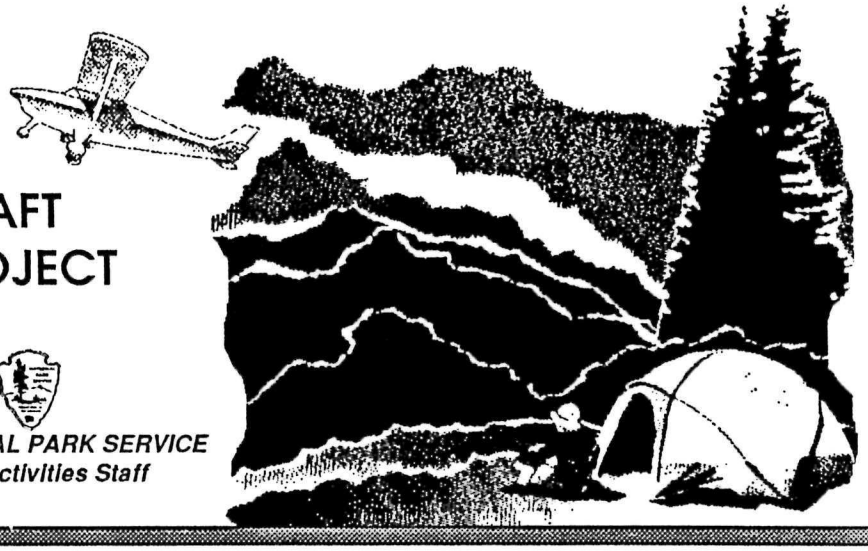
December 1, 1990

UPDATE

INTERAGENCY AIRCRAFT OVERFLIGHT SOUND PROJECT



USDA FOREST SERVICE
Recreation Management Staff

USDI NATIONAL PARK SERVICE
Ranger Activities Staff

TECHNICAL REVIEW GROUP MEETING

The Technical Review Group (TRG) meet in Arlington, VA, on September 20, 1990, to review progress on the Wilderness Aircraft Overflight Sound (WACOS) study. Wes Henry briefed the group on the new work orders negotiated with both WACOS contractors—Bolt, Brannock and Newman (BBN) Systems and Technologies Corp. and Harris Miller Miller & Hansen Inc. (HMMH). Sandy Fidell of BBN provided an update on their work progress, which included some dramatic recordings of aircraft overflights and slides that illustrate field work conducted to date. Larry Hartmann made a presentation on the wilderness safety study, and Bill Makel discussed several assessments being prepared internally by Forest Service personnel. The latter include values of aircraft overflights for firefighting, search and rescue, etc. Several members of HMMH, the second contractor, were introduced to the group and participated in the meeting.

Sandy Fidell also delivered a presentation on the differences between the underlying assumptions of standard aircraft noise studies and the situation we face in the remote recreation environment. Conventional aircraft noise studies, done in urban and suburban areas around airports, employ source-oriented analysis. Airports represent a large investment at a fixed location. Aircraft types, numbers, and locations are known. Noise contours are drawn on the lands around airports to identify "incompatible" land uses. Land use is modified to allow continued airport operation or expansion. In other words, continued aircraft use is a given and land use is changed to accommodate the airport. Software models used to develop noise contours assume well-defined flight paths, a flat ground plane, and relatively short acoustic propagation distances. These assumptions do not apply to our study in National Parks and Wildernesses. Also, background sound levels are not considered.

The National Park Service (NPS) and Wildernesses are managed to protect their natural resources, one of which is "natural quiet," so the analysis system used should be based on the need to protect natural resources and visitor experience. Aircraft overflying natural resource areas are not constrained by the fixed location of runways; there is the opportunity for greater flexibility in routing aircraft flights.

Sandy Fidell then provided an explanation of a new concept of "Observer Based Audibility Contours." This concept focuses on quantifying the intrusiveness of overflights to visitors in parks and wildernesses. It addresses the question "At what slant range from a point or area of interest may a particular aircraft operate without producing noise intrusions of an audibility in excess of some criterion value?" This concept is being considered by the NPS for possible use in determining whether "natural quiet" has been substantially restored to the Grand Canyon.

WHO TO CONTACT FOR FURTHER INFORMATION

Mr. Bill Makel, *National Coordinator for Aircraft Overflight Sound Study*, U.S. Forest Service
San Dimas Technology & Development Center, 444 East Bonita Avenue, San Dimas, CA 91773
(phone 714/599-1267, FTS 793-8000)
or **Dr. Wes Henry**, National Park Service, Ranger Activities Division (650),
P.O. Box 37127, Washington, DC 20013-7127 (phone 202/208-5211, FTS 268-5211).

In preparation for the field work to be done in 1991 on NPS lands, it was decided to have the TRG members review the final questionnaires approved for the study of National Forest System Wilderness and make recommendations for modifications for use in National Park Service areas next summer.

VALUES OF OVERFLIGHTS

A Forest Service "Report to Congress" will include a section on the values of aircraft overflights for firefighting, law enforcement, search and rescue, visitor enjoyment, and resource management. Only those values beneficial to wilderness visitors or which further the purpose for which the National Forest System was created will be included in the report. This section is being developed by Government employees familiar with these activities. No attempt is being made to assess the values of aircraft overflights for military training, commercial aviation, general aviation, other governmental agencies, etc.

WILDERNESS FIELD WORK

On-site acoustical and sociological data collection is completed in two of the three wildernesses selected for intensive study. In these areas, we will determine a dose-response relationship between aircraft overflights and human response very close to the time of wilderness visitors' exposure to the overflights. The final tally for summer on-site personal interviews was 185 interviews at the Golden Trout Wilderness, California, and 342 interviews at the Cohutta Wilderness, Georgia.

Data collection in 9 of the 12 wildernesses selected for less intensive study is completed. Field work should be completed by January.

BACKGROUND SOUNDS

In some areas, the ambient (or background) sound is so quiet that special measures must be taken simply to remove the artificial noise created by the measurement instruments themselves at the lower end of their recording range. With this artificial noise removed, the data now show that it's even quieter at the Grand Canyon than had been previously thought; in fact, below the human threshold of hearing in many frequency bands.

Progress has been made on developing systems to predict ambient noise based on weather characteristics. If this correlation is proven in different settings, it will greatly simplify determining the ambient in most settings.

SAFETY STUDY

Data collection is nearly complete and early results indicate that falls are the greatest cause of accidents in Forest Service wildernesses. The historical record shows that in previous years, some accidents have been reported where horses were startled by low-flying aircraft causing injury to their riders. But, to date, such incidents have not been reported during the period of data collection for our study. There were some incidents of horses being startled, resulting in deaths of the horses, but no people were hurt.

Larry Hartmann and his associates, Laurie Hall and Chris Dumas, will begin writing up the results of their study of the impact of aircraft on safety of wilderness users as soon as data collection is completed this month.

OTHER ACTIVITIES

In addition to the work in progress, we have recently negotiated several new work orders with both research groups—as stated above. The first assignments to be tackled by HMMH include developing a detailed program plan for the NPS, determining the impact of aircraft overflights on cultural resources, and preparing a white paper on the impacts of altitude on aircraft noise. Newly started BBN work orders include detailed program planning for the National Park study, and impacts of aircraft overflights on wildlife. All of these studies are presently underway and proceeding well.