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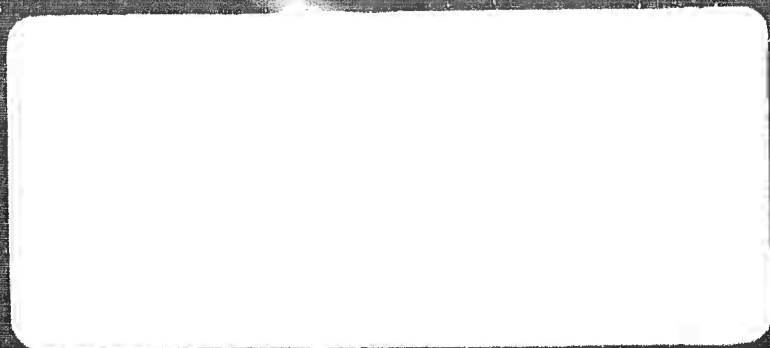
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PERKIN-ELMER

OPTICAL GROUP NORWALK, CONNECTICUT

ENGINEERING REPORT NO. 8804A

FINAL REPORT

INTEGRATION OF THE BLOCK INTERFEROMETER,
THE DALMO-VICTOR AC RADIOMETER, AND THE IMAGE
ORTHICON AND TRACKING GATE SYSTEM INTO THE GLOW SYSTEM

DATE: SEPTEMBER 5, 1967

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PREPARED FOR: COMMANDING GENERAL
U.S. ARMY MISSILE COMMAND
ATTENTION: AMSMI - RRM
REDSTONE ARSENAL, ALABAMA

CONTRACT NO. DAA-H01-67-C-0069

SPONSORED BY:
ADVANCED RESEARCH PROJECTS AGENCY
PROJECT DEFENDER
ARPA ORDER NO. 559

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CONTRACT OBJECTIVE

The purpose of this contract was to provide a program for the integration of various government furnished optical instrumentation into the GLOW System.

SUMMARY

This report, which concludes Perkin-Elmer's efforts under Contract No. DAAK-H01-67-C-0069, defines the work required to integrate the Block Engineering Interferometer, the Palmo-Victor AC Radiometer, and the GLINT Image Orthicon Television System with Tracking Gates, into the GLOW System. The individual tasks for each integration are enumerated. The status of the GLOW system at the close of Perkin-Elmer's effort is also indicated.

SECTION 1**BLOCK ENGINEERING INTERFEROMETER****1.1 INTRODUCTION**

The tasks reported here completed Perkin-Elmer's effort in the integration of the Block Engineering Incorporated Interferometer in GLOW system No. 2, now located at Eniwetok atoll in the central Pacific.

Perkin-Elmer's tasks in the integration of the Block Engineering Interferometer consisted of the following:

- 1.1.1 Fabrication of a boresight base to hold the Block Engineering Interferometer. Perkin-Elmer delivered the base to Block Engineering Incorporated, 385 Putnam Avenue, Cambridge, Massachusetts.
- 1.1.2 Modification and rewiring of rack 2A9 in the GLOW System Instrument Van to provide space for the addition of the Block Engineering Interferometer control console. The wiring in the instrument van was also modified to provide the necessary lines to operate the Block Interferometer. All these wiring changes are contained in the wiring lists in paragraph 1.2.

1.1.3 Fabrication of the API shielded cable assemblies that will connect the interferometer to the GLOW mount instrumentation platform outlet plugs. These cable assemblies were delivered to General Electric, Valley Forge, Pennsylvania.

1.1.4 In addition, Perkin-Elmer furnished wire run sheets, a layout drawing of a suggested placement of the interferometer on the instrumentation pedestal, and a print of the boresight base, to Mr. Lloyd Taylor of General Electric Company.

1.2 SUMMARY

Because of the official turnover of the GLOW system to General Electric Company, the Block Engineering Interferometer will not be installed by the Perkin-Elmer field crew. The interferometer will be installed in the GLOW system at Hajjalein by General Electric personnel.

1.3 DETAILED WIRE LISTS

The following figures contain detailed wire lists for the integration of the Block Engineering Interferometer in the GLOW system.

Figures 1, 2, and 3 are the wire lists for the Block Interferometer power plug, signal plug, and recorder plug, respectively.

Drawing numbers X578-0247, X578-0248, and X578-0249 contain the wire lists for the rack (2A9) of the GLOW instrumentation van. The instrument

van was modified, and connectors were installed to provide the necessary wiring for operation of the Block Engineering Interferometer.

POWER TAG	Block JRA		2AD 92	DP2	2JB	2J10	1J10	1J20
Boards	A	3	25	TB2-400	BZ			22
Boards	B	3	27	200	BY			
Boards	C	3	28	Grounded DP2				
Boards	D	3						
Boards	E	3	29	TB2-210	AE			21
Boards	F	3	30	210	BA			
Boards	G	3	31	Grounded DP2	BM			Ground
Boards	H	3	32	TB1-160		1	10-12	
Boards	I	3	33	180		h		13
Boards	J	3	34	Grounded DP2		l		14
Boards	K	3	35	150		i	10-1	
Boards	L	3	36	150		r		10
Boards	M	3	37	Grounded DP2		a		11
Boards	N	3	38					
Boards	O	3	39					
Boards	P	3	40	170		AT	10-10	
Boards	Q	3	41	170		AB	11	
Boards	R	3	42	Grounded DP2		BB	12	
Boards	S	3	43	190		AC	13	
Boards	T	3	44	190		AD	14	
Boards	U	3	45	Grounded DP2		BE	15	

UNIT VARIO

1JBA	1JBA P15-16	1JBA	J71	OS -> J101	
22-10	1600	T045-10	2	A	022
21	1600		1	B	022
				C	
				D	
21-3	16 JT	M31	0	E	022
2	1600	31-2	v	F	022
Received on 1-18				G	
	15-a	31-1	L	H	010
			B	I	010
		17	V	J	
	15-b	T032-5	0	K	010
			B	L	010
		21	B	M	
			7	N	
	15-B	T031-1	a	O	022
		10	0	P	022
		17	1	Q	
	15	T004-1	0	R	010
	a	16	V	S	010
	b	16	B	T	

WIRE PLUG	JR3	2AV	DP3	JR3	LR3
Space	A	2	1A	B	1
Shield	O	1	1C	A	1
Shield	B	3		F	3
Shield	H	4	2C	H	4
Shield	C	5	2A	I	5
Shield	R	6		D	6
12V	J	22	45C-12C	K	38-18
Shield	M	23	55A-12A	M	19
Shield	K	34		P	20
Shield	P	9	11C	G	15
Shield	L	18	11A	D	16
Shield	N	21		H	21
Shield	S	12	9A	J	9
Shield	T	27		P	27-10
Shield	U	25	9C	U	38-7
Shield	V	26		C	
Shield	X	53	19A		38-6
Shield	V	54			
Shield	Z	19	7C	Y	38-1
Shield	b	20	7A	AE	2
Shield	a	21		AL	3
Shield	f	22	8C	A	4
Shield	i	23	8A	AA	5
Shield		24		AM	6
Shield	h	7	3C	J	38-7
Shield	l	8	3A	K	8
Shield		16		T	16
Shield	k	10	4C	E	10
Shield	l	11	4A	F	11
Shield		12		L	12

IDENTIFICATION

MS3106A-28-158

	J22	BLOCK (10)																		
2	B	A																		
1	C	C																		
2	H	D																		
4	L	E																		
5	R	G																		
6	V	F																		
18	O	J																		
19	J	H																		
20	Z	K																		
15	C	F																		
16	h	L																		
17	v	M																		
9	P	S																		
10	Z	T																		
7	O	U																		
4	X	V																		
4	T	W																		
1	h	X																		
2	A	b																		
3	n	c																		
4	n	f																		
5	H	g																		
6	V																			
7	s	h																		
8	n	i																		
9	i	j																		
10	u	k																		
11	e	l																		
12	v																			

2

REMARKS / PLUG	PLUG JRT		249 P3	240 P1
Shield	A	0	30	30
Shield		L	19	19
Shield		L	20	20
Shield	C	0	21	21
Shield		L	31	31
Shield		L	32	32
Shield	D	0	33	33
Shield		L	22	22
Shield		L	23	23
Shield	E	0	24	24
Shield		L	34	34
Shield		L	35	35
Shield	F	0	36	36
Shield		L	25	25
Shield		L	26	26
Shield	G	0	1	1
Shield		L	9	9
Shield		L	10	10
Shield	H	0	4	4
Shield	I	0	12	12
Shield		L	13	13

PERKIN-ELMER

Electro-Optical Division, Norwalk, Connecticut

CABLE 283

UNIT A TP2 - 13

TERMINATION

UNIT B DP2

UNIT "H" CABLE CONN.

UNIT "A" CABLE CONN 102 PIN REWIND

FROM UNIT A TERM NO.	WIRE NO. AWG.	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
J	DP2-TB2-1G	2A9-P2 - 1	20 AWG	SPARE-BLOCK
K	DP2-TB2-1A	- 2	20 AWG	SPARE-BLOCK
L	DP2-TB2-2C	- 4	20 AWG	SPARE-BLOCK
M	-2A	- 5		SPARE-BLOCK
N	-3G	- 7		SPARE-BLOCK
O	-3A	- 8		SPARE-BLOCK
P	-4C	-10		SPARE-BLOCK
Q	-4A	-11		SPARE-BLOCK
R	-5C	-13		
S	-5A	-14		
T	-6G			
U	-5A			
V	-7C	-19		THERMISTOR
W	-7A	-20		THERMISTOR RTN
X	-8C	-22		HEATER
Y	-8A	-23	20 AWG	HEATER RTN
Z	-9C	-25	#18	LOW LEVEL DC BLOCK
AA	-9A	2A9-P2 -17	#18	1KH2 - BLOCK
AB	-10C	X	20 AWG	
AC	-10A	X		
AD	-11C	2A9-P2 - 9		SIGNAL - BLOCK
AE	-11A	2A9-P2 -18		0 VOLT/+12/-12/ BLOCK
AF	-12C	DP2-TB2-45C		+12 VDC BLOCK
AG	-12A	-45A		-12 VDC BLOCK
AH	-13C	-46C		
AI	-13A	-44A		
AJ	-14C	X		
AK	-14A			
AL	-15C			
AM	-15A			
AN	-16C			
AO	-16A			
AP	-17C			
AQ	-17A			
AR	-18C			
AS	-18A		20 AWG	
AT	-19C		18 AWG	
AU	-19A		18 AWG	
AV	-20C		20 AWG	
AW	-20A			
AX	-21C			
AY	-21A			
AZ	-22C			
BA	-22A	X		
BB	-23C	2A9-P2 -13		
BC	-23A	2A9-P2 -12		
BD	-24C	X		
BE	-24A	X		
BF	-25C	X		
BF	-25A	X		
BF	-26C	X		
BF	-26A	X		
BF	-27C	X		
BF	-27A	X		
BF	-28C	X		
BF	-28A	X		
BF	-29C	X		
BF	-29A	X		
BF	-30C	X		
BF	-30A	X		
BF	-31C	X		
BF	-31A	X		
BF	-32C	X		
BF	-32A	X		
BF	-33C	X		
BF	-33A	X		
BF	-34C	X		
BF	-34A	X		
BF	-35C	X		
BF	-35A	X		
BF	-36C	X		
BF	-36A	X		
BF	-37C	X		
BF	-37A	X		
BF	-38C	X		
BF	-38A	X		
BF	-39C	X		
BF	-39A	X		
BF	-40C	X		
BF	-40A	X		
BF	-41C	X		
BF	-41A	X		
BF	-42C	X		
BF	-42A	X		
BF	-43C	X		
BF	-43A	X		
BF	-44C	X		
BF	-44A	X		
BF	-45C	X		
BF	-45A	X		
BF	-46C	X		
BF	-46A	X		
BF	-47C	X		
BF	-47A	X		
BF	-48C	X		
BF	-48A	X		
BF	-49C	X		
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BF	-50C	X		
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SEE SA FOR 21

DRAWING NO. REV. SHEET
E378-0267

<h1 style="margin: 0;">PERKIN-ELMER</h1> <p style="margin: 0;">Electro-Optical Division, Norwalk, Connecticut</p>		CABLE 2M3 LENGTH 7 FT.		
		UNIT A DP2 - 13		
		TERMINATION		
		UNIT B DP2		
UNIT "A" CABLE CONN		UNIT "B" CABLE CONN		
FROM UNIT A TERM NO.	WIRE NO. AWG	WIRE COLOR	TO UNIT B TERM NO	FUNCTION
DP2-13-BV	DP2-TB2-26G	X	20 AWG WHI	TER GND
CB CD	-26A	↑	BLK	TER GND
CL	-27C		WHI	TER GND
CB CM	-27A		BLK	TER GND
CN	-28C		WHI	TER GND
CB CO	-28A		20 AWG BLK	TER GND
CB CP	-29C		18 AWG WHI	TER GND
BP CQ	-29A		18 AWG WHI	TER GND
CP CR	-30C	↓	20 AWG WHI	TER GND
CB CS	DP2-TB2-30A	X	20 AWG WHI	TER GND
DP2-TB2-15C	JUMPER (SEE PG 1)			SYSTEM #1 SYSTEM #2
-43D		2A9-F2 -32		D-10 VDC A2 SIG +12V BLOCK
-43E	JUMPER			
-43F		2A9-F2 -33		D-10 VDC EL SIG -12V BLOCK
-43G	JUMPER			
-46D		2A9-F2 -59		THERMISTOR
-46A	JUMPER			
-46B		2A9-F2 -61		THERMISTOR LTR
BUILDS - P, S, T, b, e, AL, AL, AM, c, d, AD, BA, H, P, W, i, s, t, RR, RD, AD, u, j				
AH, BE, BH, BK, BL, CC, CH, CI, CR, DP, OP, CP, DM				
2A9 F2	1, 4, 9, 12, 15, 18, 21, 24, 26, 28			
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PERKIN-ELMER

Electro-Optical Division, Norwalk, Connecticut

8 FT

UNIT A JP2 - 10

TERMINATION

UNIT B DP2

UNIT "B" CABLE CONN.

UNIT "A" CABLE CONN

FROM UNIT A TERM NO.	WIRE NO. AWG.	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
JP2 - 10 - 1	DP2 - TB1 - 23G		10 AWG Wh	SPARE (Ter Gnd)
2	32A		A Blk	SPARE (Ter Gnd)
3	33C	2A9-P2-35	Wh	+28V SENSOR
4	33A	35	Blk	-28V SENSOR
5	34C	39	Wh	THERMISTOR
6	34A	2A9-P2-40	Blk	THERMISTOR RTN
7	35C		Red	Ter Gnd
8	35A		Wh	Ter Gnd
9	36A		10 AWG Blk	Ter Gnd
10	36C	2A9-P2-41	17 AWG Wh	Gnd (Van)
11	37A	A 43	4	Gnd (113)
12	37C	45	5	Gnd
13	38C	47	16 AWG	+28V DC Regulator
14	38A	49		+28V DC Regulator 4 & V
15	39C	51		Carrier Check Common
16	39A	53		LAMP DRIVE - BLOCK
17	40C	55	22 AWG	SPARE - BLOCK
18	40A	2A9-P2-37		SPARE - BLOCK
19	41C			
20	41A			
21	42C			Ter Gnd
22	42A		Wh	
23	43C			
24	31C	2A9-P2-29		SPARE - BLOCK
25	31A	2A9-P2-32		SPARE - BLOCK
SHIELDS - P, AM, L, H, II, E, AG, AN, B, W, d, T, BM, BN, OD, OS				
2A9-J1 (75-89-78-77)				
2A9-J3 (50-52)				
2A9-J2 (31-34-37-40-41-44-46-48-50-52-54-56-58-60-62-29-10)				

TITLE
SYSTEM 02 ONLY
FOR SYSTEM 01

REV 15A

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PERKIN-ELMER

Electro-Optical Division, Norwalk, Connecticut

UNIT A CABLE 2W1) 5 FT
TERMINATION JP2 - J10 (Inst. Pwr)

UNIT B

UNIT "B" CABLE CONN

UNIT "A" CABLE CONN

FROM UNIT A TERM NO.	WIRE NO. AWG.	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
JP2-J10-A	16 AWG Wb	DP3-TB4-2C	2A9-P1-51	20 FDS MOTOR
B	16 Blk	2A	52	20 FDS MOTOR
F				SHIELD
H	20 Wb	DP3-TB1-2C	54	10 FPS MOTOR
H	16 Blk	2A	57	10 FPS MOTOR
S				SHIELD
V	Wb	DP4-TB1-3C		SPARE
C				SHIELD
d	Wb	3A	59	CALIB LAMP
P				SHIELD
q	Wb	4C	60	CALIB LAMP BYW
AB	V			SHIELD
AM	20 Wb	V 4A	62	120V 400 CPS 0A
BA				SHIELD
J	16 Wb	DP3-TB4-3B	2A9-P1-75	MOTOR DRIVE 0A
K	16 Blk	3B	2A9-P1-76	CHASSIS ORD
R				SHIELD
S	18 AWG Wb	DP2-TB1-6C	2A9-P1-48	30 FPS MOTOR
a	16 Blk	6A	49	30 FPS MOTOR
k			50	SHIELD
b	Wb	7C	2A9-P1-67	400 C.F. NEUTRAL
m	Blk	7A	2A9-P1-68	400 C.F. NEUTRAL
W				SHIELD
N	Wb	8C	2A9-P1-72	SHUTTER CORR LAMP
N	Blk	8A	2A9-P1-73	SHUTTER CORR LAMP
AJ				SHIELD
Y	Wb	9C	2A9-P1-64	0A-C 400 CPS SERVO PWR
AK	Blk	9A	2A9-P1-65	N T N
AL				SHIELD
E	V Wb	10C		SPARE
AA	18 AWG Blk	10A		SPARE
AM				SHIELD
C	16 Wb	11C	2A8-P3-43	SPARE
D	16 Blk	11A	2A8-P3-44	
M				
Z	V Wb	12C	2A8-P3-46	
H	16 Blk	12A	2A8-P3-47	
F				
L	18 Wb	13C		
V	16 Blk	13A		
W				
X	Wb	14C		
Y	Blk	14A		
Q				
R	16 Wb	15C	2A9-P2-63	0V/180V/360V/BLOCK
R	18 Blk	15A	2A9-P2-64	+ 180V DC BLOCK
SI				

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Electro-Optical Division, Norwalk, Connecticut

CABLE & WLU

UNIT A JP2-110

TERMINATION

UNIT B

UNIT "B" CABLE CONNL.

UNIT "A" CABLE CONN.

FROM UNIT A TERM NO.	WIRE NO. AWG.	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
JP2-110-1	18AWG Wh	DP2-TB1-16C	2A9-P2-66	+10V VDC - BLOCK
	Blk	16A	2A9-P2-67	*PARE
AD	Wh	17C	2A9-P2-70	THERMISTOR - BLOCK
AR	Blk	17A	2A9-P2-71	THERMISTOR - BLOCK
AS	Wh	18C		TER GND
AC	18AWG Blk	18A		TER GND
AT	16 AWG Wh	19C	2A9-P2-73	COOLER - BLOCK
AU	16	19A	2A9-P2-74	COOLER - BLOCK
AV	Wh	20C	2A4-P3-40	Camera Motor 115V (A)
AW	Blk	20A	2A4-P3-41	REN
AX	Wh	21C	2A4-P3-36	Future 0B 115V (A)
AJ	16	21A	2A4-P3-43	Future 0C 115V (A)
AY	20	22C		TER GND
AZ	20	22A		TER GND
BT	16	23C	2A4-P3-37	Camera Motor 115V (B)
BU	16	23A	2A4-P3-38	REN
AC	18	24C		VII Her R n
AE	18 AWG Wh	24A		Tracer Spare (Ter Gnd)
AF	20 20C Wh	41C		TER GND
AG	Wh	41A		
AH	Wh	42C		TER GND
AI	Blk	42A		TER GND
AJ	Wh	43C		TER GND
AK	Blk	43A		TER GND
AL	Wh	44C		TER GND
AM	Blk	44A		TER GND
AN	Wh	45C		TER GND
AO	20	45A		TER GND
AP	18	46C		
AQ	20	46A		TER GND

TITLE
SYSTEM P2
REV 10A FOR 01

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PERKIN-ELMER

Electro-Optical Division, Norwalk, Connecticut

UNIT A 2 A9 - P2

TERMINATION

UNIT B DP2 - YB1 - 2

UNIT B CABLE CONN.

UNIT "A" CABLE CONN

FROM UNIT A TERM NO.	WIRE NO. AWG.	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
2A9-P2-1	#22		DP2-YB1-1C	SPARE - BLOCK
2			1A	SPARE - BLOCK
3	SHIELD		TERM	
4	#22		2C	SPARE - BLOCK
5			2A	SPARE - BLOCK
6			TERM	
7			3C	SPARE - BLOCK
8			3A	SPARE - BLOCK
9	SHIELD		TERM	
10	#22		4C	SPARE - BLOCK
11			4A	SPARE - BLOCK
12	SHIELD		TERM	
13	#22		5C	
14			5A	
15	SHIELD		TERM	
16	#22		11C	0 VOLT/+12/-12/BLOCK
18	SHIELD		11A	SIGNAL
19	#22		TERM	
20			7C	THERMISTOR - BLOCK
21	SHIELD		7A	THERMISTOR RTN - BLOCK
22	#22		TERM	
23			8C	HEATER - BLOCK
24			8A	HEATER RTN - BLOCK
25	#18		TERM	
26	SHIELD		9C	LOW LEVEL DC - BLOCK
27	#18		TERM	
28	SHIELD		9A	1K HZ - BLOCK
29	#22		TERM	
30			31C	SPARE - BLOCK
31	SHIELD		31A	SPARE - BLOCK
32	#22		TERM	
33			45B	+12V DC BLOCK
34	SHIELD		45B	-12V DC BLOCK
35	#22		TERM	
36			33C	SPARE
37	SHIELD		33A	
38	#22		TERM	
39			36C	
40			34A	
41	SHIELD		TERM	
42	#20		36B	
43	SHIELD		TERM	
44	#20		37A	
45	SHIELD		TERM	
46	#20		37C	
47	SHIELD		TERM	
48	#20		36C	
49	SHIELD		TERM	
50	#20		DP2-YB1-30A	
51	SHIELD			

FOR UNIT #11.5 TERM
SEE 440A FOR #1 RUN

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PERKIN-ELMER

Electro-Optics Division, Norwalk, Connecticut

UNIT A 2A9 - P2
 TERMINATION
 UNIT B DP2 - TBI - 2
 UNIT "B" CABLE CONN.

UNIT "A" CABLE CONN

FROM UNIT A TERM NO.	WIRE NO. AWG	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
2A9-P2-52	30 AWG	Ø	P2-TBI-39C	
52	SHIELD	Ø	Ø	
53	Ø20	Ø	39A	LAMP DRIVE - BLOCK
54	SHIELD	Ø	TERM	
55	Ø22	Ø	40C	SPARK - BLOCK
56	SHIELD	Ø	TERM	
57	Ø22	Ø	40A	SPARK - BLOCK
58	SHIELD	Ø	TERM	
59	Ø22	Ø	40D	
60	SHIELD	Ø	TERM	
61	Ø22	Ø	46B	
62	SHIELD	Ø	TERM	
63	Ø20	Ø	DP2-TBI-15C	0 VOLTS/180V/360/-BLOCK
64	Ø20	Ø	15A	-180 VOLTS - BLOCK
65	SHIELD	Ø	TERM	
66	Ø22	Ø	16C	+360 VOLTS - BLOCK
67	Ø22	Ø	16A	SPARK - BLOCK
68	SHIELD	Ø	TERM	
70	Ø20	Ø	17C	THERMISTOR - BLOCK
71	Ø20	Ø	17A	THERMISTOR - RTN - BLOCK
72	SHIELD	Ø	TERM	
73	Ø20	Ø	18C	COOLER RTN - BLOCK
74	Ø20	Ø	18A	COOLER - BLOCK
75	SHIELD	Ø	TERM	
76	SHIELD			
77	SHIELD			
78	SHIELD			
2A9-P2-50	SHIELD			

TITLE
 FOR SYSTEM #2 ONLY
 FOR 4A AND 4A

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PERKIN-ELMER

Electro-Optical Division, Norwalk, Connecticut

UNIT A 2A9 - P1
 TERMINATION
 UNIT B 2A10 - P1
 UNIT "B" CABLE CONN

UNIT "A" CABLE CONN

FROM UNIT A TERM NO.	WIRE NO. AWG	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
210-83-18	ALL 822		2A10-P1-18	
28			28	
29	SHIELD		29	
30			30	HEATER TEMP BLOCK
19			19	
20	SHIELD		20	
21			21	AMBIENT TEMP BLOCK
31			31	
32	SHIELD		32	
33			33	DETECTOR TEMP BLOCK
22			22	
23	SHIELD		23	
24			24	RADYOMETER - BLOCK
34			34	
35	SHIELD		35	
36			36	2V ₁ - LOW GAIN - BLOCK
25			25	
26	SHIELD		26	
1			1	F ₁ - LOW GAIN - BLOCK
9			9	
10	SHIELD		10	
4			4	F ₂ - HI GAIN - BLOCK
12			12	O ₁ - VOLTS - BLOCK
13	SHIELD		13	
11			11	
2			2	
3	SHIELD		3	
7			7	
15			15	
16	SHIELD		16	
17			17	
18			18	
14			14	
5			5	
6	SHIELD		6	
27			27	
28			28	
50			50	
38			38	
51			51	
39			39	
40	SHIELD		40	
60			60	
48			48	
49	SHIELD		49	
62			62	
70			70	
71	SHIELD		71	
72			72	
63			63	
64	SHIELD		64	

TITLE
 SYSTEM #2 CH. X
 SEE 42A FOR #1

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PERKIN-ELMER

Electro-Optical Division, Norwalk, Connecticut

UNIT A DP2 - TAI
 TERMINATION
 UNIT B
 UNIT "B" CABLE CONN

UNIT "A" CABLE CONN

FROM UNIT A TERM NO.	WIRE NO. AWG	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
DP2-TAI-1				
1C				
2A	JP2-110-H	2A9-P1-55		10 FPS MOTOR
3C	H	54		10 FPS MOTOR
3A	d	2A9-P1-59		CALIB LAMP
3C	u			
4A	AM	2A9-P1-62		115V 400 CPS Ø A
4C	g	2A9-P1-60		CALIB LAMP
5A				
5C				
6A	a	2A9-P1-49		30 FPS MOTOR
6C	b	48		30 FPS MOTOR
7A	m	2A9-P1-88		NEUTRAL
7C	b	67		NEUTRAL
8A	n	73		RTN
8C	v	72		BROTHER CORR LAMP
8A	AK	65		NEUTRAL
9C	y	64		AA-C 400 CPS SERVO PWR
10A	AA			Ter Gnd
10C	E			Ter Gnd
11A	D	2A9-P1-64		Rad #1 115V A.C. RTN
11C	C	63		Rad #1 115V A.C. R
12A	H	67		#2 RTN
12C	H	66		Rad #2 115V A.C.
13A	V			
13C	L			Ter Gnd
14A	Y			
14C	X			
15A	r	2A9-P2-64		+180 V D.C. BLACK
15C	f	63		0 VOLTS/180V/360V/ BLACK
16A	b	67		SPARE
16C	n	66		+360V D.C. - BLACK
17A	JA	71		TRIMMISTOR 17B - BLACK
17C	AP	70		TRIMMISTOR - BLACK
18A	BC	74		COIL - BLACK
18C	AB	73		COIL - RTN - BLACK
19A	AM			Ter Gnd
19C	AM			Ter Gnd
20A	AM	2A9-P3-41		Cam Ctn (A)
20C	AV	2A9-P3-40		Cam Motor 115V (A)
21A	AM	2A9-P3-43		Fixture 8C 115V (A)
21C	AM	2A9-P3-46		Fixture 8B 115V (A)
22A	AM			Ter Gnd
22C	AV			Ter Gnd
23A	AM	2A9-P3-38	2A9-P3-12	Cam 85A (B)
23C	AM	2A9-P3-47	2A9-P3-13	Cam Motor 115V (B)
24A	AM			Hot Choke (Ter Gnd)
24C	AM			Filter - RTN RTN (Ter Gnd)
25A	AM	2A9-P1-1		RTN (Gnd)
25C	JP2-110-H	2A9-P1-1		RTN (Gnd)

TITLE

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PERKIN-ELMER

Electro-Optical Division, Norwalk, Connecticut

UNIT A DP2-TD2

TERMINATION

UNIT B

UNIT "B" CABLE CONN.

UNIT "A" CABLE CONN.

FROM UNIT A TERM NO.	WIRE NO. AWG.	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
DP2-TD2-1A	DP2-11-a	2A9-P2-2		Al Htn
1C	A	1		Test Sig #1
2A	B	2		#2 Htn
2C	H	4		Test Sig #2
3A	K	0		Res Htn
3C	J	7		Test Resistor Out
4A	a	11		Quad Htn
5C	B	10		Test Res Out Quad
5A	m	15		Yach Htn
5C	b	2A9-P2-13		Test Yach Out
6A	h			Ter Gnd
6C	v			Ter Gnd
7A	AR	2A9-P2-20		#1 Htn
7C	K	19		Sig #1 Out
8A	AA	21		#2 Htn
8C	s	22		Sig #2 Out
9A	d	17		-28 V D.C.
9C	u	25		+28 V D.C.
12A	AN			Ter Gnd
12C	g			Ter Gnd
11A	D	2A9-P2-18		0-100V D.C. Var x M, Sig In
11C	C	2A9-P2-9		0-100V D.C. Var x A7, Sig In
12A	H	DP2-TD2-45A		JUMBERS See Pg 2
12C	B	DP2-TD2-45C		JUMBERS See Pg 2
13A	V	DP2-TD2-46A		JUMBERS See Pg 2
13C	L	DP2-TD2-46C		JUMBERS See Pg 2
14A	Y			
14C	X			
15A	r			
15C	F			
16A	n			
16C	B			
17A	AB			
17C	AF			Ter Gnd
18A	BC			
18C	AS			
19A	AK			
19C	AC			
20A	AV			
20C	W			
21A	AM			
21C	AT			
22A	AN			
22C	AV			
23A	AK	2A1-P3-12		
23C	AI	2A1-P3-11		
24A	AE			
24C	AV			
25A	BI			
25C	BT			

TITLE

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PERKIN-ELMER

Electro-Optical Division, Norwalk, Connecticut

UNIT A DP2 - TA2
 TERMINATION
 UNIT B
 UNIT "B" CABLE CONN.

UNIT "A" CABLE CONN.

FROM UNIT A TERM NO.	WIRE NO. AWG	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
DP2-TB2-2A	DP2-11-CD			
26A	BV			Ter Gnd
27A	CH			
27B	CL			
28A	CK			
28B	CR			
29A	CH			
29B	BS			
30A	BX			
30B	BV			
31A	DP2-18-BA	2A9-P2-30		
31B	AZ	29		Wide Field Control
32A	"			SPARE (Ter Gnd)
32B	"			
33A	BV	2A9-P2-36		Sync Rtn
33B	BH	35		In Phase Sync
34A	CH	40		Quad Rtn
34B	CL	39		Quad Phase Sync
35A	CP			Ter Gnd
35B	CE			
36A	CH			
36B	CH	2A9-P2-41		B+
37A	BD	43		B-
37B	BE	45		OV
38A	BH	49		600 Rtn
38B	BZ	47		Control B+ 600V
39A	BE	53		1200 Rtn
39B	BE	52		Control B+ 1200V
40A	BV	57		Indicator
40B	BZ	55		Indicator
41A	CR			SPARE (Ter Gnd)
41B	CA			
42A	CI			
42B	CH			Ter Gnd
43A				
43B	BH			Ter Gnd
44A				
44B				
45A	DP2-TB2-12A	45B		
45B	DP2-TB2-12C	45D		
46A	DP2-TB2-13A	46B		
46B	DP2-TB2-13C	46D		
47A				
47B				
48A				
48B				
49A				
49B				
50A				
50B				

TITLE

DRAWING NO.

REV

SHEET

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SECTION II

DALMO-VICTOR AC RADIOMETER

2.1 INTRODUCTION

Perkin-Elmer's efforts in the integration of the AC Radiometer in Project GLOW at the Salinas Peak Installation, White Sands Missile Range (WSMR), New Mexico, included:

- 2.1.1 Preliminary liaison with Dalmo-Victor personnel on electrical and mechanical specifications prior to installation.
- 2.1.2 Construction of necessary cabling to meet interface requirements.
- 2.1.3 Rewiring of the GLOW Instrument Van and modified Nike Ajax tracking pedestal.
- 2.1.4 Installation of the AC Radiometer and rebalancing of the tracking platform.
- 2.1.5 Installation of the Radiometer electronics and recording equipment in the GLOW Instrument Van.

- 2.1.6 Assisting Dalmo-Victor personnel in System checkout and boreighting.
- 2.1.7 Assisting Dalmo-Victor personnel during pre-mission checkout in utilization of the GLOW Systems Target Board and Calibration facilities.

2.2 SUMMARY

2.2.1 Installation

The required electrical interface wiring of the GLOW Instrument Van and Nike Ajax tracking pedestal was initiated at the Salinas Site during the latter weeks of June 1965.

Mounting of the AD Radiometer, rebalancing of the tracking platform, and system checkout were concluded by mid-July 1965.

Figure 4 shows the GLOW System installation at Salinas Peak.

2.2.2 Operation

Operation of the Dalmo-Victor Radiometer was accomplished during required missions by the technical staff personnel of the Dalmo-Victor Corporation. This period extended from mid-July 1965 to early January 1966.

Evaluation of any acquired data and direct operation of the Radiometer was the responsibility of the Dalmo-Victor technical staff.

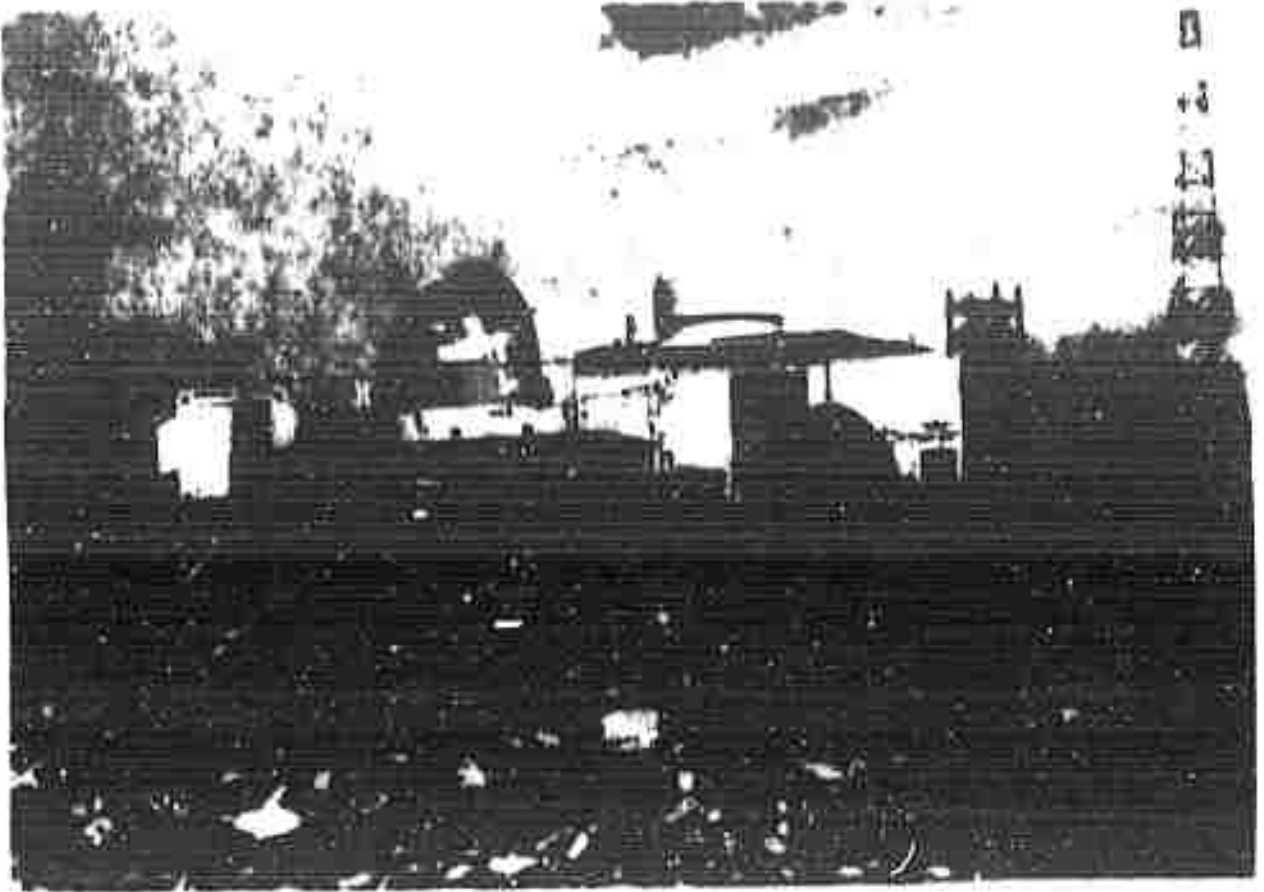


Figure 4. GLOW Optical Receiver Instrumentation Site. Site is located in White Sands Missile Range Installation.

2.2.3 Equipment Removal

The Dalmo-Victor Radiometer was removed from GLOW System I before transfer of the GLOW system from Salinas to Sole-Site in February 1966.

SECTION III

IMAGE ORTHICON TELEVISION AND TRACKING GATE SYSTEM

3.1 INTRODUCTION

In order to improve the automatic tracking and visual acquisition capabilities of the GLOW System, provision was made for the integration of the GLINT Image Orthicon Tracking System.

3.2 BASIC EQUIPMENT DESCRIPTION

The GLINT System utilizes a 12-inch, f3 cassegrain configuration (lens) with a 1.8 x 2.4 degree field of view, in conjunction with a General Electric TE-17A chain with automatic beam control and an 8-20 image orthicon tube.

This unit with its integrated boresighting base is mounted on the GLOW tracking platform.

The interface cabling connects the camera to the GLOW Instrument Van, where the ID video output is displayed on the C scope monitor; incorporated are two expanded A scopes (display recording monitors) which present radiometric data of the two targets tracked by operator B (these have been selected by the use of the Bendix Gates). The GLOW System video monitor at the main console displays the tracked target.

In addition, provisions are included for the photographic recording of the C and A scope presentation with a synchronized 3 mm cine-camera.

The tracking system consists of a Bendix four-gate tracking circuit with manual (joystick) or automatic tracking of up to four gates. The control or error signal from any one gate is used to control the GLOW pedestal as selected by mission requirements.

3.3 INTEGRATION AND INSTALLATION

Preliminary interface requirements (wiring and mechanical layouts, construction of cabling) were accomplished by Perkin-Elmer's field systems group at Norwalk, Connecticut.

Actual wiring was initiated by the Perkin-Elmer field crew in November 1965 at the Salinas Site and continued after the GLOW System transfer to Sole-Site.

Completion of the installation by the field crew was concluded in March 1966.

The following tasks were performed in this interface.

- 3.3.1 Preliminary interface wiring and mechanical requirements.
- 3.3.2 Construction of necessary cabling.
- 3.3.3 Rewiring of the Instrument Van.
- 3.3.4 Installation of the TV camera and optics on the GLOW pedestal platform.

3.3.5 Rebalancing of the GLOW pedestal platform.

3.3.6 Installation of the TV rack and console in the Instrument Van.

3.3.7 Boreighting of the TV camera.

3.3.8 Closing, optimization, and evaluation of the TV tracker servo loop.

During the checkout and evaluation phase of the installation, the field crew was ably assisted by members of the General Electric Company technical staff responsible for the IO system.

3.4 SUMMARY

The preliminary operation of the Image Orthicon System showed that the visual acquisition capabilities of Project GLOW were significantly advanced.

Perkin-Elmer's contract at WSMR for GLOW System I installation was concluded on April 1, 1966, before the tracking capabilities could be fully evaluated.

Under a contractual extension, two Perkin-Elmer employees were at WSMR until July 1, 1966, and confirmed the improved tracking capabilities indicated previously by the preliminary evaluation.

This equipment is still in active use at the GLOW Sole-Site Installation, WSMR.