CIVIL AERONAUTICS AUTHORITY

TECHNICAL DEVELOPMENT DIVISION

CONFIDENTIAL NOTE NO. 13

OPERATIONS REQUIREMENTS, AIR MAIL PICK-UP CONTRACTS

By
D. E. Ellis
AIR TRANSPORT SECTION

December
1938

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On September 15, 1938, bids were due to be received by the Post Office Department in response to their advertisement for service on two experimental air mail routes, using the patented air mail pick-up device. These routes were to be given a scheduled service under two contracts requiring mail to be picked up and delivered at some 54 points, most of which, other than the terminal, are off the established airways. This proposed operation, which was authorized under the provisions of H.R. 7448, was not an original project of this Section, and was transferred to us for study and for recommendations for safety requirements to be made to the Enforcement Section.

Briefly, the history of the matter is this: The Tri-State Aviation Corporation, of which Mr. Lytle S. Adams is president, had for some years operated a scheduled operation in Pennsylvania, West Virginia and Delaware, using this patented pick-up device, of which they were the owners, for the transportation of small package air express. In 1937 they went before Congress as the proponents of legislation enabling the establishment of an air mail pick-up service using their device. They were successful in having their proposal considered favorably in H.R. 7448. However, the actual points to be served under the advertised bids differed from those they had previously used in their air express service. Important arguments in favor of their idea were that such service could be given to isolated communities that did not have airports and were not on existing air mail routes, that their method of operation made the con-

struction of airports unnecessary, and that airports would only be used at points where landings had to be made for refueling or at the terminals of their routes. Consequently, the Post Office Department laid out the proposed routes from the standpoint of isolation of the towns to be served, that is, according to their importance or to the difficulties of surface transportation between such points. As a result, the routes decided upon would not necessarily coincide with the routes on which the Tri-State Aviation Corporation had accumulated operating experience.

Consequently there appears the immediate need for a careful inspection of the proposed installations of the ground portion of the pick-up and delivery system at each of the points named in the advertisement. The pick-up device has been tested and approved by the Aircraft Airworthiness Section and its installation on several new Stinson airplanes has likewise been tested and licensed. Undoubtedly, the contracts will be let to this company in the near future if this action has not already been taken, and we may expect that operations will be started in the near future.

The provisions of H.R. 7448 may be briefly summarized as follows:

1. The Post Office Department is authorized to contract for experimental air mail transportation.
2. Authorization for autogyro shuttle service between outlying airports and central city areas is included.

3. The utilization of the patented pick-up and delivery devices is also included. Patents owned by the Tri-State Aviation Corporation, and/or Lytle S. Adams, are those referred to.

4. The operations are to be subject to the requirements of the Civil Aeronautics Authority relating to safety, technical functions, qualifications of aircraft and airmen, and matters connected therewith.

5. The provisions of Section 13 of the Air Mail Act of 1934 apply.

6. The Postmaster General is to report to Congress as soon as practicable the final results of experimental services, with his recommendations for legislation to establish these services on a permanent basis.

7. Preliminary reports are to be made to Congress from time to time by the Postmaster General.

8. Air mail routes up to 40,000 miles and an aggregate of 60,000 airplane miles are authorized. (This is an increase of 5,000 route miles over previous authorizations, to provide for this experimental service.)

9. Extensions may be made at any point on any route. The aggregate mileage of such extensions on any one route shall not exceed 250 miles. The rate of pay is not to exceed the rate per mile fixed for the service thus extended.

10. Star route air mail contracts are authorized, not to be over 200 miles long, and to be operated by direct flight between terminals. The pay is not to be over 20 cents per mile (airplane), for not over 250 pounds of mail, and not over 1 cent per airplane mile for 20 pounds in excess of the 250 pounds.

11. Not over five contracts may be awarded under this Act.

CONCLUSIONS

Without consideration at this time of the proposed autogyro service (par. 2 above), it will be seen that there is a great deal to be done by the Civil Aeronautics Authority. (par. 4 above). Of this work, so far as the writer knows, only the requirements as to qualifications of the aircraft have been completed. The airplanes were equipped with the pick-up device at the factory, then tested and issued a C license.

The requirements relating to safety, technical functions, qualifications of airmen, and matters related thereto have yet to be made by the Authority. It is most urgent that action be taken immediately in order to have this work completed before the operator is required to start service. Post Office Department contracts provide that service must start within six months after the awarding of the contract.

The following important factors which are involved in this operation indicate the need for safety regulations on the part of the Authority:

1. Passenger Handling: The letter of the Chief of the Aircraft Airworthiness Section, of August 22, 1938, addressed to Mr. E. B. Sporleder, of the Stinson Aircraft Corporation, Wayne, Michigan, stated, "A pick-up and delivery installation may be included in the pertinent specification of a certificated airplane with the restriction that no passengers are to be carried when device is in use . . . ."

2. Pick-up and Delivery Contacts: It is understood that the only landing between terminals to be made by the operator on each trip will be made for the purpose of refueling. The route from Philadelphia to Pittsburgh, with a direct line route mileage of approximately 465 miles, involves 25 pick-ups and deliveries, not including the two terminals. The route between Pittsburgh, Pa., and Clarksburg, W. Va., with a direct route mileage of approximately 413 miles, requires 29 pick-ups and deliveries, not including the terminals. Both of these routes are off established airways. At only 22 of these 54 contact points are there airports within 5 miles of the towns for use in the event of emergency landings. The fact that advertisement for service includes the stipulation that the contractor "shall receive and deliver the mails at the post offices at all exchange and terminal points . . . ." means that he will be obliged to provide transportation of the mail from these towns to the points where pick-ups and deliveries are made. It is understood that these contact points are to be along or near the paved highways, just outside or at the edge of these towns.

3. Traffic Control, and Ground Operations: It is understood that the ground contact points are not being equipped with radio communications for this operation, and nothing in the Post Office Department advertisement for bids requires either ground or aircraft radio. It is understood that the ground personnel will consist of part time employees. These will include at a typical contact point, a car driver with an automobile for the transportation of mail to and from town, and some local employee at a gas service station or other business who will be on duty at the contact point in connection with his other employment, and who will give his part time services in operating the ground portion of the equipment at the time the plane arrives. No employees with aviation training, other than training in the use of the pick-up device, will be provided by the company at these contact points. No ground-to-plane or plane-to-ground traffic control means are provided at contact points other than terminals and refueling stops.

4. Flight operations: No direct means is provided to give weather information to the pilot from the various contact points. Information is not now available as to the flying technique required to approach a contact point properly, drop the mail to be delivered and pick up that to be received. Close contact with the ground without landing involves much of the technique and hazards encountered in crop dusting flights.

RECOMMENDATIONS

In view of the imminence of the start of operations under these experimental contracts, the following recommendations are made:

1. The study of the safety requirements and the issuance of pertinent regulations covering the operations of these two particular services should be designated as a project of the Authority, and this project should be assigned without delay to the Divisions and Sections concerned.

2. The location and physical conditions surrounding each contact point should be studied to determine the obstacles to flight, and approval of each location should be required. Such approval should take into consideration the hazards of nearby obstacles, such as highways, trees and overhead wires, the possibility of dragging the pick-up hook and cable over these obstacles in approaching or leaving the contact point, and the prevention of danger to persons within range of the pick-up operations.

3. The flying technique should be studied to determine the requirements for approach under conditions of cross winds, down winds, etc. If cross wind or down wind approaches for contact cannot be made, provision will have to be made to line up the ground installation into the wind for each approach, and for a reasonably clear approach to exist for the suspended sack of mail from any direction into the wind. Provision of wind cones at each contact point will have to be considered if approaches into the wind are necessary. It will

also be necessary to consider not only the angle of approach and the distance of level flight necessary under calm air or down wind conditions in relation to obstacles on the ground, but also the clearance of the suspended mail sack in approaching and leaving the contact point. Moreover, when these requirements have been determined, their application to each particular contact point will have to be investigated before approvals can be issued.

4. Regulations with reference to traffic control for ground personnel training should be formulated. Ground crews should be equipped with signal flags, if no other ground-to-plane communication is required, and they should be trained and qualified in their use. They should be acquainted with the location of the nearest governmental weather reporting service, and should be able to report, and route a report of special weather conditions prevailing at their locations to the pilot in flight by way of the nearest airways radio communications. They should be equipped with telephone service at the contact point where pick-ups and deliveries are made, and should be familiar with airport conditions at the nearest airport at the time their schedules are due to arrive. Ground crews should be provided with emergency first aid equipment, and fire-fighting equipment, and should be trained in their use.

5. The status of the pilots employed should be clarified with the N.L.R.B. and the A.L.P.A.

6. Because of a possible question as to the interpretation of the restriction placed on passenger carrying by aircraft when equipped with this air mail pick-up device, the restriction, which now reads "no passengers are to be carried when device is in use", should be amplified to mean that passengers may be carried between points when the plane is equipped with the device, but no pick-ups or deliveries are being made, with the provision, of course, that the gross load permits. The reason for this recommendation is the fact that the term "in use" could apply to any schedule where pick-ups were made en route. However, if the operator should elect to receive and deliver his mail at an airport instead of a pick-up point in order to handle passengers between any towns, he could do so even though the remainder of the schedule would be without passengers, and would involve using the device.

7. In view of the fact that these operations will require the waiving of certain Civil Aeronautics Regulations, this matter should be referred immediately to the General Inspection Section of the Certificate and Inspection Division for the issuance of a non-application certificate.

The above recommendations cover only a few of the possible requirements that may have to be considered in order to surround this unusual type of operation with the safety measures that will help to make it a success. In this, as in other experimental or off-air-ways flying, it may be contended that the relaxation of existing regulations will do more to further this experimental development than

the imposition of stricter regulations. In this contention there is a certain amount of merit. Existing regulations may have to be waived in many particulars to permit the operations at all. However, in order to counterbalance this relaxation of regulations, the special requirements of the new development must be protected from all hazards that may be foreseen for the benefit of both the public and the operator.