DECISION

THE COMPTROLLER GENERAL
OF THE UNITED STATES
WASHINGTON, D.C. 20548

57048

FILE: B-183395 DATE: September 25,1975

MATTER OF: Globe Air, Inc.

97418

DIGEST:

1. Where helicopter specifications require takeoff and landing capability at 10,000 feet density altitude and protester submits no evidence to directly controvert agency's stated position that, based on review of typical operating temperatures, elevation of existing heliports and higher elevation in area of operation, such capability is required, it cannot be concluded that requirement is without reasonable basis and unduly restrictive.

2. No reasonable basis has been presented for agency requirement that aircraft door opening have minimum size of 4 feet high by 6 feet wide. Agency justified requirement on basis that size of opening is dictated by mission of aircraft to move palletized cargo and transport retardant buckets which will not fit through smaller door opening of protester's helicopter. However, on another helicopter currently in use by agency, door opening size identical to protester's helicopter has not presented problems and protester has indicated that there is retardant bucket of requisite capacity which can fit through smaller door opening of its helicopter.

3. In context of special experimental program to secure data as to agency's exact helicopter rappelling requirements, where various tradeoffs have been pointed out between use of two-door and single-door helicopters to perform rappelling operations, it is recommended that serious consideration be given to testing protester's single-door helicopter, which has not been done previously, to determine whether it has specific capabilities necessary with regard to use in rappelling operations.

4. Doubts, in absence of objective evidence, as to propriety of Forest Service's helicopter climb rate requirement in IFB need not be resolved since agency had reasonable basis to utilize specification provision excluding use of protester's helicopter in particular procurement. Agency should be, however, prepared to justify climb requirement with objective evidence since question might arise again.

5. Forest Service helicopter specification requirement for landing skids which excluded helicopter operated by protester using three-wheel configuration of considerably larger dimensions is not without reasonable basis. Suggestion to Secretary of Agriculture that, if possible, landing tests should be scheduled to determine if protester's helicopter can meet agency's needs.

Invitation for bids (IFB) No. 49-02-75 was issued by the United States Forest Service on February 14, 1975. The IFB sought bids to provide helicopter services. Items 10-14 required that the successful contractor provide for each item a twin-turbine engine helicopter with skids, seating 14 passengers, Bell model 212, or equal.

These helicopters are to be used in region 6 (the Pacific Northwest) to transport cargo, personnel, and firefighting crews, and must have the special capability whereby the fire crews may rappel out of the helicopter by descent lines suspended from the aircraft. According to the Forest Service, this attempt to establish an operational rappeling capability is a special experimental program being conducted only in region 6. We note that the present general Forest Service policy is to require the helicopter to land as near to a fire as possible rather than allowing for rappelling.

Globe, an operator of Sikorsky helicopters, initially protested based on the following grounds:

A. The IFB's requirement that the helicopter have skids was unreasonable and restrictive;

B. The IFB's requirement for a semi-rigid, two-blade, single main rotor system was also unreasonably restrictive;

C. The IFB's requirement for a 1,400-foot per minute sea level rate of climb at maximum gross weight did not relate to the actual work required to be done; and

D. The pilot experience requirements unfairly excluded pilots having experience on Sikorsky S-55T or S-58T helicopters.

Globe argued that the effect of these restrictions was to unfairly limit responsive bids to operators using Bell 212 helicopters. After a thorough discussion of these issues at a

conference held in our Office, the Forest Service amended the IFB in the following manner relating to Globe's arguments B, C, and D, above.

B. the specification relating to the rotor system was revised to permit the use of either a semi-rigid, two-blade system or an articulated four-blade rotor (employed on the Sikorsky S-58T);

C. the rate of climb requirement was rewritten to reflect the useful payload requirement of the mission, i.e., payload computed on basis of total weight of personnel and equipment to be carried at density altitude which is in experienced range of required operation; and

D. pilot experience requirements were changed to include all experience in this general class of turbine helicopter (including the Sikorsky S-55T and S-58T).

Upon receipt of the amendment, Globe iterated and supplemented its protest with regard to the unchanged skid requirement, the new requirement that the helicopters have a door on each side of the aircraft, the new climb rate requirement (C, above) and the new takeoff and landing capability requirement.

The new takeoff and landing capability requirement.

Section 221-2(c) of the amended IFB provides that a "Take-off and landing capability at 10,000 feet density altitude with the 1,759 lb. allowable payload is required."

The Forest Service explains the 1,759 payload figure is composed of the weight of six firefighters, a spotter and required equipment. Moreover, the 10,000-foot density altitude is considered to be a very realistic condition of expected operation. In reaching this conclusion, the Forest Service reviewed typical operating temperatures, the elevation of all existing heliports in region 6, and the higher elevation of each area within the forest where the helicopter would operate. Based on this review, the Forest Service determined that the 10,000-foot density altitude (8,000-foot altitude pressure at 18° C.) was "typical at the more difficult portion of the required range of operations." (Emphasis added.)

Globe argues that the new takeoff and landing capability requirement is simply an effort to restrict competition to the Bell 212 since the Bell 212 has been FAA certified at 10,000-foot density altitude while the S-58T has, to date, been certified at only 8,000 feet. We note, as indicated by Globe, that the S-58T does have the ability to operate at the 10,000-foot level and that FAA certification could have been obtained if time had permitted. Globe, however, has not submitted any evidence to directly controvert the Forest Service's position that based on its examination of all factors a 10,000-foot density altitude capability is required. Under the circumstances, we cannot say that the requirement for this takeoff and landing capability is without a reasonable basis. Therefore, we do not find that the specification is unduly restrictive. Globe Air, Inc., B-183396, June 26, 1975, 75-1 CPD 389; Winslow Associates, 53 Comp. Gen. 478, 481 (1974), 74-1 CPD 14; B-178518, May 23, 1973.

The two-door requirement.

Section 221-3(b) of the amended IFB states that the:

> "Helicopter must have a door on each side, at the same approximate fuselage stations, flush with the compartment floor. Minimum door opening size shall be 4'0" high by 6'0" wide. * * *"

The Forest Service states that the size of the door opening is dictated by the mission of the aircraft to move palletized cargo and the transport of retardant buckets "which will not fit through the [single] door of the S58T." Also, the number and location of the doors is related to the rappelling mission and permits a rapid rappelling operation fully coordinated by a spotter in the aircraft.

As to the size of the door opening, Globe indicates that the S-58T's opening is the same size (45-1/2 inches wide by 48 inches high with door on and 48 inches by 48 inches with door off) as that of the S-55T which is in current use by the Forest Service, and that door opening size has not presented a problem with regard to hauling cargo or retardant buckets. While that bucket may fit through the door opening of the S-58T, this IFB requires the helicopter to provide a variable capacity bucket commensurate with the required lifting capability of the aircraft (here 4,300 pounds). Therefore, the 300 gallon bucket used on the S-55T would be insufficient under this requirement since the S-58T has a greater lifting capacity than the S-55T. However, Globe has informed us that it is possible

for the S-58 T to accommodate a 500 gallon bucket (4,000 pounds of water) which will fit through the door opening of the helicopter. This would therefore appear to be a bucket commensurate with the aircraft's required lifting capacity.

In view of the above, no reasonable basis for the door opening size limitation has been presented.

As to the requirement for two doors in the aircraft, Globe argues that the Forest Service has ignored the fact that it is simply not necessary and perhaps unsafe to require two rappellers to leave the helicopter at the same time. The helicopter will carry a crew of no more than six rappellers at any one time. Therefore, if a rappeller can descend the approximately 200 feet of rope which would be used in a rappelling operation in about 30 seconds, by using only one door and only one rope, the total hover time over the drop zone would be increased from approximately 1-1/2 minutes to approximately 3 minutes. Globe views this as clearly de minimus. Moreover, it contends that the use of only one rope would prevent tangling and also provide greater safety in that only one rappeller would be outside the helicopter at any given time, which could be important in the event that one of the aircraft's two engines failed during the rappelling operation. In this regard, both Globe and the Forest Service recognize that no helicopter of this type can sustain a hover in the required altitude of operation after the loss of one engine. However, the Forest Service indicates that by using only one door and one rappelling line the resultant doubling of the hover time and exposure to this hazard is not de minimus.

The parties have pointed out various tradeoffs between the two-door and single-door aircraft. In the context of a procurement to secure data as to the Forest Service's exact rappelling requirements, we recommend that prior to the exercise of any contract option, serious consideration be given to testing the S-58T to determine whether it has the specific capabilities necessary with regard to use in rappelling operations.

The new climb rate requirement.

The amended IFB requires that the helicopter's rate of climb at 10,000-foot density altitude with a payload of 1,759 pounds be a minimum of 1,250 feet/minute at "maximum continuous power."

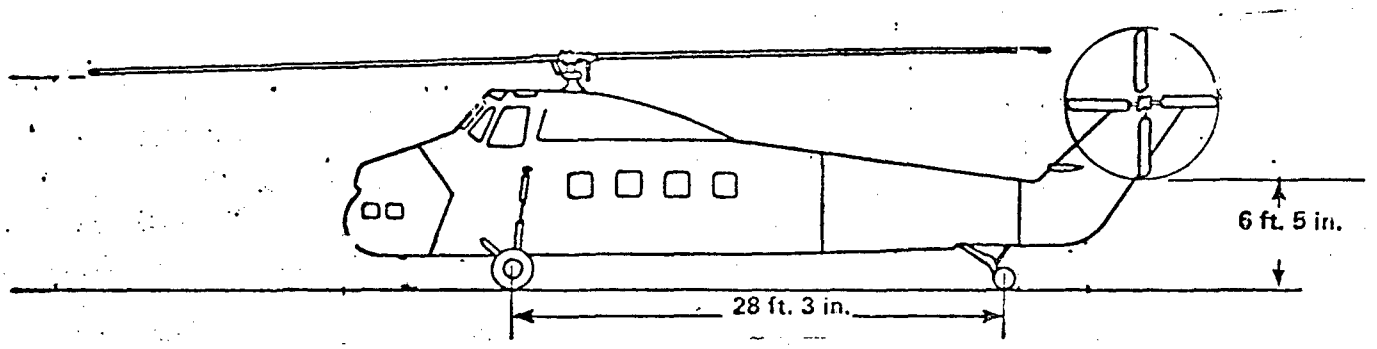
Globe has submitted aircraft performance information which indicates that at the 8,000-foot pressure altitude and 18° C. (10,000-foot density altitude) and a total load of 3,000 pounds, the S-58T has a certified rate of climb of 1,100 feet/minute. The information also indicates that when utilizing takeoff power, as opposed to "maximum continuous power," at 3,000 pounds, the rate of climb of the S-58T is 1,300 feet/minute. While Globe recognizes that the S-58T flight manual states that takeoff power can be used only for 5 minutes, it argues that 5 minutes is clearly sufficient for any foreseeable emergency need. Globe contends that no justification has been shown for requiring the use of only "maximum continuous power" rather than takeoff power for purposes of the climb requirement.

The Forest Service states that the "maximum continuous power" standard was used because the requirement for rate of climb was seen as a need for a sustained climbing capability.

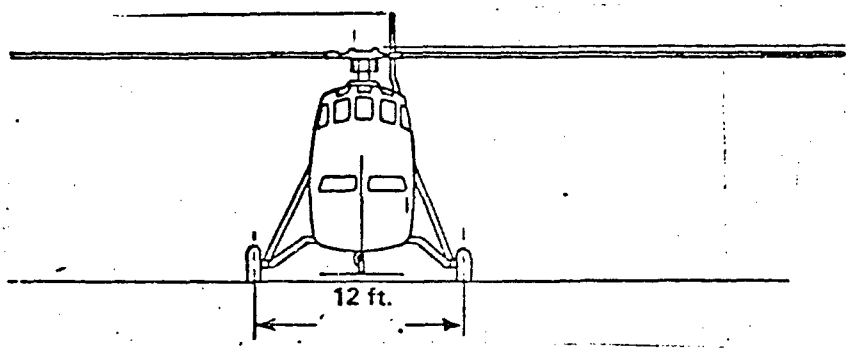
Our Office has some doubts, in the absence of any objective evidence, as to why (1) a 1,250 feet/minute climb rate (which is substantial) is sufficient and yet one only slightly less is not, and (2) why 5 minutes of sustained climbing at this rate is not considered sufficient. We need not, however, resolve these doubts for, with respect to the takeoff and landing capability, we have found a reasonable basis for the Forest Service to have utilized a specification provision which excluded the use of S-58T in this particular procurement. We would, however, suggest to the Forest Service that this question might very well arise again and the Forest Service should, at that time, be prepared to furnish objective evidence to establish that the climb rate requirements are founded upon a reasonable basis.

The skid requirement.

The IFB, as amended, requires the helicopter to be equipped with FAA-approved skids with a maximum footprint (length by distance between skids) of 12 feet by 12 feet. The Bell 212 has such a skid configuration. (The Bell 212 skid configuration is 8-1/2 feet wide and 12 feet long.) As can be seen from the diagram below, the S-58T has a three-wheel configuration of considerably larger dimensions.



SIKORSKY
S-58T



Dimensional Drawing, Sikorsky Sales Data, SE 58-109, October 2, 1970

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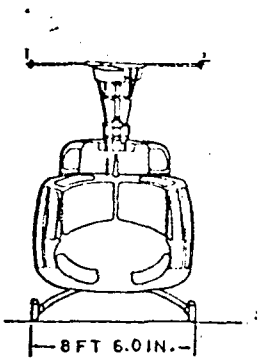

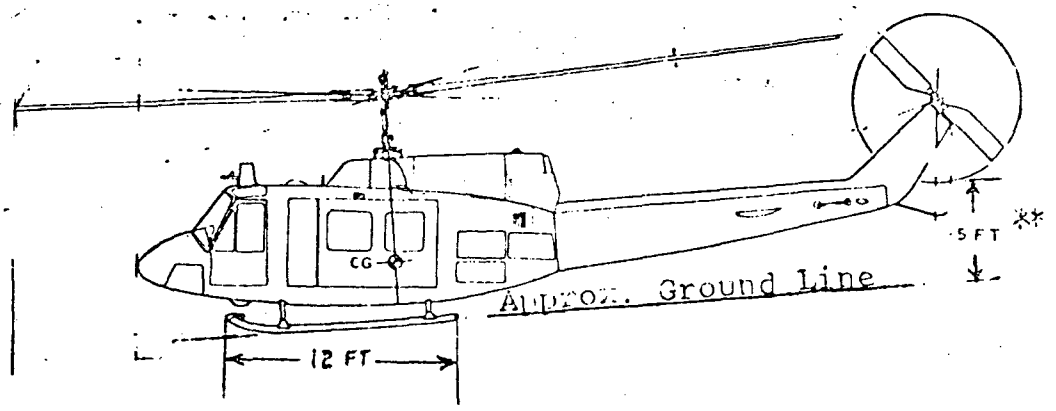

Dimensional Drawing, Bell Sales Data, January 1975

** We note a discrepancy between this dimension and the 5' 11" stated in the agency report (see infra). It may be, we do not decide, that the Forest Service in finding a 5' 11" clearance may have contemplated the use of higher skids which are available. In any event, we feel that this matter will be examined in the course of the landing tests which we have recommended infra.

The Forest Service indicates that the wheel configuration of the S-58T makes it mandatory to have a touchdown area of a minimum of 13 feet by 29 feet so as to accommodate the S-58T's footprint (the area between the wheels). Since the preferred method for ferrying fire crews is to land the helicopter as close to the fire as possible, the Forest Service implies that a helicopter utilizing a smaller footprint, i.e., one with skids, will be able to land in more places (small helispots, natural clearings, rock outcroppings and ridge lines) and, therefore, be able to land closer to fires than the S-58T.

Globe argues that there are tradeoffs between the aircraft in that while the Bell 212 has a smaller footprint than the S-58T, the S-58T has a tail rotor higher (6 feet, 5 inches, see diagram above) than the Bell 212 (stated by the Forest Service to be 5 feet, 11 inches) giving it a greater ability to clear brush, rocks, etc. Globe contends that the S-58T might be able to land in some places where the Bell 212 cannot and vice versa. The Forest Service does not consider this difference to be significant.

Globe also points to the fact that the Interagency Helicopter Management Training Guide states that, for larger helicopters such as these, landing clearance should be 100 feet in diameter and the touchdown pad itself should be 50 feet by 50 feet. Such a touchdown dimension would, of course, permit landings by both the Bell 212 and the S-58T. The Forest Service indicates that, while the criteria outlined in the training guide is desirable, it is not mandatory and does not reflect the various landing sites presently existing in region 6.

While the Forest Service argues that there are a large number of small helispots and cleared areas, it is unable to state how many of these spots would allow only the Bell 212 to land and in what percentage of those instances the use of a S-58T would preclude any other nearby landings thus mandating the rappelling operation which the Forest Service clearly regards as a "last resort." Nevertheless, we do not feel that our Office is in a position to conclude that the agency's stated need for skids is without a reasonable basis. We suggest, however, that, in an attempt to broaden future competition, the Forest Service consider conducting tests to obtain a more precise determination of its landing capability requirements. Specifically, we believe that, if possible, landing tests should be scheduled in region 6 to determine if the S-58T can in fact meet the Forest Serivce's needs. See Globe Air, Inc., B-180969, June 4, 1974.

For the reasons noted above, the protest is denied. We are, however, by letter of today transmitting our suggestions to the Secretary of Agriculture.

R. F. Keller

Deputy Comptroller General
of the United States