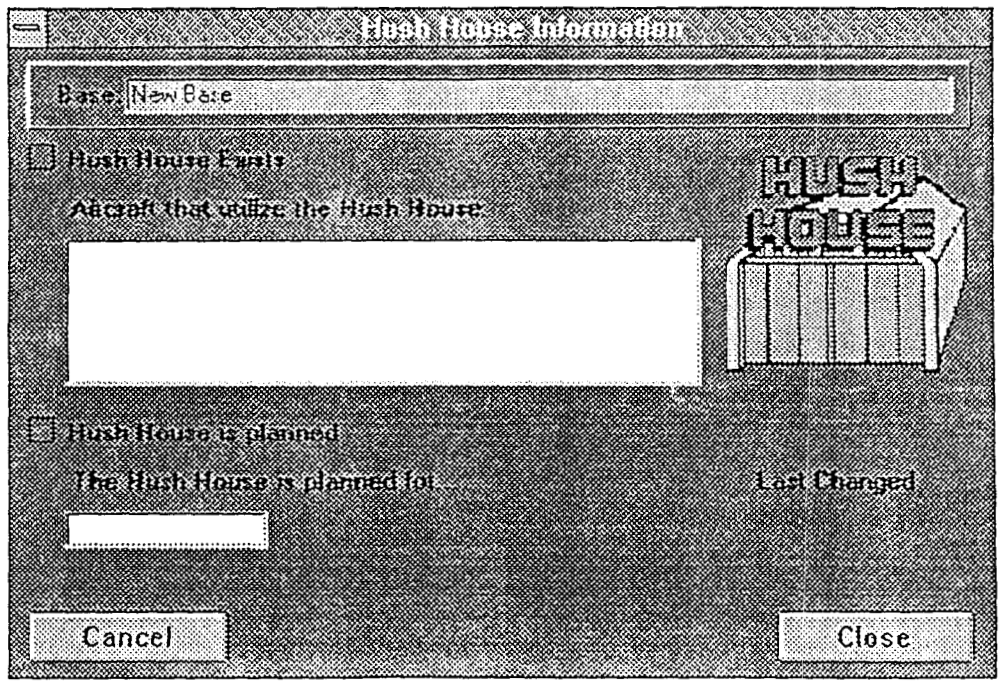


Confirm Deletion dialog box

After you have completed editing data for a heliport, you can either close the Heliport Information form, or you can edit another heliport in the NDMS. If you select the **Close** button, the Heliport Information form will close and the Modify a Base form will become the active form.

Noise Suppression Information

In reference to the data collection forms, noise suppression information refers to the use of hush houses. When you select the **Noise Suppression** command button the form that is opened is the Hush House Information form.



Hush House Information form

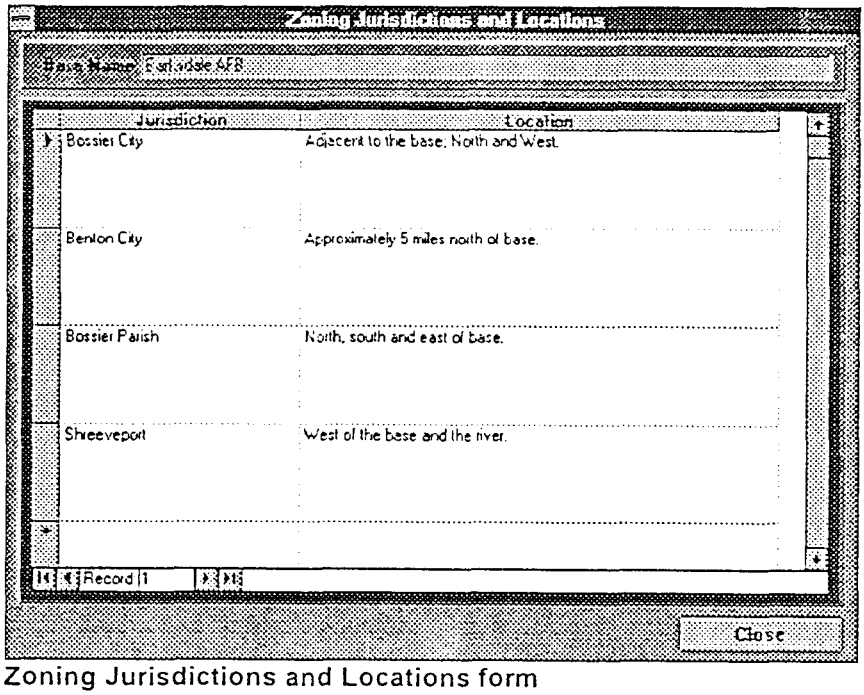
The Hush House Information form consists of six fields. The first field displays the name of the base you have selected to add noise suppression data. Just below the base name field is the Hush House Exists check box and a memo field to record the types of aircraft that use the hush house. If a hush house is planned for the base, the check box next to the statement "Hush House is planned" can be marked. If you mark the planned hush house check box, you may want to record the planned date in the designated field. The NDMS uses this same form for both adding and modifying information, therefore, the Last Changed field is displayed.

Clicking on the **Cancel** button does not close the Hush House Information form. It does, however, clear any fields that you have edited. If you want to close the Hush House Information form, click on the **Close** button.

Zoning Jurisdictions Information

Lands in clear zones and accident potential zones are not always completely maintained, controlled or owned by the government. Different agencies and governing bodies control the use of portions of land within clear zones and accident potential zones at many bases. The NDMS helps track which agencies or governing bodies control these lands by providing records for zoning jurisdictions.

To edit zoning jurisdiction information to the NDMS, select the **Zoning Jurisdictions** button on the Modify a Base form. The following form should appear on the screen:



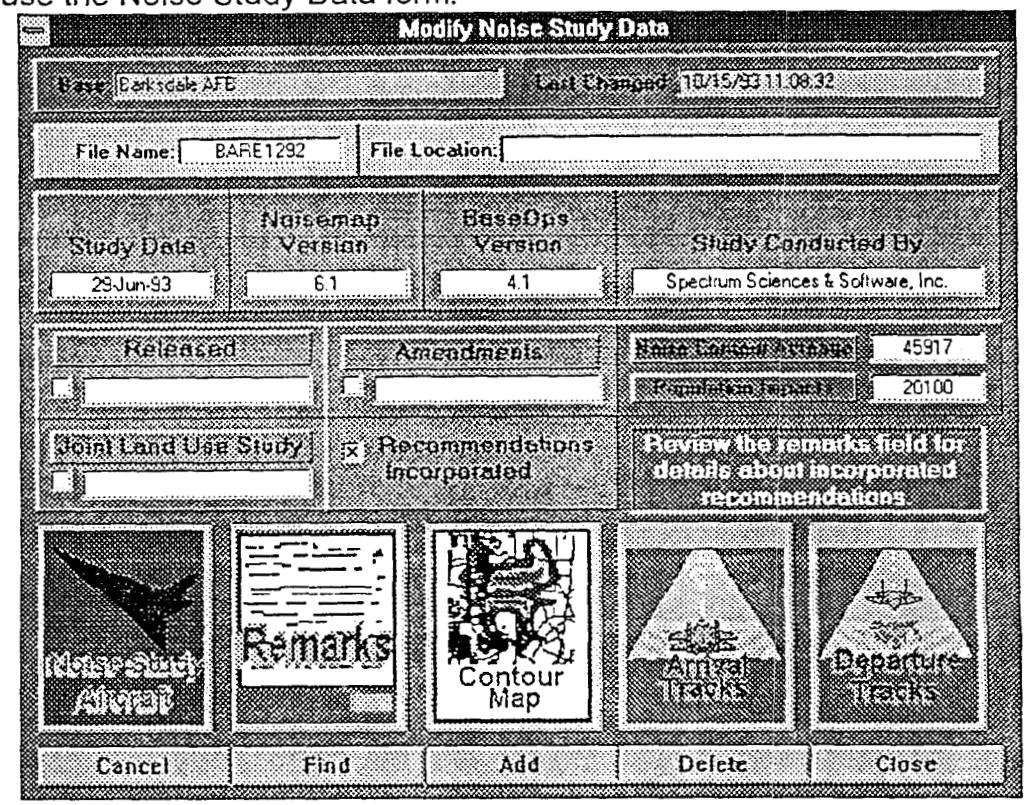
Zoning Jurisdictions and Locations form

This form consists of a scrollable table. The first field in the table is for the name of the agency or governing body. For lack of a better term this field has been named the Jurisdiction field. The second field is a memo field that allows you type a short narrative about the location of the specified jurisdiction.

If you want to save the data that you have entered and return to the Modify a Base form, click on the **Close** button. The Zoning Jurisdictions and Locations form will close and focus will return to the Modify a Base form.

Noise File Study Data

The bulk of the data maintained in the database system is stored in the Noise Study Data table. To edit noise studies in this table you will need to use the Noise Study Data form.



Noise Study Data form

The Noise Study Data form allows access to the fields for the following data elements:

- Noise File Name and Noise File Location
- Study Date
- Noisemap Program Version
- BaseOps Program Version
- Who (What Organization) Performed the Study
- Study Released Designator and Study Released Date
- Joint Land Use Study Designator and Date of Joint Land Use Study
- Amendments Designator
- Date of Amendments
- Noise Contour Acreage
- Population Impacts
- Noise Study Aircraft (Transient or Based)
- Number of Aircraft Assigned to the Base During the Study
- The Average Daily Operations performed by each Noise Study Aircraft (Transient or Based)
- Remarks/Memo
- Contour Map
- Arrival Flight Tracks
- Departure Flight Tracks

Of these fields, two are required for the NDMS to properly save any data entered. The Noise File Name and Study Date are the two fields. The file name is required to link the appropriate records in the Assigned Aircraft table to the appropriate Noise Study Data table record. The Study Date is required in order to sort the noise study records into chronological lists for reporting purposes.

The File Name field is a text field that allows you to enter up to twelve characters. A standard format for the noise file name has been established. Refer to the Noise Study Data section of **Part 2: Adding Base Information** for details on the file name standards established by AFCEE.

The File Location field is simply a text field. You may enter up to fifty characters describing the location of the noise file.

The Study Date field is a date field. You can enter the date into the field in two different formats, but the only format that will be displayed is as follows:

dd-mmm-yy i.e. 6-Jun-62

The data entry formats that you can use are as follows:

mm/dd/yy or ***dd-mmm-yy***

Both the Noisemap and BaseOps Version fields are text fields. You enter up to ten characters in each field to designate the version of the programs used to create the noise file data.

The Study Conducted By field is a text field. You may enter up to fifty characters in this field to describe the agency/organization that conducted the noise study.

The Released, Joint Land Use Study and Amendments fields are two component fields. The first component is a check box. The second component is a date field.

The check box is used as a "Yes/No" indicator. If the box is left blank, then the field value in the table is set to "No." Clicking in the check box changes the value to "Yes." If a study has been released then you will want to click in the check box associated with the Released field. If the study was a Joint Land Use Study then check in the check box associated with the Joint Land Use Study field. The Amendments check box works the same way as the Released and the Joint Land Use Study fields. If

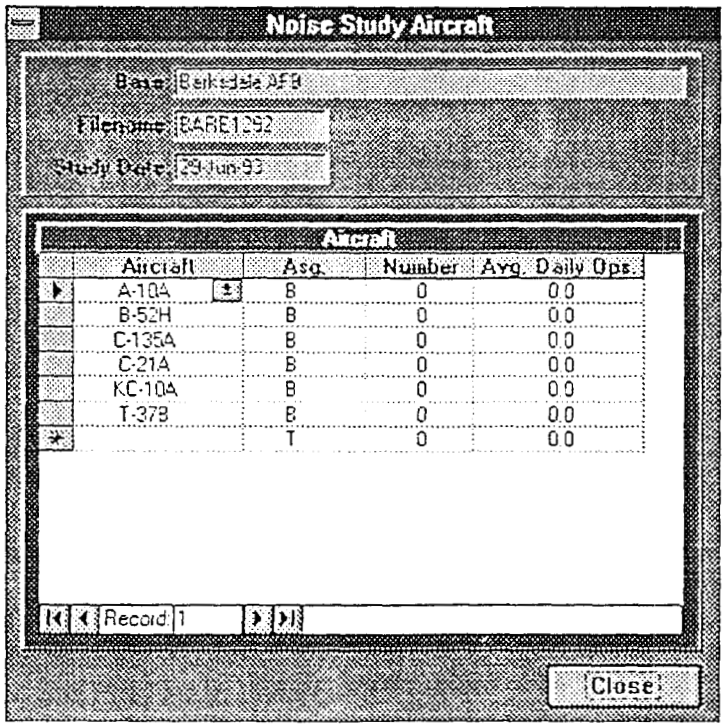
amendments have been made to a study, then make sure the check box is marked.

The date fields associated with the Released, Joint Land Use Study and Amendments fields are used to designate the date of the specified actions. The fields will accept the same formats for input as the Study Date field mentioned earlier. Each field will display the entered date in the same format as the Study Date field as well.

The Recommendations Incorporated field is simply a check box. If the recommendations derived from the study have been incorporated into the land use plans of the base and the surrounding jurisdictions, then you will want to make sure that the box is marked. A blank box signifies that the recommendations have not been incorporated into the land use plans.

The Noise Contour Acreage and Population Impacts fields are numeric fields. You cannot place alphabetic characters into either of these fields. The default value for the fields is zero.

The **Noise Study Aircraft** command button opens the Noise Study Aircraft form. In this form you can edit the assigned aircraft records associated with the selected noise study. If any records exist for the current noise study, they will be displayed in the scrollable table on the form.



Noise Study Aircraft form

If there are more records than can be shown, a vertical scroll bar will appear on the right edge of the Aircraft table. Moving the slide button up or down along the scroll bar will adjust the viewing area.

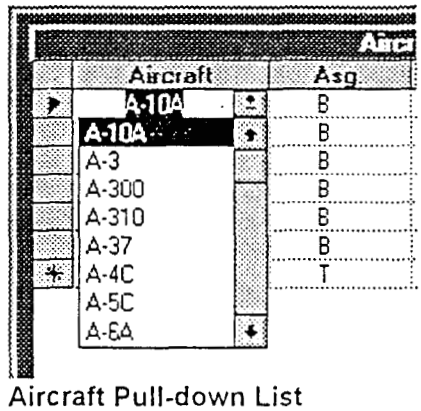
Aircraft

Aircraft	Asg.	Number	Avg. Daily Ops.
A-10A	B	0	0.0
B-52H	B	0	0.0
C-135A	B	0	0.0
C-21A	B	0	0.0
KC-10A	B	0	0.0
T-37B	B	0	0.0
	T	0	0.0

Aircraft Table

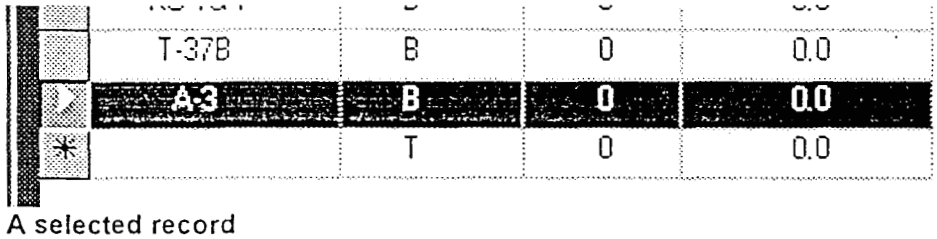
To edit a field, position the pointer in the field and click the left mouse button. A cursor will appear in the field allowing you to use standard keyboard commands to edit the data.

Two of the fields can be edited by using a pull-down list. The Aircraft field's pull-down list is composed of the aircraft types (military and commercial) found in the Noisemap and BaseOps programs. The pull-down list for the Assignment (Asg.) field consists of only a "B" and a "T."



Aircraft Pull-down List

To delete a record from the table, click on the record selector box at the left end of the desired record. The entire record will be highlighted. Next, press the **[Delete]** key. If you delete the wrong record, while holding the **[Ctrl]** key down, press the **[Delete]** key. The record will be restored to the table.

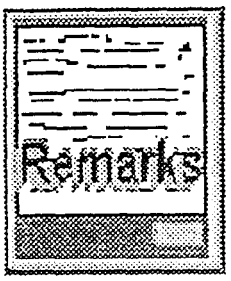


A selected record

You can delete a group of records by first doing a group select. Position the pointer on the record selector box of the first record in the group. Now, drag the pointer down or up the table to the record selector box of the last record in the group and release the mouse button. All of the

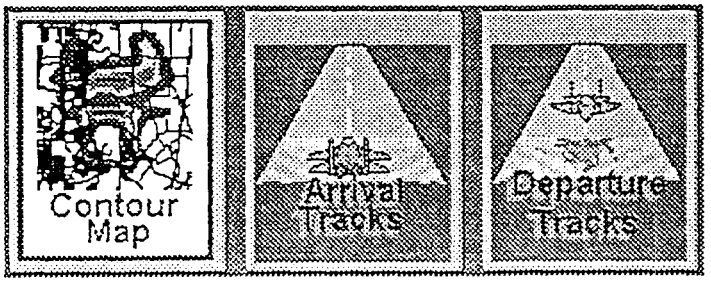
records will be highlighted. Pressing the **[Delete]** key will delete the records from the table. To restore the deleted records, while holding down the **[Ctrl]** key, press **[Delete]**.

Clicking on the **Close** button on the Noise Study Aircraft form will close the form and return focus to the Noise Study Data form. Any changes that you may have made will be saved.



The remarks field can be accessed by clicking on the **Remarks** button. You may enter any text you want into this field. There is no limit to the amount of text that you can enter other than the space available on the computer hard drive. If the text that you enter exceeds the size of the view window, a vertical scroll bar will appear on the right edge of the view window. You can use this scroll bar to scan the text that you have entered.

The **Contour Map**, **Arrival Tracks**, and **Departure Tracks** command buttons allow you to import graphic images into the NDMS. The process for importing the images is described in detail in the **Importing Contour Maps, Arrival Tracks, and Departure Tracks** section of **Part 3: Adding Base Information**.



The **Cancel** button on the Noise Study Data form will restore all edited fields to their original values. The changes you have made will be aborted.

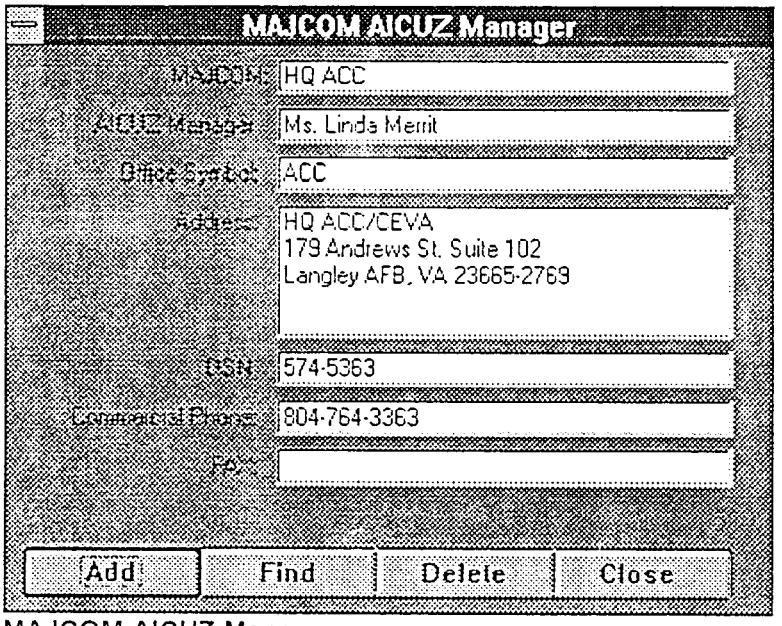
The **Close** button will close the Noise Study Data form and return control to the Modify a Base form. All of the data that you have edited on the form will be saved before the form is closed.

The NDMS will not let you enter the same study twice. It will scan the Noise Study Data table for duplicate records based upon the File Name. If a duplicate record is found, you will be notified of its existence in the

system. You will then be able to examine the data for errors to correct or cancel the entry.

MAJCOM AICUZ Manager Information

The **MAJCOM Information** button allows you to edit the recorded MAJCOM AICUZ manager records. When clicked the following form is displayed:



MAJCOM AICUZ Manager

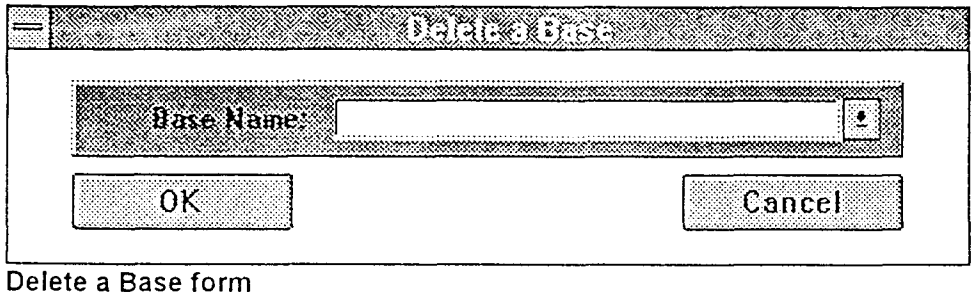
Several command buttons appear on the MAJCOM AICUZ Manager form. The **Add** button allows you enter a new record in the NDMS for a MAJCOM AICUZ Manager. Clicking on the **Find** button will allow you to locate a specific MAJCOM AICUZ Manager record. If you want to delete the record displayed in the form, click on the **Delete** button. The **Close** button will command the NDMS to close the MAJCOM AICUZ Manager form and return control to the Modify a Base form.

Part 5: Deleting a Base

Deleting records from a database table is a critical action. This is especially true when working with relational databases. With each table in a relational database depending upon another for related records, if a parent record is deleted, then it is imperative that all child records related to the parent record be deleted. If the a child record is not deleted, it becomes an orphan record. Orphan records are not good because the data within the record is not accessible without a parent record and the record consumes storage space that good records could use. Therefore, it is important that all deleting of records from the NDMS be done by the delete functions built into the forms. They are designed to handle the relational complexities of deleting records from the NDMS.

Once a record is deleted it is permanently removed from the database. If backups of the NDMS, full detailed data reports from the NDMS and data collection forms are maintained for the records in the NDMS, retrieving accidental deletions is not too difficult. Using the NDMS backup, the administrator can use an append query to restore the lost records to the NDMS. If a valid backup does not exist, the only method for restoring a deleted record is to re-enter the data from either the full detailed data report or the data collection forms.

On occasion, it may be necessary to delete all records related to a particular base. The NDMS has a special routine designed to execute this task. If you need to delete the all of the records related to a specific base, select the **Delete Base Information** button from the Main Switchboard.



Delete a Base form

The Delete a Base form is displayed. On this form, enter the name of the base you wish to delete from the NDMS. You can use the pull-down list to select the base from a list of bases that exist in the NDMS.

After selecting or entering the base name, click on the **OK** button. The Confirm Deletion form should appear. If you are sure that you want to delete the selected base from the NDMS, select the Yes button. All records in the NDMS that are related to the selected base will be deleted.

Part 6: Reports

The NDMS has ten full reports, and nine quick reports. The full reports can be produced from the Report Options form. The quick reports are produced when the Print button is clicked from any of the View Base Information forms.

The following table lists the full reports and gives a brief description of the data printed on the report.

Report Title	Description
Noise Study File Location Summary	Lists bases detailing the location of the computer noise file.
Base AICUZ Manager Contact Information	Lists the base AICUZ managers with their address, phone and FAX numbers.
MAJCOM AICUZ Manager Contact Information	Lists the MAJCOM AICUZ Managers with their address, phone and FAX numbers.
Noise File Review	Lists the most current noise file for each base, the base MAJCOM, and the date by which a noise study is due.
JLUS/AICUZ Releases and Amendments Status	Lists the bases and the most currently released noise study for each. Status on amendments, increase/decrease in impacted acreage, joint land use study, incorporated recommendations, population impacts, and remarks.
Chronological Noise Study Data	Lists all of the noise studies recorded in the NDMS for each base. The studies are sorted into chronological order starting with the most recent and ending with the oldest.
Detailed Data	Lists all non-graphical fields for every base.

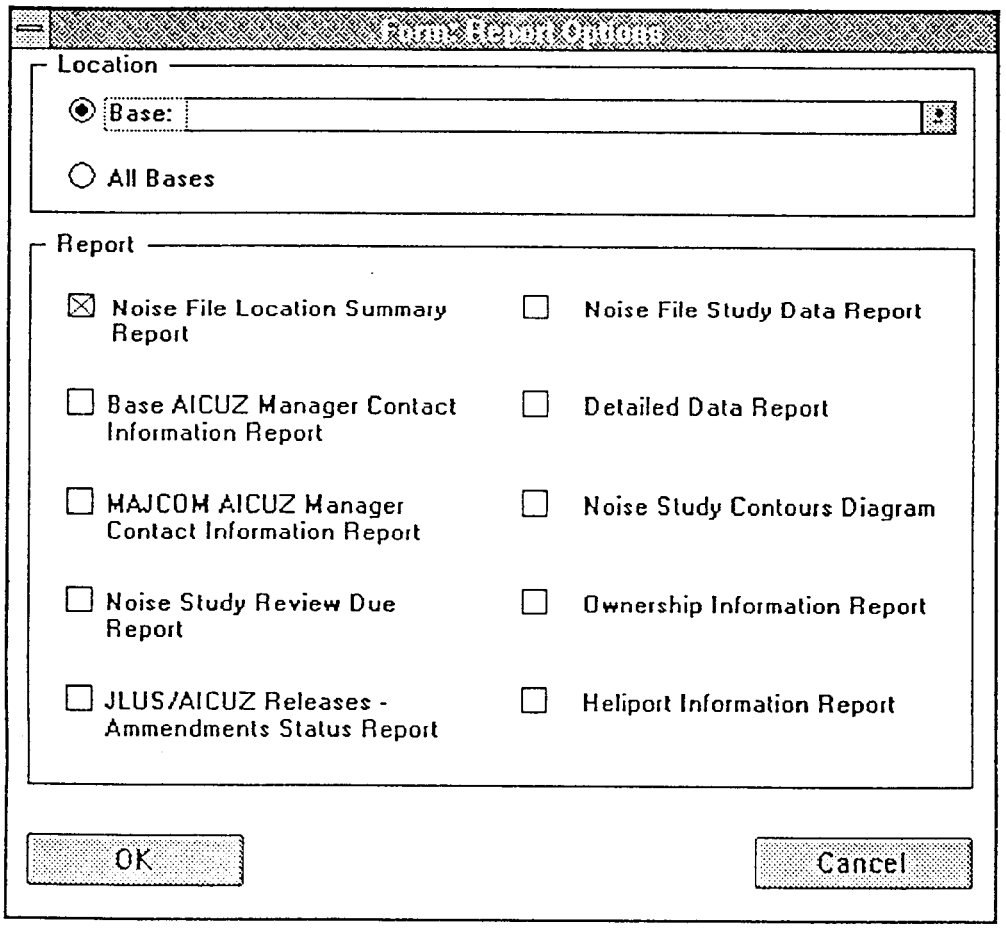
Report Title	Description
Contour Map	Prints the contour maps recorded in the NDMS for each base.
Ownership Information	Lists the percentages of land controlled by the air force within the clear zone and accident potential zones for each runway.
Heliport Information	List the heliports and the information recorded in the NDMS about each heliport for each base.

The quick reports that are available through the NDMS are as follows:

Report Title	Description
Base AICUZ Manager Information	Lists the base AICUZ manager's name, organization/office symbol, address, DSN, commercial phone, and FAX number.
MAJCOM AICUZ Manager Information	Lists the MAJCOM AICUZ manager's name, organization/office symbol, address, DSN, commercial phone, and FAX number.
Ownership Information	Lists the runway designator, clear zone land use percentages, and accident potential zone land use percentages.
Zoning Jurisdictions	Lists the zoning jurisdictions and locations for the selected base.
Runway Information	Lists the runway designator; runway length and width; CZ length and width; APZ 1 length and width; APZ 2 length and width; non-standard designator; and remarks.

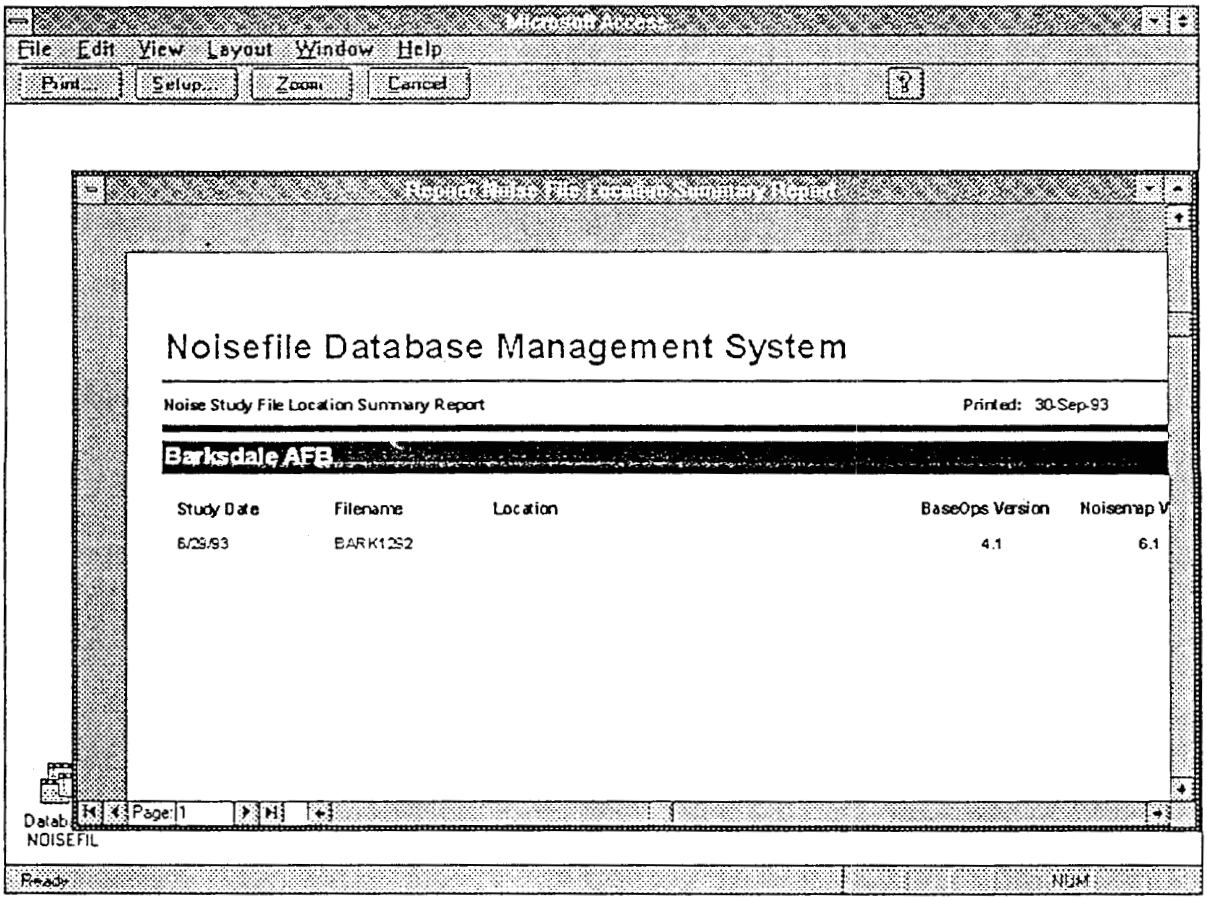
Report Title	Description
Heliport Information	Lists the heliport designator; heliport length and width; heliport latitude and longitude; and remarks.
Hush House Information designators.	Lists the hush house
Airport Diagram	Prints the airport diagram for the specified base.
Contour Map	Prints the contour map for the specified study.

From the Main Switchboard, selecting the **Print Reports** button will open the Report Options form. At the top of the form are two option buttons. If you want to produce a report for a specific base, click in the first option button and then enter the base name in the edit box. If you want to produce the report for all bases, click the second option button.

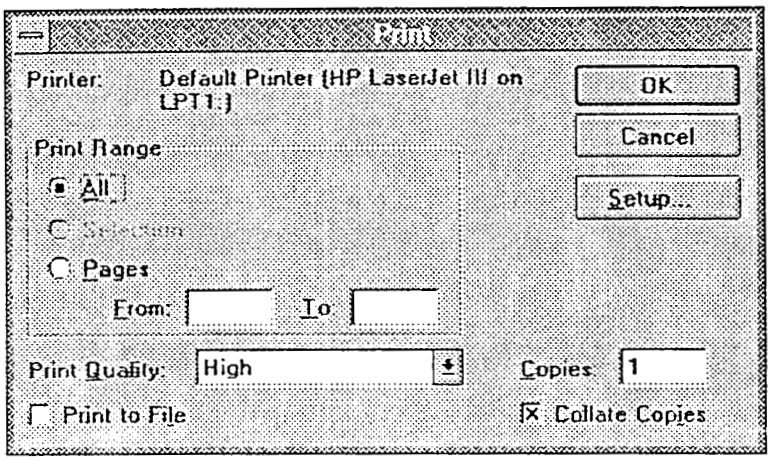


In the second section of the form, choose the report you want to print by clicking in the appropriate check box. You are allowed to choose only one report. Once the report is printed, you can select another report to print.

Select the **OK** button to initiate the reporting process. Once Microsoft Access has built the report, is will be displayed on the screen. You can use the window scroll bars to view the document before it is printed.



The first of the four command button just below the menu bar allows you to print the report. When you select the **Print** button, the Print dialog box appears. In the dialog box you can define the print range, print quality and number of copies. You can also command Microsoft Access to print to a file. If you are printing multiple copies of the report, de-selecting the collate option will speed up the printing process, however, you will have to manually collate the report.

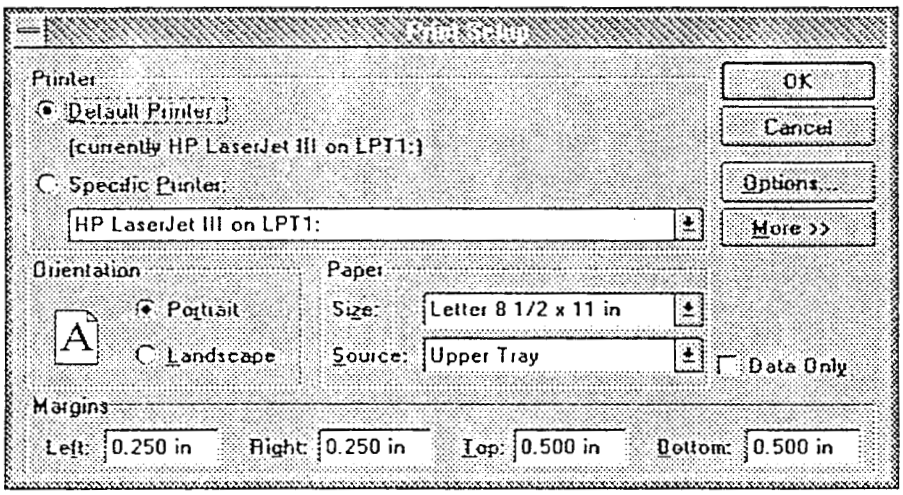


Print dialog box

Once you have set the print options, select the **OK** button to print the report. Selecting the **Cancel** button will cancel any option changes you may have made and return focus to the report view window. Selecting the **Setup** button will open the Setup dialog box (the Setup dialog box functions will be covered later).

If you select the **OK** button, the Printing dialog box will appear. Within the dialog box is a **Cancel** button. Clicking on the **Cancel** button will halt the printing process and the report will not be printed. If the Microsoft Windows Print Manager is active, the report will be spooled to the hard drive before it is printed. This tends to make the printing process slow. You can make the Print Manager inactive. To do so refer to your Microsoft Windows manual for instructions.

If you selected the **Setup** button from either the report view window, or from the Print dialog box, the Print Setup dialog box is displayed. Using the options in the Print Setup dialog box, you can select the printer, orientation, and paper size and source for the report. You can also define the report margins. It is highly recommended that you use the default settings for each report.



The **Zoom** button will toggle the report view window from actual size view mode to full page view mode. If you change the setup parameters, using the **Zoom** button before printing the report will allow you to see the consequences of the changes you made.

The **Cancel** button will close the report view window and return focus to the Report Options form.

Part 7: Creating Custom Reports

Before you can effectively create custom reports, a sound understanding of the relational structure of the NDMS is required. Without knowledge of the linking structures used to define the NDMS, it is impossible to build the queries that will be required to create custom reports.

This part of the user's manual is divided into three sections. The first section explores the relational structure of the NDMS. Next, methods and procedures used to create queries will be defined. The last section looks at Microsoft Access' Report Design utilities.

It is not the intent of this manual to replace the Microsoft Access User's Manual. It is assumed that you have read through the sections on queries and designing reports in the Microsoft User's Manual before attempting to create your own custom reports.

NOTE: Only users with Admin level security clearance can create custom reports.

NDMS: A Relational Database System

It has been mentioned in this manual several times the importance of understanding the basics of relational databases. Without an understanding of the functionality of a relational database, it is impossible to understand the hierarchical structure of the NDMS. With the understanding of the functionality of the NDMS relational database characteristics comes the ability to expand the capabilities of the NDMS. This is especially true in the area of customized reporting.

You are probably asking, "what is a relational database system?" A relational database system usually consists of two or more tables (files) linked together with common fields. The purpose for a relational database system is to reduce the amount of redundant data in a database system, to provide expandability and flexibility to a database system and to expedite data retrieval from a database system. The NDMS is a relational database system that meets all of these goals.

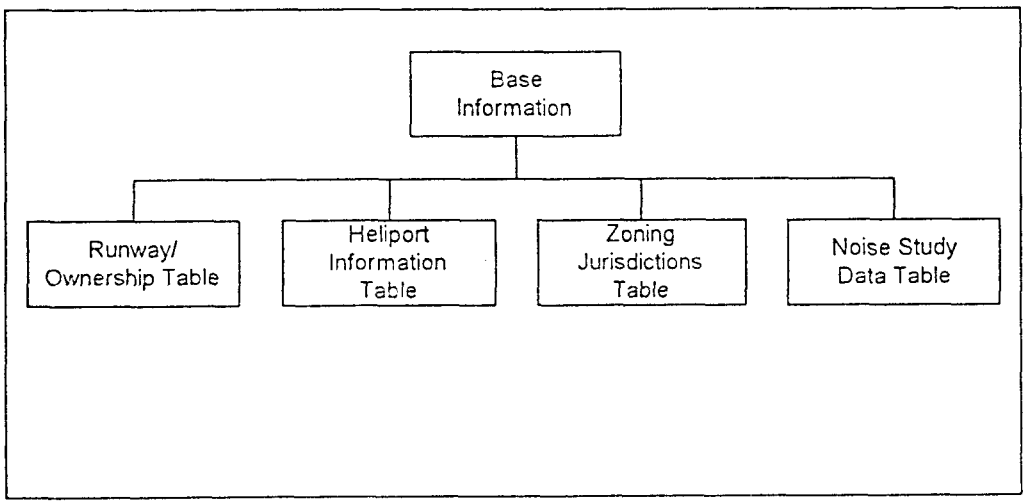
In describing the structure of a relational database, the term hierarchy is frequently encountered. Hierarchy refers to the systematic interdependency of the tables in a relational database. The function of a relational database defines the hierarchy of the tables. For example, the

NDMS is a system designed to facilitate the cataloging of noise study summary data for review. The most common elements in the database are those directly related to a noise study. For each noise study stored in the database several elements will be recorded. It is a known that a single base could have had many noise studies conducted as part of the AICUZ program. Each of the studies conducted would be represented in the NDMS by a single record in the noise study summary data table. Although the records recorded for the noise studies contains an element containing the base name, more detailed information on the base is beneficial for those who use the system. A table with base information exists containing a single record for each base. Relating the base information table to the noise study summary data table is a single element; the base name. The question now becomes, "which table depends upon which table?"

Most relational database systems are designed with one-to-many relational links. A one-to-many relational link means that for each record in one table, many related records can be found in another table. The NDMS is built on this concept. As an example, Barksdale AFB has one record in the base information table. In the zoning jurisdictions table, there are three records that are linked to the one record in the base information table for Barksdale AFB. This is a one-to-many link.

In a one-to-many link structure, the table with the single record is usually referred to as the parent table. The table with the multiple records is referred to as the child table. Naturally the parent table would have precedence over the child table.

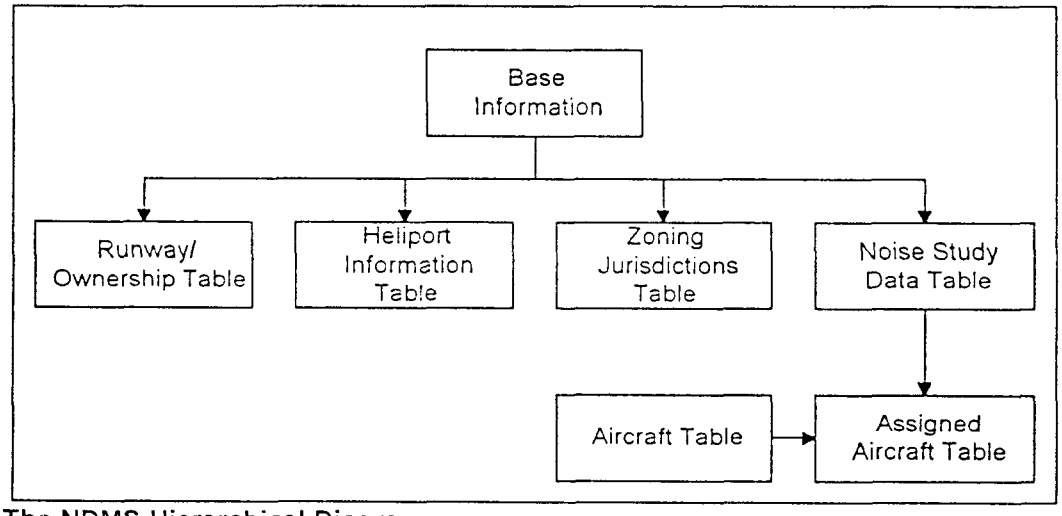
The NDMS consists of seven linked tables. The table containing base information is linked to four child tables. The following diagram is an illustration of the hierarchical relationship between the Base Information Table and its child tables.



Base Information Table and Child Tables

In order to link the base information table with its child tables, a common field must exist in the table definitions for each table. The common field in these tables is the Base Name field.

The hierarchical illustration above has only five of the seven tables displayed. A complete illustration of the NDMS hierarchy has the remaining two tables connected to the Noise Study Data Table. This can be seen in the following hierarchical diagram.



The NDMS Hierarchical Diagram

The arrow heads on the linking lines define the flow of data from one table to another. In the instance of the heliport information table, when a new record is created, the base name is pulled from the base information table to create the required link. Whenever a new record is created in the assigned aircraft table, linking data is pulled from two tables.

How does the relational design of the NDMS meet the established goals of a relational database system? If the NDMS was designed as a flat-file system, redundancy of data would be absurd. For every assigned aircraft in a study, all of the noise study data, zoning jurisdictions, heliport information, runway information and base information would need to be recorded in every record. In terms of expandability and flexibility, any number of related tables could be added to the system without destroying the integrity of the current tables or methods of accessing the tables. Because flat-file systems depend upon sequential access to records, accessibility to the data maintained in the NDMS is rapid and efficient.

Queries: The Means for Selecting

The biggest problem in creating custom reports is selecting the data from the tables to be printed on the report. Microsoft Access provides a query design system for creating select queries that can be used for reporting

purposes. The Microsoft User's Manual covers the designing queries starting on page 95.

Designing the Report

The easiest task in creating a customized report is the designing of the layout. Microsoft Access provides three methods of designing reports. Included with Microsoft Access is Report Wizard. Report Wizard is an automated report and form design tool. If you do not want to use the Report Wizard, you can create a report layout on a blank report. The third method is a combination of using both the Report Wizard and then editing the report after Report Wizard creates it. These methods are discussed starting on page 399 in the Microsoft Access User's Manual.

Part 8: Noisefile Database Management System Administration

This part of the manual addresses issues concerned with the security and maintenance of the NDMS. These are usually the two most neglected tasks of any database system. They are generally neglected because of the time that they consume or because of the their complexity. Microsoft Access combined with Microsoft Windows provide tools that make these tasks much faster and effortless.

Microsoft Access System Security

Security is generally associated only with confidentiality. Most database systems, however, do not maintain very much confidential material. Databases best serve in distributing information, not hiding information.

Database security is more closely related to the prevention of system changes by unauthorized users. Only a limited number of users (developers) should have authority to change any of the system components of a database. The users should be knowledgeable of the file structures and system procedures in order to maintain the system in a way to meet the growing needs of the users.

The NDMS relies on the security options offered by Microsoft Access. Access allows for a database administrator to assign certain privileges to each user or group of users. These privileges range from only being able to read (view) data in the NDMS to being able to modify form designs.

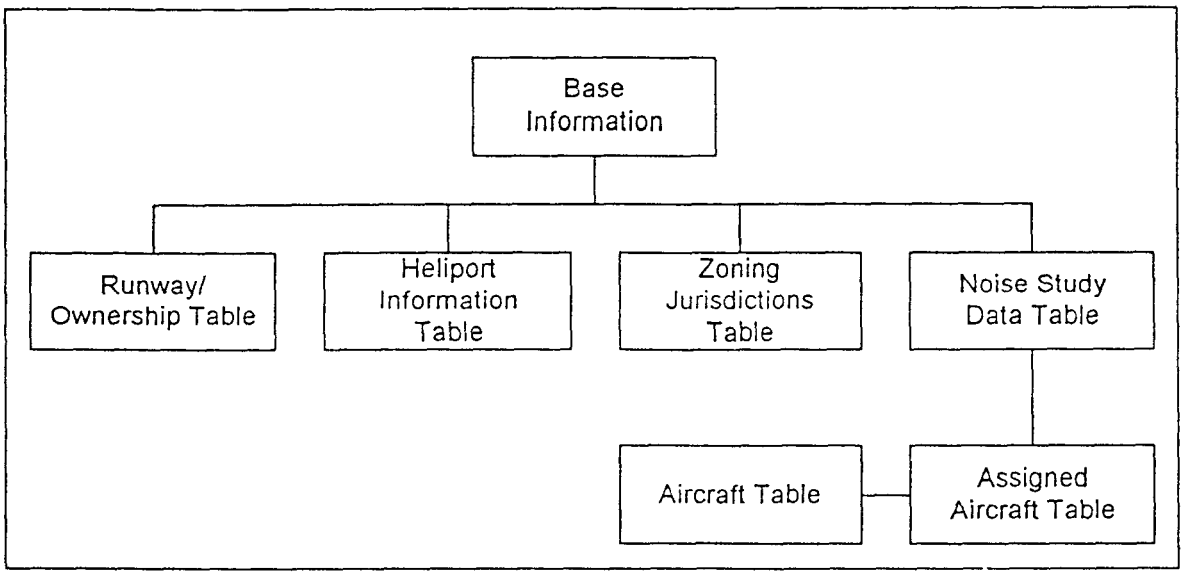
This manual is designed to give guidelines for system administrators and users. The actual implementation of the security system in the NDMS is privileged information and should only be viewed by system administrators, therefore, the implementation of the security system is not covered in this manual. The system administrator should read the Microsoft Access manuals to learn the system security implementation procedures.

Database Backup and Recovery Routines

The NDMS is installed in a sub-directory on the host computer hard drive labeled **nf_dbms**. Any commercially available backup program can be used to make backups of the NDMS. The nf_dbms sub-directory is the only directory you will need to backup.

Appendix A: Data Dictionary

Appendix B: Relational File Structure



Appendix C: The Noisefile DBMS Module

The following section is the Microsoft Access Basic routines written for use in the NDMS.

Function AFCEELogo (anyTime)

```
  Dim CloseTime As Integer, CurrentTime As Integer
  DoCmd RepaintObject A_FORM, "AFCEE"
  anyTime = Left$("00", (8 - Len(anyTime))) & anyTime
  anyTime = Mid$(anyTime, 7, 2)
  CloseTime = (Val(anyTime) + 6) Mod 60
  anyTime = Time
  anyTime = Left$("00", (8 - Len(anyTime))) & anyTime
  anyTime = Mid$(anyTime, 7, 2)
  CurrentTime = Val(anyTime)
  'MsgBox "Closetime: " & Str(CloseTime) & " CurrentTime: " & Str(CurrentTime)
  While CloseTime <> CurrentTime
    anyTime = Time
    anyTime = Left$("00", (8 - Len(anyTime))) & anyTime
    anyTime = Mid$(anyTime, 7, 2)
    CurrentTime = Val(anyTime)
    'MsgBox "Closetime: " & Str(CloseTime) & " CurrentTime: " &
Str(CurrentTime)
  Wend
  If IsLoaded("AFCEE") Then
    DoCmd Close A_FORM, "AFCEE"
  End If
  DoCmd OpenForm "Noisefile Switchboard"
End Function
```

Function DeleteAircraft (anyBase, anyStudy, anyAircraft)

```
  Dim db As Database, T As Table
  Dim Msg As String, CRLF As String
  CRLF = Chr$(13) & Chr$(10)
  Msg = "Are you sure that you want to"
  Msg = Msg & CRLF & "delete the following Assigned Aircraft record."
  Msg = Msg & CRLF & CRLF & "Noise File Study Date: " & anyStudy
  Msg = Msg & CRLF & "       Aircraft Type: " & anyAircraft
  If MsgBox(Msg, 292, "Confirm Deletion") = 6 Then
    DoCmd Hourglass True
    Set db = CurrentDB()
    Set T = db.OpenTable("Assigned Aircraft Table")
    If Not T.EOF Then
      T.MoveFirst
```

```
    End If
    Do Until T.EOF
      If (T![Aircraft Type] = anyAircraft) And (T![Filename] = anyStudy) And
(T![Base Name] = anyBase) Then
        T.Delete
      End If
      If T.EOF Then
        Exit Do
      Else
        T.MoveNext
      End If
    Loop
    T.Close
    DoCmd Hourglass False
  End If
End Function
```

Function DeleteBase (anyBase)

```
  Dim db As Database, T As Table
  Dim CRLF As String, Msg As String
  Dim Criteria As String
  CRLF = Chr$(13) & Chr$(10)
  Msg = "Are you sure that you want to"
  Msg = Msg & CRLF & "delete the following Base Information?"
  Msg = Msg & CRLF & CRLF & "Base Name: " & anyBase
  If MsgBox(Msg, 292, "Confirm Deletion") = 6 Then
    DoCmd Hourglass True
    Set db = CurrentDB()
    Set T = db.OpenTable("Base Information")
    T.Index = "PrimaryKey"
    T.Seek "=", anyBase
    If Not T.NoMatch Then
      T.Delete
    End If
    T.Close
    Set T = db.OpenTable("Runway/Ownership Table")
    If Not T.EOF Then
      T.MoveFirst
    End If
    Do Until T.EOF
      If (T![Base Name] = anyBase) Then
        T.Delete
      End If
      If T.EOF Then
        Exit Do
```

```
    Else
      T.MoveNext
    End If
  Loop
  T.Close
  Set T = db.OpenTable("Heliport Table")
  If Not T.EOF Then
    T.MoveFirst
  End If
  Do Until T.EOF
    If (T![Base Name] = anyBase) Then
      T.Delete
    End If
    If T.EOF Then
      Exit Do
    Else
      T.MoveNext
    End If
  Loop
  T.Close
  Set T = db.OpenTable("Study Data Table")
  If Not T.EOF Then
    T.MoveFirst
  End If
  Do Until T.EOF
    If (T![Base Name] = anyBase) Then
      T.Delete
    End If
    If T.EOF Then
      Exit Do
    Else
      T.MoveNext
    End If
  Loop
  T.Close
  Set T = db.OpenTable("Zoning Jurisdictions Table")
  If Not T.EOF Then
    T.MoveFirst
  End If
  Do Until T.EOF
    If (T![Base Name] = anyBase) Then
      T.Delete
    End If
    If T.EOF Then
      Exit Do
```

```
      Else
        T.MoveNext
      End If
    Loop
    T.Close
    Set T = db.OpenTable("Assigned Aircraft Table")
    If Not T.EOF Then
      T.MoveFirst
    End If
    Do Until T.EOF
      If (T![Base Name] = anyBase) Then
        T.Delete
      End If
      If T.EOF Then
        Exit Do
      Else
        T.MoveNext
      End If
    Loop
    T.Close
    DoCmd Hourglass False
  End If
End Function
```

Function DeleteHeliport (anyBase, anyHeliport)

```
  Dim db As Database, T As Table
  Dim Msg As String, CRLF As String
  CRLF = Chr$(13) & Chr$(10)
  Msg = "Are you sure that you want to"
  Msg = Msg & CRLF & "delete the following Heliport record."
  Msg = Msg & CRLF & CRLF & "Heliport Designator:" & anyHeliport
  If MsgBox(Msg, 292, "Confirm Deletion") = 6 Then
    DoCmd Hourglass True
    Set db = CurrentDB()
    Set T = db.OpenTable("Heliport Table")
    If Not T.EOF Then
      T.MoveFirst
    End If
    Do Until T.EOF
      If (T![Heliport Designator] = anyHeliport) And (T![Base Name] = anyBase)
Then
        T.Delete
      End If
      If T.EOF Then
        Exit Do
```

```
      Else
        T.MoveNext
      End If
    Loop
    T.Close
    DoCmd Hourglass False
  End If
End Function

Function DeleteRunway (anyBase, anyRunway)
  Dim db As Database, T As Table
  Dim Msg As String, CRLF As String
  CRLF = Chr$(13) & Chr$(10)
  Msg = "Are you sure that you want to"
  Msg = Msg & CRLF & "delete the following Runway record."
  Msg = Msg & CRLF & CRLF & "Heliport Designator: " & anyHeliport
  If MsgBox(Msg, 292, "Confirm Deletion") = 6 Then
    DoCmd Hourglass True
    Set db = CurrentDB()
    Set T = db.OpenTable("Runway/Ownership Table")
    If Not T.EOF Then
      T.MoveFirst
    End If
    Do Until T.EOF
      If (T![Runway Designator] = anyRunway) And (T![Base Name] = anyBase)
Then
        T.Delete
      End If
      If T.EOF Then
        Exit Do
      Else
        T.MoveNext
      End If
    Loop
    T.Close
    DoCmd Hourglass False
  End If
End Function

Function DeleteStudy (anyBase, anyDate, anyStudy)
  Dim db As Database, T As Table
  Dim Msg As String, CRLF As String
  CRLF = Chr$(13) & Chr$(10)
  Msg = "Are you sure that you want to"
  Msg = Msg & CRLF & "delete the following Noise File Study record."
```

```
  Msg = Msg & CRLF & CRLF & "      Base Name: " & anyBase
  Msg = Msg & CRLF & "Study Date: " & anyDate
  Msg = Msg & CRLF & "Noise Filename: " & anyStudy
  If MsgBox(Msg, 292, "Confirm Deletion") = 6 Then
    DoCmd Hourglass True
    Set db = CurrentDB()
    Set T = db.OpenTable("Study Data Table")
    If Not T.EOF Then
      T.MoveFirst
    End If
    Do Until T.EOF
      If (T![Filename] = anyStudy) And (T![Study Date] = anyDate) And (T![Base
Name] = anyBase) Then
        T.Delete
      End If
      If T.EOF Then
        Exit Do
      Else
        T.MoveNext
      End If
    Loop
    T.Close
    Set T = db.OpenTable("Assigned Aircraft Table")
    If Not T.EOF Then
      T.MoveFirst
    End If
    Do Until T.EOF
      If (T![Study Date] = anyDate) And (T![Base Name] = anyBase) Then
        T.Delete
      End If
      If T.EOF Then
        Exit Do
      Else
        T.MoveNext
      End If
    Loop
    T.Close
    DoCmd Hourglass False
  End If
End Function

Function DeleteZone (anyBase, anyZone)
  Dim db As Database, T As Table
  Dim Msg As String, CRLF As String
  CRLF = Chr$(13) & Chr$(10)
```

```
  Msg = "Are you sure that you want to"
  Msg = Msg & CRLF & "delete the following Jurisdiction record."
  Msg = Msg & CRLF & CRLF & "Jurisdiction Name: " & anyZone
  If MsgBox(Msg, 292, "Confirm Deletion") = 6 Then
    DoCmd Hourglass True
    Set db = CurrentDB()
    Set T = db.OpenTable("Zoning Jurisdictions Table")
    If Not T.EOF Then
      T.MoveFirst
    End If
    Do Until T.EOF
      If (T![Zone Name] = anyZone) And (T![Base Name] = anyBase) Then
        T.Delete
      End If
      If T.EOF Then
        Exit Do
      Else
        T.MoveNext
      End If
    Loop
    T.Close
    DoCmd Hourglass False
  End If
End Function

Function DupAircraft (anyBase, anyStudy, anyAircraft)
  Dim db As Database, T As Table
  Dim Msg1 As String, CRLF As String
  Dim Msg2 As String
  CRLF = Chr$(13) & Chr$(10)
  Msg1 = "The aircraft " & anyAircraft & " has"
  Msg1 = Msg1 & CRLF & "already been assigned."
  Set db = CurrentDB()
  Set T = db.OpenTable("Assigned Aircraft Table")
  T.Index = "PrimaryKey"
  T.Seek "=", anyBase, anyStudy, anyAircraft
  If T.NoMatch Then
    DupAircraft = False
  Else
    DupAircraft = True
    MsgBox Msg, 0, "Duplicate Assigned Aircraft"
  End If
  T.Close
End Function
```

```
Function DupBase (anyBase)
  Dim db As Database, T As Table
  Set db = CurrentDB()
  Set T = db.OpenTable("Base Information")
  T.Index = "PrimaryKey"
  T.Seek "=", anyBase
  If T.NoMatch Then
    DupBase = False
  Else
    DupBase = True
  End If
  T.Close
End Function

Function DupHeliport (anyBase, anyHeliport)
  Dim db As Database, T As Table
  Dim Msg As String, CRLF As String
  CRLF = Chr$(13) & Chr$(10)
  Msg = "The heliport " & anyHeliport & " has"
  Msg = Msg & CRLF & "already been recorded."
  Set db = CurrentDB()
  Set T = db.OpenTable("Heliport Table")
  T.Index = "PrimaryKey"
  T.Seek "=", anyBase, anyHeliport
  If T.NoMatch Then
    DupHeliport = False
  Else
    DupHeliport = True
    MsgBox Msg, 0, "Duplicate Heliport"
  End If
  T.Close
End Function

Function DupRunway (anyBase, anyRunway)
  Dim db As Database, T As Table
  Dim Msg As String, CRLF As String
  CRLF = Chr$(13) & Chr$(10)
  Msg = "The runway " & anyRunway & " has"
  Msg = Msg & CRLF & "already been recorded."
  Set db = CurrentDB()
  Set T = db.OpenTable("Runway/Ownership Table")
  T.Index = "PrimaryKey"
  T.Seek "=", anyBase, anyRunway
  If T.NoMatch Then
    DupRunway = False
```

```
  Else
    DupRunway = True
    MsgBox Msg, 0, "Duplicate Heliport"
  End If
  T.Close
End Function
```

Function DupStudy (anyBase, anyDate, anyStudy)

```
  Dim db As Database, T As Table
  Set db = CurrentDB()
  Set T = db.OpenTable("Study Data Table")
  T.Index = "PrimaryKey"
  T.Seek "=", anyBase, anyDate, anyStudy
  If T.NoMatch Then
    DupStudy = False
  Else
    DupStudy = True
  End If
  T.Close
End Function
```

Function DupZone (anyBase, anyZone)

```
  Dim db As Database, T As Table
  Dim Msg As String, CRLF As String
  CRLF = Chr$(13) & Chr$(10)
  Msg = "The jurisdiction " & anyZone & " has"
  Msg = Msg & CRLF & "already been recorded."
  Set db = CurrentDB()
  Set T = db.OpenTable("Zoning Jurisdictions Table")
  T.Index = "PrimaryKey"
  T.Seek "=", anyBase, anyZone
  If T.NoMatch Then
    DupZone = False
  Else
    DupZone = True
    MsgBox Msg, 0, "Duplicate Jurisdiction"
  End If
  T.Close
End Function
```

Function HeliportExist (anyBase)

```
  Dim db As Database, T As Table
  Set db = CurrentDB()
  Set T = db.OpenTable("Heliport Table")
  T.Index = "Base Name"
```

```
  T.Seek "=", anyBase
  If T.NoMatch Then
    HeliportExist = False
  Else
    HeliportExist = True
  End If
  T.Close
End Function

Function ImportImage ()
  Dim X, Chan
  X = Shell("C:\ACCESS\SCOTT.EXE", 1)
  Chan = DDEInitiate("SCOTT", "SCOTTDDE")
  ImportImage = DDERequest(Chan, "BasePicture")
  DDETerminateAll
End Function

Function IsLoaded (anyForm)
  Dim i
  IsLoaded = False
  For i = 0 To Forms.Count - 1
    If Forms(i).FormName = anyForm Then
      IsLoaded = True
      Exit For
    End If
  Next i
End Function

Function IsStudyReq (anyBase)
  Dim db As Database, NoiseSet As Dynaset
  Set db = CurrentDB()
  Set NoiseSet = db.CreateDynaset("SELECT * FROM [Study Data Table]
ORDER BY [Study Data Table].[Base Name], [Study Data Table].[Filename]
DESC WITH OWNERACCESS OPTION")
  NoiseSet.MoveFirst
End Function

Function NoiseDiff ()
  Dim T As Table, B1 As String, D1 As String, B2 As String
  Dim db As Database, D2 As String, A1 As Long, A2 As Long
  NoiseDiff = False
  DoCmd Hourglass True
  Set db = CurrentDB()
  Set T = db.OpenTable("Study Data Table")
  T.Index = "Index1"
```

```
T.MoveLast
Do While Not (T.BOF)
  If (T![Released]) Then
    T.Edit
    T![Most Current] = True
    T.Update
    B1 = T![Base Name]
    D1 = T![Study Date]
    A1 = T![Noise Contour Acreage]
    T.MovePrevious
    If T.BOF Then
      Exit Do
    Else
      T.Edit
      T.[Most Current] = False
      T.Update
    End If
    Do While (T![Base Name] = B1) And Not (T.BOF)
      If (T![Released]) Then
        B2 = T![Base Name]
        D2 = T![Study Date]
        A2 = T![Noise Contour Acreage]
        T.Seek "=", B1, D1
        If T.NoMatch Then
          MsgBox "Can't find first record.", Critical, "Seek Error"
          Exit Do
        End If
        T.Edit
        T![Difference] = A1 - A2
        T.Update
        T.Seek "=", B2, D2
        If T.NoMatch Then
          MsgBox "Can't find second record.", Critical, "Seek Error"
          Exit Do
        End If
        B1 = B2
        D1 = D2
        A1 = A2
      End If
      T.MovePrevious
      If T.BOF Then
        Exit Do
      Else
        T.Edit
        T![Most Current] = False
```

```
            T.Update
          End If
        Loop
      Else
        T.MovePrevious
      End If
    Loop
    T.Close
    DoCmd Hourglass False
    NoiseDiff = True
End Function

Function RunwayExist (anyBase)
    Dim db As Database, T As Table
    Set db = CurrentDB()
    Set T = db.OpenTable("Runway/Ownership Table")
    T.Index = "Base Name"
    T.Seek "=", anyBase
    If T.NoMatch Then
      RunwayExist = False
    Else
      RunwayExist = True
    End If
    T.Close
End Function

Function Save (anyTable)
    Dim T As Table, db As Database
    Set db = CurrentDB()
    Set T = db.OpenTable(anyTable)
    T.Edit
    T.Update
    T.Close
    Save = True
End Function

Function StudyExist (anyBase)
    Dim db As Database, T As Table
    Set db = CurrentDB()
    Set T = db.OpenTable("Study Data Table")
    T.Index = "Base Name"
    T.Seek "=", anyBase
    If T.NoMatch Then
      StudyExist = False
    Else
```

```
    StudyExist = True
  End If
  T.Close
End Function

Sub Update_Base_Name (anyBase, anyMode)
  Dim db As Database, T As Table
  Dim NewValue As String, OriginalValue As String
  Dim CRLF As String, Msg As String
  If anyMode = "Add" Then
    If IsNull(Forms![Installation Section Add Base]![Base Name]) Then
      NewValue = ""
    Else
      NewValue = Forms![Installation Section Add Base]![Base Name]
    End If
    If IsNull(Forms![Installation Section Add Base]![Base Name].OldValue) Then
      OriginalValue = ""
    Else
      OriginalValue = Forms![Installation Section Add Base]![Base
Name].OldValue
    End If
  Else
    If IsNull(Forms![Installation Section]![Base Name]) Then
      NewValue = ""
    Else
      NewValue = Forms![Installation Section]![Base Name]
    End If
    If IsNull(Forms![Installation Section]![Base Name].OldValue) Then
      OriginalValue = ""
    Else
      OriginalValue = Forms![Installation Section]![Base Name].OldValue
    End If
  End If
  Set db = CurrentDB()
  If NewValue <> OriginalValue Then
    DoCmd Hourglass True
    Set T = db.OpenTable("Heliport Table")
    Do Until T.EOF
      If T![Base Name] = OriginalValue Then
        T.Edit
        T![Base Name] = NewValue
        T.Update
      End If
      T.MoveNext
    Loop
```

```
    T.Close
    Set T = db.OpenTable("Runway/Ownership Table")
    Do Until T.EOF
      If T![Base Name] = OriginalValue Then
        T.Edit
        T![Base Name] = NewValue
        T.Update
      End If
      T.MoveNext
    Loop
    T.Close
    Set T = db.OpenTable("Study Data Table")
    Do Until T.EOF
      If T![Base Name] = OriginalValue Then
        T.Edit
        T![Base Name] = NewValue
        T.Update
      End If
      T.MoveNext
    Loop
    T.Close
    Set T = db.OpenTable("Zoning Jurisdictions Table")
    Do Until T.EOF
      If T![Base Name] = OriginalValue Then
        T.Edit
        T![Base Name] = NewValue
        T.Update
      End If
      T.MoveNext
    Loop
    T.Close
    Set T = db.OpenTable("Assigned Aircraft Table")
    Do Until T.EOF
      If T![Base Name] = OriginalValue Then
        T.Edit
        T![Base Name] = NewValue
        T.Update
      End If
      T.MoveNext
    Loop
    T.Close
    DoCmd Hourglass False
  End If
End Sub
```

```
Sub Update_Study (anyBase, anyStudy, anyMode)
  Dim db As Database, T As Table
  Dim NewFilename As String, OriginalFilename As String
  Dim NewStudy As String, OriginalStudy As String
  Dim CRLF As String, Msg As String
  CRLF = Chr$(13) & Chr$(10)
  If anyMode = "Add" Then
    If IsNull(Forms![Noise File Study Data Section Add]![Filename]) Then
      NewFilename = ""
    Else
      NewFilename = Forms![Noise File Study Data Section Add]![Filename]
    End If
    If IsNull(Forms![Noise File Study Data Section Add]![Filename].OldValue)
Then
      OriginalFilename = ""
    Else
      OriginalFilename = Forms![Noise File Study Data Section
Add]![Filename].OldValue
    End If
  Else
    If IsNull(Forms![Noise File Study Data Section]![Filename]) Then
      NewFilename = ""
    Else
      NewFilename = Forms![Noise File Study Data Section]![Filename]
    End If
    If IsNull(Forms![Noise File Study Data Section]![Filename].OldValue) Then
      OriginalFilename = ""
    Else
      OriginalFilename = Forms![Noise File Study Data
Section]![Filename].OldValue
    End If
  End If
  If anyMode = "Add" Then
    If IsNull(Forms![Noise File Study Data Section Add]![Study Date]) Then
      NewStudy = ""
    Else
      NewStudy = Forms![Noise File Study Data Section Add]![Study Date]
    End If
    If IsNull(Forms![Noise File Study Data Section Add]![Study Date].OldValue)
Then
      OriginalStudy = ""
    Else
      OriginalStudy = Forms![Noise File Study Data Section Add]![Study
Date].OldValue
    End If
```

```
  Else
    If IsNull(Forms![Noise File Study Data Section]![Study Date]) Then
      NewStudy = ""
    Else
      NewStudy = Forms![Noise File Study Data Section]![Study Date]
    End If
    If IsNull(Forms![Noise File Study Data Section]![Study Date].OldValue) Then
      OriginalStudy = ""
    Else
      OriginalStudy = Forms![Noise File Study Data Section]![Study
Date].OldValue
    End If
  End If
  Set db = CurrentDB()
  If NewValue <> OriginalValue Then
    Set T = db.OpenTable("Assigned Aircraft Table")
    Do Until T.EOF
      If (T![Base Name] = anyBase) And (T![Study Date] = OriginalStudy) Then
        T.Edit
        T![Study Date] = NewStudy
        T.Update
      End If
      T.MoveNext
    Loop
    T.Close
    DoCmd Close A_FORM, "Updating Relational Links"
  End If
End Sub
```

Function UpdateBase (anyBase, anyMode)

```
  Dim Msg As String, CRLF As String
  Dim NewValue As String, OriginalValue As String
  CRLF = Chr$(13) & Chr$(10)
  Msg = "A Base with the same name"
  Msg = Msg & CRLF & "already exists in the database."
  If anyMode = "Add" Then
    If IsNull(Forms![Installation Section Add Base]![Base Name]) Then
      NewValue = ""
    Else
      NewValue = Forms![Installation Section Add Base]![Base Name]
    End If
    If IsNull(Forms![Installation Section Add Base]![Base Name].OldValue) Then
      OriginalValue = ""
    Else
```

```
      OriginalValue = Forms![Installation Section Add Base]![Base
Name].OldValue
    End If
  Else
    If IsNull(Forms![Installation Section]![Base Name]) Then
      NewValue = ""
    Else
      NewValue = Forms![Installation Section]![Base Name]
    End If
    If IsNull(Forms![Installation Section]![Base Name].OldValue) Then
      OriginalValue = ""
    Else
      OriginalValue = Forms![Installation Section]![Base Name].OldValue
    End If
  End If
  If NewValue <> OldValue Then
    If DupBase(anyBase) Then
      MsgBox Msg, 48, "Duplicate Base Name"
      UpdateBase = False
    Else
      Update_Base_Name anyBase, anyMode
      UpdateBase = True
    End If
  Else
    UpdateBase = True
  End If
End Function

Function UpdateStudy (anyBase, anyDate, anyStudy, anyMode)
  Dim Msg As String, CRLF As String
  CRLF = Chr$(13) & Chr$(10)
  Msg = "A Study with the same date already"
  Msg = Msg & CRLF & "exists for the specified base."
  If DupStudy(anyBase, anyDate, anyStudy) Then
    MsgBox Msg, 48, "Duplicate Noise File Study"
    UpdateStudy = False
  Else
    Update_Study anyBase, anyStudy, anyMode
    UpdateStudy = True
  End If
End Function

Function UpdatingLinks (anyMode)
  If anyMode = "Base" Then
    DoCmd OpenForm "Updating Relational Links Bases"
```

```
  Else
    DoCmd OpenForm "Updating Relational Links Study Date"
  End If
End Function

Function YesNoBox (anyMsg, anyTitle)
  Dim UserOption As Integer
  UserOption = MsgBox(anyMsg, 36, anyTitle)
  If UserOption = 6 Then
    YesNoBox = True
  Else
    YesNoBox = False
  End If
End Function

Function ZoneExist (anyBase)
  Dim db As Database, T As Table
  Set db = CurrentDB()
  Set T = db.OpenTable("Zoning Jurisdictions Table")
  T.Index = "Base Name"
  T.Seek "=", anyBase
  If T.NoMatch Then
    ZoneExist = False
  Else
    ZoneExist = True
  End If
  T.Close
End Function
```

Vance AFB, OK

MAJCOM: HQ AETC

Base AICUZ Manager: Mr. Earl Rooks
Organization/Office Symbol: Northrop Civil Engineering
Northrop Worldwide Aircraft Services, INC
320 Young Road - Suite 108
Vance AFB, OK 73705-5508
DSN: 962-6205
Commercial Phone: (405) 249-7083
FAX:

MAJCOM AICUZ Manager: Mr. Jack Segal
Organization/Office Symbol: HQ AETC/DEPR
HQ AETC/DEPR
73 Main Circle
Randolph AFB, TX 78150-4549
DSN:487-6352
Commercial Phone: (210) 652-6352
FAX:

Runways

Runway Designator	Units	Length	Width	Clear Zone Length	Clear Zone Width	Accident Potential Zone 1 Length	Accident Potential Zone 1 Width	Accident Potential Zone 2 Length	Accident Potential Zone 2 Width
17C	feet	9200	150	3000	2000	5000	3000	7000	3000
☒ Non Standard CZ/APZ	meters	2804.2	45.72	914.4	609.6	1524	914.4	2133.6	914.4
AETC clear zones may be 2000 feet wide.									
17L	feet	5000	150	3000	2000	5000	3000	7000	3000
☒ Non Standard CZ/APZ	meters	1524	45.72	914.4	609.6	1524	914.4	2133.6	914.4
AETC clear zones may be 2000 feet wide.									
17R	feet	9200	150	3000	2000	5000	3000	7000	3000
☒ Non Standard CZ/APZ	meters	2804.2	45.72	914.4	609.6	1524	914.4	2133.6	914.4
AETC clear zones may be 2000 feet wide.									
35C	feet	9200	150	3000	2000	5000	3000	7000	3000
☒ Non Standard CZ/APZ	meters	2804.2	45.72	914.4	609.6	1524	914.4	2133.6	914.4
AETC clear zones may be 2000 feet wide.									

Jurisdictions

Jurisdiction	Location
City of Seguin	Located west southwest of the base. Mr. Jake Krauskopf is the City Manager.
Guadalupe County	The airfield is located within Guadalupe County. Mr. James Sagebiel is the County Judge.

Noise File Study Data

Study Date:
11-May-91

Filename: SG 96		Location: Seguin AAF, TX	
Noisemap Version	BaseOps Version	Study Conducted By	
6.0	3.02	Spectrum Sciences & Software, INC	
Study Released	Joint Land Use Study	Noise Contour Acreage	Population Impacts
01-Sep-92		8815	762

☐ Recommendations were incorporated.

Assigned Aircraft

Seguin AAF

MAJCOM: HQ AETC

Base AICUZ Manager: Mr. Scott Sheppard, III
Organization/Office Symbol: 21 CSG/DEEP
1651 5th Street West
Randolph AFB, TX 78150-4313
DSN: 487-4788
Commercial Phone: (517) 652-4788
FAX:

MAJCOM AICUZ Manager: Mr. Jack Segal
Organization/Office Symbol: HQ AETC/DEPR
HQ AETC/DEPR
73 Main Circle
Randolph AFB, TX 78150-5000
DSN:487-6352
Commercial Phone: (210) 652-6352
FAX:

Runways

Runway Designator	Units	Length	Width	Clear Zone Length	Clear Zone Width	Accident Potential Zone 1 Length	Accident Potential Zone 1 Width	Accident Potential Zone 2 Length	Accident Potential Zone 2 Width
13	feet	8350	150	3000	2000	5000	3000	7000	3000
☒ Non Standard CZ/APZ	meters	2545.1	45.72	914.4	609.6	1524	914.4	2133.6	914.4
AETC clear zones may be 2000 feet wide.									
31	feet	8350	150	3000	2000	5000	3000	7000	3000
☒ Non Standard CZ/APZ	meters	2545.1	45.72	914.4	609.6	1524	914.4	2133.6	914.4
AETC clear zones may be 2000 feet wide.									

Ownership

Runway Designator	Clear Zone Non AF Control	Clear Zone Easement	Clear Zone Fee	Accident Potential Zone 1 Fee	Accident Potential Zone 1 Off Base	Accident Potential Zone 2 Fee	Accident Potential Zone 2 Off Base
13		69	31		100		100
31		22	78	4	96		100

Heliports

Noise Suppressor

☐ Hush House Exists
Aircraft that utilize the Hush House:

☐ Hush House planned
Hush House is planned for...

14R							
32L							
32R							

Heliports

Heliport Designator	Length	Width	Latitude	Longitude
HELI B	0	0	38-32-35	89-50-40

Noise Suppression

☐ Hush House Exists
Aircraft that utilize the Hush House:

☐ Hush House planned
Hush House is planned for...

Jurisdictions

Noise File Study Data

Scott AFB

MAJCOM: AMC

Base AICUZ Manager: LT May

MAJCOM AICUZ Manager: Ms Cynthia Strannis

Organization/Office Symbol: 375 SG/CECP
701 Hangar Road
Scott AFB, IL 62225-5035

Organization/Office Symbol: HQ AMC/CEPR
507 A Street
Scott AFB, IL 62225-5022

DSN: 576-4825
Commercial Phone: 618/256-5749
FAX:

DSN:576-5749
Commercial Phone: 618/256-5749
FAX:

Runways

Runway Designator	Units	Length	Width	Clear Zone Length	Clear Zone Width	Accident Potential Zone 1 Length	Accident Potential Zone 1 Width	Accident Potential Zone 2 Length	Accident Potential Zone 2 Width
14L	feet	8000	150						
☒ Non Standard CZ/APZ	meters	2438.4	45.72						
Civil runway RPZ: 2,500 feet long. 1,000 feet wide 200 feet from the runway threshold, flaring to 1,750 feet wide.									
14R	feet	7057	150	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	2151	45.72	914.4	914.4	1524	914.4	2133.6	914.4
32L	feet	7057	150	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	2151	45.72	914.4	914.4	1524	914.4	2133.6	914.4
32R	feet	8000	150						
☒ Non Standard CZ/APZ	meters	2438.4	45.72						
Civil Runway RPZ: 2,500 feet long; 1,000 feet wide 200 feet off the runway threshold, flaring to 1,750 feet wide.									

Ownership

Runway Designator	Clear Zone Non AF Control	Clear Zone Easement	Clear Zone Fee	Accident Potential Zone 1 Fee	Accident Potential Zone 1 Off Base	Accident Potential Zone 2 Fee	Accident Potential Zone 2 Off Base
14L							

Study Date:
01-Apr-93

Filename: RobA 92		Location: Robins AFB, GA	
Noisemap Version	BaseOps Version	Study Conducted By	
6.1	4.1	Spectrum Sciences & Software, INC	
Study Released	Joint Land Use Study	Noise Contour Acreage	Population Impacts
01-Apr-93		7648	1058

☐ *Recommendations were incorporated.*

Assigned Aircraft

Aircraft Type	Number of Aircraft
C-130E	0
C-135B	0
C-137	0
C-141A	0
E-8A	0
F-15A	0
KC-135R	0
T-37B	0

Jurisdictions

Jurisdiction	Location
Bibb County	Bibb County is north of base and impacted by the northern APZs. Mr. Vernon Ryle is the Executive Director of the Planning and Zoning office.
City of Warner Robins	Warner Robins is adjacent to the west of base. Mr. Edward W. Martin is Mayor.
Houston County	Base is located in Houston County. Mr. Steve Engle is the Director of Planning.

Noise File Study Data

Study Date:
01-Apr-93

Filename: ROBJSTAR 92		Location: Robins AFB, GA	
Noisemap Version	BaseOps Version	Study Conducted By	
6.1	4.1	Spectrum Sciences & Software INC	
Study Released	Joint Land Use Study	Noise Contour Acreage	Population Impacts
		8628	1117

☐ Recommendations were incorporated.

Assigned Aircraft

Aircraft Type	Number of Aircraft
C-130E	0
C-135B	0
C-137	0
C-141A	0
E-8A	0
F-15A	0
KC-135R	0
T-37B	0

Robins AFB, GA

MAJCOM: HQ AFMC

Base AICUZ Manager: Capt. Craig Harrell

Organization/Office Symbol: 2853 CES/DEEX
2853 CES/DEEX
460 Perry St.
Robins AFB, GA 31098-1864

DSN: 468-2377
Commercial Phone: (912) 926-2377
FAX:

MAJCOM AICUZ Manager: Mr. Frank Tokarsky, AICP

Organization/Office Symbol: HQ AFMC/CEPL
HQ AFMC/CEPL
4225 Logistics Ave. Ste 7
Wright Patterson AFB, OH 45433-5745

DSN:787-2433
Commercial Phone: (513) 257-2433
FAX:

Runways

Runway Designator	Units	Length	Width	Clear Zone Length	Clear Zone Width	Accident Potential Zone 1 Length	Accident Potential Zone 1 Width	Accident Potential Zone 2 Length	Accident Potential Zone 2 Width
15	feet	12000	300	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3657.6	91.44	914.4	914.4	1524	914.4	2133.6	914.4
33	feet	12000	300	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3657.6	91.44	914.4	914.4	1524	914.4	2133.6	914.4

Ownership

Runway Designator	Clear Zone Non AF Control	Clear Zone Easement	Clear Zone Fee	Accident Potential Zone 1 Fee	Accident Potential Zone 1 Off Base	Accident Potential Zone 2 Fee	Accident Potential Zone 2 Off Base
15		2	98	2	98		100
33			100	100		53	47

Heliports

Noise Suppressor

☒ Hush House Exists
Aircraft that utilize the Hush House:
Hush house is for F-15 runups. Robins has also installed blast deflectors for F-15 ground runs.

☐ Hush House planned
Hush House is planned for...

Aircraft Type	Number of Aircraft
T-1	0
T-37B	0
T-38A	0
T-39A	0
T-43A	0

14R			100	5	95		100
32L			100	5	95		100
32R			100	1	99		100

Heliports

Noise Suppressor

☒ Hush House Exists

Aircraft that utilize the Hush House:

Randolph does not have a hush house, however, they do have two sound suppressors.

☐ Hush House planned

Hush House is planned for...

Jurisdictions

Jurisdiction	Location
Bexar County	Surrounds Base John Longoria, County Judge
City of Converse	West of Base John Klaiber, City Manager
City of Schertz	North of base Kerry Sweatt, City Manager
Guadalupe County	East of Base James Sagebiel, County Judge
San Antonio	Southwest of Base Alexander Briseno, City Manager
Universal City	Adjacent to base to the northwest. Gene Thorpe, City Manager

Noise Life Study Data

Study Date:
01-Jul-92

Filename: RD 96		Location: Randolph AFB	
Noisemap Version	BaseOps Version	Study Conducted By	
6.0	3.02	Spectrum Sciences & Software, INC	
Study Released	Joint Land Use Study	Noise Contour Acreage	Population Impacts
01-Sep-92		10302	14417

☐ Recommendations were incorporated.

Assigned Aircraft

Randolph AFB, TX

MAJCOM: HQ AETC

Base AICUZ Manager: Mr. Scott Sheppard III
Organization/Office Symbol: 21 CES/DEEP
21 CES/DEEP
1651 5th Street West
Randolph AFB, TX 78150-4313
DSN: 487-4788
Commercial Phone: (512) 652-4788
FAX:

MAJCOM AICUZ Manager: Mr. Jack Segal
Organization/Office Symbol: HQ AETC/DEPR
HQ AETC/DEPR
73 Main Circle
Randolph AFB, TX 78150-5000
DSN: 487-6352
Commercial Phone: (512) 652-6352
FAX:

Runways

Runway Designator	Units	Length	Width	Clear Zone Length	Clear Zone Width	Accident Potential Zone 1 Length	Accident Potential Zone 1 Width	Accident Potential Zone 2 Length	Accident Potential Zone 2 Width
14L	feet	8351	200	3000	2000	5000	3000	7000	3000
☒ Non Standard CZ/APZ	meters	2545.4	60.96	914.4	609.6	1524	914.4	2133.6	914.4
AETC clear zones may be 2000 feet wide.									
14R	feet	8353	200	3000	2000	5000	3000	7000	3000
☒ Non Standard CZ/APZ	meters	2546	60.96	914.4	609.6	1524	914.4	2133.6	914.4
AETC clear zones may be 2000 feet wide.									
32L	feet	8353	200	3000	2000	5000	3000	7000	3000
☒ Non Standard CZ/APZ	meters	2546	60.96	914.4	609.6	1524	914.4	2133.6	914.4
AETC clear zones may be 2000 feet wide.									
32R	feet	8351	200	3000	2000	5000	3000	7000	3000
☒ Non Standard CZ/APZ	meters	2545.4	60.96	914.4	609.6	1524	914.4	2133.6	914.4
AETC clear zones may be 2000 feet wide.									

Ownership

Runway Designator	Clear Zone Non AF Control	Clear Zone Easement	Clear Zone Fee	Accident Potential Zone 1 Fee	Accident Potential Zone 1 Off Base	Accident Potential Zone 2 Fee	Accident Potential Zone 2 Off Base
14L			100	3	97		100

Jurisdictions

Jurisdiction	Location
City of Plattsburgh	Immediately north/northeast of the base
Town of Peru	Immediatlely south and southwest of the base
Town of Plattsburgh	Mostly immediately north of the base, one strip also runs down adjacent to the west side of the base.

Noise File Study Data

Study Date:
23-Mar-93

Filename: PLATTAC2		Location:	
Noisemap Version	BaseOps Version	Study Conducted By	
6.1	4.1	Spectrum Sciences and Software, Inc.	
Study Released	Joint Land Use Study	Noise Contour Acreage	Population Impacts
		2226	0

☐ Recommendations were incorporated.

Assigned Aircraft

Aircraft Type	Number of Aircraft
KC-10A	0
KC-135R	0

Plattsburgh AFB

MAJCOM: AMC

Base AICUZ Manager: Mr. Doug Allbright
Organization/Office Symbol: 380 SPTC/CECP
324 U.S. Oval Street
Plattsburgh AFB, NY 12903-3316
DSN: 689-7474
Commercial Phone: 518/565-7474
FAX:

MAJCOM AICUZ Manager: Ms. Cynthia Stranis
Organization/Office Symbol: AMC/CEPR
507 A Street
Scott AFB, IL 62225-5022
DSN:576-5749
Commercial Phone: 618/256-5749
FAX:

Runways

Runway Designator	Units	Length	Width	Clear Zone Length	Clear Zone Width	Accident Potential Zone 1 Length	Accident Potential Zone 1 Width	Accident Potential Zone 2 Length	Accident Potential Zone 2 Width
17	feet	11760	300	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3584.4	91.44	914.4	914.4	1524	914.4	2133.6	914.4
35	feet	11760	300	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3584.4	91.44	914.4	914.4	1524	914.4	2133.6	914.4

Ownership

Runway Designator	Clear Zone Non AF Control	Clear Zone Easement	Clear Zone Fee	Accident Potential Zone 1 Fee	Accident Potential Zone 1 Off Base	Accident Potential Zone 2 Fee	Accident Potential Zone 2 Off Base
17		6	94	15	85	2	98
35			100	7	93	1	99

Heliports

Noise Suppression

☐ Hush House Exists
Aircraft that utilize the Hush House:

☐ Hush House planned
Hush House is planned for...

Jurisdictions

Jurisdiction	Location
Orangeburg County	North AAF is located within this county. Mr. James Gordon, (803) 533-6160 is the county planner.

Noise File Study Data

Study Date:
01-Jul-93

Filename: NAA 93		Location: North AAF, SC	
Noisemap Version	BaseOps Version	Study Conducted By	
6.1	4.1	Spectrum Sciences & Software, INC	
Study Released	Joint Land Use Study	Noise Contour Acreage	Population Impacts
01-Jul-93		0	0

☐ Recommendations were incorporated.

Assigned Aircraft

Aircraft Type	Number of Aircraft
C-141A	0

North AAF, SC

MAJCOM: HQ AMC

Base AICUZ Manager: Mr. Don Youngblood

MAJCOM AICUZ Manager: Ms. Cynthia Stranis

Organization/Office Symbol: 437 SPTG/CECP
437 SPTG/CECP
100 W Stewart Ave.
CXharleston AFB, SC 29404-4827

Organization/Office Symbol: HQ AMC/CECP
HQ AMC/CECP
507 "A" Street
Scott AFB, IL 62225-5022

DSN: 673-4991
Commercial Phone: (803) 566-4991
FAX:

DSN:576-5043
Commercial Phone: (618) 256-5043
FAX:

Runways

Runway Designator	Units	Length	Width	Clear Zone Length	Clear Zone Width	Accident Potential Zone 1 Length	Accident Potential Zone 1 Width	Accident Potential Zone 2 Length	Accident Potential Zone 2 Width
24	feet	10000	150	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3048	45.72	914.4	914.4	1524	914.4	2133.6	914.4
6	feet	10000	150	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3048	45.72	914.4	914.4	1524	914.4	2133.6	914.4

Easements

Runway Designator	Clear Zone Non AF Control	Clear Zone Easement	Clear Zone Fee	Accident Potential Zone 1 Fee	Accident Potential Zone 1 Off Base	Accident Potential Zone 2 Fee	Accident Potential Zone 2 Off Base
24	15		85	1	99		100
6	35		65	1	99		100

Heliports

Noise Suppression

☐ Hush House Exists
Aircraft that utilize the Hush House:

☐ Hush House planned
Hush House is planned for...

03R			100	26	74		100
21L	3		97	24	76	35	65
21R	3		97	25	75	34	66

Heliports

Noise Suppression

☒ Hush House Exists

Aircraft that utilize the Hush House:

Nellis AFB has three hush houses for F-15 and F-16 runups. In addition, a fourth hush house is programmed for construction in FY 96.

☒ Hush House planned

Hush House is planned for...

1996

Jurisdictions

Jurisdiction	Location
Clark County	Base is located within Clark County. Mr. David Wert (702) 455-4181, is the coordinator of the Clark County Department of Comprehensive Planning.
North Las Vegas	Located west of and adjacent to the base. Mr. Donald Brown is the Administrative Planner of the North Las Vegas Planning Department, (702) 649-0207.

Noise File Study Data

Study Date:
01-Dec-92

Filename: NEL A 92		Location: Nellis AFB, NV	
Noisemap Version	BaseOps Version	Study Conducted By	
6.0	4.0	Spectrum Sciences & Software, INC	
Study Released	Joint Land Use Study	Noise Contour Acreage	Population Impacts
01-Dec-92		20518	31004

☒ Recommendations were incorporated.

Assigned Aircraft

Aircraft Type	Number of Aircraft
A-10A	0
F-15A	0
F-16A	0
HH-53	0

Nellis AFB, NV

MAJCOM: HQ ACC

Base AICUZ Manager: Capt. Danilo Ocampo
Organization/Office Symbol: 558 CES/CEEP
558 CES/CEEP
6046 McGough Parkway
Nellis AFB, NV 89191-7247
DSN: 682-4183
Commercial Phone: (702) 652-4153
FAX:

MAJCOM AICUZ Manager: Ms. Linda Merritt
Organization/Office Symbol: HQ ACC/CEVA
HQ ACC/CEVA
129 Andrews St. Ste 346
Langley AFB, VA 23665-2769
DSN:574-3056
Commercial Phone: (804) 764-3056
FAX:

Runways

Runway Designator	Units	Length	Width	Clear Zone Length	Clear Zone Width	Accident Potential Zone 1 Length	Accident Potential Zone 1 Width	Accident Potential Zone 2 Length	Accident Potential Zone 2 Width
03L	feet	10118	200	3000	3000	5000	3000	7000	3000
☒ Non Standard CZ/APZ	meters	3084	60.96	914.4	914.4	1524	914.4	2133.6	914.4
Check 03R remarks for description of non-standard APZs.									
03R	feet	10054	150	3000	3000	5000	3000	7000	3000
☒ Non Standard CZ/APZ	meters	3064.5	45.72	914.4	914.4	1524	914.4	2133.6	914.4
Beyond clear zones to the south, the APZs fork two directions. One direction is straight beyond the clear zone in a standard fashion. The other direction curves off to the west and north beyond the clear zone, underlying the actual approach/departure aircraft path. This is to avoid overflight of North Las Vegas and interference with civilian aviation activities.									
21L	feet	10054	150	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3064.5	45.72	914.4	914.4	1524	914.4	2133.6	914.4
21R	feet	10118	200	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3084	60.96	914.4	914.4	1524	914.4	2133.6	914.4

Ownership

Runway Designator	Clear Zone Non AF Control	Clear Zone Easement	Clear Zone Fee	Accident Potential Zone 1 Fee	Accident Potential Zone 1 Off Base	Accident Potential Zone 2 Fee	Accident Potential Zone 2 Off Base
03L			100	26	74		100

☒ Hush House Exists
Aircraft that utilize the Hush House:
A-10

☐ Hush House planned
Hush House is planned for...

Jurisdictions

Jurisdiction	Location
City of Tacoma	Tacoma is located to the north of the base. Mr. George Hoivik is POC at the Tacoma Planning Department.
Pierce County	Base is within Pierce County. POC is Ms. Debora Hyde of the Pierce County Department of Planning and Land Services.

Noise Contour Study Data

Study Date:
01-Oct-92

Filename: MCChord U 92		Location: McChord AFB, WA	
Noisemap Version	BaseOps Version	Study Conducted By	
6.1	4.1	Spectrum Sciences & Software, INC	
Study Released	Joint Land Use Study	Noise Contour Acreage	Population Impacts
01-Aug-93	01-Feb-92	7906	16484

☐ Recommendations were incorporated.

Assigned Aircraft

Aircraft Type	Number of Aircraft
A-10A	0
C-141A	0

McChord AFB, WA

MAJCOM: HQ AMC

Base AICUZ Manager: Mr. Creig Lingle

MAJCOM AICUZ Manager: Ms. Cynthia Stranis

Organization/Office Symbol: 62 SPTG/DEEP

62 SPTG/DEEP
62 CES/CECP
525 "A" Street
McChord AFB, WA 98438

DSN: 984-3268
Commercial Phone: (206) 984-3268
FAX:

Organization/Office Symbol: HQ AMC/CEEJ

HQ AMC/CEEJ
507 "A" Street
Scott AFB, IL 62225-5022

DSN:576-2153
Commercial Phone: (618) 256-2133
FAX:

Runways

Runway Designator	Units	Length	Width	Clear Zone Length	Clear Zone Width	Accident Potential Zone 1 Length	Accident Potential Zone 1 Width	Accident Potential Zone 2 Length	Accident Potential Zone 2 Width
16	feet	10100	150	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3078.5	45.72	914.4	914.4	1524	914.4	2133.6	914.4
34	feet	10100	150	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3078.5	45.72	914.4	914.4	1524	914.4	2133.6	914.4

Ownership

Runway Designator	Clear Zone Non AF Control	Clear Zone Easement	Clear Zone Fee	Accident Potential Zone 1 Fee	Accident Potential Zone 1 Off Base	Accident Potential Zone 2 Fee	Accident Potential Zone 2 Off Base
16	27		73		100		100
34			100		100		100

Heliports

Noise Suppressor

Noise Suppression

☒ Hush House Exists
Aircraft that utilize the Hush House:
T-37

☐ Hush House planned
Hush House is planned for...

Jurisdictions

Jurisdiction	Location
Chocolay Township	Northeast of base along the shoreline of Lake Superior.
City of Marquette	Marquette is located approximately 17 miles north/northwest of the base.
Forsyth Township	Base is partially located within Forsyth Township. This jurisdiction is south and southwest of the base..
Marquette County, MI	Base is located within this county.
Sands Township	Base is partially within Sands Township. This jurisdiction is to the north of the base.

Noise File Study Data

Study Date:
09-Sep-93

Filename: KISW 0892		Location: K.I. Sawyer AFB, MI	
Noisemap Version	BaseOps Version	Study Conducted By	
6.0	3.02	Spectrum Sciences & Software, INC	
Study Released	Joint Land Use Study	Noise Contour Acreage	Population Impacts
		31415	4198

☐ Recommendations were incorporated.

Assigned Aircraft

Aircraft Type	Number of Aircraft
B-52H	0
C-135A	0
T-37B	0

K.I. Sawyer AFB

MAJCOM: HQ ACC

Base AICUZ Manager: Ms. Sondra Cryderman
Organization/Office Symbol: 410 CES/CEE
400 C. Avenue Ste 100
K.I. Sawyer AFB, MI 49843-3200
DSN: 472-2393
Commercial Phone: (906) 372-2393
FAX:

MAJCOM AICUZ Manager: Ms. Linda Merritt
Organization/Office Symbol: HQ ACC/CEVA
HQ ACC/CEVA
129 Langley St. Ste 102
Langley AFB, VA 23665-2769
DSN:574-3056
Commercial Phone: (804) 764-3056
FAX:

Runways

Runway Designator	Units	Length	Width	Clear Zone Length	Clear Zone Width	Accident Potential Zone 1 Length	Accident Potential Zone 1 Width	Accident Potential Zone 2 Length	Accident Potential Zone 2 Width
01	feet	12300	300	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3749.0	91.44	914.4	914.4	1524	914.4	2133.6	914.4
01/19	feet	12300	300	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3749.0	91.44	914.4	914.4	1524	914.4	2133.6	914.4
19	feet	12300	300	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3749.0	91.44	914.4	914.4	1524	914.4	2133.6	914.4

Ownership

Runway Designator	Clear Zone Non AF Control	Clear Zone Easement	Clear Zone Fee	Accident Potential Zone 1 Fee	Accident Potential Zone 1 Off Base	Accident Potential Zone 2 Fee	Accident Potential Zone 2 Off Base
01			100	75	25		100
01/19							
19			100	77	23		100

Heliports

UH-1N	0

15			100	100		100	
23			100	100		100	
33			100	32	68	95	5

Heliports

Noise Suppression

☒ Hush House Exists
Aircraft that utilize the Hush House:
F-15E

☐ Hush House planned
Hush House is planned for...

Jurisdictions

Jurisdiction	Location
Municipality of Anchorage	Adjacent to and south of the Base.

Noise File Study Data

Study Date:
01-Jul-93

Filename: ELM 1092		Location: Elmendorf AFB, AK	
Noisemap Version	BaseOps Version	Study Conducted By	
6.0	4.1	Spectrum Sciences & Software, INC	
Study Released	Joint Land Use Study	Noise Contour Acreage	Population Impacts
01-Aug-92		11312	2803

☐ Recommendations were incorporated.

Assigned Aircraft

Aircraft Type	Number of Aircraft
C-12	0
C-130H&N&P	0
CH-3C	0
CH-47C	0
E-3A	0
F-15A	0

Elmendorf AFB, AK

MAJCOM: HQ PACAF

Base AICUZ Manager: Mr. Marvin Thomasson
Organization/Office Symbol: 3 SOTG/DE
3 SPTG/DE
22040 Maple St.
Elmendorf AFB, AK 99506-3240
DSN: 552-3376
Commercial Phone: (907)552-3376
FAX:

MAJCOM AICUZ Manager: Mr. Bryan Kang
Organization/Office Symbol: HQ PACAF/DEVP
HQ PACAF/DEVP
Hickam AFB, HI
DSN: 448-0474
Commercial Phone: (315) 448-0474
FAX:

Runways

Runway Designator	Units	Length	Width	Clear Zone Length	Clear Zone Width	Accident Potential Zone 1 Length	Accident Potential Zone 1 Width	Accident Potential Zone 2 Length	Accident Potential Zone 2 Width
05	feet	10000	200	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3048	60.96	914.4	914.4	1524	914.4	2133.6	914.4
15	feet	7500	150	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	2286	45.72	914.4	914.4	1524	914.4	2133.6	914.4
23	feet	10000	200	3000	3000	5000	3000	7000	3000
☒ Non Standard CZ/APZ	meters	3048	60.96	914.4	914.4	1524	914.4	2133.6	914.4

Beyond the 3,000 by 3,000 foot clear zones, the APZs extend in a northerly direction because approaching aircraft avoid overflight of Fort Richardson. APZ lengths are true for the east sides, but the west side of APZ one is slightly shorter than 5000 feet and begins about midway through the clear zone.

33	feet	7500	150	3000	3000	5000	3000	7000	3000
☒ Non Standard CZ/APZ	meters	2286	45.72	914.4	914.4	1524	914.4	2133.6	914.4

APZs to this runway curve to the east in AAPZ I and to the norh in APZ II to follow the flight tracks of the aircraft. Aircraft are not permitted to do straight in approaches or departures over the city of Anchorage.

Ownership

Runway Designator	Clear Zone Non AF Control	Clear Zone Easement	Clear Zone Fee	Accident Potential Zone 1 Fee	Accident Potential Zone 1 Off Base	Accident Potential Zone 2 Fee	Accident Potential Zone 2 Off Base
05			100	63	37		100

Jurisdictions

Jurisdiction	Location
Fairbanks North	Fairbanks is approximately 25 miles to the northwest.
Fairbanks North Star Borough	Fairbaniks is approximately 25 miles to the northwest. The borough surrounds the base.

Noise File Study Data

Study Date:
01-Apr-93

Filename: EIEL 0193		Location: Eielson AFB, AK	
Noisemap Version	BaseOps Version	Study Conducted By	
6.0	4.1	Spectrum Sciences & Software, INC	
Study Released	Joint Land Use Study	Noise Contour Acreage	Population Impacts
01-Nov-92		4431	537

☐ Recommendations were incorporated.

Assigned Aircraft

Aircraft Type	Number of Aircraft
A-10A	0
CH-3C	0
F-16A	0
KC-135R	0
UH-1N	0

Eielson AFB, AK

MAJCOM: HQ PACAF

Base AICUZ Manager: Capt. Jeffrey Crewe
Organization/Office Symbol: 343 SPTG/CECX
3112 Broadway Ave, Ste 1
Eielson AFB, AK 99702-1830
DSN: 317-377-1387
Commercial Phone: (907) 377-1387
FAX:

MAJCOM AICUZ Manager: Mr. Bryan Kang
Organization/Office Symbol: HQ PACAF/DEVP
HQ PACAF/DEVP
Hickam AFB, HI
DSN:315-448-0474
Commercial Phone: (468) 448-0474
FAX:

Runways

Runway Designator	Units	Length	Width	Clear Zone Length	Clear Zone Width	Accident Potential Zone 1 Length	Accident Potential Zone 1 Width	Accident Potential Zone 2 Length	Accident Potential Zone 2 Width
13	feet	14509	150	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	4422.3	45.72	914.4	914.4	1524	914.4	2133.6	914.4
31	feet	14509	150	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	4422.3	45.72	914.4	914.4	1524	914.4	2133.6	914.4

Ownership

Runway Designator	Clear Zone Non AF Control	Clear Zone Easement	Clear Zone Fee	Accident Potential Zone 1 Fee	Accident Potential Zone 1 Off Base	Accident Potential Zone 2 Fee	Accident Potential Zone 2 Off Base
13		4	96	95	5	5	95
31		4	96	99	1	98	2

Heliports

Noise Suppression

☒ Hush House Exists
Aircraft that utilize the Hush House:
F-16

☐ Hush House planned
Hush House is planned for...

15	10		90	39	61	8	92
21		6	94		100		100
33			100	31	69		100

Helipads

Noise Suppression

☐ Hush House Exists
Aircraft that utilize the Hush House:

☐ Hush House planned
Hush House is planned for...

Jurisdictions

Jurisdiction	Location
Berkely County	East of Base
Charleston County	Surrounds base.
City of Charleston	South of Base
City of Hanahan	East of Base
City of North Charleston	North of the base

Noise File Study Data

Study Date:
01-Oct-92

Filename: CHAA 92		Location: Charleston AFB, SC	
Noisemap Version	BaseOps Version	Study Conducted By	
6.0	4.1	Spectrum Sciences & Software, INC	
Study Released	Joint Land Use Study	Noise Contour Acreage	Population Impacts
01-Oct-92		8532	24314

☐ Recommendations were incorporated.

Assigned Aircraft

Aircraft Type	Number of Aircraft
C-17	0
F-16A	0

Charleston AFB, SC

MAJCOM: HQ AMC

Base AICUZ Manager: Mr. Don Youngblood
Organization/Office Symbol: 437 SPTG/CECP
100 W. Stewart Ave.
Charleston AFB, SC 29404-4827
DSN: 673-4975
Commercial Phone: (803) 566-4975
FAX:

MAJCOM AICUZ Manager: Ms. Cynthia Stranis
Organization/Office Symbol: HQ AMC/CECP
HQ AMC/CECP
Scott AFB, IL 62225-5022
DSN:576-5764
Commercial Phone: (618) 256-5764
FAX:

Runways

Runway Designator	Units	Length	Width	Clear Zone Length	Clear Zone Width	Accident Potential Zone 1 Length	Accident Potential Zone 1 Width	Accident Potential Zone 2 Length	Accident Potential Zone 2 Width
03	feet	7000	150	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	2133.6	45.72	914.4	914.4	1524	914.4	2133.6	914.4
15	feet	9000	200	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	2743.2	60.96	914.4	914.4	1524	914.4	2133.6	914.4
21	feet	7000	150	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	2133.6	45.72	914.4	914.4	1524	914.4	2133.6	914.4
33	feet	9000	200	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	2743.2	60.96	914.4	914.4	1524	914.4	2133.6	914.4

Ownership

Runway Designator	Clear Zone Non AF Control	Clear Zone Easement	Clear Zone Fee	Accident Potential Zone 1 Fee	Accident Potential Zone 1 Off Base	Accident Potential Zone 2 Fee	Accident Potential Zone 2 Off Base
03		17	83	32	68		100

☐ Hush House Exists
Aircraft that utilize the Hush House:

☐ Hush House planned
Hush House is planned for...

Jurisdictions

Jurisdiction	Location
Benton City	Approximately 5 miles north of base.
Bossier City	Adjacent to base; North and West
Bossier Parish	North, south and east of base.
Shreeveport	West of the base and the river.

Noise File Study Data

Study Date:
29-Jun-93

Filename: BARK1292		Location:	
Noisemap Version	BaseOps Version	Study Conducted By	
6.1	4.1	Spectrum Sciences & Software, Inc.	
Study Released	Joint Land Use Study	Noise Contour Acreage	Population Impacts
		45917	20100

☒ Recommendations were incorporated.

Assigned Aircraft

Aircraft Type	Number of Aircraft
A-10A	10
B-52H	0
C-135A	0
C-21A	0
KC-10A	0
T-37B	0

Barksdale AFB

MAJCOM: ACC

Base AICUZ Manager: Mr. David Sanders
Organization/Office Symbol: CEEEP
2CEF/CEEEP
334 Davis Avenue N. Sutie 200
Barksdale AFB, LA 71110-2078
DSN: 781-4606
Commercial Phone: 318-456-5296
FAX:

MAJCOM AICUZ Manager: Ms. Linda Merrit
Organization/Office Symbol: HQ ACC/CEVA
HQ ACC/CEVA
129 Andrews Street Suite 102
Langley AFB, VA 23665-2769
DSN:574-5363
Commercial Phone: 804-764-3363
FAX:

Runways

Runway Designator	Units	Length	Width	Clear Zone Length	Clear Zone Width	Accident Potential Zone 1 Length	Accident Potential Zone 1 Width	Accident Potential Zone 2 Length	Accident Potential Zone 2 Width
15	feet	11756	300	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3583.2	91.44	914.4	914.4	1524	914.4	2133.6	914.4
33	feet	11756	300	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	3583.2	91.44	914.4	914.4	1524	914.4	2133.6	914.4

Ownership

Runway Designator	Clear Zone Non AF Control	Clear Zone Easement	Clear Zone Fee	Accident Potential Zone 1 Fee	Accident Potential Zone 1 Off Base	Accident Potential Zone 2 Fee	Accident Potential Zone 2 Off Base
15	0	10%	90%	13%	87%	4%	96%
33		57%	43%		100%		100%

Heliports

Heliport Designator	Length	Width	Latitude	Longitude
HELI-A	0	0		

Noise Suppression

Noisefile Database Management System

Detailed Data Report

Printed: 9/30/93

Noisefile Database Management System

Ownership Information Report

Printed: 30-Sep-93

Barksdale AFB

Runway Designator 15	Clear Zone			APZ 1		APZ 2	
	Non-Air Force Controlled	Air Force Easement	Fee	Fee	Off Base	Fee	Off Base
Approach	0	10%	90%	13%	87%	4%	96%
Departure							

Runway Designator 33	Clear Zone			APZ 1		APZ 2	
	Non-Air Force Controlled	Air Force Easement	Fee	Fee	Off Base	Fee	Off Base
Approach		57%	43%		100%		100%
Departure							

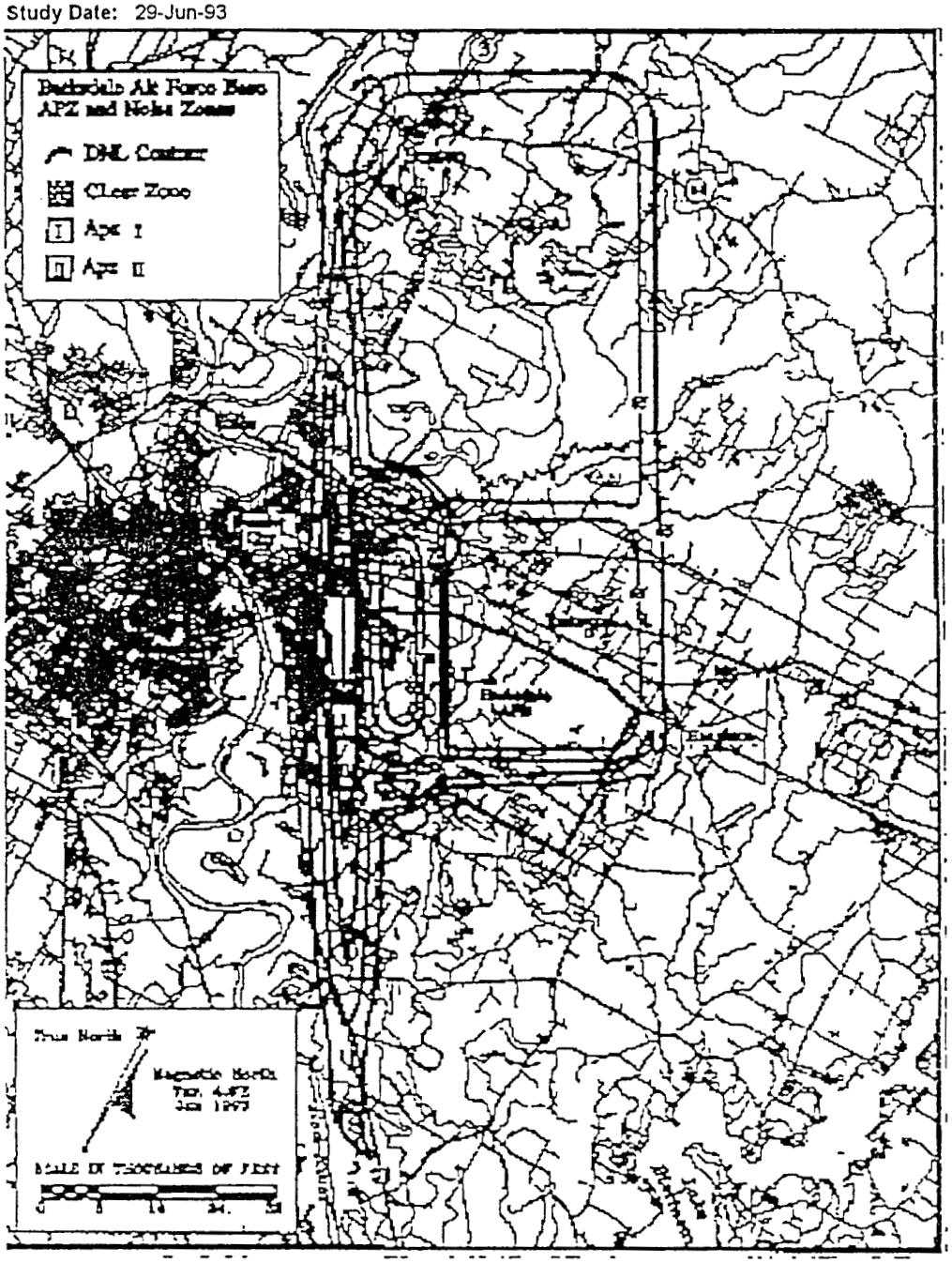
Noisefile Database Management System

Contour Map

Printed: 30-Sep-93

Barksdale AFB

Study Date: 29-Jun-93



Noisefile Database Management System

Chronological Noise Study Data Report

Printed: 30-Sep-93

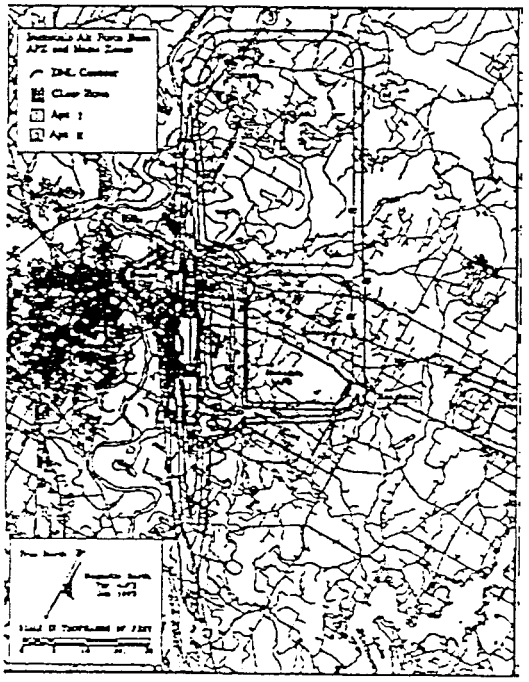
Barksdale AFB

Study Date: 29-Jun-93

Filename: BARK1292		Location:
Noisemap Version	BaseOps Version	Study Conducted By
6.1	4.1	Spectrum Sciences & Software, Inc.

Study Released	Joint Land Use Study	Noise Contour Acreage	Population Impacts
No	No	45917	20100

☒ Recommendations were incorporated.



Noisefile Database Management System

MAJCOM AICUZ Managers Contact Information Report **Printed:** 30-Sep-93

Barksdale AFB	Ms. Linda Merrit	DSN: 781-4606 Commercial Phone: 318-456-5296
Charleston AFB, SC	Ms. Cynthia Stranis	DSN: 673-4975 Commercial Phone: (803) 566-4975
Eielson AFB, AK	Mr. Bryan Kang	DSN: 317-377-1387 Commercial Phone: (907) 377-1387
Elmendorf AFB, AK	Mr. Bryan Kang	DSN: 552-3376 Commercial Phone: (907)552-3376
K.I. Sawyer AFB	Ms. Linda Merritt	DSN: 472-2393 Commercial Phone: (906) 372-2393
McChord AFB, WA	Ms. Cynthia Stranis	DSN: 984-3268 Commercial Phone: (206) 984-3268
Nellis AFB, NV	Ms. Linda Merritt	DSN: 682-4183 Commercial Phone: (702) 652-4153
North AAF, SC	Ms. Cynthia Stranis	DSN: 673-4991 Commercial Phone: (803) 566-4991
Plattsburgh AFB	Ms. Cynthia Stranis	DSN: 689-7474 Commercial Phone: 518/565-7474
Randolph AFB, TX	Mr. Jack Segal	DSN: 487-4788 Commercial Phone: (512) 652-4788
Robins AFB, GA	Mr. Frank Tokarsky, AICP	DSN: 468-2377 Commercial Phone: (912) 926-2377
Scott AFB	Ms Cynthia Strannis	DSN: 576-4825 Commercial Phone: 618/256-5749
Seguin AAF	Mr. Jack Segal	DSN: 487-4788 Commercial Phone: (517) 652-4788
Vance AFB, OK	Mr. Jack Segal	DSN: 962-6205 Commercial Phone: (405) 249-7083

Noisefile Database Management System

Base AICUZ Manager Contact Information Report **Printed:** 30-Sep-93

Barksdale AFB	Mr. David Sanders CEEEP	DSN: 781-4606 Commercial Phone: 318-456-5296 FAX:
Charleston AFB, SC	Mr. Don Youngblood 437 SPTG/CECP	DSN: 673-4975 Commercial Phone: (803) 566-4975 FAX:
Eielson AFB, AK	Capt. Jeffrey Crewe 343 SPTG/CECX	DSN: 317-377-1387 Commercial Phone: (907) 377-1387 FAX:
Elmendorf AFB, AK	Mr. Marvin Thomasson 3 SOTG/DE	DSN: 552-3376 Commercial Phone: (907)552-3376 FAX:
K.I. Sawyer AFB	Ms. Sondra Cryderman 410 CES/CEE	DSN: 472-2393 Commercial Phone: (906) 372-2393 FAX:
McChord AFB, WA	Mr. Creig Lingle 62 SPTG/DEEP	DSN: 984-3268 Commercial Phone: (206) 984-3268 FAX:
Nellis AFB, NV	Capt. Danilo Ocampo 558 CES/CEEP	DSN: 662-4163 Commercial Phone: (702) 652-4153 FAX:
North AAF, SC	Mr. Don Youngblood 437 SPTG/CECP	DSN: 673-4991 Commercial Phone: (803) 566-4991 FAX:
Plattsburgh AFB	Mr. Doug Allbright 380 SPTC/CECP	DSN: 689-7474 Commercial Phone: 518/565-7474 FAX:
Randolph AFB, TX	Mr. Scott Sheppard III 21 CES/DEEP	DSN: 487-4788 Commercial Phone: (512) 652-4788 FAX:
Robins AFB, GA	Capt. Craig Harrell 2853 CES/DEEX	DSN: 468-2377 Commercial Phone: (912) 926-2377 FAX:
Scott AFB	LT May 375 SG/CECP	DSN: 576-4825 Commercial Phone: 618/256-5749 FAX:
Seguin AAF	Mr. Scott Sheppard, III 21 CSG/DEEP	DSN: 487-4788 Commercial Phone: (517) 652-4788 FAX:
Vance AFB, OK	Mr. Earl Rooks Northrop Civil Engineering	DSN: 962-6205 Commercial Phone: (405) 249-7083 FAX:

Noisefile Database Management System

Noise File Review Report

Printed: 30-Sep-93

Study Date	Base Name	MAJCOM	Review Due By
6/29/93	Barksdale AFB	ACC	7/1/93
10/1/92	Charleston AFB, SC	HQ AMC	10/3/92
4/1/93	Eielson AFB, AK	HQ PACAF	4/3/93
7/1/93	Elmendorf AFB, AK	HQ PACAF	7/3/93
9/9/93	K.I. Sawyer AFB	HQ ACC	9/11/93
10/1/92	McChord AFB, WA	HQ AMC	10/3/92
12/1/92	Nellis AFB, NV	HQ ACC	12/3/92
7/1/93	North AAF, SC	HQ AMC	7/3/93
3/23/93	Plattsburgh AFB	AMC	3/25/93
7/1/92	Randolph AFB, TX	HQ AETC	7/3/92
4/1/93	Robins AFB, GA	HQ AFMC	4/3/93
5/11/91	Seguin AAF	HQ AETC	5/13/91
1/14/93	Vance AFB, OK	HQ AETC	1/16/93

Jurisdictions

Jurisdiction	Location
Fairbanks North	Fairbanks is approximately 25 miles to the northwest.
Fairbanks North Star Borough	Fairbaniks is approximately 25 miles to the northwest. The borough surrounds the base.

Noise File Study Data

Study Date:
01-Apr-93

Filename: EIEL 0193		Location: Eielson AFB, AK	
Noisemap Version	BaseOps Version	Study Conducted By	
6.0	4.1	Spectrum Sciences & Software, INC	
Study Released	Joint Land Use Study	Noise Contour Acreage	Population Impacts
01-Nov-92		4431	537

☐ Recommendations were incorporated.

Assigned Aircraft

Aircraft Type	Number of Aircraft
A-10A	0
CH-3C	0
F-16A	0
KC-135R	0
UH-1N	0

Eielson AFB, AK

MAJCOM: HQ PACAF

Base AICUZ Manager: Capt. Jeffrey Crewe
Organization/Office Symbol: 343 SPTG/CECX
3112 Broadway Ave, Ste 1
Eielson AFB, AK 99702-1830
DSN: 317-377-1387
Commercial Phone: (907) 377-1387
FAX:

MAJCOM AICUZ Manager: Mr. Bryan Kang
Organization/Office Symbol: HQ PACAF/DEVP
HQ PACAF/DEVP
Hickam AFB, HI
DSN:315-448-0474
Commercial Phone: (468) 448-0474
FAX:

Runways

Runway Designator	Units	Length	Width	Clear Zone Length	Clear Zone Width	Accident Potential Zone 1 Length	Accident Potential Zone 1 Width	Accident Potential Zone 2 Length	Accident Potential Zone 2 Width
13	feet	14509	150	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	4422.3	45.72	914.4	914.4	1524	914.4	2133.6	914.4
31	feet	14509	150	3000	3000	5000	3000	7000	3000
☐ Non Standard CZ/APZ	meters	4422.3	45.72	914.4	914.4	1524	914.4	2133.6	914.4

Ownership

Runway Designator	Clear Zone Non AF Control	Clear Zone Easement	Clear Zone Fee	Accident Potential Zone 1 Fee	Accident Potential Zone 1 Off Base	Accident Potential Zone 2 Fee	Accident Potential Zone 2 Off Base
13		4	96	95	5	5	95
31		4	96	99	1	98	2

Helipads

Noise Suppression

☑ Hush House Exists
Aircraft that utilize the Hush House:
F-16

☐ Hush House planned
Hush House is planned for...

Noisefile Database Management System

Detailed Data Report

Printed: 9/30/93

Noisefile Database Management System

Noise Study File Location Summary Report

Printed: 30-Sep-93

Randolph AFB, TX

Study Date	Filename	Location	BaseOps Version	Noisemap Version
7/1/92	RD 96	Randolph AFB	3.02	6.0

Robins AFB, GA

Study Date	Filename	Location	BaseOps Version	Noisemap Version
4/1/93	ROBJSTAR 92	Robins AFB, GA	4.1	6.1
4/1/93	RobA 92	Robins AFB, GA	4.1	6.1

Seguin AAF

Study Date	Filename	Location	BaseOps Version	Noisemap Version
5/11/91	SG 96	Seguin AAF, TX	3.02	6.0

Vance AFB, OK

Study Date	Filename	Location	BaseOps Version	Noisemap Version
1/14/93	VANC92 EA	Vance AFB, OK	3.02	6.0

.oisefile Database Management System

se Study File Location Summary Report — Printed: 30-Sep-93

Barksdale AFB

Study Date	Filename	Location	BaseOps Version	Noisemap Version
9/29/93	BARK1292		4.1	6.1

Charleston AFB, SC

Study Date	Filename	Location	BaseOps Version	Noisemap Version
10/1/92	CHAA 92	Charleston AFB, SC	4.1	6.0

Eielson AFB, AK

Study Date	Filename	Location	BaseOps Version	Noisemap Version
1/1/93	EIEL 0193	Eielson AFB, AK	4.1	6.0

Elmendorf AFB, AK

Study Date	Filename	Location	BaseOps Version	Noisemap Version
7/1/93	ELM 1092	Elmendorf AFB, AK	4.1	6.0

K.I. Sawyer AFB

Study Date	Filename	Location	BaseOps Version	Noisemap Version
9/9/93	KISW 0892	K.I. Sawyer AFB, MI	3.02	6.0

McChord AFB, WA

Study Date	Filename	Location	BaseOps Version	Noisemap Version
10/1/92	MCChord U 92	McChord AFB, WA	4.1	6.1

Nellis AFB, NV

Study Date	Filename	Location	BaseOps Version	Noisemap Version
12/1/92	NEL A 92	Nellis AFB, NV	4.0	6.0

North AAF, SC

Study Date	Filename	Location	BaseOps Version	Noisemap Version
7/1/93	NAA 93	North AAF, SC	4.1	6.1

Plattsburgh AFB

Study Date	Filename	Location	BaseOps Version	Noisemap Version
7/23/93	PLATTAC2		4.1	6.1