

## ROUTE SHEET

PRNC-NRL-10-8630 (Rev. 6-54)

~~SECRET~~~~CONFIDENTIAL~~

CODE	DATE	INITIALS	*PURPOSE	REMARKS
5430	15 July	JF for HOL		
5403	7/17	ky		
5400	7/18/58	MS	6	JUL 17 1958 5401 LT 13 7/17
1570	7/22	Q		
1525	7/24	P		
1522	7/23	BH		
1573	7/23	BT		
5000	7/28/58	GHV	1	Show green.
<del>4000</del>				" "
1040	7-29	Q		" "
1020	7/30			" "
4010	7/31	DR		JUL 30 1958
1523				
Classified by: <u>Dir. NRC</u>				
Review on: <u>23 July 1958</u>				

## INSTRUCTIONS

Prepare 2 copies of this route sheet and forward ALL copies together with necessary correspondence and other documents.

## \*PURPOSES:

1. FOR INFORMATION
2. FOR APPROVAL
3. PREPARE REPLY
4. PREPARE ENDORSEMENT
5. FOR NECESSARY ACTION
6. FOR SIGNATURE
7. RETAIN ENCLOSURES
8. RETAIN COPY

~~SECRET~~

FROM

Dir., USNRL, to Chief,  
BuAer (Aer-AV-42)

DATE OF MATERIAL

BRANCH IDENT. SYMBOL  
5430-95:HOL:as  
SER: 01259

ORIG. IDENT. SYMBOL (Mail Room Fill in)

01259

DIVISIONS DO NOT FILL IN

23 JUL 1958

FILE NO.

Rob-29

SUBJECT

Intercept System, Lightweight, Subminiaturized,  
for Supersonic Vehicles; BuAer Project No.  
AV-42004, NRL Problem 54RO6-29; quarterly  
progress report on; forwarding of

HANDLE VIA  
SECURITY

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CONTROL

R/S NO: 7 (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r) (s) (t) (u) (v) (w) (x) (y) (z)

~~SECRET~~5430-95:HOL:as  
SER: 01259

23 JUL 1958

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From: Director, U. S. Naval Research Laboratory  
To: Chief, Bureau of Aeronautics (Aer-AV-42)

Subj: Intercept System, Lightweight, Subminiaturized, for Supersonic  
Vehicles; BuAer Project No. AV-42004, NRL Problem 54RO6-29;  
quarterly progress report on; forwarding of

Ref: (a) BuAer Conf ltr Aer-AV-4212 Ser 02982 of 5 March 1958

Encl: (1) 4 copies of subject report 5430-95A:HOL:as of 8 July 1958

1. In accordance with reference (a), enclosure (1) is forwarded herewith.
2. This is an interim report; work is continuing on this problem.

L. A. GEBHARD  
By direction

Copy to:  
BuAer (Aer-TD-42) (w/8 copies of encl)

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~~SECRET~~U. S. NAVAL RESEARCH LABORATORY  
WASHINGTON 25, D. C.

IN REPLY REFER TO

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5430-95A:HOL:as

SER:

8 July 1958

Subject: Quarterly Progress Report on Intercept System, Lightweight,  
Subminiaturized, for Supersonic Vehicles

1. A preliminary survey and study of this problem has been made, with special emphasis on the S-band portion of the frequency spectrum. Three families of curves have been calculated which relate:

(a) intercept range to effective radiated power from a radar for various values of radar transmitter antenna gain,

(b) interrogation range to transmitter antenna gain,

(c) data-link range to altitude for various values of power transmitted and receiving antenna gains.

2. Other charts, maps, and diagrams have been completed, including a block diagram of a crystal-video intercept system which is capable of operating unattended. This system will utilize building-block constructional techniques which will provide great versatility in the usage and arrangement of the components. Extremely light weight and small size are prime design criteria, with almost equal emphasis being placed on the necessity for reliability and low power drain in circuit design. System sensitivities of the order of -50 dbm are realistic over plus or minus 10% bandwidths in the S band. Some work has been done on a circuit which will stretch the amplified video pulse by an amount proportional to the width of the incoming pulse. A proposal relating to this work has been prepared and submitted to Op-92.

Classified by: DIC. WRCReview on: 23 July 1988

Encl (1) to

NRL ltr 5430-95:HOL:as

SER01253

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