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The Position of the Private Aerial Photographer

FOREWORD

Recent changes in Federal Aviation Agency regulations have caused serious concern among many Society members, particularly among those engaged directly in aerial photographic operations. To explore the problems and search for possible solutions, the Photography Division of the American Society of Photogrammetry recently sponsored an open forum on FAA Flight Regulations during the March 1972 Annual Meeting in Washington.

The opening address was delivered by Mr. Ralph E. Kauffman of Abrams Aerial Survey Corporation, who summarized very effectively the problems encountered in obtaining aerial photography in tightly regulated airspace.

The federal regulatory viewpoint was ably presented by Mr. Robert W. Martin, Chief, ATC Operations and Procedures Division, FAA, who then answered questions from the floor for nearly an hour. Mr. Kauffman's talk is presented below. Although Mr. Martin spoke from notes, it is hoped a summary of his remarks will also be available for printing in the journal at an early date.—J. P. Burns.

IT IS CONSIDERED very proper today to examine the problems of minority groups and I am certain the commercial aerial photographers can qualify as a minority group, by any yardstick.

For one yardstick, what are our numbers?

ASP President Joe Burns invited representatives of 300 aerial survey firms to attend this meeting. Using that 300 figure, we can project some sort of calculation as to the size of our air fleet.

Nearly all of these 300 firms either own or rent an aircraft. Perhaps 200 of the 300 operate one aircraft. The remaining 100 firms operate as few as two or as many as ten, depending on how much of the aerial photographic market they have been able to corner. This assumes a total commercial photo fleet of about 500 aircraft, give or take a hundred, which amounts to somewhat less than one-

half of one per cent of the total U. S. civil aircraft fleet.

In type, these 500 or so range from single-engine low-altitude and slow aircraft to a few jets. Our ranks include some helicopters and a few surplus military or recently-retired airline-type aircraft, but the majority are light twins operating within an altitude block of 2,400 feet to 24,000 feet above sea level. A few have minimal navigational equipment whereas others carry an amazing amount of exotic gear. The majority are well-equipped by modern standards.

WHAT single thing do these widely-varied aircraft have in common? Just this: On any clear day, particularly in the spring or fall, 100 percent of these aircraft can be expected to be in the air at the same time, some two or three hours after sunrise until two or three hours before sunset.

Clear day? This is an archaic term for a weather phenomena that some of the older of us remember—a term which, regrettably, doesn't mean what it used to mean and may very well be on the way toward phasing out of existence. More about this later.

Some of these 500 aircraft are piloted by young, relatively low-time crews, but a great many grey haired (or no haired) veteran airmen are in the photo pilot ranks. Many ex-military pilots have joined the aerial mappers. The level of professionalism is high. Very few photo pilots have secondary non-flying duties. For the most part, photo pilots do not enjoy the luxury of co-pilots, so their jobs demand 100 percent concentration from takeoff to touchdown. Further, these photo pilots are a very special breed in that, in addition to keeping themselves thoroughly familiar with the increasingly complicated technology of operating an aircraft under current regulations and procedures, they must also maintain a high degree of proficiency in the somewhat ancient skill of *pilotage*—the art of visually locating a series of checkpoints, of

laying an imaginary line along those checkpoints and then maneuvering their aircraft to fly precisely down that line.

For a firsthand example, our (Abrams) chief pilot holds the coveted NBAA *Million-Miler* safety award, and two of the pilots on his staff have earned half-million miler designations which speaks to pilot proficiency.

THUS FAR we have identified our air fleet. We have qualified our pilots. We have generated a *clear*, or mapping, day and launched all or part of that fleet into the air. Now, just where is it we want to fly? Ah ha! Here comes the crunch!

A well-known and well-financed organization which insists it is the voice of private aviation has performed the mathematics to prove there is no congestion in the airspace. By the simple expedient of dividing the total airspace above the whole of the continental United States by the total number of registered aircraft, that organization has allocated a block of wild blue yonder within which each individual may do his own thing in comparative isolation.

Aerial photographic activities occur largely in response to the demands of the engineering and planning community, and those demands are for the most part generated by people—large blocks of people. While one segment of our air photo fleet will be securing coverage of blocks of sparsely populated areas, or along routes between remote points, the majority of our air fleet will be seeking new photography in high density areas. Where people congregate, requirements for physical changes generate and where these requirements develop, mapping is needed, which brings us onto the scene for the first step in mapping—*aerial photography*.

Just as the airline people know all of their routes will eventually converge on the major metropolitan areas, so, much of our photo activities center on these high density areas.

We are not a group of individualists seeking to defend our right to fly where, when and how we wish. We are not an organization determined to defend a recreational hobby pursuit against oppressive regulation. We *are* a group of legitimate businessmen conducting a professional activity, an activity we believe to be vital to the welfare and progress of the nation. We are fully aware of the importance of air safety and the machinery of regulation which is needed to assure that safety. What we *are* seeking is a degree of understanding and accommodation which will permit us to pursue this activity within

the framework of existing regulations, an integration of our operations into the ATC function which, we believe, will enable us to operate efficiently and without creating hazardous or unsafe conditions.

Very simply (and this may be an oversimplification) we believe the hang-up to be communication, not the mechanical communication (which I understand FAA is proposing to readjust over the next two or three years), but the philosophical communication which will see *our* people understand *your* goals, and which will see *your* people understand what it is we are trying to do, and why we must do it in a certain way, in your airspace. Not just an understanding between your office and the officers of ASP, but an understanding right down the line to the individual controllers in your organization and the individual aircrews in our group.

We are not so short-sighted as to wish for any blanket exemption from regulation. To the contrary, we want and need the protection your regulation is designed to afford. What we seek is the thoughtful utilization of that regulation to achieve *both* safety and operating efficiency.

Now, for some specifics. Ours is somewhat of a precise science, based on some rather inflexible arithmetic formulas, and tied to fixed geographic locations.

The ultimate product of our activity is the information our service must provide, in the form of map sheets, punch tapes, computer cards or remote sensing readouts. The unit of information determines the scale of the photography required. The scale of photography dictates the precise altitude at which we must fly. The area of ground surface to be covered photographically fixes the location and direction of our flight lines and we are locked into that format. As contrasted with the remainder of the aviation community, these variables are all pinned down within extremely tight tolerances before we leave the ground. While air traffic generally, except for the departure and approach phase, can make virtually unlimited deviations from planned altitudes and headings to accommodate circumstances, the aerial photographer cannot casually abandon either heading or altitude without aborting a phase of his photographic mission, which can be costly in many ways.

Earlier I mentioned the vanishing element of clear photographic weather. Those of us who are long-time participants in this mapping business have been aware for years of the fact of air pollution, which has only recently

been discovered by the environmentalists. With the days of photographic opportunity reduced to a very few, we need to take maximum advantage of those days. We cannot utilize good days, or even good *hours* effectively if we experience confrontations with uninformed authority.

WITH THE positive control floor at 18,000 feet and dropping, I think it is safe to say that all of us who have been working above that level have experienced the frustration of being given an unexpected altitude or directional change, sometimes after having devoted a lengthy period to acquainting a controller, via the VHF partyline, with the scheme of our operation.

As the control floor drops to its announced interim level of 10,000 feet, more aerial mappers will encounter these situations. If the floor is to drop eventually to 7,000 feet (or even 6,000 as suggested by some aviation writers) a high percentage of our operations will be subject to interruption.

Some of our members say they have approached this problem with a prior ground telephone call or even a letter, to the center involved. But the center adds a shift change which often negates our effort. Or, within the center itself, word does not always reach the many controllers who may be involved. And then there is the added complication of a photo mission area which may involve more than one center.

The increasing number of Terminal Control Areas pose their own set of problems. Experiences reported in these areas are both good and bad. Some pilots have reported contact with cooperative controllers who grasp what the aerial photographers' situation amounts to, and work diligently to get the job completed, and to get the aerial photographers out of his area. Conversely, most of us have experienced the frustration that comes with being directed by an approach controller to "standby". Not enjoying his advantage of a fixed floor beneath his feet, we are not at all able to stand by in mid-air, particularly halfway down a flight line.

WE SHOULD NOT leave this phase of our summary without commenting on the Restricted Areas, which pose their own unique problems. Our efforts to gain access to these areas are often met with a requirement to pinpoint a time as much as several days away when we propose to conduct flight operations; we know the fallacy of trying to predict the occurrence of photographic weather more than a few hours in advance. Or we are told the area will be available on Sundays, which makes the odds on photographic weather even poorer. We submit that the requirements for the continued existence of restricted areas should be re-evaluated, and that access procedures should be reviewed to give added weight to photographic needs.

Other suggestions by our members include the assignment of identifying numbers or letters to photographic aircraft; the requirement for mandatory flight plans for all missions, regardless of altitude, with a key word or phrase identifying photo mission plans; or the possibility of a priority to photo aircraft actually on flight line which would see other aircraft vectored around the photo craft. However, the great majority of our members' suggestions deal with ways through which we might make the regulating people at all levels aware of our operational requirements.

In none of the letters I have read, nor in the course of conversations I have held, has there been any suggestion of antagonistic or belligerent feelings. Frustration, perhaps, but the overall thrust has been the recognition of the problems and the desire to work out the answers.

We aerial photographers have an excellent safety record, and we have a firsthand interest in maintaining that good record. You people in FAA have the same goal, applied to the whole aviation structure. We seek the accommodation which we believe communication can bring about. The accommodation under which we may work safely and efficiently and within the protection of the regulations.