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SUMMARY OF PUBLIC INPUT--FEBRUARY 1986

I. REASONS EXPRESSED FOR CONTINUING OR NOT RESTRICTING FLIGHTS OVER GRAND CANYON NATIONAL PARK

Aircraft eliminate days of traveling from one scenic location to the next and provide perspectives of time, landscapes, and human activities on a much broader scale than can be comprehended from the ground alone. Grand Canyon is a rugged and remote area which simply must be seen from the air to be fully appreciated. The educational benefits of flights far outweigh the noise pollution. Taking a flight along with other forms of visitation (e.g., hiking or river running) enhances each experience.

Understanding of the canyon and its environment can only be accomplished through an inner canyon experience. All visitors have a right to explore the inner canyon in the format they choose, whether by aircraft, mules, river, or hiking.

Aircraft flights offer a more personal experience for visitors than other means.

Aircraft flights are environmentally the cleanest and least intrusive means of visitation to the park.

All forms of inner canyon visitation cause some sort of disturbances. However, one hiker has a greater impact than 100 aircraft, and aircraft leave no permanent impacts on the canyon.

Aircraft flights over and through Grand Canyon National Park (GCNP) are an inalienable right of all visitors to GCNP.

The National Park Service (NPS) is the worst offender in the inner canyon. The majority of low level flights causing problems are NPS flights.

River runners recognize the many services provided by air charter and commuter airline companies which benefit clients, employees, and the river running business, including: transportation, aerial perspectives for passengers which give an added dimension to the river experience, emergency assistance, and interpretive efforts by pilots and companies.

Scenic flights are a legitimate means of seeing and experiencing Grand Canyon, and have been providing this service for 60 years.

Not everyone is capable of hiking or rafting the canyon due to time constraints, expertise, inclination, or physical ability (including the elderly, very young, physically handicapped, and physically unfit). These people should not be limited to a view from the rim because the canyon is much more than that.

Aircraft are being unfairly singled out. Buses, RV's, motorcycles, and even mules on the trails are sources of more irritation than aircraft.

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More people think of Grand Canyon as a place to view rather than a place to seek silence and solitude.

It would be impossible to eliminate all unnatural sounds from GCNP and still permit visitation. Compared to most other places, Grand Canyon is still very quiet, even with all its user activities.

Grand Canyon is the most appropriate, suitable, and desirable national park for aerial exploration. Surely there is room enough for everyone.

Grand Canyon is large enough to have quiet zones for backcountry users in addition to scenic flights.

All user groups need to recognize that other user groups will also be experiencing the canyon and that there will be some conflicts from time to time. However, in general, all users should be able to coexist harmoniously.

Limited use of aircraft over Grand Canyon enhances safety (providing emergency detection and assistance) and can be compatible with maintaining wilderness values.

Restrictions on routes and altitudes will probably result in more fatalities of hikers and river runners because it will be more difficult to call for emergency help in remote areas.

Those who wish to marvel and meditate in a peaceful natural setting can go to many other areas not far from GCNP with fewer aircraft.

Aircraft sound is not an intrusion, but an attribute to the canyon.

Visitors want and expect flights to descend below rim level, asking specifically about that when deciding to take a flight. Most visitors feel it enhances their experience.

Flights only above rim level will not sell. They are not as good as below rim flights. Eliminating below rim flights will put small companies out of business, and hurt large companies. It is really an indirect way of eliminating all tour flights.

Thousands of tourists have no means other than air tours to see Grand Canyon within the time frame of their trip. Air tours provide the best quality canyon experience in a limited time. Most of the canyon cannot be seen except by air.

A minimum altitude will eliminate the opportunity of passengers to see the best views of Grand Canyon.

Air tours are affordable by anyone because of the quality of the experience.

The future will see fewer aircraft passengers being carried by fewer companies, who will be operating larger aircraft and making fewer flights at lower noise levels.

The number of flights over the canyon have decreased since 1980 and will continue to decrease due to economics.

The increase in the number of flights in the last 10 years directly correlates with the desire of visitors to see the canyon from the air.

There are not enough ways to see Grand Canyon now because everything is always booked up. Air tours are the best option available.

Any management plan should provide maximum accessibility from the air.

Air tours are already the most regulated form of visitation to GCNP. GCNP already has more restrictions on tourists than just about any other place.

Just as some people on the ground are irresponsible, so are some people in the air. It is not fair to punish everyone.

If you want silence, wear earplugs.

During the peak flight season, the noise from increased flights is masked to visitors at the South Rim by increased noise from the increased numbers of people and vehicles on the rim.

250,000 square miles of airspace would have to be cleared to eliminate all flights over the park.

NPS should not sacrifice the large number of air tour passengers who prefer to see the canyon from the air to satisfy a small number of river runners, backpackers, and day users.

Closing the airspace over GCNP would have a detrimental effect on tourism, a major industry in the West and Southwest. If NPS denies the public the most cost/time effective way of seeing Grand Canyon, the single greatest tourist attraction in the world, many tourists simply won't bother to come to the area at all.

Overseas air tour visitors to the Grand Canyon contribute approximately \$25 to \$35 million to the U.S. economy, helping reduce the balance of trade deficit. Air tour operators also provide many jobs and other revenue.

Foreign visitors see Grand Canyon predominantly by air.

Air tours provide family oriented opportunities for visitors staying in many nearby locations.

Most people who complain about noise don't live here and won't lose their jobs if air tours are banned.

A pristine experience is disturbed more by mule droppings, developed trails, litter, human waste, visitor use, and jetliner trails than by air tour sounds.

Visitors often comment that the air tour flight was the highlight of their vacation or their lives.

NPS spends considerable money and manpower for trails, campgrounds, and river management but commercial air tours provide considerable services for visitors at no cost to NPS.

NPS is providing misleading information and polarizing the issue.

NPS should get the Golden Fleece Award for wasting money even considering restricting aircraft over GCNP.

NPS allowed a problem to develop by refusing to work with the air tour operators under the 1972 Tri-State Operators Agreement. Air tour operators have always cooperated fully to reduce noise problems.

Point Sublime is a problem now because NPS requested air tour operators to fly there when they closed the road to Point Sublime several years ago. NPS reopened the road without telling anyone.

II. REASONS EXPRESSED FOR BANNING OR RESTRICTING FLIGHTS OVER GRAND CANYON NATIONAL PARK

The need to minimize overall stress on the park might justify restriction or elimination of flights because they encourage related growth and development of areas adjacent to the park as well as increased development within the park.

Perhaps the park visitor who is willing to spend several days and considerable physical energy, even physical pain, coming to know the park close-up deserves more consideration from NPS than the visitor who wants to see everything in one hour or less.

The noise level from aircraft at some rim overlooks often exceeds that of the traffic on the road. In the canyon itself, the problem is even more annoying because of the sudden contrast to the calm of the canyon.

If the sky is filled with aircraft, not only the canyon's silence but also its sense of distance, space, and depth are shattered.

People have no right to see the park by air if they disturb people on the ground by doing so. If the air passengers knew they were disturbing people on the ground, they wouldn't fly.

Flights are more frequent than the NPS information packet suggests.

There is a need to know that Grand Canyon is there, unspoiled for all time, inviolable.

The noise at some backcountry areas in the park is similar to being in the landing or takeoff pattern of a small airport.

No one form of experiencing the canyon should be allowed to completely alter or dominate any other form as aircraft noise is now doing.

One can choose not to hike the trails used by mules, but one cannot escape the increasing noise of aircraft engines anywhere. No activity has a more pervasive impact than aircraft flights.

The experience one gets from viewing the canyon from an aircraft is only the experience and thrill of riding in the aircraft, not of the canyon.

GCNP is supposed to be a special place of peace, refuge, tranquility, silence, and solitude. Quiet is one of our greatest national treasures. Aircraft noise destroys these aesthetic and intrinsic values as well as privacy.

Status quo is unacceptable for safety and aesthetic reasons.

The number of flights has quadrupled since the early 1970's and projected future increases will make the situation even worse. These increases are the most important reason to act now.

Many people used to hike the canyon a lot, but now avoid it because of the aircraft intrusion.

Because of the aircraft, GCNP should be renamed Grand Canyon Sightseeing Aerial Highway or Grand Canyon Aircraft Park.

Human impacts have already taken their toll on Grand Canyon. Let's draw the line.

There is no question that aircraft use is causing a "significant adverse effect on the natural quiet and experience of the park." If it is necessary to eliminate all flights over the park, then this is what should be done.

Thirty years ago, the dominant quality of the canyon was silence, a deep pervasive sense of peace and tranquility broken only by natural sounds. In recent years, that has all changed and we now hear aircraft.

A small minority of visitors in aircraft disturb the large majority of visitors who see the canyon from the rim, the trails, and the river.

Flights are only for the rich.

People may have some right to fly over the canyon, but not in the canyon.

Safety should be considered. Many aircraft have crashed in or near the canyon and many more mid-air collisions have been narrowly avoided.

A river guide stated that he believes he has taken more handicapped people down the river than all the air tour companies combined.

At least half of helicopter tour passengers are from outside the U.S., and less than one percent of the passengers are handicapped.

Aircraft take away from the remoteness of the canyon, one of its unique attributes. Effortless accessibility, such as that provided by aircraft,

devalues the human spiritual, mental, and physical character. It also devalues or invalidates the experience of those who choose to expend an effort and see it on the ground.

No one can see the Grand Canyon in an hour by any means (aircraft, car, bus, hiking, etc.). Even with many years, one cannot see all of Grand Canyon. The quiet is an important part of "seeing Grand Canyon." Feeling and experiencing the canyon involve much more than a picture or a quick view.

The beauty of Grand Canyon is easily experienced by means other than aircraft: walking a few feet from your car, driving the many miles of paved and dirt roads, looking out your hotel window, hiking, mule trips, and raft trips.

Sights and sounds of aircraft are not native to the park and detract from the wilderness experience. Since 88% of the park is proposed as wilderness, it is to be managed as wilderness until Congress acts one way or the other on the proposal.

Our wilderness backcountry cannot be accessible to everyone.

Grand Canyon should be a "natural" park, not an amusement park. The park's mandate is preservation first, access second.

The view from the air above the rim is just as spectacular as below the rim and generally less turbulent. Also, aircraft climbing out of the canyon do so at high rpm and power settings producing maximum noise pollution.

There have been an increasing number of complaints by river trip members about the incidence of aircraft noise in the canyon. Most of the complaints are about macho pilots flying near river level and helicopters hovering close to attraction sites such as Thunder River and the Little Colorado River.

Over the past decade, the unregulated intrusion of aircraft in the Grand Canyon has grown from indefensible to intolerable proportions. These flights are in direct conflict with established and legally recognized uses, policies, priorities, and purposes of GCNP. Aircraft activity has never been a legally sanctioned use in the park. The burden is thus not on NPS to prove why restrictions are necessary, but on the aircraft and air tour industry to prove why such uses should be allowed in the park.

GCNP is the only park where Congress specifically mandated protection of natural quiet as a resource.

Most airports and communities have noise abatement regulations.

Just as there are limits and restrictions on hikers and river runners to preserve the resources of GCNP, there must also be limits on aircraft.

Aircraft use is the only type of visitor use which is not controlled by NPS, making a mockery of the controls on other types of use. Any use of the Grand Canyon is a privilege, not a right.

People resent being turned away for hiking permits when anyone with money in their pocket can walk in off the street and bother those who have gone to all the trouble to get their permits and plan their hike.

The NPS Organic Act states that parks should be managed to protect them from environmental impacts, such as aircraft noise, so as to leave them unimpaired for the enjoyment of present and future generations.

Many people recounted being buzzed by low flying aircraft, expressing concerns for safety and stating that the aircraft adversely affected their overall canyon experience. Several said they could clearly see passengers' faces, and several said they were hit by flying dust or debris.

Poets and writers have included the natural sounds and silence as an important part of their descriptions of the canyon.

In a mechanized, hectic world, people need a place to renew the mind, body, and soul without more man-made mechanical intrusions.

Aircraft activity may disrupt certain critical activities of peregrine falcons and bighorn sheep, but the research results are not available yet. However, the noise impacts people, so it has to impact animals in some way. Even habituation is a stress. It is well documented that peregrine falcon eggs have been knocked off ledges by helicopter noise and vibrations.

NPS should restore the noise level at Grand Canyon to the level it was before man came.

GCNP also includes the airspace. NPS would not allow noisy aircraft if they were on the ground or the river.

Grand Canyon is a park all the way up, including the airspace.

No national park should allow aircraft.

The handicapped, young and old, and the physically unable have and take the opportunity to experience the canyon in many ways other than aircraft: from many designated viewpoints on the rim, through ranger talks, river trips, hikes, exhibits and museums, and films.

The aircraft issue is not one of access, but of convenience.

Backpackers and river runners spend more time (user-days) in the canyon than aircraft users. Also, the combination of backpackers, day hikers, river runners, mule riders, and overnight hikers to Phantom Ranch is equal to or greater than the total number of aircraft passengers.

Canyon visions and impressions are destroyed when an aircraft is heard or comes into view.

Lack of vegetation in the canyon tends to magnify sound.

Silence is a resource which should be protected with the same intensity as the park's other natural resources.

Aircraft are as much an intrusion to the natural splendor of the canyon as a tramway, dam, or bridge.

One aircraft passenger adversely affects hundreds of people on the ground and on the water.

According to the 1975 Enlargement Act, aircraft are trespassing.

Fewer cars and planes will make the canyon a better place.

There is no reason for any military aircraft to ever fly over Grand Canyon.

Commercial businesses have no right to impact the natural resources and depreciate the wilderness experience.

Aircraft flights offer a quantity but not a quality experience. The rim experience offers more quality than aircraft and the inner canyon experience offers even more quality.

III. SPECIFIC SUGGESTIONS FOR ACTION

Additional information which would help everyone to reach a better understanding and solution include: (1) time, location, and extent of disturbances or violations of regulations or agreements; (2) statistics from impartial studies demonstrating environmental damage caused by aircraft; (3) who and how many persons are disturbed by aircraft sound as opposed to those using air services; (4) the subjective, aesthetic values expected by all GCNP users, including air tour passengers; (5) the technology which is available to minimize aircraft sound and at what cost; (6) flight regimes, aircraft configurations, technology, and operating practices which produce the most/least sound; (7) sound signatures and footprints of various aircraft at certain power settings and altitudes; (8) what sound level is acceptable for a majority of users; (9) the "natural quiet level" of Grand Canyon.

A definitive, scientific study conducted by an independent research organization agreed to and financed by all parties would satisfy all concerned and form a basis for a plan which is done right and which all parties could endorse.

The number of handicapped persons who use the air tours should be compared to the number who use more conventional means for viewing the canyon.

Consensus actions expressed in the preplanning booklet should be implemented regardless of whatever else comes out of this process.

Identify conflict areas.

Determine and establish target noise levels for GCNP from all sources and set reasonable achievement dates.

Utilize existing expertise, especially from FAA Noise Technology Branch in Washington, D.C., to develop standards and operational practices to minimize aircraft noise.

Establish or determine attenuation factors for noise and incorporate them into "approved" flight plans/tracks/profiles.

Flights should be restricted below certain minimum altitudes. Those suggested include (all elevations are above mean sea level): (1) 6,500, 9,000, 18,000, 20,000, 30,000 feet; (2) 10,000 feet for tour flights and 12,000 feet for all others; (3) 10,000 feet with commercial flights totally banned; (4) planes 1,000 feet above the highest point in the canyon and helicopters used only in emergencies and in transporting materials and equipment mules cannot handle; (5) above the rim except for emergency flights; (6) above the inner gorge canyon-wide; (7) above the inner gorge east of Diamond Creek; (8) 2,000 feet above the north rim as a regulation rather than a request; (9) 2,000 feet above the rim until the results of wildlife studies are available.

The FAA's 2,000 feet above the rim request should be a regulation.

The 2,000 feet request should be increased to a 5,000 feet above the rim regulation and all aircraft should receive formal clearance from GCNP Airport to fly the canyon.

Flights should be severely limited, but landings should be allowed at Phantom Ranch. Below rim flights, except for Phantom Ranch landings, should be abolished.

Prohibit flight closer than 2,000 feet horizontally and vertically from canyon walls and landforms.

There could be flights at alternating altitudes, where some could be above and some below rim level.

Grand Canyon should be an "Airspace Reservation" similar to Boundary Waters Canoe Area precluding flight to an altitude that would mitigate the problem with provisions for medical and emergency flights within that reservation.

A possible solution is a special Congressional designation of airspace over GCNP with management of the airspace by FAA.

Declare special use airspace for GCNP and eliminate all flights except for health, safety, medical, and emergency reasons. This could be easily enforced as only the NPS helicopter would be allowed.

Restricted use airspace is the only fair, effective, low cost, and enforceable solution.

Military and private aircraft should not fly below the rims.

Establish a Prohibited Area below the rim, giving exclusive control in regulating aircraft below the rim to NPS.

Flights should not be eliminated, but they should be managed to strike a balance among all groups of canyon visitors.

The ability to view the canyon from the air is too valuable an experience to eliminate entirely. However, a balance must be struck which will place strict limits on intrusive flights below the rim.

All visitors should have reasonable access to Grand Canyon without the imposition of unreasonable demands on any one group. General aviation should be allowed to overfly Grand Canyon. For safety considerations and noise abatement, fixed-wing aircraft should be limited to a minimum altitude equal to that of the South Rim.

All aircraft should be banned.

Private and military aircraft should be banned.

Tour aircraft and commercial jets should be the only aircraft allowed to fly over the park, and these only with restrictions. Private, corporate, and military aircraft have no business flying over the canyon.

Helicopters should be banned (except for NPS emergency use) and only locally based fixed-wing aircraft companies under concession contracts should be allowed to fly only in certain areas over the park.

Helicopters should be eliminated, except possibly for park operations, emergency situations, scientific research, and certain photographic flights designed to provide the public with high quality video records of the flight experience and scenic views.

Helicopters should be permitted to operate below the rim over routes approved by NPS and users.

There should be registered heliports for landing tourists in the canyon in the park.

Limit NPS helicopter usage to the minimum amount required for emergency and lifesaving purposes and prohibit administrative usage, particularly where alternative transportation is available. Operate park aircraft in such a way as to minimize impacts to resources and visitors. Require written justification for any NPS administrative use of helicopters.

NPS should curtail all its own non-emergency flights. It should charge victims the full cost of providing emergency service. NPS should set the best example on this issue.

NPS supply flights to Corridor areas and the North Rim are justified as well as flights for emergency and safety situations.

Continue to clearly mark and identify NPS helicopters, whether under contract or belonging to a construction company working with the park.

Aircraft corridors should be established in conjunction with minimum altitudes. Corridors should be placed in areas not frequented by visitors, and altitudes should be set so that visitors in the lowest part of the canyon cannot hear the aircraft.

Restrict all flights to between the hours of 9 am and 3 pm.

Restrict all below rim flights, except in the Cross-canyon Corridor where flights could be allowed below the rim to a minimum of 3,000 feet above ground level for four hours per day (e.g., 10 to noon and 1 to 3).

A partial winter closure of operations over GCNP should be considered.

Overflights should be limited to one weekend or week per month if they must continue at all.

There could be flight-free days of the week in high concentration areas (Boucher to Grandview). Aircraft could be routed to other areas those days.

Commercial aircraft should be limited to flying weekends and one more day during the week only, and on those days only from 10 am to 3 pm.

Limit flights to five days per week during the summer and three days per week during the winter. Also, flights should be allowed only from one hour after sunrise until two hours before sunset.

Publish a calendar a year in advance with a rotation of days when overflights are allowed.

Aircraft should make their trip in the one hour of the day considered best for viewing.

Allow flights only every other day or every other week.

Aircraft should avoid Shoshone Point if any activities are scheduled there.

Any standard should be based on sound instead of sight.

FAA should not allow high altitude jets to detour from their direct travel route to fly over Grand Canyon.

Allow only quiet aircraft like blimps, hang gliders, or balloons to fly over the canyon.

Either specifically allow or prohibit all users from crossing the developed South Rim road at the Abyss. Most conflicts seem to come from directly below the developed South Rim.

Require pilots to use the least necessary power to maintain flight under ambient flight conditions and prohibit high power maneuvers such as hover out of ground effect, high "g" descents, and turns.

Encourage adoption of "quieter" technology through rewards of lower flight regimes, more frequent flights, etc. Don't punish those willing to invest in quieter technology by treating them the same as those who are unwilling or unable to do so.

The technology has existed since the 1950's for almost silent light aircraft. Aircraft manufacturers should be forced to supply quiet aircraft and the tour operators forced to buy them. Noise is the problem, not aircraft, and almost all currently used aircraft are unacceptably noisy. NPS already has the authority to act on this without any other agency getting involved.

Require aircraft to reach assigned altitudes before crossing the rim. Once there, low power and rpm settings will reduce the noise impact.

Establish a restricted area in the Cross-canyon Corridor vicinity below 7,500 feet on the South Rim and 8,500 feet on the North Rim except for life or health threatening situations. Establish flight-free areas in all popular hiking areas outside the Corridor. Restrict helicopters to the Corridor.

Restrict or reduce the total number of flights.

NPS should determine there is a "significant adverse effect" under the 1975 Grand Canyon National Park Enlargement Act.

Compromise for the greatest good for the greatest number of people.

Mitigation is not enough; natural quiet must be protected.

Allow only a limited number of large (e.g., 80 passenger) jets to fly scenic tours over the park. With more people per flight, there will be fewer flights and less noise. In addition, flights can originate from farther away, cost passengers less per flight, and take in more areas in less time.

NPS has spent considerable resources on programs, surveys, and facilities to benefit backcountry visitors. The same treatment should be afforded air visitors.

Backcountry users should pick their time to avoid aircraft sound (89% of all flights occur from April 1 to November 1) and pick their area (avoid conflict areas which are an intersection of activities, and pick areas such as Marble Canyon which receive few flights.)

Scenic flight operators should: (1) recognize that a conflict exists; (2) increase their sensitivity to their neighbors and do everything possible to preserve their experience; (3) impress upon all new flight personnel the significance of the effort to reduce conflicts; (4) place bold I.D. markings on the underside of aircraft so violators can be easily identified; (5) police each other; (6) trend toward larger, quieter aircraft to reduce the frequency and level of aircraft sound in the canyon; (7) wherever possible, reduce power settings to reduce sound impact; (8) use best available noise control technology; (9) use their unique capabilities in a responsible manner.

Some areas should be set aside exclusively for aerial observance to reduce conflicts (e.g., aerial viewing of the ruins at Point Sublime causes no damage but hikers do cause damage--why not allow only aircraft to visit the ruins?)

Specific noise sensitive areas identified during the public review process include: Point Sublime, Deer Creek Falls, Phantom Ranch, Little Colorado River confluence, Cross-canyon Corridor trails, Tapeats Creek and Amphitheater area, Thunder River, Tanner Rapids, Hermit Basin, Monument Creek, West Rim Drive, Shoshone Point, North and South Bass Trails, and North and South Rim developed areas.

Aircraft capabilities for dealing with fire suppression activities and emergency situations should not be impaired by any plan developed.

Transportation flights between Williams and Kanab and between North and South Rim should continue to be allowed.

Consider several zones of management: (1) Lees Ferry to Little Colorado River, (2) Little Colorado to Muav Saddle, (3) Muav Saddle to Diamond Creek, and (4) Diamond Creek to Grand Wash Cliffs. The inner gorge could be restricted throughout the canyon, though its definition should be different in different areas. Zone 1 has few flights. Zone 2 is the most sensitive having most of the trails and development, so management for that area needs to be carefully worked out. For Zone 3, Parashant to Cove Canyon should be managed by existing FAR's to allow helicopter access to river trips, while the Esplanade between Cove Canyon and Muav Saddle could be restricted below 5,000 feet elevation without much argument. Zone 4 should be managed by existing FAR's with the inner gorge defined as below 1,850 feet MSL elevation.

A cylinder of airspace with a one mile radius at Toroweap Overlook and a top at 7,500 feet MSL elevation, and another cylinder at Thunder River with a top at 8,500 feet and a radius so that aircraft can fly by Steamboat Mountain should be sufficient to alleviate concerns there.

A flight-free area should exist from Lees Ferry to a western boundary line drawn from Hopi Point on the South Rim to Tiyo Point on the North Rim.

Bass to Tanner should be flight-free.

GCNP should be a flight-free zone for military aircraft.

All commercial tour operations should be licensed by the park with annual reviews to insure compliance with all regulations pertaining to their operations over park lands.

All air tour operators over Grand Canyon airspace should be required to bid for concession permits and be directly regulated by NPS under the 1965 Concessions Act. NPS should impose regulations, capacities, and user fees the same as have been imposed on the river running industry for years.

Pilots wishing to fly over or into the park should be required to file for permission from NPS similar to the way hikers and river runners are limited. Permits should only be issued to flights originating from airports within a 100 mile radius of the park.

A gradual phase out of commercial tour operations should be considered which would allow operators to recoup their investment costs but would result in the ultimate elimination of all tour flights over the park. No new air tour companies should be allowed to operate over any part of the canyon. All aircraft should be gone from the canyon by the year 2000.

Restrict all military and high-flying commercial aircraft to at least 15 miles away from the park boundary.

Ideally, high altitude jets should be routed away from the canyon. They should be reduced to one or two routes or altitudes high enough to lessen their impacts on the entire canyon.

Commercial jetliners need not be regulated.

There should be specific time schedules when high altitude jet routes can be used in the Grand Canyon area.

A combination of changes, adjustments, and limitations in aircraft flights will probably be required to achieve a workable solution, such as limiting times of year for flights (shutting down during winter months when business is poor anyway), limiting times of day (allowing quiet periods in early morning and late afternoon when quiet is especially cherished by many visitors on the ground), setting minimum flight elevation restrictions, and limiting flights to certain areas of the canyon.

An excellent in-the-round movie should be filmed and shown free in the park and elsewhere so that tourists wishing to experience the feeling and view of the canyon from the air can experience it without actually having to be flown bodily over the canyon. The movie would be a substitute for flights and be quieter and safer for visitors than a real flight.

Grand Canyon National Park Airport should be closed, and the heliport used for administrative or emergency use only. Air passengers could fly to Flagstaff or Williams and come to the park from there by bus or rail.

A radar system should be installed to more accurately track illegal flights and control air traffic.

Grand Canyon should be designated an Alert Area.

The numbers of aircraft in the canyon at any one time should be limited.

Limit or restrict flights in areas where backcountry use is high, both from a safety standpoint and the standpoint of the most impact to the most people.

Concentrate flights in areas where backcountry use is highest, i.e, the Corridor. The Corridor is already noisy and highly impacted. Inform hikers in the Corridor that flights are common there. Preserve the quiet and wilderness experience in the more remote areas.

Strict routes should be set up, perhaps two for fixed wings and three for helicopters.

Helicopters will need to have a specific route, including one or two designated locations below the rim but not into the inner gorge.

Routes for transient aircraft should be provided in limited locations and high altitudes, and should be clearly marked on all maps.

Flights in designated corridors should be limited to one flight per hour.

Make Advisory Circular 91-36C a regulation rather than a request.

Eliminate sightseeing flights originating in Las Vegas. This route should be for transportation only.

The physically handicapped and people over 65 years old should be permitted to fly the Grand Canyon if they choose. Others should see the canyon on foot, mule, raft, on film, or from the rim.

Possibly there should be no air tours below the rim during the no motors season on the river, and perhaps only two or three days per week at other times, or maybe only at certain times of day.

FAA should surrender jurisdiction of Grand Canyon airspace to NPS.

Ideally, aircraft should be banned; but if you must compromise, NPS should designate some areas for motorized tourists and some for non-motorized tourists similar to what the Forest Service does.

This problem is not limited to GCNP. NPS should consider this issue in an extremely broad perspective. Interagency and Congressional cooperation should be maximized to develop a national regulatory scheme under which any federally protected area may petition the Secretary of the Interior for airspace designation or appropriate restrictions according to that area's special and unique needs.

NPS should not: allow construction of an airport in the park; allow the situation to get worse by doing nothing; assume that only actions agreeable to the air tour operators are "acceptable."

Before considering regulations, request aircraft operators to voluntarily limit operations in any area deemed "sensitive" and monitor compliance. If the request does not work, then something stronger would be justified.

Formally include backpacker representatives in any agreements (such as the 1972 Tri-State Operators Agreement) or committees which may result.

An experienced mediation firm should be brought in to resolve the conflicts among all parties interested in this issue. Further face-to-face discussions are unlikely to lead to substantive negotiations and resolution of this issue without the assistance of a professional, skilled facilitator. If there is the will to achieve meaningful solutions by all the parties concerned, even some of the most difficult environmental disputes have been resolved through negotiations in this way.

Use air taxi operator's Part 135 operations manuals as a way to educate and regulate.

All user groups should come together to research this problem and feed solutions to NPS. They should not expect NPS to have all the solutions.

NPS should work with all user groups to achieve a workable compromise. For example, to lessen conflicts, cliff dwellings which are inaccessible by foot could be designated for aircraft only, and those accessible by foot designated off limits to aircraft. Most conflicts can be resolved through continued dialogue and compromise. NPS should manage, not exclude, those uses which may be in conflict with each other.

Let us find a solution that allows us all to coexist.

Lack of communication continues to be the major problem. All groups should communicate to reach understanding and agreement. Air tour operators have always been cooperative and are willing to consider almost any changes if there is feedback from hikers, NPS, etc., to do so.

The 1972 agreement is outdated and needs updating.

A Notice to Airmen (NOTAM) should be published detailing any flight restrictions for Grand Canyon. Also, the airport Automated Terminal Information Service (ATIS) frequency or a special NPS ATIS should provide pilots with information on flight restrictions near the canyon. A unicom frequency for aircraft operating in the area should be established and published on flight charts and other publications.

Require each aircraft user to submit flight tracks, verticle profiles, and operational practices to NPS or FAA annually for review and suggestion.

Hold annual public meetings to report on aircraft activities, results of any committees or actions, and to receive public input.

Develop and disseminate educational materials/information to all park users and pilots.

Improve communication between backcountry users and air tour operators. Establish a "hot line" telephone number and/or address to receive/disseminate all reports/complaints, track actions taken, track any developing trends for proposing operational changes, and report to NPS and other interested groups/individuals at regular meetings. Air tour operators may be willing to fund such a hot line.

Little has been done in the past to alert pilots concerning safety and environmental concerns associated with Grand Canyon overflights. The following steps will insure the widest dissemination of information and result in a reduction of low-level flights. Establish recommended visual (VFR) flight procedures and publish them in the special notices section of the Northeast Airport/Facility Directory (A/FD) as is done for Niagara Falls. Place a similar advisory on the Las Vegas Sectional and WAC CG-19 aeronautical charts. Also in the A/FD, include a description of procedures within "airport remarks" for the listing under Grand Canyon National Park Airport. Establish an ATIS-type advisory frequency detailing VFR flight procedures and altitudes. Include canyon overflight information in the special notices section of the Class II NOTAM's. Utilize paragraph 565 of the Airman's Information Manual entitled "Flights Over Charted U.S. Wildlife Refuges, Parks, and Forest Service Areas" to mention items specific to Grand Canyon. Distribute Advisory Circular 91-36C to airports, fixed-base operators, and pilot groups in the states surrounding Arizona. Include Grand Canyon overflight information and frequencies in the Grand Canyon airport listing of the Aircraft Owners and Pilots Association (AOPA) Airport Directory.

NPS should call meetings as required under the 1972 Tri-State Operators Agreement to address any problems and accomplish any changes necessary.

Flight operators and NPS should have work sessions to rearrange flight profiles and routes to cause the least conflict with all user groups. In some areas, flight levels could be lowered and in other areas raised.

An agreement between NPS and commercial operators is a very viable way of handling sound problems from that source. An agreement would be flexible and allow for immediate change whereas rule-making is inflexible and slow.

NPS should work to establish feelings of cooperation, confidence, and trust with air tour operators and other user groups. NPS should publicly state a goal of cohabitation which is acceptable to all groups.

NPS should hold seminars for pilots to improve their tour narrations and interpretation of GCNP as well as to sensitize pilots about NPS concerns.

Most people are not disturbed by aircraft sound until it is called to their attention; therefore, NPS should refrain from mentioning it at public gatherings.

Many aircraft operators support the premise of flight-free zones, but must also have "complaint-free zones" to coexist. This can be established by informing on-the-ground visitors where aircraft may be present and where they can go to avoid overflights. On-the-ground visitors must then respect the air user groups' rights to view the canyon by air as well.

All NPS flights should be reported to the Backcountry Reservations Office as soon as possible so they can inform hikers before they obtain permits to hike in the area. NPS should also place signs at the trailheads informing people of air activity, especially if there is a major project involving helicopters (such as at Indian Gardens.)

Train NPS personnel on aircraft identification and reporting procedures.

All licensed pilots should already be abiding by the FAR's. If they aren't, the FAR's should be enforced and violators lose their licenses.

Establish a "hot line" to Los Angeles Air Route Traffic Control Center (ARTCC--also possibly to Albuquerque's ARTCC) to identify any and all aircraft, especially "stray" military pilots, who may be violating regulations.

The FAA is best suited and equipped to administer flight activities. Airmen are used to dealing with FAA and would be more likely to consult with them than with NPS. Regulation by NPS would require additional Congressional action.

Any rules adopted must be strictly enforced with provision for heavy fines applied to violators, especially those who buzz visitors at low altitudes.

Use hand-held decibel meters to enforce a maximum acceptable noise level for any vehicle (cars, buses, aircraft, etc., even NPS vehicles).

It appears that new legislation is required because existing regulatory categories for airspace do not seem to apply to Grand Canyon. The effectiveness of voluntary compliance in controlling air traffic is dubious at best.

Regulations are inflexible and will not allow future technological developments to be used to make aircraft less obtrusive.

It is not possible to enforce all rules. Fliers tend to be responsible people, so voluntary compliance is better than regulations.

NPS already has the authority. When will something be done?

IV. OTHER COMMENTS

Time of year zoning will be difficult or impossible to administer.

This is a complex problem requiring a complex solution. The simple answers will not work.

FAA Advisory Circular 91-36C was never intended to apply to a twenty mile wide canyon. Flights are now in full compliance with the advisory.

Flight floors 2,000 feet above the highest canyon rim would eliminate air tours. A floor at rim level would eliminate helicopter tours.

Elimination of below rim flights would eliminate one of the primary reasons for using helicopters. This would result in a gradual shift to fixed-wing aircraft with a resultant reduction in noise levels, since most helicopters are noisier than most fixed-wings.

Helicopters and military aircraft create most of the noise problem at Grand Canyon, especially when they fly low in proximity to people. Small fixed-wing planes are getting blamed for a problem they have not created.

The studies cited by NPS in their Task Directive are either too superficial, too outdated, biased, or too emotional to be valid.

The military is the worst problem. Helicopters are a bother, but maybe there is a place for them. Fixed-wing aircraft are not a bother at all.

High altitude jet sounds are more noticeable than tour aircraft.

Air tour operators who fly Twin Otters at 2,000 feet above ground level are 50% quieter than a civil jetliner flying overhead at 35,000 feet.

"No flights" is not a viable political or economic suggestion and would be met with legal and political action.

The Cross-canyon Corridor is as inappropriate a place to seek solitude or silence as is a major rim overlook.

Flight corridors and time restrictions would not be feasible because not all pilots could be informed of the restrictions and visitors would still be impacted in the flight corridors and during non-quiet times.

No action would not deal with a definite problem which needs to be resolved.

This is not an environmental or safety issue; it is a user conflict issue.

The issue is not a conflict between aircraft and backcountry users, but of aircraft and the canyon itself.

Profit is the real issue, not a user or environmental conflict. To protect whales off the California coast, whale-watching flights are requested to stay 1,000 feet above the whales. If the request is violated, it is considered harassment which is punishable under the Marine Mammal Protection Act.

Other parks have determined what the level of natural quiet is (e.g., Canyonlands, Olympic).

Altitudes and routes are not as effective as flight-free areas. Horizontal separation is more effective than vertical in attenuating noise.

We all have the right to enjoy our national parks, but we do not have the right to destroy other people's enjoyment or the park itself.

Forcing all aircraft into the airspace above the rims may broaden the sound cones so as to blanket the entire canyon and rims with constant

sound, and may also cause more rim visitors to notice more aircraft against a background of sky.

Any suggested action should be evaluated as part of an overall plan, not just for its own individual merit.

Any action taken should apply uniformly to all aircraft. The only appropriate criterion on which a distinction may be made is sound level produced from operations, not economics of one aircraft vs. another.

Any action should apply to the entire park.

An Environmental Impact Statement is required.

Aircraft which fly below the rim are the most annoying.

The views of the canyon are awesome even 2,000 feet above the rim.

Customer satisfaction will be the same no matter where the air tours go. This is after all the Grand Canyon--there isn't a bad seat in the house.

Planes flying 2,000 feet over the North Rim make more noise for an observer on the South Rim than a plane flying below the rim.

NPS has no mandate or responsibility to keep air tour companies in business.

Commercial airliners flying above 30,000 feet are a visual intrusion, but in general are not much of a problem.

High altitude jets are heard at night, but are not noticed much during the day.

It is ludicrous to base any management decision on numbers of users. If you have to consider numbers, user days are much more valid than absolute numbers of users.

The majority of visitors view the canyon from automobile or tour bus. The feelings of backcountry users and air tour passengers should not be given more weight than the views of the single largest group of park users.

What is considered noise to one person is only sound to another.

The FAA is primarily concerned with the safety and promotion of aviation. When it comes to imposing environmental restrictions on aircraft, FAA has a conflict of interest. This makes it imperative for NPS to gain control of its own airspace. NPS is really using the issue of aircraft noise to expand its jurisdictional powers to include airspace.

The technology for larger, quieter aircraft is increasing much faster for fixed-wings than for helicopters.

Someone should address the issue of noise and air congestion over the town of Tusayan also.

Aircraft increase the ambient sound level by 10 to 20 dB(D). The methodology of determining Acoustical Noise Contours has been refined in considerable detail in determining the noise impact near airports. A range of 34 to 42 dB(D) can be expected in defining the ambient sound level for a quiet environment.

Sound intensity varies with the square of the distance from the source (i.e., noise from an aircraft at 100 feet is at least 400 times louder than that of the same aircraft at 2,000 feet).

The problem would not exist if the existing agreements, requests, and regulations were complied with.