

# AIRSHOW MANAGEMENT ©

An Informational Production & Management Manual

Compiled by:

Hugh Oldham

307 W. Fredericks St.  
Anderson, South Carolina 29625

Phone: 864-226-3489  
E Mail [hugholdham@msn.com](mailto:hugholdham@msn.com)

March 4, 1991

# TABLE OF CONTENTS

INTRODUCTION	6
FEDERAL AVIATION ADMINISTRATION	7
INITIAL PLANNING	8
SITE SELECTION	9
Showline	10
Aircraft Category	10
Takeoff and Landing Areas	10
Engine Run Areas	10
Helicopter Demonstration	10
Rotocraft Takeoff and Landing Areas	10
Sailplane Operations	10
TYPE OF AIRSHOW	11
OPERATIONAL PLANNING	12
OPERATIONAL COMMITTEES	12
ACCOMMODATIONS	12
ADVERTISING AND PUBLIC RELATIONS	12
BUDGET AND FINANCE	12
COMMERCIAL DISPLAYS	12
CORPORATE SPONSORSHIP	13
FLY-IN AIRCRAFT	13
FLYING EVENTS PROGRAM	13
FOOD CONCESSIONS	13
GROUNDS AND FACILITIES	13
MILITARY PARTICIPATION	13
PRESSROOM ARRANGEMENTS	13
PROGRAMS	14
REVENUES ADMINISTRATION	14
SAFETY AND SECURITY	14
TRANSPORTATION	14
V.I.P	14
TENTS, CHALETS, "CLUBS"	14
MARKETING	15
VOLUNTEER SERVICES	15
SUMMARY	15

CORPORATE SPONSORSHIP	15
CONCEPT EXAMPLE	15
SPONSORSHIP OPPORTUNITIES	17
SPONSOR BENEFITS	17
ADDITIONAL PROMOTIONAL OPPORTUNITIES	18
PRESIDENT'S CLUB	18
CHALETS	19
ROPOSED SPONSOR PACKAGES	20
TOP GUN	20
GOLDEN ACE	20
SILVER WINGS	20
SQUADRON LEADER	21
CLASSIC AVIATOR	21
VIP SPECTATOR AREA	21
THE SPONSOR'S TENT	21
BENEFITS FOR THOSE SPONSORING ACTS	22
EXAMPLE OF AIRSHOW BUDGET	24
THE FAA WAIVER	26
REGULATIONS TO WAIVED	26
REGULATIONS WHICH WILL NOT BE WAIVED	27
FILLING-OUT THE APPLICATION	27
APPROVAL	33
SPECIAL PROVISIONS	33
ADVERTISING AND PUBLIC RELATIONS	33
TV EXPOSURE	34
MEDIA KIT	35
AIRPORT FACILITIES AND FIELD LAY OUT	36
TYPICAL AIRPORT LAY OUT MAP	39
ATC LETTER OF AGREEMENT	40
THE AIRSHOW BRIEFING	42
AGENDA	42
AIRSHOW BRIEFING CHECKLIST	51
MILITARY AERIAL PARTICIPATION	55
THUNDERSTORM CONTINGENCY PLAN	58

MEDICAL RESPONSE TO RAMSTEIN AFB DISASTER	62
C-130 AIRSHOW INCIDENT	66
WORLD AIRSHOW NEWS LETTER TO THE EDITOR	70
LETTER TO AIRSHOW SPONSORS FROM PERFORMERS	72
VIP PRECEDENCE LIST	75
ICAS AIRSHOW SPECTATOR & EVENT SURVEY	77
GENERAL REFERANCE PERSONS	80
NATIONAL AVIATION & AIRSHOW ORGANIZATIONS	81

On December 19, 1994, Linda Gaillard Oldham succumbed to the debilitating nature of Diabetes. The heart, which had so ably supported me, our family, the Boys Scouts of America and the Airshow Industry finally, gave out.

For almost 25 years, Linda and I were a team. She fully supported our involvement in aviation and airshows. Her help and council made me a better pilot, narrator and person.

She will be missed by both those who personally were touched by her caring support and by many who have benefited by her commitment to excellence in this industry.

Thank you, Linda. This manual is dedicated to your memory; may we follow your example and strive to overcome our limitations and reach for excellence in all of our endeavors.

Hugh Oldham  
1995



## INTRODUCTION

The staging of an Airshow is a complex undertaking. The purpose of this manual is to aid the Airshow sponsor and his organization in the planning, coordination, management, and execution of a successful event.

No Airshow, or any other event, is successful without a lot of hard work on the part of the sponsoring organization. The major problem we have encountered over the past 24 years in the airshow industry, is not that the sponsors fail to work hard, but that due to a lack of information, they fail to work smart. Presented here is a collection of information germane to the safe and successful conduct of an airshow.

The information in this manual has been gathered from a variety of sources including: The Federal Aviation Administration (FAA), The International Council of Air Shows (ICAS), The Aircraft Owners and Pilots Association (AOPA), The Experimental Aircraft Association (EAA), and the knowledge we have gained from airshow sponsors and performers from all over North America.

We would like to gratefully acknowledge all persons who have contributed to this manual. When possible, outside contributors are noted.

As Airshow Professionals, you are invited to use and disseminate any and all information contained herein to aid and improve your production. The continuing exchange of information and lessons learned will greatly benefit all of our efforts to stage the finest Airshows.

If you have information or articles, which could benefit others, please consider forwarding them to us for inclusion in revisions of this publication.

Thank You, have a great show!

Hugh Oldham  
June 15, 1990

---

## FEDERAL AVIATION ADMINISTRATION



All aerial activity in the United States comes under the control of the FAA. This control is exercised under Federal Aviation Regulations (FAR's). The low level aerobatics performed at an airshow are outside of the normal constraints of the FAR's, therefore, it is necessary to receive a Waiver from the FAA to operate outside of these regulations. Hundreds of waivers are issued by the FAA each year. The experienced sponsor of an airshow is well acquainted with the requirements and procedures for obtaining the necessary waivers. It is not hard to do, it only requires the submission of an FAA Form 7711-2 at least 30 days prior to the airshow. Only? Don't be intimidated; in almost all cases the people at the FAA are more than helpful, and the FAA has produced a booklet on the subject: Advisory Circular AC 91-45B, Waivers- Airshows / Contest / Races. A lot of the information contained in this manual is from that booklet.

The major concern of the FAA is safety. The FAA policy with respect to request for waivers for staging airshows states that "anytime the agency determines a proposed event will be in the public interest in terms of safety, and environmental concerns, a waiver will be issued." This is not to say that the FAA is a push-over when it comes to airshows; to quote AC 91-45B again "Regardless of the purposes for which the event is sponsored, unsafe events or sites will not be accepted."



Your dealings with the FAA will be through the local General Aviation District Office (GADO), or the local Flight Standards District Office (FSDO). The location of the office which will handle your paper work will be known by your local airport operator. When you submit your application for waiver, it will be assigned to an "Operations Inspector" who will become your contact with the FAA. It is important to remember that this Inspector will be the person who will approve or reject your application; he/she may have his own ideas of what is safe & unsafe, and he/she may place different restrictions on the waiver. This is his prerogative, as he/she is the determining factor of what is safe at your airshow. If you have done your home work and planing properly, there should be no problem.

A national coordinator has been designated at the FAA headquarters and a regional coordinator is designated in each region for airshow, aerobatic competition, and air race programs. It is the job of these coordinators to provide more uniformity in FAA policies as it is applied to these programs. The national coordinator is responsible for the overall program monitoring and the coordination of information and communications between the DoD, FAA regions, and the public concerned. In a similar way, the regional coordinator is responsible for monitoring the same programs in that region and coordinating policy and information between district offices. Program coordinators function in an advisory capacity, leaving the technical determinations as to the issuance or denial of a request for waiver to personnel making the on-site evaluations or as determined by the region.

---

## INITIAL PLANNING



An airshow is a complex even thorough planning is essential.

The airshow sponsor must determine his objectives and develop a plan which will lead to the realization of those objectives.

Some sponsors use an airshow as a fundraiser, others will use the airshow in conjunction with another event such as a community festival, or to promote the local airport, etc. Whatever the objective, the planning must tailored to those goals.

For the purpose of this manual, we have assumed that the show is a moneymaking event. If it is not, ignore the money part; the other areas are still pertinent.

### SITE SELECTION

Selection of a site for the airshow is of the utmost importance. If a suitable site is not available, no airshow!

The first priority of the site selection is safety. Public and spectator safety will be the overriding factor in approving an airshow site.

Generally, low speed aircraft require an area, which can be kept free of spectators, that is a minimum of 1000 feet wide and 3000 feet long. The high-speed aircraft, 3000 feet wide by 5000 to 10,000 feet long. Under certain circumstances, these areas can be smaller, but would require individual review.

If the local airport environment will provide these separation distances, it should be given first consideration as the show site since the airshow pilots prefer a runway within gliding distance during the show. Generally, an airport is the best site for an airshow because all the performers are available to the person controlling the event and the show is more visible to the spectators. Nevertheless, the needs of the public and spectator safety must be served; therefore, the airport and the terrain surrounding it should be inspected to ensure that it will be acceptable.

We have staged shows at many different sites. If the local airport is unacceptable other locations may prove advantageous. A Fairground, for instance, could offer certain advantages not found at an airport. Grandstands, concession areas, restrooms, are frequently in place. Generally, the grounds are well fenced, making crowd control a simple task. In addition, the fairground may be better able to cope with the vehicular traffic generated by the airshow than the typical airport.

A lake or other open area could be found to provide a desirable site. In any case, the area over which the aerobatics are to be performed must be void of occupied structures.



Naturally, the event site and activity to be conducted must be evaluated to determine what separation distances are needed. To assist in these determinations, the following is the FAA minimum distances or "standard limitations."

a. "Showline" - separation from spectator areas.

For aerobatic and certain other flight demonstrations, reference lines, called "showlines", must be established. These showlines prescribe the nearest point that flight demonstrations may be conducted with reference to the designated spectator area and must be clearly visible from the air. Rivers, roads, and runways all make excellent showline references that enhance pilot orientation during aerobatic routines. Snow fences spread flat on the ground may make acceptable references depending on the visual contrast. Lines of parked buses, cars, or boats, although less desirable, may be the only alternatives when natural "showlines" are not available. Pilots who are performing aerobatic maneuvers at airshow events must maintain the following minimum showline distances from the spectator area. These distances are predicated on aircraft cruise speeds (demonstrated at 75% power, in straight and level flight) and are divided into the following categories

Category	Cruise Speed	Distance
I	More than 245K (282MPH)	1,500 feet
II	More than 156K but less than 245K (181-282MPH)	1,000 feet
III	Less than 156K (180MPH)	500 feet

These are minimum distances. Under certain situations it may be advisable to increase these distances to enhance the visibility of the showline. For example, if there is a runway or road 600 feet from the spectator area, it would be far better to use it as the showline for slow speed aircraft rather than try to establish a "showline" by use of a row of parked buses, cars, or boats.

The establishment of a prominent showline is the first order of business and is preferable to establishing the crowd line and then determining the showline. The safety of the performance and that of the spectators is enhanced by the participants using a well-defined showline. For the safety of the performers, and the spectators, the showline may be moved in or out to avoid antennas, windsocks, tree lines, etc. The reduction of the minimum separation distances for Category I & II aircraft is possible. These reductions will be reviewed on a case by case basis by the local FAA Inspector.

Exceptions to these requirements may be approved for aerobatic maneuvers initiated immediately after takeoff, over the runway, and beyond a point abeam of the spectator area provided that the takeoff is located at least 500 feet from the spectators. Authorization is predicated on the trajectory of the maneuvers being away from the crowd, and the lift-off speed less than 156 knots. Approval may also be granted for categories I and II aircraft to conduct straight and level (nonaerobatic) flight parallel to the "showline" at a distance of not less than 500 feet from any designated spectator area.

NOTE: See "Airport Facilities" section of this manual (page 22) for drawings of the separation distances.

NOTE: If the flight is a formation flight, the NEAREST AIRCRAFT IN THE FORMATION must maintain the minimum separation distance from the spectator area and/or areas.

NOTE: (from the 1988 FAA Handbook) For purposes of an airshow, the definition of "aerobatic flight" in the flush paragraph under Section 91.71 does not apply. For airshows, an aerobatic maneuver means an intentional maneuver in which the aircraft is in sustained inverted flight is rolled from upright to inverted, or from inverted to upright position. All standard airshow aerobatic maneuvers such as slow rolls, snap rolls, loops, immalmans, Cuban eights, spins, hammerhead turns, etc., may **not** be performed over congested areas or over spectators. Steep banked, level, climbing or descending turns necessary during maneuvering between aerobatics are not considered to be airshow aerobatic maneuvers. Normal positioning turns for high performance aircraft operated by the military, regardless of angle of bank or pitch attitude, are not considered to be airshow aerobatic maneuvers.

b. Takeoff and Landing Areas.

Spectator areas must be at least 200 feet from active runways or other takeoff and landing areas, with the exception of runways used by airplanes with normal landing speeds in excess of 100 knots, which should be 500 feet or more from the spectators. In addition, the "Flying Farmer" or "Drunken Spectator" airshow acts or other routines involving excessive maneuvering immediately after takeoff or just prior to landing, must be separated from the spectators by at least 500 feet.

c. Engine Run Areas.

Areas where turbines, propellers, or rotors will be turning must be at least 100 feet from the spectator area unless they are enclosed by a barrier that will prevent entry by unauthorized personnel.

d. Helicopter Demonstration Separation Distances.

Helicopter demonstrations do not require deviation from the FAR's; but in the interest of safety, a routine consisting of no more than two helicopters should be kept at least 200 feet from the spectators. Routines, such as a "square dance" involving several helicopters, should be kept 500 feet from the spectators.

e. Rotocraft Takeoff and Landing Areas.

During certain events, there will be helicopters offering rides or serving as emergency vehicles. The landing and takeoff areas used by these aircraft should be enclosed in a manner that will prevent unauthorized persons from entering the helipad area. The pads should be located so the pilot will not have to pass over the spectators during takeoff or

landing. The same considerations should be given helipads that a police helicopter might use during an event. Regardless of the reasons behind the police helicopter operation, spectators must not be endangered.

#### f. Sailplane Operations.

Airshow aerobatic demonstrations with sailplanes are becoming more numerous around the country. Sailplanes, by their very nature, create a less hazardous condition at show sites than do powered aircraft. Sailplanes do not have engines and propellers nor do they carry flammable liquids that could cause injury to spectators. Sailplanes are lighter in weight and therefore have less kinetic energy for potential danger. For these reasons, the following criteria apply only to sailplane operations.

(1) Sailplanes fall into the Category III group and showline and performance distances of Category III will apply.

(2) Due to the need for a tow by either an airplane or a car, taxiways are often used for takeoff. This is advantageous in many cases since it allows the tow- plane, tow-line and the sailplane to be positioned without affecting the operation of powered aircraft or congesting the active runway. Unless there are obstructions that would make a taxiway takeoff unsafe, it should be permitted with a minimum distance from the primary spectator area of 200 feet. This distance may be reduced to 150 feet when the takeoff path, beginning at or near the center of the spectator area, is at an angle of at least 10 degrees away from the spectators.

(3) Landings may be approved on the taxiway used for takeoff as long as there are no obstructions or adverse wind conditions that would create a hazard to the spectators.. If the landing approach requires a low altitude turn over spectators, the landing on the taxiway will not be permitted.

## TYPE OF AIRSHOW

Once a suitable site is located, the type of routines can be selected. If the area and the sponsor's budget is big enough, he/she can apply for one of the Jet Teams, The USAF Thunderbirds, or The Navy Blue Angles. These Teams put on a spectacular show, and all but guarantee a successful event, but the dates are hard to get and the cost is high. For most organizations, a more conservative show is in order. An airshow featuring excellent civilian performers is also a spectacular event and is within the means of most organizations.

The amount of money the sponsor can budget to the airshow talent is the major consideration as to who and what will perform at his airshow. We have found that in the southeast you can draw approximately 10% of the area's population to your show without much effort. That number will increase with good publicity and advertising. The admission price should be the same as a first run movie at a leading theater in the city where the airshow is staged. You will be presenting first class entertainment, the gate price should reflect that. A price break for children is a good idea, under 12 half price, under 6 free. But

again don't sell your show short.

The cost of staging an airshow varies. As general information, the cost of a show starts at about \$15,000. This represents 3000 paid admissions at \$5 each. A number of organizations we work with are getting the pilots and planes sponsored by local businesses in return for advertising on the airshow posters, programs, and PA system.

At this point in the initial planning you should: 1.) Know if there is a suitable site for an airshow in the area and if you can get permission to use that site; 2.) Have an approximate idea of the amount of money you can gross and about how much the show will cost.

If the answers to the above look good, then it's time for the next step.

---

## OPERATIONAL PLANNING



It is now time to get some help. The operational planning will require the appointment of several committees to handle the different areas listed. You don't need a person for each heading, some people can do more than one job, but don't overload YOURSELF. A successful airshow requires a lot of leadership and coordination. Get as much DEPENDABLE help as you can find. From now on, you are the airshow director! Here is a list of Operational Committees recommended by ICAS.

### OPERATIONAL COMMITTEES

#### 1) ACCOMMODATIONS.

Housing is an important part of your airshow, particularly for the performers, military teams and your VIP's. It is best to reserve the best possible accommodations for them as their comfort while away from home base is a factor when considering a return to your location.

#### 2) ADVERTISING AND PUBLIC RELATIONS.

The ultimate success of any show is going to be governed by how many spectators attend. In large measure, your success will be dependent directly upon the effectiveness of this committee.

#### 3) BUDGET AND FINANCE.

The key to a successful and profitable airshow is the control of the moneys available to committees for funding each section of the show.

#### 4) COMMERCIAL DISPLAYS.

This committee is responsible for planning and organization of commercial exhibits (booths and aircraft) in hangers and outside on the ramp. He/she is also responsible for security and safety of all aircraft and booth displays before, during and after the show. He/she works closely with the Airshow Director, aircraft

parking, exhibits, facilities and security chairman.

#### 5) CORPORATE SPONSORSHIP.

The second key to a successful and profitable airshow is the involvement of the local business community in the planning and sponsorship of the event. In many cases airshow sponsors have had the entire show prepaid by corporate and business donations.

#### 6) FLY-IN AIRCRAFT.

There is tremendous pilot and family interest in all airshows, and their attendance is vitally important to the future of airshows and the promotion of aviation in general.

#### 7) FLYING EVENTS PROGRAM.

The flying show is the culmination of all the hard planning, "the icing on the cake", so to speak. The attendees are not generally oriented to flying and look for an exciting and entertaining time. It must be put together in the best interest of showmanship, kept at a reasonably fast pace, interspersed with the slow and fast acts, keeping lulls and dead spots to a minimum.

#### 8) FOOD CONCESSIONS.

No airshow is complete without cold drinks and hot dogs. This person needs to have experience in the food service industry or a related retail field. The concession stand can be another source of profit for your show when run right.

#### 9) GROUNDS AND FACILITIES.

Anytime you have a collection of several hundred, or several thousands of people, a massive requirement exists for good grounds and facilities management. This chairman must work closely with several other chairmen to make certain a smooth running airshow takes place. He/she has responsibilities that affect nearly every aspect of the show. Careful consideration should be given to the person selected to head this committee, to make sure they can devote the tremendous amount of work and time required for the task.

#### 10) MILITARY PARTICIPATION.

Military participation is a must for most any type of airshow. Jets are a big drawing card for public attendance. Military participation, both flying and static must be requested early. The success of your show's static display area as well as a smooth running military flight operation depends on this committee.

#### 11) PRESSROOM ARRANGEMENTS.

It is vitally important to the future of your airshow to give every possible attention to the well being of the Press! Make them feel comfortably at home. Give them all the information you can - they can do wonders for your attendance and gate receipts. Keep them informed.

## 12) PROGRAMS.

Nearly all-large airshows produce some type of program. Usually, they are SOLD as a souvenir program and include advertising from local business, articles about featured performers, and information about the location of the various facilities, aid stations, etc. Normally, the program also includes information about the sponsoring organization, the airport or site, and governmental agencies or people involved. A good program can be a separate income source for the event.

## 13) REVENUES ADMINISTRATION.

Duties of this committee usually include bookkeeping, accounting for all funds received and disbursed, preparation and presentation of the budgets, financial statements, and the handling the requirements of change, deposits, and transporting of funds during the airshow.

## 14) SAFETY AND SECURITY.

The primary objective of all airshow chairmen is to maintain absolute safety. The possibility of an incident can be minimized by proper planning.

Security is also becoming very important, as large amounts of cash are involved with gate receipts, concession sales, and parking charges. Security must be provided by the airshow sponsors for the displays, aircraft, and performers. Maintaining the integrity of the crowd control lines usually falls to this chairman.

## 15) TRANSPORTATION.

This is a big job. You are going to have a lot of people flying in to your show who will need transportation. The military teams as well as the civilian acts will require a number of cars. It will be this committee's responsibility to arrange for the cars, trucks, and buses necessary to move all of these people around.

## 16) V. I. P.

This is a very demanding assignment and vital to the image of your airshow. He/she is responsible for detailing all of the arrangements related to the handling of V.I.P's for the duration of their visit as airshow guests.

## 17) TENTS, CHALETS, "CLUBS".

The private entertainment aspect of the airshow industry is growing every year. The "big event" can provide opportunities to your local businesses to entertain their clients, employees and families, suppliers, potential customers, etc. The event also allows you to show your appreciation to you sponsors.

## 18) MARKETING.

Marketing has evolved to be the sophisticated effort to present your airshow better than the competition. This chairman will work closely with the Advertising and Public Relations

Committee and the Corporate Sponsorship Committee to "best present your product".

#### 19) VOLUNTEER SERVICES.

The Volunteer Services Director needs to establish and maintain a data base containing information regarding volunteers. The director will accredit all volunteers and provide identification for their admission to the airshow grounds. He/she will coordinate with the other chairman as to their needs for personnel and disseminate the information necessary to accredit these persons.

#### SUMMARY

A detailed checklist for each chairman can be found in the International Council of Air Shows (ICAS) "Air Show Manual" available to members of ICAS. We highly recommend that all airshow sponsors and participants join ICAS. (See ICAS listing in back of this manual).

The roll of the airshow director now becomes that of a manager. It is his job to ensure that all responsibilities are being met, and that each chairman has the necessary resources to complete his job.

---

## CORPORATE SPONSORSHIP

### CONCEPT EXAMPLE



The key to a successful and profitable airshow is the involvement of the local business community in the planning and sponsorship of the event. In many cases airshow sponsors have had the entire show prepaid by corporate and business donations.

The following is an example of a local airshow's corporate sponsorship concept:

#### THE LIONS QUEST FOR SUCCESS AIRSHOW

Anderson County Airport  
Spring, 1990

The **LIONS QUEST FOR SUCCESS AIRSHOW** is now being planned for the spring of 1990, at the Anderson County Airport, Anderson, South Carolina.

The airshow, a benefit for the Lions Quest Drug Education Program, is being coordinated by a committee representing all Lions and Lioness Clubs in Anderson County, assisted by the internationally known airshow narration team of Hugh & Linda Oldham, long time Anderson residents.

The **LIONS QUEST FOR SUCCESS AIRSHOW** intends to quickly establish itself as both a premier-flying event, and as an exceptionally successful community event.

Contributing to this success is the unique concept, which brings together three principal ingredients:

1. A primary goal of rising money for the Lions Quest program.
2. A spectacular family entertainment event.
3. Widespread volunteer community involvement.

The primary goal of the Quest for Success Airshow is to generate significant revenue for the Lions Quest Program. This program has a proven record of accomplishment in the Anderson school system...

To generate this revenue for the Quest program, the Anderson County Lions Clubs will produce one of the finest air shows in the country, featuring a full spectrum of aviation entertainment and exhibits. This will include championship aerobatic teams, beautiful hot air balloons, freefall and formation parachute jumps, a variety of ultralights, wing walking, World War II aircraft, and the thrill of a precision military jet unit. These exciting acts are to be complimented by an interesting variety of aircraft on display, from restored antiques, to the latest in aerospace technology.

Widespread volunteer involvement will be facilitated by inviting community service clubs and organizations to participate in the operation of the airshow, and related activities. These service clubs and organizations can earn funds from either these related activities or by directly assisting the Anderson County Lions Clubs.

An event of this size and quality is made possible by the extraordinary volunteer commitment of individuals and community organizations. It will take many of volunteers to provide the talent and hard work while a variety of sponsors and donors will provide the necessary funding for this very special event.

The Quest For Success Airshow will become a source of pride for Anderson County and the Piedmont Region, it will enrich our community and thrill and inspire thousands of people.

Participation offer these advantages:

Be part of a major aerospace event.

Provides you and your company the opportunity to entertain special customers, clients, or employees in a unique cost effective way.

Gives you the chance to associate with business leaders and decision makers.

Gives you the opportunity to promote our community in a very positive manner.

Helps establish a community event that will infuses critical visitor dollars into our local



economy.

Helps the Quest Program make a positive impact on the quality of life in our county.

## SPONSORSHIP OPPORTUNITIES

Sponsorships of the Quest for Success Airshow are designed to provide maximum exposure for the sponsor's name or product. Major show sponsors will be accorded all rights and privileges of a President's Club membership.

Sponsorships are tax deductible as advertising and client entertainment expenses which affiliate the sponsor with the selected performer, and provide substantial revenue for community related service projects such as the Quest program. Some of our pre-packages offerings include:

Eagles Aerobatic Team	\$10,000.
Julie Clark	\$7,000.
Smoke N' Thunder Jet Power 18 Wheeler	\$6,000.
Chutin' Stars Parachute Team	\$5,000.
Kim Pearson	\$3,000.
Wayne Parrish	\$2,500.

The Quest for Success Airshow will support your commitment through maximum promotional consideration and cooperation.

## SPONSOR BENEFITS

1. Full page display advertisement in the Airshow Program, placed on the same page as the sponsored act.
2. Photographs with sponsored group as scheduling permits.
3. Repeated mention as sponsor by the show's narrator during each day's performance.
4. Scheduled advance appearances (whenever possible) by your act at your designated location.
5. Two tickets to the exclusive sponsors dinner with all performers.
6. Four President's Club Tent passes each day.

7. Twenty box seat tickets each day.
8. Ten VIP Parking Passes each day.
9. Two tickets to our black tie social event.
10. 100 general admission tickets each day.
11. President's Recognition Plaque.
12. Fifty percent savings on an Airshow Chalet.
13. Four invitations to the Airshow Volunteer Party.
14. The right to display the official sponsor logo.
15. Assuming our projections are met, your total fee will be passed through to the Quest Program.

### ADDITIONAL PROMOTIONAL OPPORTUNITIES

Sponsors are encouraged to utilize the selected participation as an advertising and promotional tool tied into their own advertising and publicity. The Quest for Success Airshow lends itself to an excellent month-long or quarter-long retail campaign theme for local participation. The Quest Airshow will cooperate by offering discount ticket promotions or complimentary child tickets in conjunction with the sponsor's personal advertising program.

### 1990 PRESIDENT'S CLUB

#### BENEFITS:

1. Four (4) complimentary tickets each day to the President's Club Tent. (Additional Tickets May be Purchased.)
2. Twenty (20) complimentary box seat tickets each day.
3. Eight (8) complimentary V.I.P parking passes each day.
4. Invitation to special Airshow social events including two tickets to our black tie dinner dance.
5. Personalized plaque that readily identifies a President's Club Member.
6. 50 percent discount on a private chalet.
7. Recognition in the Souvenir Program.

8. Photograph(s) with Airshow performers as schedule permits.
9. Four (4) complimentary tickets to our Saturday night Volunteer Party.
10. 50 General Admission each day
11. The right to display the official sponsor logo.
12. Assuming our projections are met, your total fee will be passed through to the Quest Program.

#### COSTS:

President Club Membership                      \$3,500

### CHALETS

Gaily colored tents in the exclusive front row Chalet Area are your private domain for entertaining at the Airshow.

Chalets provide a shaded area for viewing the show and for entertaining your special guests. They may be decorated in any way you wish.

Private toilet facilities are provided for the exclusive use of Chalet guests.

Each 20' x 20' Chalet includes 50 passes to each day's show, 50 chairs, two tables, trash containers and 10 V.I.P parking passes each day. Nightly cleaning service will be provided.

Chalets are \$2,000 per day or \$2,500 for both days. Additional tickets and seats are available for \$15.00 each.

Chalets are available at half price for President's Club Members and Sponsors.

THE LIONS QUEST  
FOR SUCCESS AIRSHOW

Anderson County Airport  
Spring, 1990

## PROPOSED SPONSOR PACKAGES

### TOP GUN Sponsor      \$5000.00 or more

1 Authentic Top Gun Leather Flight Jacket  
25 VIP Passes for each performance and the Sponsor's Tent  
15 VIP Parking Passes for each day  
15 Tickets to a Reception and Buffet Honoring the Performers  
250 General Admission Tickets  
Acknowledgment by the Show's Narrator  
Full Page Program Ad  
Sponsor Board Listing  
Listing in Airshow Publicity  
25 Official Airshow T-Shirts  
The Right to Display the Official Sponsor Logo

### GOLDEN ACE Sponsor      \$3000.00 or more

15 VIP Passes for each performance and the Sponsor's Tent  
8 VIP Parking Passes each day  
8 Tickets to a Reception and Buffet Honoring the Performers  
150 General Admission Tickets  
Acknowledgment by the Show's Narrator  
Half Page Program Ad  
Sponsor Board Listing  
Listing in Airshow Publicity  
15 Official Airshow T-Shirts  
The Right to Display the Official Sponsor Logo

### SILVER WINGS Sponsor      \$1000.00 or more

5 VIP Passes for each performance and the Sponsor's Tent  
3 VIP Parking Pass each day  
4 Tickets to a Reception and Buffet Honoring the Performers  
50 General Admission Tickets  
Program Listing  
Sponsor Board Listing

Listing in Airshow Publicity  
5 Official Airshow T-Shirts  
The Right to Display the Official Sponsor Logo

### **SQUADRON LEADER Sponsor \$500.00 or more**

2 VIP PASS for each performance  
1 VIP Parking Pass each day  
2 Tickets to a Reception and Buffet Honoring the Performers  
25 General Admission Tickets  
Program Listing  
Sponsor Board Listing  
2 Official Airshow T-Shirts  
The Right to Display the Official Sponsor Logo

### **CLASSIC AVIATOR Sponsor \$100.00 or more**

5 Admission Tickets for each performance  
Program Listing  
Sponsor Board Listing  
1 Official Airshow T-Shirts

Assuming our projections are met, your entire fee will be passed through to the Quest Program in our schools.

### **The VIP Spectator Area**

The VIP Spectator Area is located on the Flight Line, giving the holders of VIP Passes an unobstructed view of the airshow. This area will provide box seating and immediate access to the Sponsor's Tent and its private restroom facilities.

### **The Sponsor's Tent**

The Sponsor's Tent is a special, private domain, on the Flight Line, for our Sponsors and other VIP's. Here you will have the opportunity to entertain your special customers, clients or employees; associate with other business leaders, and decision makers from the local, state, and national level. Expertly catered food and drink will be available. As well as a private, fancy portable restroom facilities. Appearances by many of the performers is guaranteed, allowing introductions and autographs for you and your guests.

### **The Sponsor Board**

The Sponsor Board is located at the Narrator's Stand and visible to the airshow's spectators, listing the Sponsors.

## BENEFITS FOR THOSE SPONSORING AIRSHOW ACTS

Sponsorship of an individual airshow act is designed to provide the sponsor with the maximum amount of exposure of the sponsor's name and product. Airshow provide a "clean" audience for the sponsor's product.

Demographic surveys conducted by the International Council of Airshows (ICAS) have shown that the airshow attendee is an excellent target market.

- 60% have incomes above \$25,000 per year
- 65% are male
- 80% are NOT pilots
- 50% are between 24 and 45 years old
- 61% are married
- 73% attend with three other persons
- The per person visit to the show is over 5 hours

Sponsors may use the selected act as an advertising and promotional tool tied into their own advertising and publicity. The Lions Quest Airshow lends itself to an excellent month or quarter long retail campaign theme associated with a positive community effort for local area promotions. The Quest Airshow will cooperate by offering discount tickets promotions, complimentary child tickets, and personal appearances by the selected performer in conjunction with the sponsor's personal advertising program.

Airshow Act Sponsors will receive:

Full page display advertising in the airshow program placed on the page opposite the sponsored act.

Photographs with the sponsored group as scheduling permits.

Repeated mention as sponsor and promotion tie-ins by the show's narrator during each days performance of your act.

Scheduled advance appearances (whenever possible) by your act at you designated location.

5 VIP Passes for each performance and the Sponsor's Tent

2 VIP Parking Passes for each day

10 Tickets to a Reception and Buffet Honoring the Performers

100 General Admission Tickets

Sponsor Board Listing

Listing in Airshow Publicity

10 Official Airshow T-Shirts

The Right to Display the Official Sponsor Logo

---

## PROPOSED OPERATING BUDGET EXAMPLE

page 1

### REVENUE

#### Earned Income:

Admissions (15,000 @ \$5.00)	\$75,000.00
Proceeds from Flight Jacket Raffle	3,000.00
Gross Receipts from Concessions	27,000.00
Receipts from Rides & Games	3,000.00
Deferred Income & Interest	600.00

Total Earned Income \$108,600.00

#### Unearned Income / Underwriting Support:

Corporations	\$15,000.00
Individuals	5,000.00

Total Unearned Income \$20,000.00

**TOTAL REVENUE \$130,600.00**



## PROPOSED OPERATING BUDGET

page 2

## EXPENSES

## Entertainment:

Airshow Acts	\$15,000.00
Music & Bands	1,500.00
Sub-Total Entertainment	\$16,500.00

## Promotion

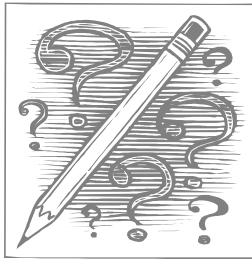
Advertising	\$5,000.00
Printing (tickets, flyers, etc.)	2,500.00
Sub-Total Promotion	\$7,500.00

Decorations	\$1,200.00
Disbursements to Vendors	20,250.00
Ride Rental Fees	2,000.00
Equipment Rentals	3,500.00
Raffle (Flight Jacket)	300.00
Hospitality/Accommodations Performers	2,500.00
Security & Traffic Control	450.00
Postage	150.00
Insurance	2,000.00
Miscellaneous	1,000.00
TOTAL EXPENSES	\$57,350.00

NET \$73,250

---

## THE FAA WAIVER



Applying for the FAA Waiver seems to be one of the more complicated jobs facing the airshow sponsor. It should not be that way, but anytime a person deals with THE GOVERNMENT a certain amount of confusion is to be expected. Remember that the FAA representative is mainly concerned with public safety and usually will go out of his or her way to help you gain the Waiver. If there is a problem, don't hesitate to ask for their help.

The purpose of this section is to aid you in filling out the "APPLICATION FOR CERTIFICATE OF WAIVER OR AUTHORIZATION" FAA Form 7711-2.

### REGULATIONS TO BE WAIVED

In general, the Federal Aviation Regulations which must be waived for an airshow are contained in FAR Part 91, General Operating and Flight Rules, and FAR Part 105, Parachute Jumping. There are several factors, which will directly affect which rules must be waived. These include show site, type aircraft and maneuvers, etc. Some events will require nothing more than waiving Section 91.71(d) to permit aerobatics at less than 1,500 feet above the surface. Sections of the FAR's that should be waived for some airshows in certain locations or that are more complex are:

a. Section 91.70 Aircraft Speed;

"Unless otherwise authorized by the Administrator, no person may operate an aircraft below 10,000 feet MSL at an indicated airspeed of more than 250 knots (288 MPH)."

b. Section 91.71 Acrobatic Flight;

"No person may operate an aircraft in acrobatic flight (c) within a control zone or Federal airway: (d) below an altitude of 1,500 feet above the surface."

c. Section 91.79(c) (except persons) Minimum Safe Altitudes;

"Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes: (c) over Other Than Congested Areas. An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In that case, the aircraft may not be operated closer than 500 feet to any PERSON, vessel, vehicle, or structure."

NOTE: (from the 1988 FAA Handbook) For purposes of an airshow, the definition of "aerobatic flight" in the flush paragraph under Section 91.71 does not apply. For airshows, an aerobatic maneuver means an intentional maneuver in which the aircraft is in sustained inverted flight is rolled from upright to inverted, or from inverted to upright position. All standard airshow aerobatic maneuvers such as slow rolls, snap rolls, loops, immelmans, Cuban eights, spins, hammerhead turns, etc., may not be performed over congested areas or over spectators. Steep banked, level, climbing or descending turns necessary during

maneuvering between aerobatics are not considered to be airshow aerobatic maneuvers. Normal positioning turns for high performance aircraft operated by the military, regardless of angle of bank or pitch attitude, are not considered to be airshow aerobatic maneuvers.

- d. Section 91.85 Operating On Or In The Vicinity Of An Airport.
- e. Section 91.87 Operations At Airports With An Operating Control Towers.
- f. Section 91.89 Operations At Airports Without Operating Control Towers.
- g. Section 91.90 Terminal Control Areas.
- h. Section 105.15 Parachute Jumps Over or Onto Congested Areas Or Open-Air Assemblies Of Persons.

## REGULATIONS WHICH WILL NOT BE WAIVED.

To meet FAA's safety obligations, the following regulations will not be waived for any aerial demonstrations. (Except under certain situations where a military team, sanctioned by the Department of Defense (DOD), has determined the site acceptability and the DOD accepts the responsibility for these technical judgments with respect to safety.)

- a. Section 91.71(a) & (b), Acrobatic Flight.

Regardless of the altitude, acrobatic flight will not be permitted over any congested area of open-air assembly of persons. For the purpose of aerial demonstrations, "Acrobatic Flight" means an intentional maneuver involving an abrupt change in an aircraft's attitude, an abnormal attitude, or abnormal acceleration, not necessary for normal flight.

- b. Section 91.79(a), (b), & (d), Minimum Safe Altitudes.

Waivers of the 500 foot rule (91.79(c)) may be issued only to allow flight closer than 500 feet to property on the surface, but never to allow operations closer than 500 feet to persons on the surface or over flight of the spectator area.

## FILLING-OUT THE APPLICATION

The 7711-2 must be submitted in triplicate, photocopies are acceptable in most cases.

Read the instructions at the top of the form.

Now, we will walk through the form block by block:

**BLOCK 1 & 2; Name of Organization / Name of Responsible Person.**

If the applicant is a representative of an organization, then that organization's name should appear in Block 1 and the name of the individual representing the organization for application purposes should appear in Block 2. If the applicant is not representing others, the term N/A should be entered in Block 1 and the applicant's name in Block 2.

**BLOCK 4; FAR Section and Number To Be Waived.**

In many instances the applicant will not know which sections of the FAR's are involved. A conference with the FAA Inspector prior to submitting the application may be time saving. An airshow will require 91.71(d) in all cases, and 91.71(c) if the show is located in a Control Zone or on a Federal Airway. The waiver of 91.79(c) will be necessary if there are any structures or vehicles within the aerobatic area.

Note: these structures and/or vehicles must be unoccupied during the airshow. If any aircraft capable of over 250 knots of indicated airspeed are in the show then 91.70 must be waived. In addition, in some cases, the skydivers will need an authorization under FAR 105.15 to jump into the show site.

That conference is a good idea! If there are problems in obtaining the waiver, or waiving certain FAR's, contact Hugh Oldham for additional help and guidance.

**BLOCK 5; Detailed Description of Proposed Operation.**

It will suffice to use the words, "airshow", or "aerial demonstration", in item 5 for these type of events.

**BLOCK 6; Areas of Operation.**

Most airshows are held at, or immediately adjacent to an airport. An increasing number are held offshore, over water, in the vicinity of a fairground or at other nonairport-related locations. The applicant should list the exact area over which the airshow operations are to take place.

The description must describe the flight maneuvering area as a cubic or cylindrical cell of airspace; e.g., a rectangle bounded by the N/S runway (or other definable geographical reference) and a point 5,000 feet east from the control tower, from the surface to 7,000 feet Above Ground Level (AGL). It can also be described as a cylindrical cell, with a three mile radius from the center of the such-n-such Airport (or definable location) from the surface to 5,250 feet Mean Sea Level (MSL).

At off-airport sites, the boundaries should be described using rivers, roads, or other easily identifiable (from the air) landmarks. In most cases, it will be preferable that the applicant furnishes an up-to-date chart, map, drawing, photograph, etc., on which the area is shown. In this event, item 6 should indicate that area of operation is shown on an attached photo,

map, etc. The applicant should understand that all flight operations conducted under the waiver will be limited to the area defined in the application as approved by the FAA.

This area of waived airspace does not have to include the area used for non-aerobatic turn-around or alignment maneuvers if the airspace is limited by presents of persons or obstructions. The minimum amount of airspace is a rectangle, 1,000 feet wide by 3,000 feet long, from the surface to 700 feet AGL.

#### BLOCK 7; Time Period.

Self-explanatory, except some have had sufficient experience to know that they can avoid a lot of confusion by asking for an alternate date. For example, if the sponsor plans a show on a Saturday and asks for an alternate date for the following week to cover the possibility of being rained out, both dates should be listed.

Remember to allow sufficient time for the show and possible delays caused by weather etc. A good idea is to close the airport 30 minutes before the start of the show and have enough waiver time to continue an hour and a half past the time the show is expected to be over.

#### BLOCK 8; Aircraft Make and Model.

(1) In most cases, the applicant will know in advance what aircraft are to be used. If so, they should be listed. However, the sponsor of an open contest, which includes competitive aerobatic events, may not know in advance what aircraft will be entered. If necessary, this item may be accepted with a statement, "list of aircraft to be furnished on (date)."

(2) Pilots. The applicant may not always know the names of all pilots that may show up for a competitive event. As described above, just as supplemental lists of aircraft may be accepted, so may supplemental lists of pilots.

It is normal procedure for the sponsor to have a complete list of planes and pilots for the show. Occasionally a pilot has to be substituted or maybe someone will fly-in who would like to be in the show. For this reason, a statement should be included at the bottom of this section, which states,

" Any changes of the pilots or aircraft will be cleared with the FAA airshow monitor prior to the start of the show."

Also, the sponsor should remind all pilots, planing to fly in the show, to bring all paper work, log books, etc., to the airshow for possible inspection by the FAA representative.

#### BLOCK 9; Sponsorship.

Not every event is sponsored by a specific organization. An individual may sponsor an event. That concern is not who sponsors an event, but what measures should be taken to

ensure that it will be a safe event. The applicant assumes responsibility for compliance with the waiver.

**BLOCK 10; Permanent Mailing Address of Sponsor.**

Self-explanatory.

**BLOCK 11; Policing.**

Depending upon the type of spectator-restraining fences or barriers available, crowd control personnel may be necessary. If the local law enforcement agency will furnish personnel for crowd control, they are more desirable and effective than untrained individuals. The FAA does not require uniformed POLICE to control spectators. Boy Scouts, Civil Air Patrol Cadets, and others may be used. However, if crowd control is lost to the extent safety is jeopardized, the control centers should be advised, and the airshow should be halted until control is regained. On a few occasions in the past, the sponsor was unable to regain control of the crowds, and the waiver had to be canceled, thereby stopping the activities completely. **THE FAA DOES NOT CONTROL CROWDS. THIS IS ONE OF THE RESPONSIBILITIES OF THE HOLDER OF THE CERTIFICATE OF WAIVER.**

It has been our experience that the spectators will cooperate with the airshow sponsor and the airshow narrator in the self-policing the crowd control lines. The only area we have had problems with is outside of the normal spectator areas. People tend to come into the aerobatic area from the back side of the airport, etc. The sponsor should be aware of this problem and make appropriate plans with local land owners and police personnel to ensure that these areas do not become a problem on show day.

The FAA has recognized the problems of controlling the incursion to persons into the operational area of the airshow and has addressed the problem in the 1988 handbook.

"The applicant should be advised that it is his/her responsibility to ensure that all REASONABLE efforts are made to confine spectators to the primary and secondary spectator areas. If reasonable efforts have been taken and unauthorized persons or vehicles enter the flight area, efforts should be made to remove such persons or vehicles. Good judgment on the part of sponsors, performers and FAA Inspectors will dictate when it is necessary to halt a show to protect persons on the ground. At many airshow locations, there are roads or highways adjacent to the boundary of the show site. The road or highway does not become a spectator area if patrolled and posted so that parking is not permitted. Transition over a road or highway as described in the egress and ingress concerning congested areas is one in the same. There is no requirement for termination of aerobatic maneuvers at a given distance from a road or highway, but, as with congested areas, airshow aerobatic maneuvers may not be performed over roads or highways unless the road or highway has been closed and no persons are allowed to park along such road or highway. If there are farmhouses or other buildings below the aerobatic maneuvering area, the sponsor must make REASONABLE efforts to evacuate such buildings during the airshow. If a person or persons reenter such buildings, efforts should be made to again evacuate them."

**BLOCK 12; Emergency Facilities.**

Providing emergency facilities can pose problems for the sponsor. As discussed previously, the application form serves as an all-purpose form and, therefore, contains items that may or may not be appropriate to emergency facilities. It would be wise for every sponsor to provide for emergency medical service even though past history has shown that this service has not been necessary because of injuries from aerial demonstrations. Normally, the following rules of thumb are adequate:

- (1) Physician. Except for events that are an excessive distance (in surface vehicle time) from a hospital or medical clinic, an emergency rescue squad or first aid station can be substituted for a physician.
- (2) Ambulance. If an emergency rescue squad is provided, an ambulance will be provided. If there is a physician in attendance, any vehicle acceptable to the doctor for emergency transportation is sufficient. In fact, many communities rely on the sheriff's station wagon as their only means of ambulance service, and it would be improper to prohibit use of a similar vehicle to serve as an ambulance for the event.
- (3) Fire Truck. For the most part, the only reason for having a fire truck at an airshow is to benefit the performers, not the spectators. If the performers are willing to accept a pick up truck with fire extinguishers, the FAA should require no more.
- (4) Crash Wagon. Most of the locations where airshows are conducted will not have crash wagons available. The FAA will not require a sponsor to obtain one from a facility that might be hundreds of miles away. Again, crash wagons are to serve the performers, not the public.
- (5) Other. Seldom does a sponsor fill in this block. The following is an example of how the "Other" block might prove useful. In one event the sponsor had a helicopter and pilot continually ready for emergency transportation of spectators who might be injured on the airport, or become ill during the event. Additionally, a military-trained fire fighter was standing by the helicopter with extinguishers in case one of the aircraft had an accident anywhere in the aerobatic area. In this particular case, by describing this "Other" emergency facility, the applicant could have been relieved of having to show anything in the other blocks.

NOTE: Aerobatic school activities or aerobatic meets may occur which are not airshows, contests, or races, even though a waiver must be issued. At these school activities or meets, which are not advertised as airshows, it may not be necessary to provide public airshow policing and emergency facilities.

**BLOCK 13; Air Traffic Control.**

Air traffic control for aerial events can be handled in many ways. Naturally, if the airport is served by a control tower, this problem will be negligible. Radio communications or prearranged ground-to-air signals can handle traffic control. Even if every aircraft in the

event is equipped with a two-way radio, it would be advisable to have a ground-to-air recall signal provision. If the airport is served by a scheduled air carrier, arrangements must be made for the arrival and departure of such aircraft. Generally, it is adequate to schedule a break in the activities to allow for scheduled arrivals and departures.

We can provide ground-to-air radio equipment, visual ground-to-air signals (pyrotechnic pistol & smoke grenades) and a recall truck for use during the airshow, if requested, at no charge to the sponsor.

#### BLOCK 14; Schedule of Events.

A schedule of events is important in several respects. Without a schedule of events, it is difficult to evaluate the application. The schedule does not have to be in sufficient detail to serve the needs of an announcer, but does have to be adequate for the assigned person in charge to keep track of the events. In many cases, identification of aircraft and performers in sequence of their appearance will be satisfactory. However, the schedule may require a brief description of aerobatic demonstrations when dealing with unknown performers. Any amendment to the schedule of events that adds an event should normally be submitted to the FAA 48 hours in advance. Cancellation of events will not require advance notice.

NOTE: Any time attachments, such as maps, photograph, or supplements which are provided, they should be identified in this section of the form.

In most cases, we have not had a problem making last minute changes to either the Schedule of Events or adding additional pilots and planes to the show. This will be up to the discretion of the FAA show monitor. We suggest the following statement in the Schedule of Events block,

"The order of the pilots may vary but the show will have the same time frame. Any changes will be cleared with the FAA airshow monitor."

#### BLOCK 15; Certification.

Self-explanatory.

#### REMARKS section.

Use this section to note any special request. We normally request a copy of the approved waiver and special provisions be sent to the Team Coordinator for that show.

This completes the application!

#### APPROVAL

Upon approval or disapproval, a copy the Form 7711-2 will be returned to the named



responsible person. If disapproved, an explanation must appear in the "Remarks" section of the form.

If approved, the 7711-2 will be returned with a "Certificate of Waiver or Authorization", FAA Form 7711-1, which will list the waived Regulations by section and number. It will also include any number of SPECIAL PROVISIONS.

## SPECIAL PROVISIONS

All airshow waivers must contain special provisions to ensure adequate public and air traffic (non-show traffic) safety. Naturally, there will be a wide variation in the type of special provisions called for. Some events require extensive and highly detailed special provisions, whereas others can be fairly simple. In addition to variations between events, local conditions have much to do with what special provisions may be necessary.

Special Provisions will pertain to protective measures and control requirements which are not specifically covered by the FAR's. In addition, it may be necessary to increase one regulatory minimum in order to safely authorize deviation of another. In order to permit aerobatic flight in a control zone or near a busy airport, it might be necessary to increase the minimum VFR visibility requirements.

Failure to comply with any special provision is a violation of the terms of the Certificate of Waiver or Authorization and is justification for cancellation of the Certificate or other appropriate actions.

The Certificate of Waiver is powerful legal document. It entitles the holder of the Certificate and the listed pilots to literally break the Law. The holder of the Certificate is totally responsible to the FAA to insure the strict observance of the terms and provisions of the Waiver.

---

## ADVERTISING AND PUBLIC RELATIONS



The ultimate success of any show is going to be governed by how many spectators attend. In large measure, your success will be dependent directly upon the effectiveness of this committee.

**You are going to have a great show, don't keep it a Secrete!**

In some areas, you can get enough "free" advertising to do the job, but don't count on it. Advertising is like everything else, you get what you pay for.

You must build up a desire on the part of the public to come to your show. You accomplish this with effective advertising and good public relations. Again, it takes work and it can't be done the week before the show. The actual advertising should start about 90 days before show day, but the work and preparation should start at least 120 days before show day.



The media in your community are looking for good local news stories about local events. After all that is the product they sell to the public and that in turn enables them to sell advertising to the business community. Use this two pronged approach to your advertising and public relation efforts. Not only is your air show an event which needs to be advertised, it is also an event that is news to your community. Advertising is the message that says "come to the air show", public relations is the news about the airport, aviation, the people, and all the other things that make up the air show.

This committee must work closely with the media to both present the message "come to the air show" and the news message about what the show is all about. The first part is the easy one, you just make-up and place the adds. The second part takes more enthusiasm, effort, time, and frankly, pushing. The committee must provide the media with complete, ready to print news stories and ideas with which they can use to present the whole story of your show. Any thing that increases the communities aviation awareness is of benefit to your show. Articles and TV stories about the airport and its related activities will help. Enlist the airport officials and the airport users in this effort. Promote aviation and you are promoting your air show.

This also goes for your organization. Stories about what it does and the people that make it go are great news stories. All of these articles and stories will cost only the effort to get the information to the news media but they will pay large dividends at the gate on show day.

### TV EXPOSURE

In today's market place television far out paces and other media in market penetration. Therefore it is important to get your message on TV. Over a million people appear as gusts on talk shows and news programs each year. It isn't necessary to be a celebrity, and such air time is free. It is necessary to do your home work and be prepared.

Here's what TV exposure can do:

Establish personal contact. You are speaking directly to viewers about your show, what it will be like, and why they should support your efforts.

Create awareness. You may be known in your organization and circle of friends, but TV allows you to make thousands of "house calls" to convey your message.

Enhance credibility. Unlike paid advertising, a TV appearance is like recognition of your show's value by an impartial source.

How do you go from relative anonymity to being a public figure? The key to catching a producer's attention. An air show is a newsworthy event and with a little work on your part, you can be prepared to present your show to the producer of local programs in a way that will make him or her want to have you as a guest.

Again, be prepared. You do the background work and make it easy for the media person. The less work they have to do, the more likely they will be to use your stories and ideas.

## MEDIA KIT

Prepare a Media Kit. This folder contains information about you and your show. Its purpose is to entice and inform. The kit should include:

A cover letter to catch the reader's attention and relate your information to current news.

Biography detailing your background and expertise.

Fact sheet as a ready reference for the producer, which lists the subject of the talk (the air show, who, where, when, why), and the speaker's name, address, and phone number.

Background information covering basic statistics about the air show and your organization, and current updates on the progress of the show.

Suggested questions that indicate key points to be covered and create a sense of curiosity.

Clippings, reprints of articles, press releases from performers, anything that will help get your story across.

Photographs and Color slides. Better, yet videotape of the performers.

Television doesn't just tell you, it shows you. Viewers who have grown up in the TV generation are more used to receiving their information from visuals than from the printed word. Your presentation can include:

Videotapes of last year's air show or tapes supplied by the performers.

Available video material, such as relevant news footage of your organization projects, what your

organization supports (such as a special camp for children), the airport, or any thing that will help tell your story.

Booklets and brochures. The air show program. Anything you can use to show and tell.

Accessories like T-shirts, desk items, or hats with your organizations logo or the air shows advertising message. Wear these and/or give them to the host.

TV's need for news and features to fill up air time may make it easier than you think to reach a producer. Watch the programming, learn the names of reporters and formats of the shows appropriate for your message.

Be persistent in trying to reach your programmer. After you have sent your media kit, don't sit back and wait. You have to follow up with phone calls. When you finally connect, have all the information at your fingertips.

If you can convince the person that you have real news to convey, you may find yourself scheduled for an air date.

---

## THE TYPICAL AIRPORT FACILITIES LAY OUT

The following "Typical Airport Lay Out Map" is an example of how an airport site can be utilized for an small to medium size airshow. A quick over view will give the Grounds and Facilities Chairman and the Safety and Security Chairman an idea of how to adapted your local site.

The first and most important consideration is the distance from the spectator area to the operational areas of the site. The spectator are must be at least 200 feet from any active runway and 500 feet from the aerobatic flight area. With these distances in mind, we can lay out the field.

The best place for the air show pilots to fly is directly over a runway. This offers two important safety benefits to the pilots; the runway is easy to see, and if something goes wrong he can land straight ahead with no need to maneuver his aircraft. So, if we can satisfied the 500 foot requirement, the show center line should be the runway center line.

If, for some reason, you can not get the spectators back 500 feet from the runway center line, then it will be necessary to establish another reference for the show line. This could be a tree line or even paper rolled across the ground. The only requirement is that it be highly visible from the air so that the pilots can keep their aircraft over this reference and 500 feet from the spectators.

Once the show line and crowd line are established, the rest of the field can be mapped out.

The spectator area does not need to be overly long. At Donaldson Center, Greenville, SC, the crowd line is about 1500 feet long, we have had over 80,000 spectators for an airshow at this site. If the spectator area is to large, it is just more area to clean up. Unless you expect more than 30,000 spectators, keep the crowd line under 1,000 feet long.

If possible, center the crowd line on the aerobatic area's center point. This way the planes will be performing right in front of the spectators. Airshow center can be off set along the length of the runway if necessary. The most prop planes need a maximum of about 3,000 feet for their maneuvers, so the center point could be 1,500 from one end of a runway. Do everything possible to ensure that the crowd line is straight and parallel to the flight line. This prevents problems from the crowd pushing the line to get a better view.

The Control Point and Narrator's area can be any where along the crowd line. It works best if it is centered on the crowd line at airshow center but it possible to place it at one end of the crowd line. The important consideration is CONTROL. You want the Control Point to be both highly visible to the pilots, and for the personnel at the Control Point to have good visibility of the airspace and spectator areas.

Do not park transit aircraft between the spectator area and the runway. This restricts the view of the spectators. Park the transits off to the side of the spectator area.

The show aircraft can be parked in front of the spectator area. This gives the spectator a close

up look at the planes and pilots and since the planes are small, it does not block their view.

If parking space is limited, cars can be parked within 500 feet of the showline. This should be avoided if at all possible as the area must be free of persons during the aerobatic portions of the show and it is almost impossible to keep the spectators out of the parking area during the show. This is not normally a problem with the transit aircraft as the pilots of these planes understand FAA Regulations, but again, if possible, don't park them within 500 feet of the show flight line.

The crowd line itself can be made several ways. Tomato stakes with baling twine and flagging tape will work just fine as long as the crowd line is straight and parallel to the flight line. Boy Scouts and/or CAP Cadets (in uniform) can police the line. The narrator is also a big factor in keeping the crowd under control.

Place Trash Cans or Boxes in a line parallel to the crowd line about 30 feet behind the line. Do not place them on the crowd line as they will not be effective when the line fills with spectators. You want them behind the spectators so that the people going to and from the concession stands and port-a-johns will pass by and drop in their trash. The narrator should make announcements about helping keep the area clean. "Nice people don't litter and everyone here is nice!"

Concession Stands should be placed approximately 75 to 150 feet behind the crowd line. This should be out of the active spectator area, leaving the area around the stands open for easy movement of customers to and from the stands. Remember to place trash cans and/or boxes near the stands.

Port-a-Johns should be placed as close to the spectators as possible under health regulations. Under no circumstance should they be further than 200 feet from the crowd line. Place them in groups, in multiples of 2. If possible, do not mark them "male and female". The sexes will segregate themselves in lines according to how many and how fast. At many shows, we see females lined up 10 and 15 deep while the males have no waiting lines. With no labels on the units, the unused units will change over as needed.

The Emergency Vehicles need to be placed where they can quickly move to where needed. The Fire Units should be prepared to respond to both aircraft problems and, more likely, grass fires due to spectator smoking. This requires that they be outside the spectator area while still close enough to respond to situations in the spectator area.

It is a good idea for an Emergency Medical Service unit to be set-up as a first-aid station for the spectators. Only first aid should be provided at the show site. If more than simple first aid is required, transport the patient off the airshow site to a location where medical help is available and the show's liability is limited.

All EMS units should be prepared to treat a number of persons for heat related problems in addition to the normal EMS set-up. For this reason, it is necessary that EMS be supplied with enough ice to treat heat related problems. Under no circumstances should EMS run out of ice, even if the concession stands have to serve hot drinks. Reserve the last 100 to 200 lbs. of ice on the site for EMS use only!

The "Water Buffalo" are drinking water wagons. If the show is taking place during the hot

months (temperature above 85 degrees), try to secure these from the local National Guard unit. If unavailable, locate some other source of water for the spectators. Soft drinks from the concession stands **WILL NOT TAKE THE PLACE OF WATER** in fighting heat related problems. Most of the spectators live and work in an air conditioned environment. They are not acclimatized to the outside weather conditions. They will quickly become dehydrated and will be required to increase their water intake. With the presents of water buffaloes, the water will be available. The spectators can save cups from the concession stands, therefore, it is not necessary to provide drinking cups at the buffalo. Ensure that the show's announcer informs the spectators about the need for increased liquid intake.

The airport terminal building should be closed to the public on the day of the airshow. If left open for public use, the number of people will not only make a mess of the place, they will overload both the water and sewer service to the building causing major problems.





#####	Area			
#####		Runways X'ed		X
#####		During Show		/ \

---

## EXAMPLE OF ATC LETTER OF AGREEMENT

### MAY FLY AIRSHOW FLORENCE CITY-COUNTY AIRPORT MAY 5 & 6, 1990

#### PROPOSED AIRFIELD HAND-OFF PROCEDURE

The following is a proposed procedure to hand-off control of the Florence City-County Airport between the FAA Florence Air Traffic Control Tower (ATCT) and the May Fly Air Operations Manager.

The proposed Air Operations Manager (AOM) for the May Fly Airshow is Mr. Bill Johnson, Facility Chief, Simmons Army Air Field, Fort Bragg, NC. Mr. Johnson has 25 + years experience in military and civilian air traffic control and is an experienced airshow performer.

Due to the limitations of the FAA waiver issued to the May Fly event, it will be necessary to allow for all scheduled FAR Part 121 Operations to continue, uninterrupted during the waiver period.

It is proposed that the control of the airport, during the waived operations be conducted by the May Fly AOM, from a central control point, co-located with the narrators position, adjacent to the waived operational runway.

The use of a central control point will facilitate a greater degree of operational control, by the AOM, of all airshow related operations. He will have both VHF radio and direct voice communication capability with the performing aircraft from this point.

It is further proposed that AOM the use a discrete VHF frequency for this operational control, thereby preventing frequency blockage by normal ATC communications necessitated by local and/or transit aircraft. The suggested frequencies are: 123.1 MHz; 138.2MHz; 138.625MHz or other frequencies as suggested. It is hereby acknowledged that current FCC policy does not provide for the use of a discrete frequency for airshow control and/or airshow air to ground communications links. It is also noted that the need to maintain adequate and secure communications is necessary for safe airshow operations and that the ICAS petition for airshow control frequencies (RM-7164) has not been reviewed by the Commission and no decision has been reached on this matter. The proposal for the use of discrete VHF airshow control frequencies is hereby made in the interest of pilot and public safety.

Constance communication between the AOM and FLO ATCT will be maintained via VHF communications on the ATCT Local Controller Frequency. In this manner, the AOM and the

ATCT will be able to monitor inbound transit traffic that may cause a conflict with the waived operations.

In the event of an air space penetration by a transit aircraft, FLO ATCT will inform the AOM of the penetration via the VHF communications link. The AOM will then make the necessary decision as to the necessity of halting waived operations due to possible transit traffic conflict. The AOM will use the discrete frequency to communicate with the performing aircraft during a time that such communication would not create undue distraction for the performing pilot. Due to possible loss of communication capability with the performing aircraft, no radio (NORDO) communications procedures will be in effect and used if necessary.

When a scheduled FAA Part 121 Operation (airliner) is inbound to the Florence Airport, the ATCT will inform the AOM of its status and Estimated Time of Arrival (ETA). To ensure a smooth airshow operation, it will be necessary for the AOM to receive as much lead time on the airlines ETA as possible. It is suggested that the ATCT inform the AOM as to the ETA no later than when the airliner reports to FLO RADAR APPROACH FACILITY (TRACON).

The ATCT and the AOM will coordinate any possible on-going airshow performance and the inbound airliner so as to best facilitate both the uninterrupted arrival of the schedule 121 operation and the best presentation of the airshow performance. In all cases, the airshow performance will be halted when the airliner reports the outer marker (5 miles) inbound for landing.

When the inbound 121 aircraft is at the outer marker or 5 miles from the runway touch down zone, all airshow operations must have been halted and the performing aircraft secured either on the ground or placed in a holding pattern agreed upon by the ATCT and the AOM. The performing aircraft will remain well clear of all 121 operations. At this time, all airport operating authority return to the ATCT.

When the inbound 121 aircraft has taxied clear the waived airspace and has established the necessary lateral ground separation distances required by the FAA Waiver, the ATCT will instruct the AOM that waived operations may be re-started, and that he again has control of the waived airspace.

The above procedure will be reversed in the case of a outbound 121 flight. The ATCT will coordinate the push-back and/or engine start of the departing flight with the AOM to ensure a smooth operational control transition. All waived operations must be halted before the departing flight enters either the ground operational area or the waived airspace. When the outbound flight has cleared the operational area, airshow operations will be allowed to continue and control will shift to the AOM.

At the completion of the days events, the AOM will inform the ATCT. The ATCT will then re-open the airport for normal operations using the procedure established by the airport manager.

## THE AIRSHOW BRIEFING



Every touring airshow performer has been to a two-plus-hour airshow briefing that degenerated into an egomaniac contest between some of the participants. This type of briefing is unprofessional, unsafe but not unheard of. In fact, some well run briefings fail to present the necessary information for the conduct of a safe, well controlled show.

Presented here is an annotated rehash of the FAA's airshow briefing procedure. It covers the important points related to the conduct of an airshow and can serve as the basis of a excellent show briefing.

Developed from FAA material with annotation by Hugh Oldham.

Every Airshow Waiver requires that a Preshow Briefing be held and attended by ALL SHOW PARTICIPANTS . It is contrary to FAA policy for FAA representatives to conduct the Briefing, but the FAA Safety Monitor will ensure that specific safety issues be covered. All participants will be required to sign the Waiver thereby attesting that they will comply with all limitations, conditions, and special limitations set forth in the Waiver (Team Leaders may sign for the entire Team).

The Briefing should be conducted in a clear, concise, business like manner. The fashion in which the Briefing is conducted will establish the tone for all activities during the event.

Although a relaxed presentation is preferable, the Briefing must be thorough, covering what is and what is not expected to occur during the Airshow. Therefore, during the Briefing, a certain level of formality and discipline must be observed.

For the Airshow's management, the Briefing is the best tool to insure the level of safety before, during, and after the show. During the Brief, the show's management will discuss the actual events that should take place; the who, what, where, when, and how of the show. And just as importantly, management must effectively communicate what to do when things do not go as planned.

This is particularly important for the "non-professional" participants. Most of your people are not normally involved in airshow production. This can include pilots, the FAA, Air Traffic Control (ATC), Security, Crash Fire and Rescue (CFR), crowd control, and other volunteers. For these people, the Airshow is an exceptional event. It doesn't happen every day, therefore all of these people must be well briefed to eliminate as many accident potentials as possible. The "professional" airshow performers, although more in tune with what is happening, will need to be acquainted with conditions particular to this show, and what they are likely to encounter during the event.

The Pre-Show Briefing is where all the prior planning comes together, where all participants

meet to cover all the angles, one last time, before we go out and do it for real. This is the time to discover problems with the performer taxi plan, or problems with smoke oil logistics, or any of the other thousand possible problem areas. The Briefing is the last time the Airshow's management will have a chance to meet eye-to-eye with all the players. Its a lot easier to solve a problem at the Brief than after the flag has dropped.

The preparation for the Briefing started with the planning of the Airshow itself. Like a good Airshow, a good Briefing does not just happen, it is planned in advance.

## THE BRIEFING AGENDA

### **BEFORE THE START OF THE BRIEFING.**

A packet of material should have been prepared and passed out to each performer as he or she first arrives at the show site (or mailed to the performer in advance).

This packet should contain:

1. A reproduction to the Area and Site map/s.
2. A copy of the proposed show schedule.
3. Assigned radio frequencies.
4. Emergency recall signals.
5. A copy of the show's Disaster Plan.
6. Performer passes/badges (don't forget the FAA personnel).
7. Vehicle and ramp passes for performers cars/trucks

Additionally, it is also a good idea to include in this packet:

8. Food/drink chits.
9. Local area road map.
10. Motel/Billeting information.
11. Restaurant/Dining Facility information.
12. Social events schedule with maps of locations.

Also include information on the show's corporate sponsors so that the performers: (1) know who the sponsors are; (2) can speak with the sponsors and media from a knowledgeable position about the sponsor's product and/or service.

The EMS, CFR, and POL crews should have been briefed on all aspects of their responsibilities BEFORE the general briefing. This includes their responsibilities under the show's Disaster Plan. If the EMS, CFR, or POL crews have any questions about specific aircraft/performance requirements, ensure that these questions are fully answered before or during the general briefing.

### **TOOLS AND MATERIALS.**

The diagrams, charts and maps used during the initial Airshow site analysis and Waiver

Application should be enlarged to sufficient size for the Briefing purposes. A large wall map of the Airshow Area and the Airshow Site should be available for use during the briefing. This map/s should be marked to show the location of: airshow "show lines", control point, fire trucks and ambulances, obstructions to flight, and any "no over fly areas'.

**TIME OF THE BRIEFING.**

Two to three hours before the scheduled show time. The time of the Airshow Briefing should be selected to provide ample opportunity for morning routines, breakfast, etc., with sufficient time following the Briefing for aircraft pre-flight and Airshow performer preparations.

**LOCATION.**

An indoor location should be chosen which is free from distractions, well lighted and comfortable. Reasonable access and space for all personnel and briefing materials is required. Ensure that all attendees will be able to see and hear the Briefing. Refreshments are optional, and a Restroom, with running water, is necessary.

**BRIEFER:** The briefing should be conducted by persons with good to excellent verbal communications skills. These persons should be knowledgeable in airshow operations, FAA Regulations, local airport and surrounding area conditions, the performance and operating limitations of the aircraft and airman participating in the show.

Let's walk through the Briefing process, using the agenda suggested in the following "Airshow Briefing Checklist".

**REQUIRED ATTENDEES:**

The following person should attend the Briefing; some personnel may perform more than one job function:

**Air Traffic Control Representative**  
**Airshow Air Operations Manager**  
**Airshow Ground Operations Manager**  
**Airshow Narrator**  
**Airport/Base Authority**  
**All Performers (Team Leaders can attend in lieu of the entire team)**  
**Crash Fire & Rescue (CFR)**  
**Emergency Medical Service (EMS)**  
**FAA Safety Monitor**  
**FAA Waiver Holder**  
**Refueling and Smoke Oil Personnel (POL)**  
**Security and Crowd Control Supervisors**  
**Safety Coordinator**

**Air Traffic Control Representative.** If the show's location has an Air

Traffic Control Tower (ATCT) or a Radar Approach Control (RAPCON) some type of coordination must exist between that facility and the show's management. An ATC representative needs to be at the Briefing to ensure that any last minute coordination problems are worked out. The Shift Supervisor, of the shift working the Airshow, is a logical choice.

**Airshow Ground and Air Operations Managers.** Self-explanatory. These are the people who will be running the show.

**Airshow Narrator.** The narrator needs to understand all aspects of the show's operation. In this way, the narrator can better perform the informational portion of the narrator function. It also gives the narrator a last minute chance to meet with the Airshow performers and gather performer information or last minute changes in routine due to weather, obstructions, or restrictions at this particular site. In case of an emergency, the narrator will be your prime link to the spectators. With proper planning, the narrator can assist in crowd control and media relations during unplanned events.

**Airport/Base Authority.** Someone from the Airport or Base, who can make decisions, must be available in the event changes are necessary.

**All Performers.** Self-explanatory. These are the people who will be The Show.

**Crash Fire & Rescue & Emergency Medical Service Representatives.** These people need to be on top of everything from a stumped toe, to a heart attack in the spectator area, to a major accident on or off the site. They must be informed as to the overall plan of action in the event of unplanned events.

**FAA Safety Monitor.** Self-explanatory. It is contrary to FAA policy for FAA representatives to conduct the Briefing, but the FAA Safety Monitor will ensure that all specific safety issues be covered during the Briefing.

**FAA Waiver Holder.** This is the person that signed the Waiver Application and "owns" the air space for the Airshow. The airshow or event chairman may **NOT** be the best person to be the Waiver Holder. The air side operations of an airshow is a full time job of show day. Any changes to the Waiver, made by the FAA, will have to be instituted by this person.

**Refueling and Smoke Oil Personnel (POL).** It is sometimes necessary to re-fuel and re-smoke the show aircraft during the show. This may have to be performed on the operational side of the crowd line and these people will be responsible for accomplishing these tasks in a safe and effective manner.

**Security and Crowd Control Supervisors.** Security and Crowd Control are

critical to the safe operation of the show. Again, these are people that must be informed as to the overall plan.

**Safety Coordinator.** At some locations (DoD installations, etc.) there is a person who's sole job is to ensure that safety is paramount at all times. This person can make important input as to the safe operation of the show. Use this resource.

**INTRODUCTIONS:** Simple courtesy and it allows everyone to meet all the players.

**START PASSING AROUND COPY OF WAIVER:** Simultaneously with the verbal briefing, the FAA Airshow Waiver and any Special Limitations/Provisions should be passed around to all performers for them to review. Each performer should acknowledge the contents by their signature on the bottom or back of the last page. This signed copy of the waiver should be retained by the waiver holder to certify that the performers did, indeed, attend the briefing.

**NOTAM:** The required Notice To Airman (NOTAM) relative to the closure of the airport and airshow area of operations must be issued by the Airport Manager or Base Ops, at least 48 hours prior to the waived operational time. **NOTE: The NOTAM MUST be issued by the Airport Manager, not the waiver holder.**

**WEATHER BRIEF:** A Weather Brief should be prepared with the latest Local Hourly Observations, and the Local Forecast, and Forecast Winds Aloft. This does not have to be a detailed briefing, just the information necessary to give the participants on what to expect for the local weather during the show period. The actual weather **MUST** be at or above the minimums specified in the FAA Waiver.

**WAIVER & SPECIAL PROVISIONS DISCUSSION:** **DO NOT** read the waiver to the participants. Respect the intelligence of your participants. Most FAA Waivers are standard documents, the performers will scan the Waiver as it is passed around, and ask questions if they find any areas confusing or unclear. Simply highlight any areas of concern in the Waiver or the Special Provisions.

**TIMES THE WAIVER IS IN EFFECT:** Several important factors. Is there time for the performers to practice at the site or provide media rides in wavered airspace? How much time will we have if there is a weather hold? Remember, when the last event on the Waiver's Schedule of Events is completed, the Waiver is voided. If you need to hold that airspace, for any reason, now is the time to coordinate with the FAA Monitor and/or ATCT and/or ATC Center personnel. Make sure there is a clear understanding as to when you will release your airspace.

**AREA OF OPERATION:** The Waiver defines both the horizontal and vertical area within which the FAR's are wavier. The performers must have a clear picture of this area.

**OBSTRUCTIONS TO FLIGHT WITHIN THE OPERATIONAL AREA:** There are many things within the Waviered Airspace that can cause problems for the performers. Examples: ILS,



NDB, and Communications antennas, Wind measurement equipment, Tall towers near the show site, etc. The performers should be briefed on the location and height of these obstructions.

**NOISE SENSITIVE AREAS:** Within the Operational Area, there may be places that it is best to avoid due to political or operational reasons. These could include: schools, hospitals, churches, nursing homes, or the airport neighbor who always is complaining about noise. The performers will make every effort to avoid these areas if they are informed about them.

**SHOW CENTER LINE FOR EACH CLASS OF AIRCRAFT:** At many shows, three show lines are in effect. This can be confusing from the air. Carefully brief the performers on the location and markings for each show line. Additionally, the parachute jumpers may be required to land in a certain area; brief accordingly.

**LOCATION OF SUPPORT SERVICES AND NAME OF PERSON:** During the show, the performers will need support services. Introduce the person responsible for each service and point out where they will be located or how the performer is to contact them. Brief the support personnel as to which aircraft/performer will be requiring their service and when and where they will require that service. The performers should be provided a dedicated restroom facility, co-located with the performers aircraft staging area. Brief the location. Ensure that adequate supplies of food, soft drinks, ice and water are provided for all airshow staff, support personnel, and performers. Brief the locations of these supplies and ensure that the support personnel will maintain these locations with usable quantities.

**COMMUNICATIONS:** The need for good communications at an Airshow is necessary to properly manage the show. The need to be able to communicate with the performing aircraft is essential. The Airshow performer ground-to-air communications frequencies should be a discrete, unpublished, and unlisted. Assign radio frequencies to be used and monitored for each activity of the Airshow. Do not over load your freq.'s with many functions. Brief the need for strict radio discipline, emphasize that the Airshow frequencies must be kept clear for operational control and/or emergencies. Blocked freq.'s and no radio/radio failure (NORDIO) procedures must be discussed and visual signals briefed and/or demonstrated for use when necessary. Discuss the need to keep the performer's ground-to-air freq.'s clear. The performers should not be subjected to any distracting radio chatter while flying their performance. Only priority/emergency traffic should be passed to the performers during this time.

**OPERATIONAL AREA'S "X'ed":** As a provision of the Wavier, at uncontrolled airports, it will be necessary to place X's on the runway. Brief the location and method of placement of the X's. Ensure that no takeoffs or lands are scheduled during the time the support personnel are placing or removing the X's.

**SPECTATORS CONFINED TO DESIGNATED AREAS:** As a provision of the FAA Wavier, the spectators must be kept a defined distance from the aircraft. Brief the need of proper crowd control. Introduce the person in charge and how they can be contracted during the show. Brief the procedures to be used if crowd control is lost during the aerial events. It may be necessary to stop the show, re-gain crowd control, and re-start the show.

**TAXI PLAN/INSTRUCTIONS:** This is an area of special concern. The movement of all aircraft before, during, and after the show will present several challenges. **It is imperative that no aircraft, under power, taxi through the designated spectator areas while spectators are present.** The effects of prop/jet blast property located in such areas can be devastating, the effect of a spinning propeller on the human body is catastrophic. Again, under no circumstances should an aircraft move through the spectator area, if it is necessary to move aircraft within this area, it must be towed and taxi directors and wing walkers assigned and properly briefed to avoid endangering spectators or property.

The Taxi Plan should include well planned, and clearly marked routes for use by both static and performing aircraft. Provisions for necessary Ground Support Equipment (power cards, fire bottles, etc.) must be included. The plan should also consider wheel loading requirements, FOD, and obstructions.

During the Briefing, taxi routes, visual aids and markers, parking areas, run-up and takeoff positions must be explained and noted by all participants. Provisions for the movement of performing aircraft from the overnight parking areas to the Airshow staging areas must be coordinated. The Briefing offers the opportunity to identify any special ground operational requirements or difficulties which a performer and/or Ground Operations Manager (GOM) may have not previously identified. These problems can then be solved due to the presents of the necessary people.

**PERFORMER VEHICLE AND AIRCRAFT PARKING:** Throughout the Airshow period, the performers will require vehicular access to their aircraft. This includes the period, during the show, when the aircraft are parked in the show staging area. The performers need this vehicular access due to the operational requirements of both the aircraft and the Airshow routines. The need to transport tools, equipment, removal aircraft parts, etc. make it imperative that they be able to park their cars in close proximity to their aircraft.

Brief the locations for vehicular ramp access, routes to and from the different parking areas, and need for Security arrangements for use by the performers.

**EMERGENCY PROCEDURES:** The Briefer should specify the procedures for all aircraft to use in the event an aircraft operational emergency occur during the Airshow. Such procedures should include: radio frequencies and discipline, flight patterns and divert information. In the event of radio failure, either aircraft of ground based, visual signals should be identified to all participants for purposes of stopping the show and requesting aircraft to land or divert. Bail Out areas should be coordinated with the CFR personnel and identified to the participants.

**CFR & EMS CREWS BRIEFED:** It will be necessary to ensure that all CFR and EMS personnel have been briefed on the necessary procedures and precautions for aircraft rescue and recovery techniques. Due to the unusual or unique nature of some performing aircraft, it will be necessary for the CFR crews to receive a special Brief, by aircraft type, relative to these techniques. The Briefer should ensure that these Briefing have taken place or coordinate the

necessary meeting at this time.

**IN THE EVENT OF AN INCIDENT ... MEDIA:** The Briefer should identify the spokesperson who would be responsible for ALL INFORMATION released to the media personnel in the event of an unusual occurrence or emergency.

**CONFIRM AIRSHOW EVENTS SCHEDULE:** A good schedule is an aid to the presentation of a professional Airshow as well as the safety of the event. Proper scheduling prevents haste, misconducted operations, overlooked pre-flights and forgotten items on a check list.

During the Briefing, the published schedule must be reviewed, checked, revised and emphasized. The performers should be aware of the times when the air field is open for normal traffic operations, and when the FAA waiver is in effect. Participants should be briefed as to the expected times for engine start, taxi, takeoff and landing. There may be times when no engine should be running, such as during an opening speech, invocation, parachute jump, etc., these times need to be briefed and emphasized.

In the event of schedule changes, a means of communication must be briefed to establish to advise all participants of time changes. This system, using radio and personal contact, should provide sufficient opportunity for the performers to adjust and prepare for their performance. Alternate acts should be planned in the event of last minute cancellations due to mechanical problems, performer illness, or other unknown/unplanned occurrences.

Weather limitations, for each act, must be understood by the Air Operations Manager, Briefer, Announcer, and Performers. Procedures and rescheduling, in the event of weather delays or other delays, must be briefed and fully understood by all participants.

The need for In-Show departures, by performers and/or other aircraft, must be planned and coordinated. Early Post-Show departures, by performers and/or static aircraft, will need to be coordinated by the Air Operations Manager and Air Traffic Control.

**COMMENTS FROM FAA REPRESENTATIVES:** The FAA Safety Monitor, ATCT representative, and other FAA personnel present should be given the opportunity to make germane comments of the Airshow operations.

**QUESTION PERIOD:** An ample time for questions from the participants should be allowed to ensure that all personnel are clear of the activities for the event. The Briefer must ensure that all participants understand the proposed operations. Any areas of possible misunderstanding must be sought out and clarified. The Briefer must not ASS/U/ME that the participants understand the program.

**WAIVER SIGNED AND RETURNED:** Has everyone required to sign the FAA Waiver done so?

**TIME HACK:** Ensure that all watches are coordinated to the correct local time.

**ANNOUNCE TIME AND PLACE OF FAA PILOT CREDENTIALS CHECK &**

**AIRCRAFT INSPECTION:** While it is the individual performers responsibility to provide evidence of proper pilot certification and aircraft documentation to the FAA Monitor, it is recommended that the Airshow sponsor obtain such documentation in advance of the Airshow Briefing. The individual inspection of pilot certificates and aircraft records can consume a great deal of time.

Suggestion: Send a checklist of the required documentation to all the Airshow's participants. Ask them to provide Certified or Notarized copies of the documentation which is then sent to the FAA Monitor in advance of the Airshow.

Coordination and communication between the designated FAA Monitor, the Airshow Operations Manager's staff, and the performers will resolve many of the certification/documentation difficulties prior to the General Briefing. Any remaining unresolved certification or documentation problems can then be cleared up immediately after the General Briefing.

**ADJOURN TO SPECIAL BRIEFINGS AS NECESSARY:** Adjourn the General Briefing, convene any necessary Special Briefing for the Warbirds, Jumpers, Special Act coordination, etc.

Due to the number of key Airshow personnel present at the General Briefing, adjourn that Briefing as soon as possible to allow these people to return to their jobs. Convene Special Briefings, as necessary, to complete the coordination of all events.

The Special Briefing are very important for the "non-professional" airshow performer such as: warbirds, commercial flybys, local non-touring performers, etc.

The Flight Patterns used by the Warbirds and Commercial exhibitors is of special importance. The patterns to be flown should be depicted on the Area, Site, and Airport charts using visible landmarks. The Briefer should establish, consistent the FAA Waiver, the minimum/maximum altitudes, airspeeds, and crowd distances to be used during the flybys as well as the distance between each aircraft or formation. If, because of performance characteristics of the aircraft, more than one pattern is used, the Briefer must devote specific attention to the planning of these patterns to eliminate aircraft approaching head on or without visibility of the other aircraft. The Briefer should separate the patterns by both altitude and geographical area. In establishing minimum altitudes for any pattern, it should be remembered that an aircraft flying very low to the ground cannot be seen by many of the spectators. Past experience indicates that 200 feet provides the minimum altitude for spectators to observe the aircraft and provides an adequate margin of safety for the aircraft during the flyby. The Briefer should identify the number and type of flybys to be made for each pattern and each aircraft.

## AIRSHOW BRIEFING CHECKLIST

page: 1 of 4

### **PRESENCE REQUIRED:**

All Performers

FAA Safety Monitor

FAA Waiver Holder

Air Traffic Control

Airshow Air Operations Manager

Airshow Ground Operations Manager

Airshow Announcer

Airport/Base Authority

Security and Crowd Control Supervisors

Airshow Director/Safety Coordinator

Emergency Medical Service (EMS)

Crash Fire & Rescue (CFR)

Refueling and Smoke Oil Personnel (POL)

### **INTRODUCTIONS:**

Briefer (self intro)

Air Show Staff present

Air Operations Manager (AOM)

Ground Operations Manager (GOM)

FAA-FSDO, Tower, ATC

Airport/Base Authority

Crash Fire Rescue Representative

Security Representative

Performers/Participants

POL Personnel

**AIRSHOW BRIEFING CHECKLIST**

page: 2 of 4

- (1) START PASSING AROUND COPY OF WAIVER.
- (2) NOTAM was disseminated 48 hrs prior to the event.
- (3) WEATHER BRIEF quick overview of show time local weather and expected trends.
- (4) WEATHER MINIMUMS \_\_\_\_\_ ceiling \_\_\_\_\_ vis  
Per FAA Airshow Waiver
- (5) OVERVIEW OF THE WAIVER AND SPECIAL PROVISIONS.
- (6) DISCUSS ANY "NON STANDARD" SPECIAL PROVISIONS.
- (7) TIMES THE WAIVER IS IN EFFECT.
- (8) AREA OF OPERATIONS AS DEFINED IN THE WAIVER  
Use Area Map
- (9) OBSTRUCTIONS TO FLIGHT WITHIN THE OPERATIONAL AREA. Use Area & Site Map
- (10) NOISE SENSITIVE AREAS AND/OR AREAS TO BE AVOIDED DURING THE DEMONSTRATION. Use Area Map
- (11) SHOW CENTER LINE FOR EACH CLASS OF AIRCRAFT  
500 foot center line  
1,000 foot center line  
1,500 foot center line  
Parachute Jumper Landing Area  
Use Site Map or Runway Diagram
- (12) LOCATION OF SUPPORT SERVICES AND NAME OF PERSON  
Smoke oil  
Avgas  
Jet Fuel  
Performers Latrine  
Performer Refreshment Area (water & Ice)  
Use Site Map or Runway Diagram



## AIRSHOW BRIEFING CHECKLIST

page: 4 of 4

- (22) COMMENTS FROM FAA REPRESENTATIVE/S  
Include Control Tower Chief &/or Shift Supv.
- (23) QUESTION PERIOD
- (24) WAIVER SIGNED AND RETURNED?
- (25) TIME HACK
- (26) ANNOUNCE TIME AND PLACE OF FAA PILOT CREDENTIALS CHECK &  
AIRCRAFT INSPECTION
- (27) ADJOURN TO SPECIAL BRIEFINGS AS NECESSARY  
Adjourn to Special Briefing for Warbirds  
Jumpers, Opening Flag Jump, etc. if necessary

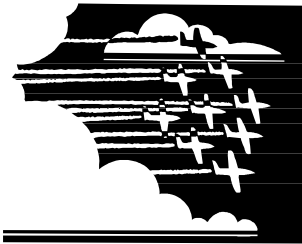
SPECIAL NOTES:

The TOTAL TIME for the COMPLETE General briefing should be approximately 15 to 30 MINUTES.



---

## MILITARY AERIAL PARTICIPATION



Military participation is very important to the success of any airshow. In a larger show, this participation could be the Thunderbirds, Blue Angels, Golden Knights, or even the Canadian Snowbirds. In smaller shows, it is more often flyovers, static displays, and single aircraft flight demonstrations.

The Key to obtaining this participation is applying the right way.

Major Brent Jones is the USAF Aviation Support Liaison Officer. His office, at the Pentagon, is where the request for all airshow military aviation support ends up. The following article, by Major Jones, discusses the process of applying for such participation.

### MILITARY AERIAL PARTICIPATION

by LtCol. Brent W. Jones,

Aviation Support Liaison Officer  
US Department of Defense  
OASD/PA (DCR)  
The Pentagon, Rm. E776  
Washington, DC 20301  
(202) 695-9368

#### Phase I - Obtaining The Request Form:

The easiest and probably the fastest way to obtain the form is to call OASD/PA (DCR) office or one of the service headquarters in Washington, DC. We deal with request daily and are the most familiar with the procedures and policies. Any military installation should also be able to provide you the form, but it will probably be a copy taken from their regulations and not necessarily current information. A revised form will be coming out the summer (1988). While waiting for the form, think about the type of military support you desire for your show.

#### Phase II - Completing the Form:

Take your time and complete all sections except the FAA section (D, 3A). If you are only asking for static displays, no FAA coordination is required. Forward the form to the nearest Flight Standards District Office for their review (allow the FAA 30 days). Aerial activities that require a waiver must have the site evaluated and determined by the FAA as Satisfactory or Unsatisfactory.

isfactory. The request will not be accepted if an unsatisfactory evaluation is annotated on the form. These are necessary steps as safety is our primary concern.

#### Phase III - Submitting The Form:

You should now have a fully completed form in your possession. Again, the fastest way to begin processing the form is to send it to my office (OASD/PA (DCR)). However, forms which request only aircraft static displays may be forwarded to the particular Service Headquarters for processing. Upon receipt, each form is reviewed for completeness and eligibility for military participation. I will notify the sponsor's representative as to the status of the request within three weeks. If an applicant does not hear from me within three weeks, you should call me or my assistant, Judy McMullen, and make certain we received the request.

#### Phase IV - Flowing Through The Chain:

I am now looking at your form and checking for the most common errors. First, I leaf through the form to make sure all blocks are filled in. Then, I look at which activities are requested and, if required, an FAA representative coordination. If these areas are in order, I then read through the entire form. If the event is eligible for military aerial participation, the form will be forwarded to the Military Service from which support is desired. If specific aircraft or Military Service are not identified, I will determine which Service to forward the form to. From my office, the form will be sent to the Service Headquarters Public Affairs Office for review and distribution to their operations counterpart. Since each Service has different command/reporting structure, the information on aviation events does not reach the base level at the same time.

From 30 days prior to the event to the actual date of the event, it gets complicated. You will probably already know by then if you were scheduled for a single aircraft demonstration.

For flyovers or static displays, depending on the Service and command, there are a variety of agencies/individuals involved in scheduling airshows. When contracting a base to see if they are considering supporting your event. I recommend you began with the public affairs office.

Keep in mind that an aviation unit's ability to support your event will depend upon their operational and training requirements. Confirmation of support or non-support could be delayed until one or two days prior to the event.

#### The Bottom Line:

Start the process so that the completed form will arrive at my office at least 90 days prior to the event for single aircraft demonstrations and 45 days prior for flyovers and static displays.

#### Helpful Hints: (To help expedite your request and limit confusion):

Use one form per event. Avoid sending duplicate forms. Avoid changes to requested participation. The sponsor's representative should be familiar with all aspects of the event and

available for questions - he/she is a "key" person. Type or legibly print the information on the form. Contact recruiters and record their names and numbers on the form. Keep your sponsor/committee and the FAA informed. Keep a copy of your request for reference. Include military representation at the initial planning meeting. If you desire specific aircraft, list them. Request for specific individuals should be addressed to the base public affairs office where the individual is stationed. If you are looking for a specific aircraft from a specific base, consider sending a copy of your request to the public affairs office or your individual contact.

---

## THUNDERSTORM CONTINGENCY PLAN



The following Thunderstorm Contingency plan was written by Mr. Dick Forester, President of Atlantic Aero, Inc., a Pro Pilot Top 25 FBO located at the Piedmont Triad International Airport, Greensboro, North Carolina.

For several years, Atlantic Aero co-sponsored the Greensboro Air Fair with the Eastern Music Festival Aux. This aviation related event is a fund raiser for the Eastern Music Festival and a vehicle to promote aviation in the Triad area of North Carolina. Atlantic Aero's personnel pioneered an acro airshow, at a major airline hub airport, within an ARSA, in the FAA's Southern Region.

This is an excellent example of a well thought out plan for the possibility of heavy thunderstorms. The points made are applicable in many other airshow emergency situations. The plan delegates both authority and responsibilities to specific persons, and clearly states the airshow management's philosophy and priorities.

Note the extensive communications networks Atlantic Aero has in place for Air Fair. It has been our experience that the lack of ground communications capability is the weak link in most airshow management plans. One of the innovative communications systems used by Atlantic Aero, is the Portable Cellular Telephone. These units were gathered both from within the company and through units supplied by the local cellular telephone system operator as promotional advertising demonstration units.



June 1, 1988

TO: ALL DEPARTMENT MANAGERS

SUBJECT: AIR FAIR THUNDERSTORM CONTINGENCY PLAN

The forecast indicates the possibility of rain and thunderstorms Saturday, June 4. Therefore, it is prudent for us to have a plan should a thunderstorm threaten or strike during AIR FAIR 88.

The most important principle to remember, is to

**PROTECT PEOPLE FIRST; PROPERTY,  
INCLUDING AIRPLANES, SECOND.**

We will follow this principle in all our activities during AIR FAIR, especially in times of stress, such as an approaching thunderstorm.

The first thing we will do is be prepared. Shelters for people, in the order of priority, are as follows:

1. Main Service Hangar Bays.
2. Main Office Building/Lobby.
3. Avionics Hangar.
4. Available Executive plane Ports (those without planes in them).
5. Ground Support Buildings.
6. N66AG Port-A-Port.
7. Other Buildings as Available.

Next in preparedness is to keep ourselves informed. The first person to learn of an approaching storm will make sure the Control Point (located on the observation deck) is advised. The Control Point Command Center may be reached by dialing 109 or 135 on the company telephone system, or by radio over the AIR FAIR walkie-talkie net. If a pilot becomes aware of the storm, a call should be made to the Customer Service Center on ARINC 129.85 MHz, and ask that the information be relayed to the Control Point. Those outside the company should dial 668-0411 and ask the operator to relay the storm information to the Control Point.

When the Control Point learns of an approaching storm, an assessment will be made, and the Control Point will issue an alert over the AIR FAIR walkie-talkie net to all managers and key personnel. At the same time, the Control Point will ask the switchboard operator to issue an alert to all cellular telephone locations.

Assuming sufficient time is available, managers and key personnel will position themselves so that they can best assist AIR FAIR visitors in reaching appropriate shelter as the storm approaches. The decision as to when to close down rides and displays and secure aircraft will be made and transmitted by the Control Point.

If it is necessary for the order to close down rides and displays and secure aircraft to be issued, the Master of Ceremonies will, in a calm and reassuring voice, announce to the visitors that due to the weather, AIR FAIR is being interrupted, and visitors should move inside the hangar. Visitors should be advised that Atlantic Aero and security personnel are available to assist as needed and to direct them to shelter. **IT IS IMPORTANT THAT ALL PERSONNEL SHOULD REMAIN CALM, BUSINESSLIKE, AND REASSURING, SO VISITORS WILL BE REASSURED BY YOUR ACTIONS AND ASSISTANCE.**

Once visitors are inside, managers and key personnel should assist in closing hangar doors as necessary to keep people from getting wet. Company personnel manning display booths inside the service hangar should assist where needed, to allow extra management personnel to return outside to assist in securing aircraft as the time and situation permits. **IF YOU ARE FORCED TO CHOSE BETWEEN TAKING CARE OF AIRCRAFT AND TAKING CARE OF PEOPLE, ALWAYS TAKE CARE OF PEOPLE!** Signs warning of slippery wet floors should be set out as time permits. Be alert for frightened people, and do your best to head off panic situations before they become a problem.

### **SECURING AIRPLANES:**

**Airplane Ride Pilots**, upon being told to shut down the rides, will first make sure that their passengers are directed towards shelter and are under the guidance of Atlantic Aero ground personnel. Then, the pilots will return to their aircraft and push or taxi them, as appropriate, to the farthest available tiedown from the main building, and tie their airplane down. This is to be sure that the airplane is tied down , and to leave the closer tiedowns available for display aircraft and late arrivals.

**Line Personnel** will proceed as directed to the display aircraft, move them to their predesignated tiedowns, and secure the airplane. Also, assist in the securing transient and aerobatic demonstration aircraft and guiding their crews and passengers to shelter.

**Ground Personnel** will, upon receiving notice that rides have been shut down and aircraft secured due to thunderstorms, advise visitors not to get off the buses and vans; advise them that AIR FAIR has been interrupted, and that as soon as the storm passes, we will do our best to get the show back underway. If visitors are without rides, take appropriate action to guide them to shelter.

**Customer Service Personnel** will be ready to relay communications as needed, keep the Control Point advised of weather and operational information, and be prepared upon request of the Control Point to contact the Airport Police and Fire Station for assistance in taking care of visitors' needs.

Should a thunderstorm strike the airport, the Control Point will be moved to the Customer Service Counter.

Should an injury occur, or if medical or other assistance is needed, contact the AIR FAIR first aid station/ambulance via the AIR FAIR walkie-talkie net, or dial 337-1575 on the nearest telephone. Also, notify the Control Point as soon as possible and advise them of the nature of the problem and the assistance needed. Render first aid assistance as required and possible.

**REMEMBER: IN ALL CASES, ONE OF THE BEST THINGS YOU CAN DO IS REMAIN CALM, OR AT LEAST ACT CALM, EVEN IF YOU ARE NOT. WE ARE LOOKED AT BY OUR VISITORS AS AVIATION EXPERTS, AND THEY WILL BE REASSURED BY OUR COMPOSURE. WE HOPE THAT WE WILL NOT HAVE A PROBLEM, BUT IF WE DO, WE WILL BE PREPARED.**

**PROTECT PEOPLE FIRST,  
AIRPLANES  
AND OTHER PROPERTY  
SECOND!!**

---

## MEDICAL RESPONSE TO RAMSTEIN AFB DISASTER:



### LESSONS TO BE LEARNED

by Linda Kesselring

(Reprinted with permission from Maryland EMS Newsletter, April 1989)

On August 28, (1988) more than 300,000 people gathered at Ramstein US Air Force Base near Frankfurt, West Germany. They had come to watch performances by aerobatic teams, the annual Flug Tag Air Show. The day turned to tragedy when three jets of Italy's Frece Tricolor (Tricolor Arrows) collided above the crowd. Approximately 500 people were injured (most of them burned) and 69 people were killed at the base or died later from their injuries.

Following the crash Naval Captain Michael Cowan, MD, special assistant for National Disaster Medical System (NDMS) in the Office of the Assistant Secretary of Defense of Health Affairs, went to Germany with a team of surgery and burn specialists. They were to learn about the medical response to the incident and to find out how the actual triage and transportation mechanisms compared with the plans that had been established for such an event. Could any lessons learned be of value in modifying NDMS plans? Capt. Cowan described the crash and the response to it during Grand Rounds at the MIEMSS Shock Trauma Center in December.

The crowd at Ramstein lined the main runway. Frece Tricolor began its maneuver called "arrow through the heart". Nine planes flew parallel to the ground and then went straight up in the air. They divided into a heart pattern perpendicular to the ground, four planes going one way, and four going the other. The ninth plane pulled away from the group and turned back to "pierce the heart" and fly over the crowd. "From the ground", stated Capt. Cowan, "it looks as though the planes pass very closely. The solo plane is actually to be several hundred meters above and behind the others."

By reviewing videotapes of the fated performance, Dr. Cowan and the other investigators saw that the pilot of the ninth jet came in too low and too fast. he hit the lead plane, which flipped to its left and hit another. Those two planes crashed along the runway, scattering burning debris for 500 meters. The solo plane landed about 50 meters from the crowd, broke into a ball of fire,



bounced across the runway, and landed in a crowded concession area where refreshment trucks were parked. The plane slammed into one of the trucks, which stopped its progress and set the fire ball straight up. "The vertical containment created some ironic occurrences," noted Capt. Cowan. "Plastic mugs full of cold beer remained right next to where people were virtually incinerated by the 1600 degree fireball."

The lead and left wing planes crashed within 2 seconds after the mid-air collision. It was only 3.2 seconds from the mid-air crash until the solo plane traveled 1500 feet to the concession area.

The crew of the primary fire truck stationed at the base extinguished the fire within 92 seconds. The first med-evac helicopter arrived within 4 minutes. twenty helicopters would be ferrying people away from the site in the coming hour. Every injured person was off the base in 1 hour and 36 minutes. Within 2 hours, all receiving hospitals had triaged, treated, redistributed, admitted, or made some disposition of all the casualties.

In preparation for Flug Tag, security and emergency preparations were high. In the crowd were at least 1500 American and German uniformed police officers as well as a number of plain clothes officers. Four aid stations had been set up for the air show. Each was augmented with intravenous fluids and additional medications. The Ramstein clinic was about 1500 meter away; it has no in-patient facilities, but it is a large and well stocked air force clinic.

Videotapes showed that people in the crowd initially froze until the fireball went up and the danger passed. Then a large number of the 300,000 people surged forward to help in an almost simultaneous response.

The injured people who could walk started to move toward the clinic. Nearly all had been burned and many were naked because their clothes had been burned off by the intense heat.

The ranking medical officer and his aide had been watching the air show from the control tower. The aide had two hand-held radios: one to keep the officer in touch with the base central command post and the other to link him with the German Red Cross and the German and American medical nets. As the aide ran down the tower steps, she fell and broke both radios, seriously compromising communication through the event.

The physician began to intercept patients running up the road to the clinic, and he started a medical triage station. An oral surgeon from the crowd, who had been trained extensively in disaster management, set up a second triage station. Three more were established by ambulances from the aid stations. Within 5 to 10 minutes, there were five medical triage areas within 50 meters of each other. Each site acted autonomously, with little awareness of the others' activities.

From the systems view, it was a multiple casualty event with five triage sites. Those sites managed about 186 people. The other 300 injured people got to medical care on their own. They drove their cars, commandeered buses, or used government vehicles. They left the base,

one of the tightest controlled grounded and air space in western Europe, before 1500 uniformed police officers could secure the site. The plan called for them to be quietly triaged into delayed categories and taken to hospitals in an orderly, convenient way.

"For reasons that are still unclear," noted Capt. Cowan, "the air traffic (control) tower was out of communications for several vital minutes after the crash." The helicopter crews on the base tried to contact the tower for directions, but no one answered. An American pilot radioed to the other pilots and organized their flight into the crash site. They found the triage stations and lined up near them so that patients could be loaded.

Almost all survivors suffered from burns. Those who also received severe trauma were in the center of the fireball and did not survive. One remarkable exception was a woman at ground impact. The solo plane dug up a berm of earth that buried her and then hopped over the runway, hit the truck, and burst into flames. She was severely traumatized but she was not burned.

The primary receiving hospitals for Ramstein Air Base is Landstuhl Army hospital, several kilometers away. Landstuhl activated its disaster plan without advantage of knowing how many patients would arrive. As patients began to arrive by helicopter, automobile, and ambulance, the disaster plan began to break down and was modified in the heat of the activities. At one time, 13 helicopters were sitting on a landing pad designed for two.

In 1.5 hours, Landstuhl Hospital received about 120 patients in no particular order of priority. Most of the seriously injured were transported here: 14 were hospitalized and another 80 were transferred for hospitalization elsewhere. Only six needed immediate surgery (a laparotomy, several escharotomies, and the treatment of a compound femoral fractures), so the hospital's operating room capabilities were not overwhelmed.

Germany has a sophisticated distribution plan for burned patients. It was established in the early 1980's after an incident in which propane gas leaked into a campground in Spain and ignited; many people were horribly burned. In the current system, a staff member at each of the 20 burn units in the country calls a central phone number in Hamburg each day to report the number of beds available for burned patients. In a mass casualty incident, one call to Hamburg can allow the burned patients to be distributed primarily.

After the Ramstein disaster, no call was made to the Hamburg distribution center. The physicians on the helicopters distributed patients themselves, presumably as the course "Advanced Burn Life Support" sponsored by the American Burn Association should be made widely available.

It seems to be a recurrent, even inevitable, observation that, during a disaster, command, control, and communication break down when needed most. Problems encountered at Ramstein could have hampered patient care but did not. The high level of training and medical readiness among both lay and medical people in the Ramstein community allowed adequate care for the victims. Disaster plans need to recognize the fragility of high technology during

emergencies.

Lack of record keeping is a recurrent problem. Even trained prehospital care providers responding to disasters often overlook this vital aspect of emergency response.

Finally the "morbidity" of psychological devastating of individuals in the community, both survivors and health care providers, may eventually surpass that of the physical injuries. Psychological support and care must be built into emergency response plans.

The objectives of NDMS are to meld federal resources (for example, medical support, equipment, and supplies) into the local disaster response, to match patients with the facilities that can best treat them, and to financially support the hospitals that receive the victims of a disaster. By studying the responses to disasters, Capt. Cowan and his associates continue their efforts to design plans that are concordant with as the course "Advanced Burn Life Support" sponsored by the American Burn Association should be made widely available.

It seems to be a recurrent, even inevitable, observation that, during a disaster, command, control, and communication break down when needed most. Problems encountered at Ramstein could have hampered patient care but did not. The high level of training and medical readiness among both lay and medical people in the Ramstein community allowed adequate care for the victims. Disaster plans need to recognize the fragility of high technology during emergencies.

Lack of record keeping is a recurrent problem. Even trained prehospital care providers responding to disasters often overlook this vital aspect of emergency response.

Finally the "morbidity" of psychological devastating of individuals in the community, both survivors and health care providers, may eventually surpass that of the physical injuries. Psychological support and care must be built into emergency response plans.

The objectives of NDMS are to meld federal resources (for example, medical support, equipment, and supplies) into the local disaster response, to match patients with the facilities that can best treat them, and to financially support the hospitals that receive the victims of a disaster. By studying the responses to disasters, Capt. Cowan and his associates continue their efforts to design plans that are concordant with the facts and make the most efficient use of personnel, materials, time, and money.

---

## AN AIRSHOW INCIDENT

by: Hugh Oldham  
(Reprinted from *World Airshow News*, Sept./Oct. 1991)

The Fourth Annual County Airshow was expected to be a good one. The performance line up was outstanding: Kim Pearson, SF-260; Wayne Parrish, Davis Acro Pro; Jeff Davis, Pitts; Bill Johnson, SNJ; Bobby Hester, P-51 acro; Skip Homburg, JARRS Heilo STOL demo; M-1 Abram Tank Demo; an eight person female skydiving team; narration by Hugh & Linda Oldham. The two day airshow lived up to expectations, but a major incident, before the start of Saturday's show, created a potential for catastrophe.

What follows is a chronology of the major events at that show. Times are estimates.

### Saturday

#### County Airport

0730: Temporary Air Traffic Control Tower starts operation.

0800: Volunteers, venders, staff, and performers are hard at work preparing for the Fourth Annual County Airshow planned to start at 1400. Minor SNAFU's but no major problems.

0830: Fire Dept. and EMS units move to staging areas.

0900: The crew of a ANG C-130, scheduled for static display, phones to report engine problems. Working on problem, will try to make show.

0930: Local vender begins to set-up a "Moon Walk" inflated children attraction in the vender/sponsor display area.

0945: The Memorial Hospital "Life Flight" helicopter lands in a special controlled access area for static display. Controlled access area necessary due to the state wide "on call" status of helio and crew.

1100: Gates open, spectators begin to filter into airport, PA system up, narrators begin normal pre-show chatter.

1230: Performer briefing begins in airport terminal building. Normal FAA stuff. Emergency plans discussed "**Protect People before Property**". Airshow incident media person introduced, incident media plan briefed.

1315: C-130 arrives over airport. Airshow director requests fly-by. Crew requests landing and

static display. Staff discusses possible staging of C-130 into **alternate static display site outside of spectator area**. Control Tower and narrators informed to prepare to stage C-130 to alternate site.

1320: C-130 lands, taxis toward static display site with aid of many wing walkers and security personnel. Narration crew briefs spectators.

1322: C-130 turns tail to spectator/vender/sponsor area. Prop blast blows over vender tents, sponsor displays and then lifts entire "Moon Walk" attraction completely into the air. The Air Traffic Control Tower and others call for engine shut down. The inflated castle like "Moon Walk" structure executes a 180 degree end over end roll while lower portion of structure is 10 to 15 feet above the ground and flies 75 to 100 feet laterally into asphalt parking lot. Unknown number of children fall to ground and asphalt while the structure in flight; adults and children on the ground are injured as the structure falls back to earth.

1322:30: Emergency Plan is self activated. EMS, National Guard, Army Band, security and spectator personnel begin moving to aid victims. Narration team goes into emergency routine to calm, inform, and control spectators. "Life Flight" nurses aid victims while flight crew prepare aircraft for possible transport.

1330: An altercation erupts between an airshow volunteer and a local newspaper photographer over photographing victims. Airport Manager strongly urges the photograph to remain outside of emergency area.

1340: All victims have been triaged, most have minor scrapes and bruises, several suffer major lacerations, and there is one possible serious head injury.

1350: Meeting in Airport Manager's office. Present: Airport Manager, Airport Commission Chairman, County Commissioner, primary airshow narrator. Decision is made to continue with show. Airport Manager and Commissioners briefed by narrator on media questions and techniques. Airport Commission Chairman is appointed spokesperson. Tentative press release prepared.

1410: All victims requiring transport are off the airport. Approximately 12 are transported by ambulance to the local hospital, treated and released. The possible head injury is air lifted to Charlotte Memorial Hospital and held for over night observation, released next morning. Many others with minor injuries elect to remain on site and see show. Incident scene is cleared of debris, tents re-erected, displays repaired.

1415: Airshow Starts.

1430: Major network TV station calls airport for info on "airshow plane crashing into the crowd." Airport Commission members and Manager begin calling ALL media outlets within a 100 mile radius to relate true facts of incident.

1650: Airshow completed without further incident.

2300: All area TV stations run item on 11:00 News about "freak accident" at the County Airshow. Report is factual and non sensational.

#### Sunday

0800: Sunday Morning Newspaper has story of incident on page 1 of the "B" section "Local News". Story is factual, non sensational, and reports that the airshow will run through that afternoon.

1100: Second day of the airshow opens with the previous days incident victims as Guests of Honor.

1400: Airshow starts and completed without incident.

#### Lessons Learned:

Handheld FM and VHF communications radios were useless during incidence due to frequency congestion. Everybody was talking at once.

The controlled access area for the "Life Flight" helicopter worked. The aircraft served two rolls, first as a static display and marketing tool for the hospital, second as a valuable asset during the incident.

All emergency and media plans must be discussed with all airshow participants. In an emergency, people will naturally look to the airshow performers for leadership. Make sure the performers as well as all airshow staff personnel know how to lead, follow, or get out of the way.

During this incident, the victims aided each other. This has been true in both Hugo and the SFO earthquake. This resource should not be discounted, minimized, or hindered in your emergency plan.

Someone must handle the media people during the incident, at the scene, and at the narrators station. The media people will want information. If you do not provide it, they will find a way to gather that info they feel they need. They will interfere with the narrators, EMS and other personnel's duties. This causes problems when they get in the way; or later when they fill in the gaps with vivid imaginations.

Get **factual information** distributed to the media outlets as quickly as possible. Media persons have radio scanners tuned to emergency dispatch frequencies. They will hear something has happened at the show site and the lack of factual information can cause a public relations nightmare.

## COMMENTS

This incident, at a small airshow at a rural airport, demonstrates the necessity for disaster planning. The successful treatment of the injured is evidence that the emergency plans in effect worked. The professionalism of the emergency medical personnel was outstanding. The available resources were used to the maximum benefit of the victims, everyone did their job without panic or heroics. The airshow and airport management team remained in control, kept the priorities in order, and successfully managed a potentially catastrophic situation.

The major area overlooked in the emergency plan was media relations. This incident, if it had received national exposure, would have resulted in a negative blow to the airshow industry's public relations efforts. Quick thinking and reaction of the management team averted both the negative national publicity and blunted the impact on the local level.

The circumstances leading up to the incident will be subjected to investigation by numerous boards and agencies. It can be assumed that the injuries and property damage could result in litigation. But once the events began to unfold, the prior planning and professionalism of the personnel involved minimized the suffering of the victims and the possible serious consequences to the airshow industry.

---

Reprinted from:

**WORLD AIRSHOW NEWS**  
(The Airshow Industry Magazine)  
PO Box 199  
Oregon, WI 53575  
608-835-7063  
Dave Weiman, Publisher

March/April 1988

## LETTERS To The Editor

Dear Dave:

For 28 years I have been an airshow fanatic. Once I got my driver's license there was no stopping me from going to the biggest airshows in my area. I now travel up to 5 hours to see an airshow with a military jet team in it, especially the "Blue Angles".

Recently, I attended two of the largest airshows in the middle Atlantic region. The first was the Department of Defense open house on May 9 at Andrews Air Force Base in Camp Springs, Md. The second was the open house on May 16 at Patuxent (Pax) River Naval Air Station in Lexington Park, Md. Both airshows had outstanding weather, however, even with comparable lineups, it's still possible to have a dull airshow. The performer lineups for both shows were as follows:

**ANDREWS AFB:** U.S. Army Golden Knights mass jump, USAF A-10 Thunderbolt II, AFRES C-130 Hercules, USAF rappelling and stabo extraction, D.C. ANG F-4 flyby, USN F-14 Tomcat, U.S. Army 82nd Airborne Division mass paratrooper drop, USMC AV-8B Harrier, and the grand finale, the USAF Thunderbirds.

**PATUXENT RIVER NAS:** Ron Shelly circling Bill FitzSimons' American flag jump, Ron Shelly Stearman solo aerobatics, Jim Parker and his Pitts Special, U.S. Army Golden Knights precision jump, Bob Hover flying his Evergreen Sabreliner, Holiday Inn Aerobatic Team, Hal Goff, USN F-14 Tomcat, French Connection CAP-10 two plane formation aerobatics, Bob Hover fling his Strike Commander, Ron Shelly with Bill FitzSimons wingwalking, the grand finale, the USN Blue Angles.

Now with these lineups you might ask how can either of these shows be boring? Well, it all has to do with timing. Not the timing in the air, but on the ground.



There were spots in the Andrews show where nothing was flying for up to 45 minutes. Now, for an airshow to be effective in entertaining the public, it should keep your enthusiasm level up.

At Pax River, as soon as one performer would land, the next performer was at the end of the runway ready to begin their routine. You were always on the edge anticipating the next event.

The Andrews show ran about 6 hours from start to finish. The Pax River show ran 4.5 hours. The Andrews show was prolonged with delays between events. The crisp timing at Pax River made it one of the best shows in the United States for 1987.

My hat is off to the coordinators of the Patuxent River NATC for this dynamic show. To the coordinators of the Andrews AFB and any other airshow coordinator out there, ladies and gentlemen, please---please keep things moving. See you at the next show.

James Deveney  
Airshow Fan  
Wilmington, Delaware

---

## A LETTER TO AIRSHOW SPONSORS

From:

Bret, Karen & Garret Willat  
Sailplane Magic Airshow  
Sky Sailing Soaring Center  
31930 Hwy 79  
Warner Springs, California. 92086

Editor's Note: Bret Willat, and his family, own and operate one of the finest soaring centers in the US.

They have consistent soaring weather at their location in San Diego County, California, and can boast of numerous sail plane flights of over 300 miles and altitude gains to just under the Continental Control Area of 18,000 ft. MSL.

Bret is also a fine airshow pilot flying a fantastic act in an unpowered-powered sail plane. He is becoming one of the premier pilots on the West Coast.

Most importantly for the purposes of this Manual, Bret Willat continues to make a outstanding individual effort to keep airshow sponsors informed about the material covered in the ICAS performers meetings held each year at the ICAS Convention. This is an edited copy of his latest letter.

DEAR AIRSHOW CHAIRMAN;

As performers, we would like to share a few suggestions which help us to make a safer and better airshow. We understand that you cannot use all of these ideas, but this list may give you some insight. Rather than go into detail on each point, we just noted a quick idea. If you have any questions, please talk it over with one of your professional performers. These ideas are given to you to help in your planning. We hope these ideas help you in planning your AIRSHOW!

PLEASE DO THE FOLLOWING:

Have WATER &/OR ICE TEA on the flight line. Soft drinks do not satisfy the need for water. Dehydration may be deadly to pilots and may be a problem for your volunteers etc.

Have a bathroom near the flight line which can be used by performers without a long waiting line. If possible a handicapped type which offers more room for our flight suits. The door should face away from the crowd!

Have a complete list of times and places where you expect the performers to be. Include a map, and background information about the airshow and its sponsors that the performer can use during his meeting with your public and media.

Provide a copy of the airshow site map showing the designated spectator areas, deadlines, staging areas, fuel/smoke oil area, etc. before the performer arrives at the site.

At the briefing, provide a schedule of events, which includes the approximate times for each event/act. If re-scheduling during the show is necessary, the performers can then anticipate event/act start times etc.

Have one person assigned as performer liaison who can make decisions.

Allow and encourage the performers to visit the VIP Tents etc.

Have the performers ground transportation (industry standard is a car) easily available for the performers when they arrive at the site. Equip each car with the necessary Gate, Ramp passes and a map of the local area.

Allow the performers vehicle to park near their aircraft.

Have complete knowledge of the performers complete routine and special needs. Many performers provide an operations manual, please read and ask questions you may have.

Have a transportable fuel and smoke oil system equipped with pumps, hoses and FILTERS available for quick refills before, during and after the show.

Have a SECURE area for aircraft tie-down/hangar at night and a roped off SECURE area during and after the show.

Have the Airport Tower Chief at the briefing.

Have two frequencies for airshow control, one for control, the other quiet except for the performer on stage.

Have an autograph area (tent) and times for each performer, preferable at the end of the show. This should be promoted by the show announcer. The point is to not take away from another performer's routine!

The briefing should be event specific with only the required people participating. Consider a separate briefing for the warbirds, races, acro, media etc.

Have a waived time before (day or two is preferred) the show when the performer can practice in your airspace before the actual show. Maybe waived airspace close or over the airport for press rides!

Send a Press/Media request list to your performer with what you want to whom and who the responsible person is to be in charge of returnable items.

Have the pilot briefing between 2 to 3 hours before the start of the aerobatic part of the show.

#### PLEASE DO NOT DO THE FOLLOWING:

Interrupt a Performer's routine by Parading a previous performer down the flight line, etc.

Have Press Rides which would conflict with performers preparation and/or the airshow briefing.

Change or give a lot of instructions to a performer just prior to his performance. If it can wait, talk to the performer at the end of the routine, not just before or during the performance. If you must contact the performer during the routine, wait for a turn around maneuver, in the middle of the inverted ribbon cut may be the wrong time to call!

Use a tower ground control frequency as Airshow Control.

Allow helicopters to over-fly any part of the audience or seating. Be very aware of the rotor turbulence causing rope, seats, etc. to fly!

Use a non-professional airshow performer.

Thank You And Lets All Make It A Safe, SAFE Show!

---

## VIP PRECEDENCE LIST

1. Governor of a state in his own state.
2. Ambassadors of foreign powers.
3. United States Senators.
4. Governors of states when not in their own state.
5. Members of the House of Representatives of the United States.
6. Secretary of the Army, Navy, Air Force (in order).
7. Chairman, Joint Chiefs of Staff.
8. Retired Chairman, Joint Chiefs of Staff.
9. Chiefs of Staff of the Army, Air Force and Naval Operations (by date of appointment).
10. Commandant of the Marine Corps.
11. Retired Service Chiefs.
12. Commanders-in-Chief of unified and specified commands (four star grade).
13. Generals and Admirals (four star).
14. Retired Generals and Admirals (four star).
15. Assistant Secretaries of the Armed Services (by date of appointment)
16. Lieutenant Generals and Vice Admirals (three star).
17. Major Generals and Rear Admirals (two star).
18. Brigadier Generals and Rear Admirals (one star).
19. Colonels and Navy Captains.

Local Mayors

State Senators

State Representatives

City Council Members

County Council Members

Police Chief

Fire Chief

## 1987 ICAS AIRSHOW SPECTATOR & EVENT SURVEY

Season Length:	March thru mid November
Annual Number of Shows:	480 + (65% ICAS)
Industry Annual Attendance:	18 Million Paid (\$117 M)
Industry Ranking:	2nd to Major League Baseball
Annual Economic Impact:	\$400 Million
Average Event length:	1.79 Days
Average Charity Pass-Thru:	\$35,606
Average Paid Attendance:	44,639 (+17.6%)
Average Total Attendance:	50,991 (paid/unpaid)
Metropolitan population of area:	153,880
Within 50 Miles:	827,300
Average Adult Ticket Price: Advance	\$4.70 (\$3 to \$9)
Gate	\$5.64
Average Child Ticket Price: Advance	\$2.20
Gate	\$3.27
Per Capita Concession Sales:	\$1.80
Per Capita Souvenir Sales:	\$ .77
Per Person Visit:	5 hours 10 Mins
What Is Your Primary Reason For Being Here Today:	
36.3% To see Jet Team	29.2% To see Warbirds
25.5% To see act other	22.9% To see Statics
then Jet Team	45.2% All above
How Did You Find Out About The Air Show:	
28.1% Radio	7.0% Poster

25.3%	Newspaper	3.6%	Aviation/Travel
25.2%	Television		Magazine
20.6%	Here Before	3.2%	Brochure
19.7%	From A Friend	2.7%	Billboard
11.5%	Other		

#### The Air Show Attendee:

50%	between 25-45 yrs old	73%	are with three other
80%	are NOT Pilots		people (3.72)
65%	are male	61%	are married
55%	drive up to 50 miles	60%	have incomes \$25K+
	to the show		

#### Sources of Income as % of Gross:

Gate/Ticket Sales	53%	Program Advertising:	2%
Sponsorships:	21%	Program Sales:	2%
Concessions:	15%	Other	2%
Chalets or VIP Area:	2%	Parking	1%
Merchandise:	2%		

#### Fee Structure with Airport:

No Fee	50%	Nominal Fee <\$500	12%
Airport Sponsored	21%	Fees over \$5,000	4%
Airport Shares	4%	Non Airport	8%

#### Number of Persons on Airshow Staff:

Permanent Full Time (avg.)	.2
Part Time (avg.)	2.7
Employed	7 of 63
Contract	11 of 63
Volunteers	45 of 63

Pay for Local Police Support (traffic)	50%
Local Police Provide Support	50%

How Many Toilets: 95 1 per 532 avg.

How many Complimentary Vehicles: 25.6

How many Hotel Room Nights: 206.5



Estimated Event Gross: \$375,220 ??

Total Budget for Event: \$125,345

Total Performer Fees: \$23,486 (18.8%  
of Budget)

Total Promotional and/or Advertising Budget:  
\$12,608 (10.1%)

Total Event Day Staffing for all areas except concessions and merchandise:  
207

Total \$ Carry over for next year: \$29,647

Data From: 1987 ICAS Airshow Spectator Survey  
Ten Events, 2913 Individual  
1987 ICAS Event Survey  
33 Events (C) Copyright ICAS, Inc. 1988

---

## GENERAL REFERENCE PERSONS

Joe Dabney, Lockheed Atlanta GA (C-130 & C-141) Public Relations 404-494-2701

Mike Mathews, Rockwell Intl B-1B program Public Relations 213-647-1000

Floyd Wilson, Wing Leader, NC Wing CAF, 704-463-1807 or 1411

Robert L. Craighead McD Customer Relations (F-4,F/A-18,C-17) St. Louis  
314-232-2866 office

Piedmont (USAir) DC-3

Roy Raines  
4631 Kinnamom Rd.  
Winston Salem NC 27103  
919-766-4187

Bill Kyle  
5005 Robin Hood Rd.  
WS NC 27106  
919-924-1327

## NATIONAL AVIATION & AIRSHOW ORGANNIZATIONS

### INTERNATIONAL COUNCIL OF AIR SHOWS (ICAS)

1910 Horton Road  
Jackson, MI 49203  
517-782-2424

### WORLD AIRSHOW NEWS (The Airshow Industry Magazine)

6031 Lawry Court  
PO Box 199  
Oregon, WI 53575  
608-835-7063  
Dave Weiman, Publisher

### Aviation Support Liaison Officer

US Department of Defense  
OASD/PA (DCR)  
The Pentagon, Rm. E776  
Washington, DC 20301  
(202) 695-9368

### Air Command Headquarters

Canadian Forces  
Westwind, MAN R3J OTO  
(204) 895-5632

### Federal Aviation Administration

#### National Airshow Coordinator AFS-20

800 Independence Ave. SW  
Washington, DC 20591  
(202) 267-3828

### U.S. Air Force Thunderbirds

USAF Demonstration Team  
Box 9733  
Nellis AFB, NV 89191  
702-652-4018/4115/2277

**U.S. Navy Blue Angels**  
U.S. Navy Demonstration Team  
NAS Pensacola, FL 32508-7801  
904-452-2584

**Golden Knights**  
U.S. Army Parachute Team  
Box 126  
Fort Bragg, NC 28307  
919-396-1539/2036/4622/9307