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**PHASE 3 PRELIMINARY DEVELOPMENT PLAN. SYSTEM 118P
RECONNAISSANCE PROGRAM (HARP) (U)**

NORTHROP AIRCRAFT INC HAWTHORNE CA

01 MAY 1956

**Controlling DoD Organization: Air Research and Development
Command, Washington, DC.**

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NORTHROP AIRCRAFT, INC.
HAWTHORNE, CALIFORNIA

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NAI-56-304

PHASE III PRELIMINARY DEVELOPMENT PLAN
SYSTEM 118P RECONNAISSANCE PROGRAM
(HAF)

15 April 1956

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NORTHROP AIRCRAFT, INC.



HAWTHORNE, CALIFORNIA

REPORT NO. NAI-56-204

PHASE III PRELIMINARY DEVELOPMENT PLAN,
SYSTEM 118P RECONNAISSANCE PROGRAM
(HARP) [21] 8

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REVISIONS

CHG. NO.	DATE	ENGR.	PAGES AFFECTED	REMARKS
1	5-7-56		11 and 1	Revised
			2, 3 and 4	Added

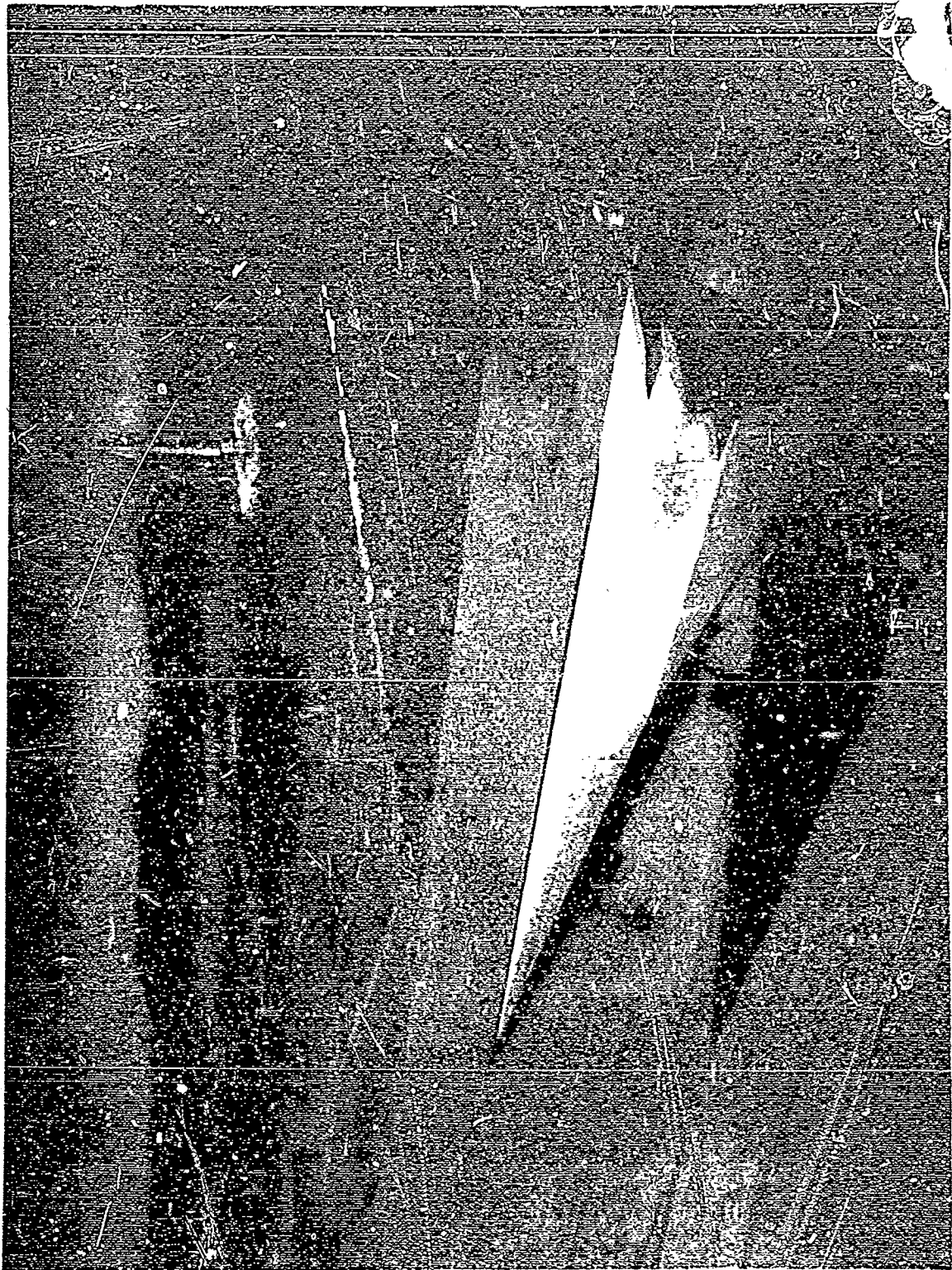
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SYSTEM 116P PHASE III RECONNAISSANCE AIRCRAFT
NORTHROP MODEL N-173

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FORM 20-76
(R. 1-64)

APPROVED	DATE	11
CHECKED	NORTHROP AIRCRAFT, INC.	NAI-56-204
DATE		

SUMMARY

The salient points of the Phase III preliminary development plan include:

1. Contractual go-ahead to be received by 1 July 1956.
2. Completion of first article low speed test glider within 40 months from contract date.
3. First flight of low speed test glider in the thirtieth month.
4. First unmanned system test flight in the fiftieth month.
5. Completion of first article manned system for flight test within 66 months from contract date.
6. First manned system flight in the sixty-eighth month.
7. Completion of manned system flight tests in the ninety-second month.
8. Delivery of the first complete OST vehicle in the ninetieth month.
9. Delivery of sixth operational system in 100 months.
10. Delivery of the twentieth operational system in the one hundred and fifth month.

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ENGINEER	NORTHROP AIRCRAFT, INC.	PAGE 2
CHECKER		REPORT NO. NAT-56-204
DATE		

The Contractor proposes a three-phase flight test program. This will consist of (a) manned glider flight tests, (b) unmanned system flight tests, and (c) manned system flight tests. Prior to initiation of the manned glider flight tests, tests will be made on a series of small-scale models. The purpose of these tests principally is to obtain aerodynamic and structural data on the glider stage throughout the speed range. For these tests six flutter models dynamically similar to the glider are proposed, and fifteen models are proposed to test materials and to ascertain the temperatures involved. A number (possibly 20) of aerodynamic test models will be required for stability and control, and lift/drag tests.

Two manned full scale gliders will be subjected to low speed proof tests. These tests will begin November 1959; approximately 50 flights are scheduled for the 11-month test period.

Ten unmanned hypersonic glider systems are proposed for proving the capability of the airframe, stabilization, and flight control systems to function satisfactorily throughout the speed-altitude range. A minimum of ten flights is indicated. More flights are desirable, provided some of the vehicles are recovered. The series of tests will begin May 1960. The test period will cover the ensuing 22 months, ending February 1962.

At least 100 hours of flight testing (approximately 150 flights) on the complete manned system are proposed, in which the ultimate speeds and altitudes will be approached in gradual stages. Ten complete systems will be required. The program will begin November 1961, and the first flight is programmed for May 1962. The tests will encompass a 28-month period, ending February 1964.

Test Facilities

The Contractor proposes that the small-scale model tests be run at a government facility, such as Holloman AFB or possibly the NACA Wallop's Island facility.

Manned low speed glider tests are proposed for Edwards AFB. A bombardment aircraft, B-50 or B-36, will be required for modifications necessary to carry the gliders aloft and drop them in a manner similar to the X-1 launchings.

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N-170 PROPOSED DEVELOPMENT PLAN (16P) SYSTEM PHASE III

SPECIAL DELIVERABLES	
CONTRACT DATE	
PRELIMINARY DESIGN	
AIRFRAME AND SUBSYSTEM RESEARCH	
MOCK-UP DESIGN	
MOCK-UP FABRICATION	
<u>FLIGHT TEST VEHICLES</u>	
GLIDER DESIGN	
FABRICATION AND ASSEMBLY	
UNMANNED SYSTEM DESIGN	
FABRICATION AND ASSEMBLY	
MANNED SYSTEM DESIGN	
FABRICATION AND ASSEMBLY	
<u>FLIGHT TESTING</u>	
GLIDER (B-50 or B-36 DROP)	
UNMANNED SYSTEMS	
MANNED SYSTEM	
EQUIPMENT AND SUBSYSTEMS	
PRODUCTION SYSTEM DESIGN	
PRODUCTION SYSTEM FABRICATION AND ASSEMBLY	

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24 MONTHS (1st UNIT)

2 0 0 3 0 1 0 1 0 1 0 1 1 1 1 1

TRAINING PROGRAM

25 - 10 FLIGHTS MONTHLY

(22 MONTHS)

10 VEHICLES - 100 FLIGHT HOURS

(22 MONTHS)

SUSPENSE, INITIALLY - HYPERCROSS, FINALLY

20 MONTHS

(20 MONTHS (1st UNIT))

OST UNITS

1 5 5 5 0 0 1 1 1 2 2 2 2 2 2

COMPLETE SIXTH
OPERATIONAL SYSTEM

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3

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