

AVROCAR CONTINUATION TEST PROGRAM

AVROCAR I

U.S. Army Designation - VZ-9AV

PROGRESS REPORT NO. 3

500/PROJ/6

November, 1960

USAF Contract AF33(600)42163

(S.W. 11)

This report contains 9 pages.

TO

DATE

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1.0 DESIGN OF MODIFICATIONS

1.1 First Vehicle at Ames

With the exception of the rotor inlet cascades, all design work for modification of the first Avrocar is complete. A preliminary scheme of the rotor inlet cascades was discussed between representatives of NASA and AVRO at Ames, and improvements were suggested. A new scheme is being prepared and will be submitted for approval when complete.

1.2 Second Vehicle at Malton

The design work relating to the modification of the second Avrocar at Malton is 95% complete. A few minor repair schemes were required for the rib structure and these have been completed.

2.0 STRESS ANALYSIS

Stress analysis of the main structure, and the focussing ring and its control system is now complete, with all drawings stress approved.

3.0 REPAIRS TO THE FIRST VEHICLE (at Ames)

All repair schemes have been completed. Manufacture of parts for repair of the first Avrocar is 100% complete, and repairs to the first vehicle are 80% complete.

4.0 MANUFACTURING

4.1 First Vehicle at Ames

60% of the parts required for modifying the first Avrocar vehicle at Ames have been manufactured and 10% of the modifications have been installed.

4.2 Second Vehicle at Malton

Repairs to the second vehicle are 95% complete. 60% of the modification parts have been manufactured and 10% of the modifications have been installed.

5.0 MODEL TESTS

Report 500/AERO TEST/410 covering tests on the 1/20th scale model has been held back pending results of tests being performed at the University of Toronto Institute of Aerophysics. These tests were conducted to check on wind tunnel side wall effect corrections in a program of support to Avrocar work which is sponsored by the Canadian Government.

6.0 ANALYSIS OF AMES TUNNEL DATA (First Series Tests)

Report 500/AERO TEST/407 has also been held back pending results of the University of Toronto Institute of Aerophysics tests.

7.0 AMES WIND TUNNEL TESTS

Some changes have been made to the instrumentation specification for the tunnel tests, (Report 500/AERO TEST/415) and issue 2 is now ready for despatch to the Project office. The test specification (Report 500/AERO TEST/405) is also ready for despatch.

Preparation of IBM 704 programs to be used in the reduction of data for the second series of tests in the Ames tunnel is approximately 30% complete.

8.0 STATIC AND FLIGHT TESTS

The test and instrumentation specification, (Report 500/AERO TEST/406) for the static and flight tests is in printing.

TABULATED LABOUR AND COST SUMMARY - (USAF Contract No. AF33(600)-42163)

(Cumulative Costs from July 1960 to 28 October 1960)

Statement of Work	HOURS	DIRECT LABOUR COST	LABOUR O/H COST	MATERIAL & DIRECT CHARGES	ADMIN O/H COST	TOTAL CAN \$	TOTAL U.S. \$ @ 2.5% Ex.	ESTIMATE U.S. \$ @ 2.5% Ex.
REDUCE AND ANALYZE AMES TEST DATA (First Series Tests)								
Engineering	1,744	5,081	5,590	541	1,682	12,894	13,216	11,322
Publications	4	10	9	1	3	23	24	845
SCALE MODEL TEST OF DESIGN CHANGES (Coanda Model)								
Engineering	209	569	626	-	179	1,374	1,408	101
Manufacturing	131	325	379	26	110	840	861	1,330
Photography	10	27	30	-	9	66	68	No Est.
(1/20 Scale Model)								
Engineering	1,961	5,450	5,919	-	1,706	13,075	13,402	11,906
Manufacturing	410	954	1,144	23	318	2,439	2,500	3,079
Publications	-	-	-	-	-	-	-	447
Photography	10	27	30	-	9	66	68	643
PRELIMINARY DESIGN STUDY								
Engineering	1,830	5,972	6,569	-	1,881	14,422	14,783	11,578
Publications	111	274	278	-	83	635	651	2,066
INSPECT AND REPAIR AVROCAR 1								
Engineering	218	898	556	821	284	2,559	2,623	2,788
Manufacturing - at Ames	648	1,371	685	2,398	535	4,989	5,114	12,030
- at Malton	371	800	881	711	361	2,753	2,822	10,159

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WORK ON VEHICLE 1 AT AMES								
Engineering - at Ames	-	-	-	-	-	-	-	23,022
- at Malton	7,941	26,742	29,314	-	8,408	64,464	66,075	102,583
Manufacturing - at Ames	-	-	-	-	-	-	-	42,336
- at Malton	1,355	3,306	3,772	115	1,101	8,294	8,501	51,291
Tooling, Planning and								33,491
Design - Build								46,413
Publications	2	6	6	-	2	14	14	847
WORK ON VEHICLE 2 AT MALTON								
Engineering	701	2,291	2,520	-	721	5,532	5,670	26,190
Manufacturing	115	250	305	18	107	680	697	72,992
Publications	-	-	-	-	-	-	-	1,321
Photography	-	-	-	-	-	-	-	6,882
MONTHLY REPORTS								
Engineering	-	-	-	-	-	-	-	284
Publications	85	229	220	10	68	527	540	886
PROGRAM REVIEWS								
Engineering	75	398	438	-	125	961	985	2,718
Publications	137	384	419	20	123	946	970	6,192
TOTAL							140,992	485,742

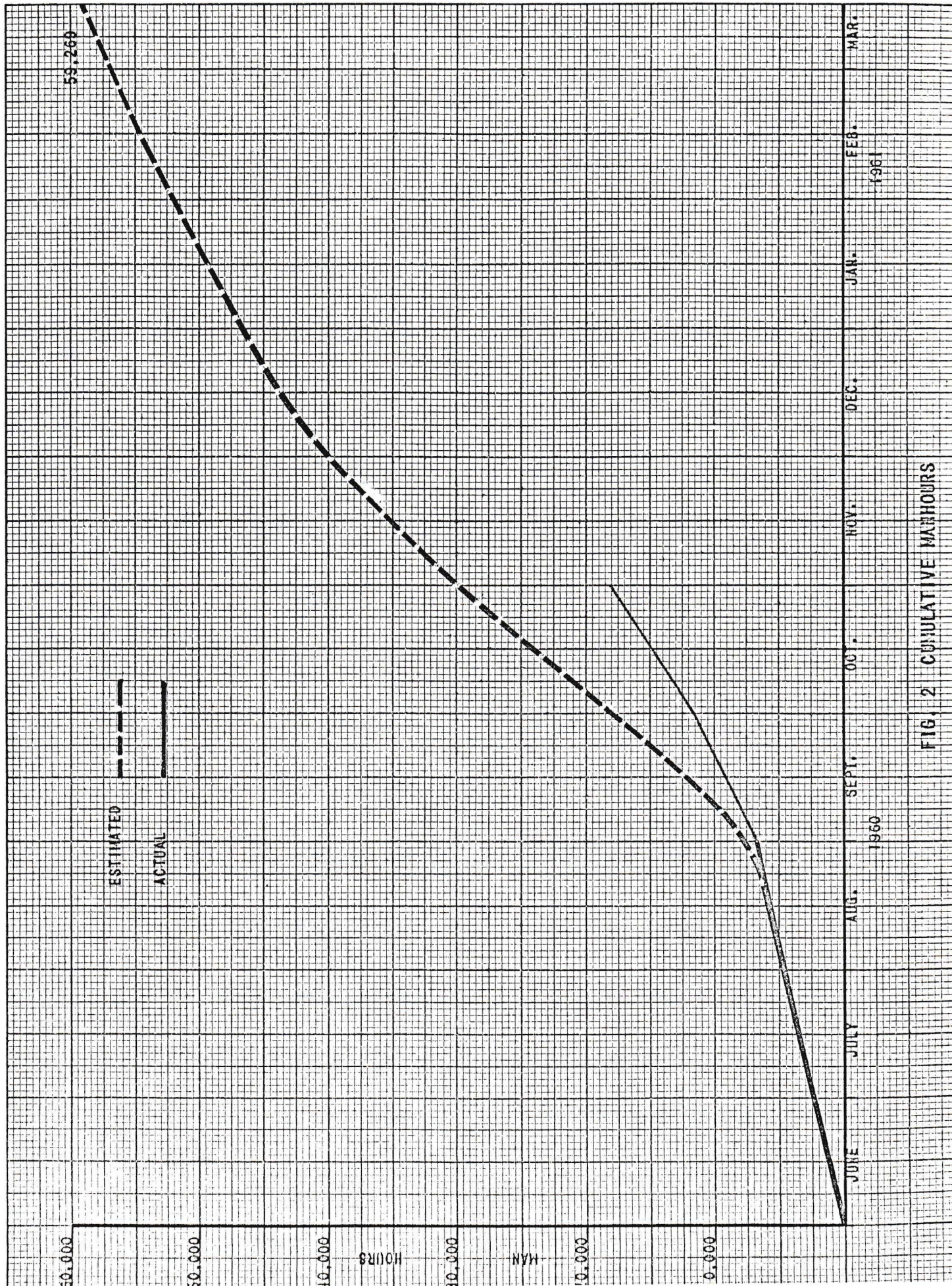


FIG. 2 CUMULATIVE MANHOURS

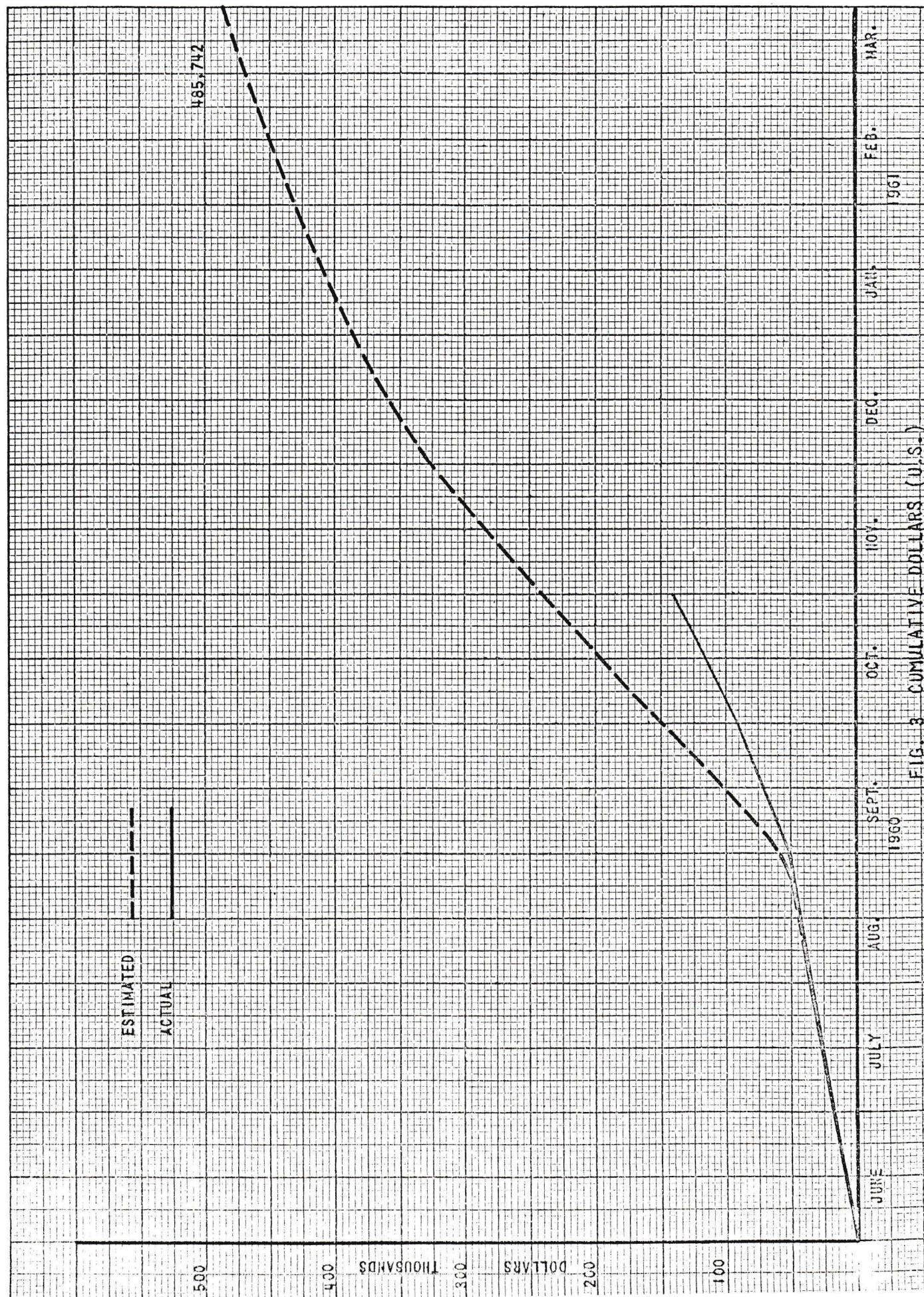


FIG. 3 CUMULATIVE DOLLARS (U.S.)

LIST OF CONTRACTOR'S VISITS

Company representatives made the following visits in connection with this project:

<u>Company Representative</u>	<u>Place and Date of Visit</u>	<u>Personnel Contacted</u>
Mr. J.C.M. Frost	N.A.S.A.	Mr. W. Cook
Mr. T.D. Earl	Ames, California	Mr. M. Kelly
		Mr. R. Grife