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# FEDERAL CONTROL OF AIR TRAFFIC

J. CARROLL CONE\*

I am glad to have an opportunity to enter into your round-table discussion regarding cooperation between federal and state aviation agencies. We have heard so much in the last two or three years about safety in the air; and, since we all realize how very important it is, some of us have given considerable thought to the subject and of what might be done in a practical way to increase safety in air transportation without unduly retarding development. Of course, we all agree that one of the most important factors in the development of air transportation is close cooperation between federal, state and municipal aviation officials.

A study of the accident records affecting all phases of aviation in this country reveals the fact that ninety per cent or more of air crashes in civil aviation are in connection with the violation of some safety regulation and that in the majority of cases if a violation had not been committed the accident probably would not have occurred. It follows then that if we can eliminate the violations we will also at the same time eliminate a large percentage of the accidents.

A study of both American and European records and engineering data establishes beyond question the fact that American aircraft are as good or better than those of any other country; and those of us who have made a careful survey of accident records are convinced that accidents, and particularly air line accidents, are not caused by the disintegration of airplanes in the air, losing of wings, the jamming of controls, or anything of the kind, and that in more than ninety per cent of accidents the airplanes involved were responding normally and naturally to the controls up to the moment of impact. If this is true, then it would seem that a well thought out program of education regarding regulations and the reasons therefor, coupled with adequate enforcement, will do more perhaps toward bringing about an increase in the expansion and development of aviation activities than almost any other one thing we might think of.

I presume that you are all very much interested in our new regulation bulletin on air traffic control along designated air routes, particularly the part which refers to instrument flying by itinerant

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flyers. I trust that you realize that these new regulations and the necessity therefor constitute one of the most complex and difficult situations we have had to handle in the Bureau because these regulations affect every flyer whether in commercial operations or in the military services. There are not a great many miscellaneous operators today who are doing instrument flying but the number is increasing very rapidly and hundreds of new students are taking instruction in instrument flying. Although we have less than one hundred itinerant instrument flyers it is only a question of a few months before we will have many hundreds and these will probably congest traffic along designated air routes and complicate our traffic control problems.

When these new regulations were first started they were generally misunderstood and very greatly criticized, and even now they are not entirely satisfactory and we find ourselves more or less on the spot between itinerant flyers and the air line operators. A great many of the itinerant flyers insist that the new regulations are much too rigid and place unnecessary hardships and inconvenience on the itinerant flyer. Strange to say, some of these complaints come from men whom we know have never done any instrument flying whatsoever and probably never will, but due to a careless reading of the regulations they have the idea that the regulations restrict their operations even when they are operating away from the civil airways and under good weather conditions. Usually, when we have had an opportunity to explain the purport of the regulations and their effect the objections are withdrawn, and in a majority of cases the regulations are commended instead. As a matter of fact, that is the condition that should exist because there is only one reason for new regulations and that is to improve the safety for all who fly. I am sure that you agree with me that when you are flying on instruments the new regulations provide a certain degree of safety from collisions in mid-air. It is indeed an uncomfortable feeling to be on instruments along a designated airway and not have any information as to other instrument flyers who may be in the same vicinity about to meet you head on or overtake you and crash into you from the rear. You imagine you can almost see the dim shape of a plane approaching you in the fog.

Our present regulations constitute the first step in regulating air traffic on instruments. We recognize the fact that they are not as complete as they must become as instrument flying increases. We know that they are not one hundred per cent satisfactory but at any rate they do improve the condition considerably and provide

a certain degree of protection for all of us who fly that we did not have before these regulations were put into effect.

Although some itinerant pilots protest that these regulations are very much too rigid, on the other hand the air line operators feel that we have not tightened up enough.

The members of the National Association of State Aviation Officials can render a great service to the Bureau of Air Commerce and to aviation in general if you will assist us in educating the public as to the necessity for regulations and help us to see that they are enforced. We hope to learn much during this winter's operations as to how we can improve the situation and we invite you to work with us along this line. Send us your suggestions and recommendations from time to time and in the meantime help us to instill in the minds of the public the necessity for regulation and to popularize them with the pilots. These regulations have been much like the Volstead Act. In the beginning they were so unpopular that they could not be enforced. When all parties concerned are made to understand the purpose back of them and the safety they provide I am sure the regulations will become popular and generally obeyed.

It does not make much difference how theoretically correct our regulations may be; we will not obtain the desired result from them until we have the willing cooperation of all parties affected.

The Regulations Division of the Bureau of Air Commerce has come to the point where it takes for granted the one hundred per cent cooperation of the State Aviation Officials. It has been a pleasure to work with you and I know that you realize that we are always anxious to give you our full cooperation. Your problems are generally the same as ours although you have local difficulties that we may sometimes fail to appreciate.

Although my Division of the Bureau is concerned primarily with regulation, we feel that our primary responsibility is to foster the development and expansion of civil aeronautics, that regulations are a necessary incident thereto and are justified but only to the extent that they do aid and foster the expansion and development of civil aeronautics. We further realize the importance of eliminating all unnecessary inconvenience and expense to the aviation operator and will appreciate recommendations and suggestions from your organization for the improvement of our service and to guide us in the cooperation we desire to give you.

*(Verbatim report of discussion following Col. Cone's address.)*

PRESIDENT SHERIFF: What are your ideas as to the proper and most sensible means of having the right supervision over terminal facilities? It has been suggested that airports, and probably also the terminal facilities that have to do with navigation aids, especially radio, should be maintained largely at the expense of the federal government, but I can't get away from the idea that part of the cost of supervision be left to the local municipalities.

MR. EDWARD P. WARNER: I have been given the specific question concerning federal participation in supervising terminal facilities. It is difficult at the present time to discuss any question of the degree of federal activity without getting into a vast and comparatively unexplored ground in this moment of intense politics. It seems to me it is still good sound principle that the federal government should participate in the promotion of any activity or development of any facility which has, as its primary purpose, the serving of commerce and the public, if such service is in danger of being limited otherwise. When attempting to apply that rule to airports, we would observe that it is impossible to say there is any facility or any phase of activity at the Kansas City airport that does not affect the people of Kansas as well as Missouri, and there are innumerable other examples. Still in a general way, we can say that certain airports are primarily regional in their service, and some others are primarily national in aim. It is a little difficult, as I say, to discuss this in terms of broad principles at the present time. We have had a situation calling for an abnormal amount of public relief, a situation of abnormal restriction, and in fact a virtual drying up in many cases, of state credit. The relief has had to be provided by the federal government, and it is inevitable that the federal government should take over a good many activities. There are some who feel that that should be permanent. It seems to me, however, contrary to the best interests of aviation to put every municipality and state in the frame of mind of lying back and waiting for the federal government to act, with the presumption that until it does, there will be no action by anybody. It does seem to me appropriate that the federal government should continue to provide certain facilities of navigation. It seems to me entirely appropriate that a long recognized airway, regularly flown on schedule, should continue to be a federal responsibility so far as upkeep, including certain lighting beacons and radio facilities. I think the federal government is bound to continue some extension of assistance to airports.

HON. RICHARD S. BOUTELLE, State Coordinator, Bureau of Air Commerce: What we have done in the Bureau toward coordinating activities of our Bureau and the states has depended largely on knowing just what you want, and our ability to do it. Each one of us has different problems, and I don't know of any general talk I could give that would fit each situation. If there are certain things you think we should do that we are not doing, this might be a good opportunity to ask us about those things, and see if we have some explanation and we can help you out later.

PRESIDENT SHERIFF: What about radio control and traffic control?

MR. BOUTELLE: Many of the men have asked me relative to putting through legislation in their own states on traffic control. My advice is that I don't think we know a whole lot about it yet. Legislation in a state, as you all know, is pretty hard to accomplish on a new subject, and still harder to

repeal, and I would suggest that until such time as we feel we are qualified to advise you, you hold up on any permanent legislation.

MR. GILL ROBB WILSON, Director, Department of Aviation, State of New Jersey: We ran into that problem in Newark, which is a convergent point, and we discovered that once we let them pile in. We have had as many as fifteen planes circling that airport, all of them blind flying and trying to keep at a different altitude, and some of them low on gas. That condition hasn't existed since the traffic control system went into vogue. There is a great question legally as to whether we could pick up a ship and tell it to stay in a certain spot so long as we were not employing a regular traffic control director—or whether we could tell a ship over one state to stay there. We were in a ticklish position. The whole proposition was a hard one. It was a matter of lack of education in most problems. We finally did this thing. We took a lot of ideas and threw them into a legislative hopper. We wanted to go on record as to the public viewpoint, so that if anything occurred, we could say we have studied the problem. There was a gradual accumulation of legislation. Many people who did not understand it got up in arms, and they felt we were trying to put everybody out of business who wasn't a scheduled airline pilot. I don't think the federal department has done enough to educate. I believe there should be a definite propaganda, not to the public generally, but to the boys who have had twenty or thirty hours in the air. We sent out an invitation to about 600 pilots to visit the tower at the Newark airport. They didn't come. I think that if the department would send out some sort of a propaganda that it was up to them to study this problem, we might be able to help the public.

COLONEL J. CARROLL CONE: In regard to the question about traffic control and regulations, I am quite anxious for you to thoroughly understand it, so that in turn you may properly instruct and inform the pilots in your state, and the objections to them may be eliminated. None of you would think of starting on a trip today without both a gasoline gauge and a compass. I believe as flying increases we are going to find that we will have to have things we believe necessary now, but are not ready to put them into effect. It isn't anything we intend to do right away, but when we get ready for it we will submit it to you before we actually adopt it.

At certain hours of the day, some other airports are just as bad as Newark, and we know we have just missed some very bad collisions. There have been very few near collisions enroute between towns, but when the airplanes reach the airports, and particularly if it is pretty hazy, that is another proposition. Most airplanes are blind to the rear and above. You can only see what is directly ahead of you, and if the man behind can't see you very well, particularly on a day of bad weather, there is likely to be trouble. So if this confusion increases, I think it is going to become necessary to have federal regulation. But right now, if we attempted to have this regulation before educating the public to it, we would get much objection. If it is brought home to those flyers how much safer it is for them, it may eliminate the objections.

Q: What do you think about the advisability of requiring the planes which fly those routes between terminal airports to be equipped with a radio so as to get the radio warnings?

COL. CONE: It might be advisable to have a receiver at least, and in the

distant future it might become advisable to have a two-way radio. I think the new pilots will see what its advantages are. It will get to the point where the pilot wants a transmitter anyway. Right now I do not think it necessary for them all to have transmitters. I will say though that we are not intending to put this regulation into effect any time in the very near future. What is your idea about the radio?

MR. WILSON: There is no doubt in my mind that the federal airway will have to be defined. Once a federal airway is defined, I think there is no doubt but that the navigation equipment of an airplane is just as important as the motor in the ship. I would say that on a federal airway, where the government has to exercise responsibility, the installation of a receiver in a plane is absolutely essential.

COL. CONE: Mr. Evans, I know you gave some thought to this idea.

MR. FLOYD E. EVANS, Director, Department of Aeronautics, State of Michigan: There is no question but that any plane landing on a transportation field should have receivers.

Q: Do you think that the radio is the solution of this problem when we don't yet know what the saturation point of an airport is? Do you think the two-way radio is the solution for the problem five years from now?

COL. CONE: We have given a lot of thought to the idea that the airline schedules are going to become so congested that even though all airplanes using the airports are equipped with two-way radios, it will still be a situation which is not satisfactory. Airline terminal use may be restricted, and other airports would have to take care of itinerant flyers. It would be fine now if we could have at certain points where there are a tremendous number of scheduled lines, restriction of the use of the airport to those airlines.

Q: I agree fully with the necessity of having radio receivers and transmitters in the future, but it seems that now is the time for manufacturers to investigate the possible use of all this extra equipment, as some planes are not now built to use it. Manufacturers should be required to allow navigational equipment when planning for the weight of a plane.

COL. CONE: A lot of private owners on their own accord are buying radios, and then getting in difficulties with the Bureau of Air Commerce because of new diagrams, etc., and it takes a lot of correspondence. I am glad to say we are working on an idea now that will eliminate this.

You are talking about regulations for manufacturing four years from now. I thought you were about to suggest that each airplane be equipped with a certain kind of carburetor and dual ignition and then we might also add the radio receiver. That probably would add very little to the cost of the airplane, and bring down the price of radio receivers.

Q: I think we are fairly well cognizant of the airport problems which the officials have well in mind, but when we come to the northeastern part of the country—Boston—we have a little different problem. The gentleman in front here spoke about the airports in New York, and a year or so ago I felt that one solution of this whole thing was the segregation of airports as to classes of traffic in neighboring cities. New York is fortunate in having several major airports which it is going to need. We have only one airport to accommodate the larger type of plane, and there is nothing further in process. Boston is really the center of aviation so far as inspection, repair

and service goes for Maine, New Hampshire, Vermont and the eastern part of Massachusetts, and I can't see just what the solution is in barring everybody from Boston airport who does not have a two-way radio. These may seem like little problems to you, but not to us, if the same rules apply to Boston, Concord and Burlington as apply to the New York and Chicago airways.

COL. CONE: It is very difficult to formulate any regulation that is national in scope, that is adequate or fair to all sections of the country, and about the only way we can handle it is to make the regulation, and then consider it more or less flexible and give inspection personnel a certain degree of authority to interpret the regulations in a particular area, recognizing the fact that different conditions exist in the different parts of the country. These regulations, as I understand them, do not affect any itinerant flyer unless he is doing instrument flying.

I think that when we get these auxiliary airports to use in the future, we will have to form a system of blind flying control, that is a system of area control in certain very large areas. In connection with control towers, as I go around, I see defects. One is that the control towers are so located that the noise of airplanes warming up is a nuisance, and I think these should be reconditioned and made sound proof, and eventually the qualifications of the man in the control tower should be very carefully considered.

We are just taking the first step now in revising our regulations, and we sometimes overlook a lot of situations that are not thought of at the moment. In some respects we go too far, and in some respects we don't go far enough. We would like to have any of you write in constructive criticism.

MR. A. H. NEAR, Superintendent, Bowman Field, Louisville, Ky.: Mr. Wilson brought up the question about educating the pilot to cooperate with the departments. First comes a bulletin which seems to overlook the itinerant flyer in its requirements. The itinerant flyer needs something from the Department that will assure him they are really interested in him as well as the airlines. I think the Department should put on a program to protect the itinerant flyer.

COL. CONE: It is a fact that we perhaps may have unnecessarily antagonized the itinerant flyers when we issued our original bulletin, but if you understand why that went out, I think there won't be any criticism. We had several near-collisions between airliners and military planes, and we more or less hurriedly got out that bulletin. The airline inspection service necessarily thinks about airlines, and when that bulletin was issued, it was done so hurriedly that we did not realize what it was doing to the itinerant flyer. I think you will realize that unless we have to put out a regulation immediately because an emergency exists, we shall not do so without giving you a chance to express yourselves on it. We realize that to study conscientiously and thoroughly a problem in our Bureau is not enough without conferring with the people in the field. We are likely to make mistakes otherwise, and we are giving all parties concerned in the future an opportunity to comment on any regulation or amendment to the present regulations.

HON. JOHN H. GEISSE, Chief, Development Section, Bureau of Air Commerce: I would like to ask permission to digress from my paper for a moment to this subject you have just been discussing. This is the first time



I have heard of the possibility of requiring radios in all airplanes on the airways. It has affected me quite deeply because I realize its effect on the growth of private flying. I am fully in agreement that the radio is probably going to be required in planes in operation from your terminal airports. As a matter of fact, I agree that probably we will have to take private flying off the terminal airports, but to say that all airplanes have to be equipped with a radio appears to be going quite a ways. If you do this, the autogiro would also have to be equipped with a radio, which at present costs a considerable amount, and weighs forty pounds or more. It strikes me that we might be a little more concerned with the visibility from an airplane, and less about the radio. Further, radio equipment would not stop collisions. Of course, the itinerant flyer wants to know very accurately where he is, but I think this requirement would be quite a blow to the private pilot.