.. Phillips Lab
Research Library

6/14/94

NOT IDENTIAL

TRACT ST [redacted] RPTS - GRD

CONT. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT E. O. NO.	REMARKS
ac-172 GRD	Propagated Characteristics Very Short Waves 1. Res & Invest. 2. Reports 20 of 20 recd	31 Dec 48	N.Y .U. Engr: Gerson	47-70,312.59 47- 7,000.00 48-15,000.00 E. O.#188-18	Contract completed. Awaiting clearances Negotiator: ROSENBERG
ac-175 GRD	Atmospheric Effect of Electromagnetic Waves 1. Study 2. 20 of 21 rpts recd	31 Mar. '49	Georgia Tech. Engr : Gerson	46-97,620.00 47-24,000.00 48-60,000.00 49-50,000.00 E.O.#188-18	Mod #10 in amt of $50,000.00 signed and rtd by contractor Prog. Rept. #20 for Sep. Oct. and Nov. recd and approved. PR #97676 Amt. $7,000.00 Bid request sent Bid request due F & D approved 5/27/49 Negotiator: HAGGQUIST
ac-208 GRD	Wave Propagation 1. Research & Invest. Quarterly reports 20 of 20 and final report recd	21 Jan '49	Penn State Engr: Gerson	46-28,076.00 47-17,000.00 48-25,000.00 E.O.#188-15	Contract will be completed upon receipt of clearance of GFP. Classification was downgraded by Change Order from Confidential to Unclassified. Negotiator: BAINES

CONFIDENTIAL

CONFIDENTIAL

CONT. NO.	EAUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT. E.O. NO.	REMARKS
ac-227 GRD	Mogul Research 1. Services & Reports Reports when assigned a task	May '49	Woods Hole Engr: Dr. Peoples	46-30,000.00 E.O.#188-11	Contract extended 6 mos. based upon decision by WLGRD. Contract in process of termination. CALENDER
ac-228 GRD	Mogul 1. Services and reports quarterly 7 of 12 recd	31 Mar'50	U of Cal. Engr: Dr.Peoples	46-20,300.00 49-40,000.00 E.O.#188-11	Purchase Request #95093 in amt of $40,000 extended contract 1 yr. mod at contractors for signature. CALENDER
ac-241 GRD	Pressure & Temperature Upper Atmosphere. Reports called for monthly. Actual issuance is variable due to extensive field work interrupting clerical work. QUARTERLY REPORTS	15 Mar '50	NYU Engr: Dr. Peoples	47-117,700.00 48-231,000.00 49- 96,000.00 49- 20,000.00 464,700.00 E.O.#188-11 114-11	Mod #8 dated 8 Apr '49 Increasing requirements and contract price by 20,000.00 forwarded ENDCA for Distribution. PETRAITIS

CONT. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT. E.O. NO.	REMARKS
ac-323 GRD	Dependence of Inder of Refraction upon Meteorological Factors and Frequency. 1. Reports and Services Quarterly 8 of 8 recd	10 Oct '48	Rutgers University Engr: Gerson	47-24,200.00 E. O.#188-18	Contract completed, final payment awaiting redetermination by WLBUY-2. CALLENDER
ac-378 GRD	Investigation-Micro meteorological Parameters Quarterly reports 4 recd	30 June 50	Johns Hopkins Engr. Lake	48-98,750.00 49-98,000.00 E.O.#114-11	Progress satisfactory. DANZIS
ac-379 GRD	Research in Atmospheric Ozone Reports 5 of 12 recd on 4/7/49	31 Dec '50	Univ of New Mexico Engr: Dr. Tyckoff	48-33,871.00 49-72,000.00 E.O.#114-11	Contract progressing satisfactorily. BAKER

CONT. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT E. O. NO.	REMARKS
ac-325 GRD	Synoptic Meteorology of the Tropical Pacific Ocean Quarterly rpts 4 of 8 recd	1/20/50	U of Calif. Engr: Barber	42,022.00 E.O. #114-11	Contract progressing satisfactorily. CALLENDER
ac-392 GRD	Research into the forecasting of soil trafficability Quarterly rpts 2 of 8 recd	2 Feb '50	NYU Engr: Greenberg	48-52,150.00 E.O.#114.11	Contract proceeding satisfactorily. No change BARNES
ac-394 GRD	Research in Graphical Representation of Meteorological Observations. Monthly reports 5 of 5 recd	Completed	Cook Electric Engr: Frank	48-39,891.92 E.O. #114-11	Contract completed. Final payment awaiting clearances for audit. HAGGQUIST

CONFIDENTIAL

CONT. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT. E. O. NO.	REMARKS
ac-396 GRD	Service Wave Propagation 3 of 4 Quarterly rpts recd	30 June '49	Columbia Univ. Engr: Haskell	48-72,000.00 E. O.#114-11	Contract progressing satisfactorily. ROSENBERG
ac-398 GRD	Services covering research in extended weather forecasting 3 of 6 quarterly reports recd	1 Aug 49	M. I. T. Engr: Lt. Thompson	48-54,486.00 E.O.#114-11	Contract progressing satisfactorily. BAKER
ac-399 GRD	Services and reports on Meteorology Quarterly rpts 4 recd	31 Mar 50	American Meteorology Society Proj. Scientist O.V. GROOS	48-94,700.00 E.O.#114-11	Progress satisfactory. DANZIS

CONFIDENTIAL

CC NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT. E. O. NO.	REMARKS
ac-426 GRD	Research & Investigation in Microseisms 4 Quarterly rpts 2 recd	30 Oct 49	Cal Inst of Tech Engr: Dr.Peoples	48-43,890.00 49- 5,000.00 E.O.#144-11	Progress satisfactory. Modification covering Pr 95097 forwarded to contractor for signature 3 May. DANZIS
ac-429 GRD	Telemetering System 4 phases 4 reports Final Report Report #1 2 3 4	Complete by 30 Apr 1949 30 Sep 48 31 Oct 48 15 Feb 49 31 Jan 49	Melpar, Inc. Engr:	48-45,180.00 E.O.#188-11	Report dated 19 April recd 5/20/49 Mod to be prepared extending delivery to 30 April 49. ROSEMIER
ac-430 GRD	Meteorological Forecasting Aids 1. An evaluation of Meteorological Forecasting Aids. 2. Investigation of contemporaneous and time-lag relationships between the various centers of action in the earths atmosphere 2 of 2 rpts recd.	15 Aug 48	Cal Inst of Tech Engr: Frank	48-55,076.00 E.O. #114-11	Contract completed, final payment awaiting GFP clearances. CALLENDER

CONFIDENTIAL

CO NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT. E. O. NO.	REMARKS
ac-436 GRD	Research - Rare gases reduction techniques 2 of 2 rpts recd	6 Sep 48	Air Reduction Sales Co. Engr: Wyckoff	48-24,900.00 49-16,000.00 E.O.#450-11	Final report recd. Awaiting cost breakdown & inventory of models and equipment to discharge Price Revision Article in contract. MARTIN
ac-439 GRD	Investigation of Diffusion in the Free Atmosphere Quarterly rpts 2 of 3 recd	15 Mar 49	U of Calif. Engr: Frank	47, 030.00 E.O.#114-11	Third report recd and being reviewed by GRD CALLENDER
ac-445 GRD	Research Meteorology 3 of 7 rpts recd	31 Dec. 1949	U of Alaska Engr: Preseman	48-88,060.83 E.O.#114-11	Contractor making satisfactory progress. Next report due 5/25 for period ending 5/15/49 mailed by Contractor on 18 May. Mod 4 issued 1 April extends cont. to 31 Dec. 49. Recd signed, executed & distributed. MARTIN

CONFIDENTIAL

CON. NO.	EQUIP MENT	DUE DATE	CONTRACTOR	CONTRACT ART. E. O. NO.	REMARKS
ac-457 GRD	Survey or basic Seismic report one report due 11/30 recd	11/30/48	Beers & Heroy Engr: Wyckoff	48-25,600.00 E.O.#450-11	Final payment made. Contract completed. File sent to ENBCA for retirement and storage on 25 April MARTIN

CONFIDENTIAL

CONT. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT. E. O. NO.	REMARKS
AF 28 (099) 1 GRD	Research Services for evaluating weather forecasting aids and study of world wide weather relationships. 4 quarterly reports starting 30 Nov. 2 of 4 recd.	30 June 49	American Inst of Aerological Research Engr: Frank	49-99,975.00 E.O.#114-11	Report No.2 for Feb has been approved. PETRAITIS
AF 28 (099) 2 GRD	Continuation Research under Cont ac-153 Investigation of Radio Wave Absorption by Atmospheric Hydrometeors. Reports Quarterly	30 Sep 49	U of Florida Engr: Dr.Peoples	48-30,000.00 E.O.#114-11	Report No. 1 dated 31 Dec 49, recd 2/16/49. Approved 3 Mar 1949 ROSEMIER
AF 28 (099) 7 GRD	Research on Turbulance and Diffusion of Particulate matter in lower layers of the Atmosphere. 4 quarterly rpts starting 10 Feb 49. 2 of 4 recd	31 Oct 49	M.I.T. Engr: Lake	49-50,300.00 E.O.#114-11	Report No. 2 for May has been approved PETRAITIS

CONFIDENTIAL

CONFIDENTIAL

CONT. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT. E. O. NO.	REMARKS
AF 28 (099) -10 GRD	Research in the Determination of Neutron Maximum at High Altitude Quarterly Reports starting 25 Feb 49	15 Nov 49	NYU Proj Eng: P.H. Wyckoff	49-18,000.00 E.O.#114-11	Progress Report #1 for Feb has been rec'd and approved. PETRAITIS
AF 28 (099) -25 GRD	Research and Reports Study of cloud Physics 3 quarterly and 1 final reports. 2 recd	20 Oct.49	Mt. Washington Observatory Engr:PS Anderson	49-$48,000.00 E.O.114-11	Contractor making satisfactory progress. Next report due 31 July. MARTIN
AF 19 (122) -36 GRD	Physical Properties of the Upper Atmosphere	31 May 50	Boston U.	49-$224,000.00 E.O.#116-11	Just recd for adm. ROSENBERG

CONFIDENTIAL

CONT. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT. E. O. NO.	REMARKS
AF 19 (122) -44 GRD	Basic Research on Radio Wave Propagation as influenced by the Ionosphere Quarterly Reports 1 recd	23 Mar 49	Pennsylvania State College Proj Eng: N.C. Gerson	98,000.00 E.O.#114-11	Progress Report #1 for May Recd and approved PETRAITIS
AF 19 (122) -45 GRD	Research and Reports. High Altitude Balloon Trajectory Data. 3 quarterly and 1 final reports	15 Mar 50	NYU Proj Eng: Lt. Jones	49-$97,000.00 E.O. #114-11	First report due 15 June. MARTIN
AF 19 (122) -49 GRD	Study of large scale oscillation of the Atmosphere Quarterly Reports Starting 15 July 1949	14 Apr 50	NYU Proj. Engr: Lt. Jones	20,500,00 E.O.#114-11	Contract in initial stage. Progressing satisfactorily PETRAITIS

CONFIDENTIAL

CONFIDENTIAL

CONT. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT. E.O.NO.	REMARKS
AF -54 GRD	Correlation of Meteorological Parameters with Cosmic Ray Energies	14 Apr 50	Univ of Denver	49-51,183.00	Just rec'd for administration.
			Engr: Wychoff	E.0.115-11	ROSENBERG

P.R. NO.	EQUIPMENT	SOURCES	EST. AMT. COMMITTED E. O. NO.	REMARKS
95084	Research Services Gathering of Data Regarding Sporatic Elonization	Radio Magazines, Inc.	$12,000.00 Obligated $12,000.00	Bid Request sent: 3-17-49 Bid Request due: 4-15-49 F. & D. sent: REMARKS: Quotation request forwarded to proposed contract on 3-17-49. Expe to obligate about 8 May 49. Cont. AF 19 (122)-72 forwarded to contractor for signature 5-26-49. Fully executed copy forwarded to contractor 26 May 49.
GRD		Engr: Gerson	E.O. #	Baker

WEEKLY REPORT ENDING 1 JUNE 1949 NEGOTIATOR: BARNES

P.R. NO.	EQUIPMENT	SOURCES	E.O. NO.	EST. AMT.	REMARKS
58109 Rec'd 2 May 49 CFS ERGRD2B-W	Power Generator Unit	Trailmobile Co. Mass. Eng'g Co. Walsh Body & Trailer and three (3) others. Engr: S. Dempsey	115-23	$15,000.00 Obligated	Bid Request sent: 12 May 49 Bid Request due: 6 June 49 F & D sent: 11 May 49 Bid requests delayed due to incomplete data from CFS but finally mailed on 12 May and are due 6 June 49. F & D mailed 11 May 49.
57146 Date rec'd 8 Mar 49 CFS [illegible]	Research Services covering Infrared Spectroscopic Determination of Atmospheric Constituents and their Distribution in the Atmosphere	Ohio State Univ. Res. Foundation	114-11	$32,950.00 Obligated $32,950.00	Contract Af 19(122)-65 was turned over to ENBC for distribution on 5/23.

P.R. NO.	EQUIPMENT	SOURCES	EST. AMT. COMMITTED E. O. NO.	REMARKS
57150 Rec'd. 19 Jan 49 GRD	INVESTIGATION - GENERAL CIRCULATION OF THE ATMOSPHERE Cont. No. AF 19 (122)-48	UNIVERSITY OF CALIFORNIA Proj. Scientist Rados	$38,900.00 Obligated: $38,900.00 E.O.#114-11	Bid Request sent: 7 Feb. 49 Bid Request due: 21 Feb. 49 F. & D. sent: 22 Mar. 49 REMARKS: Executed contract received 18 May 1949 and forwarded to ENBC for distribution. DANZIS
95097 Rec'd. 13 Apr.49 GRD	EXTENDING PERIOD OF PERFORMANCE Modification to Cont. #W28-099 ac-426	CALIFORNIA INSTITUTE OF TECHNOLOGY Proj. Engr: Dr. Peoples	$5,000.00 Obligated: $5,000.00 E. O. #188-11	Bid Request sent: Not needed. Bid Request due: -- F & D signed: 18 Apr. 49 REMARKS: Modification mailed to University for signature 3 May 49. DANZIS

WEEKLY REPORT - 1 June 1949

P.R.NO.	EQUIPMENT	SOURCE	E.O.NO.	EST AMT Committed	REMARKS
95078 Rec'd 4 March 49 LAB: GRD	Services & Repts Basic Mathematical Studies	N. Y. U.	114-11 Proj.Engr. Gerson	$144,500.00 Obligated $144,470.00	Bid req sent:)Proposal rec'd Bid req due :) F&D sent: 8 Mar 49 Remarks: Cont. AF 19(122)-42 sent to NYU on 25 Mar 49. Amour $144,470.00. Rec'd signed & ser to Hq,AMC for approval on 21 Apr 49. Negotiator: Martin
95098 Rec'd 5/11/49 GRD	Air Conductivity Equipment	Applied Physics Millivac Tracerlab National Victoreen Berkeley Air Reduction	450-11 Proj. Engr. Wyckoff	$30,000.00	Bid req sent: 5-19-49 Bid req. due: 6-6-49 F&D sent: 5-18-49 Remarks: Awaiting quotes. Negotiator: Martin

WEEKLY REPOR[redacted]DING 1 June 1949

P.R. No.	EQUIPMENT	SOURCES	E.O. NO.	EST. AMT.	REMARKS:
95091 Date Rec'd 3/22/49 GRD	Research of Upper Atmosphere Mod. to Contract W 28-099 ac 241	New York University	114-11 Proj. Engr. Dr. J. A.Peoples	$20,000.00 Obligated $20,000.00	Bid Request sent 30 Mar 1949 Bid Request Due 13 Apr 1949 F & D sent 5 Apr 1949 Remarks: Quote in the amount of $20,000.00 received. Mod. #8 in the amount of $20,000.00 to ENBCA for distribution 26 May 1949. PETRAITIS

RD

WEEKLY R[illegible]T ENDING 28 May 1949
GEOPHYSICAL RESEARCH DIVISION

NEGOTIATOR: ROSEMIER

PR NO.	EQUIPMENT	SOURCES	E.O. NO.	EST. AMT.	REMARKS
104761 Recd 3/16 GRD	Research in Physical Properties of Upper Atmosphere	Univ of Michigan	116-11	$147,500.00 Obligated $147,000.00 7 Apr 49	Bid Req sent 3/17 Bid Req due 5 Apr 49 F&D sent - To be signed by CO Permission to use Cost heimbursement Contract 3/28. Approved 4/21 by phone. Contract being prepared for distribution. Held up pending Washington approval.
95100 Recd 2 May ERHE GRD	Experimental Model of Celestial Spectrophotometer	Penn State College Engr- Gerson	114-11	$40,000.00	Bid Req sent 5/3/49 Bid Req due 5/23/49 F&D sent - Tobbe signed by CO Quotation recd $42,447.00. Additional funds to be provided by CFS as per telephone conversation with Gerson 5/31 Expect to obligate week of 6/6/49.

WEEKLY REPORT ENDING 28 MAY 1949

NEGOTIATOR: ROSENBERG

PR NO.	EQUIPMENT	SOURCES	E.O.NO.	EST AMT	REMARKS
95096 Recd 4/13/49 GRD	Research Seismic Waves Mod to ac-396	Columbia U. Engr: Haskell	188-11	$10,000.00 (obligated $10,000.00 4/29)	Bid Req sent - Bid Req due - F & D sent - Mod to ac-396 forwa rded ENBC for distribution on 5/25.
95089 Recd 22 Mar 49 GRD	Application of Statistical Optics to Radio Wave Trans-mission	Dr. N. G. Park III (sole source)	188-26	$5,000.00	Bid Req sent -(Telephonic Request) 5/1 Bid Req due -6/3 F & D sent - 6/1

P.R. NO.	EQUIPMENT	SOURCES	EST AMT COMMITTED E. O. NO.	REMARKS
95092 Rec'd 23 Mar 49 GRD	Balloon Borne Air Sampling Device	Vacuum Elec Eng Distillation Prd. N. Carolina St Co. and 17 others Proj. Scientist Mirarchi	$50,000.00 E. O. No. 114-11	Bid Request Sent 24 Mar 49 Bid Request Due: 14 Apr 49 F. & D. Sent: 25 Mar 49 REMARKS: Awaiting decision of Project Scientist relative to Engineering proposals. SPENCER
105129 Rec'd 4 Apr 49 GRD	Development of Tubes to be used in work on speech analysis	Philco Corporation Project Scientist Hollingsworth	$12,000.00 E. O. No. 115-12	Bid Request Sent: 29 April 1949 F & D Sent: 8 April 1949 REMARKS: Contract being prepared SPENCER

CONT. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT. E. O. NO.	REMARKS
ac-82 GRD	Services Project "M ogul" 1. Services	15 Jan 50	46-47,350.00 Columbia Univ. Engr-Peoples	46-47,350.00 48-50,000.00 188-11	Contract does not require repo[illegible] at any specific interval but only upon completion of a specific assignment ROSENBERG
ac-143 GRD	Critical Refraction by this Ionosphere 1. Services, research & investigation 2. Quarterly rpts 20 of 23 read	30 Apr 49	Penn State College Engr-Gerson	46-17,850.00 47-39,000.00 48-11,400.00 49-15,000.00 188-19	This contract expired as of 30 Apr 49 and upon receipt and approval of Final Report will be processed for completion. BARNES
ac-153 GRD	Scattering & Cloud Attenuation 1. Services & Quarterly rpts 20 of 20 recd	Completed	Univ of Florida Engr-Atlas	46-34,350.00 47-24,000.00 48- 7,500.00 188-16	Contract completed, final payment awaiting GFP clearance. CALLENDER

[redacted]

Z-1907-7

Phillips Lab - Geophysical Directorate

~~Technical~~ Library OL/AA

Research

PL/TL

6/14/94

This document is part of an unclassified series

[redacted]

INDEX

Watson Laboratories - Part 1
Cambridge Field Sta - Part 2
Geophysical - Part 3

DO... INTERVALS;
...26.

Contracts pertaining to Seismics

Station No. W 28-099 ac-

Contr No	Sect. Part Page
3	E-1-1
10	D-1-1
14	H-1-1
27	D-1-1
28	D-1-1
30	D-1-2
31	B-1-1
32	B-1-1
37	H-1-1
39	F-1-1
47	E-1-1
51	E-1-1
52	B-1-1
58	C-1-1
69	D-1-2
70	D-1-2
74	I-1-1
76	E-1-2
77	F-1-1
81	E-1-2
82	I-3-1
83	B-1-2
85	I-1-1
86	H-1-1
97	I-1-1
98	H-1-2
101	E-1-3
102	H-1-2
103	I-1-2
104	C-1-1
106	H-1-2
107	A-1-1
108	D-1-3
110	I-2-2
111	D-1-3
112	B-2-3
114	D-1-4
116	D-1-4
117	E-1-3
118	A-2-2
119	E-2-1
120	F-2-1
121	I-1-2
125	E-2-2
126	C-2-1
127	D-1-4
128	F-2-1
129	A-2-2
130	F-1-1
131	G-1-1
132	B-2-3
133	A-1-1
134	F-2-1
135	D-2-1
136	B-1-2
138	E-1-3
140	[illegible]
141	A-2-3
142	H-1-3
143	B-3-1
145	F-2-1
146	C-2-2
147	E-1-4
148	F-1-2
152	E-1-4
153	C-3-1
154	E-2-3
155	A-1-1
156	F-2-1
157	E-1-4
158	H-2-1
159	H-2-2
162	E-1-5
163	A-1-2
164	B-1-2
165	D-2-2
168	I-1-2
169	E-1-5
170	C-1-1
171	C-2-2
172	I-3-1
173	D-1-5
174	C-1-2
175	E-3-1
176	B-1-3
177	A-1-2
179	F-2-2
180	D-1-5
181	A-1-2
182	C-1-2
186	B-1-3
187	B-1-3
188	F-2-2
189	H-1-3
190	B-1-4
192	B-2-4
195	C-2-2
196	E-1-5
197	B-1-4
198	E-1-6
200	D-1-6
202	A-1-3
205	I-1-3
206	B-2-4
207	B-2-4
208	B-3-1
211	D-1-6
212	C-1-2
213	C-1-3
214	B-2-5
215	B-2-5
216	H-2-2
217	I-1-3
221	H-1-3
222	F-1-2
225	I-1-3
226	I-1-4
227	C-3-1
228	C-3-1
231	H-1-4
232	A-1-3
234	C-2-3
241	G-3-1
244	E-1-6
248	B-1-4
249	B-1-5
250	A-1-3
252	A-2-3
253	F-2-2
255	F-1-2
256	C-2-3
261	H-1-4
262	A-1-4
272	D-2-2
277	A-2-3
278	D-1-6
279	D-2-2
280	C-1-3
283	F-2-2
284	F-1-3
287	D-1-7
288	C-1-3
291	A-1-4
293	I-2-2
295	A-1-4
297	A-2-4
298	H-1-4
300	E-1-6
301	F-2-3
305	H-2-2
306	I-1-4
307	E-1-7
309	A-2-4
310	H-1-5
311	I-1-4
312	F-1-3
313	F-1-3
315	A-1-5
317	A-1-5
318	E-1-7
319	A-1-5
320	A-1-6
321	E-1-7
322	D-1-7
323	C-3-2
324	I-1-5
327	E-1-8
329	B-1-5
331	A-1-6
332	A-1-6
333	F-2-3
334	B-1-5
336	D-2-3
364	C-2-3
371	A-1-7
376	H-2-3
377	B-2-5
378	D-3-1
379	A-3-1
381	F-2-3
382	I-2-2
385	C-3-2
386	A-2-4
387	B-1-6
389	F-1-3
392	B-3-1
394	E-3-1
396	I-3-1
398	A-3-1
399	D-3-1
400	H-1-5
403	B-3-2
404	H-1-5
405	E-3-1
406	D-3-1
407	E-3-2
410	B-1-6
411	I-1-5
414	A-3-1
415	I-3-2
416	F-3-1
419	F-1-4
420	E-3-2

[redacted]

This document is part of an unclassified series

Contr. No.	Sect. Part Page
Station No. W 28-099 ac-	
421	F-1-4
422	D-3-2
423	H-3-1
424	B-1-6
426	D-3-2
429	H-3-1
430	C-3-2
431	E-1-8
432	D-1-7
433	C-1-4
434	I-1-5
435	C-2-4
436	F-3-1
437	F-1-4
439	C-3-3
440	C-1-4
443	H-1-6
445	F-3-1
446	C-1-4
447	B-1-7
450	A-1-7
454	E-1-8
455	F-1-4
457	F-3-1
458	B-1-7
460	C-1-5
461	A-1-7
462	C-1-5
463	C-1-5
464	C-1-6
465	G-1-1
468	E-1-9
470	C-1-6
472	I-1-6
473	E-1-9
474	D-1-8
475	D-1-8
476	I-1-6
477	E-1-9
478	F-3-1
479	G-1-2
480	G-1-2
481	B-1-7
482	H-1-6
483	I-1-6
485	H-1-6
486	H-1-7
487	G-1-2
488	G-1-3
490	G-1-3
491	I-1-7
492	I-1-7
503	G-1-3
504	G-1-4
Station No. W 33-038 ac-	
13848	H-1-7
15295	B-1-8
Station No. AF 28 (099)	
4	G-1-1
Station No. AF 19 (122)	
1	G-2-1
14	G-2-1
Station No. W 19-122 ac-	
8	I-2-1
9	D-2-1
10	A-2-1
11	D-2-1
12	I-2-1
14	A-2-1
15	D-2-1
16	B-2-1
17	C-2-1
18	B-2-1
19	H-2-1
23	E-2-1
24	B-2-1
27	E-2-1
29	I-2-1
31	H-2-1
Station No. W 19-122 ac-	
32	G-2-1
34	B-2-2
35	A-2-1
38	A-2-2
39	B-2-2
40	G-2-2
41	B-2-2
51	G-2-2
52	G-2-2

PURCHASE REQUESTS

P.R. No.	Sect. Part Page
PER 49-4	H-1-10
18140	D-2-4
46020	E-1-10
46021	H-1-8
51083	I-1-8
51085	D-3-4
51095	F-1-6
52926	H-1-9
52830	F-1-5
52993	E-1-10
52998	D-1-9
55713	D-2-4
55720	D-2-4
55778	H-2-4
55779	F-2-5
55828	D-1-9
55840	H-1-8
55859	H-1-8
55861	F-1-5
55862	H-1-9
55920	I-1-8
55961	H-1-9
57132	D-3-4
57134	D-3-4
57144	F-3-2
57147	D-1-9
57154	D-3-3
57160	F-3-2
57162	B-3-3
59667	F-2-4
59686	I-2-3
59692	F-2-4
64153	H-1-10
64156	H-1-10
64157	F-1-5
64158	C-1-7
64160	I-1-9
64282	F-2-4
64287	I-2-3
64341	E-2-3
64353	F-2-5
64366	I-2-3
64569	I-1-8
64705	D-1-10
64946	F-2-6
98556	H-2-4
98654	F-2-5

This document is part of an unclassified series

JOINT. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT E. O. NO.	REMARKS
379	Research in Atmospheric Ozone Report 3 of 4 received 10-7-48. Approved 10-11-48	1-31-49	Univ of New Mexico Engr. Dr. Wyckoff	48-22,871.00 E. O. 114-11	Contract progressing satisfactorily. P.R. 57155- $72,000.00 Mod #2 extending period of performance to 31 December 1950. Forwarded to contr for signature 11-2-48. Baker
398	Services covering research in extended weather forecasting 6 quarterly reports.	1 Aug. 49	M. I. T. Engr. Greenberg.	48-54,486.00 E. O. #114-11	Contract progressing satisfactorily. Baker
414	Atmospheric Propegation in Alaska 4 quarterly reports Rpt No. 2 received on 28 September 48.	4-25-49	Univ of Alaska	46-63,500.00 E.O.#188-26 115-11 186-26	Contract proceeding satisfactorily. [redacted]ter

CONFIDENTIAL

This document is part of an unclassified series

PROJ. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT. E. O. NO.	REMARKS
-149	Critical Refraction by this Ionosphere 1. Services, research and investigation 2. Quarterly Reports 19 of 23 rec'd	30 June 49	Penn. State College Engr: Gerson	46-$17,850.00 47- 39,000.00 48-11,400.00 E.O. #188-19	Quarterly Report #19 rec'd. Report No. 20 not due until 31 Jan. 49. PR 57162 in the amount of $15,000 will be incorporated in contract by Mod #6 upon completion of negotiation which is presently in progress.
-205	Wave Propagation 1. Research & Inves. Quarterly Reports 18 of 20 rec'd	31 Jan 49	Penn State Engr: Gerson	46-$28,076.00 47- 17,000.00 48- 25,000.00 E.O. #188-15	Contract progressing in a satisfactory manner. Mod #6 was issued 8 Nov increasing the number of reports to 50 and changing the delivery point to CFS.
-307	Research into the forecasting of soil trafficability Quarterly Reports 2 of 8 rec'd.	2 Feb.50	M. I. U. Engr: Greenberg	48-$52,150.00 E.O. #114-11	Contract proceeding satisfactorily Mod #1 was issued 8 Nov increasing the number of reports to 50 and the delivery point to CFS.

CONFIDENTIAL

B-3

This document is part of an unclassified series

	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT. E. C. NO.	REMARKS
[illegible]-403	Research in Upper Level Winds Quarterly Reports 2 of 4 rec'd	13 May 49	Univ. of Calif Engr. Greenbrier	48-$10,402.00 E. C. #[illegible]-11	Quarterly Report #2 was rec'd 19 Nov. Report #3 was 11 Feb 49. Mod #1 was issued 8 Nov increasing the number of reports to 50 and changing the delivery point to CFS.

This document is part of an unclassified series

CONFIDENTIAL

P.R.No.	EQUIPMENT	SOURCES	EST. AMOUNT Committed	REMARKS
57162 Date Rec'd 27 Oct 48 LMB: CRD	Upper Atmosphere Detection Limited Distance Communication Mod No. 6 Cont. No. ac-143	Penn. State Proj. Engr: Gerson	$15,000.00 Obligated E. O. No. 188-19	Bid Request Sent Date 1 Nov. 48 Bid Request Due Date 11 Nov. 48 Finaings & Det Sent 1 Nov. 48 Mod. #6 extending this contract for 6 months to 30 June 1949 at an increase in cost of $15,000 will be written upon completion of negotiation now in progress and expected completed approximately week of 6 Dec 48.

CONFIDENTIAL

This document is part of an unclassified series

CONFIDENTIAL

C-3

GEOPHYSICAL

Monthly Report as of 30 November 1948

CALLENDER

Page 1 of 2 pages

CONT.NO.	EQUIPMENT	DATE DUE	CONTRACTOR	CONTR.AMT. E.O. NO.	REMARKS
ac-153	Scattering & Cloud Attenuation 1. Services & Quarterly Rpts. 19 of 20 rec'd.	9/30/48	Univ. of Florida Engr.- Gerson	46-34,350.00 47-24,000.00 48- 7,500.00 E.O. 188-16	Cont. extended to 30 Sept 1948. Contractor has written requesting a further extension of contract New contract being negotiated to continue where present contract ends. Upon transfer of GFP to AF 28(099)-2 final payment will be made.
ac-227	Mogul Research 1. Services and Reports Reports when assigned a task.	May 1949	Woods Hole Engr.-Dr. Peoples	46-30,000.00 188-11	Cont. modified deleting requirements for bi-monthly reports and calling for reports upon completion of task assigned. Contract extended 6 mos. based upon decision by WLGRD
ac-228	Mogul 1. Services and reports quarterly 7 of 8 received	Dec 1948	Univ. of Calif. Engr.-Dr.Peoples	46-20,300.00 188-11	Cont. progressing satisfactorily. Contract extended to Dec. 1948 by Modification written week of 5 July 1948.

CONFIDENTIAL

[redacted]

This document is part of an unclassified series

C-3

CONFIDENTIAL

CALIENTER

Page 2 of 3 pages

CONT. NO.	EQUIPMENT	DATE DUE	CONTRACTOR	CONTR.AMT. E.O. NO.	REMARKS
ac-313	Dependence of Index of Refraction upon Meteorological Factors and Frequency. 1. Services & Rpts. Quarterly 7 of 8 recd.	10/10/48	Rutgers Univ. Engr.-Gerson	47-24,200.00 183-18	Cont. Modified requiring 25 cys of report, reports to be submitted quarterly and extending contract to 10 Oct 48. Awaiting final report.
ac-363	Synoptic Meteorology of the Tropical Pacific Ocean Quarterly Rpts. 2 of 8 rec'd.	7/20/50	Univ. of Calif Engr.- Greenberg	48,922.00 114-11	Cont. progressing satisfactorily. NACP endeavoring to supply GFP to Contractor.
ac-330	Meteorological Forecasting Aids. 1.An evaluation of Meteorological Forecasting aids. 2.An investigation of contemporaneous and time-lag relationships between the various centers of action in the earths atmosphere. 2 of 2 reports rec'd.	8/15/48	Calif. Inst. of Tech. Engr.-Greenberg	48-55,076.00 114-11	All reports received. Upon receipt of final voucher and GFP audit final payment will be effected.

CONFIDENTIAL

This document is part of an unclassified series

CONFIDENTIAL

CONT. NO.	EQUIPMENT	DATE DUE	CONTRACTOR	CONTR.AMT E. O. NO.	REMARKS
ac-439	Investigation of Diffusion in the Free Atmosphere. Quarterly Rpts. 2 of 3 rec'd.	12/15/48	Univ. of Calif Engr.-Greenberg	47,030.00 114-11	Contract in initial stages. Second report received.

This document is part of an unclassified series

as of 30 November 1948
GEOPHYSICAL RESEARCH DIVISION

NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT. E. O. NO.	REMARKS
-378	INVESTIGATION - Micrometeorological Parameters.	30 June 50	JOHNS HOPKINS	48-$98,750.00 49- 98,000.00	Progress satisfactory. Some delay in furnishing GFP. P.R. #57134 - $98,000.00. Modification #2 mailed to Contractor 26 Oct. 48 for signature.
	Quarterly Reports 3 received		Engr: Greenberg	E. O. #114-11	
-375	SERVICES & REPORTS on Meteorology	31 Mar 50	AMERICAN METEOROLOGICAL SOCIETY	48-$94,700.00	Progress Satisfactory.
	Quarterly Reports 1 received.		Engr: Greenberg	E. O. #114-11	
-406	RESEARCH & REPORTS in General Circulation of the Atmosphere	31 Aug 49	MASSACHUSETTS INST. OF TECH.	48-$33,830.00	Progress satisfactory.
	Quarterly Reports 2 received.		Engr: Greenberg	E. O. #114-11	[redacted] CONFIDENTIAL

This document is part of an unclassified series

CONT. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT. E. O. NO.	REMARKS
ac-422	Research & Investigation in Low Level Atmospheric Diffusion Final Rpt Received	20 May 49	G. M. GIANNINI Engr: Greenberg	48-$20,221.54 E. O. #114-11	Modification, in the amount of $20,221.54, forwarded to WLBCR 9 Nov. for distribution.
[illegible]	Research & Investigation in Microseisms 4 Quarterly Reports 1 received.	30 Oct 49	CALIFORNIA INST. OF TECH. Engr: Peoples	46-$43,890.00 E. O. #114-11	Contract in initial stages. First Report received 23 Nov. 48. Does not appear to be in satisfactory form.

Confidential

This document is part of an unclassified series

Confidential

NEGOTIATOR: DANZIS D

P.R.NO.	EQUIPMENT	SOURCES	EST. AMOUNT Committed	REMARKS
57154	RESEARCH CLOUD PHYSICS	MT. WASHINGTON OBSERVATORY	49-$48,000.00	Bid Request Sent: Bid Request Due: Finaings & Det. Sent: REMARKS: Contractor authorized to proceed 21 Oct.48 Contract being written.
Rec'd 14 Oct 48 SIGNED	CONTRACT NO.	Engr: Wyckoff	E. O. #114-11	

This document is part of an unclassified series

P. R. NO	EQUIPMENT	SOURCES	EST. AMOUNT Committed	REMARKS
51085 Rec'd 17 Jul 48 CONTRACT NO. WCSRD	Modification Kit for AN/MPS-6 (XE-) CONTRACT NO.	ALLISON ASSOCIATES CHATHAM ELECTRONICS GILLE BROS. RADIO RECEPTOR A. F. SMUCKLER CO. L.H.TERPENNING SERVO CORP OF AMER. and 12 others Engr: Norris	$100,000.00 E. O. No. 178-13	Bid Request Sent: 17 Aug. 48 Bid Request Due: 27 Aug. 48 Findings & Det. sent: REMARKS: Closing date extended to 27 Dec. 48. All sources advised that model is ready for inspection.
52132 Rec'd 27 Aug 48 CONTRACT NO. AF 28 (099)-1 WCSRD	SERVICES - Evaluation of Weather Forecasting Aids, Study of World-Wide Weather Relationship CONTRACT NO. AF 28 (099)-1	AMERICAN INSTITUTE OF AEROLOGICAL RESEARCH Engr: Greenberg	$125,000.00 Obligated $99,975.00 E. O.	Bid Request Sent: 14 Sept. 48 Bid Request Due: 28 Sept. 48 Findings & Det. Sent: 7 Oct. 48 REMARKS: Contractor authorized to proceed with work 1 Sept. 48. Contract, in the amount of $99,975.00, forwarded to Contractor 5 Nov. for signature. Executed contract forwarded to WCSRD 22 Nov. 48 for distribution.
52134 Rec'd 2 Sept 48 WCSRD	SERVICES - Research Micrometeorology of surface layer of atmosphere Mod. #2 to Cont. No. ac-378	JOHNS HOPKINS Engr: Greenberg	49- $98,000.00 Obligated $98,000.00 E.O. #114-11	Bid Request sent: 15 Sept. 48 Bid Request Due: 28 Sept. 48 Findings & Det. Sent: 7 Oct. 48 REMARKS: Modification #2 mailed to Contractor 26 Oct. 48 for signature.

CONFIDENTIAL

This document is part of an unclassified series

Rpgo.-52 Rpts

C-3

Confidential

CONT. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	AMT. E.O. NO.	REMARKS
AC-175	Atmospheric Effect of Electromagnetic Waves 1. Study 2. 19 of 21 rpts rec'd	12/31/48	Georgia Tech Engr.-Gerson	46-97,620.00 47-24,000.00 48-60,000.00 E.O. 188-18	Quarterly Rpt #19 covering months of June, July & Aug '48 rec'd and approved. Mod. #7 extending Contract to 12/31/48 at no add'l cost mailed to Contractor. Executed and returned. HAGGQUIST
AC-394	Research in Graphical Representation of Meteorological Observations. Monthly Reports 5 of 5 received	30 Aug '48	Cook Electric Engr.-Greenberg	48-39,891.92 114-11	Prog. Rpt #5 representing Final Report has been rec'd and is being reviewed. Maps under Item 4 rec'd & forwarded to CFS for receiving report. HAGGQUIST
AC-405	Research and analysis of Radioactive isotone samples-equipment and reports. 0 of 2 reports rec'd	1 Oct. '48	Tracerlab, Inc. Engr.-Wyckoff	46-218,060.00 450-11	Mod. #3 to cover add'l GFP issued and mailed to Contractor for signature. Executed & returned. HAGGQUIST

Confidential

This document is part of an unclassified series

E3

Confidential Page 1 of 2 Pages

CONT. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	AMT. E. O. NO.	REMARKS
[illegible]0-407	Services & Equipment for Radiological Training and Monitoring. 1a.Training Materials 2 of 2 reports received	10 Feb'49 3 May '48	Tracerlab Engr.-Wyckoff	48-123,200.00 450-11	Mod. #1 covering GFP executed and returned by contractor. Mod. No. 2 revising Item 4 to provide for one set of preliminary reports and one (1) set of Final reports under 4a and 4b, at no additional cost, has been executed and returned by Contractor. Prog. Rpt. #2 rec'd & approved. Productively inactive. Haggquist
[illegible]	Services Persistent Weather Types 1. Rpt rec'd and rejected	31 Mar'50	C. M. Giannini Engr.-Greenberg	48-19,966.20 114-11	Mod. #1 changing requirements to one (1) Progress Report reducing Contract price to $2,238.61 issued and mailed to Contractor for signature. Executed and returned. Productively inactive. Haggquist

Confidential

This document is part of an unclassified series

F-3 Confidential Monthly Progress Report as of 30 November 1948 - GRD ADMINISTRATOR: Martin

CONT NO	EQUIPMENT	DUE DATE	CONTRACTOR	CONTRACT AMT E. O. NO.	REMARKS
ac-416	Services and Reports Variation of Atmosphere Conductivity Measurements. Monthly & final reports rec'd.	12 July 48	Drs. Wait & Gish Engr: Wyckoff	48- $17,000.00 E.O. #450-11	Final report rec'd and approved. Awaiting final invoice and clearances. Productively inactive.
ac-436	Research - Rare gases reduction techniques. 2 of 2 reports rec'd.	6 Sept 48	Air Reduction Sales Co. Engr: Wyckoff	48-24,900.00 49-16,999.00 E.O. #450-11	Rec'd P.R. 57140. Issued Mod 2 to Cont. on 11 Oct 48. Amt $16,000.00. rec'd signed, executed and distributed. Final report rec'd. Productively inactive. Awaiting cost breakdown & inventory of models and equipment to discharge Price-Revision Article in contract.
ac-445	Research Meteorology 1 of 5 reports rec'd	16 Jun 49	Univ. of Alaska Engr: Greenberg	48-$88,060.83 E.O. #114-11	Contractor making satisfactory progress. Next report due 11/25 for period ending 11/15/48 expected about 10 Dec.
ac-457	Survey of basic Seismic Report. One rept due 11/30.	11/30/48	Beers & Heroy Engr: Wyckoff	48- $25,600.00 E.O. #450-11	Contractor preparing final report. Contract expires 30 Nov 48.
ac-478	Contamination Studies Two monthly and final reports received.	18 Sept 48	Armour Research Foundation. Engr: Wyckoff	48- $14,950.00 E.O. #450-11	Second and final reports received by GRD 10 Nov. Final report incomplete awaiting appendix.

Confidential [redacted]

This document is part of an unclassified series

P.R.NO.	EQUIPMENT	SOURCES	EST. AMOUNT Committed	REMARKS
57144 Date Rec'd 21 Sept LAB: CRD	STUDY OF TURBULENCE, etc.	MASS INSTITUTE OF TECHNOLOGY Engr: Wyckoff	$50,300.00 OBLIGATED E.O.No. 114-11	Bid Request Sent: 9/20/48 Bid Request Due: 10/5/48 F&D sent: 10/22/48 Remarks: Issued Contract AF 28(099)-7 week of 25 Oct 48. Rec'd signed contract with exceptions. Expect to clarify exceptions and execute contract by 3 Dec.
57160 Date Rec'd 21 Oct LAB: GRD	Research & Reports Determination of Neutron Maximum at High Altitude Mod. to Cont No.	N. Y. U. Engr: Wyckoff	$18,000.00 OBLIGATED E.O.No. 114-11	Bid Request sent: Quote rec'd Bid Request due: 10/14/48 F&D sent: 11/4/48 Remarks: Contract AF 28(099)-10 issued 12 Nov, amt $18,000.00.

Confidential

This document is part of an unclassified series

GEOPHYSICAL RESEARCH DIVISION
MONTHLY PROGRESS REPORT AS OF 30 NOVEMBER 1948

Confidential

CONT. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	EST. AMT. E.O. NO.	REMARKS
AF-841	Pressure & Temperature, Upper Atmosphere. Reports called for montnly. Actual issuance is variable due to extensive field work interupting clerical work.	1 Feb. 49	N. Y. U.	47-117,700.00 48-231,000.00 49- 96,000.00 444,700.00	Mod. #5 dated 28 Oct increasing tne number of reports & changing place of final inspection to CFS went to WLBCR for distribution on 24 Nov 48.
			Engr:Dr. Peoples	188-11 114-11	

[redacted] Confidential

This document is part of an unclassified series

Confidential

H-3

CONT. NO.	EQUIPMENT	DUE DATE	CONTRACTOR	CONT. AMT. E.O. NO.	REMARKS
ac-423	Research in Artic Meteorology	10 May 49	G.M. Giannini Engr- Greenberg	$5036.88 114-11	In process of cancellation. Mod #1 reduced contract to $5,036.88. Sent to Contractor 10/28/48. Mod signed by Contractor and returned 11/12/48. Distributed 11/26/48. Contract productively inactive.
ac-429	Telemetering System 4 Phases 4 reports Final Report	30 Nov 48	Melpar, Inc. Engr.- Peoples	48-$45,180.00 188-11	Requirements revised and modification prepared, to include downward price revision and change requirements. Contractor visited 4 Oct 48. Report #1, Phase 1, period 31 July to 30 Sep rec'd 10/11/48. Approved 10/15/48. Mod#2 changing requirements to Contractor 10/20/48 signed by Contracting Officer for distribution 11/8/48.

Confidential

This document is part of an unclassified series

CONFIDENTIAL

GEOPHYSICAL CONTRACTS
Month Ending 30 November 1948

CONT NO.	EQUIPMENT	DUE DATE	CONTRACTOR	AMT & E.O.#	REMARKS
ac-82	Services Project "Mogul" 1. Services	15 Jan 1950	Trustees of Columbia U. Engr: Dr. Peoples	46-47,350.00 48-50,000.00 E.O.#188-11	Contract does not require reports at any specific interval but only upon completion of a specific assignment .
ac-172	Propagated Characteristics Very Short Waves 1. Res & Invest 2. Reports (19 of 20 recd)	31 Dec 1948	N.Y.U. Engr: Gerson	47-70,312.59 47- 7,000.00 48-15,000.00 E.O.# 188-18	Contract nearing completion.
ac-396	Service Wave Propagation 2 of 4 quarterly reports recd	31 Jan 49	Columbia U. Engr: Dr. Peoples	48-72,000.00 E.O.#114-11	Quarterly Rpt #3 for period ending 31 Oct 48 recd and forwarded for approval on 10/8.

CONFIDENTIAL

This document is part of an unclassified series

CONFIDENTIAL

ADMINISTRATOR: Rosenberg

CONT NO.	EQUIPMENT	DUE DATE	CONTRACTOR	AMT & E.O.#	REMARKS
ac-445	Ionopsnic Layers above the US	20 May 49	G.M.Giannini Engr: Greenberg	48-11,506.62 E.O.#114-11	Technical work has ceased by request of Proj. [illegible] Contract price is being readjusted. [illegible] $11,021.38. Productive inactive.

CONFIDENTIAL

This document is part of an unclassified series

April 2 Tues D & I left caracas Pan Am bus 9 pm. Arrived Miami 10 pm on Pan Am. through customs and caught 1 am National Airlines plane for Newark
April 3 Wed Arrived Newark 730 am and took airline bus to NYC. D left for Providence 9 am. Called up Ewing but he was in Chicago - due back tomorrow. Left on 1040 sleeper for Canton tonight.
April 6 Sat At home. Over to Ogdensburg to see Steve this pm
April 7 Sun. Left Canton on 805 sleeper. Saw Bob Foster '31, also on way to NYC
April 8 Mon. Arrived NYC 730 am. Up to Columbia University to see Ewing 130 pm. Wyckoff and Dove on way to Los Angeles py plane this pm. Crane and Morrison in also from Watson Labs. Went back to Red Bank with them in AWUS car to Officer's Club near Watson Lab. Crane, Morrison and I went up tonight to see Reinnegle at office. Met Gifford who has 80' sea rescue boat this project is planning to use. Stayed at Officer's Club tonight
April 9 Tues. At Watson Labs all day. Went through all processes necessary for employment under Civil Service. Warrant Officer Gifford transferred to WLERI-4 today. McCurdy already in and started work. Talked with Reinnagle and Gallo re Columbia contract. Gifford left pm for Washington, Major Crane for Camp Dix and Morrison for NYC. Reinnagle and I went down to CO this pm to meet group from Cornell extension at Buffalo - Aeronautical research wanting to get contracts. Stayed at Molly Pitcher Hotel in Red Bank tonight
April 10 Wed Checked out of Molly Pitcher Hotel and caught 730 am train out of Red Bank NYC. Checked in at Hotel Webster and then up to Ewings at Columbia University. Mr Gallo of Watson Labs in at 10 am and we went over contract questions regarding Watson Lab cont with Columbia until 1 PM. Went over all parts of work with Doc from 2 to 530 pm. John Ewing in from Missouri.
April 11 Thurs. Worked on rough outline of Eglin Field and SCFAR project Am. Up to see Ewing at Columbia PM. Doc and I went over contract with Watson Lab & Columbia tonight. Caught 1205 sleeper to Boston.
April 12 Fri. Arrived Woods Hole about 11. Joe Worzel went over all sound transmission work at WHOI this pm.
April 13 Sat. Talked with Columbus Iselin this Am regarding Watson Lab work and needs. Crane and Gifford up pm and Joe and I went up to lab with them.
April 14 Sun. Down to lab this am with Joe looking for G9A files. Jim Peoples over about noon for awhile. Joe and I went golfing pm. Took 600 pm train to Boston and 1230 sleeper to NYC. Up to Boston with Lt Frank Ryder with Navy and WHOI
April 15 Mon. Contacted Doc Ewing in NYC and rode down to Red Bank with him. Talked over instrumentation of upper atmosphere investigations. Out to Oakhurst this pm. Conference with Col. Cole and Col. Grough re Project 188-5 and regarding microseisms. Doc and I went back to Molly Pitcher Hotel in Red Bank tonight.
April 16 Tues. Rode out to Watson Labs with Ewing. Went over to Evans Labs with Harry Day Watson Lab navigation man, and saw newly developed ranging apparatus and talked to Lt Rydetor? re Spherics, location of lightning and thunderstorm data collected during past few years. Saw Col. Duffy of Meteorological Division AAF and back to Watson Labs. Doc went on through to NYC. Went over program with Dove and Crane this pm. Back to lab tonight with Crane and Gifford, discussing Project 185-7-1. Back to Myrtle Hotel at 1045 pm.
April 17 Wed. Rode out to Watson Labs with McCurdy. Worked with Major Crane on report regarding underwater work, Eglin Field and deep water. Took this in to Colonal Cole this pm. Acceptance probable. Got room in private house in Red Bank. Moved out of Molly Pitcher Hotel.
April 18 Thurs. Caught bus out to Watson Lab. Col Cole up this am and advised writing new Cost Expenditure for and revising the R. & R. Major Crane left about noon for trip Phila and Woods Hole. Made arrangements to meet him in NYC Monday. Wrote out new R & R and Cost Expenditure ready to take to Col Cole.
April 19, Fri. Talked over work with Dove and we wrote up 2nd EO covering all ocean work. Talked to Ewing on phone this am. Dove and I went down to see Col Cole and then wrote up new EO for deep water work. Saw Hincke? regarding this EO and A for P processed this pm and ready to go out to Wright Field.
April 20 Sat. Caught 710 train to NYC, cashed check at Chase Natl Bank, talked to Ewing on phone. Back to Red Bank about 4 pm.
April 22 Mon. At Watson Labs this am. Got final physical exams. Down to Supply to see Maj Morris with Reinnagle re getting equipment out that came from WHOI without paper coverage Got travel order back and authority to use it. Caught 342 pm out of Red Bank and arrived

in Newark about 430. Reservations to Dayton on Spirit of St. Louis had been cancelled. Called Watson Labs. Got roomette on Spirit about 530. Called Mrs Ewing in NYC. Left Newark on Spirit of St Louis at 620 pm.

April 23 Tues. Arrived Dayton, Ohio about 830 am. Tried to get return ticket for tonight but coach car only open. Took bus out to Wright Field, Bldg 28. Saw Mr Drexler and turned over 2 of the A for P to him. Colonel Maier on leave. Went down to Colonel Winter's office and found Major Crane there. We talked to Colonel Winters regarding the need for planes and about new EO on extended long ranges of the 189-7-1 program which he approved and marked up to 1-E & sent on for higher approval. Went over with Crane & saw Colonel Lindgard in the plane assignment division and talked about planes. Had lunch with him and then went back to talk to Colonel Eaton regarding planes to 189-9-1. Went over to look at C-9 converted B-29 for transport. Back to Bldg 28 & talked with General Rives. Request for planes agrred upon and B-29 will be available near the 1st of June. 189-7-1 required by Rives. A for Ps in Drexler's office not yet signed. - will be sent on to Watson Labs later. Crane had reservations for me on the Spirit of St Louis and we left Dayton at 8 pm.

April 24 Wed. Discussed with Crane possibilities of getting sound through the ground part of the ocean sound channel and about the possibilities of a balloon such as Piccards. Arrived in NYC about 1030. Called Watson Labs and then we took a taxi up to Ewing's office at Columbia. After Ewing 1-2 class we discussed plans for 188-5 and 189-7-1, both Eglin Field and long range channel program. Left Ewings office about 6. Crane registered at Hotel Lexington and I caught 740 out of Penn Station and arrived at Red Bank at 845 pm

April 25 Thurs. Up to Watson Labs. Worked over notes of conference with Ewing yesterday. Wrote up both travel blanks and sent them down to Travel Order Section. Talked with Palm about MQ travel forms. Wrote up letter to Wright Field requesting use of second crash boat. Wrote R&R for Mark 2 hydrophone. Talked to Lt. Hungerford regarding request of this. Stepanoff, new physicist for WLERL in this pm. Crane left for Wright Field tonight.

April 26 Fri. Up to Watson Labs. Went over purchases already applied for with Reinnagle. Wyckoff in this am. McCurdy in pm for radio parts. Went back to Oakhurst with McCurdy this PM

April 27 Sat. Left Red Bank about 730 AM with McCurdy in his car. Drove through NJ at TRenton & down to Philadelphia. Mac left me off at Olney at subway station. Contacted Marion at Bankers Security and went by train with her to Newton, Pa at 100 PM . Stayed with Flaggs.

Apr 28 Sun. Wayne & Marion drove me over to Trenton, NJ & I caught 1030 am train into NY. Went up to Ewings about 1215. Joe Worzel there & Hilly Barbour. They left for Woods Hole about 2 PM. I caught 550 train out of Penn Station to Red Bank, NJ

April 29 Mon. Up to Watson Labs. Checked over at library to have some periodicals obtained. Went over water work with McCurdy regarding what is needed in way of purchases. Went over to Oahhurst with Roke, new engineer, former Lt. Commander in Navy. Talked to Charl Ireland regarding Eglin Field work.

April 30, Tues. Up to Oakhurst. Went over equipment that would be left there and what we might do when rest of people gone to Whitesands with Wyckoff. Wyckoff and I took car to Watsom Labs to conference with Col Duffy of Weather Bureau, Capt Kellogg and Col Gault. Discussed weather problems - on eqpt? and S658s & aerography neede in coming work. Discuss equipment with McCurdy pm and tried to find where demolition cable could be located.

May 1 Wed. Up to Watson Labs. Talked with Stepanoff and Wyckoff regarding work to be done while crew was recording White Sands in New Mexico. Commander Navy arrived about 1130 am and we held a conference - Gault, Compton?, Dove Crane, Wyckoff, Hungerfield, Vaux and myself regarding Navy participation with us in Crossroads. Captain Kellogg of Weather Service over pm and talked with Crane and I regarding 658s, airgraphs, etc. Got travel orders etc to Columbia tomorrow. Wyckoff and about 11 others leaving for White Sands by plane tomorrow morning. Up to lab tonight with Crane.

May 2 Thursday. Left Red Bank on 8 am train, off at Elizabeth and took ferry to NYC. Up to GCT and then up to Docs. Too late for talk with Kellogg but in time for conference with Ewing, Lane of Columbia, Gallo, Bradford, Dove and Crane of Watson Labs. Conference went over contracts with Columbia and WL. Crane and I talked to Dove for short time after dinner. Caught 1130 sleeper to Boston tonight.

May 3 Fri. Arrived Woods Hole 1045 am . Went over to Falmouth with Dorothy. Up to lab pm with Joe W. Talked to Jim Peoples re his amplifier and level recorder. Bump and Kit over tonight. Saw Columbus PM.

~~May 4 Sat~~

May 4 Sat. Up at WHOI this am. Cut with John Ewing taking bottom shots in water. Worked with Joe on his boat this pm. Over to Jim and Rowes tonight and to Buzzards Bay bowling.
May 5 Sun. Up to WHOI about 11. Went over deep water equipment with Joe Worzel and Jim Peoples. Jim and I caught 600 pm train to Boston tonight, got 1130 pm Owl to NYC
May 6 Mon. Caught 625 train out of Penn Station to Red Bank. Arrived Red Bank 730 and ca bus out to Watson Labs. Checked at library for caps?militaryinfo. Called up Morris of Sup and wrote supply request. Stepanoff in fm Oakhurst. Wrote up weekly report to Watson Lab for 189-7-1. Arranged truck to take fathometer to Nyack, N.Y. for 104' boat and bring ba microbaragraph from Columbia. Went out to Oakhurst and saw Rooke who is working on fluxmeter, and got fathometer NMB-1 ready to send to Nyack. Went over list of parts needed 189-7-1 with Peoples. Peoples signed in at Watson Labs today. Capt Kellogg in from Evans Labs re how they can help- rough draft of letter of request to be written by Col Graul. Got travel orders to NYC tomorrow and to Nyack.
May 7 Tues. Jim Peoples and I caught 608 train out of Red Bank and arrived Ewing's offic about 850 am. Conference at Ewing's office Gallo, Bradley, Crane, Peoples and I from Wat Labs, Lane and Ewing of Columbia and Iselin and McCrory? of WHOI regarding 189-7-1 cont of WHOI with Columbia. Conference later Iselin, Crane, Ewing, Peoples and myself regardi technical procedure and plan for Atlantis, Anton Dohrn and two boats of Watson Lab for summer and next winter. Crane, Peoples and I left about 240 pm for Nyack, NY in Army ca Arrived in Nyack at Peterson's Shipbuilding Co, new 104' boat P778 docked about the same time. Went over all changes and additions to the boat with Gifford and made plans for co version to our needs. Left Nyack about 6. Jim Peoples and I caught 740 train out of Penn Station and arrived in Red Bank 9 pm.
May 8 Wed. Jim Peoples and I went up to Watson Labs this am

P-2146

Dec 2 Mon. Oakhurst. Cold wave hit about midnight - temperature down to 15° - strong wind. Started preparations for Alamogordo trip; getting Rubicon drums and galvanometers ready.

Dec 3 Tues. Oakhurst. Worked on Rubicon drums and galvanometers for Alamogordo trip - Stepanoff on August 9 data - Vivian working up cruise tabulations. Oliva setting up new GR3 for Alamogordo. Got oscillograph operating with 3 T-21 microphones.

Dec 4 Wed. Oakhurst. Set up 20 sec galvos and operated for several hours. In with McCur to safety meeting, M. Chantz set up Rubicon in dark box and took several records with 1 sec galv. Made up list for Alamogordo.

Dec 5 Thurs Oakhurst. Worked on relays for setup at Alamogordo. McCurdy & his group on T-21 operations. Woodruff and Chantz getting motors,etc ready for trip. Went over work at Oakhurst with Vivian.

Dec 6 Fri. Oakhurst. Worked on equipment for Alamogordo. Left at noon, caught 135 to New York City. Contacted Carl Gerdes and Ed Schempf at United Geophysical office. Curtin also in NY office. Went out to eat with Carl and Ed and discussed future work. They have job open for me in Alaska and also later possibilities in Turkey. Ed caught plane out about 745. Left on 1215 tonight for Asbury Park.

Dec 7 Sat. Went to Oakhurst 10 - 3. Woody and Phil there getting ready for Alamogordo. Peoples up for awhile pm.

Dec 8 Sun. Worked about 7 - 8 hours at Oakhurst. Chantz and Peoples there - getting reals etc ready for Alamogordo. Went over all theoretical work on flights, etc with Peoples.

Dec 9 Mon. Oakhurst. Finished getting all equipment ready for Alamogordo. Chantz, Woody a went to Watson Labs. Got checks and travel orders. All equipment loaded on trucks and tak to Watson late pm. Talked to Colonel Duffy a while about future plans.

Dec10 Tues. Woody, Chantz and I left Oakhurst in staff car about 9 am. Arrived at Newark airport 10. C-54 in from Middletown about 11, bringing Ball and Oakes from Wright Field. Loaded up all equipment on C-54 and left Newark about 145 pm. Lewis, pilot; Clowry, co-pilot. Arrived Oklahoma City about 945 pm EST. Got rooms at Air Base Hotel. Went into Okl homa City for dinner tonight.

Dec 11 Wed. Oklahoma City. Waited for weather to lift. Unable to leave in time to reach Alamogordo before dark. At Air Base hotel tonight. Equipment from Johns Hopkins Unicersit transferred to MOGUL plane, including warhead of V-2. 4 scientists & crew, including Del-gano? . Called Jimmie at Fairview, Okla.

Dec 12 Thurs. Left Oklahoma City in C-54 at 0800 CST. Arrived at Alamogordo about 11 MT. Met Major Pritchard at air base. C-54 unloaded warhead material first then all MOGUL eqpt which went to North Hanger. Went over to Prichard's office, met Major Maguire? and talked over prospects of serups. Woody and Phil worked on equipment pm. Went up in L-3 with Sgt Mack looking over country of proposed sites. WAC corporal launched at 4 pm. Worked on equipment tonight. Staying at BOQ.

Dec 13 Fri. Woody and I left Alamogordo Air Base in weapon carrier and scouted out area so of White Sands and Turoro Lake. Got lost on ordnance map we had. Located Tower and K stati Went to Proving Ground. Saw Karsh and Major Grant and got good locations and one of good maps. Left Proving Grounds about 2 and went up west side of sand area to site A3. Arrived there at 4 but over very rough roads. Back to Alamogordo Air Base at 620. Chantz i Alamogordo working on T-21s, BST and Brush equipment.

Dec 14 Sat. Went out Hwy 70 this am toward Proving Grounds. Turned off at White Sands Nat' Monument and drove to end of 9 mile road in park, about half in white sand area. Found loc ation for #2 site which is about 30 miles north and a little east of launching site. Back Air Base at noon. Went out north looking for Site 3. Tried to get through Ordnance Gate bu needed key. Went back and around by Alamogordo and Tularosa but couldn't get in there. Bac to base, got key from Provost Marshal and went out to Ordnance Gate. Found it did not lead in right Came back to North Hanger and took road out from there, finally landing a bombing area about 35 mi from base. Left all Rubicon equipment there. Back at Base 645

Dec 15 Sun. Got all GR3 recording units and went up to site 3. Set up both Rubicon in tent and GR3 in small building. Got recordings on both. Back through Tularosa and Alamogordo.

Dec 16 Mon. Signal Corps people, Dr. Kane and Dr Crenshaw in this am. They are planning to measure time interval between bursts of meteorites at 60, 70, 80 seconds after launching. Went over our plans with them. Packed eqpt for Site #2 in White Sands. Chantz and I stayed setting up apparatus and Woody went back for equipment for Site #1. Left Site 2 about 3 pm and went to site 1. Set up equipment there. Finished about 7. To Alamogordo for dinner.

Dec 17 Tues. Got Chantz a Jeep to use on Station 3. Went out to #3 made final checks - Chantz stayed there. Woodruff and I went to Station 1 and made final checks there. Woodru drove me to Station 2 and then went back to 1. V-2 rocket went up at about 1015 pm. Got Brus recording - 1 trace & Rubicon at 2. Woodruff got BST & Rubicon at 1 -though had interference with other group. Chantz got GR 3 & Rubicon record at #3. Back to BOQ about 12. Rubicon & BST recordings not yet developed.

Dec 18 Wed. Chantz and I went out to Sta 3 and got all equipment together and back to camp about 1 - went in borrowed weapon carrier. Woody and Jeff Fowler took other weapon carrie and collected all equipmert from Sites 1 and 2. Packed all equipment at north hanger and loaded it into truck, which was then put on plane. Got data from V-2 firings from Pritcha office. Left Alamogordo about 730 pm in C-54 and went to El Paso Biggs Field.

Dec 19 Thurs. Went down to El Paso this morning and then across to Juarez. Back to Biggs Field about 230 pm. C-54 left El Paso 400 pm , landed in Patterson Field, Dayton, Ohio 11

Dec 20 Fri. Left Dayton about 9 am & arrived ir Olmsted Field near Harrisburg, Pa about noon. It Carroll and Clowry drove us down to Pa RR station. Got 150 out of Harrisburg and arrived in Newark 6 pm. Caught train to Asbury Park.

Dec 21 Sat. Chantz went down to Oakhurst and developed 3 Rubicon recordings from White Sa and BST recording at Site # 1. Site #1 recording poor, possibly NG. Looked over recording obtained at Oakhurst on bombing run of 19 Dec.

Dec 22 Sun. Cut to Peoples this evening in Marlsboro.

Dec 23 Mon. Cakhurst. Worked on Alamogordo and Flight 13. Had flight # 14 this pm. - 24 bombs starting at 2 pm. Ran GR-3, Brush and Rubicon at lab. Woodruff went out to Farming with van and Rubicon but results NG. No shots apparent on recordings.

Dec 24 Tues. Oakhurst. Closed down about 1130. Worked on Flight# 14 and work from NYU. Started Stepanoff on extension of Aug 8 flight. Into NYC PM and caught 1045 sleeper to NY

Dec 28 Sat. Cold NE winds and storms all day. Unable to get roads cleared out. Cancelled reservations for this evening to NYC.

Dec 29 Sun. Caught 805 sleeper to NYC this evening.

Dec 30 Mon. Arrived NYC about 915 am - caught 1040 out of Penn Sta, arrived Asbury Park about 1 pm. Worked on Alamogordo results. Went over work with McCurdy who proposed new type instrument and wants authority to go ahead with it.

Dec 31 Tues. Oakhurst. Flight # 15 this morning at 1040 - 1105. Woody went out to Farming and recorded on Rubicon drum. Recorded also on Rubicon drum T-9- Brush and GR3-T-8. Set u sonobuoy 1000 ft ± west of T-8-0. Times Square tonight.

1947

Jan 1 Wed Asbury Park. Snowstorm pm

Jan 2 Thurs. Oakhurst. Worked with V on flights 12, 13 and part of 14. Got Alamogordo results together. Conference this pm with Colonel Duffy and showed him my results with flights and with Alamogordo.

Jan 3 Fri. Oakhurst. Worked with V on Flights 14 and 15 and started NYU data of Sept 12. Stepanoff on extension of August 9 results. Conference pm: Dr. Ewing, Spilhaus, Dr Ferenc of Evans, Duffy. Discussed Evans program and air flight and Alaomgordo results. Made arrangements for cooperation with Evans in coming tests.

Jan 4 Sat. At Oakhurst about 3 hours. Finished getting velocities for Sept 17 flight and started work on data of Oct 4 cruise.

Jan 6 Mon. Oakhurst. Finished velocity data for Oct 4 and Oct 16 from NYU meteorological studies. Stepanoff finished Aug 9 data and started on # 1 of Sept 12. Moved into new buil ing next to T-8-0 today.

Jan 7 Tues. Oakhurst. Vivian worked up ray paths, time and distance for Vel #2 of Sept 12 Started on Aug 8 data to get Stepanoff's figures together for study above 15 kms. Went scouting for location of sono buoy west of Oakhurst Arm about 3000 ft. Chantz and Woodruf on calibration of Alamogordo instruments and fixing up of equipment for field uses.

Jan 8 Wed. Oakhurst. Worked on Aug 8 cruise, making final calculations for sky wave. V or Vel #3, Sept 12 cruise. Woody and I went over to high ridge 2900 ft west of Cakhurst wit sonobuoy which worked into GR3.

Jan 9 Thurs. Oakhurst. Worked on sky wave data. Vivian and Stepanoff on Sept 12 ray paths Flight # 16 at 1200 to 1220 pm. No noticeable results. Used sonobuoy at 160' hill back o labs.

Jan 10 Fri. Oakhurst. Into Watson Labs at 9 to take supervisor's test. Trakowski, Peoples I went to Camp Evans and discussed results of V2 rocket recordings informally. Flight #17 this PM 1600 to 1620. Worked on sky wave data

Jan 11 Sat. Oakhurst. Worked on sky wave data of Aug 8. Drew up curves for lower and upp stratosphere. Regung? brought in calculator from Wright Field.
Jan 12 Sun. Oakhurst. Worked on sky waves Aug 8th and 9th. Got out letter to Gutenberg pertaining to those two days.
Jan 13 Mon. Oakhurst. Working on sky wave curves. Made plans for Alamogordo this Thursda
Jan 14 Tues. Oakhurst. Calibrated instruments A-21 to take to Alamogorso. Raining
Jan 15 Wed. Oakhurst. Started writep of V-2 rocket work. Dr O'Day in from Watson and we went over V-2 rocket program with him. Finished calibration of T-21s on GR 8. Vivian fin ished sky wave curves. Worked on Dec 31 Woods Hole recordings.
Jan 16 Thurs. Oakhurst. All equipment for Alamogordo packed and loaded on truck pm. Work with Vivian on sky waves of Aug 8th and 9th.
Jan 17 Fri. Oakhurst. Conference with Capts Lewis, Clowry and Duff of Olmstead Field and MCCUL at 1230 regarding bombs, future flights, etc. Mathematecian from Newman's group started work this noon - for two weeks. - working with Vivian. Woodruff and Chantz went up to Newark with equipment and loaded on P-47. Went up at 2 pm by staff car. P-47 left Newark 333 pm, landed at Patterson for fuel, landed at Tinker Field, Okla City 120 am. Stayed there overnight, Officers Manjak and Layden.
Jan 18 Sat. Left Oklahoma City about noon and went as far as Amarillo. Stayed at Amarill at Clinton Hotel
Jan 19 Sun Left Amarillo about 1130 CST - arrived Alamogordo 1230 pm MST. Unloaded equ ment off plane and put in north hanger. Unpacked GR-8s, T-21 galvanometers. 3 T-21s and galvanometers broken. Repairing tonight
Jan 20 Mon Alamogordo. Tested out T-21s at north hanger with GR-8s. Loaded up all equipm for GR-3 and Rubicon drum and went out to A1 tower. Set up house along road about 3/4 m southeast of the tower. Ran out 3 1000' lines for the at 120° radii. Set up dark ro tent and 2 galv L&N broken suspensions. Worked on timing circuits, T-21s and galv at Alamogordo Air Base.
Jan 21 Tues Alamogordo. Tried out more T-21s with GR-8. All OK but one. Set out Site 2 n Hwy 70, C&GS marker 'Dona'. Laid out 1000'cables, set up Rubicon. Went out to end of Dop line to station G but could not find C&GS marker 'Town'. Went back along line toward blo house & set up site #1, cables and Rubicon drum at intersection of G line and C line. Sites now set up 6, 13, 19 mi from blockhouse, all about 2 mi east of N line from bounda site
Jan 22 Wed Alamogordo. Made rounds of all 3 sites. Set up L&N at Site #3, & surveyed to tower. Took T-21s and GR-8s to Sites 1 and 2 and set them up ready to operate. Took Rubicon recordings at Site 1 and 3 to check galvanometers.
Jan 23 Thurs. Alamogordo. Left air base about 900am. Bombing postponed from 11 am to 3 p Went out to Site 3, surveyed to tower. Got GR-3 recordings. Left Chantz at Site 3 and we to Site 2. Woody left Site 2 and went to site 1. Bombing delayed by 15-30 minute interva from 3 pm to 519 pm. Got good recordings at Site 2 . Both other stations lost to triang- ulation acc't radio communication though Woody had GR-8 operating but without directiona instrumnets.
Jan 24 Fri. Alamogordo. Checked with Major Pritchard at base. Left about 830 and picked all equipment from 3 sites. Surveyed Site #2 and made rough survey of Site #1
Jan 25 Sat. Alamogordo. Sorted out all equipment at north hanger. Left GR3, Rubicons and Sprengnethers. Packed up GR8's and other equipment and loaded in C-47. Carroll and Short in C-47 from Middletown. ready to leave tomorrow. Worked on Site 2 recordings pm. got azimuths and angles of ascent for 2 main explosions. Have high angle of ascent.
Jan 26 Sun. Left Alamogordo about 830 am in C-47, Lt Sherry of Alamogordo pilot. Landed at Scott Field, St Louis for gas & eats, and then to Patterson Field, Dayton, Chio where we stayed overnight acct bad weather east of Pittsburg.
Jan 27 Mon. Left Patterson Field about 930 am, arrived in Newark near noon. Chantz and Woodruff left by train. I went to Oakhurst with truck and equipment.Arrived about 330 pm Peoples going to Washington tomorrow to V-2 panel meeting with Trakowski.
Jan 28 Tues. Oakhurst. Worked up diagrams for azimuth and offset distances, also angle o descent from Site 2, Alamogordo. Went over recording, got about 20 recordings on first part but only 2 on down part.
Jan 29 Wed. Oakhurst. Worked on latter part of V-2 recording of Alamogordo. Got 2 record besides 2 large ones, but very poor. Worked up possible trajectory of V-2 rocket. Worked up future program for Alamogordo - Chantz & Oliva leaving about 10 February for semi- permanent work there. We are passing up Feb 6 rocket but starting on definite program following that.

Jan 30 Thurs. Plotted up angle of azimuth against angle of descent for V-2 recordings. Set aside this work for bombing runs. Worked on Flight 18 with Vivian. Started Eileen on calculations with Aug 8 and 9 data, reworking calculations doe before. Checked picks on Flight 19 - they appear to be sky waves though angle of descent is not regular.
Jar 31 Fri Oakhurst. Worked with Eileen on Aug 8 calculations. Finished up for both dire and reflected possibilities. Went over Flight 19 records. Found that all of these are sky waves.
Feb 1 Sat. Left A.P. for Philly on 940 bus, arrived at Marions apt about 1. Wayne back f work about 5. After dinner we went out to Newtown and stayed overnight.
Feb 2 Sun. Drove up to Sparta NJ with Marion and Wayne. Saw Dorothy, Joe and family. Nel Steenland & family living there with them. Saw Worzels pm. Ed Douglas in tonight for few minutes. Joe took me over to Dover & caught 958 train, then 1120 out of Penn Station, Newark. Arrived AP about 1230
Feb 3 Mon Oakhurst. Peoples in Washington regarding balloon ascention in June. Made plan for flight 20 which was made this pm 1300 to 1320 in conjunction with instruments in blin Route just south of east, no results. Worked on sky waves from Flights 18-19.
Feb 4-5-6, Tues, Wed, Thurs. Oakhurst. Checked over all sky wave picks on Flights 19 - 1 Went over Loran data and plotted up to get accurate plane speed. Plotted T - X curve usi these figures. Worked up Oakhurst corrcetions for elevations and replotted all values fo velocity - Flights 18 - 19. Received Gutenberg letter in which he had worked out Aug 8,9 data. Went over this method and worked over thae data again. Unique solution not obtaina Went over possible experiments in 'Helios' balloon June with Peoples.
Feb 7 Fri Oakhurst. Worked on 23, 24 Jan T-X curves. V files 23,24 Jan forms, started on NYU data. Eileen worked on least squares-Wa , then on Gutenberg's method applied to Aug data.
Feb 8 Sat Oakhurst. Worked on V-2 rocket information 23 Jan. Used meteorological informa for 2 explosions. Tried to get $\bar{V}$ at height of explosions but seems too low.
Feb 9 Sun Asbury Park - worked on calculations of flights, setup? and calculations for rockets.
Feb 10 Mon Oakhurst. Worked over Alamogordo Radar Hueco stations for 23 Jan 1947 records and made plot of V-2 rocket D - H using all radar data. Went over all equipment to go to Alamogordo. Made plans for departure Thurs. Set up 8 sec galv in T-9. Vivian checked velocity from caps with temperatures and continued on Oct 22-23, Flights 12-13, Cruises, NYU data. Eileen in pm - worked on formulas of seismic refraction using straight line for line - Aug 8 - 9. Finished this and went back to least square solutions of Jan 23 -24 dat
Feb 11 Tues Oakhurst. Flight 21 scheduled for 8 tonight postponed until tomorrow. Worked Oct 22 data with sky waves to Highland Lights. Went over all records. Have 2? consecutive shots to H.L. Oliva left by train tonight for Alamogordo.
Feb 12 Wed Oakhurst. Vivian & Eileen worked on temperatures and winds Oct 22 & 23 and wor up ray paths for sky waves to Highland Lights. All equipment for Alamogordo assembled and loaded on trucks for Watson Labs this pm. Flight 21 at midnight tonight. McCurdy, Chantz, Woodruff, Ball, Hom?, Rigny present. Dropped 20 bombs 1200 to 1237. No signals received, either sky or direct waves.
Feb 13 Thurs. Got special instruments for 1 cycle from McCurdy this AM. Drove up to Newar in staff car- Chantz & myself. Loaded B-25 this pm but could not get all equipment on -le 5 reels and box of equipment ? . Left Newark about 330, stopped in Middletown, Pa Olmsted Field for 1 1/2 hrs to eat and gas plane, then left and landed at Godman Field ou side Fort Knox, Louisville, Ky. Stayed at Officers Club tonight.
Feb 14 Fri Left Louisvilleabout 930 am. Stopped at Tinker Field, Ok City for eats and ref then to Alamogordo. Arrived Alamogordo 430 pm - contacted Watson Lab and got truck. Unloa all equipment from B-25 & took part of it to North hanger. B-25 crew:It Mosher, It Albert Sgt ? Oliva arrived Alamo. by train this am
Feb 15 Sat. Moved eqpt from north hanger across runway to stowage building. Checked T-21s GR 8, Checked galvanometers, etc
Feb 16 Sun Alamogordo.Out to Tower and Dona sites & surveyed in instrument locations - 5 be station(ed) in shape. Ran out field wire at Dona station.
Feb 17 Mon Alamogordo. Went out to Tower site and set up Springnether and GR3 equipment. Rubicon 500 ft from GR3. Took trial recordings on both equipments
Feb 18 Tues Alamogordo. Went out to Dona Site this morning. Set up GR8 then Phil took tru and went over to GR3 Tower site. WAC corporal shot off about 215 but with little slipstr recorded at Dona but Phil at Tower site never saw rocket. Waited at Dona until 3 pm. Phil

not come so got rideinto Army base. Phil in later. Very windy for recording.
Feb 19 Wed. Alamorgordo. Got radios from Watrus of Signal Corps and got trip tickets for tomorrow. Ran test records on Rubicon at both sites and checked everything ready for tomorrow.
Feb 20 Thurs. Alamogordo. Cut early to station at Tower. Left Phil off there and went on to Dona Site. Rocket delayed from 10 to 1119. Both stations got good recordings except 1 9T-MS on both WC. Worked on GR8 records tonight.
Feb 21 Fri. Alamogordo. Went to White Sands Proving Grounds with Pritchard, Magnir?, Sol & Phil this morning for V-2 critiques, 0930 to 1100. Canister from rocket unpacked? about 40 miles up and finally found this pm between El Paso and Alamogordo. No transportation back to NJ yet. Worked or GR-3 records today
Feb 22 Sat. Alamogordo. Worked on data all day today. Correlated between the Tower and D sites for several sources. Worked total travel times for ascents both Dona and Tower and got average velocities up to about 65 kms, velocity increases from about 40 kms up to 60. Average velocity at 65 kms is about 320 meters per sec.
Feb 23 Sun. Worked on detailing record from GR3. Added more and made T-D move up to 75 kms, giving velocity of about 420 m/sec at top.Phil and Sal went out and picked up equipment - T-791s and GR8 and checked all pickups.
Feb 24 Mon. Alamogordo. Waited for air transportation today but none available and may not be any until Thurs at latest. Worked on V-2 recordings, frequency and characteristic analysis - T-3. Sal and Phil out to Site at Dona and recorded WAC Corporal at 1400. Got some waves in about 7 minutes after it had left ground.
Feb 25 Tues. Alamogordo. Went out to Tower Site, surveyed in #6, took down shelter. To Dona Site, set up GR3 in shelter, surveyed in #6, went to launching site, about 2 -3 miles NW launching area. Phil went in to WSPR and got permission, Sal and I surveyed 1 site for use with WAC Corporal.
Feb 26 Wed. Alamogordo. Worked on GR8 records of 20 Feb V-2 rocket. This am Phil and Sal up Sounding? site for tomorrow's W.A.C. L left 7 pm - C-47 Hoffman, Missinger: Pilot, co pilot. arrived in Newark 9am.
Feb 27 Thurs. Arrived Newark 9 am. Lewis, Duff,Mosher a request? in from Middletown - on way to WL to conference and I rode in with them. Conference re future missions. Conference PM Trakowski, Peoples, Rying & myself regarding future operations
Feb 28 Fri. Oakhurst. Ewing in from NYC. Went over Alamogordo results with Ewing, Peoples and Trakowski. Out to Peoples tonight
March 1 Saturday. Asbury Park
March 2 Sunday Oakhurst. worked on calculations for wind translations.
March 3 Monday.Cakhurst. Postponed Alamogordo trip until tomorrow. getting together equipment for Alamogordo. Thompson going also to get information on bombing runs? there. Worked on calculations from V-2
March 4 Tuesday. Thompson and I left staff car about 930, arrived at Newark 1040. Loaded B-25 with equipment and left about 1230. Stopped at Middletown and picked up radio. Stopped at Scott Field & Tinker Field for gas. Arrived at Alamogordo 2 am. Crew B-25:Hoffman, DeTurk, Hancock
March 6 .Thursday. Alamogordo. Snowing - rocket flight called off until tomorrow. Chantz out to Tower Site and brought in batteries. Sal and I checked low frequency equipment and went out to Tularosa site with it this pm. Ready to use on 1 sec galv on Rubicon drum
March 5 Wednesday. Alamogordo. Chantz, Thompson and myself out to Tulerosa site and surveyed out X setup and ran out wires. Back about 2. Oliva working on check of T21s. Worked on radio and T21s until tonight
March 7 Friday. Alamogordo. At 8 am Pritchard got word rocket would go off between 1034 and 1200. Phil and Sal went out to Dona and Launching Sites with weapon carrier. Hoffman, DeTurk and Thompson out with them in staff car. I took Jeep and went out to Tularosa site Rocket off at 1123. Got recording on GR8 but not time for Rubicon record. Phil and Sal got OK records from their sites. Thompson reported on bombing sites for runs and met and talk with Ordnance Officer. Left Alamogordo 845 pm , B-25 with Hoffman, DeTurck. Motor trouble on way and reached? Tinker Field 1200 with cylinder broken.
March 8 Sat. Hoffman wired Alamogordo and caught Manjak & Schneider (P4)? before leaving for Florida. They changed their route and landed at Tinker Field, O.C. 535. Trouble with their oil gauge and the trouble not repaired until 10 am. Left Tinker Field 10 and landed at Patterson. Off from patterson to Olmsted, Olmsted at 9pm. I stayed there overnight.

March 9 Sun. Left Olmsted 0934 am - C47, Manjak and Schneider and landed at Newark 1130 Thompson and I took train to Asbury Park from Pa station. In Asbury Park 3 pm
March 10 Mon Oakhurst. Vivian and I worked on Flight 25, Parts 1 and 2. Started Eileen on V-2 rocket recordings.
March 11 Tues Oakhurst. Vivian and I worked on Flights 25, 24. Flight 26 off today, Part 1 at 9, part 2 at 2 pm. Good results! Eileen on V2 rocket March 7, Dona Site.
March 12 Wed Oakhurst. Vivian and I worked on records - Flight 26, and started Flight 23 Eileen worked on Dona site , V-2. Thompson and I went over Alamogordo plans.
March 13 Thurs Oakhurst. Worked with Vivian some on Flight 23 and 22. Worked on Tularosa site of V2 - 7 March. Eileen worked on Launching Site, V-2. Flight 27 today - at 12 noon and at 4 pm. Probably last of flights.
March 14 Fri Oakhurst. Vivian worked on identification of returns, last 4-5 cruises. gave good sky waves. Trakowski, Peoples and myselfwrote up report for General Reves on overall program to be hand carried by Thompson to Washington. Eileen worked on V-2 records, #21
March 15 Sat Oakhurst. Worked up survey of Launching Area and Tuleroso sites & plotted all sites on air map. Worked on V2 rocket March 7 records.
March 16 Sun Oakhurst. Worked on formula for sound correction until 2 pm - went over to McCurdys tonight.
March 17 Mon Oakhurst.Vivian plotted up all last sky waves. Worked on eqpt list for Alamogordo. Worked on formulas for wind correction.
March 18 Tues Oakhurst. Worked with V. Checked through all March 13 records. Worked on Woods Hole recordings pm. Eileen working on V-2 rockets.
March 19 Wed Oakhurst. Reviewed Flight 24A trying to get some azimuths from Oakhurst but records very poor. Reviewed records of Jan 23rd and started on stratosphere calculations. Eileen working on corrections Jan 20 V2 rocket from meteorological data. Baten? in from Florida Field Station, ready to go to Alamogordo next Tuesday.
March20 Thursday, Oakhurst. Went over final calculations for stratosphere data using seismic methods, of Jan 23 data with Vivian. Got V=325 at 3 kms. Studied azimuths on that data and got w = 10 m/sec coming from south on June 23rd. Worked with Eileen on rocket Jan 20thcorrecting for met data and plotting final H against X in kms from surface for up data.
March 21 Friday Oakhurst. Worked on Alamogordo plans - Lewis & Clowry over this pm and we went over all future plans including bombing for Alamogordo. Worked on rocket data with Eileen and on flight data with V. Stepanoff on ray paths of Dec 13
March 22 Saturday Oakhurst. Went over all V2 rocket data. Studied azimuth - elevation graphs & studied WAC Corporal of 3 March. Caught 534 train from Asbury Park - 1045 sleeper out of NYC
March 23 Sunday. At home. Arrived Canton about 9. Left on sleeper tonight about 8 pm
March 24 Monday. Arrived NYC about 7. At 0930 went up to Math Department at NYU - Washing Square. Met Mr Bennett of WL. Found that Dr. Courant would not be in until late and decid not to wait but caught 1040 train to Asbury Park. Went over shipment ready for Alamogordo and over work for Vivian and Eileen. Packing tonight.
March 25 Tuesday Truck at Oakhurst at 9 with scales - all equipment weighed - about 3500 total including TORRID. Edmonton, Reynolds, Thompson, Porter, Godbie? and I left about 10 and went through to Mitchell Field in staff car. B-17, Carroll, pilot -- co-pilot. Left Mitchel Field about 3 pm. High level winds - went southern route - stayed at Maxwell Fiel Alabama tonight. Thompson stayed behind waiting for B-45
March 26 Wednesday. Left Maxwell Field, Ala. about 9 and landed in Alamorgoro 3 pm
March 27 Thursday Alamogordo. Phil, Reynolds and I went out to Tower site, took in all wi Pulled down tent and Rubicon equipment and took it over to new site west of Lake Lucero. Strung out wire, surveyed in site & set up Rubicon tent. Sal, Edmonson, Godbie?, Porter weighing in equipment in Alamogordo air base.
March 28 Friday. Alamogordo. Went out with Godlers, Porter to White Sands west of air bas Located site and surveyed it, put up shelter and set up GR3. Phil and Reynolds went up to Tularosa site, Sal and Edmondson worked on GR8 and low frequency equipment. Thompson in with B-45 from Newark.
March 29 Sat Alamogordo
March 30 Sun Alamogordo. Phil and I went out to Dona site and picked up some equipment and then out to Lucero site. Set up Rubicon and took a record. Tried to get through to Tularos site west of White Sands but couldnt find road.

March 31 Monday. Alamogordo. Chantz, Bill Godbee and Ace went out to E. White Sands and Tularosa sites to make final setups. Sal, Edmondson, Peoples amd I went out to Dona site this pm and moved tent and Rubicon to #3 position and set up low frequency apparatus
April 1 Tues V2 Rocket #22 went off at 1310 this pm. Chantz and Don at Tularosa, Godbee and Peoples at East White Sands, Sal and Edmondson at Dona, Porter and I at Lucero. All 4 stations got good recordings though low frequency instrument at Dona did not work out.
April 2 Wed. Peoples, Major Magnur?, Thompson and myself went over to Lt Col McKenson's office this am regarding bombing runs. There are many difficulties with the bombing here, mostly that so many new groups have moved in and are setting up on the northern? range. Thompson and I went overto see Major Mitchell this pm regarding same matter. Wrote memo regarding proposed work to take to CO tomorrow. Peoples left on B-17 today. Don and Bill went to Dona and Launching Area sites am and got all loose wires. Don and Bill E went to East White Sands and Tularosa pm and got inventory and brought back Rubicon and tent fro Tularosa. Worked on East White Sands record. V2 made 85 peaks - down course. Porter worke on calculations pm. Sal and Edmondson took complete inventory and this pm worked on low frequency equipment.
April 3 Thurs. Oliva and Edmondson on low frequency equipment. All T-21s changed over to Stds. Edmonton and Bill G went out to Lucero and Dona, got inventory and brought back tent from Lucero.
April 4 Fri. Reynolds and I went out to Osurso? Range and located PB1 bombing range. Set up wires and did surveying. Chantz and Porter on computations April 1
April 5 Sat Alamogordo.
April 6 Sun. Checked clocks. Cleaned out hanger and emptied trash out at East White Sands
April 7 Mon Talked to Pritchard re 3rd car for tomorrow. Gave him memo of progress report for MOGUL project to date, talked to Lt Dyer of Signal Corps regarding for tomor firing. Chantz and Bill went out to Tularosa and got that site ready. All equipment check for tomorrow. Edmondston and Reynolds ran drum recording of McCurdy low frequency equipment at base. Porter and I worked on amplitudes and frequencys of all recordings April 1 firing and started calculations. Olive worked on calibration of GR8 recorder attenuation. Got 3rd vehicle and all trip tickets for tomorrow.
April 8 Tues. Ace and I went out 7 am to Osarco site. Arrived 9 and set up radio and T-21. Rocket due at 11, delayed until 1710. Very windy then, all settings at 8. Ran 3 rolls but nothing came in. Chantz at Tulerosa alone - Godbee and Reynolds at East White Sands - Oli and Edmonston at Dona - all sites windy but 3 closest ones got some signals.
April 9 Wed. Worked on yesterday's records. Made picks on Dona, East White Sands and Tula Found nothing on Oscuro site recordings. Don and Bill G went out to East White Sands site and took recordings with pistonphone to get GR3 attenuation calibration. Sal Olive left t pm for San Diego. Wrote letters to Vivian and Jim P tonight.
April 10 Thurs. Ace and Phil worked on rocket recordings. - azimuths vs elevation angles. Don and I went out to Tulaarosa Range and checked bombing sites - bombing range just nort of Range Camp and another site between that and our Tularosa site. Triangulated in with Tularoas Peak, etc. Thompson left in 45 for East. Godbee and Edmondson went with him.
April 11 Fri. Don and I went out past Tularosa Site looking for bombing sites. Went back to Air to Ground Range and to air strip. Chantz and Porter working on calculations V2 23 and T-21 calibrations.
April 12 Sat. Alamogordo Air Base
April 13 Sun. Worked on formula for triangulation without using compass - Alamogordo Air
April 14 Mon. Porter, Chantz and I worked on GR3 and GR8 calibration curves for frequency and attenuation settings. Don worked around equipment - Don, Ace and Bill got apartments at air base. Wrote letters to Vivian and Eileen tonight.
April 15 Tues Alamogordo. B-29 arrived today - Lt Ball, McCurdy, Woodruff and MOGUL personnel - 41493: Lewis, Wolk, Burnhoff, Adams, Duff . Worked some on instrument calibration Lewis, Ball and I checked with Major Pritchard, then to Major Mitchell's office regarding bombing sites. Mitchell said CO had turned down bombing from air, but we could have surfa charges along Tularosa road. Went up in AT-6, light plane with Capt Runcraft and looked o area west of Tularosa as far as the mountains, where bombing sites are to be located.
April 16 Wed. Alamogordo. Chantz and Reynolds out to East White Sands and Tularosa sites to check GR3 equipment for tomorrow. Porter and McCurdy working on low frequency equipment for V2 tomorrow. Woodruff, Ball, Work and I went out to Dona site then to Launching Area site. Strung out wires and left equipment for tomorrow's firing. McCurdy working tonight on low freq. Oliva in from San Diego this pm

April 17 Thurs. V2 firing #24 scheduled for 11 am. Chantz - Porter at Tulerosa Range; Reynolds - Woodruff at East White Sands, Woodruff with low frequency equipment for 1 trace GR3;Oliva - Kabassa?, radio operator on B-29 at Dona Site, Bill Edmonston arrived by car from Florida about 11 and went out to Dona -- Captain Lewis and myself at Launchi Area site. V-2 postponed from 11 to 1610. 9 explosives supposed to go off, SCEL, only 1 worked. Tularosa site - had bad instruments - had 3 working but in line; East White Sand - one short roll, then paper jammed; Dona Site OK; Launching Area site - OK for first 2 rolls, paper jammed on third roll. McMurdy set up low frequency in hanger, north side, a on Rubicon drum but recordings questionable - as SCEL radio transmitter interfered.
April 18 Fri. B-29 took off for Middletown and Newark about 730 from Alamogordo with all personnel that came down with it. Wrote Peoples a letter regarding split-up of equipment so that bombing runs could be continued on East Coast. Plans are to have Edmonston, Reynolds here with 2 sets and take Oliva, Chantz w 2 sites for the East. Set up equipments - Sprengnether & L&N galvanometers for Helgoland experiment & run equipment 1030 to 3 Pm. Checked over all recordings. Oliva and Reynolds out to Dona and brought in all equipment except wire.
April 19 Sat. Into El Paso with Bill E this am. Got reservations to Houston next weekend.
April 20 Sun. Worked on plans for bombing runs and V2 monitoring.
April 21 Mon. Alamogordo Air Base. Bill Edmonston and I went out to Tularosa Range and checked 2 bombing targets, and located third bombing site 7-8 miles west of A1, near alk flats. Chantz and Porter worked on calculations V2 -#24. Sal worked on equipment. Don off today.
April 22 Tues. Alamogordo. Reynolds - Oliva out to East White Sands. Brought GR3 there i for overhaul. Worked up calibration of GR 8. Got curves for settings of 8 and for change in attenuation. Talked to St. James, Ordnance Supply, re 500# bombs. Wire from Peoples - Godbee ready to come back - plane ready to come down this week. Sent return wire to hold plane off until after 1 May.
April 23 Wed. Alamogordo. Bill E. and I left Air Base at 0930 and drove to Roswell. Scou out area between Roswell and Donali? but all irrigated farm lands. Finally back with fin ing suitable site, 129 miles from Air Base to Roswell. Chantz went Tularosa range GR3 ba Oliva and Reynolds checking GR3 in base, Datn?on calculations April 1 rocket
April 24 Thurs. Phil and Ace working on V-2 recordings April 1 and 8 getting and amplitudes. Sal and Don on GR3, Bill E. on clock checks. Saw Pritchard about Roswell tri bombing. Saw Post Engineers and Major Mitchell.
April 25 Fri. Sal and I went to Motor Pool and got our driving licenses. Worked up sunsh for Tower and Dona sites, OK within 10 minutes. Bill E and Phil got timbers from scrap p and went out on Tularosa Bombing Range to build shelters. Sal and Don working on GR3. L Air Base 130 and left Alamogordo 3 pm. Got room in El Paso at Hotel McCoy.
April 26 Sat. Left El Paso on Continental Air Lines about 0930, went by way of Hobbs, Mid land, Odessa, San Angelo to San Antonio. Waited there about 2 hrs and caught Eastern Air Lines out to Houston. Got in about 0630, took bus to Houston and taxi to see Donnie.
April 27 Sun. Houston with Donnie and family
April 28 Mon. Down to Sohio Geophysical office with Donnie and Roy Bennett. Went up to Abbott and Stansell about a car. Caught bus out to airfield 1020 and caught Eastern Air Lines to San Antonio, and Continental Air Lines to El Paso. Arrived El Paso 730 and caug train to Alamogordo, then bus to Air Base. Chantz, Oliva and Bill E. checked over L&Ns, got driving licenses and worked on calibration curves.
April 29 Tues. Alamogordo Air Base. Delayed trip to Silver City to talk over Signal Corps Communication with Peoples, Ball this PM. Went out with Don to East White Sands to set up GR3 and get it working. Lt Thompson in pm. Lt Stevens in on vacation trip. Sal and Bill E got low frequency equipment together and ran test with it at hanger. Possibility rocket will not be fired until Monday acct weather
April 30 Wed. Alamogordo. Phil and Don out to East White Sands and Tularose sites to get equipment ready for test tomorrow. Set up Rubicon at Tularosa. Sal and Bill E. went to D and Launching Area sites to set up equipment. All mikes got out ready for firing.
May 1 Thurs. Out at 2 am. Put up equipment for low frequency run at the north hanger. Out to stations in field - Thompson with Phil at Tularosa - Don and Ace to East White Sands, Sal and Bill E. to Dona and I went to Launching Area site. Rocket misfired at 050009 and all equipment of Signal Corps 'explosions' lost. Picked up equipment from Dona, Launching Area and East White Sands this pm. C-47 in this pm: Dubell, Mosher and Duff. Duff brought in 2 100# bombs with some TNT charges. Bill Godbee in from R.B.

May 2 Friday. Alamogordo. Assembled apparatus to go back to Watson Labs. Phil and Bill Godbee out to Tularosa and picked up all GR3 equipment. Duff, Mosher, Dubell and I went out to Tularosa Bombing Site #2 and shot off 2 100# bombs, using the TNT blocks alongsid All went off OK. Duff got box caps for use. Will cancel 500# bomb order and use just TNT blocks if possible. All equipment loaded on plane this pm.

May 3-4 Sat, Sun. Left Alamogordo about 9 am, Chantz, Porter and myself, 2 Signal Corps men along. Stopped at El Paso and went over to Juarez for pm. Left El Paso about 8 pm. Landed in Scott Field about 4 and found weather bad in East. Stayed at BOQ until 10. Lef about 11 and arrived in Middletown, Olmsted Field, about 6. Weather bad in Newark. Staye in Olmsted Field BOQ

May 5 Mon. Left Olmsted Field at 7 am. In Newark about 8. Trucks in about 11. Loaded equ ment and sent to Oakhurst. Arrived Oakhurst about 230. Chantz left for Frenchtown fm New

May 6 Tues. Oakhurst. Worked with Vivian and Eileen on their calculations. Eileen workin on several? Feb 20 rocket and Vivian on last flights from Oakhurst.

May 7 Wed Oakhurst. Conference am - Dr Delassos? and Leonard from UCLA. Went over T-21 calibration they had - also the results from Alamogordo. Conference pm with Mr--- from AMC Wright Field. Flight scheduled for tomorrow, balloons with instruments going up at Bethlehem - B-17 following balloons with recording equipment and B-29 dropping bombs eas ward from Atlantic City.

May 8 Thurs. Oakhurst. Scheduled balloon flight this morning at 730. Mears and men from NYU at Bethlehem with balloons. Trouble with winds and instruments did not go up. People Moulton over to Middletown with recording equipment on B-17 following balloons. Had no trouble following them. B-29 started dropping bombs near Atlantic City about 8. Trouble with oil leak in a motor and B-29 had to jettison the bombs and return. Recorded at Oakhurst with Brush and GR3. Working today with Eileen on Feb 20 rocket - final ave velocit data

May 9 Fri Oakhurst. Worked on calculations - bombing runs and V2 tests Feb 20. Took slee out of NYC for Canton tonight.

May 10 Sat. Canton. Steve and Esther up from Syracuse for weekend.

May 11 Sun. At home. Took sleeper out of Canton for NYC

May 12 Mon. Arrived NYC and caught 0940 out to Asbury Park - then to Oakhurst. Saw Mr Em of NYU this pm regarding future flights both here and in Alamogordo.

May 13 Tues. Chantz and I went down to Cape May today with staff car and driver. Located suitable site for bomb recordings on road between Cape May Court House and Goshen. Surve out 5 pickup locations and took solar observations. Back in AP about 0800 pm

May 14 Wed - Finished checking up with Chantz and Oliva in regard to bombing runs on ea coast. Run scheduled for 9 and 12 on Friday. Packed up all equipment from computing offi to go to Alamogordo. Checked transit and rod to go to Alamogordo. Jappett?, new computer, in today. Started him out on work Stepanoff was doing.

May 15 Thurs Oakes, Stevens?, Oliva and myself to Fort Dix this am early. Loaded up C-54 when it arrived, with 229 boxes of TNT, about 12,000#. Carroll - pilot and Hoffman- copil Mears, Vivian and Eileen arrived laterand we took off Fort Dix about 1130, EDST. Arrived Fort Worth about 9 EDST. Off again to Big Springs, Texas, where forced to stop account of weather conditions. Stayed overnight at Hotel Supples.

May 16 Fri C-54 arrived at Alamogordo from Big Spring about 930 MST. All TNT unloaded and put in dump. Vivian and Eileen got rooms at girls dorm, Mears and I at BOQ 25. Went over future program with Edmondson, Reynolds and Godbee. Vivian and Eileen in office this pm. Have office in Watson Lab Bldg. Checked out ready to go to Silver City Monday. Got car re and gas for car. Checked transit and made from field wire chain for 125 meters. Mears and Thompson down to critique at White Sands and to see Capt Smith of Weather Service.

May 17 Sta. Alamogordo. Vivian, Eileen and I worked on May 15 rocket data. Plotted up azi uth angle against elevation angle for Dona and White Sands stations. Plotted azimuth agai time for Dona site.

May 18 Sun. Alaomgordo. Worked on Dona record, May 15 rocket. Checked through picks - plo elevation angle against time, calculated elevation and distance from bombing site using straight line plane between launching site and point of impact.

May 19 Mon Reynolds and I left about 0745 in weapon carrier for Silver City. Arrived at Giles National Forest Station about 1230. Got permission for site there and went along valley 16 miles, then back 5 and located site. Surveyed location, dug holes and strung wi Back to ranger station and located ourselves on range map. Left Bayard about 630 pm. Back at Alamogordo about 1045 pm. Edmondson and Godbee out to record WAC Corporal at Dona site

but it was postponed until Thursday.
May 20 Tues. Edmondson and I left about 0845 in weapon carrier for Roswell. Arrived at Hagerman about 12. Went across Pecos R and found site. Surveyed in locations, dug holes and strung wires. Went over to Roswell Army Air Field, filled up with gas. Checked for r for Bill for Wed and Thurs. Back to Alamogordo about 730 pm. Godbee and Reynolds loaded one weapon carrier, ready to leave tomorrow. Vivian working on weather data to send back to Watson. Eileen working on March 7 azimuth - elevation plots and checking picks.
May 21 Wed. Reynolds and Godbee left about 800 in loaded weapon carrier. Stopped at gate by SC Lt and had to unload on motor pool weapon carrier acc't bad tires and heavy load o other one. Left about noon for Silver City. Bill Edmondson picked up GR8 and left for Ro well in weapon carrier SC about noon. Got all equipment together for shooting tomorrow. Worked with V and E this pm. Eileen finished checking original data 7 March and started checking April 1 azimuths and elevation angles. V finished azimuths direct waves and sta extension of weather data to 288, 18 kms fm sky wave data.
May 22 Thurs. Thompson and I out at 0730 to Ordnance dump. Sgt Rand met us there and let in area. Picked up 17 boxes of TNT. Shot 1000 at Site 1, 1100 at Site 3, 1200 at Site 3 a 1300 at Site 1 again. Thompson left for El Paso to meet his family, in from Corpus Chris Worked a little in office PM. Called up Silver City and Roswell tonight, changed schedul of tomorrow from 1100 last one to 1115. Checked AAF clocks over telephone.
May 23 Fri. Went out at 0530 and got sgt Rand. We went out to ammunition dump, picked up 16 boxes of TNT. Sgt Rand to field with me. Shot 0800 Site 1, 0900 Site 2, 1000 Site 3 and 1115 Site 1. Worked on theoretical calculations pm. Bill E in from Roswell about 5 a and Reynolds & Godbee in about 800
May 24 Sat. Went over with Godbee and unloaded his truck, hung his recordings to dry. We over GR8 records too but didn't see any signals there. GR3 from Silver City has some goo sky waves.
May 25 Sun. Tried to get into El Paso to catch train to Houston but Alamogordo train too late to make connections. Back to Alamogordo Air Base.
May 26 Mon. Worked on Tests 1 and 2 records today. No signals from Roswell - some thunde on 2 shots. 5 sky waves from Silver City. Vivian worked on records, Eileen on thunder recordings. Godbee worked am, Bill and Don off today.
May 27 Tues. Worked with V on tests 1 and 2, E back on rocket of April 1. Bill Godbee an Don out to Dona and set up GR3 for Thursday firing.
May 28 Wed. B-17 in from Watson with Mears, Hackman, NYU and Alden. They plan to fly test balloon tomorrow. Other gang with recording equipment, due to leave Watson Sat. Got every thing ready for HERMES rocket tomorrow, Dona & White Sands. Finished theoretical calculations of T-X solution of sky waves.
May 29 Thurs. Mears and Hackman got balloon ascension off about 1 PM today with B-17 plan to follow it. Don and Godbee out to Dona, Bill and I to East White Sands to record HERMES Set for 1100 am, postponed repeatedly, finally fired at 0730 PM. Rocket off course, lande near Juarez, Mexico.
May 30 Fri. Memorial Day. Got 330 bus out of Alamogordo, 1030 train out of El Paso to Hou
May 31 Sat. Arrived Houston 715, went up to bank 900, then to Abbott - Stansell and picke up car - '42 Chrysler. Went up to Sohio and talked to Donnie and Roy Bennett for an hour. Left Houston about 1145, stayed overnight past Post, Texas.
June 1 Sun. Left 0400, arrived in Alamogordo about 0930 - 800 miles to base from Houston. C-47 with Moore, Schneider and others from NYU. Also Ireland, Minton, Olsen. NYU men worked on balloons today in north hanger.
June 2 Mon. Changed shooting plans to coordinate with balloon flights. Balloon all ready to go. Receiver in plane and receiver on ground. Edmondson with GR8 to Roswell pm, Godbee and Reynolds with GR3 to Silver City. Vivian working on amplitudes of flights - Eileen on April 7 rocket.
Jun 3 Tues. Up at 0230 am ready to fly balloon but abandoned due to cloudy skies. I went out to Tularosa Range and fired charges from 6 on to 12, missed 530 shot - trouble getti ordnance man.
Jun 4 Wed. Out to Tularosa Range and fired charges between 00 and 06 this am. No balloon flights again on account of clouds. Flew regular sono buoy up in cluster of balloons and had good luck on receiver on ground but poor on plane. Out with Thompson pm. Shot charges from 1800 to 2400.
June 5 Thurs. Up at 4 to shoot 2 charges for balloon flight. Whole assembly of constant-altitude balloons set up at 0500. Fired charges at 0537 and 0552, then soon buzzed by pla

to return. Receiver at plane did not work at all. Ground receiver worked for a short time but did not receive explosions. B-17 and most of personnel out to Roswell - recover equipment some 25 mi east of Roswell. Out at 10 this morning, got TNT and went out to range. Fired shots 12 to 18 every hour. Last of bombing tests this week.
June 6 Fri. NYU personnel getting ready for flight tomorrow. Conference about noon, Hack with radiosonde, Olsen and Godbee with receiver to Roswell - also Smith on theodolite. Regular equipment in plane.Edmundson and Reynolds to operate equipment at labs - receive with GR8. Worked on adopting GR8 this pm and this evening. Fired some shots pm at site but no transmitter for sonobuoy. This pm put McCurdy low frequency amplifier in circuit before GR8 and have plenty of signal.
Jmne 7 Sat. Balloon flight off about 530. Dribbler? broken on takeoff. Balloon was to 60,000'±, broke left balloons then train came down somewhere in mountains. Recordings at north hanger, and at Roswell but plane did not receive. Shot at 6, 630, 7, 730, 8 and 8? at site #4. Plane out to find balloons but no luck. All NYU personnel and John Adden off on B-17 - Lewis, Gallagher. Went over to Alamogordo with Ireland, Minton, Olsen and Mear but no train today - making reservations for tomorrow.
June 8, Sun. Rancher, Sid West, found balloon train 25 mi south of High Rolls in mountai Contacted him and made arragements to recover equipment Monday. Got all recordings of balloon flights. Took Treland, Mears, Winton, Olsen to Alamogordo to catch train this pm
June 9 Mon. Bill Godbee and Don Reynolds went out to Sid West's ranch south of High Roll and broughtback recovered balloons- clock, 2 radiosondes, sonobuoy and microphone and lo part of dribbler. Bill Edmondson cleaning up hanger and sorting out equipment of NYU. Wo today on balloon records (GR8) from north hanger. No definite signals obtained. Took inv entory MRs.
June 10 Tues. Bill G , Bill E and Don worked on equipment, repairing GR8, T21 mikes, etc Getting ready for rocket Thursday. Worked on GR8 recordings from Hagerman, Tests 3,4,5,6 No signals obtained. Worked on balloon tests from Roswell - no signals. V on Gila R test 3,4,5,6, Eileen on V2 amplitudes.
June 11 Wed. Bill Godbee and I went out to Tulerosa Range and located Site #5 for bombin 24 mi N of Site #3 - roads bad. Laid out wire for shooting, Don and Bill E getting ready for rocket. Checked Rubicon records, all 3 sites.
June 12 Thurs. All rockets postponed until July 3 rocket of S.C.E.L. Bill E, Don, Bill G went down to El Paso and then SE along Rio Grande. Located listening site south of Clint Texas and layed out wires and dug holes. Worked on bombing flights from Oakhurst.
June 13 Fri. Men off today. V worked on tests 3,4,5,6 Tularosa bombing. E on V-2 rocket amplitudes. I plotted T-X all sky waves and started reviewing March 11 and 17 records.
June 14 Sat. Bill E and family, Don R and family, V, E and I to Carlsbad.
June 15 Sun. Through Carlsbad Caverns and back to Alamogordo.
June 16 Mon. Men off today. Worked on eastern shore cruises, plotting T-X corrected to 6 kms & worked on apparent velocities and differences in azimuth.
June 17 Tues. Men left for Silver City and Febrero? near El Paso for bombing tests. Worke on Cruises.
June 18 Wed. Test 7 of Tularosa Bombing Program, Shots at 7, 930 and 1230. Men called in from field to check clocks. Weather poor - raining at all sites. E on V2 rockets, V Crui
June 19 Thurs. Test 8 of Tularosa bombing program, shots at 1600, 1830, 2100 , 2400. Weather poor - rainy at Alamogordo.
June 20 Fri Finish of Test 8. Shots at 0000 and 0230, Sites 1,3,5. Men back today. Godbe Reynolds at Silver City got all shots, Edmondson at El Paso got 1 possibly 2. Looked ove all Fabens records today. E on weather data, rocket firings,V on Tests 3,4,7 and Flights.
June 21 Sat Worked on GR8 records from Fabens - calculated azimuth and elevation angles - Fabens recordings and some of Silver City.
June 22 Sun. On trip with V & E - San Cruzes, Hot Springs, Carizzo
Week of Jan 23-28 Alamogordo Air Base. Men worked on equipment for sound ranging Monday and made arrangements for off base transportation, had to get some from Base Motor Pool; Bill G, Don R left am for Gila Valley and Bill E went to Fabens. Tests 9, 10 Wednesday 2 and Thurs, Fri 26-27. Test 9: 7-10-13-16-18 Sites 1-3-5-3-1. Went out with Sgt Rand. Contacted by telephone Wed night and Thursday. Shot 10 Thurs, Fri at 18-21-00-03-05. Out with Sgt Rand again. Men in Fri pm. Good results from west, but poor or nothing from Fabe Looked over some of Fabens records Sat. V worked on Tests 7-8 getting all data, including amplitudes, then worked on Flights 1-27. Got met data for all flights up to 18 kms except Oct ones. Found one whole minute error in timing on 24A flight which now checks with othe

in March. E on new weather calculations 20 Feb. Found adding wind directly to velocity from temp gives accurate enough results. Changed 20 Feb rocket and plotted up altitudes against signal Strength - shows nothing significant & started on 1 April rocket. Have all 4 station azimuths about finished. Phil Chantz and Wiggett in by train Friday night. They brought in records of Flights 28, 29 and 30 on east coast - 1 of May and 2 in June. Went over records Saturday and identified signals of 28 -29. Balloon expedition personnel arrived Saturday evening - Peoples, Trakowski, Mears, Ireland, Olsen, Moulton, Alden from AM and Moore, Schneider, Hackman, Smith, Hazzard, 2 others and a Lt Smith from Navy NYU.
29 June (Sun) NYU personnel and some of Watson Lab men working today with equipment in north hanger. Went to Ruidoso with Mears, Trakowski, Godbee, V & E
Week of 30 June - 5 July '47 Alamogordo. Vivian worked on Tests 9 and 10, finishing all upward data on GR3 recordings. Eileen worked on 1 April rocket, getting signal strengths vs altitude (corrected for weather data) and started on time calculations to get time of signal for correlation purposes. Appears likely that strength of signal is dependent on station factors rather than anything about rocket.

Balloon tests? 7, 8, 9, and 10 off this week. Test 7, slated for 1 July postponed until 2 July as equipment was not ready. 100 tanks Helium obtained from Amarillo Monday evening Also radiosonde receivers set up by NYU personnel Monday but were not operable. Test 7 at dawn on July 2 with pibal 1 hr first following with theodlite. Winds were very light and balloons up between A air base and mountains most of time. Included cluster of met balloons. Followed by C-54? for several hours & finally landed in mountains near road to Cloudcroft. Before gear could be recovered, most of it had been stolen. Stations operating at north hanger, Cloudcroft and Roswell. Shots made unfortunately at Site #4 and picked up good from north hanger and from Cloudcroft for awhile. Nothing from Roswell. On Thursday morning 3 July, a cluster of GM plastic balloons sent up for V2 recording but V2 was not fired. No shots fired. Balloons up for some time. No recordings from Roswell as pibal sho no W winds. Balloons picked up by radar WL and hunted by Manjak C-45. Located on Tularosa Range by air. Out pm with several NYU by weapon carrier but we never located it. Rocket postponed until 730 Thursday night but at last minute before balloon went up, V2 was call off on account of accident at White Sands. Sent up cluster balloons with dummy load. Ballo flight #10 at dawn on July 5th. Had gone out in C-45 again with Moser and Dubell to hunt for balloon from Flight 8 but not since? we found them. C-54 went to El Paso and picked up single Smith plastic balloon and GM cluster plastic balloons. Flight 10 with single plastic followed from Alamogordo and Cloudcroft. Shot 8 shots from Site 4. Picked up most and lost signal at 845. Balloons ? more than 6 hrs although time clock had been put in to bring them down after 5 hrs. ? were picked up by ? C-45 as first flight out was delayed. Had special balloon at 7 with explosice charge which went off at 35,000 ft and a 745 but by that time the receiver had lost the signal. Followed by radiosonde series until after 1300. Cloudcroft off at 8 and doubtful about signals received.

Peoples and Trakowski up 4 July with Dr. O'Day of CFS to Alamo Tower ---- ? Solar Observatory the SCEL station. Schneider up with O'Day to check use as NYU station.

Alamoggrdo crew helped get helium, and did ground shooting of 2 July. Out July 3 at Do and Launching sites at 2 pm and later at night.

Finished identification on Flights 28, 29 and 30 on east coast and made plans for Bermu flights.

Unable to leave for home on 3 July as was planned and wired Donnie first part of week if he could change his schedule and go home folloeing week. Got wire back that he had decided not to make the trip.

July 6(Sun). Worked at office on flights and rocket data. Started on plans for speech 17 Ju meeting NYU - Getting ready for Flight 11. Plans are to put up Smith balloon with GM ? plasties + simple met balloon sonobuoy + balloon bomb.

July 7 (Mon) Alamogordo. Balloon Flight 11 A off at 0503. Big plastic with small auxiliary plastics. WL gear - radiosonde and dribbler. Followed with theodolite and receiver until about 11. Picked up on radiosonde receiver at Roswell and followed then. Finally came down (at 10,000 ' cap should have punctured plastic) near Hwy 70 between Roswell and Tularosa. Second balloon - met balloons with radio sonde up about 630. Third balloon with 2 1/2 # stick TNT and caps set by pressure element to fire at 35,000' up at 0630. Surface bombing at Site 4 from 545 to 845 at 15 min intervals. Ireland followed main receiver only about 3/4 hr but followed radio sonde about 3 hrs. 35,000' explosion off about 655.

Vivian got all instructions for completing work on Flights 1-30 and picked all records and filed. Sent off TWX re Bermuda Flight and wrote up memo on it. Worked with Eileen on

April 1 rocket plotting H-SS, H-T, SS-T.
July 8(Tues) Alamogordo. C-54 off about 1030 with 23 people - all NYU, WL including V, E. Godbee. Lt Thompson, Edmondson, Reynolds and myself left. Wote up report on East Coast Flights for Peoples.
July 9(Wed) Alamogordo. Worked today on balloon flights. Studied WL records of them brief and wrote a memorandum to Peoples about results. Left in car this PM late. Flat tire bet Roswell and Tularosa and stayed there.
July 10 Thurs. Changed tire and went into Roswell. Bought new tire. On to El Reno, Okla today. Stopped in cafe in Hereford, Texas and met Dannie Harns from UGC. Went up to offic and saw Bob Cowder?, PC and Gene Conant, supervisor.
July 11 Fri. From El Rosa to Cherokee. Got note at Cherokee that Jimmie was at Tonkawa ar went over there. Stayed tonight with J & family.
July 12 Sat. Jim, Pat , Vanessa along with me on way home. Got to Doolittle, Ark tonight.
July 13 Sun. to cabins in Ohio just out of Springfield.
July 14 Mon. To cabins near Geneva, N.Y.
July 15 Tues. Stopped at Syracuse. Got home about 230. Marion & her baby there.
July 16, 17, 18 At home. Drew in 4 or 5 loads of hay but land very wet and rains intermittently.
July 19 Sat. Marion and I left in Chrysler for Woods Hole to see Dorothy & family. Throug Albany, Springfield, Providence. 463 miles 12 hours. Doc Ewing on Atlantic cruise. Worzel working on gravity at sea. Saw Geo Woollard and the Ryders. Woollard after Guggenheim fellowship for next year - positions at WHOI and Princeton are ? very satisfactory.
July 20 Sun. Saw men working with Worzel at WHOI, Pollak, went over to Vine's new house, Kit and Bump at their house, then out to Ewings, saw Midge & children, Anne and Mikey.
July 21 Mon. Went down to WHOI, saw Pollak, Bumpus, Worthington. Up 3rd floor and saw Emm of NYU, who is finishing up some research work there under Ray Montgomery. Talked with Co umbus Iselin for short time. Saw Gil Oakley. Marion & I left about 11 am. Went through Providence, Hartford. Crossed river at Hudson. Met rain last part of trip, not home unti 130. Jim & family spent weekend with Steve and Esther in Syracuse.
July 22,23,24 At home. Drew in a little more hay from lot in front of barn but still rain ing quite often. Jimmie & family took Thursday PM train to Syracuse to catch tomorrow's plane to Wichita, Kansas.
July 25, 26,27 At home. Steve and Esther came up Sat night. Marion and I went to Watertow to pick them up at bus station at midnight. They left again Sun pm on bus from Canton. Ch Crary up from Canton Sunday PM
July 28,29,30,31,Aug 1. At home. Chrysle to Canton, change plugs, reline wheels - Rained hard first part of week then clear. Got in lots in back of barn, north of road and front house.
Aug 2 Sat. Marion - Bunny and I left 1230 PM, arrived Marcellus about 5 PM. Ate dinner wi Steve and Esther, left Marcellus 730 PM. Through Binghamton, Scranton, Stroudsburg, Easto Arrived in Newtown about 245 am.
Aug 3 Sun. In Newton with Flaggs for dinner. Left Newtown about 5 PM. Arrived Jersey Coas Got room on Hwy 35 near White Bite Shop.
Aug 4 Mon. Up to Oakhurst. Went over developments to date with Jim Peoples. Out to lunch Lt Ball. This PM Chantz and I surveyed to Sonobuoy site.
Aug 5 Tues. Oakhurst. Worked on Aberdeen results - 2 failures - 1 direct wave. - Worked or Bermuda run # 2 - Oakhurst and started Bermuda #2 C.N.C.H., Peoples on vacation startin today.
Aug 6, 7, 8 Wed, Thurs, Fri. Oakhurst. Worked on Cruises 1 -28 with Vivian and Epstein. Checked over all recordings of Bermuda #2, Flight 32. Got sonobuoy survey calculated and worked up results of Flight 25 B which depended on sonobuoy signal. Started Epstein on wea ther data which Wiggett is working on. Wrote letter to Emmons with remaining work to be done there. Conference Wed pm with Clowry, Carroll, Dubell, Bernhoff of Olmsted regardin Bermuda and Alamogordo plans. Mr Mears put up balloons with equipment on here at Oakhurst. Reynolds and Edmondson in and working around lab. Worked some with Eileen on rockets.
Aug 9,10 Asbury Park
Aug 11, 12,13,14,15,16 Oakhurst. Wrote memo regarding Alaskan work and had copies typed up Worked most of week on rockets. Plotted altitude against time of origin for April 1, 8 rockets but did not get identical graphs. Tried to vary distance to obtain similiar curves but this was not possible. Made plots of time vs SS and altitude vs SS in effort to correlate signals between stations. Correlated fairly good on 1 April but poor on 8 April.

Wed Jan 7. Up to WL. Took gravimeter readings at WL, got checks, left for Lakehurst about 1030 then to Dix when it was found plane went there instead. Left Dix about 1230 - crew consisted of Dubell, Lewis, Duff & crew chiefs Kennedy, Ellis. Lt Cothorpe with us as far as Edmonton. On trip to Fairbanks, Ala - Woodruff, Chantz, Reynolds and myself. C-47 - 68 Also 47 with Schneider, Telogh? in to go to Alamogordo with explosives, then to bring Alaskan explosives up to Edmonton. C-47 to Wold-Chamberlain Field outside of Minneapolis tonight - one stop near Detroit.

Thurs Jan 8. From Minneapolis to Great Falls, Mont. Stopped there for clearance - then on to Edmonton, Canada. Stayed there tonight.

Fri Jan 9, Sat Jan 10. Edmonton, Canade. Weather north bad.

Sun Jan 11. Left Edmonton about 11 after trouble starting engines. Stopped at Fort Nelson for gas. Arrived Fairbanks, Alaska about 7 this evening. Met Col Wather nee CO and Major Watkins CWT

Mon Jan 12. Went up to lab space 130A with Major Watkins - then over to hanger for orientation given by CWT personnel. Saw Capt Anderson of Weather Office and went over upper air weather data. Went to Operations and talked to Major Estes. Unloaded equipment and put in 130A. Went up in base C-47 this PM and flew 140 mi west to junction of Tanana and Yukon investigating landing conditions for plane. Don and Phil working on equipment. PM. Woody went over to Univ of Alaska to talk to Physics Dept , & to Observatory & talked to C&G people. Also checked with RR re work there. Lt. Duff checking Ordnance for storage space.

Tues Jan 13. Woody and I up to see Landburg? at Post Engineers, Got Coast & Geodetic maps for large area around Fairbanks and east to the border. Scale 1/250 000. Don & Phil got driving licenses. Got jeep and trailer and went out with surveying equipment west of Fairbanks along Chena River. Located some favorable sites but went looking for owner of small shack near area. Stopped at Weather Bureau at Weeks Field and talked over weather conditions over Alaska in general - also upper atmosphere winds and temperatures. Back to Fairbanks looking for shack owner. - Out to Yukon Construction Co, talked to John Legge, UGC, then up to U of Alaska and to Geophysical Dept. Went over work with gravity meter with St. Ammand?, also looked over seismograph station & recordings. Met Dr. West also of U of Alaska.

Wed Jan 14. Out AM and surveyed in + at Site 31 south of Chena River - temperature about -25 and transit screws froze after about an hour. Woody stayed in town and found owner of shack and got permission to use it. Also checked with USGLO re locations. Checking equipment at lab this PM. T-21s out all day -25 are operating OK.

Thurs, Jan 15. Checked out equipment for trip tomorrow. Went up PM with Major Watkins to see Col Watner re gravity work at Clear. He was not too enthusiastic about this - could give us no help on the railroad run. Word rec'd this PM that plane with explosives could not be sent. Checked with local ordnance and found they have about 5000# of TNT and nitrostarch. Sent Lewis a wire re explosives.

Fri Jan 16. Chantz and I left in jeep about 745. Went to Big Delta, got gas and dinner, th started down Richardson Hwy. Got as far as Black Rapids & decided road was too bad to continue. Started back. Hat trouble with jeep, ran off road once, had flat tire then the motor went out. Walked 5-6 miles back to Big Delta, got car out and jeep towed in. Stayed at Big Delta tonight. Got 9 gravity readings along route.

Sat Jan 17. At Big Delta. Motor examined by Motor Pool personnel and decided motor change needed - either cylinder or piston broken. Called up Capt Fox at Ladd Field and he sent ove a 2 1/2 ton truck. Loaded jeep on truck and rode back to LF.

Sun Jan 18. Fairbanks. Saw dog sled races P.M.

Mon Jan 19. Got out 300# TNT, got 2 1/2 ton truck at motor pool. Woody and I left in C-47 about 2 PM. Went to Tanana - set off 2 150# charges at 345 and 400 on banks of Yukon 1 mi W of Tanana. Phil and Don went to recording site W of Fairbanks & took 2 records. Direct waves only.

Wed Jan 21. C-47 to Tanana w Chantz, Reynolds. Went with Duff with weasel & fired 2 shots on Tanana south of the Ladd Field. Woodruff recording on Brush at Ladd. Recordings at Tana very poor - windy.

Thurs Jan 20. C-47 to Tanana. Woody and I laid out recording site on Yukon R near runway. Set off 2 150# charges at 2 and 230 . Second was dud but fired again at 245. Phil and Don recorded south of Fairbanks. Good direct waves only.

Thurs Jan 22. Duff went with weasel & fired 2 shots - 2, 230 at same site on Tanana R. Char & Reynolds to Tanana to record - C-47. Woody and I drove 2 1/2 ton to site on Gurth? R, abo

120 mi from Fairbanks. Windy. Changed locations after first shot & recorded 230 shot. Records at Tanana also poor but some direct waves obtained on first shot. Recorded 330 to 800 tonight on Brush for V2 fired today at White Sands, NM

Fri Jan 23. Woody and I took 2 1/2 ton truck and shot charges of 150# at 3 locations past Big Delta. Chantz and Reynolds recorded at Fairbanks site. 50 hr inspection on C-47. Woody and I went on to Tok Junction with G meter after shots. Took GM readings.

Sat Jan 24. Woody and I went through from Tok Jct to Gakona, 140 mi S, taking GM readings. Back to Tok tonight.

Sun Jan 25. Tok Jct to Fairbanks. Checked Fri records.

Mon Jan 26. Lt Duff, Reynolds and I drove 2 1/2 T to Big Delta Area. Fired 3 shots at Site 3,4,5 along Alcan. Stayed at Big Delta tonight.

Tues Jan 27. Out from Big Delta. Fired three shots from Sites 2,4 and 5. Laid out recordin sites at 2 and 5. Chantz and Woody recording at Fairbanks site - C-47 down about 6 and pic ed up Duff & myself. - left Chantz with recording equipment.

Wed Jan 28. Lt Duff fired 2 shots, at 12 and at 230 from Tanana R near Fairbanks. Woody an I drove 2 1/2 ton up Circle Road - only could get as far as Chatanika, and set up site the for 11 oclock shot. Back to shooting site and set up recorder there 230 shot. Chantz and Reynolds recording at Sites 2, 5 Alcan.

Thurs Jan 29. Couldn't get 2 1/2 ton started at Fairbanks. Duff fired shot at 11 and 1530. Woody and I left in C-47 and set up recording station at Tanana for second shot. Chantz an Reynolds recording at Alcan Hwy - Big Delta.

Fri Jan 30. Test # 10 today. Duff fired 500# at Tanana 1230. Woody and I went in C-47 to
sw! McGrath, about 280 mi SE of Fairbanks and set up recording site. Chantz and Reynolds back from Big Delta - bearing in 6x6 front wheel burned out.

Sat Jan 31. Test 11 today. Duff fired 500# at 1100 and 1200. First shot was partial explos Went in C-47 to Bettles, left off Reynolds - Chantz with station there, then Woody & I wen to Umiat and set up site there.

Sun Feb 1 Worked on completion of data from tests

Mon Feb 2. Phil and Don packed eqpt and put in plane. Woody and I picked up Fairbanks site wire - resurveyed direction. Took g-meter to Geophysical Observatory for reading. Saw Legg and got difference Umiat - Pt Barrow -

Tues Feb 3. Abandoned plans for g-meter on RR. Left Fairbanks about noon - unable to land in Skagway - Stopped at Watson Lake. Weather bad - stayed there tonight

Wed Feb 4. Watson Labs to Edmonton - stopped at Fort Nelson for gas.

Thurs Feb 5. Edmonton to Winnepeg

Fri Feb 6. Winnepeg to Montreal - stops at Kapuskney? & Ottawa

Sat, Feb 7 Montreal

Sun Feb 8. Montreal to Newark -stop at Westover Field. Took train to Asbury Park - got roor at Asbury-Hudson? - Chantz went on to Olmsted with equipment.

Mon Feb 9. Chantz over about noon with equipment. Went over Vivian's work - Missions 29-30 still bad. Went over late rocket data with Eileen

Tues Feb 10. Worked with Epstein on V2 rocket velocities. Worked on Missions 29 -30, changing navigation.

Wed Feb 11. Worked on Alaskan Bombing Records. Went over Tests 1 - 2, made all picks. Worke cap records.

Thurs Feb 12. Worked on Tests 3 - 4. Alaskan Bombing Tests.

Fri Feb 13. Worked on Tests 5 - 6. Alaskan Bombing Tests. Accepted year's work in Bahrein Islands for United Geophysical Co starting about 15 July. Talked to Capt Trakowski about leave of absence.

Sat Feb 14. Worked on Tests 7,8,9,10 Alaskan Bombing Tests. Out to Peoples tonight. Doc Ewing and family there.

Sun Feb 15. Worked on Test 11, Alaskan Bombing Tests. Left on sleeper from NYC for Washingt

Mon Feb 16. Jim and I saw Mr Cox, NRL who has been doing sonic upper atmospheric work. Ther went out to Dept of Terrestrial Magnetism and saw Mr Douls? & Tuve who had seismic instruments and have been taking long range T - X profiles. Back to A.P. tonight after meeting at Army Air Force, Johnson's office of Planning for Atom Bomb.

Tues Feb 17. Watson Lab ? looking over Alaskan results. Studied Missions 29, 30. Work with Abe on V2. Conference Col Duffy re future planning.

Wed Feb 18. W.L. Conference - Lewis, Dubell, Duff, Carroll re ? work. Talked with Lt. Thompson, in and out from Alamogordo.

Thure Feb 19. Watson Labs. V on Alaskan data, Eileen on Apr 17 rocket - Tularosa, Epstein

on Dona 20 Feb calculating H - V by approximations - Wiggett on ray paths - Alamogordo. Made up T-X curves - Alaska and all other long distance shots. Over to Evans Lab PM: Luke Cranshaw, Kaiser? & discussed work on long range bombing - no mention of their work made Fri Feb 20. Watson Labs - Maps and charts 29,30 in from Middletown. Got all distances, azimuths, etc for Alaskan work. All stations on map. All formulas for azimuth. Started outline of ECB report.
Sat Feb 21 - Langhorne, Pa visiting Marion and Wayne.
Sun Feb 22 - Back to AP. Worked on gravity locations in Alaska
Week of Feb 23-27, Mon-Fri. Worked on East Coast Bombing report - mostly all written exce final part of results. Vivian working on last missions - signal strengths, azimuths, etc. Wiggett worked on Alamogordo ray paths, then theoretical calculations - t_i - a. Eileen worked on weather data for late '47 rockets - then on Dec 8th V2. Epstein on Feb 20th - finding H - V curve to fit data obtained from rockets. Worked up Alaskan gravity meter da getting latitude and Elev corrections - no apparent correlation of anomalies.
Sat Feb 28 Saw lawyer AP re divorce; up to lab PM
Sun Feb 29 Out to Peoples - John Ewing, Doc, Wyckoff, Johnston
Week of March 1 - 6, Mon - Sat. Worked on East Coast Bombing report - Worked on final V-I curves - using minimum distances. Wiggett and Vivian working on it. Changed 29-30 navigat E and Epstein on rockets. Al Vine in Fri re tables. NYU in Friday re balloon work. Chantz took G meter up to Columbia Thursday. All data from G meter still here. Up to efficiency rating meeting END OF BOOK 4

BOOK 5

March 7 Sunday - Asbury Park
March 8 Mon. W.L. Peoples left for trip to Florida (TO) this afternoon. Worked on formul for H values on bombing, from T_i and X_m.
March 9 Tues W.L. Started on formula for H, Went through one solution with Wiggett, then let him start on others. Went through R.I.? recordings on Brush of Bermuda runs. Started Eileen out on #20 rocket getting pertinent data assembled.
March 10 Wed. Vivian on T-X curves, above met levels only - all flights. Wiggett on H for working out for each flight separately. Started work with Epstein - went over all work on rockets, sorted out files on each - then started on 23 Jan rocket. Eileen off today.
March 11 Thurs. Epstein and I worked on 23 Jan rocket, working up paths as well as down one. Call from Ed Schompf re Bahrein Island work. Regardless of 8 mos. minimum, they stil want me to go. Also OK to take recording altimeter. Vivian, Wiggett on ECB
March 12 Fri. Epstein and I on 23 Jan rocket, finishing all work on it. Eileen on 20 Feb rocket, Vivian and Wiggett on ECB. Over to Langhorne, Pa to see Marion and Wayne tonight.
March 13, Sat. Left Langhorne about 130 PM, went up to Sparta, NJ to see Dorothy and Joe.
March 14 Sun. Back to A.P.
March 15 Mon W.L. Worked on rockets. Eileen on 23 Jan, Abe on 20 Feb. Worked some with 7 March rocket. V, Wiggett on ECB
March 16 Tues. Worked on rockets, trying to find some method of triangulating on rocket signals from different stations.
March 17 Wed. W.L. On 1 April rocket, trying to find method for triangulation. V, Wiggett on ECB - finished up a and H calculations. Wiggett started on some rocket work.
March 18 Thurs. Went over all remaining rocket work with Abe Epstein, including work on each rocket. V drawing up H-V curves for all cases on ECB. Eileen on 7 March temp-ht curv Wiggett on 29 July Doppler report.
March 19 Fri - Went over all ECB work with Vivian - picked up all final figures to take w me. Went over work for Vivian on Alamogordo and Alaska bombing. Up to conference Trakowsk office re plans for building space at Rome, N.Y. Worked on efficiency ratings with People
March 20 Sat. Over to Langhorne, Pa this morning. Folks arrived from trip yesterday. Joe Worzel and family down - had car accident leaving Pa and stayed at Langhorne over last ni I stayed there tonight.
March 21 Sunday - Back to Watson Labs - collected all data to take with me on trip - all final report data ECB, all data 8 Dec rocket.
March 22 Mon. Packed all personal belongings in car - left in Asbury Park garage. Checked out of Asbury-Hudson Hotel. Went over to Trenton, NJ with John Alsen, Johnnie Moulden. Johnnie and I caught train to Middletown, Pa. Alden to Washington, D.C. Went out to Olmst Field - 4149th at Middletown. Trucks with equipment from Watson Labs arrived 0530. Truck from NYU already there. Loaded up B-29 after it had test hop. B-17 having trouble with on

of its motors. Duff has tetratol tracked to Dix - to be picked up there by B-17. Staying at BOQ Olmsted.

March 23 Tues - Weather bad. Left Olmsted Field about 1 PM. Lewis, pilot - Kane, co-pilot Adams, navigator; Cox, Kabasta, Moon, Holloday, crew. With WL Alden, Moulden, myself; wit NYU, Schneider, Hackman - Smith to meet plane in S.F. After delay at Tinker Field- B-29 arrived at Holloman Air Base 3 AM Wed.

March 24 Wed - Out to north side, Holloman Air Base. Had conference with Thompson, Reynol Edmondson re work done and plans for future work. Packed up recordings to send back to W. Hackman, Schneider, Moulden got 30 tanks Helium sorted out ready for B-17. Left Alamogord in B-29 about 5 PM, arriving in LA, Mines? Field about 9 PM. Got room at Ritz Hotel in L.

March 25 Thurs. - Up to U.G.C at 10 AM. Met and talked with Gerdes and Schemph re Persian work. Went down to shops and checked over altimeter w e are taking to the Pacific. Met Ho Peterson, Swann. Had lunch with them at regional SEG meeting. Back to UGC labs and got recording altimeter checked out. Gerdes and I took it to Ritz Hotel about 6. Don Dressen to hotel tonight.

March 26 Fri. Left LA in B-29 about 10 AM, arriving in Fairfield-Suisan? about 12. B-17 with Dubell, Carroll already there. Smith of NYU there. Went through all necessary briefi and checked out this PM. Ready to leave Sunday AM

March 27 Sat - At Fairfield-Suisan all day. Talked to Peacock and Thomas of Tracerlab, In regarding their freight to go out to Pacific.

March 28 Sun - Left Fairfield-Suisan about 12 today - arrived Hawaii lete tonight

March 29 Mon - In Honolulu today - At Hickam Field saw Col King and talked to him about pa of plans. Met Atchley of Tracerlab.

March 30 Tues - Left Hickam Field about 9 this AM. Arrived Johnston Island for gas about noon, then on to Kwajalein Is, arriving about 8 PM

April 1, Thurs. Lost March 31st account of crossing International Date Line. Went up to C(of Task Group but he was busy all day. Saw Major Faulkly and Major Gazzanegia who made arrangements for our use of building near 658. Got transportation about 1 PM and unloaded equipment from plane, took it over to building and started setting it up. Capt Hayes made arrangements through Capt Hutchison of Navy for use of Navy area to launch balloons. No definite word regarding first explosion but it will probably be around the 15th of April.

April 2 Fri - Moulden, Alden on balloon mike equipment - NYU on balloon equipment. Took ou part of floor and set up place for burying mikes. Set up GR8 and looked over Kwaajalein fo balloon launching spot, finding only one good place, at east end of apron. Necessary to bu on tennis court fence. Surveyed in two mike locations across apron from weather building. Col King in from Hickam on way to Guadalcanal.

April 3 Sat. Set up recording altimeter - found that solenoid for Esterline Angus used too much current, affecting pressure recording - set it up and ran it overnight.

April 4 Sun. Rewired altimeter for use in keying operation and set it up on firm ground in weather building. Trouble with SCR 658 and spare was removed but also found bad. Hackman finally got original in operation for Sunday night flight. Col Triffy from Eniwetok in tod Got all secret coding from him this PM

April 5-6-7, Mon,Tues,Wed - Working on eqpt. C-54 in Wed morning - Capt Clowry, Lt Mosher. Helium in Tues via ATC. Col Jackson, Col Triffy over from Eniwetok Wednesday and went up t area for short time this PM. Alden and I went over to see Capt Hutchison and Mr Hiller, NC re Navy timing system. Balloon inflation shelter finished Wed PM

8 April Thursday. - Up at 2 AM. Released 20 plastic balloon with WL equipment at 0485 AM, coinciding with test run at Eniwetok. Lost balloon with 658 when it got directly overhead at 6 AM. Located it after breakfast when visibility was good. Followed it with 658 until about noon - then with theodolite until 19 PM at dusk. C-54 off this pm for Guam.

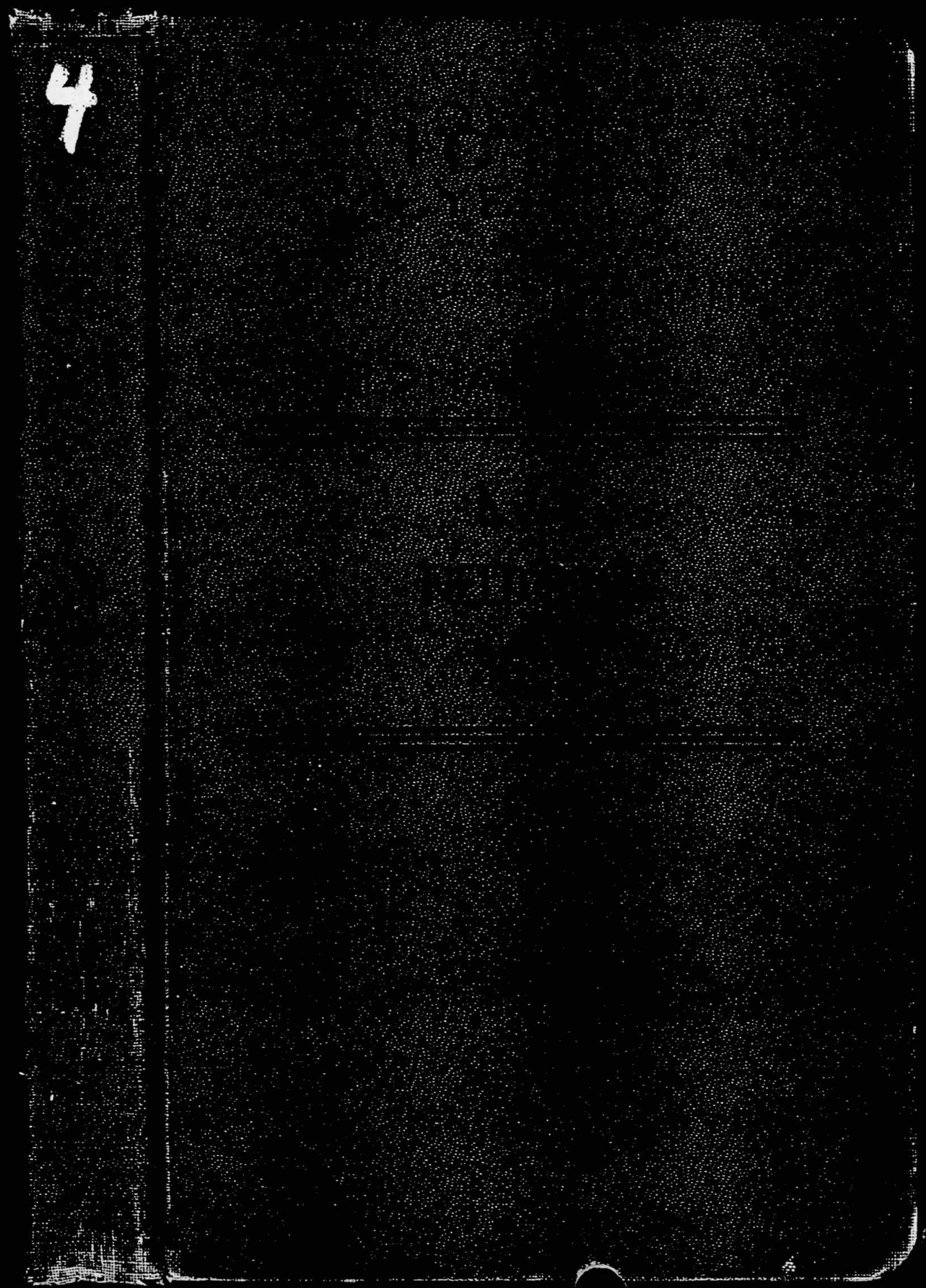
9 April Fri - Worked on data from yesterday's flight, H-P-1. Made plans for another flight before X test.

10 April Sat. Worked up some calibrations- recalibrated airborne mikes and outside attenua but variations were large. Schneider lft by ATC for Guam to get things ready there.

11 April Mon. Worked on formulas for sunshots -took GR8 timing motor out of chassis and cleaned, oiled and inspected it. Runs better but still isn't too good. Checking wiring on altimeter. Worked on cathode follower but didnt get it working too good. All equipment ready for another balloon flight tomorrow morning.

12 April Mon. Put up balloon Flight H-P-2 at about 0815 this morning. Winds were fairly calm and planes did not have to be moved. Flight went up toward west and came directly bac overhead again as in H-P-1, then continued east and was finally lost by theodolite about

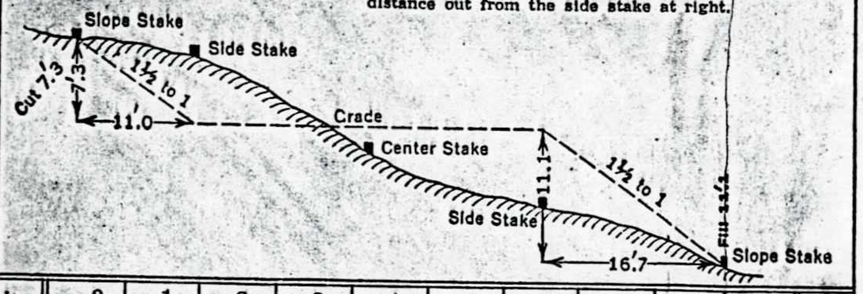
4



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1½ to 1.

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or Fill	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Cut or Fill
	Distance out from Side or Shoulder Stake										
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

KEUFFEL & ESSER CO., N. Y.

For Curve Tables see end of book.

BOOK 4

March 19, 1946 — March 7, 1948

A.P. CARY

The paper in this book No. F362A is made of 50% high grade rag stock with a WATER RESISTING surface sizing.

11,311-2. x, h, yk. hC.

1946

March 19, Tues.

Started operations C-9 Line Tm. Jose working up dyn. Transferred ops C-8 Tm. Staff Quarters for Monrovia on Freeman / Allen, arrived Monrovia 6 P.M. Set camp at West Caribbean. Melody in from El Reno & Tonkawa.

March 20 Wed.

Mac & Z went down to Steel Office Mercantile and talked with Hammaker & Wood, Don Short came in from field about 1 P.M. and we went down to Steel Office with him to clean up acct & finish program with Wood. Hayes in tonight from Conroe.

March 21 Thurs.

Short, Kaye & 2 Cat Mercantile about 9 A.M. Crews to Pentos & took carry all car up to El Reno to Mercantile & Line P56 is working. Crews Crews & Short, Barnes, Kaack, Odekirk, McGinn, Dunn, Robinson, Owens, Carmichael, Phalen & Worked on seismic detectors & cable shooting crews took over Short brought Odekirk & Robinson, Blanchard repairing water jet comp up.

March 22 Fri.

Short over and onto Line 1. Kaye & Mercantile about 9 A.M. Line P56 Line 2 arrived in Albegrau 1/2 noon. Started unit 12:45 for Line 1. Crews to Mercantile Camp repaired at Hotel Caribbean. Melody Dunn Carpenter moved to 25

March 23 Sat.

Camp 8 Norman at 6 AM & arrived in Caracas about 10 32 AM, met Mr Cooley at Magnolita on way to Santa Barbara. Worked some on checking C-12 Ring Lots. Joe plotting, Raymond on 5-d Ring Lots. Money out on P53 & 68.

March 24 Sunday.

Made up expense acct. March Record for final check C-12 & C-9. Plotted change C-3 & updated completely C-2. Saw Walt at hospital. Finished checking through Computer Monuments.

CH Div.

March 25 Monday.

Joe plotting C-1. Reversed dips C-7, C-6 C-5, C-4. Bob on 5-d Ring Lots, letter 55 monthly report. Bob Olson & Oggilt in from P5. Couch & Ring Campbell in from P55 with monthly report.

March 26 Tuesday.

Reversed lines C-3, C-2, started C-1 Joe finished plotting C-1. & started on final reports. Finished 1054. Went down & Shell with Cooke & Talbot & Pastrana & Brown re Maracaibo area. Mike Foster in from P54. on way to States.

March 27 Wednesday.

Money in with P53 report & records. Went over 53-0-5, 6801-17 Enos sheets. Joe finished Ring 6 & 7 sections, & updated sections 5.5 monthly sections. Bob in 55 Xlots, Money on 53-0-1 & 123-29. Saw Jones Pan & Velocity SE 124

March 28 Thurs.

Finished checking 53-0-5, worked & Reversed cross dips. Started corrections & Love & ranked dips. Drew up work maps - Ring 4 & 5 & started plotting sheet C-1. Money on 53-0-1, 123-29 Bob Mc & Joe Norton on 55 Monthly Report & maps - 53. Alex Ranoff in for 55

March 29 Fri.

Drew Structure Contours on all Ring 4 sections & put dips & possible fault locations on work maps. Started getting miscellaneous Money, Ranoff & Joe in P53 & P55 monthly reports.

March 30 Sat.

Adjusted Mandrons & Started plotting on Ring 6 & 7 Love Contours - Started plotting Corrected structures on sections. Bob Mc Money & Joe working on Shell monthly reports. Cantos & Hansen in from Party 54. Party at Dances tonight.

March 31 Sun

Put adjusted structure Contours on all Ring 4 sections. Drew up Some structure Contours & Ring 5 & 6. Money up Bob & on work on structure on Cross sections Personnel

April 1 Mon.

Shell reports finished & in today. Reassigned on 5-d & Ring Lots. Drew on plotting & Drew work on Some Contour maps & Ring Lots with Fonda. Reassigned Department. Read & Structure work on & Dances. At Magnolita tonight

ORIGINAL

April 2 Tues

D & I left Caracas La Guaira 9 AM. Arrived Miami 10 PM pre Par Av. Through customs & caught 10^00 PM National Airlines plane for Newark.

April 3 Wed

Arrived Newark 3^30 PM & took airport bus to NYC - 10 cts for Broadway 9 PM Called up Evvy but he was in Chicago. due back tomorrow. Left at 10^40 PM by Pullman for Canton Ohio 9 PM

April 4 Thurs.

Arrived Canton 9 AM & went at once

April 5 Fri

at home

April 6 Sat

at home. Over to Oglebay & all day this PM

April 7 Sun

Left Canton on 8:05 PM Ship — Down Bob Forte '24, also on way to NYC

April 8 Mon.

Arrived NYC 7^30 AM. Up to Columbia University & saw Ewing 1^30 P.M. Wyckoff and Dove on way to Los Angeles by plane this PM. Crane and Morrison in also from Watson Lake. Went back to Red Bank.

week there as AWOL as to officers club now Watson Lake. Crane, Morrison & I went up together & are managed at office. Maud Oglebay who has 50 per cent of this project is playing here. Stayed at Lynn Lee Hotel tonight

April 9, Thurs.

At Watson Lake all day. Went through all processes necessary for employment under Civil Service. Warrant officer Oglebay transferred to ALERL at Today. McCurdy already on and started work. Talbot was Rainaldo and Hallo as Columbia Contract. Oglebay left PM for Washington. Major Adams for Camp Dix and Morrison for N.Y.C. Rainaldo and I went down to Cleo Thurs PM & met group from Oneida Castings & Buffalo Armature Winding Co. Left Contracts. Stayed at Holly Potash Hotel on Red Bank tonight.

April 10 Wed.

Checked out of Holly Potash Hotel and caught 7.30 AM train out of Red Bank to NYC. Checked in at Hotel Astoria and then up to Ewings at Columbia University. Ship Talbot & Watson Lake in at 10 PM and we went over contract questions regarding Electron but content with Columbia. Until 2 PM Went over all plants & work until 5 PM Dove from Detroit 5:30 PM John Ewing in from Missouri.

2

April 11 Thurs.

Worked on wings outlines & Eglin Field and Salah projects Am. Up to an Ewing at Columbia Pa. Wind through Lap water sound transmission papers. Stopped up Pa on account for boat. Dow & I went on content with Watson Lab & Columbia tonight. Caught 12:45 sleeper to Boston.

April 12 Fri.

Arrived Woods Hole about 11. Jr Wright went over all sound transmission work at WHOI this P.M.

April 13 Sat.

Talked with Columbus John this A.M. regarding Watson Lab work & needs. Crane and Stafford up P.M. and Jr & I went up to Lab with them.

April 14 Sun

Down to Lab this AM with Jr looking for GRA files. Jim Peoples over about noon for a visit. Jr & I went golfing P.M. Took 6:00 PM train to Boston & 12:30 sleeper to N.Y.C. up to Boston with H. Trumbly who with Harry & Walt.

April 15 Mon.

Contacted Doc Ewing on WHOI and rode down to Red Bank with him. Talked over instrumentation & oxygen atmosphere situation. Put to Cabinet this P.M. Conference with Col. Cole & Lt Groupe P.M. re Project 1884 and regarding underwater tests. Dow & I arrived Red Bank tonight.

April 16 Tues.

Rode out to Watson Lab with Ewing. Met some & Evans Elv with Harry Shows, Watson Lab Pennington men, Hunt and Busby developed ranging apparatus & talked to Dr Kaplan re Ginna, Elevator, Lights and Church Plan. Lecture scheduled Lunch fast fwd year. Rec'd Daffy & Intercept Program Hdtr & back to Watson Lab. Dow went to Chicago & NYC. Worked on program with Dow and Crane this P.M. Back to Lab tonight with Crane & Ryffel discussing Project 1884-1. Stark & Ingalls Hdtrs at 10th Pa.

April 17 Wed.

Rode out to Watson Labs with McCandy. Worked with Major Crane on report regarding underwater work. Ryan Hunt & Dept with Jack Thomas re Ground Cable Plan. Completed Lunch, Got down to Penn to Route New York - Journal out of Trenton Watson Hotel.

April 18 Thurs.

Caught Ensign to Watson Lab. Col Cole up this A.M. & advised writing new Cost Explanation for Caribbean and meeting Thos R.J.R. Page Crane up about noon for trip Phila & Washington. Made change to Ist report for NYC Meeting. Worked out new Red Bank Cost Expenditure Study & talks & Col Cole

3

April 19 Fri.

Packed our work with Dow & we wrote up 2 Hdc E O covering only all accum work. Talked to Ewing in plans this a.m. Dow & I went down & ate Cal Cob and then wrote up one E O for hyd water work. Saw Hinds regarding this E.O. Both E Os and A for B prepared this P.M. and ready to go out to Dwight Judy.

April 20 Sat.

Caught 7h0 train to N4C, cashed check at Chase Nat'l Bank, talked to Ewing on phone. Back to Red Bank about 4 P.M.

April 21 Sun

In Red Bank

April 22 Mon.

At Watson's labs this A.M. Got final physical exams. Down to supply & on Dwight Lewis with Kinnaugh re getting equipment and back came from W4C without page carriage. Got travel order book and authority & rec'd it. Caught 3 4h0 P.M. out of Red Bank and arrived in Newark about 5 30. Reservations to Dayton on Spirit of St. Louis had been cancelled. Called water Labs. Got remote on Spirit about 5 30. Called Mrs Ewing in Nyk. Left Newark on Spirit of Sts. at 6 20 P.M.

April 23, Tues.

Arrived Dayton, Ohio about 8 30 A.M. Tried to get return ticket for tonight but coach cars only open. Took the out & Wright Field, Bldg 28. Saw Mr. Orville and turned over 3 of the A for P & Hdc. Colonel Waller & Lieut. West down & Colonel Winter's office. Began case there, & talked to Colonel Winter regarding the need for planes and about new EO on additional long engine of the 1917-1 program, which is approved and checked up at 1 P.M. & end on the flying ground. Went over with Crane & Lieut Colonel Hudgens in the plane assignment division and talked about plans. Had lunch with him and then went back to talk to Colonel Eaton regarding planes C/1917-9-1 Went over to look at C-32, assembled 5-19 for transport. Back to Bldg 28 & talked with Colonel Reeves. Signed A for P in duplicate. Spec not yet signed - will be sent on & Crane had reservation for me on the Spirit tonight and we left together at 8 P.M.

April 24, Wed.

Arrived with Crane [illegible] & getting aboard through the ground fog the crew consisted of myself and about the passengers & a Fokker each to Records. Arrived in N4C about 10 30. Crane called Watson Labs & then we took a taxi up to Curtiss Wright Office at Columbus. Office Ewing & I discussed plans for 1917-5 and 1917-1. Both Egbert Reid and Ewing empty Colonel Thurgood. Left Ewing's office about 6. Crane departed at Port Lexington & I caught 710 bus & from Lexington arrived at Red Bank at 8 45 P.M.

4

April 25 Thurs.

Up to Victor Lake. Worked over notes with J. Conference with Ensey yesterday. Wrote up letter to Wyatt Field ordering Hawks and sent them down to Field under Jackson. Talked with Palmer about HP Hawk parts. Wrote up letter to Wright Field requesting one J second crash boat. Wrote K and H for Mark 2 hydrophone - Talked to H. Hungerford regarding report of this, Hegarty, and physicist for work in this Pac. Crane left for Wright Field tonight.

April 26 Fri.

Up to Victor Lake. Went over purchases already agreed for with Kenneth. Wyckoff in this AM. McCurdy in PM for radio parts. Went back to Oakhurst with McCurdy this PM.

April 27 Sat.

Left Red Bank about 7:30 AM with McCurdy in his car. Drove through NJ to Trenton & down to Philadelphia, where left me off at Olney at subway station. Contacted Marion at Bankers Security and went by train with her to Norristown, Pa at 1:00 P.M. Stayed with Haggs.

April 28 Sun.

Wayne & Marion drove me over to Trenton N.J. I caught 10:45 AM train into NYC. Went up to Ensign about 12:45. Joe Wenzel there & Hedy Barbour. They left for Woods Hole about 2 PM. I caught 3:00 train out of Pennsylvania to Red Bank N.J.

April 29 Mon.

Up to Victor Lake. Checked over all of Navy correspondence obtained. Went over back work with McCurdy regarding what is needed in way of purchases, etc. Went out to Oakhurst with Cooke and Radio regarding progress from the Commander in Navy. Packed & started for Hegarty & his field work.

April 30 Tues.

Up to Oakhurst. Went over report that Cooke wanted to get this and what we thought to obtain next & people going & returning with Wyckoff and a talk can to Victor Lake to conference both Col Jeffers & Heath Bunting. Capt Hedy and Col Rockwell discussed weather reports - one Ensign and Sec'y, arranging matters in coming week. Discussed report with McCurdy & obtained a good idea transmitter could be located.

May 1 Wed.

Up to Victor Lake. Talked with Haggs & Wyckoff regarding work to be done at Oakhurst. While there received word that Lake, in New Mexico, Commander Navy observers about 1:30 PM & had a conference - Gen'l Arnold, Lovett, Chief, Wright Field, Hungerford, Land and myself, regarding Navy projects with us in Command. Captain Hedy & Lovett leaving for NY and talked with Haggs and Wyckoff, arranging data, etc. Got word Hedy left for Atlantic Command - Wyckoff about to return to Oakhurst for Radio tests by plane tomorrow morning. Up to Lake & talked with Haggs.

May 2 Thursday.

Left Red Bank on 8 am train, off at Elizabeth
& took ferry @ 11 a. Up & SCT & then up & down.
Too late for Rick with things sent on. Time for
Conference with Young, Lane & Gabrielle, Rick,
Brodhead, Bond, Crane & Barton left. Conference
until 2 and Conference with Gabrielle and Rick,
Crane & Called @ 10 Bond for about this afternoon;
Cravath & 11 30 adjourn to Baxter tonight.

May 3 Fri

Arrived Woods Hole 10 45 pm. Short crossing
Telegraphed with Dorothy. Up at 6 30 am with fine
Walked with Jim Pringle in the mighty & cool woods.
Bumped & Kit over tonight. Sent Columbus pm

May 4 Sat.

Up at 6 30 this am. Out with John Young taking
bottom shots in water. Worked with Jim in the boat
This pm. Am & Jim & Ross Tenyck & at Buzzards Bay
Bowling.

May 5 Sun

Up & 4 45 & about 11. Went over deep water sounding
with Jim Wood and Jim Pringle. Jim & I caught 6 30 pm
Steam & Boston tonight. Got 11 30 pm Out & 7 45

May 6 Mon.

Caught 6 35 train out & Penn Station & Red Bank
Arrived Red Bank 7 25 and caught bus out &
Watson Labs. Checked up Library for cards & things in.
Called up Morris & Forgotty and wrote supply report.
Telegraph in from Oakland. Wrote up weekly report &
Watson Labs. for 1919-7-1. Arranged Tuesday & Take

Fairbanks & Byrd. 14 & 104 Coast & Survey book micro-
Paragraph from Columbia. Went out & Oakland & took
Poole etc & working on Plymouth, E 5 & Jackson 1915-1
many & and & Byrd. Went over that & just reached
1915-1 and was very tight. Pringle departed at Wood
Hole today. Got today in from Penn Station & from Troy
Car Shop - many things & tests & repairs & to unload
Log Car Frame. Got transformers & 24 & Common &
& Byrd

May 7 Tues.

Jim Pringle & 2 caught 6 35 train out & Red
Bank and crossed Cravath's office at Columbia
University about 9 30 AM. Conference in Cravath
office with Young, Crane, Pringle & Penn Station Red
Bank & Troy & Columbia and Oakland & Cleveland & Troy
& West regarding 1919-1 matters & West with
Hamilton Gardner & Cravath Young Crane
Pringle and others regarding Retirement Pension
Plan for Officers, Petty Officers and Men Coast
& Water Side Surveys & Navy Yards, Crane,
Pringle and Self left about 2 30 PM. to meet Mary
in Troy Car. Arrived & Byrd at Richmond
Shipbuilding Company Penn 10 45 PM. Went to
about 1 AM and then down to Car & change
and additions & this Road with Byrd and
Knight plans for connecting Boom with Log.
Byrd & about 6. Jim Pringle & caught 7 45 train
out & Penn Station and crossing to Red Bank Pier
and

May 8 Wed

Jim Pringle & I went up & Watson Labs this pm
Collected mail etc & signed for air cylinder
and lunch at mess. Packed and stencil order from
for Lunch & Dept trips, Jim & I discussed plans
for completion & tests for Watson work & found
some typographical errors that ought & need
Called up Jim Rice & Camp Lewis found Director
and made appointment for Pringle & me this pm
Went out & Oakland this pm. Got Rock & put
Elevator out on Coast plane and started changes letters

May 9 Mon.

Up & Oakland by Ferry with Jim Day trip to see Rice yesterday. Jim got last 2 parts needed to make ERPI filter. Also started last for transmitter for Eyer field job. Rewound more parts for Woodruff & Chicken. Went out to Oakland with Hyperg. Rewound coils for Gutter and put them in the change station. Rookie working on flywheel, stepping up micrographs. 2 Bell visitors called up and met in Oakland today. Lights out 12m.

May 10 Tue.

Out to Oakland on 6:41 train this AM. Finished fettering up "A" batteries and put all 6 on charge. Opened up boxes of micrographs. Fixed up one but it was shemicker. Field shield took to fix with holding coil. Set up and examined B5 Put used batteries and new instruction book in Discriminator unit & flywheels in rotor Oakland. Called up Wk Bldg and located Jim Peoples and Major Crane left for Wyc and Woods Hole. Mr Card came in this AM with part of supplies Peoples had ordered for Edenfield two buoy transmitter. Checked over these parts

May 11 Sat.

Bought some steak from butcher on RD Cooper & to bus and to Oakland to Worked on flywheels until 5p then came home but could get interested in work & ate supper. Took 3 batteries to charge. Worked for awhile on GR & went out about 9p & worked until 3 batteries on charge until 12m.

May 12 Sun.

Worked on notes & typed on Oakland file. Worked on plans for Oakland & Woods Hole and plans for boats for Reimers.

May 13 Mon.

Up & out this AM. Tried to get something started on work at Oakland but Dan said appropriation not up yet. Called Graham but he is away for day. Worked up monthly status report for 1st-7th. Worked on checking status & trouble shops - may be able to locate trouble for Oakland & also get out from work. Went on bicycle & started work. Mrs. Rice & myself down to the Ferry today to take airplane ride. Came in with Mr & Mrs Reed from Wyc & 2 Woods Hole.

May 14 Tues.

At Oakland. Mrs Reed took trip to Oakland. Went on flywheels with Rookie. Decided on new housing with gate and decided to leave at for awhile. Melted out 4 coils on micrographs & sent to Dayton by Dan and put stage for concrete back. Appears to work good at low pressure. Rookie wound one also all. Left with Jean 4 micrographs to send to Washington. Worked on charge for storage battery & micrographs at Oakland. Rookie and Olin Clarke. Olin & Mrs Crandall for lunch. Left Oakland by Ferry & home. Worked on charging batteries & micrographs. Rookie & Olin Clarke. Olin & Mrs Crandall for lunch. Left Oakland by Ferry & home. Worked on charging batteries & micrographs. Rookie & Olin Clarke. Olin & Mrs Crandall for lunch. Left Oakland by Ferry & home. Worked on charging batteries & micrographs.

May 15 Wed.

At Oakland. Brought out dumfor record microscope and set it up & ran water and connections with pneumatic for telephone & calibrate instruments. Worked original record & connections with pedestal & telephone details until 4 hour stop time & at Oakland the 850 galvanometer showed 20-300 cycles/sec. Steel mercury at 20K. Stefanoff worked Pm on 6 P-8 Cart & Gunther Rees & Carl microscopists on. Wed. Kelly and Wedekoff out to look over Oakland area and got started on changes & modifications.

May 16. 2 hours.

At Watson Labs 8 AM. Rennyl in from Watsonville last, others due in probably by Monday. Contacted repairs & cable & referred to Morgenstern. Peoples & went out to Oakland about 9:30. Mans finished up pedestal with rubber tubing & fine supplies & microbarograph flame mixed. Works OK. Ready to take readings on photo paper. Rode on Transmetta F.F. Other investigators arrived & got chemicals ready for developing. Stefanoff put coils on other microbarographs, worked on 3 units. Peoples calibrated galvanometer 850 & 20 cycles.

May 17 Thu. At Oakland. Worked with Means on microbarograph. Received 35 mm film from Watsonville. Rubber tubing made & put on drift box. Turned up tape recorder. Ready to use. Rode on Transmetta, Stefanoff working on P-8 & Carlson F.F. 2 hours. 5 NYE & 10 Pm Time & Carlson

May 5 Sat.

Received Postal Card from Oakland for truck drivers next Thursday. Peoples & left at 9 with Special Equipment & truck. Picked up Stefanoff at Oakland & got ready & took out Pedestal & Stefanoff & Equipment

May 19 Sun.

At home. Received 2 letters from Watsonville. Letter from Oakland & Red Bank. Called Peoples & Means - Oakland. Mr. Means & Stefanoff & others here. Called Stefanoff re Photographic Paper. Called Oakland. Peoples & I went to Oakland. Means & Carlson & Stefanoff & Others Present. Left Oakland 5 PM. Home & Carlson & Stefanoff Left here 6 PM.

May 21 Tues.

At Oakland, Wedekoff, Peoples and I went over all work & he does, and left 3 new available. Assigned Stefanoff & altering Tel-C and sent to disconnect Badger type recorder, Garland & Ephrata, Stefanoff & Carlson & microphones and means & wires & Springfield instrument. Peoples and I went in to Watsonville about 2:30. Benny came up from Coronado & we went over last year Charts regarding possible route for expedition boat & location agreem. Doc Kaye about 5:

8

May 22 Wed.

At Oakland. McCurdy working on T. W. C. changing wireless aerial also started putting underground cement on storage battery. Oakland & Dooley hydroplanes. Moved flying machines to shipping and got it working this A.M. working on P.C. instruments for messages while wireless sends. Prepared & sent over report of Indian reservation needs and continued and worked it for a day.

May 23 Thurs.

At Oakland. Set up plunger & got it going OK. Put mouthpiece on it & ran some words by. Papa too slow to get frequency right. Put pentagram nuts in Chronograph also nuts DST mouthpiece. Winter helping on this. Came out Pop & he, Purdy, & I went over reports needed for carrying on work, especially long range work.

May 24 Fri.

Up & Victor take from Mr. Guglielmo. Peoples, Pace, Gow, Wyckoff, Connolly, myself and Lieut. Col. Balcombe plans for Coronado operations secretary states; personnel at station and equipment & how to get it out there. Also probability that we must take all & don't stay on 3 or 4 and certain factory equipment not take. Also continuing 1500-1, Jim and 2 tents can out & Oakland at 11. Worked on pentagram. but Springville instrument stays on & worked afternoon. Left apart BSF aerial and resistance up at for dinner.

May 25 Sat.

Up at 6 Rob Roy got working putting up Papa's aerial. Left & Oakland at 9:20 A.M. Wind over 40 miles per hour. Kites would not fly. Very heavy clouds (2-3 cycles). Got 2 interchangeable clear lenses. Packed car & Plymouth and other & Dooley Chevrolet. Got 2 barometers 2 records for each & 10 private detectives. Left Oakland on 3 o'clock ferry. Papa & Peggy came down Newton. Got into Rob about 4:30 P.M. Very cold & windy & Peter.

May 26 Sun.

Letter & Wireless arrived Rob 1 P.M. Marconi Wagner & took them out & Lake Park to afternoon planes. Left about 10 P.M.

May 27 Mon.

Oakland. McCurdy brought out the condensing type aerial 7-21 meters and put it on with the flexible aerial. Wind was too great & rose. Put 2 Springville barographs in flexible and gave copies and repeated instrument with new charts & readings. Messrs. Reed Martin worked with me. Winter made light proof cover for dynamo.

May 28 Tues.

Set 6 records today 2 barographs & into flexible aerial with cable. Worked down & the afternoon on electric wires - good experiments. Up & on roof on & Wireless for & started talking & long for tents (Lieut. Reed and Pete to Papa's room today. Worked on

May 29 Wed.

Used microscopes with bleed valves closed up. Put 200,000 Ω resistors in circuit with microscope slide and set proper dispersion for 2 markers. Had 5 for my wires on one 2 springsetters. Tested supply with magnet in different positions. Got Wallace-Tiernan pressure gauge in the Bm unpacked at once. Need more 5 for disposal use. Put McCandless condenser units in our spring. Galv and checked with regular spring. pickup. Records duplicate pair.

May 30 Thurs.

McCandless & I unpacked at Oakland today. Took galv out of one & spare BST and stole mirror from it. Put mirror on rotor 2 Wallace-Tiernan pressure gauge and ran 2 tests with it empty with McCandless condenser unit. Used cardboard milk on plywood mount. Dryer still hap-hazard test company & with springsetters on job.

May 31 Fri.

McCandless started on different type 3 condenser microphone but broke. Almost decided work out as abandoned this Bm and plan 2 use of type for Virginia elec. Lined up light source & readings on same drum took qualitative readings 2 W.T. & Wallace pressure indicators & comparisons 2 thyratrons with bleed valves 1/2, 1, and 2 turns open. Put Bendix galv movement but has too high freq. Got equipment together, 2 thyr & drum, 1 BST 2 mercs mixed Hg & loaded them on truck to last Sunday

June 1 Sat.

Jim Rapp & 2 crew out to Lakehead 70 Mc Bought new field relay in P.C. Set up one 2 springsetter microbarograph unit in display part together one packing unit that had stored here in boat. Packed up 3 galvanometers and units ready to take to Concord. Left Lak about 1. Breaking up and ready 2 work when this Bm. Rapp went into Hq & got mail. Came back last about 4 left for Concord.

June 2 Sun.

Left Red Bank 7 AM with Cliff Carr & truck 2 drivers, 4 Mexicans from Hq. Went 2 Lakehead loaded up galvanometer FH recorder. Picked up McCandless and my things in Calmar. Rainy test. Drove through 2 Worthington, package on Broadway at Falls church & arrived on 2 Dahlgren, 7:30 PM Navy Pkwy Ground Cmd. Got room at BOQ

June 3 Mon.

Got pass 2 restricted area. Dahlgren - saw Com Caldwell at 9:30. Discussed program and what was lacking. Got maps to need. Decided 2 set up at Purdum Road & try seismic detection, move later 2 Eagle Tunnel Basin. Records not received from Goldtown as yet. Checked up 2 Indian Head, about 25 mi, 20 air miles. & set up apparatus in Corporal's Quarters Parking. Up about 5 PM from Caldwell at Ind Head. Had supper and ran check test to work today. Started into 5 PM on motors. Set up seems very good. Galvanometer tests unsatisfactory. Set at 1 & Dahlgren Equipment not ready again tomorrow available 2 for St. Caldwell says he will find 2 test tunnel in Nov 8 shipment 2 Navy.

June 4 Sun.

Out to Indian land direct from Ballagan. Set up Spangenberg and Anderson T-21 to record on same drum. Fired 100# shot at Ballagan (equivalent of 500# for dry) at 10:45 A. No interference with weak possibly on Ramon Indian which was only visual observation. Rain but too light to stop work but went home for dinner. Set up Riesen Anderson Sm on second drum in dark room. Another 100# shot fired 3:30 P.M. but still no results above general noise level. 2 men from U of A under Varney attended shot at Ballagan with Mark I Hydrophone system.

June 5 Mon

Out to Indian land. Took 15 sm record + Spangenberg one in lab one outside + PE record. Took a record with 2 Spangenbergs - one in dark room one in lab + PE. Hydroff stayed in Ballagan to talk to Gilliland about tobogg shot. Came out to Indian land later + 100# shot about 1000# explosive charge, fired at Ballagan at 11 o'clock. Nothing recorded at Indian land. Packed up all equipment and left Indian land at 12:25 P.m. DST. Arrived in Red Cache 10 o'clock DST.

June 6 Tues.

Out to W.L. Got 2 rod typhoid shots + got pay for trouble 3 checks. Out to Oakhurst with Newton. Got carpenters started making partition in dark room for photo. Worked on Ballagan records. Mac + Newton out to Spangenberg. Compound Dow, Dunphy, Hydroff. People + supply in Ballagan. Packed + out down to Fortuna leaving for Frisco + supply on at Oakhurst. Decided to go Eureka down Monday for final decision on the Jim Creek Point in SEC 2 T 1 S R 1 E Humboldt + Spangenberg. Got Kellogg on Pan with final Sam Blanchard + Pierce. Hydrophone with Anderson. Case called from Washington Post that thing had been stolen + that sudden deaths happening. Called Kellogg tonight and he said a colonel wanted case down but I called + it unnecessary + was upset + refused to let him. Will be in Eureka Monday

June 7 Tue.

Oakhurst. Finished putting tools + records, blankets + supplies + putting Spangenberg in car. Left Oakhurst. Pandora found up dropped bag and left us smile. Caught + finished up dark room. Packed car + Anderson radio again. Out one in afternoon and Corporation with W.F. Chaney + Spencer indicator. Blanks color is very critical. Heard from my graph of wind caught up Tom on Kellogg thing, also called that Dr. had arrested on plane, Hydroff for use of Pacific islands.

June 8 Wed.

Oakhurst. Cleaned up before + after Corporation. Set up + Spangenberg and ran a copy of the Jim Creek point + sent it to Kellogg. Used Spangenberg in dark room for this

June 9 Sun.

Oakhurst. Fixed up Spangenberg + ran a test with all patients in office + Kellogg in Eureka. Left 1 in operation + packed up as well as possible. Checked with one outside.

June 10 Mon.

Met Lowry & Pugsley at RR station and rode out to Oakhurst with them. Doc, Langdon & I went over proofs of general setup of Mt. Mont over winter work with Ireland in explosion at Oakhurst & need getting plans. Ran microbarographs record admirably throughout most of day. Went down to WL for formal conference last Rogers upstairs. I came back to Oakhurst after. Lowry & Oakhurst Jameson over & Thomas & got typewritten sheets. Arrangements for 4th trip. Pugsley and I called back & explosion at WL Hunter acted as this & Corscallen & explosion Grant, Mein, Canterbury, Bentley, O'Connor, yesterday & was away at WL

June 11 Tues.

Oakhurst. Moved Thompson's unit out, Despeaux to Jesse Alley. Set up microbarographs & ran it from 8:22 to 5 PM. Carpenter started on air tight box for microbarographs. Reorganization WL & put down act to Robbs Ryder WL and Upchurch in WL & Administration. Crane set about covers and started preparing memo to Hopper on WL all covers very descriptive about consequences of WL use. Wrote up memo and decided Pugsley could take it to Washington - protect to see Bowie & relative signal data. McCurdy worked airbrush make on Caterpillar Engine - still trouble with dirt. After 6 Crane, Rogers & I called up Lowry in NYC who advised not to [illegible] until Bentley had time to report in Library. Advised secrecy Hopper but not letting any paper get out.

June 12 Wed.

Oakhurst. Ran microbarographs all day. Getting new record at 5 PM. Wrote letter with McCurdy on explosion for newspaper. Upgrade & Clark change plans into top explosion plate. Start pile on putting all mats together - tag, red tents, and wire ammo. Rogers left for Washington & see Col Bowie and Dr Hopper tonight.

June 13 Thurs.

Oakhurst. Stopped work 2 minutes about 10. Wind & WL to go last explosion this Bergt took cores for strength shrinkage. Tuesday just for strength test & weather success. Bentley came down with air gun for Mt. Mont. Tuesday this capacity on pressure reading & explosion - Ireland to take this & data. If wind & cores in by

June 14 Fri.

Oakhurst. Set up Gurney & take readings & back diagram by plane. Mac and I worked 2 1/2 mile out Oakhurst Lyric records and made contact making 3 W-E Brown Ireland. Borg made frame for shed. Left at four stopping 10 & back W. 3 and 5 & any one return & WL 200. Stopping 20 & back at 8:30 - 2 1/2 miles. Record slow with gusty about Noise Level. Worked a while longer for test with whole works in car and record. Thompson left last night to WL to set & have day shakeout & record pressure. Telephone and Bowie to advise this Rep. Pugsley back from visit to Bowie & Hopper in Washington. Finds Hopper is enthusiastic with Library &

June 15 Sat.

Wk this A.M. Took notes in machine shop, located Tuck with Springvalley equipment & started work with Springvalley equipment & started machine shop & engineers & Springvalley down & off there for X mission. Took out, equipment & Oakhurst & unloaded at there. Unpacked Springvalley packing cases. Set back tool & AC motor & gear units & machine shop. Unpacked Accumulator unit & flange units, Peoples, McCurdy & I worked on cinderman motor in afternoon. Took sam readings & left for a long Run Springvalley packing all day in DC motors.

June 16 Sun

Oakhurst. Started running tests with DC motor on Springvalley Comp. Ran for 8 hrs & 30 min. Worked on T-21 condenser units. Stood by in machine shop. Sealed them all up and made test run against C.T. Pressure Indicator. All shows signs of sweden change but not in accord with P.I. are all charges together. Took units out of motor & tried them on floor outside. Ran motor with #3 alone for 2 hours - results fairly good - probably have large temperature effect.

June 17 Mon.

Oakhurst. Started on testing new Springvalley units. Mears, McCurdy, Chantz, People and myself went over to Hospital & Fort Mason and received Cholera and yellow fever shots. Back to test about 11 Vol. 2 new Springvalley showed up, cold wire bag applied without drawing insulation. Pressed these up and tested to 2.5 with #1. Put charges thereon but it made no difference. Got air tight box & tested it but it showed defects wrong with other. McCurdy working on Condenser Units

Repairing accumulator unit & flange units. Left Woodward Gate unit for safety test on Springvalley.

June 18 Tues.

Oakhurst. Started 8 cps galvanometer which needed changing resistance. Fixed up & ran reactance unit gave good deflection with 60 cps. Peoples worked on air tight box and repaired indicated that it would be a electrical connection and not some loose & pinion motion. Peoples and I worked on flange unit and accumulator unit this P.M. McCurdy on Reactance bridge and T-21 condenser units. Came out today with report of the work & data for Murray, also report of the Run & C.T. for 10 hrs & 15 min. Left for Oakhurst with his gang and released Springvalley testing.

June 19 Wed.

Oakhurst. Jim Peoples and I worked on flanges and accumulator units all day. Hooked up a Springvalley & at this P.M. but it would not delay points right yet. Disconnected complete & wiring from motor with condenser packing & worked out at my Station, Brown worked on repairing unit of packing and drawing ready for shipment. Brown and I went out with W.L. Kin Run for second testimony sheet.

June 20 Thurs. Oakland. Brought out Recovery recorder unit from pressure equipment and worked it into recorder equipment. Worked only galvanometer and pressure section this and strengthen into pressure complete. Recovery some agreement through unit in accordance with AT Trial Version run all through days. Afternoon brought down record complete pressure unit but had trouble operating pressure cancelled. Brought unit this unit except for recorder and it worked out OK. Went to Capers wonder Letter & strength pressure letter letter but decided see him for good Checks McCurdy, Capers and I worked until 8 PM

June 21 Fri. Oakland. Packed up pressure equipment to take to Ascension. Cupid packed up spare parts for pressure. McCurdy got together & left recorder equipment. Olsen made up 6 recorder units and weight weights and holders & for more in case of breakdown. Truck out 9AM and picked up equipment for 5 outside stations. Started working upon pressure equipment for outside and using them. 11 o'clock call from AT that orders from Washington were not given out and trip postponed until Monday.

June 22 Sat. Oakland. Set strengthen unit into pressure complete with barometer and took almost continual runs from 07 to 5 now company with AT Pressure Indicator. Regis set Sent 104 lbs set up a strength with galvanometer in back room. Got connection with wire and got break circuit chronometer locked into darkroom record. Worked on finer adjustments of galvanometer this PM and got comparator and working and started into testing, getting it working OK. Left Oak. 5:30 PM

June 23 Sun. Finished rough draft and typed up 5 copies of instructions for strengthen microbarograph. Jim & Dave out to Glen near Mariposa and he got apartment there for 7 months.

June 24 Mon. To W.A. Group going west to Hawaii Wake, Guam, Midway waiting on clearance from Washington. Waited for word from Washington to any channel & all order to Ascension Islands & Unloaded truck at W.A. for months unit with only Ascension Island equipment. -20 bags - 1140 lbs. Mess Martin, 2 Capt WC about 11:30 arrived Airfield 12:30. Left Newark Airport on B-17 #83587 arrived Washington 3:40 PM EST. Saw Lt Roddy for Col. Capen pass and got ticket orders. Left Washington 5:45 EST arrived Morrison Field, West Palm Beach 9:20 EST. B-17 crew: Pilot Lt Col. Dubell, Co-pilot Lt. U.S. Work, Navigator Lt C.B. Bernhart Sgt's Secrest, Miller, Kabasto.

June 25 Tues. Through Pickup, medical, immigration & customs etc. Left Morrison Field 11:21 EST. arrived Barinjin Field, Puerto Rico 16.30 EST.

June 26 Wed. Left Barinjin Field 15:30 EST after partial inspection & flare around Atkinson Field, Georgetown, British Guiana 01:20 GCT

June 27 Thurs.
Left Atlanta Field 1547 GCT, arrived Belem, Brazil 2104 GCT

June 28 Fri
Left Belem, Brazil 1329 GCT, arrived Natal, Brazil 1913 GCT. Left Natal 0210 GCT.

June 29 Sat.
Arrived Ascension Island 1036 GCT. Saw Major Johnston, CO & looked over locations for equipment. Decided on 251 feet after unloading equipment from plane. Lined hole out. Moved 5 Rose Hangers, Protein Pool in 5th and 7 Nursery. Set up Kitchen & ordered equipment.

June 30 Sun.
Worked on equipment, setting up & mounting anti AC, Generators, T-2's, condensers. Everything working OK. Heard by radio "A" back Sheffield at 2200 GCT. But left Ascension for actual about 2300 GCT.

July 1 Mon.
Started all readings into about 0800 GCT. Raw flavanone with C6 and T-2 started about 2400 tonight. Kept taking readings WT Pressure Indicator all night. Jr NW checked pressure in early morning and wrong.

July 2 Tues.
Took WT readings until 1200 today. Started at WT readings earlier each. Called for Rebuilt B-17 in Natal water inspection.

Sgt Gilman P. Hoyes
803 Douglas Blvd
Arcadia, Calif.

July 3 Wed.
Took WT readings thru Today & every Monday Both wave tape. Decided to take C-54 out to Natal & leave B-17 from ATC Rep. Made & got cable for all necessary Paragraphs & switch info from Lt. Jones. Packed up equipment and loaded it in Train Ele afternoon and wrong.

July 4 Thurs
Unable to get B-17 by radio. Boarded equip. & left in C-54 ATC 0930 GCT. Arrived Natal 1630 GCT. B-17 had left for Ascension. Passed it en route in. B-17 took in Natal in wrong.

July 5 Fri.
Left Natal 1317 GCT, arrived Belem 1846 Checked meteorological station, waited for info ordered & left from Greenock.

July 6 Sat.
Left Belem 1256 GCT. Arrived Waller Field Trinidad

July 7 Sun
Left Waller Field, Trinidad Arrived Borinquen Field, Puerto Rico

July 8 Mon
Left Borinquen Field 0700 EST Arrived Newark, NJ 1005 EST. Called WC for trucks. Truck and staff on and off Cessna about 12. Then through customs and immigration. Left Newark about 1. Arrived WC 3:00. Began getting equipment ready for water cleaning. Nobody else back from A bomb tests yet.

July 9 Sun. Unpacked some & repacked. Cleaned up room from around Cowdery. Went over fiction program with Heydorff and Ropley. Worked on comparing WTS (3), and trying to find Schmidtoff & flowmeter errors from.

July 10 Mon. Set up GE recorder (coordpaker type) and used it with T-21 strikes today. Worked on calender runs & T-21 & got equations without chrystal. Set up one & WT models were plotting onto film on GE recorder. Plan & WT demultiplexing ne nuys and spice test correlation was poor on general line.

July 11 Thurs. Worked Condenser units with GE recording Multichannel most of day. Worked on flowmeter #2. Minton ran WT for 2 hrs checking with T-21. Found up 2nd WT for recording on GE meter. Put both recording tonight. Worked started on design & work 24 hrs until WT every thoroughly drew from. Arone & Gifford out for. Gave Tosh one WTS go to Vandalia Iowa

July 12 Fri. Ran both WTs on IE micrometer until about 11. Records duplicated and GE one of WTs showed friction errors on right run. Ran flowmeter most of day & determine causes of disp. Set up recorder & flowmeter & worked condenser units with GE. Worked over fiction program with Heydorff & Taylor.

Red Bank about 6 Pm & 4 G Compt 4 Pk steps put 2 RPC for Cuba tonight. Next Mission all set and the word up on some time.

July 13 Sat
Arrived Cuba about 10 Am. Stayed at the Inn Cuba and two type working there.

July 14 Sun.
Telegram received from Jim Cole tonight that Edna died and he was coming home with her as soon as possible.

July 15 Mon
Called Bentley. He is word that Jim. Cancelled if they can come up.

July 16 Tues
Gene arrived to record cards Atlantic Oregon #10.

July 17 Wed
Jim, Bentley & Children arrived home about 10 Am. Had 7 tenths copy of Edna's Funeral and Jim. Burial for Edna in Greenwood Cem Clio Mich.

July 18 Thurs
Gene Long went to Atlantic Oregon Trucked on single axle 2 way Jim left for Buffalo this morning & Rec'd card from Dayton Ohio from Curtis Wright for Continental.

July 19 Fri.
Gene & Linda Long from Atlantic Or. Gene back from Buffalo tonight. Wayne Long down in Iowa Pentium today. Arrived here after 8 Pm. Short visit this morning.

July 20 Sat.

Jamie left this P.m. for Louisiana. Boudreaux Young up for about the Rodeo.

July 21 Sun.

Joe & Dorothy & children left for Wood Hole, Mass. Marion & Morgan left for Motown Pa & both about 8 pm Helen & Burt stopped over this P.m. from Indiana

July 22 Mon.

Dave went for hanging P.m. North 12 Went & Oglesby & got engine relining stopped at Custer & repaired in safety bar of Great Northern Bank,

July 23 Tues.

No hanging. Showers. Worked 2 2 drove down & Pulaski Ry - 10 Pm and was there at Doyle's Manor Farm. Returned about 5 Pm

July 24 Wed.

Hanging - 5 loads

July 25 Thurs

Hanging 8 loads

July 26 Fri

Hanging 5 loads

July 27 Sat

Hanging - 6 loads

July 28 Sun.

Dave Martha & L drove over to Custer, Jeff Thompson Camp at Wells, Jeff and Elizabeth at Elizabeth Hwy, Ate dinner at Jamies, and drove Thompson Place. Helen, Linda Mark was at Bryans. Camp at Custer Tonight. Cool Cloudy Threatening.

July 29 Mon.

Bryant Style mark Bert Cooley. Camped 99 1/2 Train over 2 Union Station for Red Bank. Got 12 Pr two from Red Bank & Outbound Peoples, waiting on Bonds Oglesby, Ill Cloudy & Cool miles, Drove & Mendota Ry and Rutherford Intermediate,

July 30 Tues

Oakhurst Testing Rubber Gaskets in Reno - 3 Records 1 1/2 and 20 pcs Gaskets Set up 24 hr Observation on Aluminum and started run this P.m. Pegram not up Bonds Oglesby, Oakhurst worked on Bridge 1-2 circuit, Set Nelson tools Ord to get clear and re about Removed Bridge the Nelson.

July 31 Wed

Set up 10 pcs Rubber Gaskets a run Hung meters into Chem, Set up 2 1/2 pc Gaskets a regular Test Book runs 9 Hydraulic 1-21 - 12 1/2 Continually testing,

6

Aug 1. Thurs.

Worked on Redmen drum. Set up 3 BST cents 6 diam in cent. Trap bay & plunged for 2 hours this PM. Rain at in dark noon and raw for 6 hrs.
Army air force day at Wk this PM's Holiday. Carl Hales calling up for NYC — arranged to meet him for lunch Sat noon.

Aug 2 Fri.

Rain 3 Springtails on 3 diff sets on Redmen no use boy — put on chronometer & play. Set up Redmen drum in dark room with 3 1/2 in galv. slanted stings run up tower for Monday test. Col duffy, tutoring Annis plane, out PM with Crane and Dave.

Aug 3 Sat.

Caught early train to N.Y.C. Spent morning at Museum of Natural History. Went up to Carlos Hotel & saw Carl Gerdes, just in from Caracas. Spent afternoon with him and dinner and evening with Jim and Dr Wilson & Gulf Oil. Missed last train and spent night with Carl.

Aug 4 Sun.

Caught 1st early train to Red Bank. Took bus to Oakhurst. Set up 3 BST cents on 1000 ft west of Oakhurst and 1 / 100 ft SE.

Aug 5 Mon

Set up 4 BST cents on 400 ft diam. 3 up at right angles and 1 at 45 to them. Brought out 3 wires in to Oakhurst and 1 wire left road today — 0.04 & 0.3 ohms. Flying rest am Cent. & dropping tools from water up to 40 miles away. Recorded with (1) 6P. (3) 4P5 and Redmen (2) BST and Redmen (Spread) (4) BST and 4 Condenser mike and 6P3.

Aug 6 Tues.

Started records yesterday. Recorded on three scale yesterday and two today. Started at 1 1/2 in and 1 1/2 in Redmen. Recorded BST on top of tower with 7 A. Dark room this PM. — 11 cents going out at 1 min intervals & coming back at 1 min intervals. Recorded on Black Beauty on BST at 7-21, on Redmen tower with 3 BST on top of spool,

Aug 7 Wed.
Worked on records from yesterday's shots. Rounded on Bunk oscillograph film 7-21 Conductor made a 7-21 brings decent results all way out except pr 2 intermediate points. Some poor deflection - data returns probably from sky wave. Lower frequency appearing at longer distances. All results of Bunk oscillograph shown on PST units as it are photographic. Made plans with Crane for shots tomorrow. Late shots received were from about 70 miles away - 10th charge exploding at 12000 ft.

Aug 8 Thurs.
Set out 2 sets (3 each) BSTs about 100 feet distance and located in series - one of the sets and the other of the sets on Rubicon Drainage Post 1 7-21 on top of tower and 1 BST at middle level. Ran level test this PM with BST on way back from Woods Hole. Started about 1/2 mile away and dropped bomb every 1 minute to the crest at 5000 ft level.

Aug 9 Fri.
Worked on yesterday's records. Changed equipment for runs today. Put BST at top of tower. Last it was too noisy and could not use it. Conference with Duffy (Schools Pa) started dropping bombs for 11-25 at 5000 ft at about 150 miles but broke down after 15 bombs.

Aug 10 Sat.
Worked out a Pertinent. Went over all yesterday's records - Bunk oscillograph Rubicon with BSTs tracked. Found explosions for bombs but they did not check with given distances. Plotted on basis of Thursday's station distances calculations.

Aug 11 Sun
Pertinent. Plotted up all bearing & results using 10/3 for most & average constant on plot. Work of 9 Aug runs about 45 miles. Worked out a Pertinent cross position.

Aug 12. Mon
Pertinent. Left with Lt. Simmons in UK Camp Wheeler. Back in Barracks. Saw 2d Duty and got a duplicate payroll prepared. Left reservation about 0300 PM

Aug 13 Tues.
Checked Pertinent's report & results & Pertinent's data. How 2 results may be looked wrong - that Pertinent's accuracy may be poor yet. Worked with Lt. Simmons & calculated T-21 results on pertinent's data. Wrote up on travel duty

Aug

Aug 14. Wed. Papers back from Sacramento. Col Duffy sent me 7-D orders and suggested written program & proposed scheduling & training. Issued my 3 drums for continued operation (1) Spanguette pickups for 45 Lyr & 8 sec gelo (2) 2 BBTs about 1200 apart with 2 sec Rebeam gates (3) 2 auto BBTs (Buck) in series with 1 and 1 sec gate monitor.

Aug 15 Thurs. Drew up rough draft of three way Sand program, 1. Sand properties 2. Contours of top, 3. Contours of new structure with 3 stations about 30 miles apart. Went over plans with Col Duffy this PM

Aug 16 Fri. Worked on wind report supplement. Report had been made up at Camp Evans. Make seven 6 levels, 12 months, Complete drawings applied to velocity & accuracy curves. Survey down PM. Had conference Evans, Duffy, Peoples and myself. Evans & I went over & Peoples for dinner & stayed overnight.

Aug 17 Sat. Peoples and I on Evans down to Sandy Hook and Evans stayed until 1:45 PM. ready to go out for cruise. Went to Oakhurst, met up Jorgensons and Hales Spanguettes and spent night & day as guests of Peoples and PM

Aug 18 Sun.
Out to Oakland. Evans went yesterday and to get Leonard back & we & packages to 651, Capt was late & up and explained the fashion with it. Worked on correspondence for standard case and four ground cases. Spent most of day on Sandbox.

Aug 19 Mon.
Oakland. Continued 651 supplies on Gryphon and Rotary and Cases. Then Pan Worked on stations for 2 and 5 degree cones. Conference etc. - Mrs Spanguette for 3 accelerometers - Atmosphere, Averages, and Standard. Spent day in office & finished last one. Mr Grady & Peoples Gryphon, Evans to Coast Guard & Pan Am Airways, etc. Flew Evans to Bank and went over records & this on radio project.

Aug 20 Tues.
Oakland. Conference with Evans and Mr Grady. We went to the Zoo & then planned Upwards conference report. Worked on it not finished on one copy calculations Pan.

Aug 21 Wed.
Worked on Calculations Cases 651, 1-21 Conference at Camp Evans re State Dept Navy and whether we should go to Camp Peoples on work. Started flight at 10:30 for Atlantic Highlands. Arrived at 12:30 Pan Am and Evans left 1:30 for Sandy Hook Coast Guard

Aug 22 Mon.

Oakhurst. Around water lab to get permanent pass. Worked on calibration curves of BSA at 1-2/ on Beach instrument & Lab 3. Continued work on upper atmosphere with Duffy, Wyckoff & Snyder. Vision cloudy on average wind speeds & directions for various levels.

Aug 23 Tue.

Oakhurst. Worked on calibration records of BSA, TA, & glucose etc. Got stuff on computer & looks pretty. Vision on upper atmosphere wind data. Worked on some more pretty pics.

Aug 24 Sat.

Oakhurst. Replotted graphs & started again on Robinson dam. Changed records on BSA & Hypromellose packages. Plotted graph of ground & ground for 1st repeat case. Worked on paper slide rules for calculating air mass factor.

Aug 25 Sun.

Oakhurst. Got 3 dam records changed & started new ones. Worked on doing very pitch-funneled fluids rule for diffusion & Gadermaciers, plotted up my graphs of ground & ground, DOAG. Spent Sunday Parkside with Jim & Rose Bin

Aug 26 Mon.

Oakhurst. Worked on intensity curves today & on study of upper atmosphere winds, started on my diagrams - ground & ground. Nice and others on calculations and air mass and. Cloudy & foggy coming on from coming at sea

Aug 27 Tues.

Oakhurst. Worked on my diagrams - stepping working on these two. Vision on winds. Down to Naples today.

Aug 28 Wed.

Picked out 3 sites within area to set up deposition radials. Charles put 90 tent at each location, checked gate. varieties and tried to prep tent up as recommended. Used Hypromellose on end & set up to run overnight working with regular Hypromellose.

Aug 29 Thurs.

Worked on changes & strengths & resumes. Made one change today - most except sensitivity. Charles put out 3 BSA3 at all 3 test stations and plastic covers out & then worked with Vision on averages, wind velocities and visible Hypromellose on ocean paths.

Aug 30 Fri.

Set up 3 test up 3 to 11 20 sec photographs on one Robinson dam & 3 Robinson photos on 2nd dam. Put 3 Hypromellose into 4 & 11 photos & 3 BSA receptors into other. Ran one test record. All 3 plots and 3 labs ran 5 took one card and dinners flying test.

21

Aug 31 Sat. Oakhurst. Started 3 thermistor packages together in dark room. Tried to get accurately equal lag magnet placements without success. Took 3 packages and met to Oakhurst test site 1, 2 and 3. Strong winds and packages and connected to Tubicon drum. Worked on BST employing winding for geophone recording. Found up 2 amplifiers and they seemed to work ok. Studied recordings of blasts Saturday or Bank restored.

Sept 1 Sun. Oakhurst. Started up 2 drums with BST pathways about 4. Set up programme at 10.30 and tested out amplifiers. Drums started well 7 geophones and motor noise picked up on record. Worked on ray paths, corrected Hydrographs work & expanded to for other angles from the ground & found calculations

Sept 2 Mon. Oakhurst. Moved geophone amplifiers away from Tubicon motor, added Andreas glass mats. Put on 3 drums, Sp, BST & geophones for 5 to record. Finished ray paths for 5 Kms target & worked on upper wind velocity figures.

Sept 3 Tues. Oakhurst. Calculated average frequency of BST with Charly & arranged w 3 Oakhurst sites. Worked on ray paths at 15 Kms target this pm. Started Varun on ASM calculations

Sept 4 Wed. Oakhurst. Worked up survey notes & plotted in my. Surveyed the 4 front sites but fence and property pins in my way. Put up final 4 wind velocity combinations. Arranged to walk on Sept 7 with Jo T-H. Worked on intensity curves for 15 Km target.

Sept 5 Thurs. Oakhurst. Worked on wave intensity and time distance curves for short in channel. Worked on plans for adaptation of study in Peoples & start again next week. Packing up yesterday's surveying

Sept 6 Fri Oakhurst. Working on real upper Colonel Bagby regarding Pangs to be repeated in Kerry & Drumkelly. Thurstant and others now known. Calculated absorption coefficient and intensities at 20 Kms for ground and channel rays. Discussed at confluence Bagby, People, Lacy Tim overall phase of Project.

Sept 7 Sat. In Oakhurst Park, Ocean Grove, Bundoran Beach walking for rescue

Sept 8 Sun. In Oakhurst Park looking for rescue. Free Pm at Oakhurst. Calculated ground & ground wave distance figures. for Jean 6-6

Sept 9 Mon. Arranged on 2 new stations for T-H to worked on ray paths T-H curves. Varun & Stephen

22

Sept 9 Tues.

Arranged w Lent T-21 station. Drank fairly cut wires & instrument. Vern & Virgil working as my helper. Finished T-K cross with directional control. Decided S end V up & wk B & C ends, working thru navigators over flow Lindbergh & go over for work. To start over again Thursday.

Sept 10 Wed.

Arranged for Vivian to go & work and later came & drew them for Thursday payroll. Also left Edmonton & w cattle 6-53 at Dix. Spent Sp & Dist Station wagons ready for Canmore. Worked on my notes, updated &.

Sept 11 Thurs.

Flight this PM out 50 hours and last 50 hours, starting at 13:00 and ending noted 14:50. Used GR-3 among longest Continuity - 10½ volts, paper, Drew with pencil types & notes, Sp and Bp3 on draw wording. Only found 3 obtained for one.

Sept 12 Fri.

Notes Report on well & GR-3 wording. Did drying work all day, brought in wires & instruments outside area. Worked on draw wording trying to find why wires wanted reduced. Vivian came in about 1:20 with wire from Woody Lake. Went out & found about 60 shots which were worked into good approximate location & distances for return route

Sept 14 Sat. Oakhurst. Went over wording from W to Lake. Obtained all distances Lent & Oakhurst to shot locations. Got velocities (are to W) for return trip, Dried & work outgoing trip but appear to be located wrong. Worked over 4 for GR 3 volts. P.M. & this morning.

Sept 15 Sun. Oakhurst. Went over all notes, GR-3 records, about 2½ volts. Went to Pb Chi Pass & got auto, worked at Hamilton Store, GR 3 & starting Wednesday

Sept 16 Mon. Oakhurst. Put keeping on directions & were ground velocities for long by a fast four hours but accomplished working. V put topographic on & many stations 24 hours was to catch large Blasting explosions. Started T-O cross for return trip & kept (OK) & checked this PM work for correspondence with existing location notes & GR-3. Checked over future operations & plans & arranged to leave for Prince Tuesday, or Friday. Ready for Pass and open navigation & flight out. Data probably wrong, depended on fast radar fixes. Changed Mar Location data, managing data location at 16.

Sept 17 Tues.

Received wires from Oakhurst as saved & left out. Still does not check exactly. Worked up missing notes. Went over work on location & missing days work. Flying Ready from this PM. 20 shots dropped after and went to Jasper by night, arriving there and baby dumping B-29. Goods after Standard for equipment.

23

Sept 18 Wed. Oakland. Stepanoff arrived & worked up GR3 recordings. Checked time on Berkeley record, and on drum recorder (GR1) and started cutting out recordings & charts on GR-3. 19 charts made all recorded. Worked on latitudes and departures for surveying of Oakland. Moved today from 49 Riverside Ave, Red Bank to 611 63rd Ave Cadwalader Park.

Sept 19 Thurs. Oakland. Worked up charts for determination of azimuths & measuring rays from 4-5, 4-5 also 3 times, and charts for computing Pot distances for azimuths, Vivian finishing cutting out recordings & charts and working on drum recordings filing.

Sept 20 Fri Oakland. Ewing and Lyckhaus & NBS in today. Conference regarding contract with NBS for constant altitude balloons and radio links. Went over Ewings work as far with him. 3 complete profiles & part of 4th finished this season. Went over results of flights at Oakland with Ewing. Discussed future plans as bad weather other flights can be scheduled. Possibility of getting WBT & RCA if surface charges from boat and also charges for GR3 recorders & test wires Coils & rockets. Vivian & I worked on records from Cruise 7. Stepanoff finished data for azimuth determination chart.

Sept 21 Sat. Oakland. Finished plotting chart for azimuth determinations & started on intensity as measured at Oakland water. Worked out local azimuth correction test decided plotting was better. Finished three Sept 21 & calculated new angles & approach. Rained most of day.

Sept 22 Sun. Up & Oakland for about three hours. Worked up a few more curves and got together this more intensity practice for flight

Sept 23 Mon. Oakland. Finished intensity calculations - Flight 7. Investigating possibility of getting standard signal periodically at Oakland to check variations in near ground reception. Worked up amplitude curves flight 7 for all stations. Unable to market any of plots & recordings secured with partly & annuals Out & Proper tonight

Sept 24 Tues. Oakland. Stepanoff on any parts - different variations & wind velocity. Went over navigation - Bowles Cruise 6 with Bache and Oakes N. J. worked on Cruise 6 - outgoing trip - marked up over navigation scheme which failed to take. Time & pressure runs. Plotted time distance curves for all recorded at WBT but unable to identify any stay waves. Worked on maximum intensity & winds.

24

Sept 25 Wed Oakhurst. Worked on Charts 4 and 5, recomputing data of navigation and recording, and plotting new T-D curves. Wrote about 3 pages report on flights 3 & 4 working on maximum elevation of upper atmosphere winds 88 off Bar. Started on T-D curves Thornton day more cross

Sept 26 Thurs. Oakhurst. Worked up scheme for shooting in Long Island Sound with "Astrion". Talked plans over with Pakes, who went ahead trying to get permission. Found that it would probably require several weeks. Talked over personality of many 446 as radar and Astrion as depth sounder. Verified characteristics of BST with view of changing it to 1 cycle but found it would be impossible. Vivian and Ordway, Lyon off on my paths. Charley put out T-21 microphones & hydrophones & took up some shooting from east.

Sept 27 Fri. Oakhurst. Went over pamphlet on wind information as per Gast. Worked out method for Low frequency Calculations & Printed a Daily Station on Springfield Calculations. Went over Relocation regarding boats for shooting with Pryor and Col Duffy. Duffy refused to let me on shooting boat with a 88. Woolard & WHOI said he would be sure if they could get shots from way or if they were willing to put batteries under water. Col Duffy got in contact with a Mr Wellett who is at Fort Monmouth and as a Mr Ramsey at Astria Point he may agree to help with our shooting. In contact him Monday. Jim & I went over Alamogordo prospect and decided to try to get out Oct 10th shooting - Pryor & so out west.

Sept 28 Sat. Oakhurst. 8 hours working on Springfield Calculations.

Sept 29 Sun. Oakhurst

Sept 30 Mon. Oakhurst. Made plans for shooting with WHOI boat & 446 over water. Talked to Oakley over phone. Made plans to get Astria & Work Hole Transmissions. Went over plans with Vivian. Left. Went to Calibrating Springfield. Decided on instruments to use for Idaho tests. Talked over Alamogordo plans with Jim.

Oct 1 Tues. Caught 0541 train out to Cranbury Park, 800 train out to 446 and 0700 PM train out to Barton, arrived at WHOI about 0945. Talked to Oakley about plans. 446 not arrived yet. Weather rough. Talked to Charles for article + plans. Stayed at Oakleys tonight. Worked, Vivian out as entrance from Air Force.

Oct 2 Wed. Studied regulations for flooding charges. Had Stan make up some forms we could use. Talked to Dr Pyle & Navy & regarding his expenses shooting explosives. Worked on BST under at WHOI with Dot Ryder and checked & changed methods location. Studied pamphlets & mailing BST & drawings to Pennsylvania. Talked to Mrs. Ewing about time delays there, and Oakley arranged with Coast Guard commander. Arranged to go explosives at Otis Field early tomorrow morning. 446 not in yet though talked with Rogers at Oakhurst who said he believed he was today

Oct 3 Thurs. Worked. Vess back from New London. Went to Otis Dock with acetylene & WHOT truck & got 18 cases of TNT, leaving about 26 cases there. Changed location of BST, putting it on 100 ft bet mess 100 mess Hut. Got together core drawstem cable that Young used on deep sea work. Called Oakland but talked to Oakes, & he said 446 was on way up. Talked to Dr Cady regarding mooring there, decided to shoot very ½ hour and gave him instructions for working. Left WHOT about 1 in Asterias with 3 crew members. Covered on Block Island about 6:30 PM and met up with 446 which had gone to WHOT & gone up & then had passed us on way to Block Island. Met Hickman & 446 and arranged work for tomorrow.

Oct 4 Fri. Left Block Island with "Asterias" about 4:30 and arrived at location about 7:30 AM. Set up first Charge (24#) at 7:32. Lost all floats and trailers used. Shot charges 48, 72 and 96 pounds at 8, 8:30, 9, 9:30, 10, 11, 12, 13 14, 15 and 16 o'clock. Used lye grapnel, tender, and finally had last results with one 2 can floats and 6' 2X4 frame & buoy 4 from capsizing. 446 met us about 5 and stayed with us all day. Covered area south of Montauk Point and between mainland Point and Block Island. 446 got positions with Radar. After 4 o'clock past 446 left for Montauk Point & we left on Asterias for WHOT, arriving there about midnight. Talked to Capt Thurs twice today about 446 but as party Oakland was not getting results

Oct 5. Sat. Windows WHOT moorings - 3rd & 4th buoy stars are good, all others absent or from. Started getting soundings and positions. Made plans for future mooring next week. Left Woods Hole on 11:20 train to Boston, then 2:00 PM NYC and 10:30 to Asbury Park, arriving there about midnight.

Oct 6 Sun. Oakland for 2-3 hours this P.M. Looked over Oakland results highly & Cruise &

Oct 7 Mon. Oakland. Plotted up T-D curves for moorings measured at Woods Hole and at Oakland. Started GR 3 and Pierce results.

Oct 8 Tues. Oakland. Working Cruise & Dr Bowen calibrating on 20 sec galvanometer & finding station names for Woods Hole trip.

Oct 9 Wed Oakland. Calibrated Lyp pickup with 1 sec galvanometer for Woods Hole and Woods Hole. Got new Lyp calibrations together.

Oct 10 Thurs. Oakland. Finished calibrations. Celebrated last night Custers in Cecil Ray Present Lyp with two gals most 2 day - Lyp with 20 sec gals also. Bad navigation - WHOT cannot record Asterias through Block Island until possibly Monday. Vess worked on round stations for Lyp stations. Woods Hole Oakland, Albany & Alexandria for Island Cruise 46.

Oct 11 Fri. Oakland. Went today over. Worked on wind data. Ran up today with fuel gals and DO over gals. Went over Alameda Exp with Peoples. Received advice words not for me in case I am needed there. Dots from Bs V&C & Pullman & Canton.

Oct 12 Sat. Raining. Got trays home from RR - photos out.

Oct 13 Sun. At home. Left Canton on 2:05 train. Bs V&C. Got Pullman at Walbridge

Oct 14 Mon. V&C. Boys sent to trap out. Arrived Asbury Park P.M. Called up Jim & found V&O planned tests starting 8 A.M.

Oct 15 Tues. Ran tests today. Dots GR-3, BST. Block meetings 8-9-11 11-1-3. Bid Oakley called up 13 and Ross had radio from Block Island - that they were outside to operate today. Jensen ran wire for Boys.

Oct 16 Wed. Dots today on Oakland. Just Vivian out with rain & plane just Colds Made 15 ext ups working down. Ran tests at Oakland 8-9 10-11- Carl Ashley called up that ship had gone NE at 8 and quit work with us shipped because of rough water. Wind comes & change ran like h. Got Wradstaff ready & up with Vivian. Packed out etc & cut up van.

Oct 17 Thursday. Oakland. No shooting from W&O. Oakley - Jim Kemp. Worked on recording drum.

Oct 18 Friday. Oakland. No shooting from W&O - trips cancelled and boat returned to Woods Hole. Set up recording drum & temp and took record. Got permission for Earle to record in this area if suitable. Got town winds data from Brenner and worked up some graphs on it. Personnel confusion with Hoyles and Duffy.

Oct 19 Saturday. Asbury Park.

Oct 20 Sunday. Up at Oakland 11 to 4. Went over ground program and ground study of ~~of~~ courses.

Oct 21 Monday. Oakland. Went over work at with Vivian & Francis. Duffy, McCarty, Moore - 2 left in army car at 8:48 for N.Y.C. Arrived about 11 o'Clock. went to N.Y.C and had conference with Gilliland, Schneider, Hickman. Lunch noon. after lunch, Duffy, Popley, Gilchrist, Emmons, and myself discussed preliminary plant work. While on Liberty was with Hickman, Klemstine and Merry was with Schneider. at 3 went down to Evans Wire & Cable and had conference with Brandeau, Emmy, Gilchrist, Popley, Duffy, Merry, McCarty - myself. Left about 6, picked up Lucille down from Dreamland ~~Lyon~~ Lyon & Duffy up at Newark airport. Arrived Up about 8:30

27

Oct 22 Tues. Firing from batteries today. Recorded 10.5" mounts on Brush with T-7½° Smoothy, BS13 on Ambrose down + T-4½ on GK3 at Oakland for 8, 9, 10, 11, 12, 13, 14, 15" and 16 hours. Pottery depots around range 5010. Vivian + Wesley left van out about noon + did not get back until after dark with BST.

Oct 23 Wed Firing from batteries today. Recorded 10-11-12-13-14 shots - powder all gone. Jerry called for that all shots had gone off per schedule yesterday. Vivian went out in van and worked 12½-14 shots with BST down 11 miles away.

Oct 24 Thurs. No firing today. Vivian + I worked on records of Oct 22-23. Dr Carlson in Oak + went over records of all mines and discussed matters, etc

Oct 25 Fri Vivian + I worked on meteorological data for various cruises + got ready for conference today. Hellman, Emmons, Spilhaus in from N Y S. Went over all results with Emmons and he and Vivian and I discussed plans for future work regarding meteorological data.

Oct 26 Sat. With Jim + Rose this evening. Oak + down with Hunsaker + Eaton + Ed Brown + wife.

Oct 27 Sun. Up to HYC with Jim + Rose. - Looked over battleships. up at Eaton + family. Called Ed Doolittle + arranged to see him next weekend.

Oct 28 Mon. Oakhurst. Vivian worked on recordings GK3, Brush + BST for Cruises 10-11. Went over records + made notes. Found + recovered 1 quite good, 1 all plotting up as they were. Wrote Bro + letter regarding future plans. Typing up translation of Russian article.

Oct 29 Tues. Oakhurst. Finished up tabulation of recordings for Cruises 10-11. V worked up plans for new building for Vivian. Stepanoff finished up Russian translation and started on letters for azimuths, using GK3 etc.

Oct 30 Wed. Oakhurst. Worked on azimuths and velocities for recordings of Cruises 10-11. Stepanoff finished up azimuth plans and started on telegram, letters + memos. Pepito went over to Camp Evans + Library Pa

Oct 31 Thurs. Oakhurst. Worked on shock waves from 4 shots. Started calculations and turned them over to Stepanoff. Finished up azimuth and velocity determinations. Made plans for shots for tomorrow.

28

Nov 1 Fri. Oakhurst. Started out to ride on shock waves from artillery shells. I worked on filling in forms of data for Cruises 10-11. Stephanoff worked on ray paths for shock or wakes.

Nov 2. Sat. Out to Lt Balls today with Chantz

Nov 3 Sun. Asbury Park.

Nov 4 Mon Oakhurst. Conference this AM with Col Cole & Dr O'Day, & V-2 Panel Advisory Board regarding written test part in V-2 tests. Mr O'Day & I left in P.M.

Nov 5 Tues. Capt Jakowsky & I went over to Camp Evans this AM to the V-2 Advisory Panel Meeting. Left at noon. Discussion around noon on V-2 tests needed, Needs of Telemetering personnel & Transducers & results & Oct 10 firing. Visitors noted on light current trouble using Arnold & Bickley & Bissey & Jim Peyton N.Y. & Florida to interpret personnel for Florida Cape Canaveral

Nov 6 Wed.

Started-to type suggestions against time for sound tests, Writing up 4 page report for analysis & meetings from Tuesday & Thursday Flight schedules were on proposed printing schemes given. Went sick leave.

Nov 7 2 hours.

Final Off from attendance back @ Oakhurst on a special car-car. Set new signal on 3-4 @ 5-4 5. Left today on Klipp. Ireland and Olson on Klipp. Last made 3 more tests and some runs made with both motors shut off. Read information about proj 6 & published report data from Emmons. Klipping on ray diagrams for July & Aug, I worked up Cruise 9 & R-3 recordings.

Nov 8 Fri Oakhurst Spoke on a Thesis Am. Essay in late preparing negatives for Friend Irving. Driving around about 4 and closed for only few minutes. Worked all today. Klipping on Cruise 3 ray diagrams. Reading Charts & Recording Runs. Caught time & RPG 5-3 and next Runs, Doubling Jos, Lundy & Greene Mains, Bentley & Schlesinger and 2 Camp at 10 & Pullman & Gentle Target

Nov 9 Sat. Came out on Comet Victoria arrived home about 1?

Nov 10 Sun At home

Nov 11 Mon At home. Worked & Typed on Pullman proposal & RPG

Nov 12 Tues. Arrived Asbury Oakhurst. Left for Asbury. Has & Oakhurst. Plans flights which not ready accd & ordnance Officer. Checked over plans & was ready with Jim, Looked Cruise 9 records,

29

Nov 13 Wed. Oakhurst. Worked with Chant, on drum recording. Finished up study of Alamogordo and wrote up report and list of items of importance for planning tests there. Duffy and Brennan left for Alamogordo this P.M. Got inventory of all drums and packages of Ope & Returns. Hyanny on Aug 5 ray diagrams, Vivian viewing Oct 16 records for group Hotpoint Co. Chant, more furnaces in workhouse tonight.

Nov 14 Thurs. Oakhurst. Chant, on drums, GR-3, 2 worked on maps. Got 3 drums operating. 1 on Oppenheimer & Ray 5 wks. Jean typed up Alamogordo report that we took. Olson and Fenton on Water Tube & Tank 7-21 at Coal pressures.

Nov 15 Fri. Left Ashbury Park 7½ train to Newton. Changed at Newton and arrived at Washington about noon. Went out to see J. L. Hendricks in Bedford Hills Building about 1½. Discussed with him future contract Cinch fingerprint classifier. Caught 4 o'clock train and Ashbury Park via Newark at 9½ P.M.

Nov 16 Sat. Ashbury Park.

Nov 17 Sun Ashbury Park

Nov 18 Mon Oakhurst. Received 2 articles about temperature & upper stratosphere. Got results of day's flights from Simons and calculated V. H. Gregory. Plotted all wind direction data from Denver

Nov 19 Tues. Oakhurst. Rewound articles on wind in upper troposphere - Chant, busy working on drums. Hyanny on more flights, Vivian on sick leave

Nov 20 Wed. Oakhurst. Made Co determination with detonator using T-215 with plugs out. McCurdy has completed for Mt. which finishes about 1 spec. Vivian on visits from Denver.

Nov 21 Thurs Oakhurst. Made Co determination from Lots 1 with 15 sec fused detonators. Worked with McCurdy on 1st spec instrument using Hyanny. Started Hyanny on Aug 8 data, Mann started Compilation of Denver data.

Nov 22 Fri. 7140 - train

Nov 23 Sat Philadelphia Cyclone 1/40 & see Marion a while. Up to Apartment for Thanksgiving at Newtown.

Nov 24 Sun. Newtown. Back to Philly 12 P.M. Caught 7½ train to Ashbury Park.

Nov 25 Mon Oakhurst. Worked on Brennan report & Alamogordo things. Checked on Hyanny's Denver data. Read Britton article on shock waves.

Nov 26 Tues Oakhurst. Worked on 7140 data & Engineering. Worked with Vivian on compilation of Wash Jan Denver & Hyanny on Aug 5 ray paths. Started plans for Alamogordo trip.

Nov 27 Wed Oakhurst. Finished up altitude-velocity data from 7140 flights. Simons called up that he wanted me in Pitts. Worked with Chant on Hyanny's setup and Exposures. Received telegram.

Feb 21. Friday. Alamogordo. Went to White Sands Proving Ground with Pritchard, Magruder, Lt. Neil Ellis Browning for V-2 critique. 5:20 A/C Carried from motor shop about 45 min. up and finally found the POL dump at Pad 37 and Alamogordo. No transmitter here & R.V. got, worked on RC-8 most today.

Feb 22 Sat. Alamogordo. Worked on data all day today. Conflicts between the Brown and Dana data for burnout accuracy. Worked total trend lines for apogee, both Dana and Brown and burnout accuracy, velocity up to about 65 km. Velocity varies from about 720 km up 0.60. Average velocity at 60 km is about 320 m/sec.

Feb 23 Sun. Worked on data reduction from RC-3. Worked some plots and found D varies up to 75 km, average velocity about 420 m/sec up top, plotted and left work at 2 pm and drove up Tularosa Pass and checked RC-8 and checked all packages.

Feb 24 Mon. Alamogordo. worked for air transportation, but not much available and ended at last. Worked on V-2 records, frequency and dimension analysis - 53 shots and plotted up to date

at Dona and marked wire capsule at 1400. Got one wagon to drive 7 miles to after it had left ground.

Feb 25 Tues. Alamogordo. Went out to Dona site, arranged on #6, took down shelter. To Dona site, put up RR-3 in shelter, arranged on #6, went to Tularosa site, about 2-3 miles NW Tularosa town, picked most of WSPG and got permission for 5 cal. 1 arranged for telegram for use as test was confirmed.

Feb 26 Wed. Alamogordo. Worked on RR-3 records, 20 and 21 packed. Then on Pilot chart up to 70 km. Left for Cambridge WAC 9 flight 7 hr. C-97 Hoffman Manager, Pilot Capt. Arrived in Newark 9 pm.

Feb 27 Thurs. Arrived Newark 9 pm. Lunch, Dept, Mostly a general run from Middleton to Long & Wilmington and back to work on work there. Confirmed future meetings Upham Am. Rocketry, Peoples, Rocket Society, Lunch Upham

Feb 28 Fri. Oakhurst. Driving up from NYC. Went down Alamogordo records with Long, Rogers, Krakowski. Out to Rogers Agent

41

March 1 Saturday, Ashley Park

March 2 Sunday. Oakhurst. Worked on calculations for wind translations.

March 3 Monday. Oakhurst. Colgrave Alamogordo trip water transmissometer. Getting together equipment for Alamogordo. Thompson going also to get information on working same there. Worked on calculations for Vs.

March 4 Tuesday. Thompson and I depart Hoffman car about 9:30, arrive at Newark 10:45 P.M. loaded up B-25 with equipment & left about 12:30 P.M. stopped at Midlothian and picked up radio. Stopped at Scott Field & Rankin Fraud for gas. Arrived at Alamogordo 2 P.M. Crew B-25, Hoffman, Dr. Zinke, Hancock.

March 5 Wednesday. Alamogordo. Charley Thompson. Myself out to Tularosa Base and arranged with X setup and run out wires. Back about 2. Olsen working on checking T-24's. Worked on radar and T-24's until 9 tonight.

March 6 Thursday - Alamogordo - Snowing - Rocket project called off until tomorrow. Charley out to Tularosa and complete installations. Val & I checked over frequency equipment & went out to Tularosa but with it this P.M. Ready & run on radar to Patterson Drive.

March 7 Friday Alamogordo. At 8 A.M. Patterson got card ticket moved so off between 10 & and 12. Phil and Val went out to Area and finishing setup with complete system. Hoffman, Dr. Zinke & Thompson with them in staff car. 2 trucks jeep and went out to Tularosa site. Radar off at 11:13. Set working on C-Band unit for Patterson guard. This - Val got OK Results from this site. Thompson opened up looking after jeep and met and talked with Andrews Group. Kept Alamogordo 8 to 5 P.M. B-25 with Hoffman, Dr. Zinke. Photo trouble on way out & started back 12 Noon with cap back home.

March 8, Sat. Hoffman and Alamogordo and Cowgirl Marfa & Schumber C-47 home bound for Florida. Thompson & Hancock & Dr. Zinke. O.C. V35 Inside with Thompson gauge and then trouble with speed control 10 A.M. Left Ashley Park 12 & landed at Patterson 2 P.M. from Patterson to Newark. Almost 4 of 9 P.M. & stayed there overnight. p5 p6

March 9 Sun. Left Newark 9:30 A.M. C-47 Hancock & Schumber and landed at Newark 1:30. Thompson and took them to Ashley Park & from Co. station to Ashley Park 3 P.M.

March 10 Mon. Oakhurst. Vivian and I worked up Flight 25 Part 5 1.2. Started Flight 26 V2 worked 5 hours.

March 11 Tues. Oakhurst. Vivian and I worked on Flights 25, 24 Flight 26 Working Part 1 of 9 Part 2 of 2 Part 3 of 9 Edison on V2 until March 7. Page 24

March 12 Wed. Oakhurst. Vivian & I worked on notes. Flight 26. and started Flight 23. Edison worked on Pine Site V2 Thompson and I went over Chungdale Notes.

March 13 Thurs. Oakhurst. Worked with Vivian notes on Flight 23 - 22. Worked on Johnson Site 3 V2 - 3 March. Edison worked on Lounsbury Site V2. Flight 27 Friday - at 12 noon and at 4 PM. Probably last of Flights.

March 14 Fri. Oakhurst. Vivian worked on identification of artifacts last year's animals. Eg gave me 2 big arrows. Probably Peoples and myself working report for Forest Rec. on burial program to be read around by Thompson to Washington. Edison worked on V2 records #21

March 15 Sat. Oakhurst.
Worked up survey of Lounsbury area and Johnson site & plotted all sites on air map. Worked on V2 worked 7 hours work.

March 16 Sun Oakhurst.
Worked on notes for road circulation until 2 PM. Rested & went to Dr Eaton's tonight.

March 17 Mon Oakhurst.
Vivian plotted up all test pit areas. Worked on equipment list for Chungdale. Worked on notes & me for road circulation.

March 18 Tues Oakhurst.
Worked with V. Checked through all Profile Records. Worked on working State Recording PM. Edison working on V2 Rockets.

March 19 Wed. Oakhurst.
Received [redacted] Flights 24 & Flight 25 Got one report from Oakhurst last week only one. Received records of Jan 23rd and started on stratigraphic & calculations. Edison working on corrections Jan 20 worked from notebook not started. Both up from Florida Trail Station, only 2 go to Chungdale not done

March 20 Thursday, Oakhurst.

Went over final calculations for stratosphere data using Kennie method of Jan 23 data with Vivian. Got V=325 at 3 kms. Studied agenda on that data and got ready for Seattle on June 27th. Worked with Edson on rocket Jan 23 data correcting for wet data and plotting final A against X in kms from surface for 1/30 data.

March 21 Friday, Oakhurst

Worked on Alamogordo plans — Lucia & Clowry over this PM and we went over all future flights, including bombing for Alamogordo. Worked on rocket data with Edson and on flight data with V. Stipanuk on way to the 13.

March 22. Saturday, Oakhurst.

Went over all V-2 rocket data. Finished azimuth - elevation graphs. & studied W/C. Enjoyed 3 hours. Caught 5:37 train from Arbury Park - 10:45 stopped by W.C.

March 23 Sunday. At home. Serviced Custer about 9. Left on sleeper tonight about 8 P.M.

March 24 Monday. Arrived W/C about 7. At 9:30 went up to talk with Dyer at 1120 - Washington Square. Met Jan Bennett & W.L. Found that Dr Emmons would not be in until late and decided not to wait but enjoyed 45 Cokes

& Library Park. Went over shipment ready for Alamogordo and was busy with Woods and Edson. Packing tonight.

March 25 Tuesday. Drove at Oakhurst about 9 with acetylene all equipment & supplies about 3000# total including Todd, Edmonston, Reynolds, Thompson, Porter, Stobbe and Dyer about 10 and went through to switch to Ford in staff car. B-1, Canada, pilot, Co-pilot. Left Oakhurst field about 3 P.M. High cloud cover. Went southern route stopped at Maxwell field, Alabama kept it. Thompson stayed behind waiting for B-40.

March 26. Wednesday. Left Maxwell field, Ala. about 9 and landed in Alamogordo 3 P.M.

March 27 Thursday. Alamogordo. Phil Eyster and 2 men out & drove pile, took in all wire hooked down tent and Kodium equipment and took it over to new site and 2 Dodge trucks. Hung out wire arranged in site & set up Kodium Lab. Lab. Edmonson, Stobbe, Porter working on equipment & also radio antenna.

March 28 Sunday. Alamogordo. Went out with Stobbe, Porter & Eyster - took west 2 antenna located site & surveyed it, put up shelter and set up Lab. Phil and Stipanuk went up to Socorro site. Pat & Edmonson worked on Lab and two engineers. Dupont, Johnson and B-40 from arrived

March 29 Det. Alamogordo

March 30 Fri. Alamogordo. Phil and I went out to drive pile and picked up some equipment and then out to Socorro site. Set up Kodium & took record. Dried & Det Thompson & Dunmore to west 7 White Sands Test Ground for road.

March 31 Mon. Abongale. Charly Dm, Byel Enoch and Ace went out to 1 F. White Sands and Lukuse also to push forward Pickets. Sgt Edwardson, Hughes and 2 went out at Osma site. Chas Pvary moved tent and Pickens to #3 position and put up low frequency apparatus.

April 1 Tues. Lt Robert Jr was wounded at 1310 this P.M. Charly and Dm at Lukuse, Hoskins + Hughes at East White Sands, but and Edmonson at Osma, Porter and 2 at Lukuse. All of stations got Enemy messages. Chas's low frequency instrument at Osma did not work any.

April 2 Wed. Hughes, Major Magnus Johnson and myself went over to A Co Hdqrs office this A.M. regarding sending runner. There are many disputes about the boundary line, mostly that so many new Groups have moved on and are Letting up on the position range. Johnson + I went over to see Major Patchen this A.M. regarding some matter. Wrote memo regarding keeping work to take to Co Hdqrs tomorrow. Hughes left for Bn Hdqrs. Edmond Bell & went to Osma and Tuesday and later Edmonson at Lukuse. Dan and Abdi went to White Sands and Pickens at Osma. Got another Enemy message Enoch Pickens + Lt from Pickens worked on E White Sands duty 12-noon 85 pickets - worked on 4

Porter worked on Calculator Pvt Sabo and Edmonson Pvt Cyphers Enemy Code Pvt Abongale Pvt Lukuse Pvt Hoskins Pvt Osma Pvt Hughes Pvt Pickens

April 3 Thurs. Osma and Edmonds on low frequency apparatus. All Pvts. changed from 8 Hdqrs. Edmonds, Bissett went out to Lukuse and Osma, Set Cemetery and hospital tent from Lukuse.

April 4 Fri. Reynolds and I went out to Osma Range and checked PB. Bombing Proj. Set up wires and did messages. Charly and Porter a congratulations Cpl's

April 5 Sat Abongale.

April 6 Sun Cloudy cloudy. Cleaned out barge and replaced tents out at East White Sands Site

April 7 Mon. Talked to Patchen on 'phone tomorrow. Sent him memo and 2 reports for Major Report to date, talked to Lt. Dyer & Signal Corps regarding procedure for tomorrow firing. Charly and Bill went out to Lukuse and put that site ready. All report checked for tomorrow, Edmonson and Reynolds ran Osma sending & Receiving low frequency report. all true. Porter and I worked on cryptograms and frequency & all messages Cpl's firing and started calculations. Edmonds worked on calculations & all messages Cpl's 3rd vehicle and all trip tickets for tomorrow

April 8 Sun. Ops 2 & 2 went out 7 am to Oscuro site. Arrived 9 a set up radio & T. HS. Rocket due at 11, changed until 12 10. Very windy then, all settings at 8. Ran 3 rolls test and nothing came in. Charly at Tularosa alone — Goldie and Reynolds at E. White Sands — Olson and Edmonston at Dona — All sites windy but 3 clear ones got Dona signals.

April 9 Wed. Worked on yesterday's records. Made packs on Dona, East White Sands and Tularosa. Found anchor on Oscuro site recordings. Don and Bill Jr went out to East White Sands site and took recordings with photophone & got GR3 atlanta calibration. Col Olson left this P.M. for San Diego. Wrote letters to Vivian and Jean tonight

April 10 Thurs. Al and Phil worked on rocket recordings. — azimuth vs elevation angle. Don and I went out to Tularosa Range and checked bombing data — bombing range just north of Range Camp and another site between that and our Tularosa site. Triangulated in with Tularosa Peak, etc. Thompson left in 45° for East. Goldie and Edmondson went with him.

April 11 Fri. Ops 2 went out past Tularosa site looking for bombing data. What looked like a Grand Jury Range and 8 Cer sites. Charly & Porter working on Calculator G & 23 and R 21 calculations.

April 12 Sat. Attempted Air Base

April 13 Sun. Worked on board for triangulation without using Compass. — Attempted Air Base

April 14 Mon. Porter, Charly - 2 worked on GR3 and GR8 calibration curves for focusing and attenuation settings. Don bombed around myself — Don, Al & Bill got azimuth at Air base. Wrote letters to Vivian and Eileen tonight

April 15 Tues. Alamogordo. B-29 arrived today — Lt Col. McCurdy. Working on Norden manual — 4149th Lewis, Work, Barnhoff, Adams, Duff. Worked home on magnetic calibrations *

April 16 Wed. Alamogordo. Charly and Porter out to East White Sands and Tularosa sites to check GR3 azimuth for tomorrow. Wandroff, Porter and Mc Curdy working on bombing azimuth for tomorrow. Worked, Bell, Work and I went out to Dona site. Third January Dona site. Flying out wires and left magnet for tomorrow's flying. Mc Curdy working tonight on bombing. Olson in from San Diego this P.M. Lewis, Burt and I checked with Major Mitchell's Pico regarding bombing site. Mitchell said CO Hop. Flying Control bombing pass direction in every way except change along Tularosa road.

April 17 Thurs. Up at 4 A.M., light plane with Capt Rescigno and looked over area west of Tularosa as far as the mountains, where bombing sites are to be located.

p8/

April 17 Thurs. Vr formn 424 scheduled for 11 Acft. Chaney - Pontius & Anderson Kaye, Reynolds, Woodruff & Earl White Sands. Woodruff with low frequency grunt from 1 Train 6R3; Oliver Cabaniss, radio trouble on B-29 at Roswell - Bert Edwards ordered by wire to Florida about 11 and went out & Dona - Capt Davis, Ingraff & Manning came Rate. Vr postponed from 11 to 1610. Inspections assigned to 93 BW SCEL. Only 1 wkend, Anderson late - Said key instrument - had 3 working but no dive, Earl white sands - Ok most all, three papers signed. Dona 216 05, Sunday Cave rate - Ok to fort & radio tapes farmed as stated ref. McCauley airborne low frequency grunt on Range - Knock sink and on Rubber dummy but mandrel grunted to SCEL radio transmitter satisfied.

April 18 Fri. B-29 took off for Middletown and Newark about 720 from Alamogordo with all personnel that came down with A. Short Perfect & little engine trouble - 1 engine to that boundary was could be continued on East Coast. Others on & home Edwards Reynolds Lum with V 216 and take Oliver, Chaney & V 216 back East. Set up equipment together & 93 BW Gilmont for Helgeland equipment & ran engine 10 to 3 P.m. Checked over all wiring. Oliver and Reynolds on & Dona and brought mail & engine except wire.

April 19 Sat. Off & El Paso with Bill E. this Afm. Got recorders & Houston went weekend.

April 20 Sun. Worked on plans for tracking van and VT mounting.

April 21 Mon. Alamogordo Air Base. Bill Edwards and I went out & Anderson Kaye and Oliver & tracking targets and started third tracking run 7-8 miles east & Alamogordo Army Air Field, Chaney and Pontius worked on calculations V2-424. Set worked on equipment down 93 today.

April 22 Tues Alamogordo. Reynolds - Oliver out to East White Sands. Brought 6R3 Dona in for overhaul. Worked up calibration of 6R8. Put curves for setting of 8 on for changes in attenuation. Talked to St Louis, Ordnance Supply, re 500# bombs. Wire from Kaplan - C-6600 ready & come back - Plane ready & come down this week. Sent telegram wire & hold plane off until after 1 May

April 23 Wed. Alamogordo. Bill E. & I left for Base at 0930. Down & Roswell. Scanted out Anderson between Roswell and Dexter but still unidentified farm lands. Finally found Anderson's field. 129 miles from Air Base & Roswell. Chaney and Pontius busy 6R3 checking Oliver and Reynolds checking 6R8 in hangar. Peterson calculations Capt Woodruff.

April 24. Thurs. Phil and Sal working on P.R. until Sat April 1 to 5, getting dragged and dynamited, Sal and Don on CR 2, Bill & on Clock Checks. Saw Pullman about Round trips, Sunday. Saw Post Engineer & Byers Retired

April 25 Fri. Sal & I went to Motor Pool and got our driving licenses. worked up Records for Town and Dona sites. OK within 10 minutes. Bill S. and Phil got Tickets from army pilot and went out on Tularosa Bombing Range to build shelter. Sal and Don working on CR 3. Left Alamo 1:30 and left Alamogordo 3 P.M. Got room in El Paso at Hotel McCoy

April 26 Sat. Left El Paso on Centennial on time about 9:30. Went by way of Hobbs, Midland, Odessa, Sanderson & San Antonio. Waited Thru for about 2 hrs and caught Eastern Sunbeam out of Houston. Got in about 6:30, with bus to Houston and taxi to Ma Dennis

April 27 Sun Houston with Dennis & family

April 28 Mon. Down to Sabine Ind Yard Office with Dennis and Roy Bennett. Went up to Abbott and Stowell about a car. Carpet bugs out to unfasten at 10:00 and Sunset Eastern on time to San Antonio, and Centennial Sunbeam to El Paso. Arrived El Paso 7:30 caught train to Alamogordo 8:30 Mon bus to Tularosa. Charley Allen, Bill S checked on T-N-E, got driving licenses and worked on Calibration records.

April 29 Tues. Alamogordo to Roe. Delayed trip to Salem City to talk over Signal Corps Communication with Purple. Back this P.M. Went out with Don to East White Sands to set up CR 3 and get it working. St. Shingara in Roe to stay on vacation trip. Sal & Bill S. got two pigeons pregnant together and can't have only at Range. Probably would not be found until Monday a.m. or week.

April 30 Wed. Alamogordo. Phil & Don out to East White Sands and Tularosa area to get Pregnant ready for test tomorrow. Set up Radios at Tularosa. Sal and Bill S. went to Dona and Landing area Site to set up apparat - all radios set and ready for firing. Detailed Procedure & Org. Map drawn in 2 100# bombs with 20# TNT charge. Bill Gobbo in for R.R.

May 1 Thurs. Out at 2 A.M. Set up Apparat for low frequency unit at the North Range. Out to Stations to find Storage units. Met at Tularosa - Don & Sal to East White Sands, Sal and Bill S to Dona and Don and Spanky and self. Rocket misfired at 9:00:09 and did explode 3 tripod legs exploding. Took Apparat up Apparat from Dona Landing Area and East White Sands this P.M.

48

May 2 Friday. Alamogordo.

Assembled apparatus to go back to Walcott dals. Phil and Bill Albee out to Indiana and picked up all CR3 equipt. Asst. Weeks, Dudell + 2 went out to Indiana Bombsight to find that of 2 - 100# bombs, many ck. TNT blocks alongside. All went OK. Asst got bag cargo for me. Will arrive 500# bomb order and 100 TNT blocks if possible. All equipt loaded on plane this P.M.

May 3 Sat, Sun.

Left Alamogordo about 9 A.M. - Chas Potter and myself + Signal Corps man stopped at El Paso and went over to Tucson for P.M. Left El Paso about 5 P.M. landed in Scott Field about 4 and fuel and weather bad in East. Flight on B.C. Control to. Left about 11 and arrived in Middletown, Olmsted Field, about 6. Weather bad in Newark. Thought it in Olmsted Field 800

May 5 Thur.

Left Olmsted Field at 7 A.M. for Newark about 8. Thunder in about 11. Landed myself and went to Oakland. Arrived Oakland about 2:30 Changed bags + Freshened from Newark.

May 6 Fri. Oakhurst.

Conference on - Dr Delano + Leonard from U.C.L.A. Went over T+T adjustments had - also the results from Alamogordo.

Worked with Vernon and Eileen on theo calculations Eileen working on record Feb 20 rocket and Vivian on last flights from Oakhurst.

May 7 Wed Oakhurst.

Conference P.M. with me from ANC Wright Field. Allegat scheduled for tomorrow - balloons not inflated going up at Bethlehem - B-17 following balloons with recording equipt and B-29 dropping bombs eastward from Atlantic City.

May 8 Thur. Oakhurst.

Scheduled balloon flight this morning at 7:32. Phone and wire from Hq C at Bethlehem with balloons. Trouble with valves and instrument do not go up. Purples, smaller ones to Middletown with recording equipt on B-17 following balloons. Had no records following the B-29 started dropping bombs near Atlantic City about 8. Trouble with disk on a earth and B-29 had to jettison the bombs and return. Recorded at Oakhurst with Brush and CR 3. Worked today with Eileen on Feb 20 rocket - final and velocity data

May 9 Fri. Oakland. worked on calculations - Evening sun and Vr tests Det 20. Took slayer out & NYC for Canton tonight.

May 10 Sat. Canton. Steve + Eaton up from Syracuse for weekend.

May 11 Sun Cat Rm. Took slayer out & Canton for NYC.

May 12 Mon. Commd NYC and caught 0940 east & Cleburne Park - then to Oakland. had mc Emmons & VBC this PM regarding future flights both him and me Alameda.

May 13 Tues - Charley - 2 went down to Cape may Turkey with Staff car and Chief Erected portable rest for boat warships on road between Cape may Court House and Woodbine. Surrounded out 5 parking locations and took aerial photographs. Back up at about 0800 PM

May 14 Wed. - Finished checking up with Charley and Olsen in regard to bombing runs on east coast. Run scheduled for 9 and 12 on Friday. Packed up all equipment from computing office to Alameda. Checked limits + rode to 32 to Alameda. Supply new computer in today. Started him out on work flying was done.

May 15 Thurs. Oakes, Stevens, Olsen and myself left this AM early, landed up C-37 when it cleared, with 229 hours & TNT about 1:00 PM. Carried, pilot and Hoffman co-pilot. Mess Nairn and Eaton arrived later and we took off at 2:30 PM about 4:05 PM. Stopped in Ft Worth here about 4:45 PM. Off again to Big Spring, Texas, where fueled up stop account, weather conditions, stayed overnight at Hotel Settles.

May 16 Fri. C-37 arrived at Alamogordo from Big Spring about 9:30 AM. 000 TNT unloaded and put in dump. Nairn + Eaton set rooms at Inks down town + at BOQ 25. Went over future program with Edson, Reynolds and Ledbetter. Eaton in office this PM. Stevens flew in Unloaded Plug Charles and ready to go to Lima Ohio Monday. Set on hardy and got the car. Checked tires + made fuel and air check for flight to Lima, Ohio + Hoffman down to Carlsbad and to see Capt Smith + Lieutenant Bernie.

May 17 Sat. Alamogordo. Nairn, Eaton and 2 worked on may 18 rocket data. Plotted up azimuth angle against elevation angle for Dora and wrote formula relations. Plotted azimuth against time for Dora site.

50

May 18 Sun. Alamogordo. Worked on Dona record. May 5 rocket. Checked through packet. Plotted elevation angle against time, calculated elevation and distance from launching site using straight line plane between launching site and point of impact.

May 19 Mon. Reynolds and I left about 0745 in wagon caravan for Silver City. Arrived at Gila National Forest Station about 12:30. Ate lunch there and went along valley 16 mi. then back E and located site. Surrounded in boulders, deep ditch and stony walls. Back to ranger station and located another ranger map. Left Bayard about 6:30 P.M. Back at Alamogordo about 10:45 P.M. — Edmondson and Hibbard went to record the original data sheet & was postponed until Monday.

May 20 Sun. Edmondson and I left about 0530 in wagon caravan for Roswell. Arrived at Hagerman about 12. Went along Pecos R and found site. Surrounded on boulders, deep hole and stony ditch. Went west Roswell along the field, failed up with gas, checked for room for Bell Hubard Hwy. Back to Alamogordo about 7:30 P.M. Hibbard and Reynolds loaded up one wagon caravan ready to leave tomorrow. Vision working on wealth data to send back to Watson. Edmondson working on launch 7 agenda - elevation points and checking packs.

May 21 Wed. Reynolds and Hibbard left about 8:00 in loaded wagon caravan. Stopped at Gate by SE B. and had to unload on account of wagon caravan axle had dries and heavy load on the bus. Left about noon for Silver City. Bill Edmondson packed up 6 R3 and left for Roswell in wagon caravan SE. about noon. Got all equipment together for shooting tomorrow. Worked with V and E data R4. Edmondson checking original data 2 rounds and started checking April 1 agenda and elevation angle. V finished agenda checked wrong and started extension 1 weather data 0 288, 18 hours for May under data

May 22 Thurs. Thorgan and I met at 0730 at Ordnance Camp. Light Rain met us there and let us in area. Picked up 17 boys 7 R5 Shot 10:00 at site 1, 11:00 at site 2, 12:00 at site 3 and 13:00 at site 1 again. Thorgan left for El Paso to meet his family + fly Cape Canaveral. Picked up Silver City and Roswell boys. Checked 3 pressure sensors. Checked 3 pressure sensors Hayes.

May 23 Fri. Went out at 5:30 and Sgt Kincaid Rio went out 2 counter loops. Picked up 16 boys 7 R5. Light Rain & fired rocket no shot 08:00 site 1, 09:00 site 2, 10:00 site 3 and 11:00 site 1. Watched Thorgan and Calendar 12:30. Back at Jim Ranch about 5 and Boys to Silver in about 8:00

May 24, Sat. Went over with Fuller and unloaded his truck, then cleaned his room. Got over 80 mail today. Went over PX with Fuller and bought many things. Got 3 pr shoes from Lake City. Wrote a few letters.

May 25 Sun. Rec'd to get into El Paso to catch train to Houston but Alamogordo train left a few minutes. Broke W Alamogordo Air Base.

May 26 Mon. Worked on Desto I & II records today. No signals from Roswell some thunder or a shots. 5 sky wave from Lake City. Worked on records, Edwards on Sunday mornings, Forbes worked Sun. Rec'd a few letters today.

May 27 Tues. Worked with Com 2nd/12 & took a rocket & April 1. Bill Forbes & Don out & Dona and all up GR3 for Thursday prog.

May 28 Wed. B-17 in from Water with Mess, Heckman W/C and Alden. They plan to fly test balloon tomorrow. Other prog with regular crews & Dona & Helen water test. Got everything ready for HERMES rehearsal tomorrow. Dona & White tests. Finished Hunt at Calculating I-X solutions & sky waves.

May 29 Thurs. Mess Heckman & Alden ascension 11 AM about 1 PM today water plane & pontoon. Dona Forbes out & Dona, Bill, & I out & E White times & recd HERMES. Left for 11 PM tonight rehearsal yesterday, tomorrow, Fri & Sat at 7:30 P.M. Packed up covers, loaded car. Sunday, May 30.

May 30 Fri. Planning day. Left 3:30 PM & Alamogordo 10 PM train. Met Dona & El Paso & Houston

May 31 Sat. Arrived Houston 7 AM. Washed up & town 9 AM. Ate & Hilton. Planned and packed up am - pm changeover went up 5:30 PM and talked to Dona & Roy Kennedy for an hour & left Houston about 10:45 PM. Played cribbage most of trip. Dona.

Jun 1 Sun. Left at 8 AM arrived in Alamogordo about 6:30 PM. Met Dona & Roy from Houston. Bill, Forbes, Hunt, Schmitt, and others from 1140, also Leland, Hunter, Alden. Wyle crew in Holloman today in world tonight

52

June 2 Mon.

Changed shooting plans to coordinate with balloon flights. Balloons all ready to go - uneven flow and uneven on ground. Edmundson with GR 8 & Rosewell Pk - Fodder and Reynolds with GR 8 to Alton City. Visual reading on anglebore & Pilot - Edwards on April 7 shoot.

June 3 Tues.

Up at 2:30 am ready & fly balloons but frankly abandoned due to cloudy skies. 2 went out to Tularosa Range and fired charges from 6 and 12. Missed 5:30 shot - temporary getting awkward again.

June 4 Wed.

Out to Tularosa Range and fired charges between 00 and 06 this a.m. No balloon flights again on account of clouds. Flew regular area hoping to take up an observer for balloons but had fatal leak in vacuum air ground unit pump on plane. Out with Thompson Pk, shot charges from 0000 to 2400.

June 5 Thurs.

Up at 4 to shoot charges for balloon flight. Wind exceedingly & Capt went out to release balloons Red sky at 05:00. Fired charges at 05:37 and 05:52 then was forced by plane to return. Reason at first did not work out ok, seemed vacuum pump for a short time but shot out again upstream. B-17 and must [illegible] out to Roswell - Recovered equipment near 25 Mi east of Roswell. Out all of this morning, got TNT and went out & range fired shots 12 & 18 every hour. Lost 2 bombing tests this week.

June 6 Fri. Up to Tularosa early ready for flight tomorrow. Conference about noon Tularosa with Radiosonde, Alamogordo with recon to Roswell - also South on Rhodesite. Regular equipment on plane, Edmundson and Reynolds to operate equipment at Roswell with GR 8. Worked on coupling GR 8 this PM and this evening. Fired one shot PM at Site B but no transmission for some time. Shot PM put in Candy box for morning and fire in ground type GR 8 and low pencil signal.

June 7 Sat. Balloon flight #1 about 5:30 - Balloon broken on takeoff. Balloons rose to 60,000 ft, broke left balloons then train came down somewhere in mountains. Recharge at north range, and at Roswell but plane did not return. Shot at 6, 6:30, 7, 7:30, 8 and 8:30 at site B. Plane out to find balloons but no luck. All #1 personnel and John Alden off at 8:47 - Jones, Gallagher. Out from Alamogordo with Graham, Hunter, Alpenaugh Marks but no flown today. Making reservations for tomorrow

53

June 8 Sun.
Rankin, Tex Visit. Found balloon train 25 mi south of Hyde Rolls on mountain. Contacted him and made arrangements to recover equipment. Monday. Get all members balloon flight. Capt Ireland, Lieuts Kintz Olson and 6 Alamogordo & catch train this P.M.

June 9 Mon.
Bell Tribbe & Don Reynolds went out to Sid Watts ranch south of Hope Robbs and brought back recovered balloon— Cloudy & cool overcast, snowing and misty, and lower part of Cribbs, Bell Chambers cleaning up hangar and putting out equipment & M4C worked taking on balloon needs (GRS) from north hangar. Yes clearance agents obtained. Work observing MRS

June 10 Tues. Bell & Rob & and Don worked on equipment, repairing GRS 121 ribbon etc. Getting ready for work Thursday. Worked on GRS sunday from hangar man Lts 3, 4, 5, 6. Two engines started. Worked on balloon taken from Roswell— two engines. Non Lts R Lts 2, 3, 4, 5, 6. Taken on V2 apparatus

June 11 Wed.
Bell Tribbe and 6 went out & Zolan Range and located Site #5— for bombing. 2 Jeeps N 2 Site #3 — roads bad, Lizard not used for shooting, Don & Bell getting ready for rocket, Chadwick Robinson working, all 3 sites.

June 12 Thurs—
All rockets postponed until July 3 making 3 SEL. Bell & Don Bell & went down to El Paso and Las Cruces Rio Grande. Visited factory and watch & chat, Tues and loaded out wires and dug holes, worked on bombing stages for accident.

June 13 Fri—
Jim Nolan. Worked on 2 Jeeps & 4 Lts 6 Volcanoes Bombing. 5 on V2 rocket explosives. 2 shots T-X all play wires and started mounting Mock II and 7 mocks.

June 14 Sat
Bell & family, Don & family, Y, C and L to Carlsbad.

June 15 Sun
Jim Carlsbad Caverns a hot & stamegrocks

54

June 16 Mon.

Mon of today. Worked on Eastern Front Chiem, yesterday I-4 carried #68 Kms I worked on apparent detectors & Effects in azimuth.

June 17 Tue.

Mon left for Silver City and Fabens near El Paso for bombing tests. Worked on Chiem.

June 18 Wed.

Det 7 of Odessa Bombing Program Photo at 7, 9:30 and 12:30. Mon called in from field Pm & check clocks. Weather poor - raining at all sites. 5 on Vr results, V on Chiem.

June 19 Thurs

Det 8 of Odessa Bombing Program Photo at 16:00 18:00 21:00 24:00. Weather poor - raining at Alamogordo.

" 20 Fri.

Finish of Det 8. Photo at 00 and 02:30 Hours G.M.T. Mon took holiday. Gibbs-Reynolds at Silver City got wet shots, Edwards at El Paso got (possibly I-) Confusion all Fabens results today. E on Investigation data rocket Jornada - V on Det 34-I and Flights

June 21 Sat. Worked on 588 records from Fabens calculated azimuth & elevation angle Fabens recording and area of Silver City.

June 22 Sun. On time with G. Sandoval, Pilot Flying, Carry 30

Week of June 23-28. Alamogordo Proving Ground Mon worked on equipment for round ranging missiles and made arrangements for off base transportation of same from Las Cruces Rail Road Depot. Dr R left for Silver City and Rich & Mon to Fabens. Dets 9-10 Wednesday 25 and Thurs 26-1 June 9 - 7-10-13-16-18 - July 1-3-5-7 Vanguard and Sq Rocket Conducted by Stephen Medway & Thursday Det 10 Thurs 27 at 18-21-00-03-05 Ons with 6 Rocket Trains. Mon in Driving Dr, Jerry Mundt Jim and Bert Wray Jones or Motley from Fabens Instrument area. Fabens results bad. V worked on Dets 2-8 getting set data checking equipment, Chiem worked on Flights 1-27. Got most of the small Flights 9 & 18 Kms except Det 22 and Flight 1 which would

Week of 30 June - 5 July 47 Alamogordo

Vision worked on 2nds 9 and 10 finishing all ground data on GR 3 readings.

Films worked up 1 April rocket, getting propellant strength as allotted (Arnold for weather data) and started on tear calculations to get tear & regard for correlation purposes. Appears likely that strength & regard is dependent on station factors rather than anything about rocket.

Bolton did 7,8,9 and 10 of this week. Det 7, slated for 1 July postponed until 2 July as equipment was not ready. Go data obtained for Aerobee firing morning 2 July. Also radiosonde ascension up by 0700 present sunday but Rawinsonde unable. Det 7 all down on July 2 with pibal then lost telemetry and Rawinsonde. Winds were very light and balloons up often & broke and mostly lost sight of. Included Chester & Mrs Hobbins. Delayed by C-47 for rawinsonde runs & finally landed in mountains near Cloudcroft. Pipe gun could be recovered, mostly it had been stolen. Stations operating at north barge, Cloudcroft and Research. Shot made up today at 1 pm #4

12/ 29 Jun. Fired analog wind charts & velocity & velocity from trap guns against known charges. Changed 10 Jet rockets and started up calculations against weight strength - altitude. Starting experiment & Rocket on 1 April rocket. Have all data & calculations about finished.

Phil Chesty: Wright in by train Sunday night. They brought in rockets 1 Flight 28-1-9-30 on last order - 1 of Army and 2 on Army own funds. Saturday day worked part night 27-28

Bolton personnel unpacking and setting up. Pierce, Zakowski, Jones, Jackson, Dixon, Hamilton, Clarke from NRL and Jones, Richards, Hobbins, Smith, Hazard, 2 others and 2 ft Bustle from Troop 1 PC.

29 Jun. 47

NRL personnel & some Army men took over working today with equipment in north barge. Went to Rinaldo visit Mears, Zakowski, Zeller, Vand E.

and I stood up good from north Conger
and from Aberdeen for activity. Working
from Roswell. On Thursday morning
3 July, a cluster of 6 plastic balloons
went up for V2 reading but V2 was
not fired. No shots fired. Balloons up
for some time. No reading at Roswell
Co Pitbal showed no winds. Balloons
picked up by rodar W1 and Runtz
by Marzalz C-45. Located on Tularosa
Range by air. Unit Ran with normal RAP
run by weapon Carrier but we were
located at Rocket postponed until 730
Thursday night but at last minute Explo
Balloon went up. V2 was called off.
Account accident at white Sands.
Sent up cluster balloons with Army
load. Balloon Flight #10 at about 0400
July 4. Had gone out on C-45 again
with Moran and Dupell to find for
balloons for flight 8 but not gone as
found them. C-54 went to El Paso 4 July
and picked up Engr Smith Electr
balloon and GAR Check plastic balloons
Flight #10 with angle plates. Inspected
from Alamogordo and Aberdeen. Short
8 shots for site 4 Rocket 25 mm and
lost signal at 8:45. Balloons on (low)
one thunder gathering sun Check had
been put on to keep the sun off the J Hs.
(Flown) were packed up by other C-45 to
fight flight as was delayed. Had final
balloon ex 7 with explosive charge Rad

and B at 35,000 ft and at 0745 lost by
that time the receiver had left the signal
Blood by radio and (serian) with explo
Wire. Conduct Pibal at 8 and dark Pi
about eight hours.

Rogers and Johnson up 4 July with
Dr O'Day, Lt Adams Brown in (July 6 and
Stan Abernathy, the SCEL station. Schedule
up until O'Day 5 July & check was as
1641 station.

Alamogordo crew badges got taken, and
did found starting 7 July. Off July 3
to Boston and Lansing later at 2 PM
and later out myself.

Received schedule on flights 28, 29, 30
all first class and Conductions for
Bermuda flights.

Unable to clear for home on 3 July as
was planned and moved down to
port, work of to avoid change in
schedule and go via Bolling was
but was back that he had cleared
and I made the trip.

July 6 47 Worked at plans on flights
and worked data. Started on
plans for about 17 July meeting
Wyld was later ... made for ...
Plans and check up ... Left ...
with Col Bowles ... planned ...
not below ... working ... Lockheed
Combs

57

July 7 '41 Alamogordo. Burton Hoyt
#11803 of 0507. Rec'd [illegible] and
[illegible] Wagon
[illegible] Rubber, Rebored and
Rubber & accessories, until about 11,
Rebuilding motor started in earnest
& Ronald [illegible] the Family
Camp down (at 10,000' exp Shaved
Cam journals (.010) Main Bkg 70
between Rings, Pistons, Second
Valve - new Valves with new
Guides up .010 & 2nd, Second
Valves with 2½ stem, Put on
exp with Pressure Gauge
of 70 lbs up to 600. Engine
Run for 5 to 6 Hrs 5400 to 6,
at 1500 R.P.M. Tuned, Rebuilt Carb
Removed, adj Timing & Valves
Completely, Installed on Jeep 1.30
and Checked all wiring and [illegible]
Put it Tuned Removed Plugs
and Points, removed V. Belt
with Extra on April and put
Pulley H-15, H-T, 15-T.

July 8 Alamogordo. Cloudy 70 about
10:30 out 23 miles east, well
maintained & sand dunes. Desert,
Edwards Plain, Rough & mountains
White sands Nat'l Mon. Entrance Fee
for Pleasure,

Wed

July 9 Alamogordo. Worked today
on Burton Hoyt. Finished the
manifold, then tuned and wrote a
memorandum to Lupke about results,
left in car then Burton. Next trip
between Roswell & Alamogordo and stayed
there.

July 10 Thurs. Changed tires & went into
Roswell - Bought new tires, on to
El Reno, Okla today. Stopped on way
in Hereford, Tex and met Dennie
Harris from OCC. Registered Jeep
and Paul Burt Cranston, OC and
Jim Conant, superintendent

July 11 Fri. Drove to Reno & Checked
Gasmart at Amarillo that I was now
at Oklahoma and found from there
stayed until 9 July.

July 12 Sat. Jim, Ken Ramon & Clyde
with me on drive home. Got to
Doolittle, Oklahoma

July 13 Sun. In Oklahoma Okla just
east of Shawnee.

July 14 Mon. In Oklahoma near Geary 70 mi

July 15 Tues. Stopped at Lyons. Got home
about 2 P.M. Ramon & his baby there

July 16, 17, 18 At home. Drawn. Hot spell very hot and dry cool and rains intermittently.

July 19 Sat. Marion & I left on Chrysler for Wards Hole through Albany & Springfield, Brandon. 463 miles to home. Doc Young in Atlanta Ga. Wyatt working on frontyard car. Saw Jos. Woodard and the Rogers. Woodard gets Legionaire fellowship for next year positions of Elliot and Painter are quite very satisfactory.

July 20 Sun. Saw Jim working with Wyatt on Elliot, Painter and Vine new house and Ed & Burgess on the house, this and 15 Evergreen, new bridge, Children, Anne and Mikey.

July 21 Mon. Went down to Wards saw Pollak Burpee, Washington. Up 3rd floor and talked awhile with Emerson of N.Y.U. who is putting up some research work there with Roy Montgomery. Talked with Columbus Faber for short time, Blue Ed Cable Marion & I left about 11 AM. with Chris Amidon, Hartford, crossed river at Hudson. Nice drive last part of trip. got home until 1:30. Spent a pretty quiet weekend with Anne and Esther in Lynnewood.

Tues, Wed, Thurs
July 22, 23, 24 At home. Drew on the patio. Cut grass & front & back lawn. Did odd painting jobs around house. Thursday 105° Temp & Lynnewood with Thunderstorms & Electric Current.

July Fri 25 - Sat 26 - Sun 27 At home. Mon and Esther Came up last night. Drawing & painting & Watering & pick etc up of two stones at Andrews. The boy again has Pain in Back from Cabin Fever Going up for Easter Sunday for.

July Mon 28 - Tues 29 - Wed 30 - Thurs 31 - Aug 1 Fri At home. Church & Cards. Chas. Jessup called & Rec'd hand print (Print) each the Chas + Sat in Kids but I (Jim, Mike) and I just 7 home.

Aug 2 Sat. Marion - Bunny. I left 11:30 AM. arrived Bloomsburg about 5 PM. Ate dinner with Stan & Esther, left Bloomsburg 7:30 PM. Stayed Binghamton Saturday Stroudsburg, Easton, arrived in Newton about 2:45 PM.

Aug 3 Sun. In Newton until Bloomsburg Dinner. Left Newton about 5 PM. Arrived Jersey City 8:30 PM. Put Cabin in Jersey 8:5 down White Star Ferry. Aug 4 Mon. Up & Oakland Went down Montgomery & to date with Jim Lupo, Ort & Dinner with Al Beck. Phone Chas & I drove up & Broadway with.

59

Aug 5 Sun. Cabbard. Worked on Aberdeen results - 2 failures - 1 duration - Worked on Bermuda navigation & started Bermuda #2 (11 CH). Couples on vacation, Hunting today.

Aug 6,7,8 Wed Thurs Fri. Cabbard Worked on Cruises 1-28 with Vernon & Epstein. checked over all recordings of Bermuda #2, Flight 32. Got Anonoy survey calculated and worked up results of Flight 25 B which depended on anonoy signals. Started Epstein on weather data which Wright is working on. Wrote letter to Emmons with summary work to date thus. Confused and worried with Avery, Arnold, Barnhoff & Olmsted regarding Bermuda and Eberhardt's plans. Mathews getting bottoms, both equipped on Bermuda Cabbard. Reynolds and Edmondson in and working around lab. Worked on pitot tubes on rockets,

Aug 9-10 Cabbany Park.

Aug 11,12,13,14,15,16. Cabbard. Wrote memo regarding Alaskan work and headspace typewriting. Worked most of week on rockets. Plotted altitude against time & origin for April 1,8 rockets but did not get identical graphs. Tried to vary distances & obtain duration curve but this was impossible. Made plots & time vs S and altitude vs S. Ran Correlate against Natural Station Correlated Survey Sept on 8 April but for on 8 Apr. Worked on 7 March and received success in correlation. Epstein worked up curves for various velocity factors about 10 times for this various curves, then worked on T-D curves & finished depth work with Wright. Vern working on Chem computations. Finished all the required curves, then up to Sept to practice 3 times for on airplanes. Bradenbeck & couples attended Cabbard Park Cemetery Parade & Drill. Drastrom work on Wing & Pitot. Captain Friday with Wife & personnel - Drove Cabbard, Smith, Eberhardt to Colton exhibition of first world in Hydraulics Friday P.M. Edmonton Arrived, Vern flying Cotton and Epstein and Dahlstrom transmitter and practicing C.W.

Aug 17 Sun Cabbany Park.

Aug 18 Mon. Cabbard. Worked with Edmondson on T-D and D-X curves for various Cages about 15 kilometers according to H-V of VRL. Started working up rocket trajectory from Aberdeen data.

Aug 19 20 21 22 23 Oakhurst. Vernon working on Curves 1-28 inc getting together all detailed information re weather, Signal strength, etc. Eileen, Epstein and I worked on rockets. Made up graphs D vs h and D again T for different distances for 1 Apr, 6 April, 20 Feb rockets. Added 5 kicks each for higher angles. Worked over Haggerty Tues 7 Again from the curves but still is not to good a check of velocity against different stations. Worked up data from 6 April - Dora station from height vs velocity I found - Got a high velocity but not followed by lower one. Watson data finally finished over Fixed Fords - Kimpson left by plane Edmonton, Reynolds by train & Florida and plans for Peoples, Inyokern, Alberquerque, Nipigon and Churchill to be in Aberdeen about the first of September

Aug 24 Went over to Newtown, Pa - visited Marion and Wayne. They have found Bungalow in Silver Near Newtown, That they are buying. Wind down PM and looked at N. Park A.P. midnight.

Aug 25, Monday, Oakhurst. Working on rocket data with Eileen - Epstein. V making up charts, etc for Kelly & ink for slides for Symposium.

Aug 26 Tuesday Worked on rockets - Got charts ready for 4-8 April test data

of 7 March 1 other poss. Still undecided what ahead for meeting. Worked with Hantz surveying a little later work.

Aug 27 Wed. Worked on slides. Sent 10 graphs and maps in to Watson to make slides - worked with Epstein on rocket data. Not doing Every target each night.

Aug 28 Mon. Clouded over early in the day by working runs by Vivian and on rocket by Eileen - Mostly making up graphs and charts to be used on 4th report. Worked with Epstein on rocket. Went through entire procedure with him. Got data ready to take to Aberdeen. Flight out with Snyder Engr in Washington.

Aug 29 Tue. Left Oak Board at 0845 flying Vivian and Eileen with 2nd Lt Wm Pennington navigator - Flight time at cruising 1 hr 40 min. Weather. Ceiling 450 meters.

Aug 30 Sat. Ceiling 400 - light rain 7/8 overcast. Flight thought quite rough to Fort St Louis 673 miles.

Aug 31 Sun. Ceiling 600. Flight over Gulf of Mexico City. 574 miles.

Sept 1 Mon. Cell developing thunderstorms 580 miles. Saw Reynolds, Edmonton, Johnston, Smith, Putnam. Hayes developed for Rockets, Engineering Conference on Communications office.

61

Sept 2 Sunday. Capt Fry Lt 6 & 8 and recruits left up in north bayou. Make 2 trips that day. 8 & 8. Went over July 29 working party. Thompson & 2 went down to Prospect and saw Majors Brown and Kelsey & Edwards and arranged for them & conductor forms with balloon ascensions. Moved over & Room 12 Barracks 147 this morning.

Sept 3 Wednesday. Plane in from Middletown 7 A.M. Newton, Wonjoh, Pratt & Corpl. Cox & Lt from Watertown - Purples, Mears, Mendler, Allen. Also start over 6 from N.Y.C. Moore and Schneider in from El Paso late today. Conference this PM regarding Types of flights etc. Worked on Gymnasium subject.

Sept 4 Thursday. Purple, Majors Pritchard, Capt Depot. and myself over Chanute & rec'd Lt CO & Staff & discussed Moyer Project and how handling. Planned balloon flights for tomorrow. Cadets & 2 myself down to Prospect Ave Barracks with Capt & went balloons. Then, Worked on Gymnasium.

Sept 5 Friday. Received balloons this AM about 6:45 & Hooker balloon together with 7-69 & Wilkie & Goodyear transmitter & dirigible. Balloons rec'd & rigged Hoover Lunch at 7th. Lowry obtained thirteen players with uniforms and

At Roswell Bn hospitals visit hours & Brigade Eng Camp check from which can from 6th & 15th 15 months. Balloons landed on west edge & Wilkie Sandy Hook & searched for about 1 hour then gave up. Headed home on Pennsylvania Railroad P.R. passed C-47 on Bn with more freight and 1 more NYC plane. Balloon flights planned for tomorrow but washed out by rain.

Sept 6 Sat. Balloon flights #14 and #15 out this AM & PM without Watson Lab equipment. On #14 single balloon with rope twice inside appendix which burnt. #15 on PM two balloon with short flights. OK.

Sept 7 Sun. Worked on Gymnasium reports & training and rockets. Dr Knudsen, Lt Col, Delaware, Leonard from WDA arrived PM. Balloons in PM

Sept 8 Mon. Balloon flights #14 & 15 with 1 GM, landed about dusk with OK equipment. Repacked & Brigade again. Balloon had large wrinkle and finally burst. Came down 5-6 miles NE & longer. Equipment taken this PM. with assistance Dr Benoit & Lieutenant. Pan Jolander, Pyrotechnic P.M. & Jane reports & training and rockets

Sept 9 Sun. Pvts. Ingalls, Signal Corps for manage at S. C. Pelican from Am Weather Service - Trailer P.C.P. on this Am. Crew & equipment this Am on balloons this P.M. wind over future plans; Lt. Lind Pelican flight #17 this PM which was very successful first weather RC flown.

Sept 10 Mon. Balloon Flights 18 & 19 this Am. 18 with small balloon which the wind on the ground. 19 with small balloon and 6 grams + Parachute attached. Pilot Pogoff at rain level reached 60,000 and burned up too in balloon which descended slowly at once. Raymond immediately Reynolds & Ongonde again. Very cold up 5M balloon this morning with OK - no flight - 720

Sept 11 Tues. No balloon flights today. Preparing gear for flight tomorrow. Worked on static measurements - pressure curves.

Sept 12 Fri. Balloon Flight 22 with Weather Lab gear. Normandin failed to operate, Clemmons & Thompson & Delmonte and Lt. Thrasher making flight #21 with Watson for gear down after #21. Followed by Lt Thrasher, Normandin worked only about the Reynolds & Ongonde and Lt. Lind #23 made Saturday - Dummy. Very balloon - pilot Crew on watch, Came down near Cathedral singing Juvenile pilot.

Sat Sept 13 2M balloon carrying Hilborn transmitter put up. & followed with spirits gauges pilot theodolite. Moderate wind light wind good and flight was OK. Most wind over to Cortland in direction to wind to find balloon - while over flight #23 showing wind & cautious made can find pilot land,

Sun Sept 14. Worked on flight 13 and put up memo or NY Herald on static readings & also flights C-47 went over to Ardmore, Okla and located balloon maneuvered over flight #21 - telemetr and mean wind array.

Mon, Sept 15. Put up 11 met balloons in cluster with Flag modulator pulse and found sun for many signal. Signals following by both Rawin and Delmonte for 3-4 hours. Reynolds & Ongonde & Commanto antennas Rawin and Commanto to Delmonte track for Thrasher readings but due to haze could not follow the balloon. Flight #25

GR balloon.

#26 with Holman transmitter up
late p day, followed by recovery
and Chronolite.

Mon, Sept 16, Balloon Target #28,
and cluster, 11 balloons, put up with
Watson dot box-bag transmitter and
followed by both Alamogordo and
Roswell for 3-4 hrs. Reynolds &
Roswell B combined get alt, thence
Edmundson & Artesia Park with
theodolite, Holland balloons from 7.
Park until 0930 last seen at
6th pm from Alamo. acct trying & follow
both balloons, Flight #29 had been put
up earlier with Holman transmitter
and was followed by the same
about 6 hours. Smith and I went
over all theodolite data this PM
and he got orbit on azimuth & alt
instrument data (-47 thick) Last
0600 temps' with alt 640 and
Valley crowd. Flights left Roy for
Trinidad in his Car. — to return
via about 1 Oct. to Thompson,
Reynolds, Edmundson Mona and myself
left at Alamogordo.

Wed, Sept 17. Got the tracks & 2
drivers and took all logs (theo)
from both Imps & then rode the
wind to Lindley normally. Tried
to get fork lift and fuel & finish

up the Pan but could get neither.
Left Mrs Mona with the report
from radio car not to keep again.
Drove and I worked on theodolite
data, Flight 28 on Light Smith data.
High altitudes from 2000 for balloons.
Capt Battles sent men from Roswell
came on PM with data and equipment
Telegram asking data from Roswell PM.

Thurs Sept 18. Cleaned this pm that
AM & this evening this part worked
Common Den & Bill worked on
ground equipment this PM. Jim Evans
and I worked on balloon flight
data, this PM Don, Bill and I
went out & Ent White Sands and
set up the GR 3, then up to Jolora
Park and laid out a triangulation
site with / side up on top / the
windiest of the Indian Burial ground PM.

Fri Sept 19. Out early and started
getting ready for tracking Diamond
Joe flight & that AM had been
postponed until next week. Jim
and I did GR battery and we
worked on same & did part telegram
follow Mr Mona and I finished
study of balloon flights & sent
two including memos on each

64

Sat Sept 20 Wrote letter to Wyoff today re balloon program with cc to Moore, then 2nd to Ady off re Waterii business.

Sun Sept 21 Worked on balloon flights 7 July - 7, 8, 9, 10 and 11.

Mon Sept 22. Left pick up and flat bed from base this P.M. and took all Radar tower from tower and moved acros to far side tower. Mon and 2 worked on flights 7 July 2. Worked up frag may directives 2 trips. July 6 Sept. Worked on Rapp smith hyd + altered late.

Tues, Sept 23. Left to working site this AM; Reynolds, Edwardson & East White Sands site; 2 mast & Tularosa Peak site. GAPA rocket scheduled for 10 hrs was fired 10 Hy. Explosion in air. Then rocket towered by parachute; Each of stations got signal, probably the explosion. Brought in all equipment except wire and prepared for trip to Alamogordo and bombing trip.

Wed Sept 24

Reynolds - Edwardson picked up all equipment GR3 - left for Tularosa early about 11 AM, worked on GMK meadings, then started packing up Inertia Weapons Equipment, Checked out vehicle, TNT and got clearance this P.M. for bombing.

Thurs Sept 25,

Left Base about 5. Shot 5 shots in Tularosa Range - 6 - 7:15 8:15 9:15 10:30 Reynolds called up about noon - was needed at Base - Need Tomorrow. Packing equipment & work equipment, Planned to shoot again Tomorrow, Checked out vehicle, TNT & got clearance this Range again. Worked on Smith Hyd altitude tester,

Fri Sept 26.

Left Base about 5. Shot 4 shots on Tularosa Range - Test #12. Shots at 6, 7:15, 8:15 and 9:30 A.M. Checked back in & range office, Then returned vehicle, & clearance for left the 27th & Pm went over to White Sands and Picked up Mr McDonald & Boeing about GAPA rockets. Left & Base in about 7 Sept.

Sat Sept 27.

Worked on Hydraulic mounts Test 11 and 12. Wrote letter to Epstein re mounts. And to prepare the this on rockets. And to prepare the Mr. to Water Chute Drop earth tomorrow

Sun Sept 28. At Thompson on mtc.

Mon Sept 29. Reynolds Edmondson JB today rec'd overhaul last week. Worked all day in working up mines on ~~Balloons~~ 2 July trip and studying ~~Balloons~~ 2 Jan trip. Finished all flights and ready to make summary.

Tue, Sept 30. All hands working today on buoys, cleaned all dirt and unpacked equipment. Mess in tonight from West Coast.

Wed, Oct 1. Make up summary of all Balloon Flights with Watson Lab gear. Bill Edmondson and I worked on Boundary transmitter and receiver today. Set 1 transmitter working good. Mines and Reynolds on Balloon trips. Edmondson, Reynolds on Pleasant Valley today & Alamogordo Army Air Base

Thurs Oct 2. Worked on soundary transmitter and receivers. ready for test tomorrow on Tularosa Peak (Thompson and 2 W White Sands today & talked with Capt Smith re buys collected work. Borrowed 2 Theodolites and 100 350 gm balloons from him) - Dole?

Fri Oct 3. Made final test comparisons today at Tularosa Peak. Set up GE 8 with 5-21 on Sandia & Tularosa Peaks. Set beginning at 7-21 also 8 other and set up transmitters hill. Reynolds start 6 charges 24th each at site #1, Tularosa Range - Recorded on both systems. Thompson & White Sands & Roscoe rocket firings

Sat Oct 4 Means & I went to El Paso this AM.

Sun Oct 5 Alamogordo Army Air Base

Mon Oct 6. Worked on Boundary transmitter Set # 6 72 cell battery together and 2 12V batteries for airborne transmitter. Set 2 systems testing. Changed Brush equipment around and got a good transmission on one pen only. Double with 3rd pen more fair. working. Cloudy not easy for W.K. - no transponder. also no transmitter Sun Oct 7.

Reynolds and Mines & White Sands with GE 8 & 2 sets of soundings at boundary Sites. Recorded WSMR Rocket and Weather Data. Edmondson and I worked on 3rd transmitter and microphones but couldn't get any thing working. Both 2 complete systems that are ready.

Wed Oct 8 Sent up W.B. Balloon Flight #1 consisting of 10 met balloons with modified sno buoy transmitter, Lightweight T-21. Reynolds & East White Lands after breakfast, 9:30, with GR8, Chamberlain & EWS with theodolite, Means on theodolite at base. Sent up fired about 10 35 Cent by that time the antenna wire had about played out. Don got pretty good record on GR8 at White Lands. Worked on oscillograph, transmitter this Pm. I worked 7-11 tonight.

Thurs Oct 9, Rigged up transmitter and microphone. Don R, left with GR8 for East White Lands about 9 30. Call from Capt Smith @ White Lands that rocket was fired from 11 to 12:15. Thompson and DE Who to Lands and Sgt Reynolds, - Reynolds back again at 1 30 Sundays W.B. Balloon Flight #2 at about 11 30 11 met balloons, with sno transmitter and mike, Borland with only one theodolite - that at Longe. Recorded from airborne mike from Sunday sets until about 13 00, V2 Rocket sent up at 12 15. No record obtained from airborne mike. Don got good record from E. White Lands sets,

Fri Oct 10. Reynolds-Edmondson off today. Worked on transmitter - checked over all wiring diagrams and unit though trying part by part. Got I working and I ready for test. Bruno worked on balloon flight data flight #.

Sat Oct 11. Worked on transmitter. Put third one together from 2 removed and tuned up record and tone at mid. Sq.

Sun Oct 12 Rain/mist. Wrote letter to Ryder.

Mon Oct 13. Test transmitters and mikes today at longe and out on apron. Reception OK. Rigged up inside antennae but record same as outside one. Don & Bill went out with truck this Pm to make tests toward Indianola with transmitter, but news did come from Sgt. the carrier delivery to Indianola Park to today come back. Heard tonight. Rigging up mike & transmitter position in one trouble. Ready for balloon flight Thurs with sch-sch and surface charges.

Tues Oct 14. Worked on tests with sonobuoy transmitter but very windy. Sent up a few Ordnance Pilot balls with one mike. Bill working on radios and Alternate transmitter.

Wed Oct 15. Ran tests & signal strength as from Pittsburgh against field strength as I was using for channel. Worked out good. Ran portable tests at 5 stations, Bill & I went on alternate mike & transmitter. 9:25 in the Pm - to Lake, Capt Cusick & Borland and Sgt Kennedy. Brought in sonobuoy transmitter & balloon, tomorrow etc. Trouble with phone & this stayed overnight

Thurs Oct 16.

Made Watson Lab Balloon Flight #3 at 8:55 this A.M. Very calm — 11 balloons with 200 brass modified transmitter and modified light weight #2-2. Don went to Hospitals and they found ok at 9:45 to 11. Bell went to White Sands and shot surface drops 9-11. Mears on Theodolite at Langley. Transmitter very bad - going to first low - then OK Tracks no returnable signals from either Angels or East White Sands. Mears went up with Lt Pruett in F-5 & took down balloons which went SE but they did not fly them. B-25 left about 1 P.M. for Langley PM with Allen mike & transmitter. Beyond the outside ranges. Bell & Fred & surface dips at White Sands worked on ranges by SCR 584 and BC 610 using Brush oscillograph.

Fri Oct 17.

Worked in office on recordings today. Checked thru Dr recording at White Sands and compared amplitudes with balloon recordings. Equal probably present last week. Looked over Instrument Test A, B and C. Mears worked on Balloon Flight 3 both. Bell & Don changed beam antennas to other side, Langley, worked on SCR 3 and radar T-6. Thompson went with Lt. Pruett to Carlsbad and recovered gear & first flight UCT

Sat Oct 18. Worked on data ATC and wrote up memorandum for them. Wrote up memorandum on UC Flight #1 and 2. Came at 1100 back by A

Sun Oct 19. Wrote letter to Dr Sepler

Mon Oct 20. Worked UC Flight #3 and wrote memorandum on it. Worked up VHF recordings of 2 Oct and 4 GAPA recordings of 3 Oct. Edmonston working on ranges on distance transmitter. Reynolds off today

Tues Oct 21. Bell & Don worked on transmitter today, checked on timing methods, etc. Beam up 2 about ready to go. Don worked on SCR 3 SCR 584 and T-2 & 3. Mears worked on balloons by Sunday. Lt Pruett went to Cairo and then stopped at Carlsbad, picked up Flights 25 and 26.

Wed Oct 22. Bell & Don worked on transmitter and microphones. Trouble with transmitter timing. Went for Sepler in conference with Evans & drained data to correct pattern. Army Canada to take tonight with A-26 ready by dark tomorrow.

Thurs Oct 23. Made plans with personnel for bombing test next week. Lt Conrad, Lt Hart & myself left 09 20 EST in A-26, landed in Scott Field for gas, landed in Mitchell Field, N.Y. at 20 30 EST. Took train to Penn Station, called up Irving, learned Engineers reached test for Sunday, and caught sleeper for Canton at 10 45 PM

Friday, Oct 24.

Arrived Canton 8:30 Am. I went on Board.
Folks nursery off farm went Thursday.

Sat, Oct 25.

At home - Caught plane to NYC tonight

Sun Oct 26

Phyllis, Ewing, myself in conference today,
Mr. Knight, Canadian Govt agent in USA, in NY
to see Ewings Mid-atlantic rock specimens, went
over all Ewings geophysical work on Mid atlantic
ridge. What now we work to futher contact
with Columbia. Phyllis + I to Marlboro tonight.

Mon Oct 27.

At Oakhurst, W.L. Sam Johnston, more critters
equipment, including one of direct molecular,
went over Ewing's work and Rona's Bermuda
results, at YWCA Asbury Park.

Tues, Oct 28

Worked with Vernon today on work
of breaking new report. Went over
some of Bermuda recordings. Worked
with Ogden on rockets. Over to Phyllis
tonight. Dr Ewing, Worzel and Press
down with all reflections from middle
Atlantic Ridge.

Wed. Oct 29.

Wrote report for Critchlow, Bell, Stevens
and I left for Lakehurst about 1:30 and
met C-47 with Maryak, Wolf + 4 go Miller.
Picked up Wx equipment and NY
equipment that had been up there. Left
Lakehurst 4:30 + Bedford and pick up
some eqpt for Cambridge Field Station.
Weather bad - landed at Mitchel Field
on Long Island and stayed there overnight

Thurs. Oct 30

Weather still bad. Unable to get to
Bedford, went from Mitchel Field to
Westover Field, near Springfield, Mass
+ picked up C-45 equipment there. Started
to take off but had trouble with one
of engines. Stopped magneto, but
Equipment around midnight. Stayed at
Westover tonight.

Fri. Oct 31.

Weather bad. Trouble getting off field.
Finally off this PM and went south
landing at Pope Field, near Ft Bragg,
N.C. Left from there + landed at
Marietta Field near Atlanta, Ga. Thunderstorms
ahead. Stayed at Marietta tonight.

Sat. Nov 1

Weather bad AM. Took off from Marietta
landed at Barksdale Field near Shreveport, La
for fuel, then on to Alamogordo. Landed
at Alamogordo at 6 tonight.

69

Sun, Nov 2

Worked on car, unloaded C-47 and took equipment to north hangar.

Mon Nov 3

Mr Khan left with C-47 returning East. Worked on transmitters and airborne mike today

Tues Nov 4.

Worked on 2 modified transmitters but couldn't get them working corrected. Abandoned them and started working on sono-buoys Thursday. Reynolds and I went to Dow Lab this PM and got recordings on CR 8 from expanded output.

Wed Nov 5

Cloudy and windy. Put up tandem balloon train with transmitter and mike at 0809. Noisy for first 3/4 hour then cleared down. Signal on until about 1 o'clock. Ozgunes into aircraft at 9, 9:15, 9:30 but had to hold up later flights on account of CRP-1 rocket. Don and Tommy out to new explosion site and at 1ff charges from 10:32 to 11:32. Bill followed balloons for about 40 minutes before losing them in cloud over mountains. Recorded test ground charges with Wirtz and transmitter no longer. Worked on recds & looking into 13-14, Capsule & rocket, and C-2 flight #14

Thurs Nov 6

Worked on transmitter & mike — balloon being set for tomorrow. Tested out all telemetry leads.

Fri Nov 7

Put up 4 balloon flight #5 at about 08:30 this morning. 12 balloons inflated to 1000 gms each. 6 in cluster, 6 in tandem with about 45 m below first and last for radar measurements. Heck-ack on from 0920 to 1100. Reynolds found output changes at site #6 for about an hour. Edmondson and Thompson on theodolite. Two C-2 parachutes.

Sat Nov 8

Klamath Falls. Worked on C-2 Balloon Flight #5

Sun Nov 9

Wrote up C-2 4-5 flights. Wrote People a letter.

Mon Nov 10.

Worked on angle calibration rocket and rocket records up to method and wrote Upshaw & Bates a letter for Epstein.

Tues Nov 11

Klamath.

Wed Nov 12.

Worked on equipment for Project Firecrest. Got transmitter, mike, etc ready. Put portable camera on 4 Brush with Gordon Goodlin to help. Planned to take equipment and Greek balloons at Site 3 on Antelope Range.

Thurs. Nov 13. Reynolds and I left base at 0645, loaded up 6 cases explosives at Ordnance, arrived at Site 3 on Rubicon Ridge about 0825. Inflated 12 balloons and launched them on tandem - cluster line 40 m long with transmitter and mike (W6G). Ready at 0917. Set up theodolite and from Wheeler Ridge with optical means the storm - set up portable recorder and recorder magnet but did not get it going until end - wind very weak. Lost 7 of 8 flights of explosives. Released balloons for about 40 min, then lost in clouds. Back to base about 1230. Thereafter had men aground at hangar for about 1½ hrs. Thompson tried to pick up balloons with theodolite from hangar but men did not see them. Moved Wire Site No 6 sixteen miles to the Valley. Now have 2 weapon carriers assigned to Project. Word will get to people. Will fly heavy sheet 17th Monday.

Fri, Nov 14. Worked on W6 & the portable recorder all day & flights. Together, 4 of 8's from Indio field in plane with 658 for Project. Bill Emerson worked on transmitter. Reynolds on ground operation. Radio & record ACROSEE report today but signal was masked on account of clouds.

Sat Nov 15 Skunk ranch

Sun Nov 16. Worked on theodolite collecting wind data today.

Mon Nov 17. Cleaned up hangar - worked clearing garden hoses but had trouble with Chevy 1200 gal. worked on transmitter & mike Dow on ground mike. Thompson & myself to White Sands. Penney Grand with regs. Published this PM - went to Burbank & Glendale etc and then saw Capt Smith re 6x8 depositories

Tues Nov 18

Cleaned up hangar - put garden hoses away. Worked on airborne mike and transmitter. Flying on by Main Transport

Wed, Nov 19.

Went out with Don and helped set up building and 6x3 equipment at the Dona site, C-54 in this morn - Jack Carey, Morton, Bell, Thompson and Bushnell Others, Chantry, Alden, Marsden from WL Moore, Hoskinson, Monell from NYO. Unloaded C-54 this PM.

Thurs Nov 20

Set Rocket #2 fired today about 17m Waited all day waiting & finally set up #3 Finally set it up about 1445 - but it lasted only about 3½ hours. Followed it with theodolite for about two hours - it went in clouds. Then put up 2000 gm balloon with tiny load on top in the afternoon with #3 PM. Ran low frequency equipment at hangar for rocket. Reynolds - Olsen at dome - got good results Transmitter at 6465 but came in before rocket was fired. Ed Thompson over to

Roswell with Adams today & Ritenour, Catalina there. Joe Johnston in today by car with family, staying at Alamogordo.

Fri, Nov 21.

Thompson, Johnston & 2 went & 2 re-kept busy this AM repairing runway & 6 65 F. Headgear on motor grounded & runs OK with other testing completed. Tried & contact Col. Wadelton but he was in conference most of day. Worked on finishing radio equipment & weapon cabin and getting communication equipment working. Thompson & Charity & Hobbs today but arrived late & had no luck getting things ready then.

Sat, Nov 22.

To Alamo & to Juarez, Mexico with Evans last going. 2 65B's kept today - one from Clovis Lands & Roswell, one for Alamogordo, (Burton Field) & Hobbs.

Sun, Nov 23

Charity & Olsen got all equipment together including communication equipment and kept busy with weapon cabin & Hobbs, Thompson, Johnston & Bolster worked on communication equipment but but did not get it operating.

Mon, Nov 24.

Arrangements made for Holman trip - Butterfield plans for week 42 & N40 Cochran flights. Johnston & Bursell or Ritenour, Bell Ed & Kingston at OWS, assisted Aerodex Rocket. Left up 42 Balloon Flight #3 at 15:43. Tracked with theodolite & 65B at Kearney Camp. Recorded at Kearney Camp. Sun fixed about 4.65 W at Lat 43. Johnston & went to see Col Wadelton at Moody 65B & to Capeard.

Tues, Nov 25.

All communications working this AM & had Kearney Records & Weds both sent up Balloon Flight #30, N40 at 15:30 this PM. 20' plastic. Balloon travelled west and was lost by theodolite & 65B before 6. Broke out with Pratt in L-5 but distant see it. Passed 65B in & with range over this area.

Wed, Nov 26.

Pilot Ballon up 7:32. Tracked with Theodolite for 80 minutes. Put up plastic balloon, Flight #31 at 1025. Followed with Theodolite until 1345. Used 65B section in Langmuir cell 65B antenna was clear. Then tracked with theodolite until Roswell could only. Ramell on for awhile but Langmuir soon. Broke up with Pratt in L-5 but distant find it. Watson Lab Flight #9 up at 1343. Recorded pressure Balloon burst at 1520±, watson Lab Flight #10 put up at 1500 and tracked until 1748. Elements fixed charges at site 6 for flights - Ongrounds on 13.29 & 10.0± or worse 15 minute intervals.

Thurs, Nov 27

Worked on data from balloon flights 9, 10, Aerobee Rocket this AM. Up & Thompson for dinner tonight.

Fri, Nov 28.

Pilot up at 7:29, Flight 32 up at 0903. Followed with theodolite until 11:32 Ritenour on & relieved early with #11 up this PM. 1945 with 200 gm balloon. Evaluation system with a promise worked OK except one essential. Ground explosions at site 6 & indicated. Flight lasted 2 hrs. Valved to

Sat Nov 29. Johnston + Jackman to Roswell and back Chg Bn. Pibal up at 08[30]. Flight 33, plastic up @ 09[30] with V40 data on. Transmission did not last long - jerked up fouly by Roswell before long out. Flight 34 this PM with WL gun on plastic. First attempt blowout patch exploded on ground. Second attempt OK - balloon landed at 15[30]. Ground operations good but not recorded. Noise load high + rate of rise high. Pulled up by wish Roswell + Holbo for short time.

Sun. Nov 30. Worked on data; Flight W-11

Mon Dec 1. Put up Flight #35, plastic balloon, CL with WL mike + transmitter, AM. Fouled early with theodolite acct clouds. WL mike and not work at all. Reynolds fired one shot at calc 6. not recorded. Balloon went little north, Roswell. Roswell station off AM account of power failure at 0[30]. Out about noon but couldn't find balloon though it supposedly was within 20-30 miles of them. Off 6[th] station at Alamogordo about noon. Holbo thought they had signal but later decided acct bad receiver that chg clocks were unreliable. Manyak + Gallagher in about 06[00] tonight on B-25

Tues, Dec 2. Flight #36, V40 gear only, with GM diathermic Erdtler, up at 09[24]. Followed with 658 from Alamogordo until about 12, by Roswell from about 10[30] - 12[20]. Was not found by Holbo crew, Manyak and Gallagher up on B-25 about 11 and followed them 2 balloons for about an hour but never could locate it. Balloon went to Roswell at 12[30]. Got mylar aimed covered 2000 yds ready to put up PM with WL gun. But bad weather held it up. Rainy. Dept. bad weather held it up. Rainy. Dept.

Wed, Dec 3

Rainy today. Col Kipp and Major Fletcher in PM and went over work + discussed balloon flights. Put up 20' plastic, #37, on PM during flight Eagle. Balloon came down about 4 hrs later near Alamogordo. Pulled out by Holbo crew.

Thurs, Dec 4

Put up Flight #38 this morning, balloon with strong with plastic neck, WL good for awhile then noisy. Reynolds fired chgs at calc 6 but none were marked. Balloon landed with 3 Roswell + Holbo went out + recovered it. Plastic balloon #39 up PM. with only V40 gear. Climbed up only about an hour then fell fast in moderate zenith + clouds[ish]. Instructions given for Holbo crew to return to Alamogordo.

Fri, 5 Dec. M4V gang - Moore, Hackaman, Kaczmarczyk up upon this AM - leaving some to inspect and taking only tools and data. They complete turnout & downgrade this PM. Ready to put up balloon for V2 rocket today and finally postpone until Monday. Reynolds & Edmonston & Freed fr V2 assembly, but after delay announced, Wilkes on balloon flight for velocity test. Clarke, Olsen in from Baltimore, VAP.

Sat, 6 Dec. To El Paso & Juarez, with V2 personnel.

Sun 7 Dec. Peoples, Drakowski, Greenley, Maj -- arrived Alamogordo 8 AM by C-47. They are on trip through states getting contracts lined up for new atmosphere work. Want our work here with Peoples - Drakowski - Also discussed coming Clarkson work. Glockowski covered work at WL - revision of station of Rossgoten pitot & atmospherics tab which seems not to meet engineering design at WL but satisfies J-5 own. Also possible change of CO at WL. Returned M04112 station and accessory for Clarkson use to report components. They left Alamogordo about 1 PM heading for Albuquerque with White Sands letters & Emmons, Gerber.

Mon 8 Dec. V2 Rocket scheduled for 6:45 AM. Reynolds, Edmonston & Dana with 4.63. Out & Lange early & get ready & launch balloon.

Rocket fuzing two postponed repeatedly, Clearly & White Sands with WL & launched WL-12 with 2000 gm balloon at 0805. Balloon gone fairly good results (noisy) for 2½ hrs, and rose to nearly 80,000 ft. Went just north of Roswell, WL-12 put up thin 1000 gm about 24 months type rocket finally fired. Results on WL-13, two good Rayon not followed so long. Rocket results good - all doing C, T, W5, and low frequency mike on Rayon and pitot good results this too, Launch with WL V3, on another night not standout as yet. Notified 2 V2 Balloon recovery - one new found in Ontario, Canada.

Tues 9 Dec. Worked on balloon flight data today. Finished WL8, WL9, WL10, 34, 35 and started on 38. Johnston worked on cap firing tests, Found to cool water system - Set up tube in Range. Rec'd 20 balloons from C.U. Also tube watch men back & Timber Field.

Wed 10 Dec. Put up WL 14 this PM. with 300 m of wire and cannon. Put up dunk batteries and cold water rubber diaphragm mike. Mike did not perform well, pressure data OK and batteries did not last long enough for cannon to fire. Lt. Johnston leaving tomorrow for Calif. Edmonston & Jackson took to track balloon with theodolite but did not see it at all.

Thurs, 11 Dec. Put up 200 ft [illegible] Line [illegible] Examine
[illegible] Date Data Log Book Mag Bearing
local [illegible] and data. Log book
longer only for [illegible] section. Thodolite data
S.E. 1/4 Sec 2 Twp 8 and 11 East Township [illegible] W 73-12-30W
[illegible] Thodolite data
Found get good signal and followed Hillard
[illegible] Reynolds Line and Roswell.
[illegible] [illegible] N 68-30 30W
[illegible] [illegible] [illegible] N 46-18-30W

Fri. 12 Dec. Put up W 6 at about 11 30 with
2 T 2000 gpm gasoline and 1 gate N 46-18-30W
600 ft 4½" [illegible] North
Line with Thodolite but moved to Clovis
Put up 250 ft [illegible] wire with #8
detonator. [illegible] N 67-28 W
from [illegible] feet to [illegible] NE contact
Cut transformer kick off paper. Put up
when cap and fuse, Balloon went up
12 40 and [illegible] ground about 13 N 74-42-30W
Power off [illegible] 13 72-54 35 04 E

Sat 13 Dec. Abandoned Area Base
4 12-44½ 30 -1-54 N 60¼ W N 60-26W
Block 64 [illegible] 133 [illegible]

Mon 15 Dec. Put up Pabst 7 at [illegible]
Ground charges at 13 [illegible] Cap fuse N 56 69 30W
Exploded [illegible] contact. Detonator did not
[illegible] more than one turn. Very poor at
Roswell. C-47, Runcoff. Patrick in early
this morning. They are taking equipt back
B-25 to base tomorrow. Rocket to Thurs

Could [illegible] Sunday Thursday Monday
Sunday Thursday Monday
Capt Arnold in Ruidoso 49-50 mercy and
picked up 12 tanks gasoline

Tues, 16 Dec. [illegible] 11 40-30 seconds
Detonation. Fuse failure and Det from
Secondary relay. Put up 41-18 det, Am-
2 Robertson Bulldozer with Coal water
system - exploding detonator [illegible] 3 00
radio wire. 30 [illegible] 33-38-30 with fuse
cap - no ground charge. Received
Ticket of typ and followed it to Ft
Stanton and got all necessary explosives,
and G/C 3 gunny [illegible] 112-32 [illegible]
checks out to date [illegible]
Set up G/C 3 and 3 detonators, all long
[illegible] [illegible] [illegible] from Standing at
Set up 1600 ft fuse at 9800 feet on
G/C 3 fuse 1802 to 108-31-30 for explosives

Wed 17 Dec. Got up just ready to leave to
Fort. C-47 and only take about 2000 lb
of gear with [illegible] 32 Cargo Deck
[illegible] not [illegible] about 2 inch
[illegible] Plan Sunday to [illegible]
[illegible] Monday, Thursday [illegible]
[illegible] Mr. Campbell, Engineer Bardwell,
[illegible] Mr. Campbell [illegible] 40-30 Plan to
Explode [illegible] 68-30-30 Set 3-30 W
from Cde H

Thurs 18 Dec

Started [illegible] Dried, filled Radiators Bearing
Chrysler at about 4 P.M. Reached Wickliffe
Falls at 10:30 but can hunting badly.

Fri 19 Dec

Clear & foggy until 2 P.M. Getting radiator
fixed. Left Wickliffe Falls 2 P.M. Played
on Hope, Arkansas tonight.

Sat 20 Dec

Hope, Arkansas to Kingsville, Tenn 278 mi.

S.P. 342

Sun 21 Dec	106-47-30	1121	S73¼E
S.P. 343	106-47-30	1485	Washington DC. S20m-
S.P. 344	106-47-30	880	N73-12-30W
S.P. 341	106-47-30	400	by Porter

Washington DC to Wickliffe Falls at 1 P.M.
Got with Woolley & Chaney and Mr. Crowther Monmouth
Beach with Jim [illegible] N12-14-30W
Bryan & Jim [illegible] did not in take-
Sat 22 [illegible] 106-47-30 1260 stel

Tues 23 Dec SP 347

344 34-47-30 on rockets with Abe & Edsen,
W 348 [illegible] 106-47-30 and talked to Wyckoff
& Perkins [illegible] with Mr. Crowther with N50-23-30E
inventory atom bomb from Russia. Jim has 600 in
to be approved for this work. Woolley, Chaney, Reynolds
and myself to Evans this PM and got photos and
fingerprints for ID Cards. Talked to Dutton re
Alaskan work and flooding in Fairbanks. Ok'd for
surface charges. Worked on rocket sending rockets
with Abe.

Wed 24 Dec Xmas Eve

Work with Crowther and Bernoskie re plans for
Alaska. Off in early afternoon for Xmas with Wayne and Grayson.

Thurs 25 Dec.

Drove over to Langhorne, Pa to spend Xmas
with Wayne and Grayson.

Fri 26 Dec

At Langhorne all day - Record 26"
[illegible] in vicinity.

Sat 27 Dec.

Joe Wogel down from Lake Hopkins today with
Dorothy, Sandy and Tom & Ev.

Sun 28 Dec.

Joe left for Ottawa. S.P. 344 started 3:45 and meeting
Dorothy & kids stopped Dick Marion until he
got back. Over tonight to Calgary Park tonight.

Mon 29 Dec.

Up at 8:30 today S.P. 344 left and
Alaskan preparations. Jim left by 9:30 again & finally
departed from Alongado from Lakehurst 3 days.

Tues 30 Dec.

Checked over test S.P. 347 equipment from Alongado
and started Working on test two flights, 17-18
Woody and Dick Dutton & Lockhart and met
Mother [illegible] Dutton, Adams, Bentley and
Hans [illegible] Mr. Anderson. Packed Alaskan Bag
Packed cafe Bag [illegible]. Left Friday go. Started
Tabulating balloon flights.

Wed 31 Dec. Worked on flights 17-18, balloon
meetings. Worked with Crowther on Arctic
matters & orders.

76

Thurs Jan 1 1948

Up & late for 4-5 hours. Finished up most of flights 6/18.

Fri Jan 2

Finished flights 5/18. Made tabulation of all cool water flights, including 17-18. Discussed them with Peppler & Johnston. Started work with Vivian on last 7 Bombing runs before Bermuda. Started E. on 4-4V for theoretical cooled core.

Sat Jan 3. Checked Bombing runs 29-30-31 for trouble with navigation, etc.

Sun Jan 4 Sabbath Rest.

Mon Jan 5 Worked on flights 29-30-31 etc with V. Nose, Schmidt, Smith & all down from VFC. Two movies of Lillian Boyes in use. Discussed future plans for flying balloons. Went over & cut light in c-c Cloud tracked over graphs, maps, etc for report. Worked up CMCH flow chart.

Tues, Jan 6. Went over rest of flights etc with V. Went over 5 clear cut. Picked up Theothard material & my time. Showed no special indications of velocity changes. Went over Oct 9 cards & tracks with Schmidt. Went over Eskdale work with Tom. Joe Wiegel up to A.P. YMCA tonight & Brought Frost generator and allowed us use of the set.

Wed Preliminary

Up 6:45 A.M. Took generator readings at W.C. Prof Chalkley, Skipped Fri. Schmidt takeoff 10:30 Flight 5 Dry ice. It was found plane was then instructed Kept Dry about 12:15 - Crew consisted of Duffield Lewis, Duff & Chew Chief Reynolds Ellis, 44 College work as co-pilot Chandler, Co-Pilot & navigator, Alexander, Clark, Reynolds and myself C-47 - 6836. Also 4P with Schmidt, Telegram 5 & 6 Champlain with explosive, then to Grey Chandler replacing myself & Schmidt C-47 #6836 World-Chamberlain Field suburbs of Minneapolis Eight & One stops near Detroit.

Thurs, Jan 8.

Flight Minneapolis to Grand Falls. Took 2 Weighed them for clearance - Then on to Goldwater, Canada. Skipped the Export, Fair Jan 9, Sat Jan 10

Edmonton, Canada. Weather month bad.

Sun. Jan 11

Flight Edmonton about 11 after trouble starting engines Stopped at Fort Nelson for gas. Continued Fairbanks, Alaska at 7 PM evening. Met Col Walker and began work on C-47

Mon Jan 12

Went over & cut flight 1308 with Major Walker Fairbanks over & stopped for Christmas given by Col Thermal. Saw Col Anderson Weather Officer and Signal Officer in weather data. Went to Quarters and talked to Major Staley. Unloaded equipment and left at 1308. Went up in C-47 this PM and flew 1:40 in heat & smoke & Fumes and Jakes emergency landing crashes for plane. Done Phil working on report. Mr. Woody and crew of Alaska & talked to Major Staley & Observatory

2 talked with C.G people. Also checked with PR re work there. Diff checked ordnance for storage yard.

Tues, Jan 13

Woody + 2 went up & are working at Portage area, Got Coast & Geodetic maps for Tanana area around Fairbanks and west to the border. Scale 1/250 000 Dave & Phil got driving licenses. Got jeep and trailer and went out with surveying equipment went to Fairbanks along Chena River. Forecast was favorable after last week looking for camp & would check area. Stopped at Weather Bureau at Ladd Field and talked over weather conditions over Alaska in general - also upper atmosphere winds & temperatures. Back to Fairbanks looking for check corner - out to Yukon crossing. O. talked to John Legge, C&C, then up to U.S. Alaska and to Geophysical Dept. Went over work gravity meter work at Aleyeska, also looked over Seismograph station & recordings. Got De West obs & C7 Alaska.

2 Well #56 Leg #4 - 2MR - 1½MR.

Wed Jan 14.

Got Ken & surveyed in + at site by switch, Chena River - Temperature about -25 and transit seems going fairly about an hour. Woody stayed in Town and found corner & check & set fiduciaries & mark. Also checked with 0560 at Weather Bureau. Chena appears to take this low. T-26 out all day -25 and gravity OK.

Thurs, Jan 15. Checked out equipment for trip tomorrow. Went up to with Major Watkins & in Cat Watson re gravity work at Clear. He was not too enthusiastic about this. I could give the Seismologists on the railroad here. Work out this for that plan with explosives could not be used. Checked with local ordnance and found they have about 5000 # TNT and [illegible] but there is a wire re explosives.

Fri. Jan 16. Woody and I left on jeep about 7:45 AM went to Big Delta, got gas. Then started along Richardson Hwy. Got as far as Black Rapids & checked road up to but & continue. Started back. Had trouble with jeep, muffler and gas. And first time got them mixed and out. Called SC & checked back to Big Delta, got gas out & jeep towed in. Stayed at Big Delta tonight. Got 9 gravity values along road.

Sat. Jan 17 Left Big Delta, motor warmed by motor 24 hours and checked motor changes made - Fuel pump by Linde & motor tube. Called up Capt. Fox at Ladd Field and to send out a 2½ ton truck. Loaded jeep on truck and took back to C&C

Sun Jan 18 Fairbanks - Saw Dog Sled races Fun.

Mon Jan 19 Got out 500 # TNT. Got 2½ ton truck at Ladd Field. Woody left at 9:30 AM and I at 10:30 AM. Went to Tanana, left Nenana at 2 PM. Went to Tanana, left Nenana at 2 PM. Got gas and jeep ready by 4 PM. Phil and Dave with 6 Wyoming left Fairbanks 6 PM. Took 2 weeks. Road was only 60 miles. Got on #6 298.05 elev 67

Tues Jan 20 Left Tanana. Woody + 2 had out reading sets on Yukon R near mouth. Left Tanana at 10 AM changes of 2 and 2½°, heard one and lost [illegible] again at 6 PM. Phil + Dave worked until 9 PM. Tanana 56 feet above sea level.

Wed, Jan 21 Left Tanana at 9 AM, changes, Big Delta went into Dept with Woody. Found a check on Tanana corner. Ladd Field. Woody recorded a check at Ladd. Picked up Jerome supply for Woody,

25-1
30 20 15

Thurs, Jan 22

Duff went with Wood & found 2 shots 2 2½ mi SW from mouth of Tanana R. Cloudy. Rejoined G Tanana & moved - R. 47. Windy, 2 shots 1½ 12 G ate on Yukon R, about 20 miles from Tanbark. Windy. Changed batteries after found about 2 more 2:30 shots. Records of Tanana also poor but one decent course obtained on first shot. Recorded 3:30 to 8:00 Cowgill on Bank for 2d first today at White Sands, 4 mi

Fri Jan 23. Windy. 2 holes 2½ in bank and shot charge 150# at 3 locations just Big delta. Cloudy. Reynolds recorded at Fairbanks etc. 20 in negative on C-47. Windy. 2 went to 5 Took fractionation & water after shots. 2 to 6 miles.

Sat Jan 24 Windy. 2 went thru from 2 to 5 to Tokosha, 440 mi S, taking 6 M readings. Back to 2 to tonight.

Sun Jan 25. 2 to 5 to Fairbanks. Checked Fix work.

Mon Jan 26. Off. Reynolds. 2 down 2½ to Big Delta area - Fixed 3 shots at sites 3, 4, 5 along Alcan. Flight at Big Delta tonight

Tues Jan 27. Out from Big Delta found 3 of 5 fresh holes 2, 4 and 5. Laid out recording units at 2 and 5. Cloudy & Windy working at Fairbanks data - C-47 down about 6 and picked up Duff. anyway - left Cloudy with recording apparatus.

Wed Jan 28. H to Big Delta and shot, at 12 and at 2:30 from Tanana R near Steinbright. Windy, 2 down 3½ to 40 Circle bound - may send out to fix at Chatanika, and set up site then for 11 o'clock shot. Back to Cloudy with out set up recording [illegible] for 2:30 shot. Cloudy & Reynolds working at Tolo & 5 Alcan.

Thurs Jan 29. Copeland to 2 & 5 started at Fairbanks. Duff found shot at 11 and 15:29. Windy. 2 left a C-47 set up recording center for Tanana for second shot. Cloudy - Reynolds working at Alcan & Windy - 3 to 5.

Fri, Jan 30. Out #10 today. Duff found 5:00 at Tanana 12:30; Windy and 2 went to C-47 to Mc Grath about 280 mi SE, Tanbark and set up recording site, Cloudy & Reynolds back from Big Delta - having in 6 to 6 from Alcan. turned out.

Sat, Jan 31. Out #11 today. Duff found 5:00 at 15:00 and at 12:00. Visit about two feet of ice, Went to C-47 & Bettles, left 2 Reynolds-Cloudy with station thru Jan. Windy, 2 went to Tanana and set up site there.

Sun, Feb 1. Worked on computation & data from 2 to 5,

Mon Feb 2. Phil. Don packed up - went to Alcan Windy & picked up Tanbark set site - recharged batteries. Took 9 miles to Geophysical Laboratory - for reading - two days. Got depths Umiat - Ft Barrow -

79

Tues, Feb 3

Edmonton [illegible] for g. motor on RR, Rpt Fairbanks, about noon. Unable to land on Skagway, stopped at Whitehorse - Exacto Boundary Triangulation Sta on E "Side of Lake N 13-21-30 W

Wed, Feb 4 N 185 076.92 E 153 599.39

Water take to Edmonton - etc[illegible] at 5P taken for Gov

Thurs Feb 5

Edmonton to Winnipeg

Fri Feb 6

Winnipeg to Montreal - stop at Kapuskasing, Ottawa

Sat, Feb 7 Montreal

Sun, Feb 8 Montreal to Newark - stop at Westover Fuel. Took train to Asbury Park - got room at Asbury Harbor - Charity went on to Olmsted with equipment.

Natural Set

Mon, Feb 9 Charity over about noon with equipment, Went over various work - Museum 24-30 still look W.M. over data worked data with Salem,

Tues, Feb 10 Worked with Gaston on V2 work & velocities, Worked on stations 29-30, changing computations.

Wed, Feb 11. Worked on Alaskan Sounding Records, went over Sects 1-2, made all picks. Punched cup records

CURVE TABLES.

Published by KEUFFEL & ESSER CO.

HOW TO USE CURVE TABLES.

Table I. contains Tangents and Externals to a 1° curve. Tan. and Ext. to any other radius may be found nearly enough, by dividing the Tan. or Ext. opposite the given Central Angle by the given degree of curve.

To find Deg. of Curve, having the Central Angle and Tangent: Divide Tan. opposite the given Central Angle by the given Tangent.

To find Deg. of Curve, having the Central Angle and External: Divide Ext. opposite the given Central Angle by the given External.

To find Nat. Tan. and Nat. Ex. Sec. for any angle by Table I.: Tan. or Ext. of twice the given angle divided by the radius of a 1° curve will be the Nat. Tan. or Nat. Ex. Sec.

EXAMPLE.

Wanted a Curve with an Ext. of about 12 ft. Angle of Intersection or I. P. = 23° 20′ to the R. at Station 542+72.

Ext. in Tab. I opposite 23° 20′ = 120.87
120.87 ÷ 12 = 10.07. Say a 10° Curve.

Tan. in Tab. I opp. 23° 20′ = 1183.1
1183.1 ÷ 10 = 118.31.

Correction for A. 23° 20′ for a 10° Cur. = 0.16
118.31 + 0.16 = 118.47 = corrected Tangent.

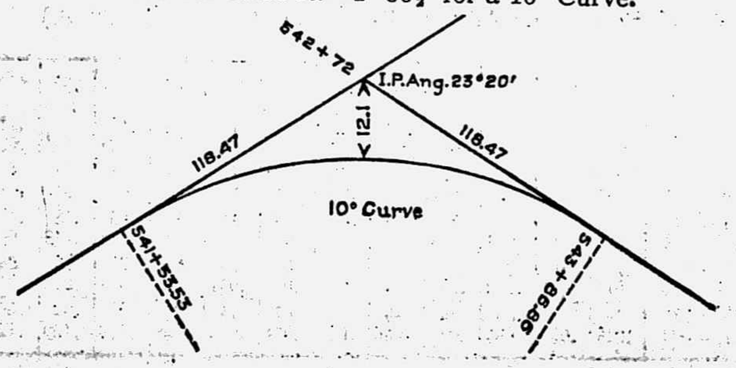
(If corrected Ext. is required find in same way)
Ang. 23° 20′ = 23.33° ÷ 10 = 2.3333 = L. C.

2° 19½′ = def. for sta.	542	I. P. = sta.	542+72
4° 49½′ = " " "	+50	Tan. =	1 .18.47
7° 19½′ = " " "	543	B. C. = sta.	541+53.53
9° 49½′ = " " "	+50	L. C. =	2 .33.33
11° 40′ = " " "	543+	E. C. = Sta.	543+86.86
	86.86		

100 − 53.53 = 46.47 × 3′ (def. for 1 ft. of 10° Cur.) = 139.41′ = 2° 19½′ = def. for sta. 542.

Def. for 50 ft. = 2° 30′ for a 10° Curve.

Def. for 36.86 ft. = 1° 50½′ for a 10° Curve.



in Newark about 430. Reservations to Dayton on Spirit of St. Louis had been cancelled. Called Watson Labs. Got roomette on Spirit about 530. Called Mrs Ewing in NYC. Left Newark on Spirit of St Louis at 620 pm.

April 23 Tues. Arrived Dayton, Ohio about 830 am. Tried to get return ticket for tonight but coach car only open. Took bus out to Wright Field, Bldg 28. Saw Mr Drexler and turned over 2 of the A for P to him. Colonel Maier on leave. Went down to Colonel Winter's office and found Major Crane there. We talked to Colonel Winters regarding the need for planes and about new EO on extended long ranges of the 189-7-1 program which he approved and marked up to 1-B & sent on for higher approval. Went over with Crane & saw Colonel Lind gard in the plane assignment division and talked about planes. Had lunch with him and then went back to talk to Colonel Eaton regarding planes to 189-9-1. Went over to look at C-97, converted B-29 for transport. Back to Bldg 28 & talked with General Rives. Request for planes agrred upon and B-29 will be available near the 1st of June. 189-7-1 required by Rives. A for Ps in Drexler's office not yet signed. - will be sent on to Watson Labs later. Crane had reservations for me on the Spirit of St Louis and we left Dayton at 8 pm.

April 24 Wed. Discussed with Crane possibilities of getting sound through the ground part of the ocean sound channel and about the possibilities of a balloon such as Piccards. Arrived in NYC about 1030. Called Watson Labs and then we took a taxi up to Ewing's office at Columbia. After Ewing 1-2 class we discussed plans for 188-5 and 189-7-1, both Eglin Field and long range channel program. Left Ewings office about 6. Crane registered at Hotel Lexington and I caught 740 out of Penn Station and arrived at Red Bank at 845 pm

April 25 Thurs. Up to Watson Labs. Worked over notes of conference with Ewing yesterday. Wrote up both travel blanks and sent them down to Travel Order Section. Talked with Palmer about MQ travel forms. Wrote up letter to Wright Field requesting use of second crash boat. Wrote R&R for Mark 2 hydrophone. Talked to Lt. Hungerford regarding request of this. Stepanoff, new physicist for WLERL in this pm. Crane left for Wright Field tonight.

April 26 Fri. Up to Watson Labs. Went over purchases already applied for with Reinnagle. Wyckoff in this am. McCurdy in pm for radio parts. Went back to Oakhurst with McCurdy this PM

April 27 Sat. Left Red Bank about 730 AM with McCurdy in his car. Drove through NJ at TRenton & down to Philadelphia. Mac left me off at Olney at subway station. Contacted Marion at Bankers Security and went by train with her to Newton, Pa at 100 PM . Stayed with Flaggs.

Apr 28 Sun. Wayne & Marion drove me over to Trenton, NJ & I caught 1030 am train into NYC. Went up to Ewings about 1215. Joe Worzel there & Hilly Barbour. They left for Woods Hole about 2 PM. I caught 550 train out of Penn Station to Red Bank, NJ

April 29 Mon. Up to Watson Labs. Checked over at library to have some periodicals obtained. Went over water work with McCurdy regarding what is needed in way of purchases. Went over to Oahhurst with Roke, new engineer, former Lt. Commander in Navy. Talked to Charlie Ireland regarding Eglin Field work.

April 30, Tues. Up to Oakhurst. Went over equipment that would be left there and what we might do when rest of people gone to Whitesands with Wyckoff. Wyckoff and I took car to Watsom Labs to conference with Col Duffy of Weather Bureau, Capt Kellogg and Col Gault. Discussed weather problems - on eqpt? and S658s & aerography neede in coming work. Discussed equipment with McCurdy pm and tried to find where demolition cable could be located.

May 1 Wed. Up to Watson Labs. Talked with Stepanoff and Wyckoff regarding work to be done while crew was recording White Sands in New Mexico. Commander Navy arrived about 1130 am and we held a conference - Gault, Compton?, Dove Crane, Wyckoff, Hungerfield, Vaux and myself regarding Navy participation with us in Crossroads. Captain Kellogg of Weather Service over pm and talked with Crane and I regarding 658s, airgraphs, etc. Got travel orders etc to Columbia tomorrow. Wyckoff and about 11 others leaving for White Sands by plane tomorrow morning. Up to lab tonight with Crane.

May 2 Thursday. Left Red Bank on 8 am train, off at Elizabeth and took ferry to NYC. Up to GCT and then up to Docs. Too late for talk with Kellogg but in time for conference with Ewing, Lane of Columbia, Gallo, Bradford, Dove and Crane of Watson Labs. Conference went over contracts with Columbia and WL. Crane and I talked to Dove for short time after dinner. Caught 1130 sleeper to Boston tonight.

May 3 Fri. Arrived Woods Hole 1045 am . Went over to Falmouth with Dorothy. Up to lab pm with Joe W. Talked to Jim Peoples re his amplifier and level recorder. Bump and Kit over tonight. Saw Columbus PM.

~~May 4 Sat~~

[redacted]

By authority of
CO, WATSON LABS, AMC
Initiasl JPR Date 8 May 46

Item 189-7-1
WLERL-4

AIR MATERIEL COMMAND
WATSON LABORATORIES
Red Bank, New Jersey

May 9, 1946

AC/mw

SUBJECT: Request for Special Route Weather Analyses 8 May 1946

THRU: AAF Liaison Office, Weather
Hqs, Signal Corps Engineering Laboratories
Bradley Beach, New Jersey
ATTN: Colonel M. Duffy

TO: Commanding General
Army Air Forces
Washington 25, D.C.
ATTN: Chief, Air Weather Service

1. In connection with the research and development activities of the AAF Watson Laboratories, Radio Acoustic Branch (WLERL-4), at Eatontown, New Jersey, it is requested that the Air Weather Service be prepared to provide certain special route weather information.

2. It is intended that aircraft associated with the research project of the Laboratory will fly over certain predetermined routes, taking observations in connection with special equipment located on the ground. In the initial stages of the investigation these flights will be made in the vicinity of New Mexico and Arizona, but later flights will be in other parts of the United States and outside the United States. It is probable that the exact routes of these flights can be established at least two weeks in advance.

3. It is requested that the Air Weather Service be prepared to assemble weather information concerning the routes flown, and present this information in a form which can be conveniently used to correlate weather with the other observations made by the aircraft. This is not to be considered as a route forecast, but rather an analysis of route weather, giving an accurate vertical cross section to at least 60,000 feet of pressures, temperatures, humidities, clouds, winds, and regions of turbulence. In this connection, it is requested that a map showing locations of special high altitude meteorological stations operated by the Air Weather Service in the continental United States and those stations outside of the United States which the Air Weather Service has access to, be prepared for Watson Laboratories (WLERL-4) as soon as possible.

4. In addition, it would be desirable to have a picture of the synoptic situation in the vicinity of the route, showing frontal positions and pressure centers at the time of the start and finish of the flight.

5. Since the exact accuracies with which these measurements will have to be made are not known at the present time, it is considered that interpolation between existing radiosonde, rawin, and surface stations may provide adequate data. If special meteorological observations directly on route are required, separate action will be taken at a later date to request the Air Weather Service to furnish such observations.

6. These flights, for which the route weather is requested, will start about [redacted] June 1946.

MASTER FILE COPY
[redacted]
be cited in History of

[redacted]

7. There will be three (3) aircraft flying over the same route at three altitudes between 10,000 and 40,000 feet. These aircraft will be equipped for making in-flight observations of temperature, pressure, absolute height (over water), humidity (at intermediate to low altitudes), and turbulence (a recording accelerometer). This information can be used eventually to supplement the weather information provided by the Weather Service.

8. In connection with the planning phase of the project, it is requested that, starting as soon as possible and for a period of one week, four (4) cross sections per day be prepared as outlined in paragraph 3, covering the route between Alamogordo, New Mexico and Mt. Whitney, California. It is not important at what times these cross sections are prepared, provided they are at six-hour intervals. At the end of the week's period, these data should be forwarded to the Watson Laboratory, Radio Acoustics Branch.

9. It is requested that a brief report of the general conditions of winds, including approximate mean direction, velocity, and accuracy of prediction, over all areas in which data are available be prepared and submitted to Watson Laboratories (WLERL-4) as soon as possible. This information is for altitudes of 30,000 feet and higher.

10. The project for which this information is required carries a 1B priority, and cannot be successfully prosecuted without the above weather information.

D. P. Traul
Colonel, Air Corps
Commanding

[redacted]

MASTER FILE COPY

SECRET

Basic ltr frm Watson Labs, dtd 8 May 46, subj: Request for Special Route Weather Analyses

1st Ind

Office of the Army Air Forces Liaison Officer, Weather, Hq, Signal Corps Engineering Laboratories, ASF, Bradley Beach, New Jersey. 10 May 46

To: Chief, Air Weather Service, Langley Field, Virginia

At the request of Colonel Yates, the undersigned investigated the needs of Watson Laboratories for weather service on the project concerned and the preceding request is a result of that investigation. Inasmuch as this information is to be used in connection with an important high priority development project and may eventually involve the setting up of special observation stations for this project alone if interpolated and extrapolated data from the existing weather network is inadequate, it is recommended that every effort be made to demonstrate that the weather information requested can be obtained from the existing weather network. It is further recommended that a staff weather officer be assigned permanently to Watson Laboratories in order to better coordinate the needs of the laboratories for weather service.

M. Duffy /s/
M. DUFFY
Colonel, Air Corps
Liaison Officer

2nd Ind

Air Weather Service, Washington 25, D.C. 31 May 1946

To: Liaison Officer, Weather, Hq S.C. Engineering Laboratories, Shark River Hills Motel, Bradley Beach, New Jersey.

1. In compliance with request contained in paragraph 3, basic letter, 12-hourly cross-sections for the route Alamogordo, New Mexico to Mt. Whitney, California, for the period 16-23 May inclusive, are forwarded herewith.

2. As only 12-hourly data is received at this station it was impossible to prepare 6-hourly cross-sections. However, fairly accurate forecasts of these intermediate hour cross-sections can be made if they are desirable.

3. The study of mean direction, velocity, and accuracy of forecasts of winds aloft above 30,000 feet, requested in paragraph 3, basic letter, and the study of availability of upper air observing station requested in paragraph 3, are being prepared at present. These studies will be forwarded immediately upon completion.

FOR THE CHIEF, AIR WEATHER SERVICE:

OFFICE SYMBOL	1. CAWEA	2.	3.	4.	5.
GRADE AND SURNAME OF COORDINATING OFFICERS				M. F. SOUBA, Jr. Lt. Col., Air Corps Chief, Research & Development	

MASTER FILE COPY

Record Document - Must be cited in footnotes

16—29242-2 U. S. GOVERNMENT PRINTING OFFICE

THIS PAGE IS UNCLASSIFIED

24 January 1947

MEMORANDUM FOR: Deputy Chief of Air Staff for Research and Development

SUBJECT: Trip Report - Weather Research Organization

1. Attended a conference at Wright Field on 23 January on the problem of meteorological research responsibilities in the AAF. Those in attendance at the conference were Generals Craigie, Carroll, Rives; Colonels Yates, Putt, Maier, Holzman and Major Matchinsky.

2. It was generally agreed that meteorological research responsibilities should be assigned to the AMC.

3. The discussion resolved itself about three items as follows:

A. Where should the Met Research Lab be placed in the present Engineering Division organization.

Mainly because of the present assignment of the Upper Atmosphere Research Program to the Electronics Sub-division and also because it would simplify administrative procedures, it was General Craigie's belief that Met Lab might conveniently be placed in the Electronic Sub-division.

This was strongly opposed by Colonel Yates who felt that the Met Lab should be a distinct and separate unit. It was pointed out that there was as much reason to combine electronics with meteorology as aeronautics with medicine. Colonel Yates thought that meteorology would be placed in a very weak position under electronics, because under this head there would be a strong tendency to emphasize the material aspects of meteorological research. The improvement of forecasting weather or geophysical elements in the lower and upper atmosphere requires basic research in which electronic developments are important but incidental. Another point was that in considering the forthcoming merger legislation relating to the Army and Navy, the AAF Met Research might be placed in a most unstrategic position if considered as part of electronics.

General Rives was not particularly receptive to assuming responsibility for Met Research but went along with General Craigie that for administrative

2098

simplicity, it might be convenient to place Met Research in his Electronic Sub-division. General Rives brought up the subject of Met equipmental research and development. At present, this phase of R&D belongs to the Signal Corps. Recently, the AAF was assigned the responsibility for procurement of Met equipment and it was General Rives' belief that a decision would be soon forthcoming as to whether the AAF will be made responsible for this phase of R&D. If the decision is to have the AAF assume the responsibility for all phases of R&D in meteorology, the setting up of a separate Met Lab might then be very well warranted; or as an alternative, the title of the Electronic Sub-division might be expanded to include meteorology i.e., Electronic and Meteorologic Sub-division.

b. Personnel for the Met Research Lab

Colonel Yates indicated that the Weather Service's R&D Unit has been virtually decimated by demobilization and the fact that very few weather officers received Regular Army commissions. Civilian positions and officer vacancies could be transferred to the AMC but in actual bodies, the number of civilians and men, the number would probably not amount to more than 15.

Colonel Yates indicated that he was planning to give AMC, Colonel Leo Mundell, Commanding Officer of the North and South Atlantic Weather Group to head up the R&D Unit in meteorlogy but would like to have Colonel Duffy returned to the Weather Service. It was Yates' understanding that Duffy was to be returned to the Weather Service after Duffy had made his evaluation of the Mogul project. Yates was planning to use Duffy to replace Colonel Bassett in the European theatre.

General Rives indicated that Duffy could not be made immediately available.

Because of the lack of ranking Regular Army officers in Weather, Yates' felt that he could not afford to give up Mundell without having Duffy in return, and a personnel decision was requested on this point.

2099

simplicity, it might be convenient to place Met Research in his Electronic Sub-division. General Rives brought up the subject of Met equipmental research and development. At present, this phase of R&D belongs to the Signal Corps. Recently, the AAF was assigned the responsibility for procurement of Met equipment and it was General Rives' belief that a decision would be soon forthcoming as to whether the AAF will be made responsible for this phase of R&D. If the decision is to have the AAF assume the responsibility for all phases of R&D in meteorology, the setting up of a separate Met Lab might then be very well warranted; or as an alternative, the title of the Electronic Sub-division might be expanded to include meteorology i.e., Electronic and Meteorologic Sub-division.

B. Personnel for the Met Research Lab

Colonel Yates indicated that the Weather Service's R&D Unit has been virtually decimated by demobilization and the fact that very few weather officers received Regular Army commissions. Civilian positions and officer vacancies could be transferred to the AMC but in actual bodies, the number of civilians and men, the number would probably not amount to more than 15.

Colonel Yates indicated that he was planning to give AMC, Colonel Leo Mundell, Commanding Officer of the North and South Atlantic Weather Group to head up the R&D Unit in meteorlogy but would like to have Colonel Duffy returned to the Weather Service. It was Yates' understanding that Duffy was to be returned to the Weather Service after Duffy had made his evaluation of the Mogul project. Yates was planning to use Duffy to replace Colonel Bassett in the European theatre.

General Rives indicated that Duffy could not be made immediately available.

Because of the lack of ranking Regular Army officers in Weather, Yates' felt that he could not afford to give up Mundell without having Duffy in return, and a personnel decision was requested on this point.

2099

C. What will be the organizational structure of Met R&D, if the AAF is given responsibility for all Met R&D.

General Rives indicated that decision might be very well reached within the next month as to the assignment of all Met R&D to the AAF.

General Craigie indicated that if this came about, he might then consider changing the title of the Electronics Sub-division to include Met R&D, or even set up a separate laboratory.

4. At General Rives' suggestion, it was agreed that immediate action to transfer responsibilities of Met R&D to AMC be deferred for approximately three weeks. This suggestion was made because General Rives felt that an immediate decision on Signal Corps - AAF responsibilities in Met R&D would be obtained.

5. Recommend

1. That the present AAF responsibilities in Met R&D be transferred to AMC immediately.

2. That General Craigie handle the organizational structure as he sees fit, but emphasize to AMC that theoretical research aimed to aid the forecasting of geophysical parameters is of greater importance to the Weather Service than equipmental developments, and as a result, electronics and meteorology should be considered as independent fields.

3. That as soon as available, Colonel Leo Mundell be selected to head the Met R&D at AMC, and in return Colonel Duffy be returned to the Weather Service for a previously committed overseas weather assignment.

B.G.

B. G. HOLZMAN
Colonel, Air Corps

2100

DOCUMENT TO ROLL INDEX

Some unreadable pages - Poor original

Frame Number	Classification Number	Date Period	Vol.	Pt.	Title	Security Classification	Remarks
4	168.64-23	1945-1947			Aero Medical	U	
309	168.64-24	1945-1947			Administration	U	
497	168.64-25A	1946			US Civil Service.	U	
790	168.64-25B	1946-1947			War Dept.	U	
1121	168.64-25C	1945-1947			Personnel	U	
1170	168.64-25C	1947			Personnel	U	
1406	168.64-26	1945-1949			Intel.	C	
1785	168.64-27	N.D			President's Air Policy Com.	U	
1871	168.64-28	1945-1947			Operational Analysis	U	
1902	168.64-29	1945-1947			Mogul and Torrid.	U	
1986	168.64-30	1946-1947			Meteorology	U	
2150	Index				Index		

3825 FORM NOV 71 0 - 23

PREV EDIT WILL BE USED

Page 1 Of 1 Roll Number A1760

Subdiv.
Elect. Subdiv.
Operations Section
Plans Sections
Administration Section
Procurement Information
Lab.
Amplification Lab.
Systems Engineering Lab
Engr. Serv. Lab.
Files

T

RE27

WB102

O

GC159 LB15

N

URR V UGLBL NR3 WDP P

FROM CO WATSON LABS REDBANK NJER 171815Z

TO CG AMC WRIGHTFLD OHIO

GRNC

WLEAP-3-4 ATTN TSELP REFERENCE PROJECT MOGUL CMA CAA PROHIBITS DEVELOPMENT FLIGHTS OF CONSTANT LEVEL BALLOONS ANYWHERE IN UNITED STATES PD BELIEVE SPECIAL ARRANGEMENTS ARE POSSIBLE IF CAA WILL CONSIDER THE PROBLEM PD REQUEST THAT SUABLE HIGH AUTHORITY ADVVVVVISE AAF MEMBER OF AIR WAYS SUBCOMMITTEE CMA COLONEL G E FREEMAN CMA MITCHEL FLD CMA NEW YORK TO FORCEFULLY REPRESENT AMC INTERESTS ON THIS MATTER PD ADVISE COLONEL FREEMAN THAT DETAILED INFORMATION ON PROJECT BE OBTAINED FROM NEW YORK UNIVERSITY AND WATSON LABORATORIES PD NEXT CAA BOARD MEETING ON 20 MARCH 1947 PD SATISFACTORY SOLUTION IS ESSENTIAL TO CONTINUE NEW YORK UNIVERSITY WORK PD SIGNED ENGINEERING DIVISION

1813Z

LEAP-3-4 TSELP CAA G E CAA 20 1947

Mar 17, 1947

Mr. Project

CENTRAL FILES

C
O
P
Y

4149TH AAF BASE UNIT
ELECTRONICS EXPERIMENTAL SQUADRON
OLMSTED FIELD, MIDDLETOWN, PENNSYLVANIA

MAEES/SCL/jrs
4 Sept. 1946

SUBJECT: Maintenance of Altitude Control Unit

TO: COMMANDING GENERAL
Air Materiel Command
Wright Field
Dayton, Ohio
ATTN: TSELF-7 - Mr. Hale

1. Reference to the automatic altitude control unit attached to the C-1 auto-pilot on B-29, 5-21795, of Project Mogul, the following malfunction has been noted in its operation: with auto-pilot on all aircraft trimmed for straight and level flights, the ship noses down and starts a gradual descent when the altitude control switch was turned on. This has been found on the last two flights only - one at 10,000 feet and the other at 20,000 feet - in case of the latter a more rapid descent was made. In neither case was the control switch left on for more than approximately 10 seconds, and after it was turned to the off position, the plane resumed a straight and level flight.

2. Request information as to maintenance which can be performed by crew personnel or arrangements be made to have a qualified person be sent to this station to accomplish work on same.

3. This installation was made during the first week of June 1946 at OCATSC, Oklahoma City, Oklahoma, by Mr. Hale.

DONALD E. MATTHEWS
Major, Air Corps
Commanding

Ltr from CO, 4149th AAF Base Unit, Electronics Experimental Sq., Olmsted Field, Middletown, Pennsylvania, subject: "Maintenance of Altitude Control Unit," to Commanding General, AMC, 4 September 1946.

3. It should be noted that the five thousand ohm potentiometer in the altitude control rack is in series with the grid circuit of the C-1 automatic pilot elevator axis. This means that the elevator axis of the automatic pilot will be inoperative when the AN connector is removed from the altitude control. To place this axis in normal operation a jumper must be put between wires number 31 and 86 in the automatic pilot junction box.

4. If base service personnel is unable to service this equipment, it is suggested that this unit be removed from the airplane and sent for further checking to this Command, attention TSEPE-11K.

FOR THE COMMANDING GENERAL:

1 Incl.
Wiring Diagram

for W. H. GIST, JR.
Colonel, Air Corps
Acting Chief, Equipment Laboratory
Engineering Division

THIS PAGE IS [illegible]

RESTRICTED

General Ord[illegible]d/ea/71300

Subject: Constant Level Balloons

2nd Wrapper Ind

Wa, Army Air Forces, Washington 25, D. C. 20 September 1946

To: Commanding General, Air Transport Command, Washington 25, D. C.
Attention: Chief, Air Weather Service

1. The desirability of reinstatement of a former Signal Corps project for the development of a constant level meteorological balloon has been discussed with Colonel Willis of the Office, Chief Signal Officer. The decisions resulting from this discussion can be summarized as follows:

a. After a recent presentation of all arguments for and against the transfer of developmental responsibility for meteorological equipment from the Signal Corps to the Air Forces, the War Department General Staff ruled that such developmental responsibility would continue to be charged to the Signal Corps. The Air Forces, therefore, must abide with the spirit of the announced decision.

b. The Air Forces, have, however, another project of a top-secret category which requires the development of a constant altitude balloon as a means for carrying some 15 to 20 lbs of specialized equipment to varying constant levels. The requirement for this constant level balloon is not related to meteorological problems, although the type of balloon proposed for development by the Air Forces may also logically be used by the Signal Corps in the performance of their responsibility for the development of meteorological equipment.

c. The Signal Corps agrees with a proposal that the Air Forces proceed with its current plan for developing a constant level balloon for the specific purpose of meeting their existing requirement for such a device, providing it is understood that all pertinent information pertaining to the Air Forces constant level balloon is transmitted to the Signal Corps for their information and assistance in discharging their responsibility for development of constant level meteorological balloons. Since the Air Forces project is of a 1B priority, the Signal Corps will hold in abeyance their proposed constant level balloon development pending an appropriate percentage of completion of the Air Forces project.

d. The proposal of the Chief Signal Officer that his responsibility for development of a constant level balloon and the necessary equipment to maintain the balloon at a constant and pre-determined altitude be delegated to the Chief of Engineers, will be reviewed with the intention of either assuming this responsibility in the Office of the Chief Signal Officer or delegating the responsibility to the Air Forces.

RESTRICTED

THIS PAGE IS UNCLASSIFIED

RESTRICTED

Subject: Constant Level Balloons 2nd Wrapper Ind (cont'd)

2. The above decisions pertain to the development of constant level meteorological balloons only. Any subsequent requirements for constant level balloons for the purpose of carrying offensive or defensive weapons will be considered seperately when the need for such type balloon becomes more specific.

By command of General SPAATZ:

ALDRIN H. CRAWFORD
Brigadier General, U.S.A.
Chief, Research & Engineering Div
Office, Asst Chief of Air Staff-4

Incls: n/c

RESTRICTED

A. G. P.	
PRIORITY	
ROUTINE	
MULTIPLE ADDRESS	

TELETYPE MESSAGE

AIR SERVICE COMMAND TELETYPE NETWORK

TSSEQLB/LHB/mw

FROM: AMC **DATE:** 30 Sept 46

TO: CG, AAF Wash 25, D.C.

Attn: AC/AS, A-4, Air Ordnance

CLASS:

C. E. JUNG,
Colonel, Air Corps,
Chief, Equipment Section
Supply Division 5-2241
NAME, RANK AND TITLE OF AUTHENTICATING OFFICER

TSSEQLB3-9-90 . . . . . REQUEST THAT 200 EA. S1HEA BOMB, G.P., 100-LB AN-M30 W/FIN, 200 EA. S20WA FUZE, BOMB, MECH TIME, M127 (NOSE) AND 200 EA. S2AGA ADAPTER BOOSTER M117 BE MADE AVAILABLE TO ORDNANCE PROPERTY OFFICER, WATSON LABORATORY, RED BANK, NEW JERSEY FOR USE IN CONJUNCTION WITH PROJECT MOGUL, EX. ORDER 188-11, PRIORITY 1C. REQUEST THIS HQS ATTN: TSSEQLB BE ADVISED OF APPLICABLE CHIEF OF ORDNANCE SHIPPING ORDER NO., TIME, PLACE AND DATE OF AVAILABILITY AND ARRANGEMENTS WILL BE MADE FOR PERSONAL PICKUP OF THIS MATERIEL. DIRECT SHIPMENT TO WATSON LABORATORY IS NOT DESIRED SIGNED SUPPLY DIVISION.

COPY

COORDINATION

C. G. OR C. O.	CONTROL OFFICE	MAINTENANCE	P & T	SUPPLY	BUDGET & FISCAL	OTHE

Ind 1.

~~SECRET~~

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

SECRET
By Authority of
The Commanding General
Army Air Forces
12 August 1946 Date Initials

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

MEMORANDUM FOR ASSISTANT CHIEF OF AIR STAFF-2, ATTN: General N. B. Harbold

Subject: Intelligence on A-Bomb Explosions in Foreign Countries.

1. If an atomic bomb is exploded in some other country, we should know of the event as soon as possible. The Army Air Forces is currently carrying on a project to explore one proposed method for detecting such an explosion at great distances. It is not yet known whether this proposed method is at all practicable, but the importance of the problem is considered to justify a large expenditure of effort and money in order to test it.

2. There is another method which has been shown to be practicable; namely, to monitor continuously the counting rate of an unshielded Geiger-Mueller Counter and to watch for anomalous increases in the counting rate. Following the explosion of the test bomb in New Mexico in July 1945 an observer on the eastern seaboard reported (Letter to Editor of Physical Review) a temporary increase of about 50 per cent in the rate of a counter set up at his home. A news release from the University of California (Washington Post, 8 August 1946) states that the radioactivity from the second explosion at Bikini has reached San Francisco, 4700 miles away, with measurable intensity.

3. The apparatus for making such measurements is not especially large or complicated. The complete unit can be designed to weigh less than 100 lbs and occupy no more space than an ordinary suitcase. The required power, roughly the same as is needed by a small radio broadcast receiver, can be supplied from an ordinary house lighting circuit. The accumulated counts can be read from an indicator such as a veeder counter. With a little more complication the counts can be recorded automatically at regular intervals. The unit can be made reliable enough to require no maintenance over a period of months. It is likely that units of the required simplicity and reliability are not commercially available now, but they could be developed and produced rapidly.

4. Investigation of the problem might show that an ionization chamber is preferable to a Geiger-Mueller counter for such measurements. The ionization chamber unit would need to be no larger or heavier than a Geiger-Mueller counter unit.

5. It is proposed that such monitor units be installed throughout the world in sites controlled by the United States (embassies, consulates, ships, offices of commercial firms, etc.) and that a system be set up for reporting the readings regularly to a central analysis group.

~~SECRET~~

SECRET

This document is part of an unclassified series

Memo for AC/AS-2, Attn: General N. B. Harbold

6. It should be pointed out that the units are inconspicuous in appearance, that they send out no noise or electromagnetic radiation to call attention to themselves, that their nature and purpose are not obvious except after close examination by an expert, that they require no special siting or skilled attention, and that anyone of them can be represented legitimately as an apparatus for fundamental research on cosmic rays.

7. Without knowledge of the winds which disperse the radioactive gases from the scene of the explosion, the point of the explosion could not be located precisely. However, if units are stationed within a few hundred miles of any suspected point, it should be possible to locate the explosion within a few hundred miles (possibly less) from the trends of the counting rates of the various units.

8. The best information on methods of constructing and using such monitor units is presently held by the Manhattan District. It is probable that a world-wide monitor system of the type proposed here has been considered by the Manhattan District, and it may even have been instituted.

9. If such a monitor system is not now in existence, it should be possible to set it up in time to use the third Bikini explosion for testing the system. The need for a proven monitor system of some kind will, according to some estimates, become acute within the next year or so.

10. The Army Air Forces is already considering development of a piece of equipment similar to this for purposes of collection of technical intelligence and scientific investigation. If, as is suspected, the collection of this type of world-wide intelligence is deemed useful by our State, War, Navy and Air agencies, this office is prepared to initiate development of such a piece of universal and portable equipment applicable to ground, air or surface vessel use.

Curtis E. LeMay

CURTIS E. LeMAY
Major General, USA
Deputy Chief of Air Staff for
Research and Development

This document is part of an unclassified series

SECRET

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

SECRET
By Authority of
The Commanding General
Army Air Forces
6 SEP 1946
Date Initials
FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

DRD

REPLY REFER TO

MEMORANDUM FOR DEPUTY CHIEF OF AIR STAFF FOR RESEARCH AND DEVELOPMENT (6)

SUBJECT: Intelligence on A-Bomb Explosions in Foreign Countries

1. This office is definitely concerned with the problem of acquiring intelligence information on A-Bomb explosions in foreign countries.

2. The development of equipment applicable to A-Bomb explosions, which will give both positive indication and direction, should be expedited. It is believed that this equipment should be portable, automatic recording, requiring minimum technical knowledge for operation, and preferably unrecognizable.

3. The Director of Central Intelligence Group is being advised of our interest in this matter. (Copy attached)

JOHN A. SAMFORD
Brig. General, U. S. Army
Deputy, Assistant Chief of Air Staff - 2

1 Incl
Cy Memo to Director, CIG
same subj as above

Central Files
9/30/46

SECRET

ADDRESS REPLY TO: COMMANDING GENERAL, ARMY AIR FORCES, WASHINGTON 25, D. C.

This document is part of an unclassified series

~~SECRET~~

SECRET
By Authority of
Army Air Forces
5 SEP 1946
Date Initials

AFBAI/Brig Gen Harbold/mbg/6548
wrtn 5 Sept 46

MEMORANDUM FOR DEPUTY CHIEF OF AIR STAFF FOR RESEARCH AND DEVELOPMENT

SUBJECT: Intelligence on A-Bomb Explosions in Foreign Countries

1. This office is definitely concerned with the problem of acquiring intelligence information on A-Bomb explosions in foreign countries.

2. The development of equipment applicable to A-Bomb explosions, which will give both positive indication and direction, should be expedited. It is believed that this equipment should be portable, automatic recording, requiring minimum technical knowledge for operation, and preferably unrecognizable.

3. The Director of Central Intelligence Group is being advised of our interest in this matter. (Copy attached)

1 Incl
Cy Memo to Director, CIG
same subj as above

JOHN A. SAMFORD
Brig. General, U. S. Army
Deputy Assistant Chief of Air Staff - 2

A.P. AAF
6 - SEP 1946
WAR DEPT

Suitable, pending

OFFICE SYMBOL	1. AFBAI	2. AFACB	3.	4.	5.
GRADE AND SURNAME OF COORDINATING OFFICERS	N. B. Harbold Brig. Gen.				

16—29242-2 U. S. GOVERNMENT PRINTING OFFICE

This document is part of an unclassified series

SECRET

AFBAI/Brig Gen Harbold;meg/6548
wrtn 5 Sept 46

SECRET
By Authority of
The Commanding General
Army Air Forces
6 SEP 1946 4/46
Date Initials

MEMORANDUM FOR DIRECTOR, CENTRAL INTELLIGENCE GROUP

SUBJECT: Intelligence on A-Bomb Explosions in Foreign Countries

1. This office has been advised by memorandum from Assistant Chief of Air Staff for Research and Development of the possibility of existing equipment capable of indicating radioactive air masses resulting from A-Bomb explosions. If such equipment exists, this office is interested in initiating information collection activity through AAF agencies in occupied areas, or through military air attaches, by such means as may be feasible.

2. Since atomic energy intelligence recently has been transferred to the Central Intelligence Group and since other governmental agencies have personnel in place capable of acquiring this information, this matter is considered proper subject for CIG supervision and co-ordination.

FOR THE COMMANDING GENERAL:

JOHN A. SAMFORD
Brig. General, U. S. Army
Deputy, Assistant Chief of Air Staff - 2

[illegible] AAF
6 - SEP 1946
[illegible]

Cy sent to Dep Ch Air Staff
for Research and Development

A [illegible]3

OFFICE SYMBOL	1. AFBAI	2. AFACB	3.	4.	5.
[illegible]ADE AND [illegible]NAME OF COORDINATING OFFICERS	N. B. Harbold Brig. Gen.				

SECRET

16—29242-2 U. S. GOVERNMENT PRINTING OFFICE

This document is part of an unclassified series

SECRET

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON 25, D. C.

AFBAI-CO/Lt. Col White/dfr/73605
Wrtn 30 Aug 46

SECRET
The Commanding General
Army Air Forces
30 AUG 1946
Date
In Initials

MEMORANDUM FOR MAJOR GENERAL GEORGE C. McDONALD

Subject: Intelligence on A-Bomb Explosions in Foreign Countries

1. Reference is made to attached memorandum from General LeMay, same subject as above.

2. Subject matter was discussed with the following persons:

a. Colonels Wilson and Sullivan of General LeMay's office.

b. Colonel K. D. Nichols, Deputy to General Groves; and Colonel D. J. Keirn, AAF Liaison Officer to Manhattan District.

c. Mr. Donald Edgar, Acting Chief, Interdepartmental Coordinating & Planning Staff, Mr. Edward R. Welton and Dr. Howard P. Robertson of Central Intelligence Group.

3. The following pertinent information was obtained:

a. The detection method mentioned in paragraph 1 of attached memo is based on the possible existence of a "sound axis" in the upper atmosphere. This method is in an early experimental stage and there is no indication so far that any degree of success will ever be obtained.

b. Contrary to paragraph 2 of attached memo, the Geiger counter method of locating an A-Bomb explosion has not been shown to be practicable. This method was tried for the first time in connection with the Able and Baker tests at Bikini. The final results are not yet available.

c. Consensus of opinion among those consulted is that it should be the function of CIG to determine the feasibility of the Geiger counter method, and — if found feasible — to inaugurate and monitor a project based on same.

4. It is therefore requested that, at the next meeting of the CIG Advisory Board, this matter be referred to CIG for action.

N. B. HARBOLD
Brig. Gen., U. S. A.
Chief, Air Information Division
Office of Ass't Chief of Air Staff-2

SECRET

OFFICE SYMBOL	1. AFBAI-CO	2. AFBAI	3. AFACB	4.	5.
GR[redacted]D SU[redacted]OF COO[redacted]NG OFFICERS	Sr Cap Con	AFBAI			
	2d Col White	N. B. Harbold Brig. Gen.			

ADDRESS REPLY TO COMMANDING GENERAL, ARMY AIR FORCES, WASHINGTON 25, D. C. 10—29242-2

This document is part of an unclassified series

Upper Air Research Vehicles (Conference of 12 March 1948)

MCREON
THRU: MCREP

MCREEP-4

MAR 30 1948

1

1. A conference was held on 12 March 1948 in the office of Engineering Division Plans at which the following were present:

Colonel O. C. Maier	MCREP
Colonel M. S. Roth	MCREON
Colonel M. Duffy	MCREEP
Lt. Col. G.J. McClesmon	MCREC
Major J. O. Fletcher	MCREEP-4
Mr. E. G. Johnson	MCREC
Mr. E.A. Drexler	MCREPX3

2. BACKGROUND INFORMATION: The purpose of the conference was to review plans for obligating the sum of $1,000,000 which had been allocated for the purchase of Upper Air research vehicles. Actions leading up to the conference were as follows:

a. On 12 December 1947 a conference was held between Col. Roth, Col. Duffy and Maj. Fletcher regarding the development and procurement of Upper Air research vehicles. It was decided that approximately thirty (30) Aerobees would be procured and that further investigation of the Corporal F would be carried out with a view to supporting the development of a 1,000,000 ft. vehicle. Funds from the atmospheric research program were to be held for the purchase of Aerobees provided other funds were not available.

b. Later in December the sum of $1,000,000 was allocated by Engineering Division to the Guided Missiles Section for expenditure on Upper Air Research. Informal discussions were held during January and February 1948 between personnel from the Guided Missiles Section and Electronic Subdivision concerning the proposed expenditure of these funds.

c. A conference was held on 20 February 1948 at which a definite agreement was reached. The agreement, as understood by the Electronic Subdivision representatives is outlined in the attached R/R (Incl. 1).

d. In early March 1948 it came to the attention of the Engineering Plans Section that a memorandum from Guided Missiles Section to the Chief, Engineering Division, dated 19 February 1948 had been sent which recommended that $400,000 of the $1,000,000 be diverted to other projects. The remaining $600,000 would then be used as follows: $100,000 for the development of the Convair missile and $500,000 for the purchase of Aerobees.

e. In view of the discrepancy between (c) and (d) above, a conference was called by Engineering Division Plans on 12 March 1948 to clarify the plans for Atmospheric Research vehicles.

500?

OFFICE SYMBOL	1 MCREEP	2 MCREEP	3	4	5	6
SIGNATURE OF RESPONSIBLE OFFICER	M Duffy		(over)			
INTERNAL OFFICE COORDINATION	Got Duffy					

TSENG Form No. 147
(30 Jul 47)
(Formerly TSELT Form No. 1)

RR/m

ESD COORDINATION and FILE COPY

WF-L-18 NOV 47 10M

ROUTING AND RECORD SHEET AIR TECHNICAL SERVICE COMMAND

Use this form for inter-office correspondence within headquarters.

Use authorized office symbols to designate addressor and addressee.

Place initials of dictator and typist, telephone number and location to right of signature

Use entire width of sheet, both sides.

Number all comments consecutively.

Separate comments by horizontal lines across

SUBJECT Memorandum Report, TSEPS-552-540, 11 Oct. 1946, Close out of E.O. 552-591

TO TSEPS-5A
Mr Ryan

FROM TSELS-5B

DATE 15 Nov. 46 COMMENT NO. -

1. Confirming telephone conversation between Mr. Ryan TSEPS-5A and Mr. J.E. TSELS-5B, subject correspondence is returned herewith. It is recommended that the Expenditure Order 552-591 be held open until a conference is held with Watson Laboratories' project officer and representatives of both the Electronic Subdivision and Armament Laboratory to discuss possible additional work.

2. The following additional comments are made concerning subject report:

a. Under c. Conclusions

(1) Add paragraph 12d:

"Due to variations in the size and shape of M-2 demolition blocks the cross-sectional diameter of the tubes and cannisters will have to be enlarged t allow four blocks to be inserted without distorting the cannisters."

(2) Paragraph 13 should be qualified by a remark to the effect that "servi tests of the package dispensing system indicates that it was not satisfactory due, a large part, to the use of the Engineer Corps' M-2 Demolition Blocks which are not of a uniform size and shape. Also the possibility of defective fifteen-second dela detonators creates a serious hazard to personnel and the aircraft."

(3) Paragraph 14 is incorrect and reference to T12003, Addendum 58 should be deleted. This paragraph should be amended to read "All work in connection with E.O. 552-591 is considered completed."

b. Under D Recommendations

(1) Paragraph 15 should read: "That in the event of future requirement, paragraphs 12 and 13 above, be considered."

(2) In view of the difficulties encountered during the brief service tests of the package dispensing system, it is the opinion of this laboratory that further tests or use of the system be abandoned in favor of some suitable use of bombs which can be carried and dropped by means of the bomb shackles in the bomb bays.

Inc;1 M/R orig. and
coordination copy

cc: Mogul File

FILE COPIES TO: | INITIALS
HER
EDS-1

for L P Richmond
C.P. WALTER
Lt. Colonel, Air Corps,
Chief, Systems Laboratory
Electronic Subdivision
Engineering Division

caa
J.E.Scott/meh
2-7145

WF-5-14-45-2 Mil.

(CONTINUE ON OTHER SIDE)

(19 Mar 45)

ROUTING AND RECORD SHEET AIR TECHNICAL SERVICE COMMAND

Use this form for inter-office correspondence within headquarters.

Use entire width of sheet, both sides.

Use authorized office symbols to designate addressor and addressee.

Number all comments consecutively.

Place initials of dictator and typist, telephone number and location to right of signature.

Separate comments by horizontal lines across sheet.

SUBJECT Bombs for Project "Mogul."

RECEIVED

TO TSSEQ4B FROM TSELO DATE 30 Sep 46 COMMENT NO. 1

It is requested that the following materiel be furnished to Watson Laboratories use on Project "Mogul," EO-188-11, Priority 1C.

200 each Bomb G.P. Demolition, 100 lbs, with fin, Type AN-M-30, A.I.C. No. S1HEA

200 each Fuse, Mechanical Time, Type M-127, A.I.C. No. S20WA

200 each Adapter Booster Type M-117, A.I.C. No. S2AGA

T. L. BRYAN
Colonel, Air Corps
Chief, Operations Section
Electronic Subdivision
Engineering Division

EAD/mbh/ia
Ext 26241
Bldg 28

To: TSELO From: TSSEQ4B3 Date: 8 Oct. Comment No.

Attention is invited to teletype TSSEQ4B3-9-90, dated 30 Sept. 1946, copy attached, which indicates action taken on request contained in preceding comment. Upon receipt of information from Hq., AAF concerning availability of subject materiel, your office will be further advised.

1 Incl
Cy TT 30 Sept 46

LAWRENCE BROWN
Capt., Air Corps,
Asst., Equip. Section,
Supply Division.

LHB/mg
5-2273
B-262A
P-232K

16-1-5

WF-5-14-45-2 Mil.

(CONTINUE ON OTHER SIDE)

COORDINATION

CG OR DEP CG

ATSC Form No. 10-508
(Rev. 22 Oct 45)

(PRINT SYMBOL AND INITIALS IN APPROPRIATE BLOCK)

15:29

ADJUTANT GENERAL

Basic ltr fr 4149th AAFBU, Middletown, Pa., dated 4 Sept. 1946, subj: Maintenance of Altitude Control Unit

CHIEF OF ADMIN.

1st Ind. TSELS8/HWM:ag

Chief, Systems Laboratory, Electronic Subdivision, Engineering Division. 10 September 1946.

AIR INSPECTOR

TO: Chief, Equipment Laboratory, Engineering Division. Attention: TSEPE-11, Mr. Levine.

PUBLIC RELATIONS

1. Forwarded as a metter pertaining to your Laboratory.

JUDGE ADVOCATE

2. It is requested that necessary action be taken to comply with par. 2 of basic letter.

PERSONNEL (T-1)

C. P. WALTER
Lt. Colonel, Air Corps
Chief, Systems Laboratory
Electronic Subdivision
Engineering Division

INTELLIGENCE (T-2)

ENGINEERING (T-3)

Wel. Hale

2nd Ind. TSEPE-11K/WEH/imm

HQ, AMC, Wright Field, Dayton, Ohio 25 SEP 1946

SUPPLY (T-4)

TO: Commanding Officer, 4149th AAF Base Unit (Electronics Experimental Sq), Olmsted Field, Middletown, Pennsylvania. Attn: Major Donald E. Matthews.

1. Reference is made to basic communication.

PLANS (T-5)

2. No maintenance instructions have been prepared for this experimental unit. However, it is believed that automatic pilot maintenance personnel can service this equipment by means of the attached wiring diagram. The faulty operation indicates that the synchronizing system is inoperative. This probably means that the follow-up amplifier has failed. It is suggested that the first step be to check the amplifier tubes and if these are found operative, to check continuity of the various circuits in accordance with the attached diagram.

BASE C. O.

OTHER

ORIG FILE COPIES TO:	INITIALS
RECORDS BR, AGO Lab Sec	
EXTRA COPY RETAINED	

VALUE OF PAPER-CHECK ONE
PERMANENT ☐ TRANSITORY ☐

WF-L-8 NOV 45 500M

CENTRAL FILE COPY

ATSC Form No. 10-3 (17 Oct 44)

ROUTING AND RECORD SHEET

AIR TECHNICAL SERVICE COMMAND

Use this form for inter-office correspondence within headquarters.

Use authorized office symbols to designate addressor and addressee.

Place initials of dictator and typist, telephone number and location to right of signature.

Use entire width of sheet, both sides.

Number all comments consecutively.

Separate comments by horizontal lines across

SUBJECT: Supply of Bombs to Watson Laboratories

TO: TSELP3 FROM: TSSEQ4E3 DATE: 3 Jan 47 COMMENT NO. 1

1. Attention is invited to attached teletype WLSUB-4-12-37, dated 31 December 194 from Watson Laboratories.

2. Prior to submission of requirement indicated in cited teletype to Hq AAF, Air Ordnance, for approval, the comments and recommendations of your office are requested.

1 Incl.
TT dtd 31 Dec 46

LAWRENCE BROWN,
Capt., Air Corps,
Asst., Equip. Section — LHB/lhb — B. 262A
Supply Division — 5-9215 — P. 232L

TSSEQ4B3 — TSELP-3 — 7 Jan 47 — 2

1. It is recommended that Watson Laboratories request in teletype WLSUB-4-12-37 be approved.

2. The bombs cited are in surplus supply at Earle Ammunition Depot and the Navy Department has indicated that they can be made available to the AAF, to be drawn from stock at Earle Ammunition Depot in lots of twenty (20) each, as required. It is believed that such an arrangement would be more advantageous to the AAF than the present arrangements for storage of bombs at Fort Dix.

Incl. n/c

TOM C. RIVES
Brig. General, U.S.A.
Chief, Electronic Subdivision
Engineering Division

EAD/jet
2-6211
Bldg-23

FF. 1-30-48. 500M

(CONTINUE ON OTHER SIDE)

R E S T R I C T E D

C O P Y

WLERL-4

PSD/df

14 June 1946

SUBJECT: Change in Classification of Project "Mogul," Item 188-5.

TO: Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

Attn: TSELT

1. It is recommended that the present classification for project "Mogul," Item 188-5, be retained for the military purpose, the final instrumentation and site locations only, and that the phase of preliminary work including field testing, instrumentation, scientific and general engineering work be classified as "Confidential" and the contractual work as "Restricted."

2. This change in classification will elininate certain complications in correspondence and procedures, and is justfied in view of the publication of articles in the press, magazines, and books on the phenomena of sound wave propagation inthe stratosphere in connection with the Siberian meteor and the eruption of the island of Krakatoa.

/s/ D. P. GHAUL
Colonel, Air Corps
Commanding

RXXXXTXRXEXTXXXXX
R E S T R I C T E D

Ltr Watson Labs. 14 Jun 46, subj: "Change in Class. of 'Mogul,' Item 188-5."

1st Ind. TSELT-2/WHD/mch

Hq., Air Materiel Command, Wright Field, Dayton , Ohio. 8 July 1946.

TO: Commanding General, Army Air Forces, Washington 25, D.C.

THRU: (AC/AS-4)

1. To amplify the information given in the basic letter it is desired by Electronic Subdivision that the following information and scientific data pertaining to project "Mogul" be classified "TOP SECRET:"

a. Precise data as to the exact placement of measuring instruments.

b. Scientific observations and measurements that have military application.

c. Detailed methods of measuring results.

2. Engineering preparations for the final test that are not in conflict with the above will be classified "Confidential."

3. Contractual documents will be classified the same as the security classification of the equipments involved. Equipments used in project "Mogul" are common to other systems or sets that are now classified "Confidential," "Restricted," or "Unclassified;" contractual documents should be classified accordingly.

4. Authorization is requested to observe the security classifications proposed herein.

FOR THE COMMANDING GENERAL:

E. O' DONNELL
Brig. Gen., U. S. A.
Deputy Chief
Engineering Division

CENTRAL FILES
EOdonnell.

CENTRAL FILES COORDINATION COPY

RECEIVED
OCT 15 9 AM '46
REPRODUCED

CROSS REFERENCE

AND SUSPENSE RECORD

FILE UNDER NO: 360.2 - Projected Type
360.2 - Guided Missiles - Misc. Bomb Projs. - German
452.1 - Boeing B-29
452.1 - North American B-25
452.1 - Beech C-45

DATE: 5-2-46 & Wire, & Attachments.

FROM: Mr. H H Lammers/mjl/TSTEX

TO: Engineering Division
Maintenance Division
Supply Division.

SERIAL NO: TI-2003, Add.#3

SUBJECT: Project Mogul (188-5)

DOCUMENT FILED UNDER: 360.2 - Guided Missiles - Technical Instruction Directives.

SUSPENSE RECORD

DATE	FOR ATTENTION OF	DATE	FOR ATTENTION OF

ACTION TO BE TAKEN ON SUSPENSE DATE

WF-L-18 SEP 45 200M

HQ AMC Wright Field, Dayton, Ohio

Commanding General
Army Air Forces
Washington 25, D. C.

Crd Mail

x

Attn: AC/AS, A-4, Air Ordnance.

TSSEQB3-1-25 . . . REQUEST THE SUPPLY OF 593 EACH BOMB, DEMOLITION, 100-LB., M30, WITH FINS, TO ORDNANCE PROPERTY OFFICER, WATSON LABORATORIES, RED BANK, NEW JERSEY, BE APPROVED FOR USE IN CONJUNCTION WITH PROJECT MOGUL ITEM 155-5. THESE BOMBS ARE CURRENTLY ON HAND AT THE EARLE NAVAL AMMUNITION DEPOT IN NEW JERSEY WHICH IS IN RECEIPT OF NAVAL BUREAU OF ORDNANCE SHIPPING ORDER NO. 515175 DATED 1 NOV 46 DIRECTING SHIPMENT THEREOF TO THE PHILADELPHIA ORDNANCE DEPOT. WATSON LABORATORIES HAS MADE LOCAL ARRANGEMENTS WITH THE EARLE DEPOT HEREBY, IF RELEASE OF THESE BOMBS IS APPROVED, THEY CAN BE LEFT AT THE EARLE DEPOT AND DRAWN IN SMALL QUANTITIES AS REQUIRED. SUCH ARRANGEMENTS ARE CONSIDERED DESIRABLE IN THAT THEY WILL PRECLUDE A STORAGE AND TRANSPORTATION PROBLEM. ACCORDINGLY, IT IS REQUESTED THAT NECESSARY ACTION BE TAKEN THROUGH THE ORDNANCE DEPARTMENT AND NAVY BUREAU OF ORDNANCE TO AUTHORIZE THE RELEASE OF THE ABOVE BOMBS TO WATSON LABORATORIES IN ACCORDANCE WITH THE LOCAL ARRANGEMENTS INDICATED ABOVE. FURTHER REQUEST THIS HQ, ATTN: TSEQB, BE ADVISED OF ACTION TAKEN.

CC to TSELP3
CC to Watson Lab., Attn: Lt. Ball

TSEQB3 EB/t1 13 Jan 47 C. E. JUDD, Colonel, Air Corps, Chief, Equip. Sec., Supply Div. 1 1

#2

1947 JAN 2 08:27

0

RE46

WB51

151 LB14

URR V UGLBL NR4 WD P P

FROM CO WATSON LABS REDBANK NJER 311653Z

CG AMC WRIGHTFLD OHIO

GRNC

WLSUB-4-12-37 ATTN TSORD EARLE AMMUNITION DEPOT HAS IN EXCESS OF CURRENT NEEDS FIVE HUNDRED NINETY THREE EACH ONE HUNDRED POUND GP BOMB M-30 IN BOMB CRATES WITH FIN ASSEMBLY CMA NOT CODED CMA WHICH CAN BE USED BY THIS INSTALLATION ON PROJECT MOGUL CMA ITEM NO 188-5 PD EARLE DEPOT IS IN RECEIPT OF SHIPPING ORDER NO 518175 DATED 1 NOV 46 FROM BUREAU OF ORDNANCE NAVY DEPT FOR SHIPMENT TO LETTERKENNY ORDNANCE DEPOT PD REQUEST AUTHORITY TO DIVERT SHIPMENT TO AAF 466 SO FOR USE ON AFOREMENTIONED PROJECT PD EARLE DEPOT IS HOLDING SHIPMENT PENDING APPROVAL SIGNED ACTG CHIEF SUPPLY DIV

1657Z

WLSUB-4-12-37 GP BOMB M-30 188-5 518175 1 46 AAF 466

593 ea Bomb, demolition, 100-lb, M30 w/pin
or else
593 ea Bomb, GP, 100-lb, AN-M30 w/pin.

TSELP-3

ATSC Form No. 10-514
(12 APR 45)

CROSS REFERENCE
AND SUSPENSE RECORD

FILE UNDER NO: 008- Directive- confid

360.2- Guided Missile Projects - Mogul

DATE: 28 June 1948

FROM: Cal Roth, Guided Missiles, MCREGM-5-jhz;brw

TO: Commanding O. Holloman A.F.B., Alamogordo, N.M.

SUBJECT: Test Directive No. 16A

field tests on Project Mogul - covering balloon flying and ground explosions as means of measuring sound in upper atmosphere.

DOCUMENT FILED UNDER: Project MX-1011

SUSPENSE RECORD

DATE	FOR ATTENTION OF	DATE	FOR ATTENTION OF

ACTION TO BE TAKEN ON SUSPENSE DATE

WF-L-18 SEP 45 200M

CG OR DEP CG

ADJUTANT GENERAL

CHIEF OF ADMIN.

AIR INSPECTOR

PUBLIC RELATIONS

JUDGE ADVOCATE

PERSONNEL (T-1)

INTELLIGENCE (T-2)

ENGINEERING (T-3)

SUPPLY (T-4)

PLANS (T-5)

BASE C. O.

OTHER

AAF Form No. 10-508
(Rev. 22 Oct 45)

(PRINT SYMBOL AND INITIALS IN APPROPRIATE BLOCK)

TSELO-3B

AIR MATERIEL COMMAND

TSELO-3B/PA/med

19 November 1946

Subject: Mogul Project Replacement B-29
(EO 188-11)

To: Commanding Officer
4151st AAF Base Unit
Watson Laboratories
Red Bank, New Jersey
Attn: Engineering Division

1. Reference is made to R&R dated 11 Oct 46, subject: Report of Conference, and R&R dated 16 Oct 46, and 29 Oct 46, subject: Mogul Project B-29, copies of which are attached herewith. This papar work was initiated in order to expedite arrangements for the replacement airplane for the Mogul Project. The requirements were based on verbal information from Captain Lewis, B-29 Mogul Flight Commander.

2. The airplane request was based on T.I. 2003, Add. 58, and Expenditure Order 188-11. The E.O. was initiated by Watson Laboratories and should be revised by your office to cover the additional expense involved to modify the replacement aircraft. It is estimated that 10,000 man-hours will be required.

3. An airplane assignment has been authorized and the Maintenance Division, AMC has been directed to obtain a B-29 airplane from storage for modification on Project DOM 542-C. The airplane has not yet been selected by serial number, but is to be selected from the block 45-21793 to 45-21811. The Maintenance Control Office, AMC indicates that either Rome or Middletown Air Materiel Area will accomplish the modifications for the replacement B-29 aircraft.

4. It is pointed out that no provisions have been made for the special bomb controls for the Navigator as mentioned by Capt. Lewis. It is recommended that Watson Laboratories' project officer visit Wright Field with Capt. Lewis for a conference with Systems Lab and Armament Lab representatives in order to arrive at a satisfactory system. The following facilities are available for individual drops of one-hundred pound bombs from a standard B-29 airplane:

a. With no bomb bay fuel tanks there is a total of forty bomb shackles available, including stub racks.

D 8056

WF-L-8 NOV 45 500M

CENTRAL FILE COPY

PRIATE STOCK)
INITIALS IN APPRO-
PRINT SYMBOL AND.

b. When two upper bomb bay fuel tanks are installed, there are sixteen shackles available.

c. With two bomb bay fuel tanks installed in the aft bomb bay, there are twenty shackles available in the front bomb bay.

d. The bombing controls are located in the nose of the airplane and are not readily accessible to the Navigator.

e. The snap opening pneumatically operated bomb bay doors are limited to three opening and closing cycles per hour. Leaving the bomb bay doors open for extended periods in flight is not objectionable except that the airspeed will be considerably lessened during these periods.

5. It is requested that your office confirm the existing arrangements indicated herein, whereby the detailed requirements for subject airplane are handled by and coordinated through Captain Lewis, and advise this Headquarters as soon as practicable when Watson Laboratory representatives can attend a conference such as indicated in paragraph 4.

BY COMMAND OF LIEUTENANT GENERAL TWINING:

3 Incl
R&R - 11 Oct 46
R&R - 16 Oct 46
R&R - 29 Oct 46

WAYNE G. EATON
Colonel, Air Corps
Actg Chief, Operations Section
Electronic Subdivision
Engineering Division

Report of Conference.

TSELS From TSELS5B Date 11 Oct 46 Comment No. 1

Lt. Col. Walter

1. A conference was held at Systems Lab 9 a.m. Tuesday, 8 October 1946 in reference to the requirements for a replacement airplane on the Mogul Project.. The following persons attended:

Capt. S.C. Lewis, B-29 Mogul pilot, 4149th B.U.
Capt. Clowry, C-54 Mogul pilot, 4149th B.U.
Lt. Carrol, Mogul crew member, 4149th B.U.
Capt. Witry, TSELO
Capt. Anderson, TSELO
Mr. J.B. Allen, TSELS-5B
Mr. J.E. Scott, TSELS-5B

2. The original B-29 airplane modification list was used as a guide and a new list was prepared. The new list represents the minimum modification requirements to be accomplished before the replacement B-29 airplane is assigned to the project. The replacement B-29 is to be requested by Systems Laboratory on ATSC Form No. 181-4 (copy attached.)

3. It was agreed that salvaging special equipment from the original B-29 45-21795 for re-installation in the new airplane would save a substantial amount of time and labor. The Mogul C-54 would be made available to transfer the equipment from Mitchell Field to the modification point selected by the Maintenance Division.

4. The Maintenance Control Office, by telephone conversation, presented the following facts:

Present work loads at Maintenance depots, especially OCAMA, indicate that unless the project was assigned a "preference number" of 20 or below it would probably be three or four months before they could get an airplane in work.

5.Capt. Witry and Capt. Lewis contacted Col. Duffy, Mogul project officer, by telephone to obtain a target delivery date and to determine what action he would recommend in regard to obtaining a high preference number.

6. Col. Duffy stated that the project was already two months behind schedule and that the airplane was needed immediately. A target date of 15 December 1946 was considered satisfactory under the circumstances. Such a target would require the no. 20 preference.

7. Systems Laboratory accepted the following responsibility in the project:

a. To prepare and carry the airplane request (181-4) through to the Flight Test Division.

b. To assist the Aircraft Distribution Office in selecting a B-29 airplane having as many required features as possible to conserve Maintenance Division man

copy

Summarized Special Equipment, installation or modification required to complete project.

a. Install Flasher Mechanism per 01-20EJ-102.
b. Special identification - Paint wing tips, horizontal and vertical stabilizers and engine ring cowls chrome yellow (including rudder, elevators, and ailercns).
c. Install special locks. These locks are to all use the same key. Only six (6) keys will be made and are to be receipted for by the ferry pilot on delivery of the airplane.
d. Install special instrument panels for the pilot and co-pilot with the instruments grouped in accordance with T.O. 01-1-160.
e. Install 24 hour clock type A-10.
f. Install constant altitude control (barometric).
g. Install True Airspeed Indicator.
h. Install Psychrometer.
i. Install Aerograph
j. Install accelerometer at Navigator's position.
k. Install Weather Attachment AN/APA-35 to AN/APQ-13A Radar Set.
l. Install extra AN/ARC-8 (BC-348Q and AN/ART-13A) at radio operator's positi.
m. Install extra AN/ARN-7 Radio Compass with receiver in upper forward turret well.
n. Relocate the existing Radio Compass Receiver from the bomb bay to the forward cabin.
o. Replace Radio Set SCR-522 (if installed) with AN/ARC-3.
p. Install special audio mixing facilities at the pilot's and co-pilot's positions.
q. Install AN/APN-1 with the indicators at the co-pilot's pane.
r. Relocate the SCR-718 Indicator from the nose to the navigator's cabinet.
s. Connect the audio output of the marker beacon receiver to the interphone system.
t. Install Loran Antenna to the left hand horizontal stabilizer.
u. Install anti-precipitation static antennas AS-315/A and relocate the antenna lead-in insulators from the bombbay to the forward cabin.
v. Miscellaneous
   (1) Install two bombbay tanks; one tank in each upper bombbay.
   (2) Install alternate C-1 Turn Control for the navigator.
   (3) Modify scanner's seats in Section 44 to face forward.
   (4) Install two (2) engine tool kits.
   (5) Install one (1) Curtiss propeller tool kit.
   (6) Install three (3) type E-2 life rafts.

The special instrument panels and instruments, weather Equipment and extra radio equipment are to be removed from the original B-29 45-21795 now at Mitchell Field for installation in the replacement airplane.

copy

copy

Mogul Project B-29

TSMCO
Mr. Goldberg

From TSELS5B

Date 16 Oct 46

Comment No.

1. Reference is made to Routing and Record Sheet 11 Oct. 1946, Subject: Report of Conference, from TSELS5B to TSELS, a copy of which was forwarded to your office. A copy of the newly prepared Airplane Request (ATSC Form No1 181-4), dated 10 Oct. was attached.

2. A considerable saving in installation, fabrication and supply manhours will be effected if the special instrument panels and instruments, weather equipment, bomb bay tanks, Curtiss propellers, and extra radio equipment is removed from B-29 45-21795 for re-installation in the replacement airplane. Equipment, mounting brackets, cabling, etc. salvaged from the damaged airplane must be carefully removed, tagged and loaded aboard the transporting aircraft, C-54 45-551, which will be furnished by the 4149th B.U., Olmsted Field, Penna. The salvaged equipment must be thoroughly inspected and either reconditioned or replaced before re-installation; particularly, the propellers and weather equipment.

3. The following list is submitted as a recommended guide for removal of the equipment to be salvaged from B-29 45-21795 now at Mitchell Field:

a. Special locks including six keys.

b. Special instrument panels for the pilot, co-pilot and navigator including all instruments, shock-mountings and plumbing which can be removed with the panels.

c. Twenty-four hour clock, (Part of navigator's panel).

d. Constant altitude Control for C-1 Auto Pilot consisting of three items:

(1) Control unit located behind pilot's seat bearing an identifying tag.

(2) Altitude Control Junction Box, bearing an identifying tag, is located near the control unit.

(3) Switch located near the C-1 Auto Pilot Control is madked "Altitude Control On-Off". Salvage the switch and escutcheon plate as part of the pilot's aisle stand.

The above items are to be inspected and calibrated by TSEPE-11K at Wright Field before re-installation.

e. The True Airspeed is to be retained in the NavigatorIs instrument panel complete with its associated tubing, thermometer and sunshade attached securely to the panel to prevent damage.

f. Free Air Temperature Gage installed forward of the Navigator's window is to be removed for re-installation due to its special selection.

copy

(over)

g. Weather Equipment

(1) The Psychrometer (above the bombardier's position) is to be remove as a complete unit including the mounting, adapter plate (complete window panel assembly) lights, and the storage chest.

(2) The Aerograph is to be removed complete with associated parts. Ca- Lewis, Mogul B-29 pilot, reports that the recorder is in need of repair. It is recommended that the aerograph be checked by a Signal Corps Activity in the vicinity of Mitchell Field (probably Fort Monmouth or Watson Laboratories) before re-installation if no delay is involved.

(3) Indicator Equipment AN/APA-36, weather adapter to the radar set, consisting of:

1 Control Unit C-176/APA-36
1 Indicator Amplifier AM-63/APA-36
1 Mtg. Base MT-38/APA-1
1 Repeater Indicator ID-15/APA-1
1 Switch Box SA-48/APA-36
1 Synchronizer SN-78 ( )/APQ-13
1 Control Box C-718 ( )/APQ-13
#1 Cable (connects Ind.Ampl. AM-63 to Synchro SN-78)
#2 " (" " " " " to SW. Box SA-48)
#4 " (" " " " " to J.B. J-106)
#5 " (" " " " " to Control Unit C-176)
#6 " (connects Control Unit C-176 to Repeater Indicator ID-15)
#7 " (connects Switch Box SA-48 to Synchro SN-78)
#8 " (" " " " " " ")
#9 " (" " " " " " ")
#10 " (" " " " " to Adapter M-358)
#11 " (connects Synchro SN-78 to Range Unit SP-6/APQ-13)
#12 " (connects Switch Box SA-48 to Adapter M-358) if installed.
(connects Switch Box SA-48 to Control Box C-718)

h. Accelerometer (part of the navigator's panel).

i. AN/ART-13A Transmitter No. 2 with the special mounting bracket provisions, and dynamotor complete.

j. BC-348 No. 2 installed above the normal liaison receiver, including the special mounting provision.

k. Extra Radio Compass (Receiver, loop and relay installed in upper forward turret well) is to be removed complete with tuning shafts, indicators, control Boxes and special mounting fixtures; and, two sense antenna masts with pressurizing provisions. Tag all components. Add an additional tag to the LP-21 loop with the following:

(cont'd)

NOTICE: THIS LOOP SPECIALLY COMPENSATED! DO NOT EXCHANGE OR DISTURB THE COMPENSATION!

l. Remove the fourteen foot loop cable and pressure fittings between the compass receiver aft of the navigator and the compass loop in the forward bomb bay.

m. Radio Set AN/APN-1 is to be removed complete with receiver transmitte mounting provisions, antenna cables and pressure-bulkhead fittings. Retain the indicators and altitude selector as installed in the copilot's instrument panel.

n. Remove the wire antenna anti-precipitation static hardware, wrapping insulators, tension units and fittings individually to prevent scratches.

o. Bomb bay tanks are to be drained, removed and treated for storage. Ta each tank indicating from what location it was removed. The two upper tanks are to be re-installed in the replacement B-29. The two lower tanks are to be returned to Wrignt Field via the transporting C-54 airplane marked for B-29, 45-21812.

p. Remove the C-I turn control at the navigator's position.

q. Remove E-2 life rafts and emergency equipment.

r. Curtiss Electric propellers including wiring harnesses, voltage boost synchronizers, special relays, switches (including reverse pitch actuating switch at pilot's left hand side), and the aisle stand are recommended for removal and reinstallation in the replacement airplane if not already installed.

s. Wing deicer boots and fairings are to be removed for reinstallation in the replacement airplane.

4. It is requested that salvaged parts be assembled at Mitchell Field, and the 4149th SU Olmsted Field, be notified that a transporting airplane is required to deliver the equipment to the modification point. The saving in time and labor represented by salvaging the above equipment is dependent upon the care and workmanship exercised in the removal and tagging of the above listed items.

C. P. WALTER
Lt. Colonel, Air Corps,
Chief, Systems Laboratory,
Electronic Subdivision,
Engineering Division. J.E.Scott/dju
2-7145

cc: Mr. Haney TSELS8
Mr. Lawrance TSELS4
Capt. Witry TSELO
TSELO
Mr. Borlund TSFCO

COPY

copy

Mogul Project B-29

TSMCO From TSELS5B Date 29 Oct 46 Comment no. 1
Mr. Goldberg

1. Reference is made to R&R 16 October 1946, same subject.

2. From information received through Mr. L. F. Fischer, TSSAD, a tentative proje has been set up to assign a B-29 replacement airplane from the serial number range 45-21793 to 45-21811 on DOM Project 548-C. However, this project will not be released to the Maintenance Division for action until confirmation is received from Washington.

3. Based on the above tentative information it will be necessary to salvage the Radar Set AN/APQ-13A together with all installation provisions from B-29 45-21795 for re-installation in the replacement airplane as the above mentioned block of airplanes do not have radar equipment installed.

4. It is requested that the following item be added to paragraph 3 of the referenced R&R:

a. Radar Set AN/APQ-13A.

(1) Group A and B Parts

(2) Cables and bulkhead fittings

(3) Mounting provisions and equipment racks, operator's table, chair and tracks, oxygen, etc.

(4) Antenna, R.F. Unit, radome, wave guide and all mounting provisions, including the belly panel between the bomb bays if it is considered reparable.

5. The above radar equipment will require close inspection and bench test before re-installation as some parts may have been damaged and will require replacement or repairs.

E. C. LAVIER,
Lt. Colonel, Air Corps,
Acting Chief,
Systems Laboratory.

cc: TSELO, Capt. Witry
TSELS4, Mr. Lawrance

J.E.Scott/ems
2-7145
Bldg. 6A

C/O Prof Meese