NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
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AIRWORTHINESS

Group Chairman's Factual Report

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Appendix B – P-51D Operating Limitations
(5 pages)

The following operating limitations for a Group 3 aircraft would apply to the accident airplane if it were registered under the current regulations.

(1) No person may operate this aircraft for other than the purpose(s) as specified on the airworthiness certificate. This aircraft must be identified in accordance with 14 CFR part 45 including the experimental markings required by part 45 located near the cabin entrance and operated in accordance with all air traffic and general operating rules of 14 CFR part 91, all limitations herein prescribed, and as described in the owner operator's program letter. These operating limitations are a part of FAA Form 8130-7, and are to be carried in the aircraft at all times.
(2) Application must be made to the geographically responsible FSDO where the aircraft is based for any revision to these operating limitations.
(3) The pilot in command of this aircraft must advise passengers of the experimental nature of this aircraft and that it does not meet the certification requirements of a standard certificated aircraft.
(4) The owner operator must submit an annual program letter to the geographically responsible FSDO where the aircraft is based. All operations must be conducted in accordance with these limitations and the program letter. A copy of the current program letter and any amendments must be carried on board the aircraft any time that the aircraft is being operated.
The program letter must include the following information:

(a) The aircraft's home base.

(b) The name of the person responsible for the operation and maintenance of the aircraft.

(c) A list of events at which the aircraft will be exhibited (the list may be amended as necessary).

(d) For Group 6 aircraft, the proficiency area. The proficiency area may be depicted using a map or it may be described by geographic landmarks, airports, or aids to navigation.

(5) The pilot in command of this aircraft must hold an appropriate category and class rating.
(6) In addition to the requirements of limitation (5) of this paragraph: the pilot in command also must hold:

(a) An appropriate type rating (if one has been established), or

(b) An experimental aircraft authorization, by make and model, on their pilot certificate, or

(c) A temporary LOA issued by an FAA Flight Standards Operations Inspector.

(d) For the purpose of completing the practical test for the issuance of an experimental aircraft authorization, a qualified instructor may make a logbook endorsement permitting limited local solo operations for a period of not more than 30 days.

(9) If the pilot has not completed three takeoffs and landings within the preceding 180 days in this aircraft make and model or comparable aircraft, the pilot must receive training from a qualified instructor in this aircraft make and model or comparable aircraft prior to carrying passengers.
(10) During Phase I test flight operations, this aircraft is to be operated under VFR day only, and no person may be carried in this aircraft during flight unless that person is a required crewmember. The local FSDO must coordinate with AFS-800 to determine if a person is essential for the test flights.
(11) During Phase I test flight operations, no person may flight test an aircraft except over open water or sparsely populated areas having light air traffic.

(12) During Phase I test flight operations, this aircraft may only operate from [identify name of airport(s)] until the requirements of 14 CFR § 91.319(b) have been met.
(13) During Phase I test flight operations, this aircraft must be operated for at least __ hours with at least __ takeoffs and landings (to a full stop), and all operations must be conducted in the geographic area described as follows:

(a) The size of the test flight area must be the minimum required to safely conduct the anticipated maneuvers and tests.

(b) The area must be described by radius, and/or landmarks, or as depicted on an attached chart.

(c) The minimum number of hours and minimum number of takeoffs and landings should be based on the aircraft's condition and records and the total time on the aircraft and its engine(s).

Note: Unless otherwise determined by the FAA for aircraft other than newly manufactured or built, the number of hours normally should be 10 and the minimum number of takeoffs and landings should be five. Phase I test flight limitations similar in scope to paragraph 4103c(1) or (2) of this order will be added to these operating limitations for newly built aircraft.

(14) During Phase I test flight operations, following satisfactory completion of the required number of flight hours in the flight test area, the pilot must certify in the records that the aircraft has been shown to comply with 14 CFR § 91.319(b). Compliance must be recorded in the aircraft records with the following, or a similarly worded, statement: "I certify that the prescribed flight test hours and the number of takeoffs and landings have been completed and the aircraft is controllable throughout its normal range of speeds and throughout all maneuvers to be executed, has no hazardous operating characteristics or design features, and is safe for operation."
(15) During Phase I test flight operations, aerobatic maneuvers intended to be performed must be satisfactorily accomplished and recorded in the aircraft records during the flight test period unless the aircraft meets the manufacturer's design which includes defined acrobatic maneuvers. In addition to the requirements of 14 CFR § 91.303, appropriate limitations identifying the acrobatic maneuvers and conditions under which they may be performed shall be included in the aircraft records.
(16) During Phase I test flight operations, if the aircraft will have removable externally mounted equipment, it must be test flown in all configurations. An entry must be made in the aircraft records indicating the configurations flight tested, unless the original manufacturer's flight test data for that equipment is included in the aircraft limitations.
(17) During Phase II operations, this aircraft is prohibited from flight with any externally mounted equipment except configurations that have been tested as allowed in limitation (16).
Note: The owner may place the aircraft back into Phase I for the sole purpose of flight testing the added external equipment; in this case the owner must comply with limitation (16) requirements of this paragraph.
(18) During Phase II operations, this aircraft is prohibited from flight with any externally mounted equipment unless the equipment is mounted in a manner that will prevent in flight jettison.
(20) During Phase II operations, this aircraft may be operated over densely populated or congested areas in accordance with 14 CFR § 91.319(c) only for the purpose of takeoff and landing. When exercising this authorization, the pilot in command must avoid densely populated areas and congested areas whenever possible.

(22) During Phase II operations, no person may be carried in this aircraft during the exhibition of the aircraft's flight capabilities, performance, or unusual characteristics at air shows, or for motion picture, television, or similar productions, unless essential for the purpose of the flight in accordance with FAA Order 8900.1 , Volume 3, Chapter 6. Persons may be carried during flights to and from any event or during proficiency/currency flying, limited to the design seating capacity of the aircraft and subject to the regulatory prohibition on compensation.
(25) During Phase II operations, aerobatic maneuvers that were not documented in accordance with limitation (I5) may not be performed.
Note: The owner may place the aircraft back into Phase I for the sole purpose of adding additional aerobatic maneuvers to the aircraft authorized maneuvers. In this case, the owner must comply with limitation (15) requirements of this paragraph.
(27) This aircraft must not be used for glider towing, banner towing, or 14 CFR part 105 parachute operations.
(28) During Phase II operations, night and/or instrument flight is approved, provided the aircraft is equipped as described in 14 CFR § 91.205. Instruments and equipment installed for night and/or instrument flight must be inspected and maintained in accordance with the applicable requirements of 14 CFR part 91. All maintenance or inspection of this equipment must be recorded in the aircraft maintenance records and include the following items: date, work performed, name and certificate number of person returning aircraft to service.
Note: For aircraft subject to an FAA approved or accepted inspection program, issue limitation (29) or (30) as appropriate and limitation number 31. For aircraft not subject to an FAA approved or accepted inspection program, issue limitations (32) and (33).
(32) The inspections for aircraft must be recorded in the aircraft maintenance records showing the following, or a similarly worded, statement: "I certify that this aircraft has been inspected on {insert date] in accordance with the scope and detail of 14 CFR part 43, appendix D, and found to be in a condition for safe operation.” The entry will include the aircraft's total time-in-service and the name, signature, certificate number, and type of certificate held by the person performing the inspection.
(33) No person may operate an aircraft unless within the preceding 12 calendar months it has had an inspection performed in accordance with the scope and detail of 14 CFR part 43, appendix D, or other FAA-accepted program, as applicable, and was found to be in a condition for safe operation. This inspection will be recorded in the aircraft maintenance records and include the following items: date, work performed, name and certificate number of person returning aircraft to service.
(34) Only FAA-certificated repair stations and FAA-certificated mechanics with appropriate ratings as authorized by 14 CFR § 43.3 may perform inspections required by these operating limitations.
(35) The geographically responsible FSDO where the aircraft is based must be notified, and its response received in writing, prior to flying this aircraft after incorporation of a major change. A "minor change" is one that has no appreciable effect on the weight, balance, structural strength, reliability, operational characteristics, or other characteristics affecting the airworthiness of the aircraft. All other changes are major changes" The FSDO response should be entered in the aircraft's records.
(36) Aircraft equipped with live ejection seats must be clearly externally marked to ensure that emergency personnel are aware of the hazard presented by the system. The ejection seat system must be maintained and inspected in accordance with the manufacturer's procedures or

USINATO applicable technical orders. In addition, the ejection seat system must be secured in accordance with the manufacturer's procedures or USINATO applicable technical orders to prevent inadvertent operation of the system any time the aircraft is parked or out of service. Pilots operating aircraft and passengers of aircraft equipped with an ejection propellant system installed, whether armed or not armed, must satisfactorily complete an FAA accepted ejection seat training program for the pilot and the passenger. An aircraft with an ejection seat must have and utilize an FAA accepted ejection seat training program for the pilot and for the passenger. Ejection seat training and briefing programs are accepted by the FAA National Program Office for Vintage and Experimental Aircraft, AFS-800, Washington, DC or by an industry group authorized by AFS·800.

(37) When an aircraft's home base is changed or there is a transfer of ownership, the owner/operator will take the appropriate actions within 30 days:

(a) Submit a new program letter to the geographically responsible FSDO.

(b) If an accepted or approved inspection program is specified in these operating limitations, submit a copy to the geographically responsible FSDO.

i. The gaining FSDO will not change the previously accepted or approved program unless it can be substantiated that the previously accepted or approved program no longer meets FAA requirements. The gaining FSDO will not require the aircraft's airworthiness certificate or operating limitations to be reissued, unless the aircraft requires Phase I test flight operations or at owners request.

ii. New proficiency areas must be described for Group 6 aircraft.

(38) This aircraft does not meet the requirements of the applicable, comprehensive, and detailed airworthiness code as provided by Annex 8 to the Convention on International Civil Aviation. The owner/operator of this aircraft must obtain written permission from another country's CAA before operating this aircraft in or over that country. That written permission must be carried aboard the aircraft together with the U.S. airworthiness certificate and, upon request, be made available to an ASI or the CAA in the country of operation.

(40) FAA acceptance or approval of maintenance and inspection interval extensions requires that the owner operator submit documentation and data justifying the extension in the request to the local FSDO for evaluation and concurrence.

(41) The aircraft may not be operated unless the replacement for life-limited articles specified in the applicable technical publications pertaining to the aircraft and its articles are complied with in one of the following manners as specified below:

(a) Type-Certificate Products: Replacement of life-limited parts required by 14 CFR §91A09(e) is only applicable to experimental exhibition aircraft when the required replacement times are specified in the U.S. aircraft specifications, or type certificate data sheets.

(b) Non-Type Certificated Products: Unless otherwise determined by the FAA, all articles installed in non-type certificated products operated in the experimental exhibition category, in which the manufacturer has specified limits, must include in their program an equivalent level of safety for those articles. Although the FAA recommends adherence to part replacements, achieving an equivalent level of safety for non-type certificated products is acceptable. Manufacturers have historically assigned life limits to articles installed in non-type certificated products. These products were typically operated in a military environment which imposed different limitations based on the aircraft's operational and environmental use. Although these limitations are not regulatory by the FAA we have determined that these

limits must be evaluated for their current operating environment and addressed in the accepted inspection program. All articles installed in non-type certificated products operated in the experimental exhibition category, in which the manufacturer has specified limits, must include in their program an equivalent level of safety for those articles. The article must be inspected to ensure that it is still in a serviceable condition for safe operation.

(42) Aircraft originally incorporating fatigue life recording systems must maintain the system and comply with the original manufacturer fatigue limits. If the fatigue life system is removed, or is inoperative, the aircraft cannot be operated in any group other than Group 6.

(44) Former military aircraft must remain demilitarized.