

SECRET

1. R & D MANAGEMENT REPORT <input type="checkbox"/> SYSTEM <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> TASK <input type="checkbox"/> OTHER		2. REPORTS CONTROL SYMBOL ARDC=D15	
		PAGE 1 OF 2 PAGES	
4. TITLE (S) AVRO Vertical Take-off Aircraft		3. DATE 30 August 1955	
		5. NUMBER 1794	
		6. CENTER	
		7. TECH GROUPING 01	
8. APPLICABLE AREAS A. <input checked="" type="checkbox"/> TECHNICAL B. <input type="checkbox"/> TEST C. <input checked="" type="checkbox"/> FUNDS D. <input type="checkbox"/> MATERIEL E. <input type="checkbox"/> FACILITIES F. <input type="checkbox"/> MANPOWER G. <input type="checkbox"/> PERSONNEL H. <input type="checkbox"/> TRAINING I. <input checked="" type="checkbox"/> CONTRACTS J. <input type="checkbox"/> AIRCRAFT			
9. PROGRESS AND/OR STATUS a. An R & D Management Report was last submitted on Project 1794 on 25 February 1955. At that time contract negotiations with AVRO Aircraft Limited were in progress. b. On or about 19 April 1955, supplemental funds amounting to \$285,000 (for a total of \$785,000) were released by Hq ARDC and contract negotiations were completed on 28 April 1955. A fixed price contract, No. AF33(600)-30161, in the amount of \$784,492.29 was fully executed on 4 July 1955. Final reports under this contract are to be submitted by AVRO not later than 1 June 1956. c. Contract AF33(600)-30161 provides for analytical investigations, design studies and test programs covering five major problem areas, as selected by WADC evaluation. These areas are as follows: (1) Air cushion effect (2) Stability systems (3) Air intake and gas exhaust systems (4) Aircraft performance, stability, and control (5) Radial flow engine feasibility d. Testing, with exception of wind tunnel programs, is being accomplished at contractor's facilities. Two wind tunnel test programs have been arranged. Low speed tests are to be conducted in the 20 foot tunnel at WADC. The models and apparatus required are being furnished by AVRO during September 1955. It has been estimated that this program will involve approximately 20 shifts, or one month's running time. A high speed test program is to be conducted in the Supersonic Wind Tunnel at the Massachusetts Institute of Technology, Cambridge, Massachusetts. This program is to be accomplished in December 1955, and will involve 59 occupancy hours under Contract No. AF33(616)-2665. This test time involves no additional cost to Project 1794, since the time utilized was previously purchased for the B-58 program and is now in excess of the B-58 requirements. Models and apparatus are AVRO furnished. e. Contractor's results continue to indicate very interesting performance potential for the AVRO Aircraft. Flight altitudes of from 90,000 to 100,000 feet and flight speeds from M3.0 to M4.0, combined with vertical take-off and landing capability are indicated. Substantiating test data are not yet available. Several major design			

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improvements which should remove some of the objections previously offered by the WADC laboratories have evolved during the program. For example, the original large, radial flow turbojet engine which was dependent on an air bearing for its operation has been replaced by a ducted fan-ramjet combination propulsion system. A series of cascades, rather than the Coanda Effect, are now used to direct exhaust gas flow for thrust and control functions.

f. On 23 and 24 August 1955, the Canadian press gave wide publicity to what was termed the AVRO Aircraft Limited "Flying Saucer" project. Brief releases made on 23 August 1955, by Hq USAF, Hq WADC and AVRO were the first official public confirmation of the existence of a contract between AVRO and the U.S. Air Force. The articles appearing in the Canadian newspapers evidently were motivated primarily by political considerations, since they did not contain a great deal of information which had not previously appeared and seemed to be designed principally to discredit the Canadian Defense Production Minister.

g. ARDC Project Development Directive No. 1794, dated 12 January 1955, specifies 1 March 1956, as the target date for submission of recommendations regarding further effort in this program. Due to the delay in achieving contractual coverage (see b above), final contractor's reports will not be available until 1 June 1956. WADC laboratory evaluation and preparation of recommendations by the project office will be completed and forwarded approximately 20 August 1956.

*William R. Stephens*  
WILLIAM R. STEPHENS  
Major, USAF  
Project Engineer

*Samuel C. Phillips*  
SAMUEL C. PHILLIPS  
Colonel, USAF  
Actg. Chief, Bombardment Aircraft Division  
Directorate of Systems Management

HOWELL M. ESTES, JR.  
Brigadier General, USAF  
Director of Systems Manag

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ARDC FORM 111 (continued)

f. Block 30, Paragraph r(2)(a)

Delete the last sentence of this paragraph which begins, "Initial power plant development effort will be . . .". Progress made by the contractor since the writing of reports on which the Development Plans was based, indicates that the potential of the vehicle can be investigated more simply and cheaply using the multi-engine configuration than with the radial engine version. This approach will avoid concurrent development of an airframe and power plant and will assist in reducing expenditure of funds in an attempt to remain within the limits established by PDD No. 1794, dated 12 January 1955. Consequently, initial effort will be directed towards the multi-engine configuration and the radial flow engine will be considered more as a system improvement for future development.

g. Block 30, Paragraph r(2)(c)

(SECRET)

Change "January 1956" to "May 1956". This change is necessary because of the time required by higher headquarters in reaching a decision to initiate the program, i.e., Project Development Plan was submitted on 15 September 1954, PDD No. 1794 was dated 12 January 1955, (and was received 1 February 1955) and notice of release of project funds was received 19 January 1955. (UNCLASSIFIED)

h. Block 30, Paragraph r(2)(e)

Change to:

(e) Major areas of initial investigation in order of priority will be:

1. Ground cushion effect
2. Stability of multi-engine configuration
3. Air intake and exhaust systems
4. Aircraft performance, stability and control
5. Radial flow engine feasibility

This revision is made for purposes of reorientation as described in (f) above to reflect changes contained in PDD No. 1794 dated 12 January 1955. It may become necessary to delete the investigation of radial flow engine feasibility from the program as a result of fund limitations. (SECRET)

1. Block 30, Paragraph r(4)2. Funds

FY 1955	\$500,000		FY 1958	\$12,000,000	APPR P 600
FY 1956	\$2,800,000	APPR P 600	FY 1959	\$6,000,000	APPR P 600
FY 1957	1,750,000	APPR P 600	FY 1960	\$1,000,000	APPR P 600

Addl Reqmt for

FY 1957

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05-04493

**CONTRACT MEMORANDUM  
OF TRANSMITTAL**

10/24/75  
**SECRET**  
CONTRACT NO.: AF33(600) 3012  
QUOTATION WILL EXPIRE: \_\_\_\_\_  
\$ AMOUNT: \$784,492.29

To: MCPC From: MCPHAB Buying Ass't. B.SINAY Date 5/10/55 Comment No. 1

Contracting Officer HELEN BLAKESLEE

Request approval of the contractual instrument identified above by number and described below.

I — CONTRACTOR: Name and Address:

**AVRO Aircraft Limited**  
**Toronto, Ontario, Canada**

1. State of Incorporation: **Province of Ontario, Canada**
2. Where is work to be performed? **Malton, Ontario, Canada**
3. Past Performance record: **UNKNOWN - First contract with USAF**
4. On Unsatisfactory Performance List (DOI 70-95)? **N/A**
5. Plant Cognizance to any other Defense Department service? **N/A**  
If YES, identify: \_\_\_\_\_
6. Percentage of Subcontracting **None** Identity of Principal Subs., if known: \_\_\_\_\_
7. Is Contingent Fee Statement affirmative? **N/A** / **Exempt per AFPI 1-507.2(f)**  
If Yes, has Std. Form 119 been obtained and found not in violation of Covenants Clause? \_\_\_\_\_
8. Has affirmative F C R been obtained? **N/A** / **Exempt per AFPI 52-104(a)(7)**  
If F C R exempt under App. No. 8 to DOI 70-1? \_\_\_\_\_ Was F C R exception granted? \_\_\_\_\_  
If YES, what category? \_\_\_\_\_
9. On F C R excepted or exempted procurements, has MCP Form 72, Financial Clearance, been accomplished or obtained? **NO - Exempt per AFPI 52-105**

II — MISCELLANEOUS: 1. D. O. Rating:

**A-1**

2. Office of Contract Administration:

**MOAMA**

3. Accounting & Disbursing Office:

**FO, USAF, Chicago, Illinois**

III — SUPPLIES OR SERVICES: Brief Description:

**Feasibility study (engineering, testing & data) of an aircraft, the details of which is furnished strictly on a "need-to-know" basis**

1. Has continued requirement been currently verified with initiator of P.R.? **N/A**
2. Is approved specification used? **No** If NO, why not? **Contractor-initiated project, WAC and AMC has approved work statement.**
3. Qualified Product? **NO** If YES, is proposed contractor on Q P L? \_\_\_\_\_  
If NO, why is award recommended? \_\_\_\_\_
4. Is any surplus property being reacquired? **NO** If YES, describe. \_\_\_\_\_
5. Is G F P to be supplied? **NO** If YES, where is it? \_\_\_\_\_
6. If items are offered as "equal" under an "or equal" equality? **N/A**  
**Classification changed to UNCLASSIFIED by AFM 10-100 (C-3E) dated 17 June 1980, subject: Downgrade of AF33(600) 3012.**
7. Has there been any previous negotiation or advertisement for or including the same, or substantially the same, items which is to be or has been abandoned? **NO**  
If YES, state details. \_\_\_\_\_  
Signature *[Signature]*
8. Serial Numbers required? **NO** **SECRET** Who assigned? *12 April 1960*



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- IV - SELECTION OF SOURCE: 1. Request for Proposal (Std. Form 30) No. \_\_\_\_\_  
Letter Proposal dated **2/25/55** ; Oral Request on \_\_\_\_\_
2. Was Mechanized Bidders List obtained? **YES** Was the list used in whole or in part? \_\_\_\_\_  
How many names were added to list by Buying Assistant? \_\_\_\_\_  
How many quotations were requested? **1** received? **1**
3. Were negotiations conducted after receipt of quotations? **YES** If YES, with whom: **AVRO Aircraft Limited**
4. Reason for selection of contractor for award:  
**This is a sole source procurement - one of the Contractor's employees is the designer of the air vehicle involved**

V - DELIVERY SCHEDULE: (if lengthy, use reverse side of this page)

**All work on contract is to be completed by 1 JUNE 1956.**

1. Is proposed contractor already in production on these items under another contract? **NO** If YES, state details.

VI - PRICE: State detailed item description, unit, total, and grand total prices: (if lengthy, use reverse side of this page or on a continuation page)

**ITEM 1 - Engineering studies . . . . . \$228,388.08** **ITEM 3 - Data (Incl'd in 1&2)**  
**ITEM 2 - Lab & wind tunnel tests . . . . . 556,104.21** **TOTAL PRICE . . . \$784,492.29**

1. If there is both a target and ceiling price, state both totals and percentage relation between them. **N/A**
2. Dollar amount of profit, or fixed fee, and percentage relation to cost:  
**Contractor is requesting NO profit on this procurement - he has stated he intends to spend every dollar in furtherance of the project**
3. Prices previously paid, if available, stating when and quantity: **N/A**
4. Has price been analyzed? **YES** If YES, by whom? **Price Anal., C.O., & Buying Ass't**
5. Were experienced costs considered? **YES** Are Fixed Overhead Rates used? **NO**  
If YES, have they been approved by Plans and Operations?
6. Is there any provision for anticipatory costs? **NO** If YES, state approximate dollar amount and effective date.
7. Who authorized commencement of work?
8. Are there any other special allowable items of cost? **NO** If YES, identify.
9. Is specified overtime contractually authorized? **NO** If YES, has it been approved?
10. Does the price analyst consider the price fair and reasonable? **YES**
11. Do the Buying Assistant and Contracting Officer consider the price fair and reasonable? **YES**

- VII - GOVERNMENT AID: 1. Are facilities to be provided the contractor? **NO** If YES, has coordination of Facilities Section been obtained?
2. Is any Government property (other than G F P and/or facilities) to be bailed or leased? **NO** If YES, does contract so provide?
3. Has the availability of property to be bailed been coordinated with the agency who is to supply the property? **N/A**

VII — GOVERNMENT AID (continued): 4. Is financial assistance in the form of V-Loan or advance payments to be provided? **NO** If YES, give details.  
Has required approvals been obtained?

VIII — THE CONTRACT: 1. Security Classification: **SECRET**  
2. Type and Form of Contract: **SFP**  
3. Contract entered into under Section 2(c)(1) of P.L. 413, 80th Cong. and/or

4. Form of Price Redetermination: **N/A** Effectivity Point:  
5. Is there a preceding letter contract which is being superseded? **NO**  
If YES, is letter contract superseded 100%? If NO, explain:

State percentage of deliveries made under letter contract to date. **N/A**  
6. Is this contract under a Basic Agreement? **NO** If YES, state its Number and applicable clauses.

7. Inspection and F.O.B. Points:  
The data to be furnished under ITEM 3 shall be inspected and accepted at WADC (WCSB), WPAFB, OHIO  
8. Shipping Instructions: (may be a continuation page)  
All technical data to be furnished under ITEM 3 will be forwarded to WADC (WCSB), Progress Reports will be furnished to AMC, MCPHB  
9. Special clauses to be included in definitive contract: (Check ONLY those clauses to be included. Insert titles of required clauses not listed.)

**.39** ☒ Partial Payments **75%**  
☐ Renegotiation  
☐ Ceiling Price  
☐ Preferred Customer  
☐ Subcontracting  
☐ Progress Reports  
☐ Patent Indemnity  
☐ License Rights  
☐ Copyrights  
☐ Special Repro. Rights  
☐ Gratuities  
☐ Security Class. Check List

☐ Final Cost Information  
☐ Current Cost Information  
☐ Add. Insp. Requirements  
☐ Term. Fix. O'Hd Rate  
☐ Late Delivery of Data  
☐ Best Efforts  
☐ Sp. Prov. as to Term.  
☐ Metalworking Machinery  
☐ Exam. of Records  
☐ Special Tooling  
☐ Overtime  
☐ First Article Inspect.  
☐ Liquidated Damages

SEE PART I, paragraphs (b), (c), (d), and (e)

10. Are there any additions to, deletions or changes in standard contract clauses?  
If YES, state details.

**YES - See back of this page.**

Attached hereto is "File Content Check List" current as of the date of release of this memorandum. The papers identified by the numbers circled in red on the File Content Check List are in a separate folder which is to be returned to the Buying Assistant.

Signed:

CARL F. DAMBERG, Colonel, USAF  
Chief, Aircraft Division