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442479

SUPPLEMENT II

TO

TECHNICAL REPORT 46

BASIC DATA

FROM H-34/HIDAL CALIBRATION TRIALS
1963

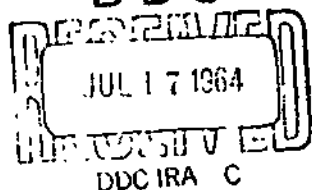
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U.S. ARMY BIOLOGICAL LABORATORIES
Fort Detrick, Frederick, Maryland

SUPPLEMENT II
to
TECHNICAL REPORT 46

BASIC DATA FROM
H-34/HIDAL CALIBRATION TRIALS
1963

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Crops Division
DIRECTOR OF BIOLOGICAL RESEARCH

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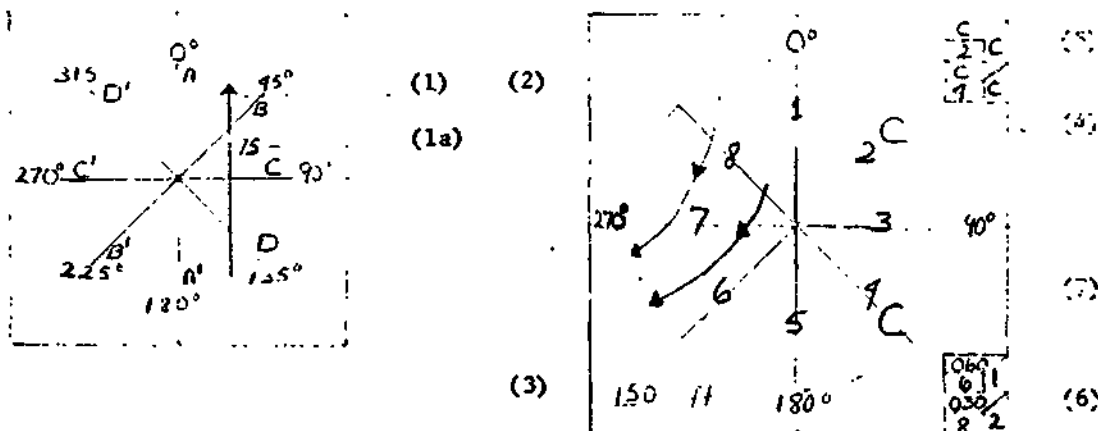
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INTRODUCTION

This supplement concerns the calibration of a modified H-34/HIDAL spray system and presents the basic data and spray deposit patterns obtained in 100 test flights at Eglin Air Force Base between 27 June and 16 July 1963. The data are presented in the sequence of ground flow determinations, mass median diameter calculations, and mass deposit measurements.

SAMPLE AND EXPLANATION OF METEOROLOGICAL DATA



(1) & (1a)

Aircraft course

75 Station No. aircraft crossed

(2)

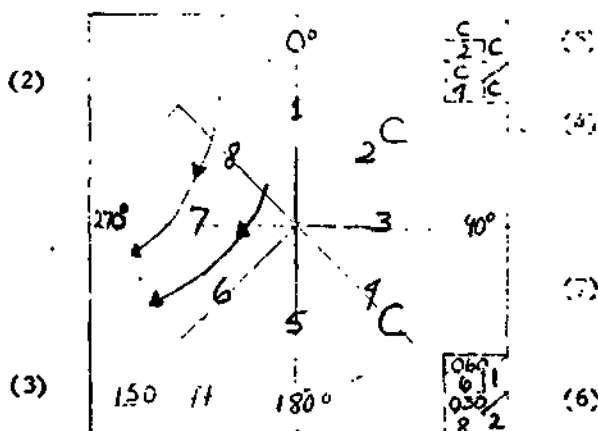
Wind current

(3)

150ft Altitude in feet, met. data obtained

(4)

Calm



(5)

Calm

Met. data station

(6)

Wind direction in degrees

Met. data station

Wind speed mph

Wind speed mph

(7)

1-8 indicate location of met. data station

Sky Conditions

Example: 25 ③ 100 ⑪ / + 7

 1 2 3 4 5 6 7

- 1 - Cloud cover height in hundreds of feet
- 2 - Cloud Amount 0 - No clouds
 ① - Fair weather cumulus
 ⑪ - Variable sky
- 3 - Second cloud cover height in hundreds of feet
- 4 - Cloud Amount
- 5 - Barometric Tendency / Rising
 - Steady
- 6 - Overcast
- 7 - Visibility in miles

Remarks

GFH - Ground Fog Heavy	N - North
OCNL - Occasional	E - East
C - Clouds	S - South
CLR - Clear	W - West
CU - Cumulus	LTG - Lightning
CB - Cumulo-nimbus	H - Haze
FQT - Frequent	S - Smoke

H-34/HIDAL GROUND FLOW & FLIGHT DATADATE CALIBRATED: 26 June 1963DATE TEST FLOWN: 27 June 1963LIQUID SPRAYED: Fuel OilTOTAL NOZZLES OPEN: 60NOZZLE TYPE: 8010LIQUID TEMP: 350 F.DURATION OF SPRAY: 30 Sec.PUMP PRESSURE: ----- PSITOTAL AMOUNT SPRAYED: 26 Gal.BOOM PRESSURE: 32 PSIFLOW RATE CALIBRATED: 54 CPMOPERATIONAL DATA DURING FLIGHT

Run 1 - Shakedown flight

Run 2 - Pin sheared in pump

PASS MEDIAN DIAMETER

DATE: 2/ June 1963SPREAD FACTOR: 6.0FLIGHT #: 1CONVERSION FACTOR: 2.2SAMPLE LINE: BPAPER: Kromekote, whiteFLOW RATE: ----MATERIAL: Fuel OilSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
78	1	3500*			
78	2	3400			
78	4	3300			
78	3	3200			
78	5	3100			
78	6	3000			
78	7	2900			
79	8	2800			
79	9	2700			
79	10	2600	77		75

$$\text{MMD} = \frac{\text{Spot D Max}}{\text{Spread Factor} \times \text{Con. Factor}} = \frac{3500}{6.0 \times 2.2} = 265.2 \text{ Microns}$$

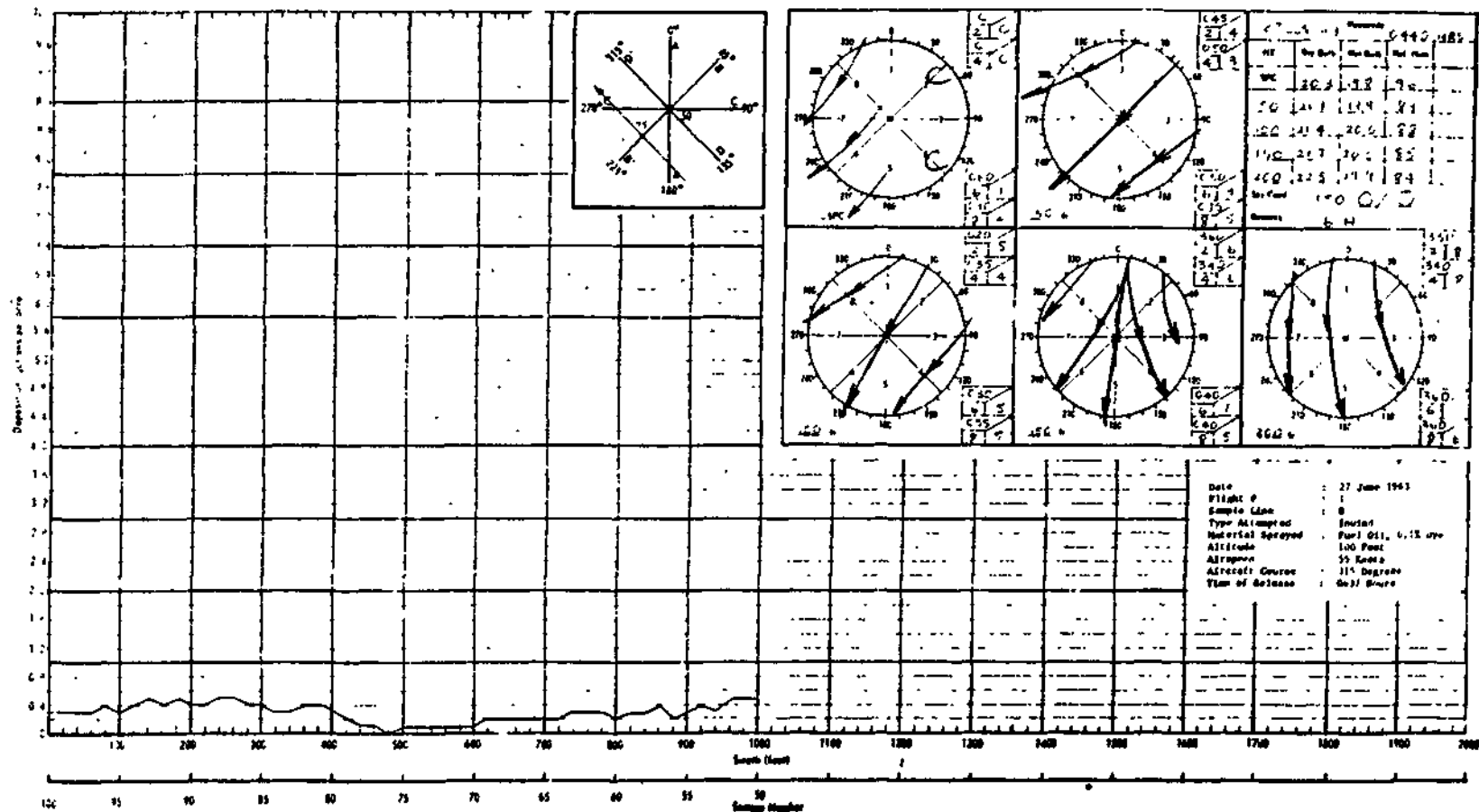
$$\text{Max. Sph. Dia.} = \frac{3500}{6.0} = 583.3 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = \frac{75}{6.0} = 12.5 \text{ Microns}$$

MASS DEPOSITMATERIAL: fuel OilFLOW RATE: ----DATE: 27 June 1963SYSTEM: hidalFLIGHT #: 1AIRSPEED: 55 KnotsSAMPLE LINE: BALTITUDE: 100 FeetTIME OF RELEASE: 0437 HoursAIRCRAFT COURSE: 315 DegreesDURATION: 10 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 50 Blank				51	0.5	76	0.3
				52	0.5	77	0.1
				53	0.3	78	0.1
				54	0.4	79	0.2
				55	0.3	80	0.3
				56	0.2	81	0.3
				57	0.4	82	0.3
				58	0.3	83	0.3
				59	0.3	84	0.3
				60	0.2	85	0.3
				61	0.3	86	0.3
				62	0.3	87	0.3
				63	0.3	88	0.3
				64	0.2	89	0.4
				65	0.2	90	0.4
				66	0.2	91	0.5
				67	0.2	92	0.4
				68	0.2	93	0.3
				69	0.2	94	0.3
				70	0.1	95	0.3
				71	0.1	96	0.4
				72	0.1	97	0.3
				73	0.1	98	0.3
				74	0.1	99	0.3
				75	0.1	100	0.3

Total 14.5



MASS MEDIAN DIAMETER

DATE. 27 June 1963SPREAD FACTOR. 6.0FLIGHT #: 2CONVERSION FACTOR: 2.2SAMPLE LINE: BPAPER: Kromckote, whiteFLOW RATE: ----MATERIAL: Fuel OilSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
28	1	4500			
28	3	4000*			
28	4	3900			
28	2	3800			
28	5	3700			
28	6	3600			
28	7	3500			
28	8	3400			
28	10	3300			
28	9	3200			
28	11	3100	30		100

$$\text{MMD} = \frac{\text{Spt D Max}}{\text{Sprcad Factor} \times \text{Con. Factor}} = \frac{4000}{6.0 \times 2.2} = 303.0 \text{ Microns}$$

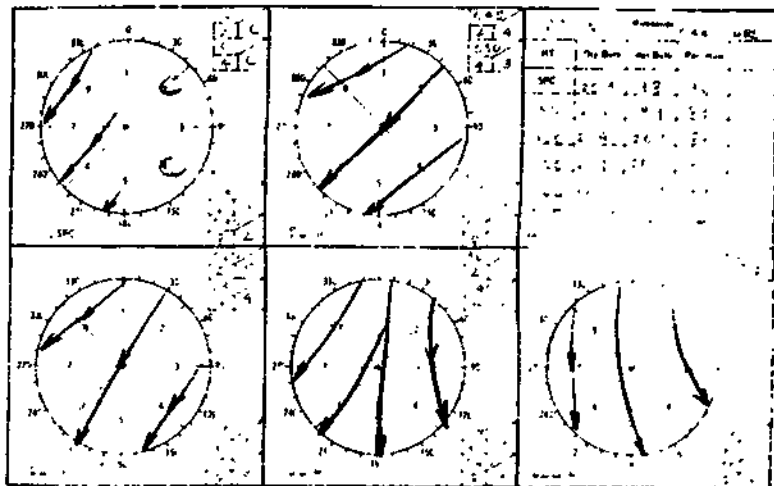
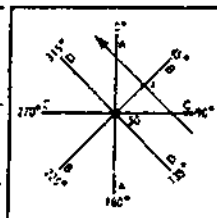
$$\text{Max. Sph. Dia.} = \frac{4500}{6.0} = 750 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = \frac{100}{6.0} = 16.7 \text{ Microns}$$

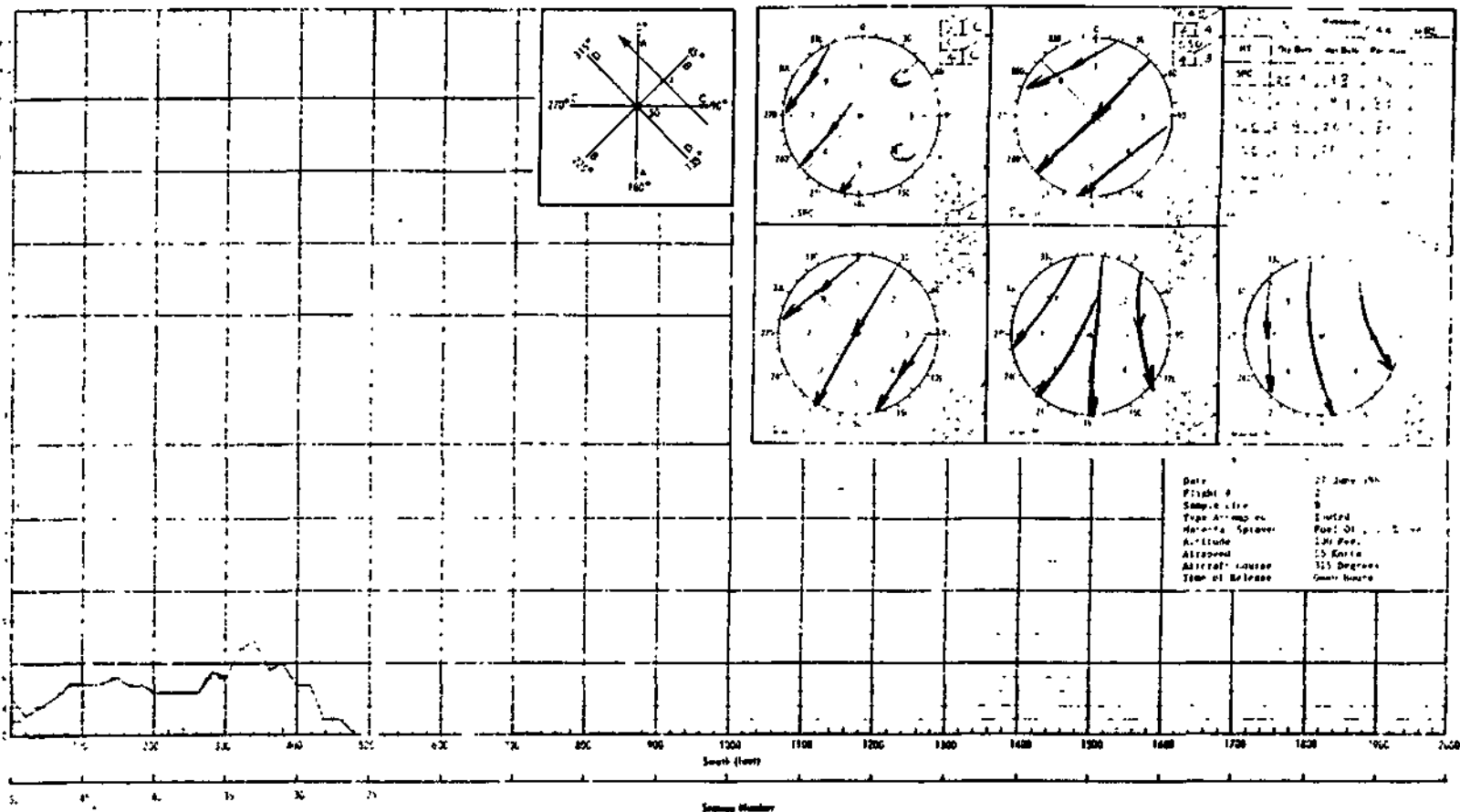
MASS DEPOSITMATERIAL: Fuel OilFLOW RATE: ----DATE: 27 June 1963SYSTEM: HIDALFLIGHT #: 2AIRSPEED: 55 KnotsSAMPLE LINE: BALTITUDE: 100 FeetTIME OF RELEASE: 0440 HoursAIRCRAFT COURSE: 315 DegreesDURATION: 14 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 26 Blank				Stations 51 - 100 Blank			
27	0.2						
28	0.2						
29	0.7						
30	0.7						
31	1.0						
32	0.9						
33	1.3						
34	1.2						
35	0.8						
36	0.9						
37	0.6						
38	0.6						
39	0.6						
40	0.6						
41	0.7						
42	0.7						
43	0.8						
44	0.7						
44	0.7						
46	0.7						
47	0.5						
48	0.4						
49	0.3						
50	0.5						

Total 12.4



Date: 27 June 1966
 Flight #: 1
 Sample size: 9
 Type of pump: 1
 Name of pump: 1
 Altitude: 1000 ft
 Altitude: 1000 ft
 Altitude: 1000 ft
 Time of Release: 1000 hours



H-34/HIDAL GROUND FLOW & FLIGHT DATA

DATE CALIBRATED: <u>1 July 1963</u>	DATE TEST FLOWN: <u>2 July 1963</u>
LIQUID SPRAYED: <u>2 Fuel Oil, 1 Purple</u>	TOTAL NOZZLES OPEN: <u>60</u>
NOZZLE TYPE: <u>8010</u>	LIQUID TEMP: <u>37° C</u>
DURATION OF SPRAY: <u>30</u> <u>Sec.</u>	PUMP PRESSURE: <u>40</u> <u>PSI</u>
TOTAL AMOUNT SPRAYED: <u>30</u> <u>Gal.</u>	BOOM PRESSURE: <u>36</u> <u>PSI</u>
	FLOW RATE CALIBRATED: <u>60</u> <u>GPM</u>

OPERATIONAL DATA DURING FLIGHT

Above information same for Runs 1 - 6.

DATE CALIBRATED: <u>1 July 1963</u>	DATE TEST FLOWN: <u>2 July 1963</u>
LIQUID SPRAYED: <u>2 Fuel Oil, 1 Purple</u>	TOTAL NOZZLES OPEN: <u>60</u>
NOZZLE TYPE: <u>Check valves only</u>	LIQUID TEMP: <u>37° C</u>
DURATION OF SPRAY: <u>30</u> <u>Sec.</u>	PUMP PRESSURE: <u>16</u> <u>PSI</u>
TOTAL AMOUNT SPRAYED: <u>40</u> <u>Gal.</u>	BOOM PRESSURE: <u>14</u> <u>PSI</u>
	FLOW RATE CALIBRATED: <u>80</u> <u>GPM</u>

OPERATIONAL DATA DURING FLIGHT

Above information same for Runs 7 - 12.

MASS MEDIAN DIAMETER

DATE: 7 July 1963CONVERSION FACTOR: 2.2REPORT NO.: 1PAPER: Kromekote, whiteCANDLE LINE: CMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 60 GPMSYSTEM: 1 IDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
77	2	4400*			
77	1	4300			
77	6	4200			
77	5	4100			
78	8	4000			
77	7	3800	76	1	75 (smallest)
77	3	3700			
77	4	3600			
77	10	3500			
77	9	3400			

$$MMD = \frac{67.72 + 0.1420 (\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4400}{6.355 \times 2.2} = 314.7 \text{ Microns}$$

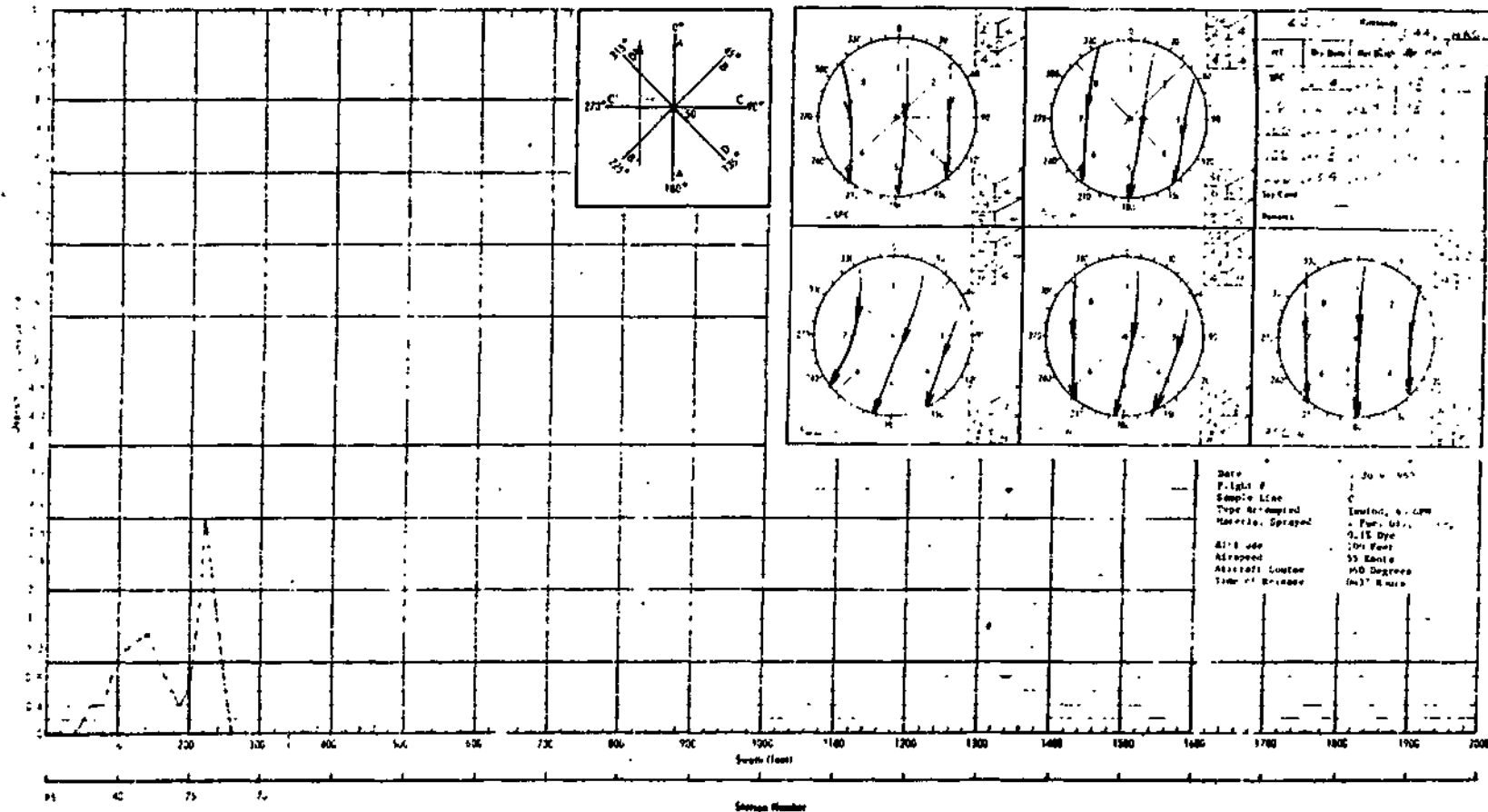
$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420 (4'00)}{6.355} = 692.4 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 48 \text{ Microns}$$

MASS DEPOSITMATERIAL 2 Fuel Oil, 1 PurpleFLOW RATE: 60 GPMDATE: 2 July 1963SYSTEM: HIDALFLIGHT 1AIRSPEED: 55 KnotsSAMPLE LINE: CALTITUDE: 100 FeetTIME OF RELEASE: 0437 HoursAIRCRAFT COURSE: 360 DegreesDURATION 12.5 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 72 Blank				73	3.0		
				74	1.9		
				75	0.6		
				76	0.4		
				77	1.0		
				78	1.4		
				79	1.3		
				80	1.1		
				81	0.4		
				82	0.4		
				83	0.0		
				Stations 84 - 100 Blank			

Total 11.5



MASS MEDIAN DIAMETER

DATE: 2 July 1963CONVERSION FACTOR: 2.2DROPS #: 2PAPER: Monelote, whitePLS LINE: CMATERIAL: 1 Fuel Oil, 1 PurpleFLOW RATE: 60 GPMSYSTEM: WIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
30	3	5000			
30	4	4700			
28	1	4400*			
29	2	4300			
28	3	4200			
30	5	4100			
31	6	4000	38	1	100 (smallest)
25	7	3900			
25	9	3800			
22	10	3700			

$$MMD = \frac{67.72 - 0.1428 (\text{Spot 1 Max})}{2.2} = \frac{4400}{6.355 \times 2.2} = 314.7 \text{ Microns}$$

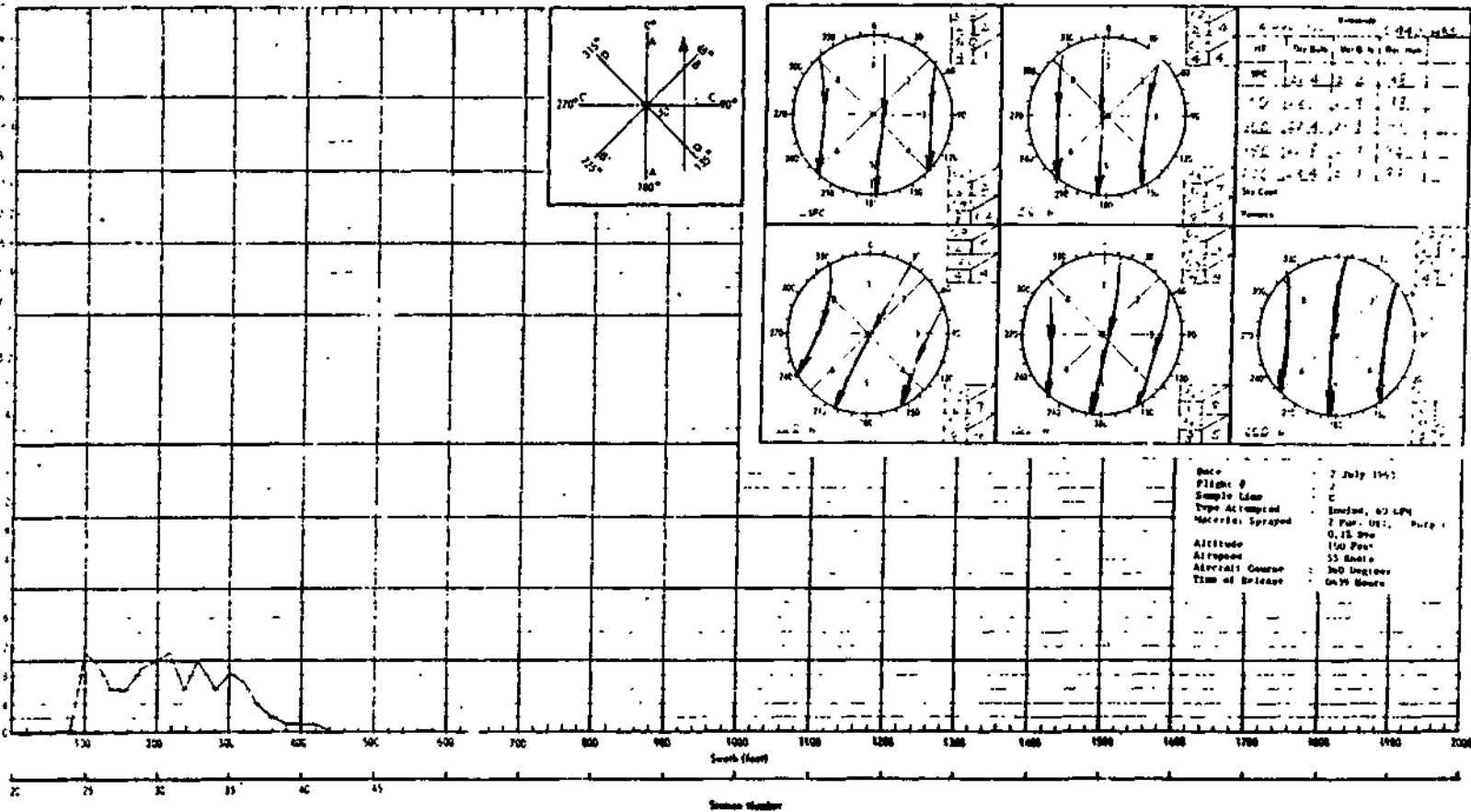
$$\text{Max. Sph. Dia.} = \frac{67.72 - 0.1428 (5000)}{6.43} = \frac{5000}{6.43} = 777.6 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 33 \text{ Microns}$$

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 60 GPMDATE: 2 July 1963SYSTEM: HIDALFLIGHT #: 2AIRSPEED: 55 KnotsSAMPLE LINE: CALTITUDE: 100 FeetTIME OF RELEASE: 0439 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 11 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1	23 Blank	24	0.0				
		25	1.1				
		26	1.0				
		27	0.6				
		28	0.6				
		29	0.9				
		30	1.0				
		31	1.1				
		32	0.6				
		33	1.0				
		34	0.6				
		35	0.8				
		36	0.7				
		37	0.4				
		38	0.2				
		39	0.1				
		40	0.1				
		41	0.1				
		Stations 42 - 100	Blank				

Total 10.9



MASS MEDIAN DIAMETER

DATE: 2 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 3PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 60 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
75	4	3700			
79	3	3200*			
79	2	3100			
78	1	3000			
79	5	2900	78	1A	100 (smallest)
78	6	2800			
78	7	2700			
78	8	2600			
78	10	2500			
78	9	2400			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3200}{6.355 \times 2.2} = 237.3 \text{ Microns}$$

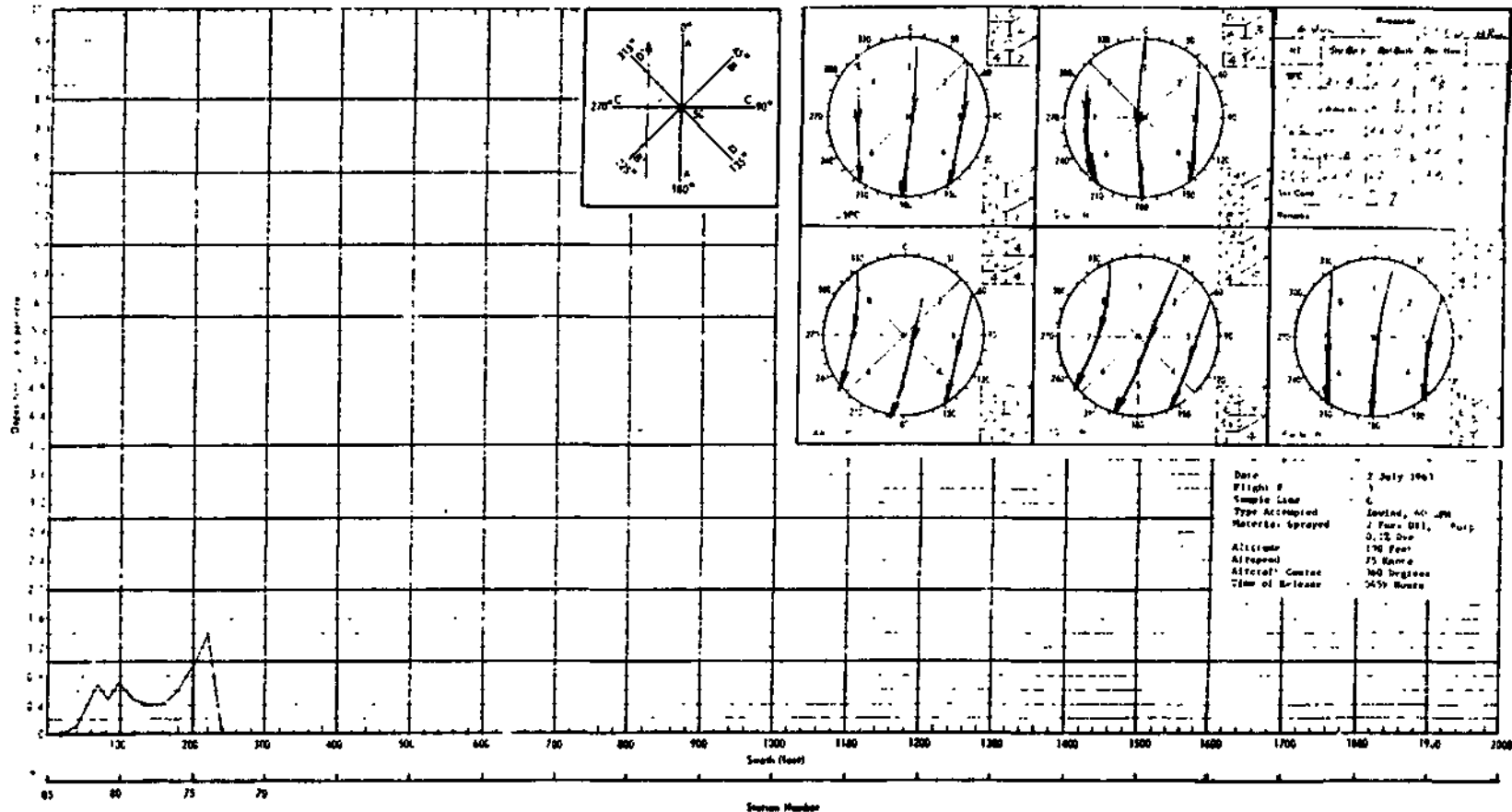
$$\text{Max. Sph Dia.} = \frac{67.72 + 0.1420(3700)}{6.430} = \frac{3700}{6.430} = 593.0 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 60 CFMDATE: 2 July 1963SYSTEM: HIDALFLIGHT #: 3AIRSPEED: 75 KnotsSAMPLE LINE: CALTITUDE: 100 FeetTIME OF RELEASE: 0459 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 7.5 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 73 Blank				74	1.4		
				75	0.9		
				76	0.6		
				77	0.4		
				78	0.4		
				79	0.5		
				80	0.7		
				81	0.5		
				82	0.7		
				83	0.1		
				Stations 84 - 100 Blank			

Total 6.2



MASS MEDIAN DIAMETER

DATE: 2 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 4PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 60 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
29	1	3400*			
24	4	3300			
29	2	3100			
29	3	3000			
29	5	2900			
29	6	2800	26	1A	100(smallest)
29	7	2700			
29	8	2600			
29	9	2500			
29	10	2400			

$$MMD = \frac{67.72 \pm 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3400}{6.355 \times 2.2} = 250.2 \text{ Microns}$$

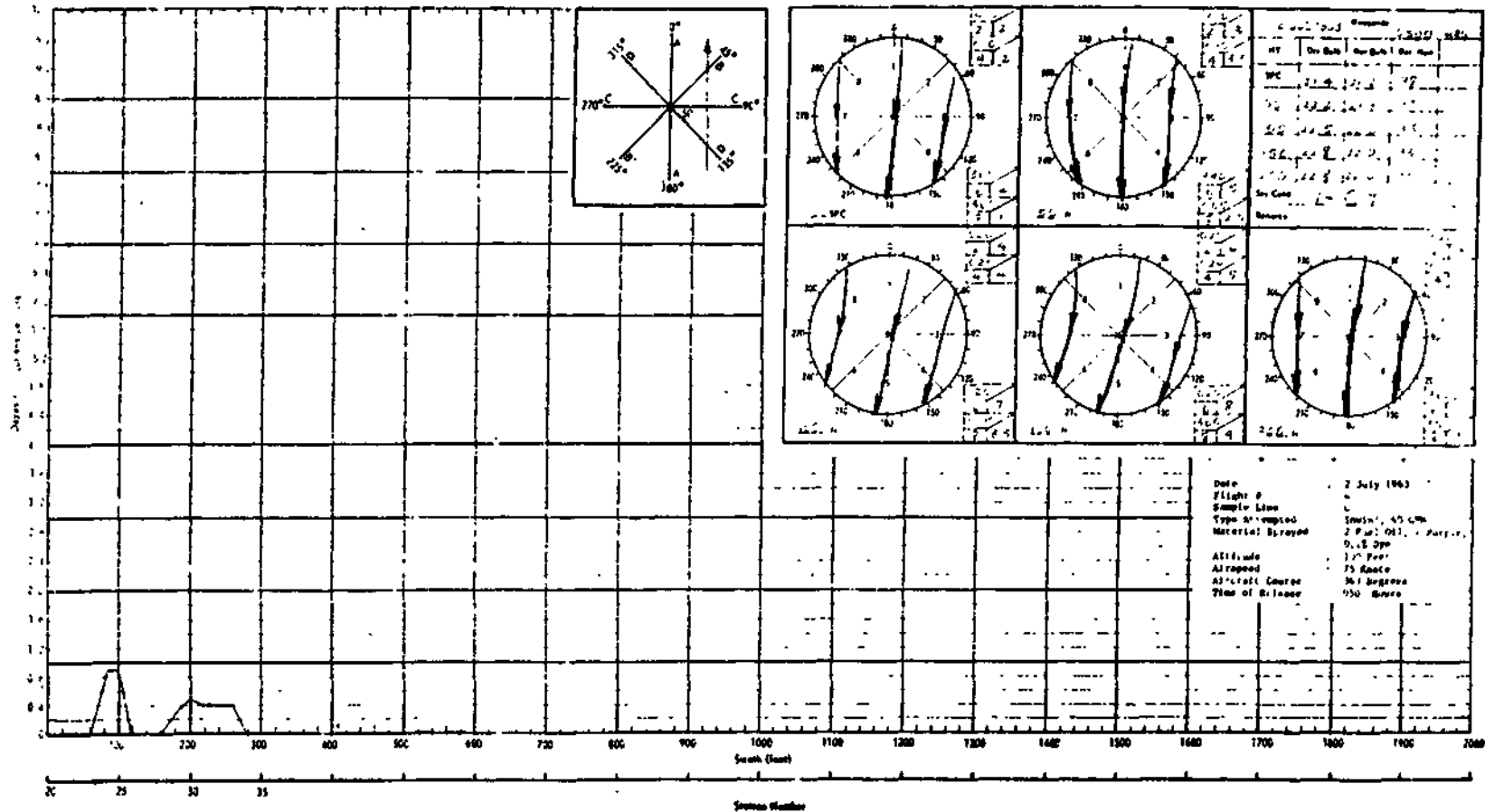
$$\text{Max. Sph. Dia.} = 67.72 \pm 0.1420(3400) = \frac{3400}{6.430} = 550.4 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 5.1 GPMDATE: 2 July 1963SYSTEM: HIDALFLIGHT #: 4AIRSPEED: 75 KnotsSAMPLE LINE: CALTITUDE: 100 FeetTIME OF RELEASE: 0500 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 7 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 23	Blank	24	0.9				
		25	0.9				
		26	0.0				
		27	0.0				
		28	0.0				
		29	0.3				
		30	0.5				
		31	0.4				
		32	0.4				
		33	0.4				
		Stations 34 - 100	Blank				

Total 3.3



MASS MEDIAN DIAMETER

DATE: 2 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 5PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 60 GPMSYSTEM: HTDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
79	5	4800			
78	1	4300*			
80	6	4200			
78	2	4100			
78	4	4000	78	1A	100(smallest)
78	3	3900			
79	8	3700			
78	7	3600			
80	10	3500			
80	9	3400			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{spot D Max}) = 4300}{\text{Con Factor} = 2.2} = \frac{4300}{6.355 \times 2.2} = 308.2 \text{ Microns}$$

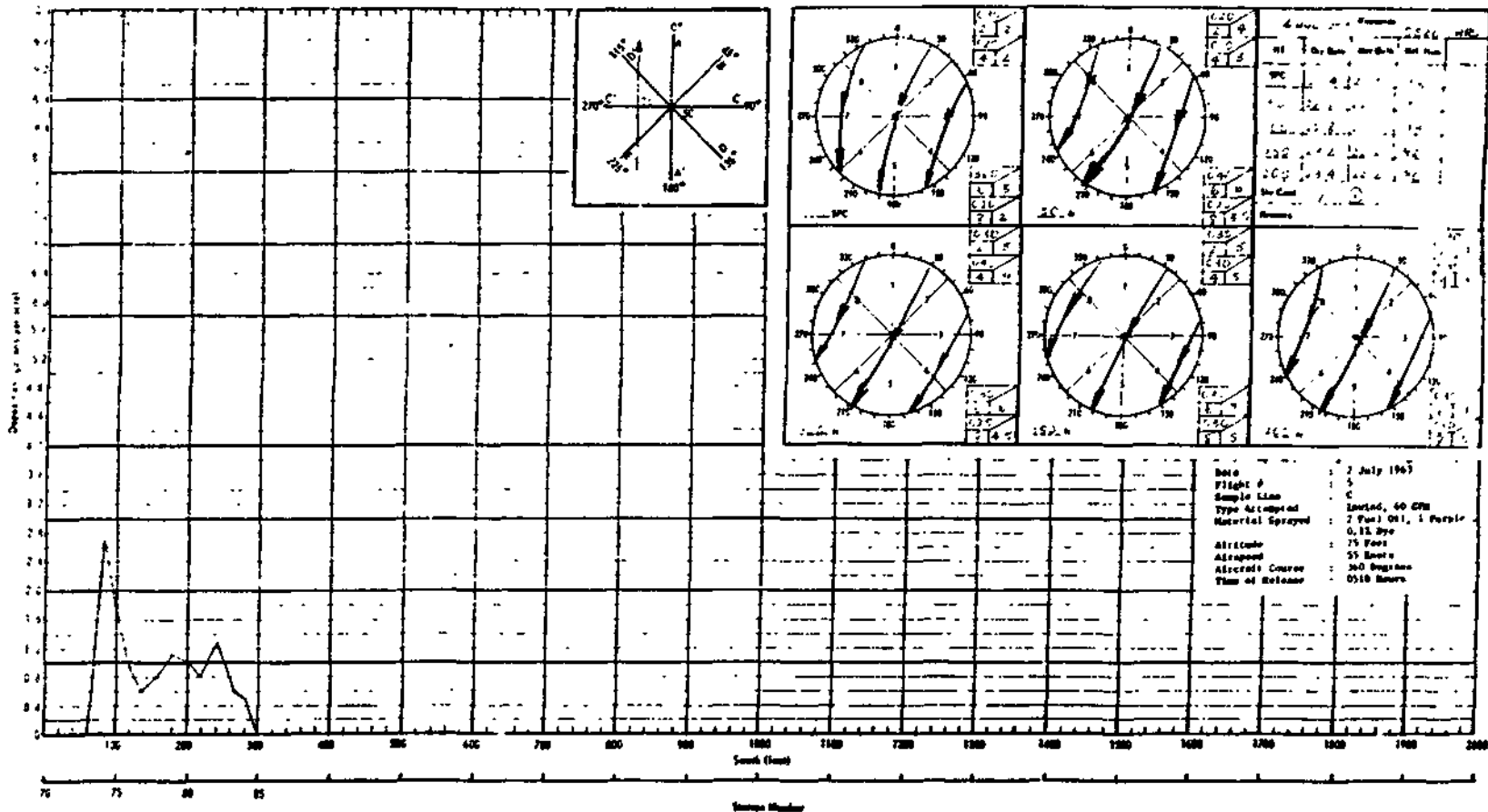
$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(4000)}{6.430} = \frac{4800}{6.430} = 749.2 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 60 GPMDATE: 2 July 1963SYSTEM: HIDALFLIGHT #: 5AIRSPEED: 55 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0518 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 09 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 73	Blank					74	2.7
						75	1.7
						76	0.9
						77	0.6
						78	0.8
						79	1.1
						80	1.0
						81	0.8
						82	1.3
						83	0.6
						84	0.5
						85	0.1
						86	0.0
						Stations 87 - 100	Blank

Total 12.0



MASS MEDIAN DIAMETER

DATE: 2 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 6PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 60 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
24	1	5000			
29	6	4100*			
29	3	4000			
27	7	3900			
29	2	3800	34	1	100(smallest)
29	5	3700			
29	4	3600			
29	8	3500			
24	9	3400			
29	10	3300			

$$MMD = \frac{67.72 + 0.1420(\text{spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4100}{6.355 \times 2.2} = 295.3 \text{ Microns}$$

$$\text{Max. Sp. Dia.} = \frac{67.72 + 0.1420(5000)}{6.430} = \frac{5000}{6.430} = 777.6 \text{ Microns}$$

$$\text{Min. Sp. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITCONTENTS: 2 Fuel Oil, 1 PurpleFLOW RATE: 60 GPMDATE: 2 July 1963SYSTEM: HIDALRELIGION: 6AIRSPEED: 55 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0520 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 08 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 23	Blank	24	1.4				
		25	1.5				
		26	0.7				
		27	0.8				
		28	1.0				
		29	1.0				
		30	0.9				
		31	0.9				
		32	0.7				
		33	0.4				
		34	0.4				
		35	0.5				
		36	0.2				
		37	0.3				
		Stations 38 - 100	Blank				

Total 16.7

MASS DEPOSIT

100 TONS: 2 Fuel Oil, 1 Purple

FLOW RATE: 60 GPM

DATE: 2 July 1963

SYSTEM: HIAL

THICKNESS: 6

AIRSPEED: 55 Knots

SAMPLE LINE: C

ALTITUDE: 75 Feet

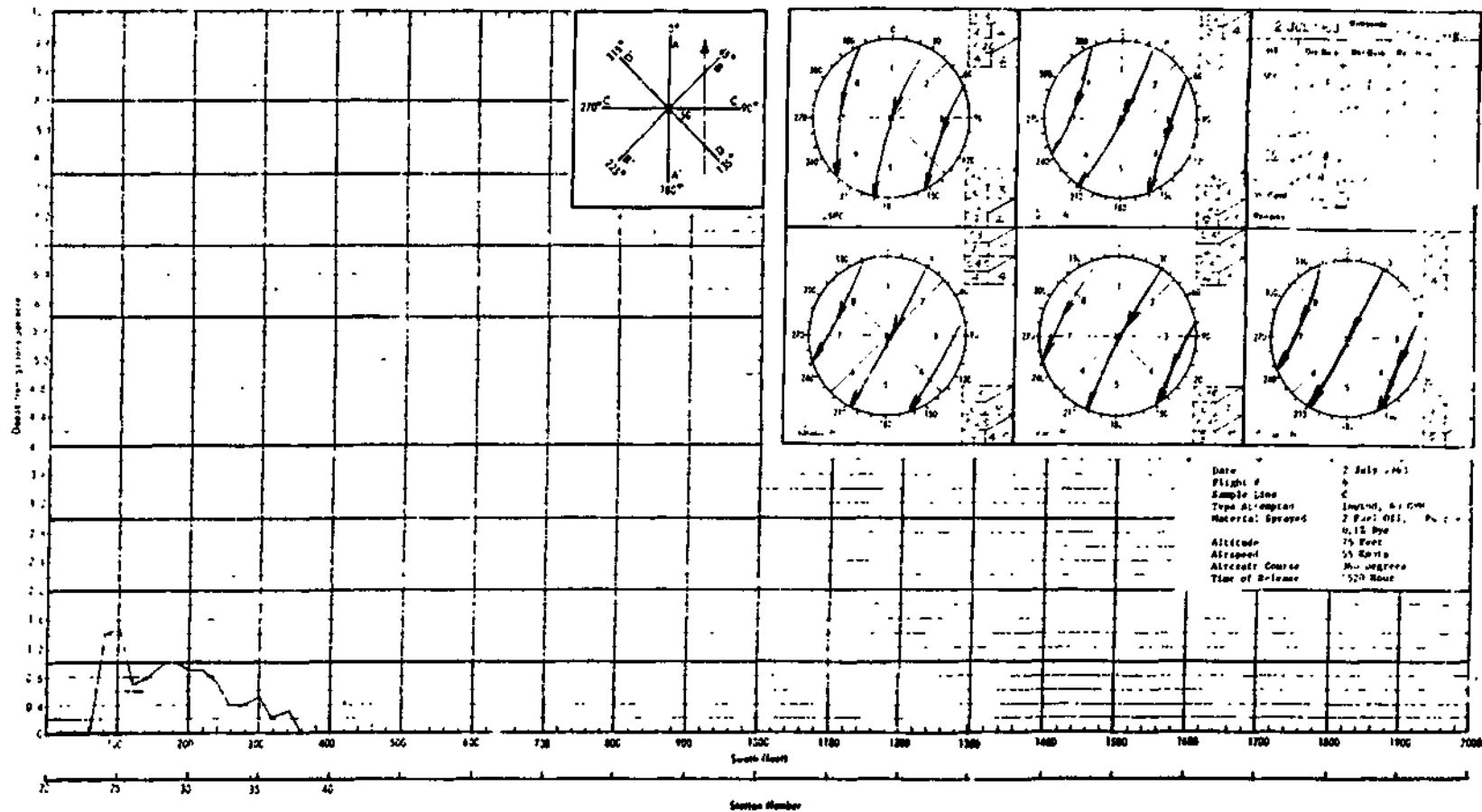
TIME OF RELEASE: 0520 Hours

AIRCRAFT COURSE: 360 Degrees

DURATION: 08 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 23	Blank	24	1.4				
		25	1.5				
		26	0.7				
		27	0.8				
		28	1.0				
		29	1.0				
		30	0.9				
		31	0.9				
		32	0.7				
		33	0.4				
		34	0.4				
		35	0.5				
		36	0.2				
		37	0.3				
		Stations 38 - 100	Blank				

Total 10.7



MASS MEDIAN DIAMETER

DATE: 2 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 7PAPER: Kromakote, whiteSAMPLE LINE: CMATERIAL: 3 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMASTEN: HICAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
77	1	5100*			
77	2	5000			
77	5	4900			
77	3	4800			
77	4	4700	83	1	100(smallest)
77	6	4600			
75	9	4500			
77	8	4400			
77	7	4300			
77	10	4100			

$$MD = \frac{67.72(0.1489)(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{5100}{6.355(2.2)} = 352.0 \text{ Microns}$$

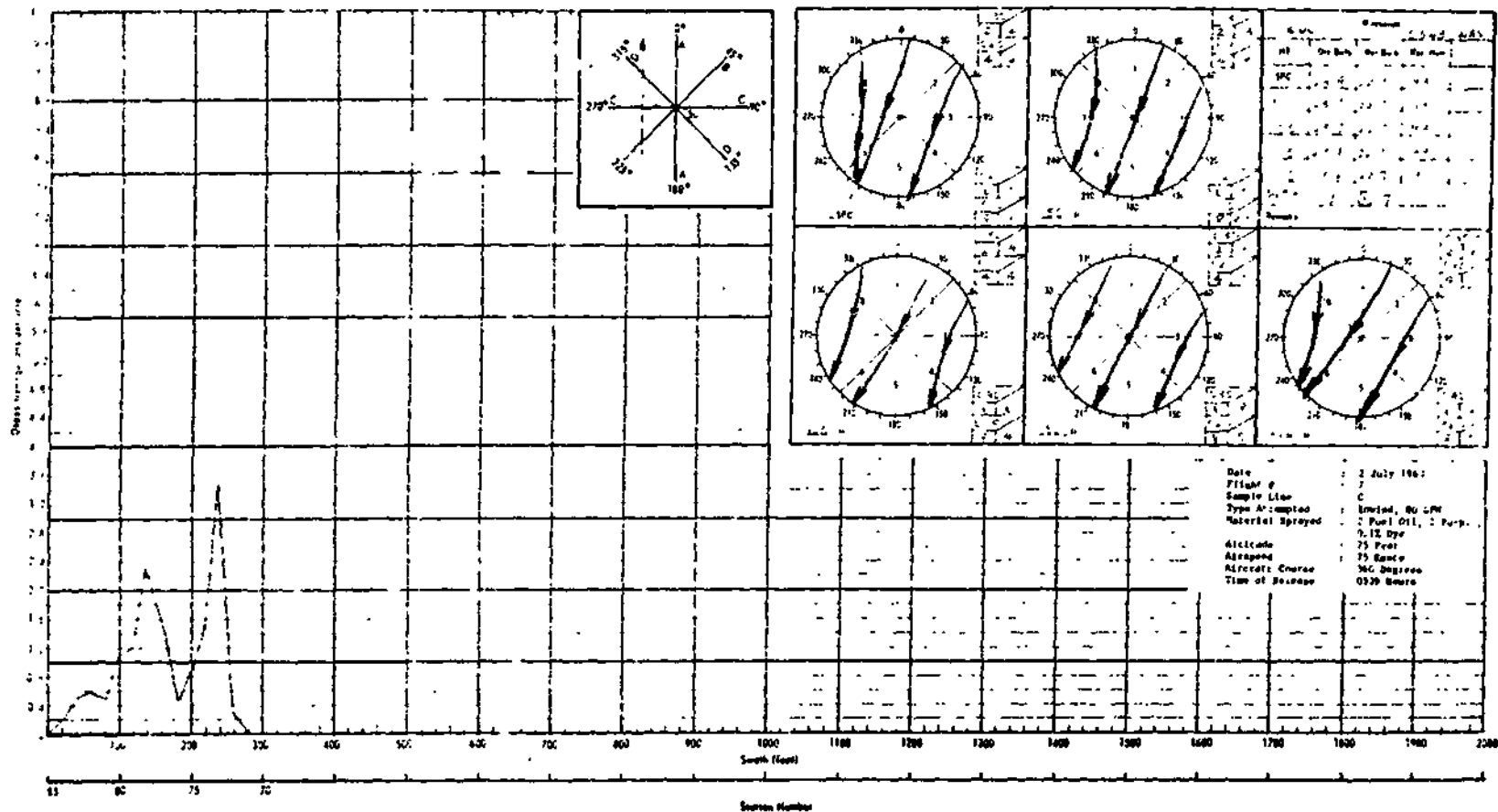
$$\text{Max. Sph. Dia.} = \frac{67.72(0.1489)(5100)}{6.435} = \frac{5100}{6.435} = 791.0 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 60 \text{ Microns}$$

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE 2 July 1963SYSTEM: HIDALFLIGHT #: 7AIRSPEED: 75 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0539 HourAIRCRAFT COURSE: 360 DegreesDURATION: 08 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 71 Blank				72	0.3		
				73	1.5		
				74	1.5		
				75	0.9		
				76	0.5		
				77	1.7		
				78	2.1		
				79	2.1		
				80	2.1		
				81	0.5		
				82	1.6		
				83	0.5		
				84	0.2		
				Stations 85 - 100 Blank			

Total 14.5



Source Number

MASS MEDIAN DIAMETER

DATE: 2 July 1963CONVERSION FACTOR: 2.2 -FLIGHT #: 8PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
28	2	5000			
28	3	4900			
24	1	4800			
27	6	4600			
27	4	4200*			
24	11	4100	28	1	100 (smallest)
25	8	4000			
25	7	3900			
25	10	3800			
27	5	3700			
24	12	3600			
24	9	3500			
27	13	3400			

$$MMD = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} - 2.2} = \frac{4200}{6.355 \times 2.2} = 301.8 \text{ Microns}$$

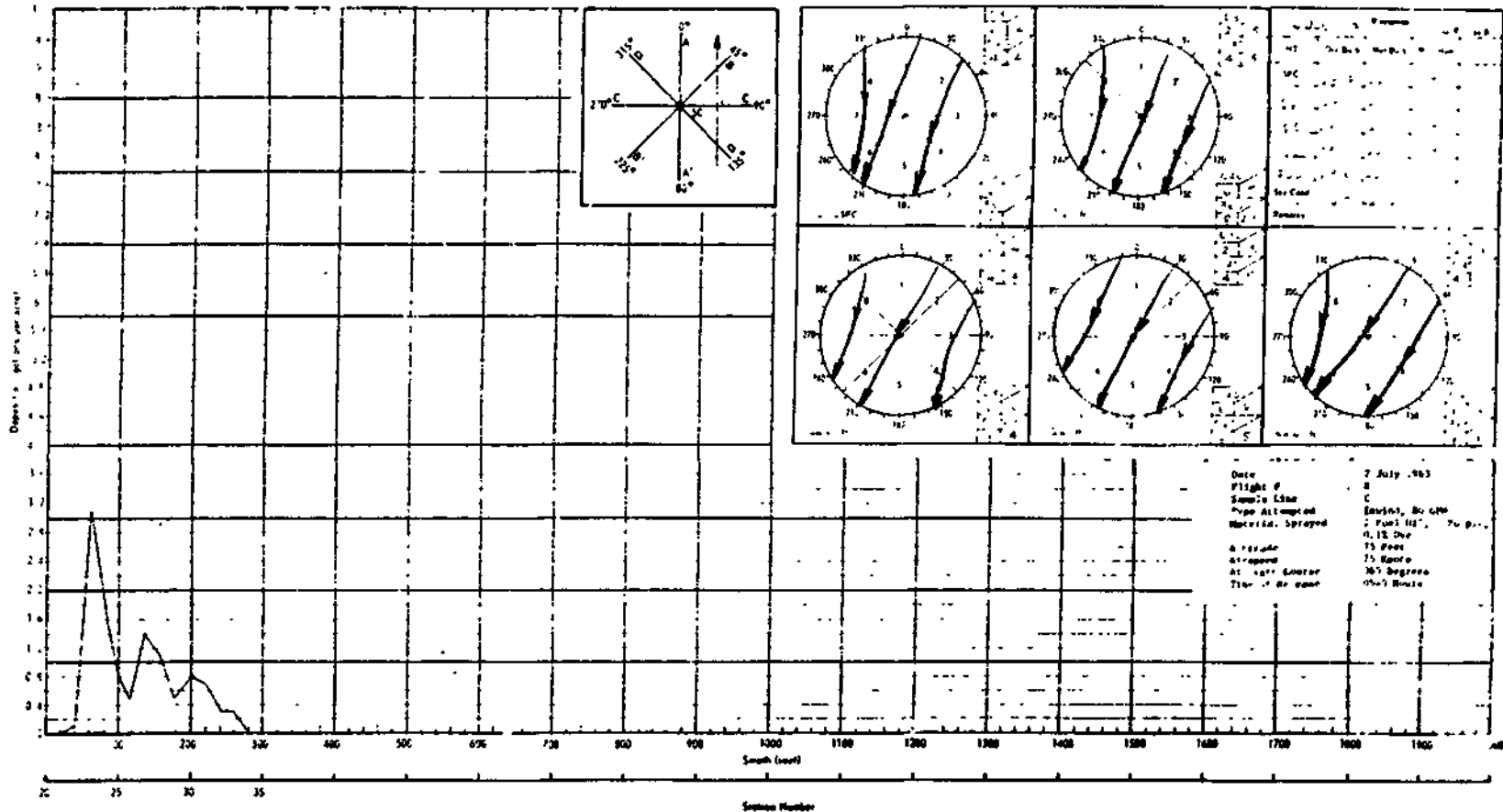
$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(5000)}{6.430} = \frac{5000}{6.430} = 777.6 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 2 July 1963SYSTEM: HIDALFLIGHT #: 1AIRSPEED: 75 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0540 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 07 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 21	Blank	22	0.1				
		23	3.1				
		24	1.6				
		25	0.8				
		26	0.5				
		27	1.4				
		28	1.1				
		29	0.5				
		30	0.8				
		31	0.7				
		32	0.3				
		33	0.3				
		Stations 34 - 100	Blank				

Total 16.2



MASS MEDIAN DIAMETER

DATE: 2 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 9PAPER: Kromekote, whiteSAMPLE LINE: DMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
24	1	5900			
24	2	5500*			
24	4	5300			
24	5	5200			
24	3	5000			
24	6	4900			
24	8	4800	4	1	100 (smallest)
24	7	4700			
24	10	4600			
24	11	4500			
24	9	4400			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{5500}{6.523 \times 2.2} = 383.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(5900)}{6.558} = \frac{5900}{6.558} = 899.7 \text{ Microns}$$

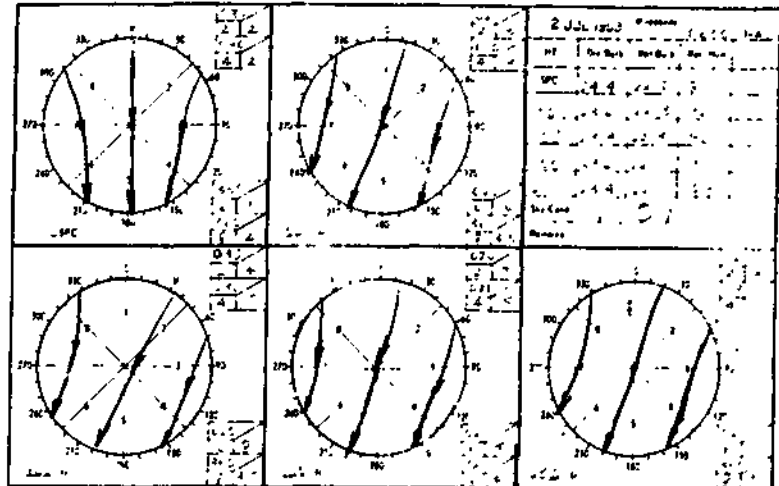
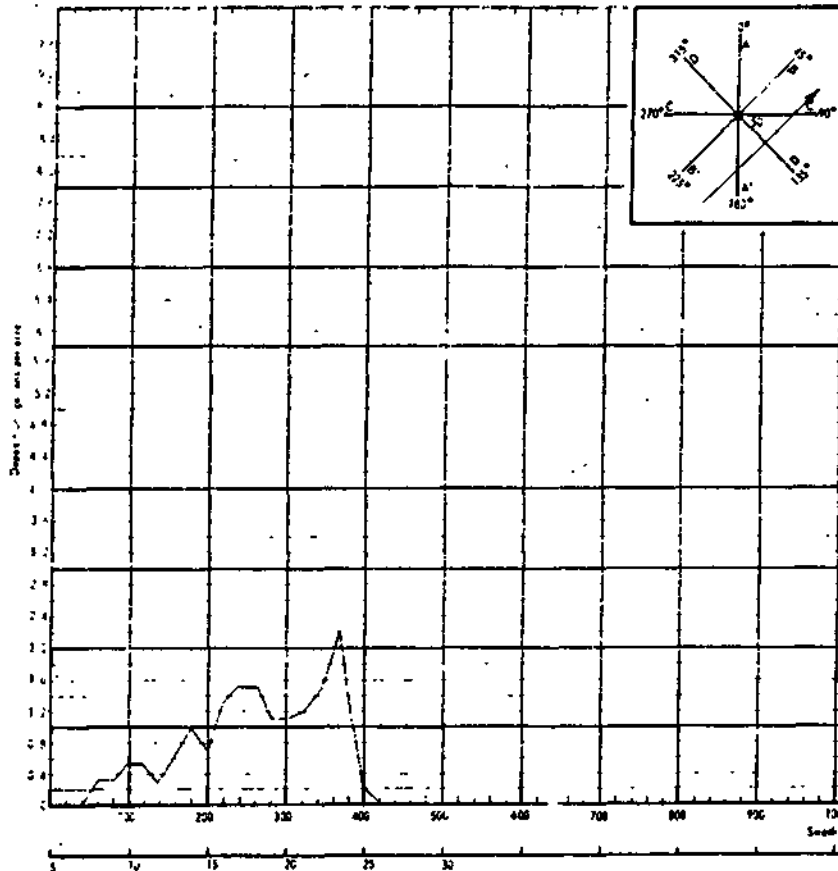
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 2 July 1963SYSTEM: WIDALFLIGHT #: 9AIRSPEED: 75 KnotsSAMPLE LINE: DALTITUDE: 100 FeetTIME OF RELEASE: 0550 HoursAIRCRAFT COURSE: 045 DegreesDURATION: 08 Secs.STATION G.P.A. STATION G.P.A.STATION G.P.A. STATION G.P.A.

Stations 1 - 7 Blank

8	0.3	Stations 26 - 100 Blank
9	0.3	
10	0.5	
11	0.5	
12	0.3	
13	0.6	
14	1.0	
15	0.7	
16	1.3	
17	1.5	
18	1.5	
19	1.1	
20	1.1	
21	1.2	
22	1.5	
23	2.2	
24	1.2	
25	0.2	

Total 17.0



Date: 2 Jul, 1963
 Flight #: 8
 Sample Line: South 40 GPH
 Type Aircraft: 2 F4U
 Material Spilled: 1.15 lbs
 Altitude: 100 feet
 Airspeed: 75 knots
 Aircraft: Course
 Time of Release: 0559 hours

MASS MEDIAN DIAMETER

DATE: 2 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 10PAPER: Kromekote, whiteSAMPLE LINE: DMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
75	1	5200			
75	2	4600			
75	3	4200*			
75	4	4100			
75	5	4000			
75	6	3900			
75	7	3800	51	1	100(smallest)
75	10	3700			
75	9	3600			
75	8	3500			
75	11	3400			

$$MMD = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4200}{6.325 \times 2.2} = 301.8 \text{ Microns}$$

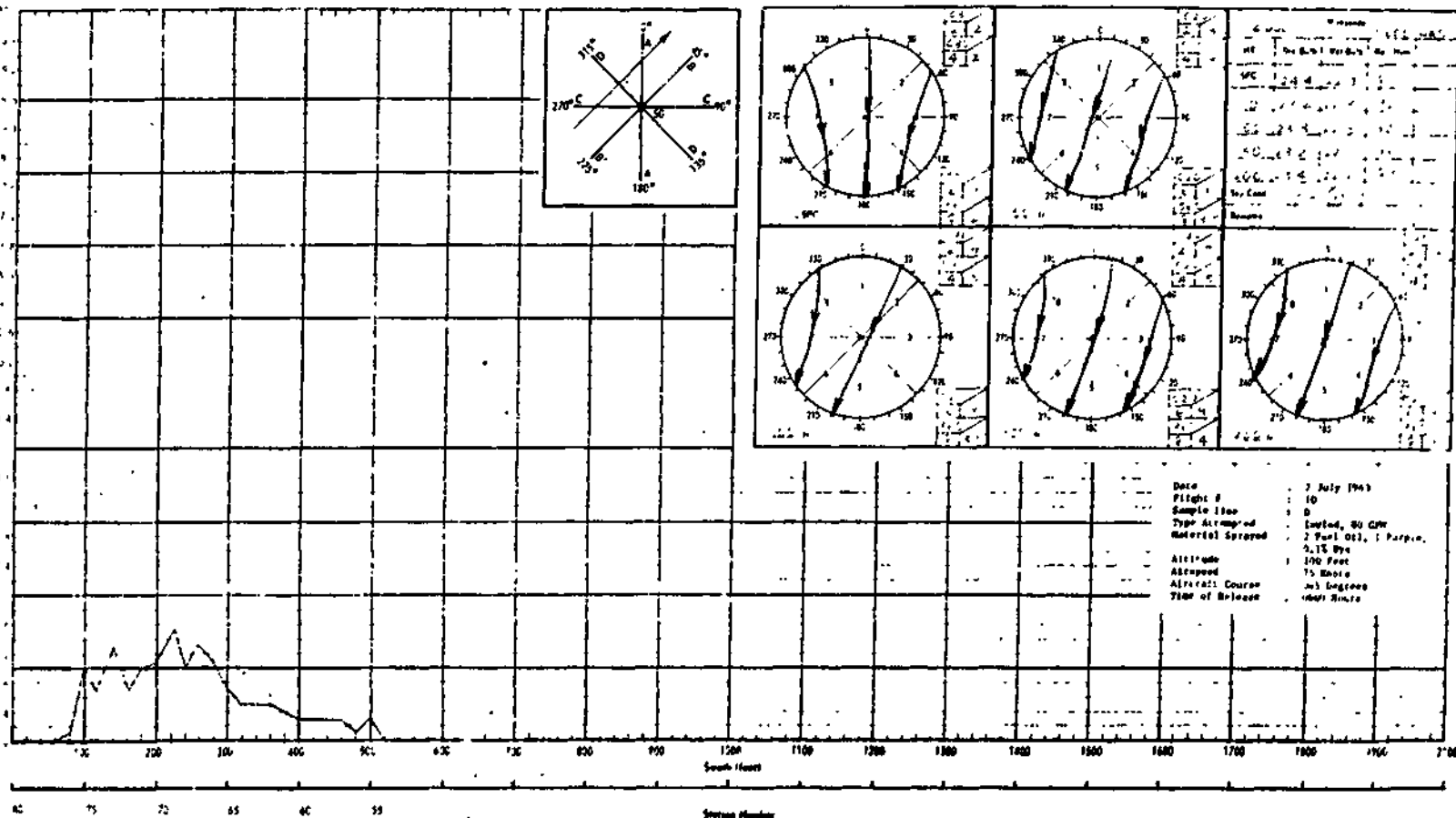
$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(5200)}{6.493} = \frac{5200}{6.493} = 800.9 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIALS: 2 Fuel Oil, 1 PurpleFLOW RATE: 8.1 GPMDATE: 2 July 1963SYSTEM: HIDALFLIGHT #: 10AIRSPEED: 75 KnotsSAMPLE LINE: DALTITUDE: 1.1 FeetTIME OF RELEASE: 0600 HoursAIRCRAFT COURSE: 045 DegreesDURATION: 08 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 54 Blank				55	0.3		
		56	0.1				
		57	0.3				
		58	0.3				
		59	0.3				
		60	0.3				
		61	0.4				
		62	0.5				
		63	0.5				
		64	0.5				
		65	0.7				
		66	1.1				
		67	1.3				
		68	1.0				
		69	1.5				
		70	1.1				
		71	1.0				
		72	0.7				
		73	1.3				
		74	0.7				
		75	1.0				
		76	0.1				
				Stations 77 - 100 Blank			

Total 15.0



MASS MEDIAN DIAMETER

DATE: 2 July 1963CONVERSION FACTOR: 2.2FLIGHT NO: 11PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
72	3	5400			
74	1	4300*			
73	7	4200			
74	2	4100			
72	5	4000	73	1	100(callest)
73	6	3900			
72	4	3800			
73	8	3700			
71	10	3600			
73	9	3500			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4300}{6.355 \times 2.2} = 308.2 \text{ Microns}$$

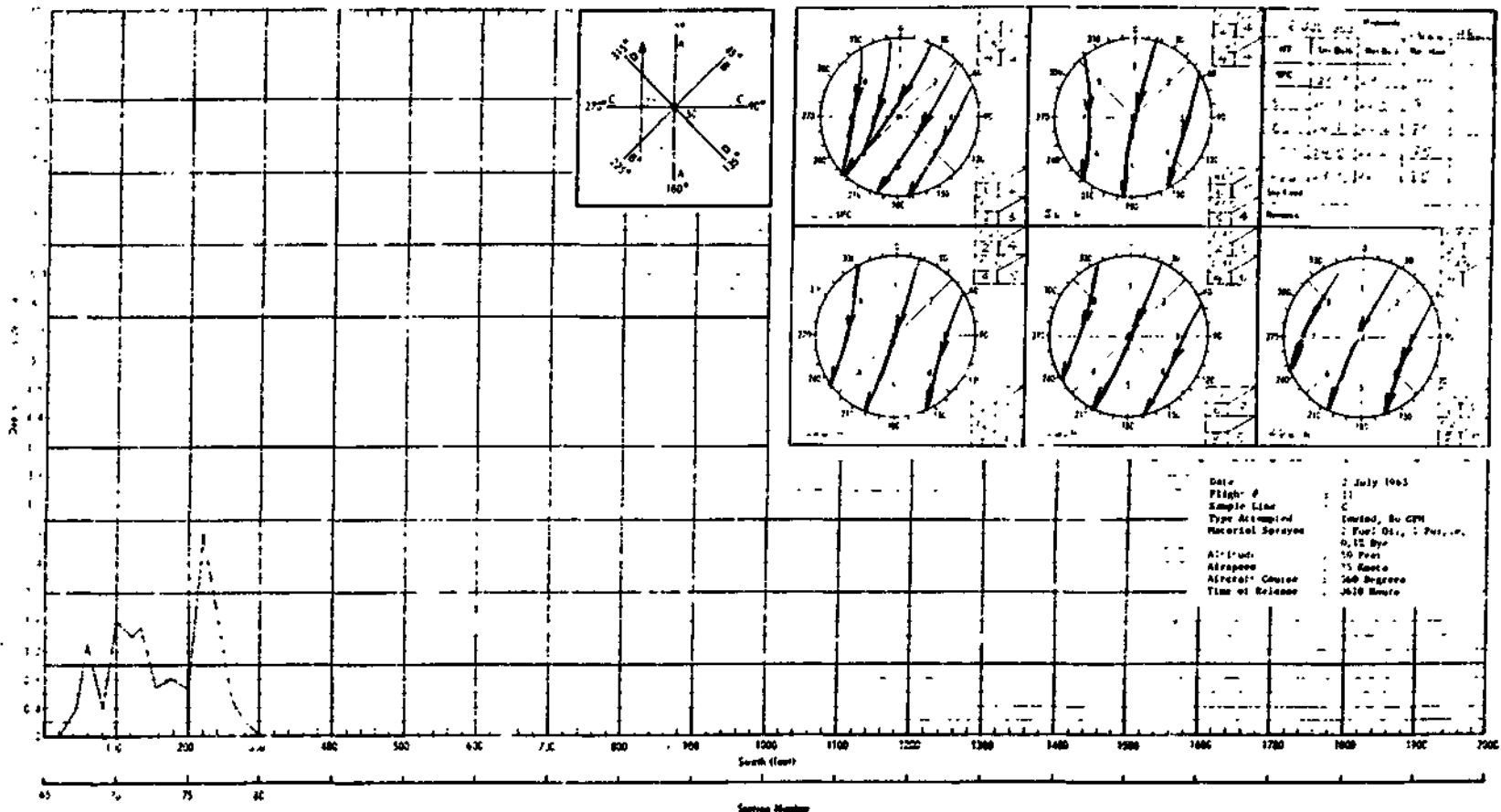
$$\text{Max. Sph. Dia.} = 67.72 + 0.1420(5400) = \frac{5400}{6.430} = 829.1 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

WASS J. POSI1MATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 2 July 1963SYSTEM: HIDALWEIGHT: 11AIRSPEED: 75 KnotsSAMPLE LINE: CALTITUDE: 50 FeetTIME OF RELEASE: 0618 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 08 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 66	Blank			67	0.4		
				68	1.3		
				69	0.4		
				70	1.6		
				71	1.4		
				72	1.5		
				73	0.7		
				74	0.3		
				75	0.7		
				76	2.8		
				77	1.8		
				78	0.5		
				79	0.2		
				Stations 80 - 100	Blank		

Total 14.1



MASS MEDIAN DIAMETER

DATE: 2 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 12PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMSYSTEM: RIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
21	1	4400			
25	4	3700*			
23	2	3600			
20	6	3500			
24	3	3400	24	1	100 (smallest)
22	5	3300			
23	3	3200			
20	8	3100			
20	7	3000			
24	11	2900			
24	10	2800			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3700}{6.355 \times 2.2} = 269.5 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(4400)}{6.430} = \frac{4400}{6.430} = 692.4 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

TEST RESULTS

TEST DATE: 10-1-61 Oil, 1 Sample

TEST RANGE: 10 10 10

DATE: 1 July 1965

SYSTEM: 11DA1

TEST TIME: 17

AIR SPEED: 75 1000

TEST TYPE: C

ALTITUDE: 10 100

TIME OF RELEASE: 0519 hours

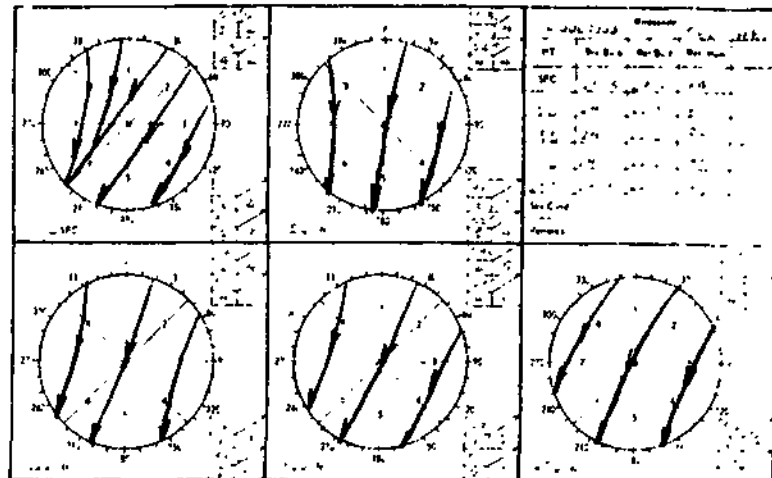
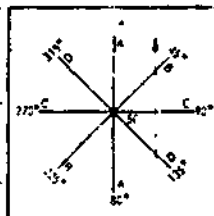
AIRCRAFT COURSE: 101 1000

DURATION: 07 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Station 1 - 16 Blank		17	1.2				
		18	1.3				
		19	1.4				
		20	1.0				
		21	0.4				
		22	0.3				
		23	0.3				
		24	0.3				
		25	0.7				
		26	1.5				
		27	1.0				
		28	1.5				
		29	1.3				
		Stations 30 - 100 Blank					

% Recovery - 42.7

Total 1.1



Date: 2 July 1963
 Flight: 17
 Sample line: 6
 Type: A sampler
 Method: Sprayed
 Altitude: 75 Feet
 Airspeed: 75 Knots
 Aircraft course: 360 Degrees
 Time of Release: 0619 Hours

South Spot

Scale: 10 Miles

H-34/HIDAL GROUND FLOW & FLIGHT DATADATE CALIBRATED: 1 July 1963DATE TEST FLOWN: 5 July 1963LIQUID SPRAYED: 2 Fuel Oil, 1 PurpleTOTAL NOZZLES OPEN: 60NOZZLE TYPE: 8015LIQUID TEMP: ----DURATION OF SPRAY: 30 Sec.PUMP PRESSURE: 32 PSITOTAL AMOUNT SPRAYED: 38.5 Gal.BOOM PRESSURE: 30 PSIFLOW RATE CALIBRATED: 77.0 GPMOPERATIONAL DATA DURING FLIGHT

Above information same for Runs 1 - 8.

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 77.0 GPMDATE: 5 July 1963SYSTEM: HIDALLIGHT: 1AIRSPEED: 55 KnotsPIPE LINE: CALTITUDE: 100 FeetTIME OF RELEASE: 0439 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 08 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.

Stations 1 - 9 Blank

10 0.3

11 0.2

12 0.2

13 0.5

14 0.2

15 1.6

16 2.3

17 2.7

18 2.6

19 1.3

20 1.9

21 1.1

22 1.7

23 2.3

24 1.3

Stations 25 - 1.0 Blank

Total 21.5

MASS MEDIAN DIAMETER

DATE: 5 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 2PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 77.0 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
75	1	5200*			
75	3	5100			
75	2	5000			
75	6	4800	62	1A	100
75	5	4700			
75	4	4600			
75	7	4400			
75	8	4300			
75	9	4200			
75	10	4100			

$$MBD = \frac{67.72 \pm 0.1420 (\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{5200}{6.355 \times 2.2} = 364.0 \text{ Microns}$$

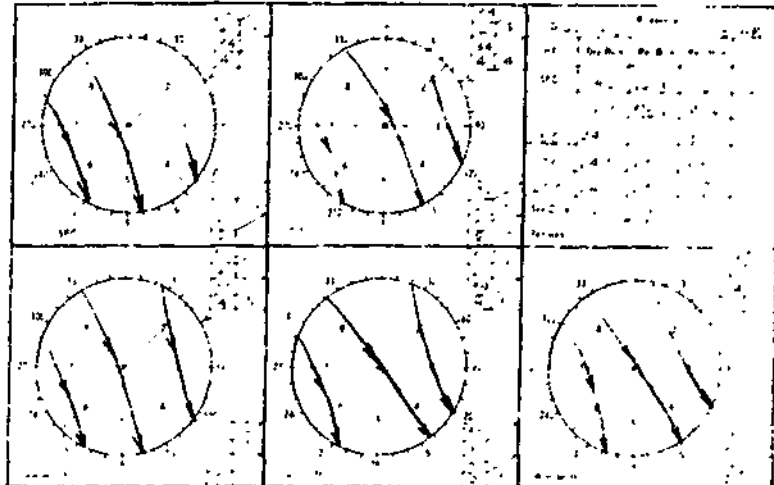
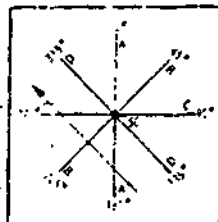
$$\text{Max. Sph. Dia.} = \frac{67.72 \pm 0.1420 (5200)}{6.430} = \frac{5200}{6.430} = 800.9 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 77.0 GPMDATE: 5 July 1963SYSTEM: HIDALFLIGHT #: 2AIRSPEED: 55 KnotsSAMPLE LINE: CALTITUDE: 100 FeetTIME OF RELEASE: 0441 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 10 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 58	Blank			59	0.3		
				60	0.5		
				61	0.6		
				62	0.4		
				63	0.9		
				64	0.7		
				65	0.8		
				66	1.3		
				67	2.0		
				68	2.5		
				69	1.5		
				70	1.8		
				71	1.2		
				72	1.6		
				73	1.0		
				74	4.3		
				75	0.6		
				76	0.2		
				Stations 77 - 100	Blank		

Total 21.7



Date: 5 Jan 1967
 File #: 1
 Sample Size: 1
 Type of Sample: 1
 Material Spaced: 1
 Airframe: 1
 Aircraft: 1
 Alt. Ref. Source: 1
 Time of Release: 1

Swath Foot

Swath Number

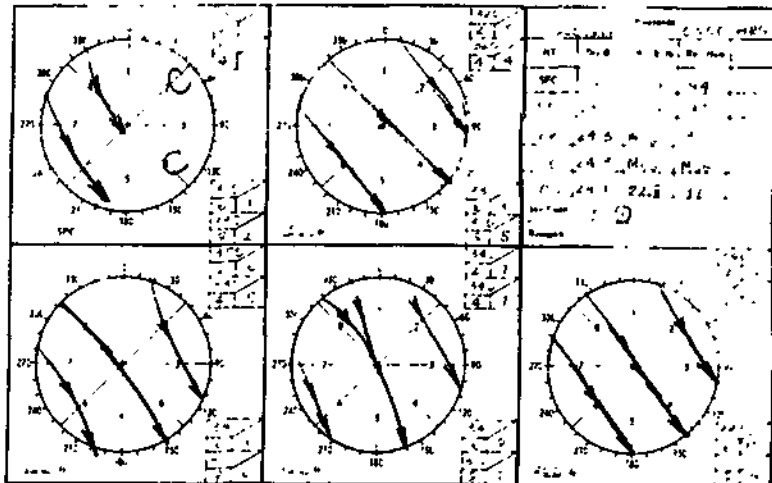
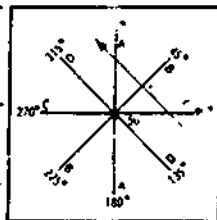
MASS DEPOSIT

No. 2121 2 Ford 211 1 Purple
 Date 1 July 1963
 Place 4 3
 Sample Line 3
 Time of Release 0900 Hour
 Duration 18 Sec.
 Flow Rate 77.0 GPM
 System HIDAL
 Airspeed 55 Knots
 Altitude 74 Feet
 Aircraft Course 315 Degrees

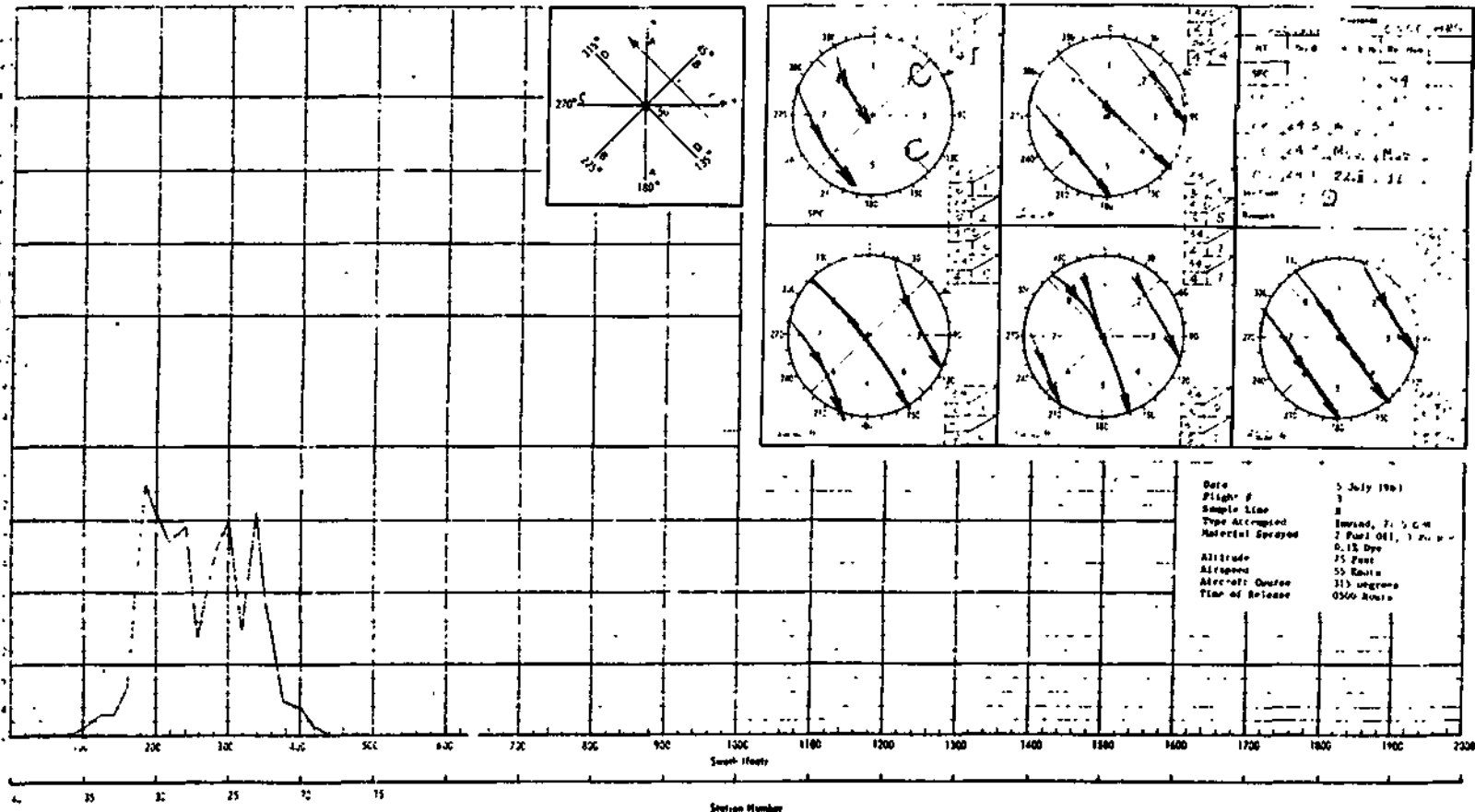
STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 17 Blank		18	0.0				
		19	0.1				
		20	0.4				
		21	0.5				
		22	1.9				
		23	3.1				
		24	1.5				
		25	3.0				
		26	2.6				
		27	1.4				
		28	2.9				
		29	2.7				
		30	3.1				
		31	3.5				
		32	0.7				
		33	0.3				
		34	0.3				
		35	0.1				
		36	0.0				
		Stations 37 - 100 Blank					

 % Recovery - 89.8

Total 25.1



Date: 5 July 1961
 Flight #: 3
 Sample Line: 3
 Type Attempted: Inward, 7: 5 C. M.
 Material Sprayed: 2 Fuel Oil, 1 P. M.
 Altitude: 0.15 Dye
 Airspeed: 25 Feet
 Aircraft: 55 Hours
 Time of Release: 115 hours
 0500 Hours



MASS MEDIAN DIAMETER

DATE: 5 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 4PAPER: Kromelote, whiteSAMPLE LINE: BMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 77.0 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
78	5	4300*			
79	2	4100			
78	4	4000			
79	3	3900			
79	1	3800	82	1A	100
78	6	3700			
75	7	3500			
77	9	3400			
79	10	3300			
78	8	3200			

$$MMD = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4300}{6.355 \times 2.2} = 308.2 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(4300)}{6.430} = \frac{4300}{6.430} = 678.2 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

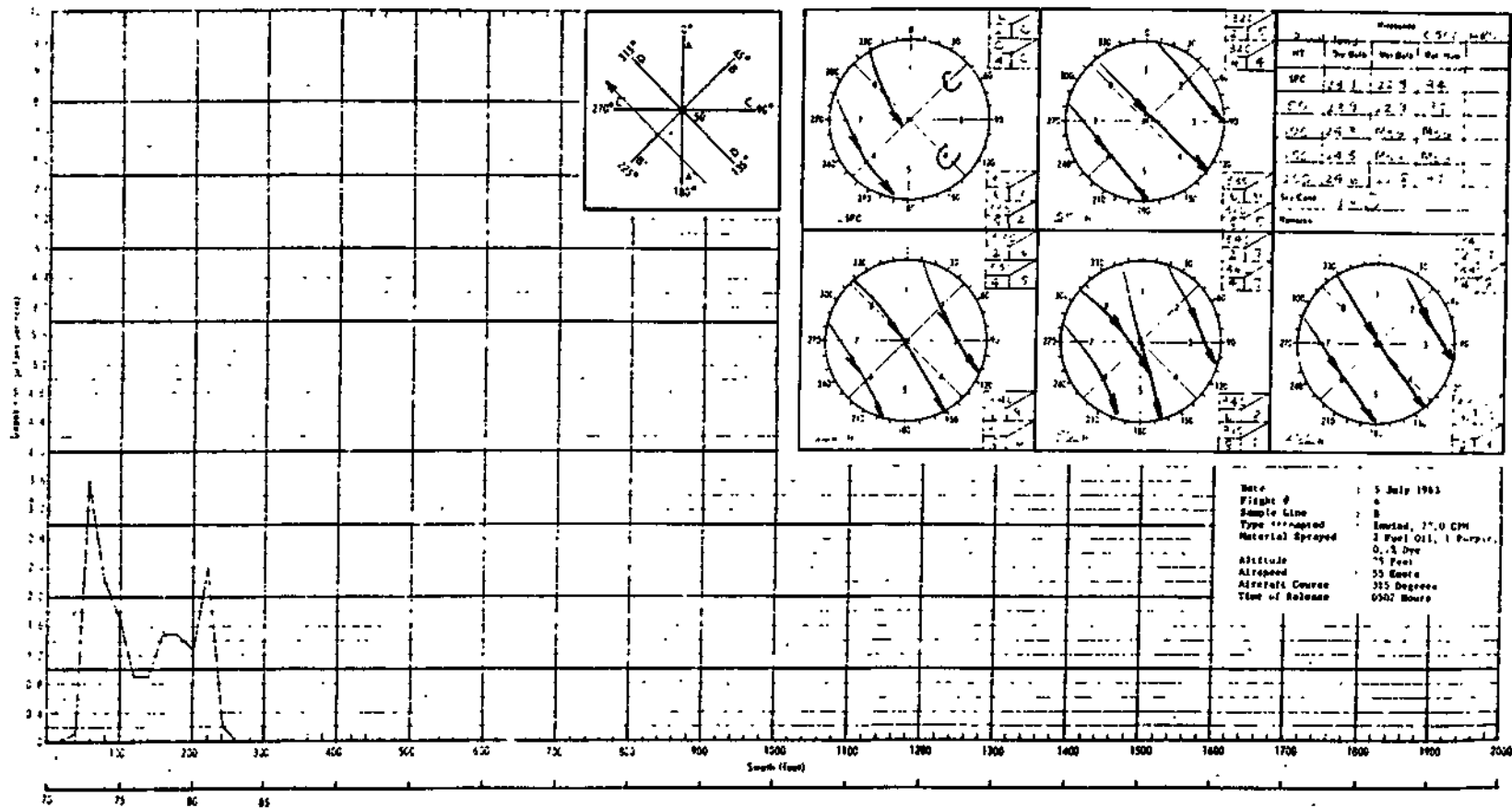
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 77.0 GPIDATE: 5 July 1963SYSTEM: HIDALFLIGHT #: 4AIRSPEED: 55 KnotsSAMPLE LTR: BALTITUDE: 75 FeetTIME OF RELEASE: 0502 HoursAIRCRAFT COURSE: 315 DegreesDURATION: 11 Sec.

<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>
Stations 1 - 71	Blank						

72	0.1
73	3.6
74	2.2
75	1.7
76	0.9
77	0.9
78	1.5
79	1.5
80	1.3
81	2.4
82	0.2
83	0.0

Stations 84 - 100 Blank

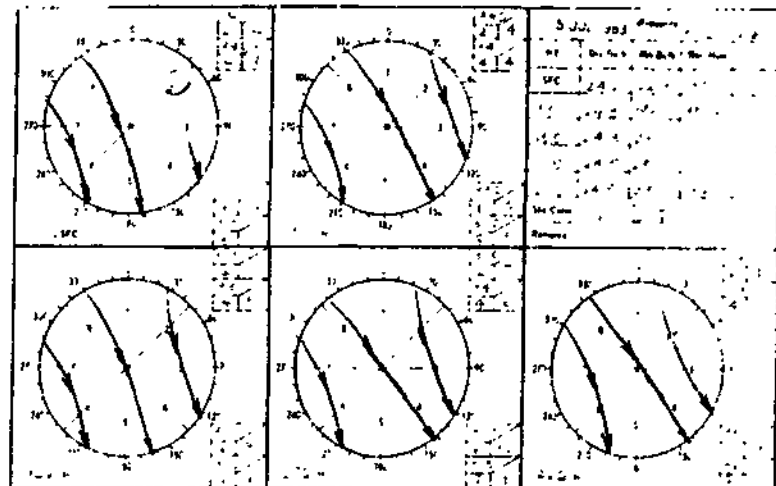
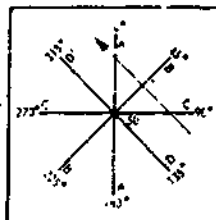
% Recovery - 52.1Total 16.3



MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 77.0 GPMDATE: 5 July 1963SYSTEM: HIDALFLIGHT #: 5AIRSPEED: 75 KnotsSAMPLE LINE: BALTITUDE: 100 FeetTIME OF RELEASE: 0520 HoursAIRCRAFT COURSE: 315 DegreesDURATION: 08 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 20	Blank	21	0.3				
		22	0.8				
		23	2.9				
		24	1.4				
		25	0.9				
		26	0.6				
		27	0.3				
		28	0.6				
		29	1.6				
		30	1.3				
		31	1.6				
		32	0.6				
		33	0.5				
		Stations 34 - 100	Blank				

 % Recovery - 58.3
Total 13.4



Date: 5 July 1961
 Flight: 5
 Sample line: 6
 Type Aircraft: Invited, 111, 112
 Material Sprayed: 2 feet of 111
 Altitude: 15,000
 Altitude: 15,000
 Aircraft Course: 15 degrees
 Time of Release: 15.2 hours

Station Number

MASS MEDIAN DIAMETER

DATE: 5 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 6PAPER: Kromekote, whiteSAMPLE LINE: BMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 77.0 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
78	1	3700			
78	2	3200*			
77	3	3100			
78	5	3000	77	1A	100
78	7	2900			
77	4	2800			
78	6	2700			
78	8	2600			
78	9	2500			
78	10	2400			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3200}{6.355 \times 2.2} = 237.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(3700)}{6.430} = \frac{3700}{6.430} = 593.0 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

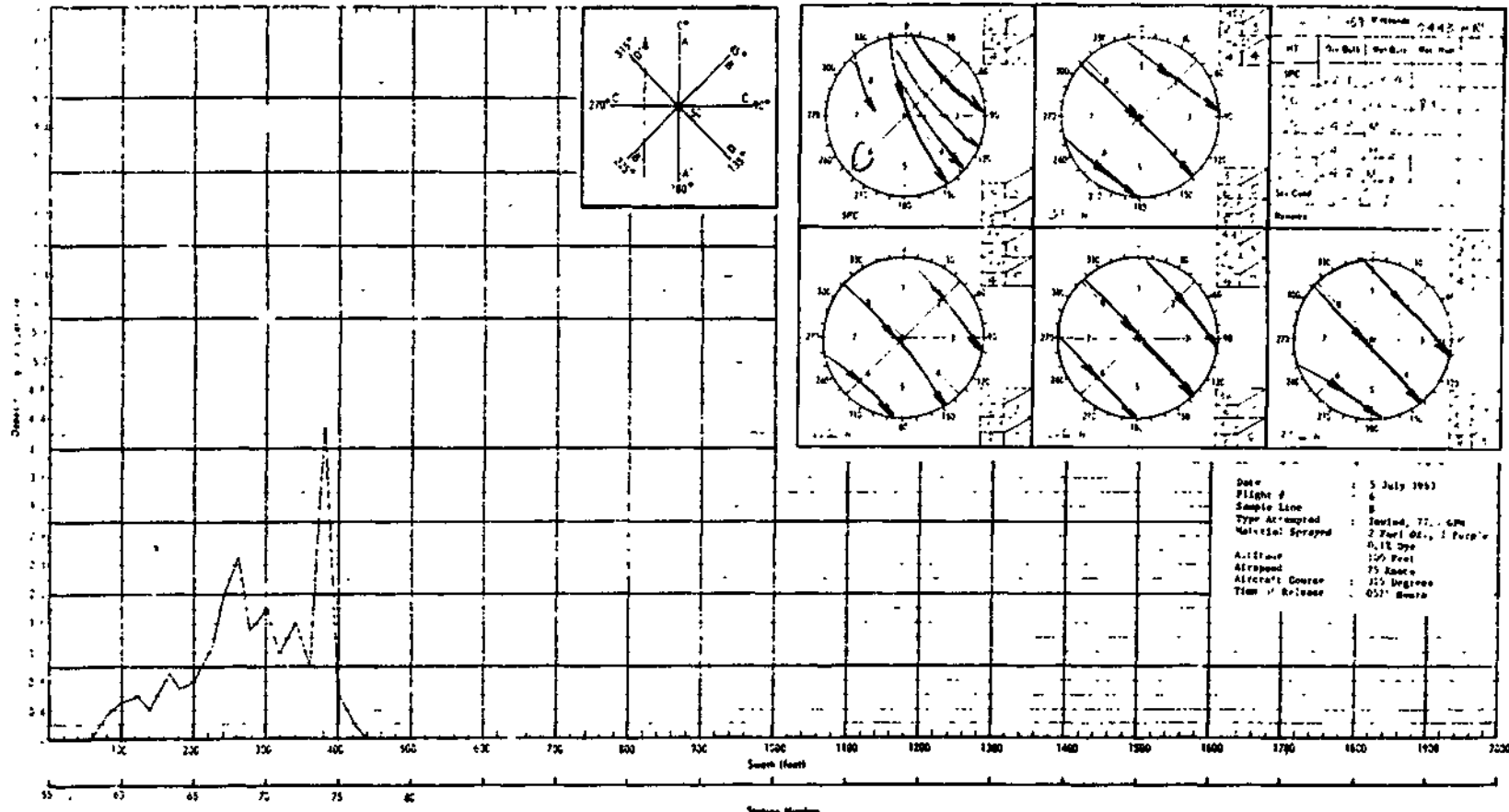
MASS DEPOSIMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 77.0 GPMDATE: 5 July 1963SYSTEM: HIDALFLIGHT #: 6AIRSPEED: 75 KnotsSAMPLE LINE: BALTITUDE: 100 FeetTIME OF RELEASE: 0521 HoursAIRCRAFT COURSE: 315 DegreesDURATION: 10 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 72 Blank							

73	0.8
74	2.2
75	1.5
76	0.8
77	1.0
78	1.0
79	1.1
80	1.2
81	1.2
82	0.6
83	0.5
84	0.3
85	0.5

Stations 86 - 100 Blank

Total 12.7



MASS MEDIAN DIAMETER

DATE: 5 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 7PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 77.0 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
25	1	3000*			
25	2	2900			
17	3	2800			
18	4	2700			
25	6	2600	18	1A	100(smallest)
18	5	2500			
25	8	2400			
18	7	2300			
15	9	2200			
15	10	2100			

$$MED = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3000}{6.355 \times 2.2} = 224.4 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(1000)}{6.430} = \frac{3000}{6.430} = 493.7 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

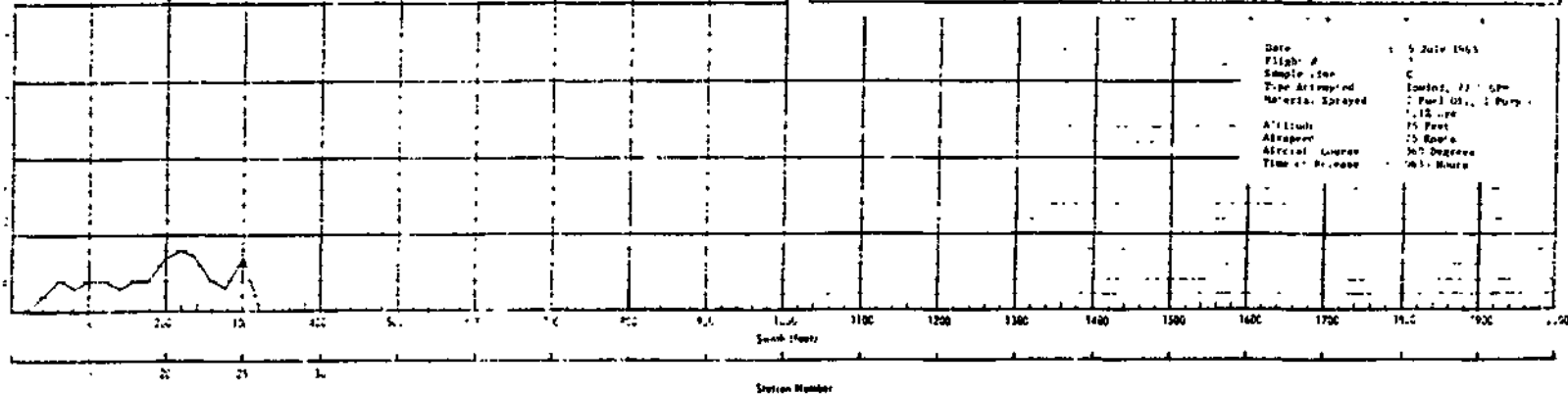
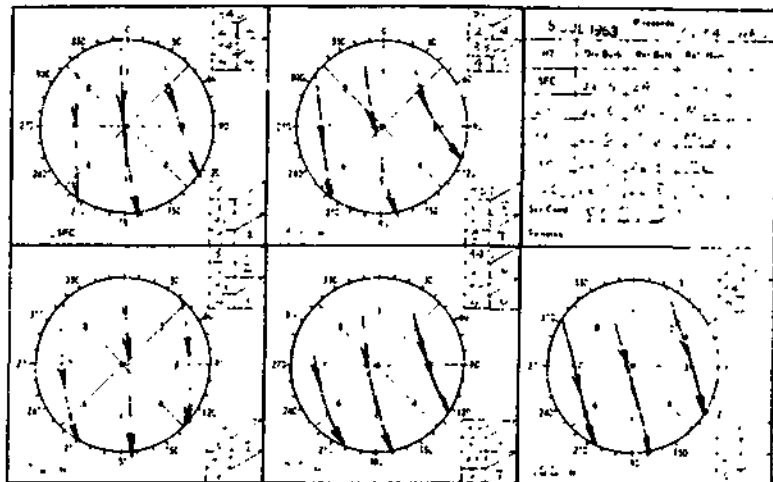
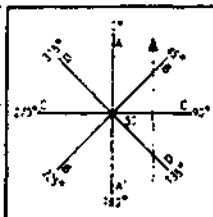
May 22, 1963Name: Paul H. H. 1 PurpleTime: 11:00 GMTDate: July 1963SYSTEM: BIPALTime: 7:00ALTIMETER: 75 FeetSAMPLE LENGTH: 2ALTITUDE: 75 FeetTIME (1 - 10) 1630 HoursAIRCRAFT COURSE: 160 DegreesDURATION: 09 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
STATION 1 - 10 Blank					

11	0.0
12	0.2
13	0.4
14	0.3
15	0.5
16	0.7
17	0.5
18	0.8
19	0.7
20	0.7
21	0.8
22	0.7
23	0.7
24	0.7
25	0.7

Stations 15 - 10 Blank

% Recovery - 27.8Total 6.0



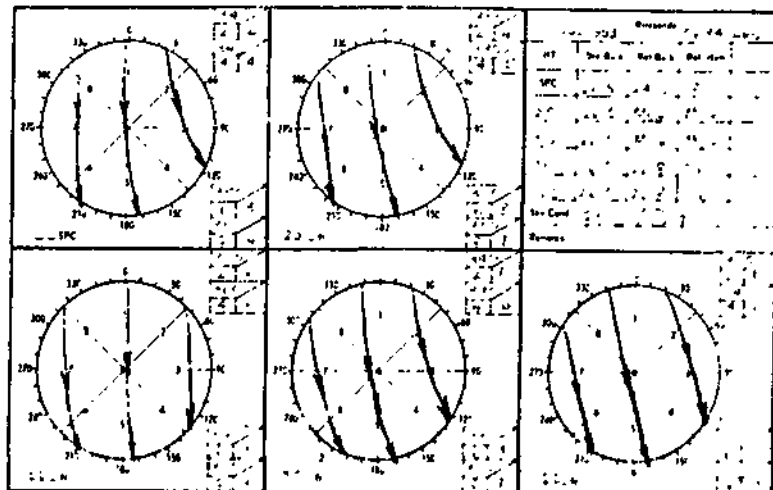
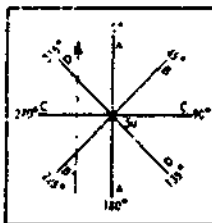
MASS DEPOSITMATERIAL 2 Fuel Oil 1 PurpleFLOW RATE 27.0 GPMDATE 2 July 1963SYSTEM HIDALFLIGHT # 8AIRSPEED 75 KNOTSSAMPLE LINE CALTITUDE 75 FeetTIME OF RELEASE 0632 HoursAIRCRAFT COURSE 360 DegreesDURATION 12 Sec.

<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>
Stations 1 - 65	Blank						

66	0.1
67	0.4
68	0.7
69	0.8
70	0.4
71	0.3
72	0.2
73	0.2
74	0.4
75	0.3
76	0.3
77	0.1
78	0.0

Stations 79 - 100 Blank

% Recovery - 18.3Total 4.2



Date 5 July 1963
 Flight # 8
 Sample Line C
 Type Atomized
 Material Sprayed Twined, 12 1/2 gm
 3 Fast Oil, 3 Purple,
 0.18 Dye
 15 Feet
 Altitude 15 Miles
 Aircraft Course 340 Degrees
 Time of Release 0612 Hours

Search (April)

Search Number

H-34/HIDAL GROUND FLOW & FLIGHT DATA

DATE CALIBRATED: <u>6 July 1963</u>	DATE TEST FLOWN. <u>7 July 1963</u>
LIQUID SPRAYED: <u>2 Fuel Oil, 1 Purple</u>	TOTAL NOZZLES OPEN: <u>60</u>
NOZZLE TYPE: <u>8C10</u>	LIQUID TEMP: <u>39° C</u>
DURATION OF SPRAY: <u>30</u> <u>Sec.</u>	BOOM PRESSURE: <u>54-55</u> <u>PSI</u>
TOTAL AMOUNT SPRAYED: <u>35.5</u> <u>Gal.</u>	FLOW RATE CALIBRATED: <u>71</u> <u>GPM</u>

OPERATIONAL DATA DURING FLIGHT

Above information same for Runs 1 - 6.

DATE CALIBRATED: <u>6 July 1963</u>	DATE TEST FLOWN <u>7 July 1963</u>
LIQUID SPRAYED. <u>2 Fuel Oil, 1 Purple</u>	TOTAL NOZZLES OPEN <u>60</u>
NOZZLE TYPE: <u>8015</u>	LIQUID TEMP: <u>33.5° C</u>
DURATION OF SPRAY: <u>30</u> <u>Sec.</u>	PUMP PRESSURE. <u>38-28</u> <u>PSI</u>
TOTAL AMOUNT SPRAYED <u>39.5</u> <u>Gal.</u>	FLOW RATE CALIBRATED: <u>80</u> <u>GPM</u>

OPERATIONAL DATA DURING FLIGHT

Above information same for Runs 7 - 16.

REMARKS. Pump cavitating after 20 seconds due to low level of liquid in tanks on run #16.

MASS MEDIAN DIAMETER

DATE: 7 July 1963CONVERSION FACTOR: 2.2FLIGHT NO.: 1PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 71.0 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
72	1	3900			
70	2	3100*			
72	6	3000			
72	5	2900			
72	8	2800	70	1A	1. (smallest)
70	3	2700			
70	4	2600			
72	7	2500			
70	10	2400			
70	9	2300			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3100}{6.355 \times 2.2} = 230.8 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(3900)}{6.430} = \frac{3900}{6.430} = 621.4 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

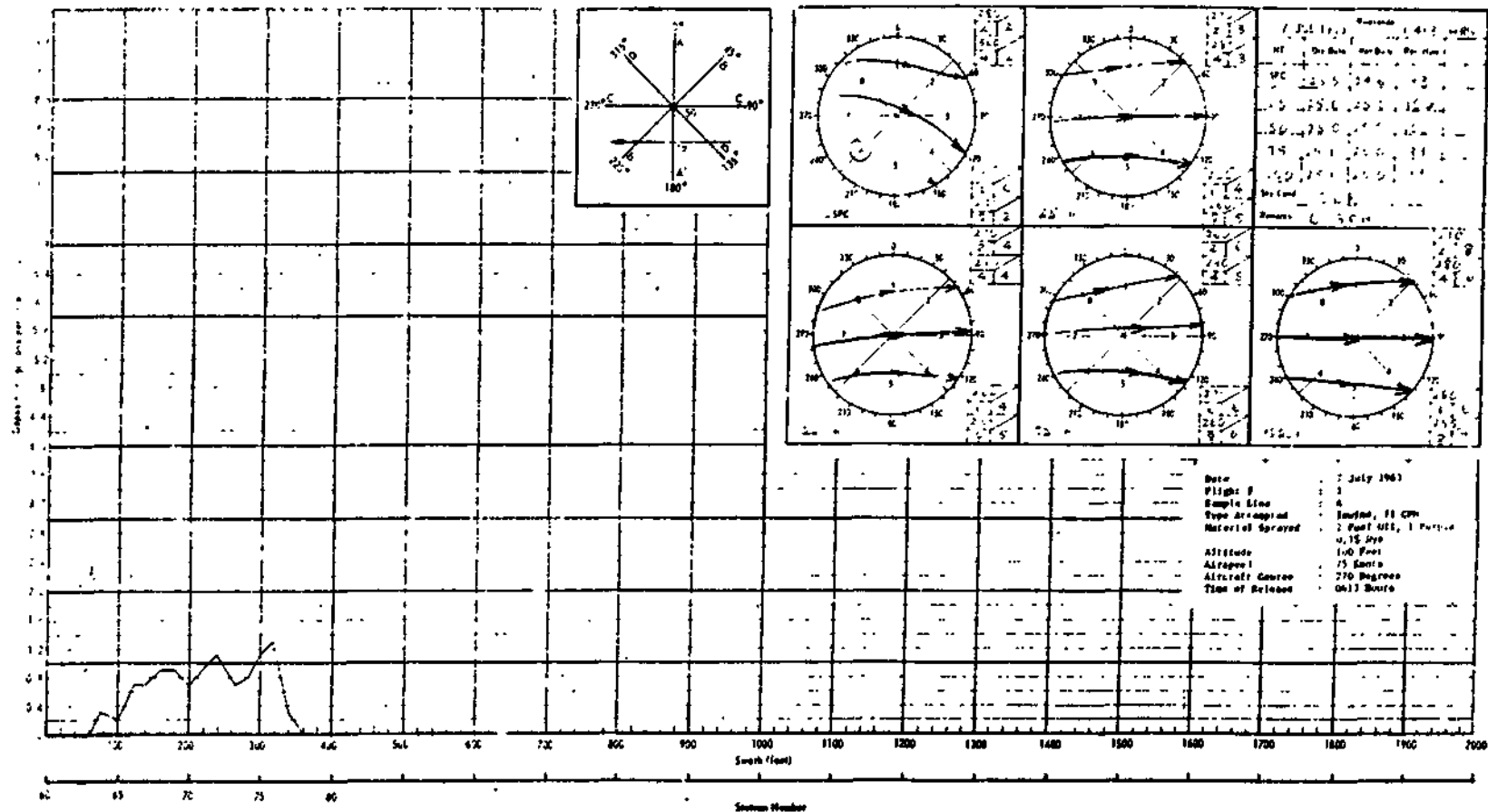
MASS DEPOSITMATERIAL 2 Flcl Oil 1 PurpleFLOW RATE 7 GPMDATE 7 July 1963SYSTEM 70AFLIGHT # 1AIRSPEED 7 KNOTSSAMPLE LINE AALTITUDE 100 FEETTIME OF RELEASE 0413 HoursAIRCRAFT COURSE 270 DegreesDURATION ---

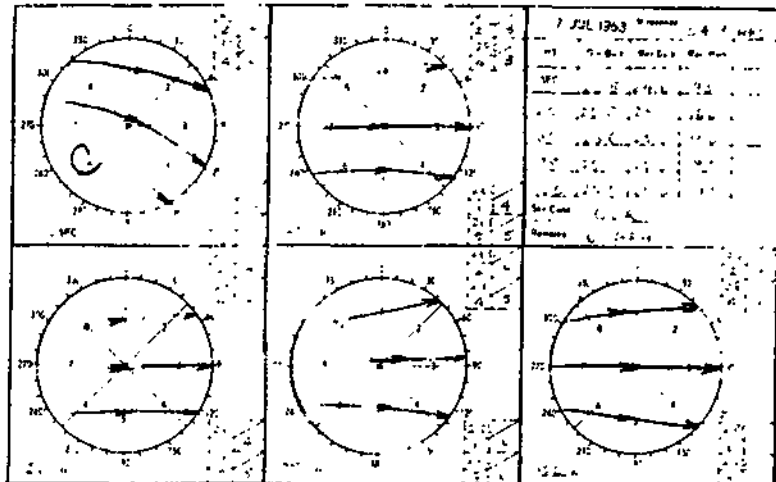
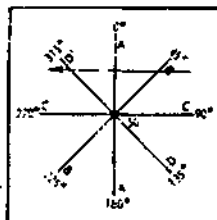
STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1	63	Blank					

61	0.3
62	0.2
66	0.7
67	0.7
68	0.9
69	0.9
70	0.7
71	0.9
72	1.1
73	0.7
74	0.7
75	1.1
76	1.3
77	0.3

Stations 78 - 100 Blank

 % Recovery - 52.0
Total 10.6





Date: 7 July 1963
 Flight #: 2
 Sample Line: A
 Type A Sampled: 2 Fuel Oil, 1 Fuel Oil, 1 Fuel Oil
 Material Sprayed: 0.15 Dye
 Altitude: 100 Feet
 Altitude: 75 Feet
 Altitude: 250 Feet
 Time: 10:00 AM
 Time: 10:15 AM
 Time: 10:30 AM

Station Number

Station Number

MASS MEDIAN DIAMETER

DATE: 7 July 1963CONVERSION FACTOR: 2.2SLIGHT #: 3PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 71.0 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
70	3	3200*			
72	1	3100			
72	2	3000			
69	4	2900			
74	5	2800	73	1A	100(smallest)
71	7	2700			
70	6	2600			
74	8	2500			
72	9	2400			
70	10	2300			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3200}{6.355 \times 2.2} = 237.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(3200)}{6.430} = \frac{3200}{6.430} = 522.1 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

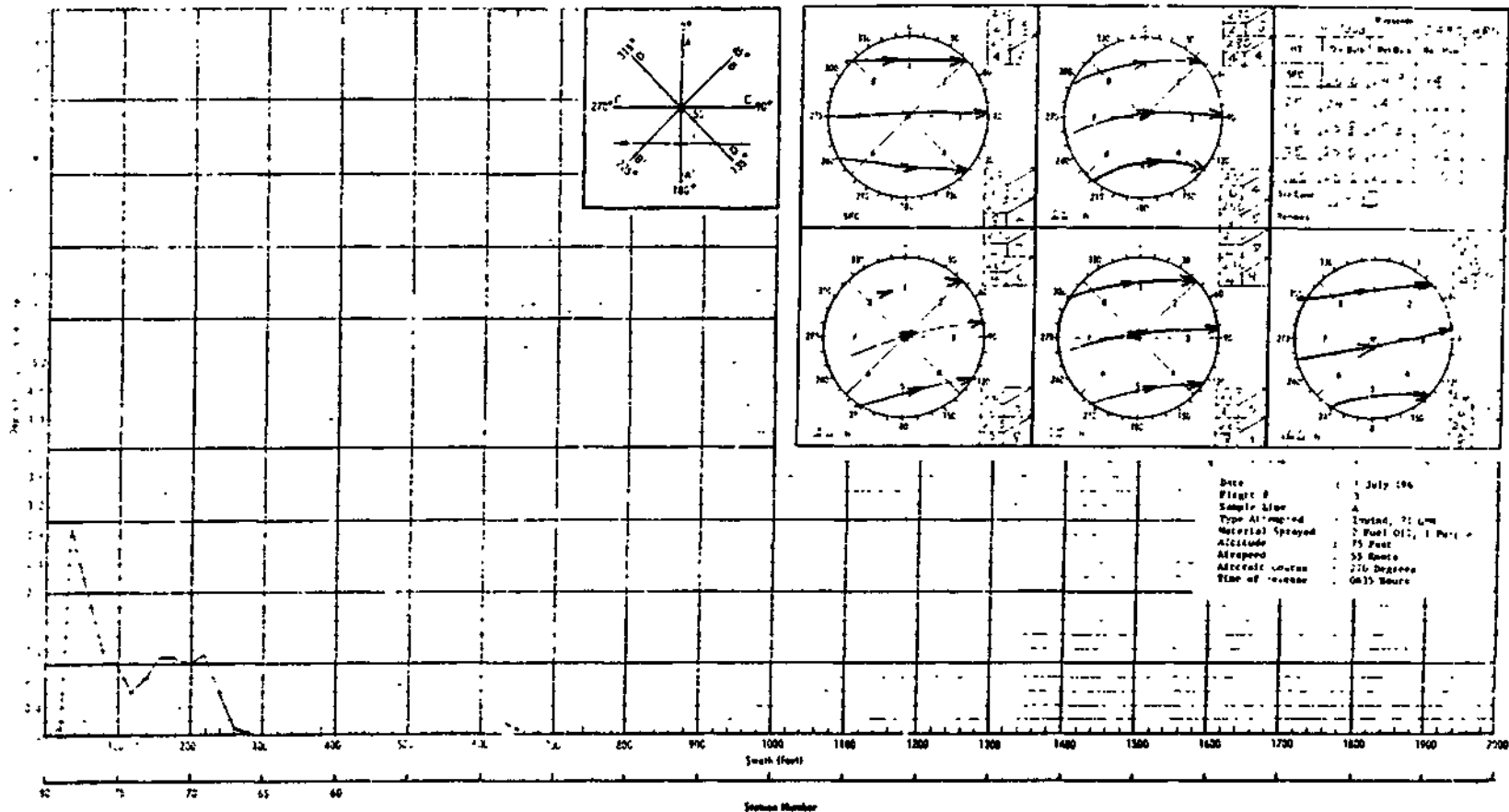
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 8 71 CFMDATE: 7 July 1963SYSTEM: HIDALFLIGHT #: 3AIRSPEED: 55 KnotSAMPLE LINE: AALTITUDE: 75 FeetTIME OF RELEASE: 0435 HoursAIRCRAFT COURSE: 270 DegreesDURATION 13.5 Sec.

<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>
Stations 1 - 65 Blank							

66	0.0
67	0.1
68	0.6
69	1.1
70	1.0
71	1.1
72	1.1
73	0.8
74	0.6
75	1.0
76	1.0
77	1.8
78	2.9
79	0.1
80	0.0

Stations 81 - 100 Blank

Total 13.2



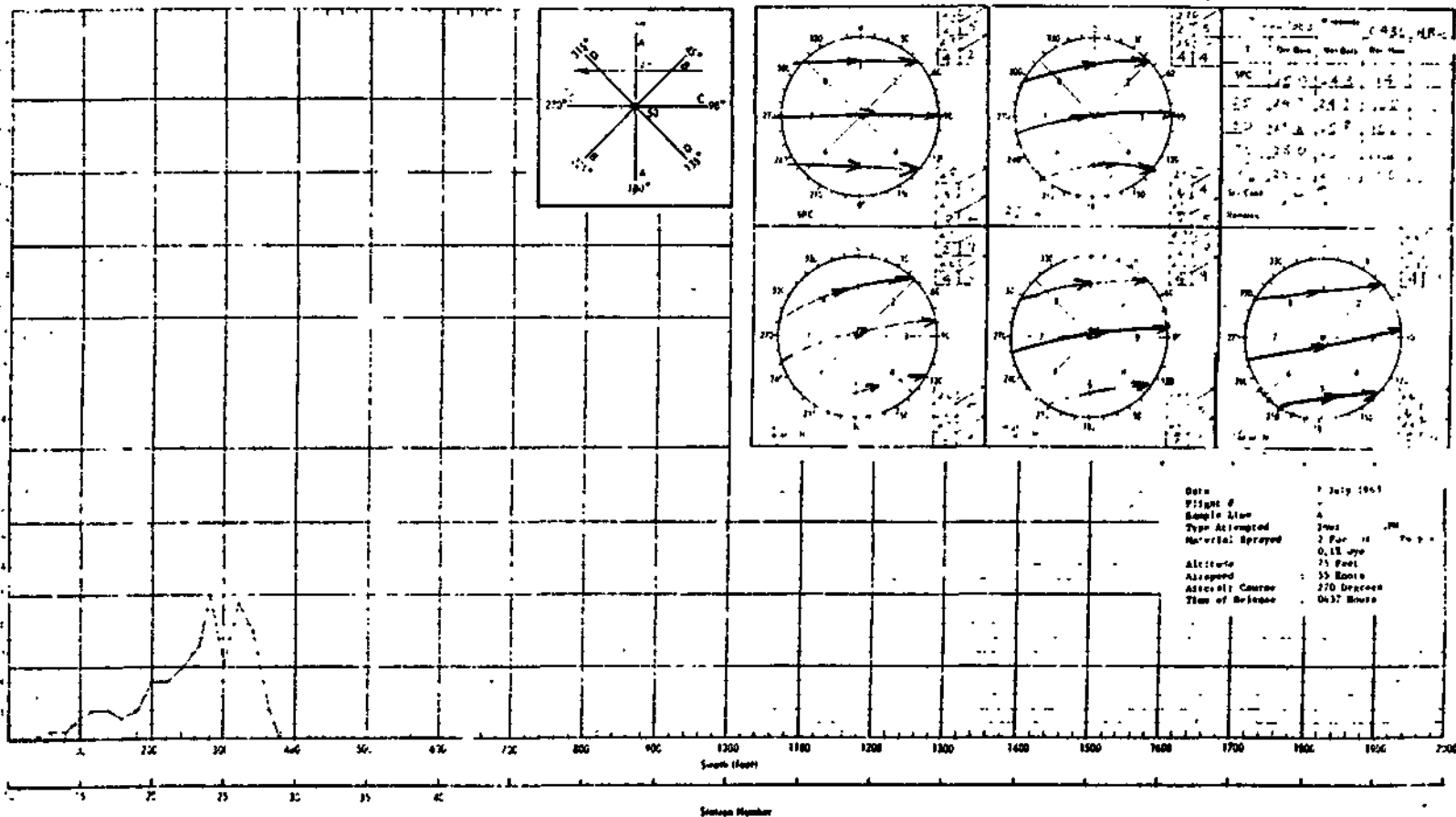
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 71 CMDATE: 7 July 1963SYSTEM: HIDALFLIGHT #: 4AIRSPEED: 55 KnotsSAMPLE LINE: AALTITUDE: 75 FeetTIME OF RELEASE: 0437 HoursAIRCRAFT COURSE: 270 DegreesDURATION: 12.5 Sec.

<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>
Stations 1 - 11 Blank							

12	0.0
13	0.1
14	0.1
15	0.3
16	0.4
17	0.4
18	0.3
19	0.4
20	0.8
21	0.8
22	1.0
23	1.3
24	2.0
25	1.0
26	1.9
27	1.5
28	0.4
29	0.0

Stations 30 - 100 Blank

Total 12.7



MASS MEDIAN DIAMETER

DATE: 7 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 5PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 71.0 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
27	2	4600			
22	1	3800			
24	4	3200*			
27	5	3100			
24	3	3000	27	1A	100 (smallest)
27	7	2900			
27	6	2800			
27	9	2700			
27	10	2600			
27	8	2500			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3200}{6.355 \times 2.2} = 237.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(4600)}{6.430} = \frac{4600}{6.430} = 720.8 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

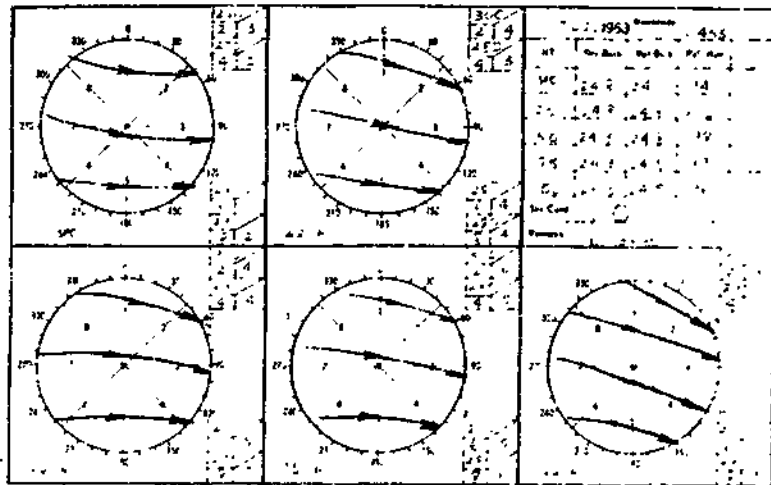
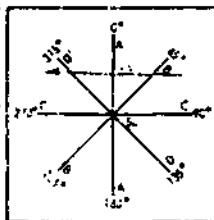
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 Purp'sFLOW RATE: 71 GPMDATE: 7 July 1963SYSTEM: HIDALFLIGHT # 5AIRSPEED: 55 KnotsSAMPLE LINE: AALTITUDE: 50 FeetTIME OF RELEASE: 0456 HoursAIRCRAFT COURSE: 270 DegreesDURATION 13 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 16 Blank							

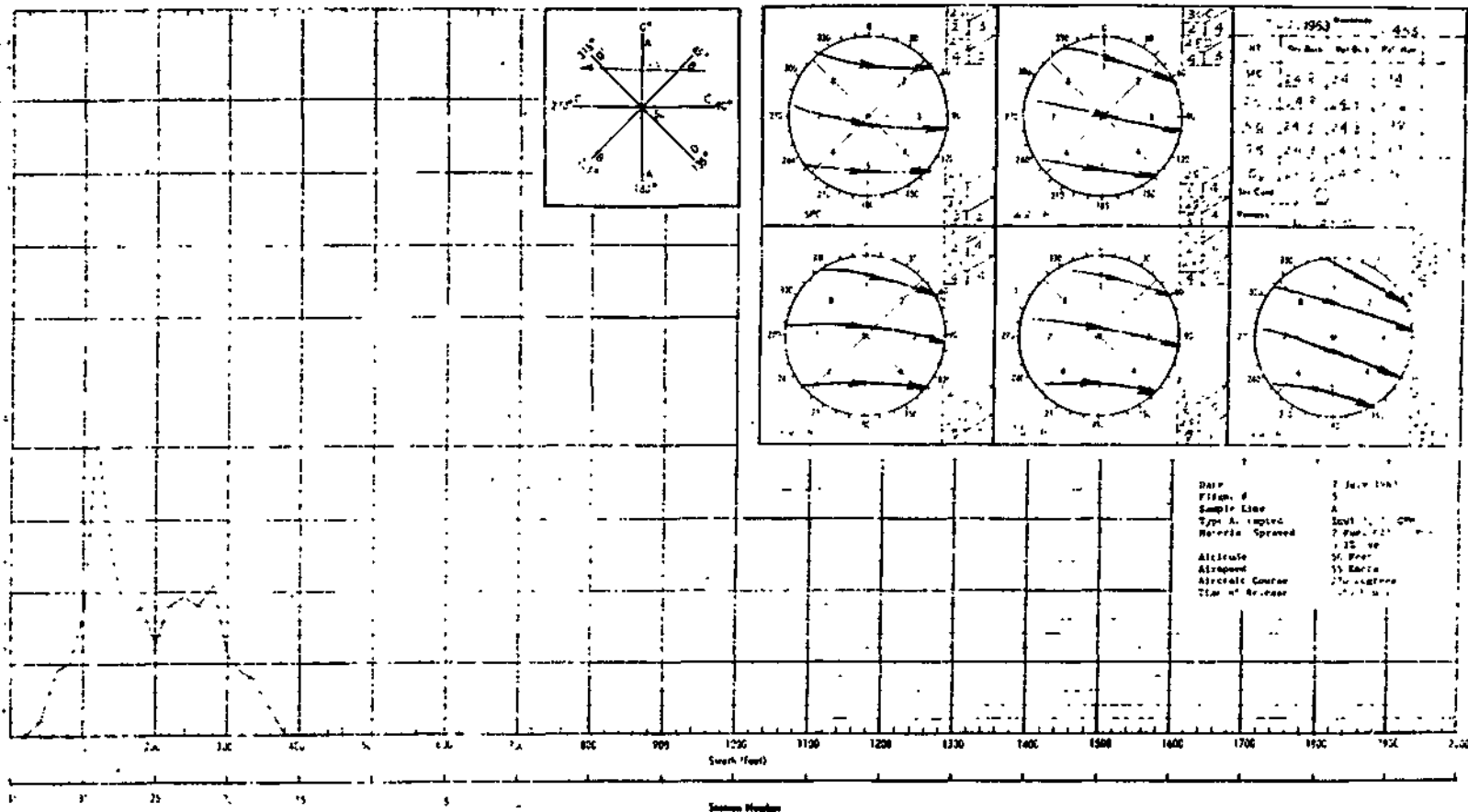
17	0.4
18	0.8
19	0.9
20	1.1
21	2.1
22	1.8
23	1.9
24	1.8
25	1.3
26	1.8
27	1.7
28	2.5
29	4.1
30	1.7
31	1.0
32	0.9
33	0.2

Stations 34 - 100 Blank

% Recovery - 93.6Total 26.0



Date 7 Jan 1963
 Film 8
 Sample Line A
 Type A. Imped
 Material Sprayed
 Altitude 15,000
 Altitude 15,000
 Aircraft Cessna
 Time of Release 11:15



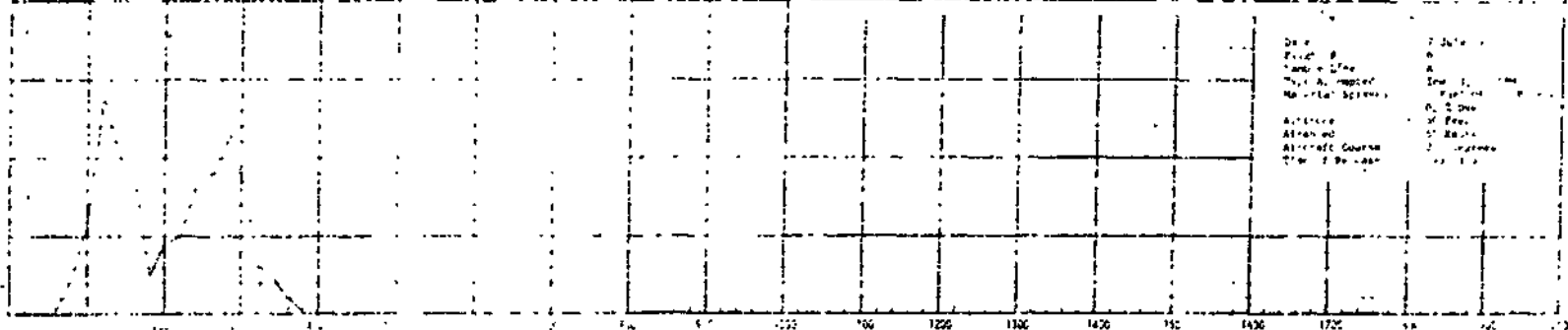
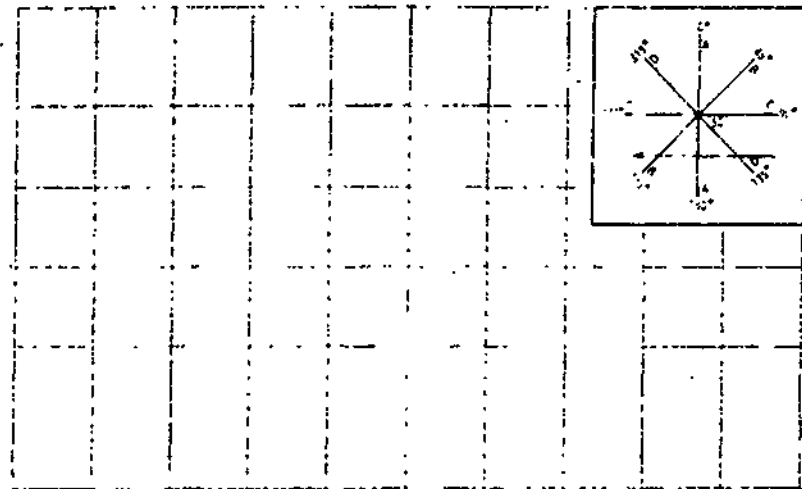
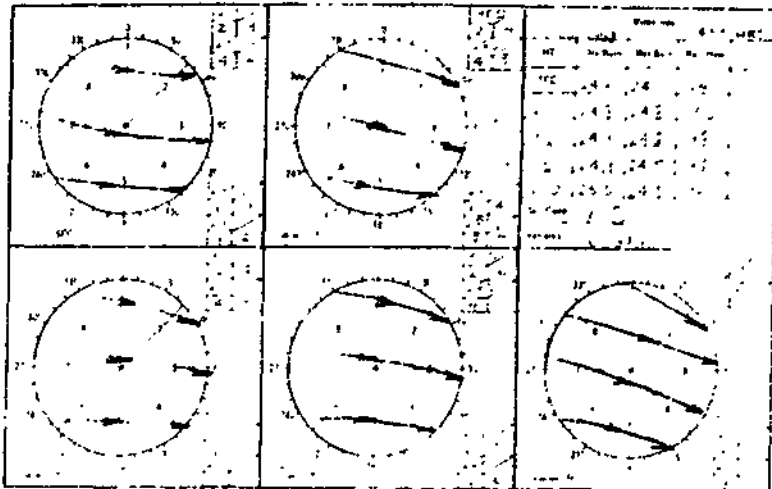
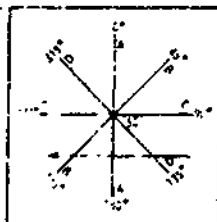
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 71 GPMDATE: 7 July 1963SYSTEM: HIDALFLIGHT #: 6AIRSPEED: 55 KnotsSAMPLE LINE: AALTITUDE: 50 FeetTIME OF RELEASE: 0457 HoursAIRCRAFT COURSE: 270 DegreesDURATION: 10 Sec.

<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>
<u>Stations 1 - 68 Blank</u>							

69	0.5
70	1.1
71	2.7
72	2.0
73	1.7
74	0.5
75	0.9
76	1.0
77	1.7
78	1.8
79	2.3
80	1.8
81	0.6
82	0.5
83	0.3

Stations 84 - 100 Blank

% Recovery - 69.8Total 19.4



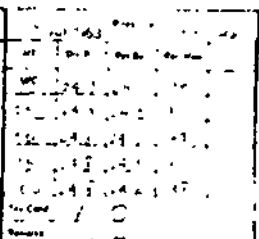
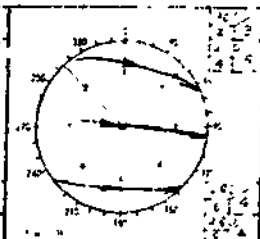
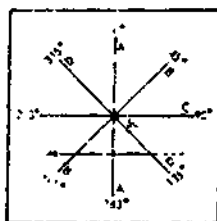
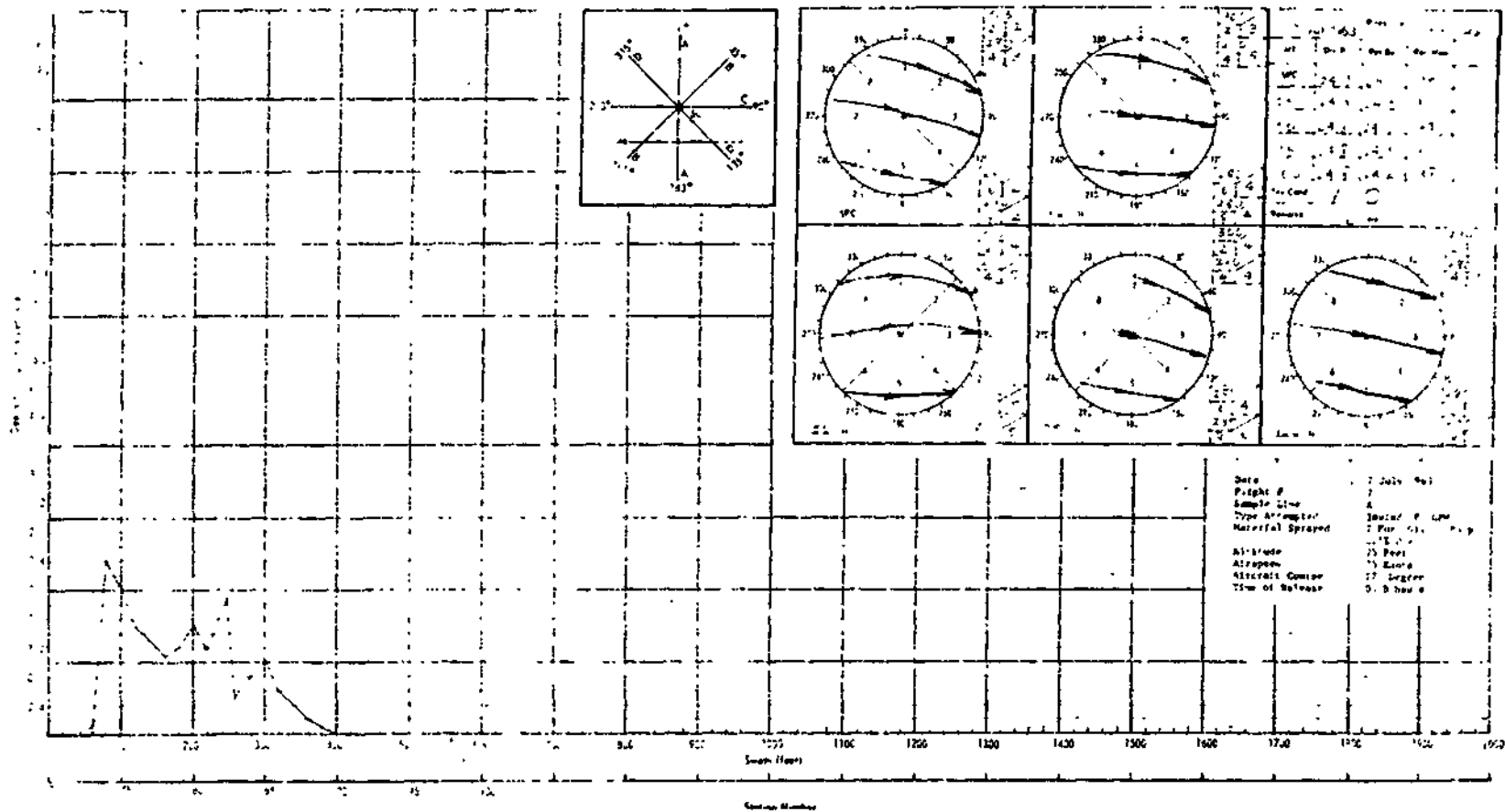
Source: 1941

Source: 1941

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 7 July 1963SYSTEM: HIDALFLIGHT #: 7AIRSPEED: 75 KnotsSAMPLE LINE: AALTITUDE: 75 FeetTIME OF RELEASE: 0518 HoursAIRCRAFT COURSE: 270 DegreesDURATION: 13 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 71	Blank					72	0.0
						73	0.1
						74	2.4
						75	2.0
						76	1.5
						77	1.3
						78	1.1
						79	1.2
						80	1.5
						81	1.2
						82	1.9
						83	0.5
						84	0.8
						85	1.0
						86	0.6
						87	0.4
						88	0.2
						89	0.1
						90	0.0
						Stations 91 - 100	
						Blank	

Total 17.8



Date 7 July 64
 Flight # 1
 Sample Line 4
 Type Sampler 1000 P LPH
 Material Sprayed 2 PPH
 Altitude 25 Feet
 Altitude 75 Feet
 Altitude 17 Feet
 Time of Release 0.8 hour

MASS MEDIAN DIAMETER

DATE: 7 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 8PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80.0 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
24	1	3700*			
29	3	3500			
24	2	3300			
29	4	3200			
29	5	3100	29	1A	100(smallest)
29	6	3000			
24	7	2900			
24	8	2700			
24	9	2600			
24	10	2500			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3700}{6.355 \times 2.2} = 269.5 \text{ Microns}$$

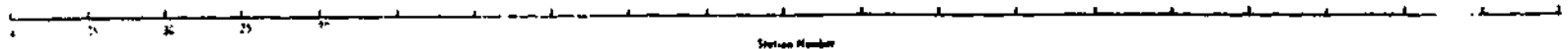
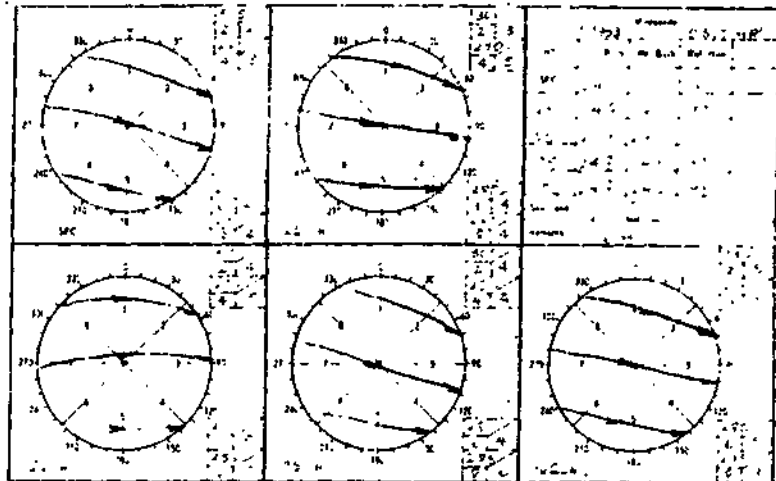
$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(3700)}{6.430} = \frac{3700}{6.430} = 593.0 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 7 July 1963SYSTEM: HIDALFLIGHT #: 8AIRSPEED: 75 KnotsSAMPLE LINE: AALTITUDE: 75 FeetTIME OF RELEASE: 0520 HoursAIRCRAFT COURSE: 270 DegreesDURATION: 9.5 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 22	Blank	23	0.0				
		24	0.3				
		25	2.6				
		26	1.0				
		27	0.9				
		28	0.7				
		29	0.7				
		30	1.0				
		31	0.6				
		32	0.2				
		33	1.0				
		34	0.6				
		35	0.5				
		36	0.5				
		37	0.3				
		38	0.3				
		39	0.1				
		40	0.0				
		Stations 41 - 100	Blank				

Total 11.5



MASS MEDIAN DIAMETER

DATE: 7 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 9PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
75	3	4100*			
75	1	3900			
75	2	3800			
73	4	3700			
75	5	3600	90	1A	100 (smallest)
75	9	3500			
76	10	3400			
75	6	3300			
75	8	3200			
75	7	3100			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4100}{6.355 \times 2.2} = 295.3 \text{ Microns}$$

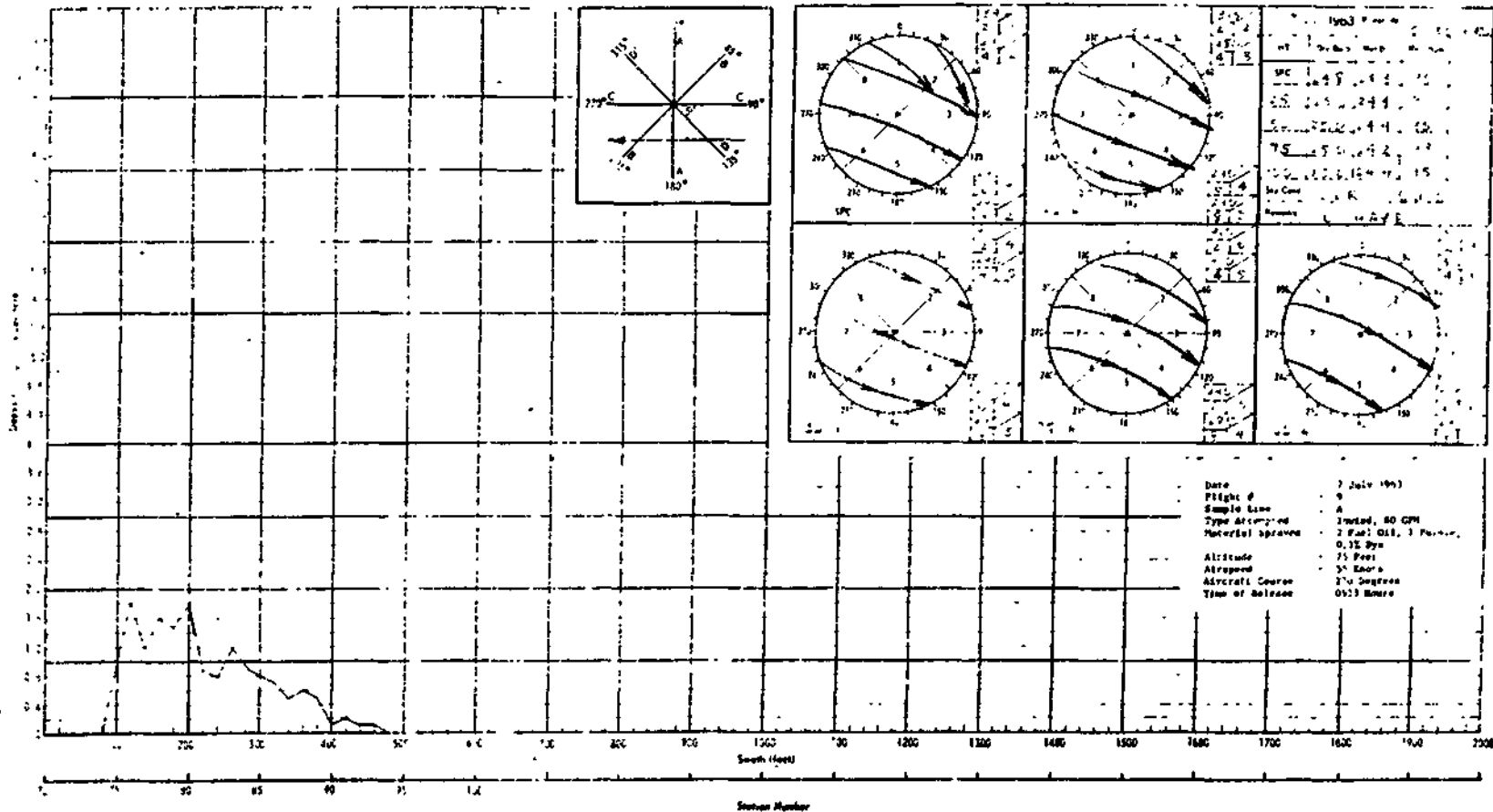
$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.14 \times (4100)}{6.430} = 649.8 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 7 July 1963SYSTEM: HIDALFLIGHT #: 9AIRSPEED: 55 KnotsSAMPLE LINE: AALTITUDE: 75 FeetTIME OF RELEASE: 0533 HoursAIRCRAFT COURSE: 270 DegreesDURATION: 11 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 73	Blank					74	0.0
						75	1.0
						76	1.8
						77	1.2
						78	1.6
						79	1.5
						80	1.8
						81	0.9
						82	0.8
						83	1.2
						84	0.9
						85	0.8
						86	0.7
						87	0.5
						88	0.6
						89	0.5
						90	1.1
						91	0.2
						92	0.1
						93	0.1
						94	0.1
						95	0.1
						96	0.1
						Station 1 - 100	Blank

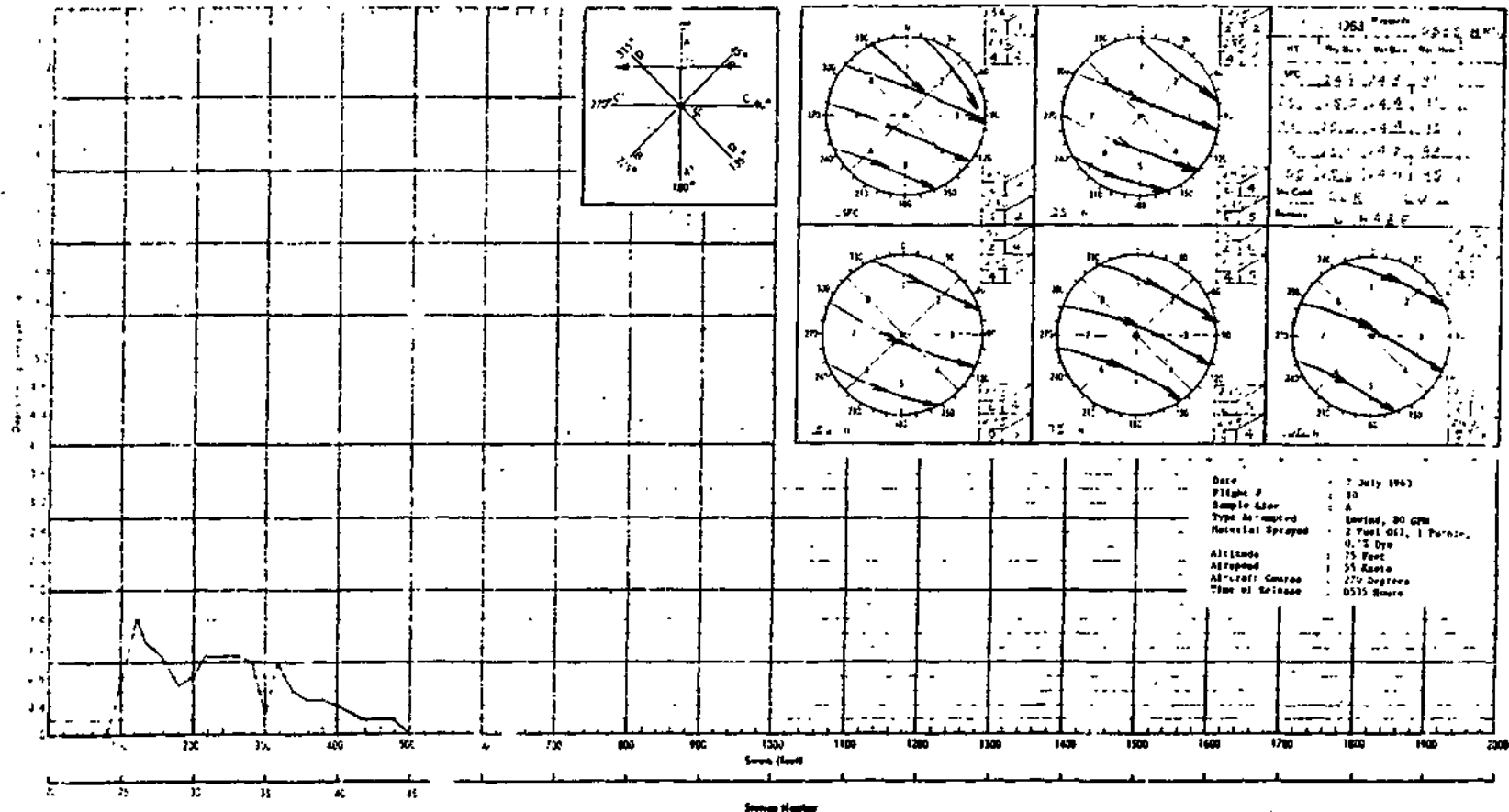
Total 16.3



MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 7 July 1963SYSTEM: HIDALFLIGHT #: 10AIRSPEED: 55 KnotsSAMPLE LINE: AALTITUDE: 75 FeetTIME OF RELEASE: 0535 HoursAIRCRAFT COURSE: 270 DegreesDURATION: 13 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 23	Blank	24	0.9				
		25	0.7				
		26	1.6				
		27	1.3				
		28	1.1				
		29	0.7				
		30	0.8				
		31	1.1				
		32	1.1				
		33	1.1				
		34	1.0				
		35	0.3				
		36	1.0				
		37	0.6				
		38	0.5				
		39	0.5				
		40	0.4				
		41	0.3				
		42	0.1				
		43	0.1				
		44	0.1				
		45	0.0				
		Stations 46 - 100	Blank				

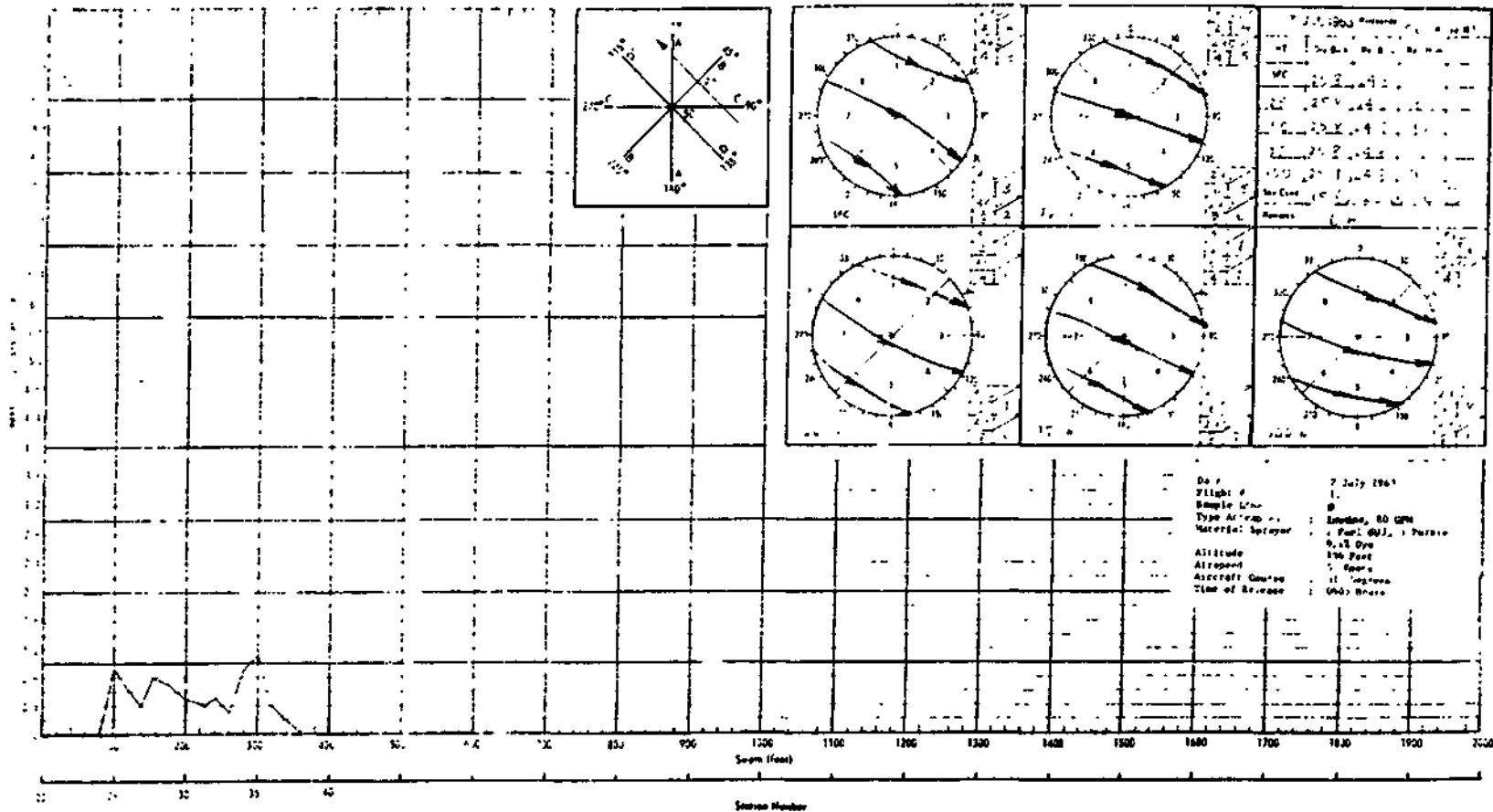
Total 14.4



MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 7 July 1963SYSTEM: HIDALFLIGHT #: 11AIRSPEED: 55 KnotsSAMPLE LINE: BALTITUDE: 100 FeetTIME OF RELEASE: 0605 HoursAIRCRAFT COURSE: 315 DegreesDURATION: 19 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 23	Blank	24	0.0				
		25	0.9				
		26	0.7				
		27	0.4				
		28	0.8				
		29	0.7				
		30	0.5				
		31	0.4				
		32	0.5				
		33	0.3				
		34	0.9				
		35	1.1				
		36	0.4				
		37	0.2				
		38	0.0				
		Stations 39 - 100	Blank				

Total 7.6



MASS MEDIAN DIAMETER

DATE: 7 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 12PAPER: Kromekote, whiteSAMPLE LINE: BMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
81	4	4100*			
84	5	4000			
77	1	3900			
77	2	3800			
77	3	3700	90	1A	75 (smallest)
87	9	3500			
86	8	3400			
78	6	3200			
78	7	3100			
79	10	3000			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4100}{6.355 \times 2.2} = 295.3 \text{ Microns}$$

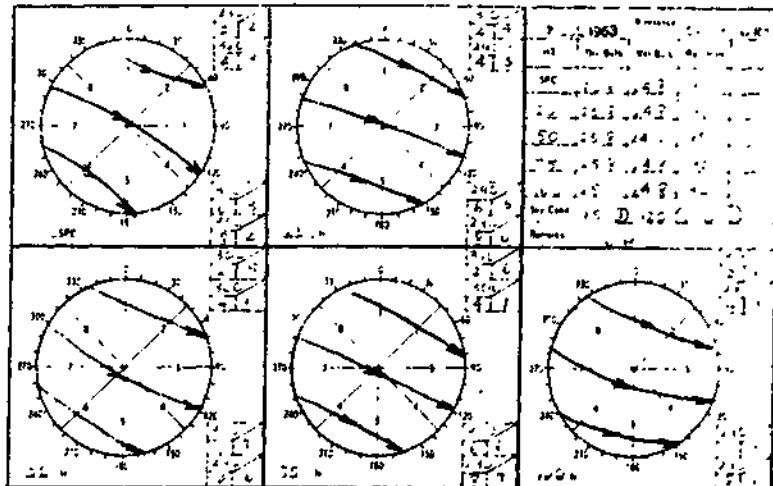
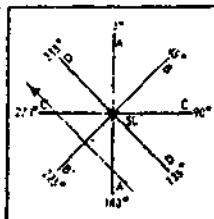
$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(4100)}{6.430} = \frac{4100}{6.430} = 649.8 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 48 \text{ Microns}$$

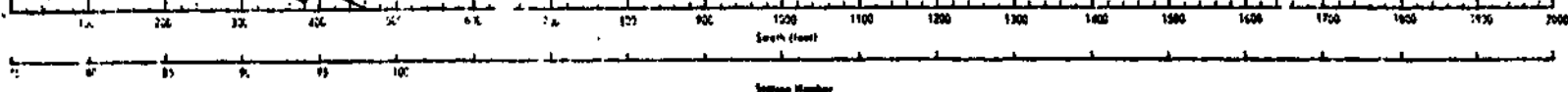
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 7 July 1963SYSTEM: HIDALFLIGHT #: 12AIRSPEED: 55 KnotsSAMPLE LINE: BALTITUDE: 100 FeetTIME OF RELEASE: 0607 HoursAIRCRAFT COURSE: 315 DegreesDURATION: 14 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 76 Blank							
						77	0.0
						78	0.4
						79	1.0
						80	0.8
						81	0.4
						82	1.4
						83	0.7
						84	0.9
						85	0.6
						86	0.6
						87	0.7
						88	0.6
						89	0.2
						90	0.5
						91	0.2
						92	0.2
						93	0.2
						94	0.1
						95	0.3
						96	0.2
						97	0.1
						98	0.0
						Stations 99 - 100 Blank	

Total 10.1



Date: 7 July 1963
 Flight #: 17
 Sample Label: B7
 "Type Aircraft": Intruder, 80 GPH
 "Material": Sprayed
 Altitude: 0.15 mi
 Altitude: 1000 ft
 Altitude: 55 ft
 Altitude: 15 ft
 Time of Release: 0001 Hours



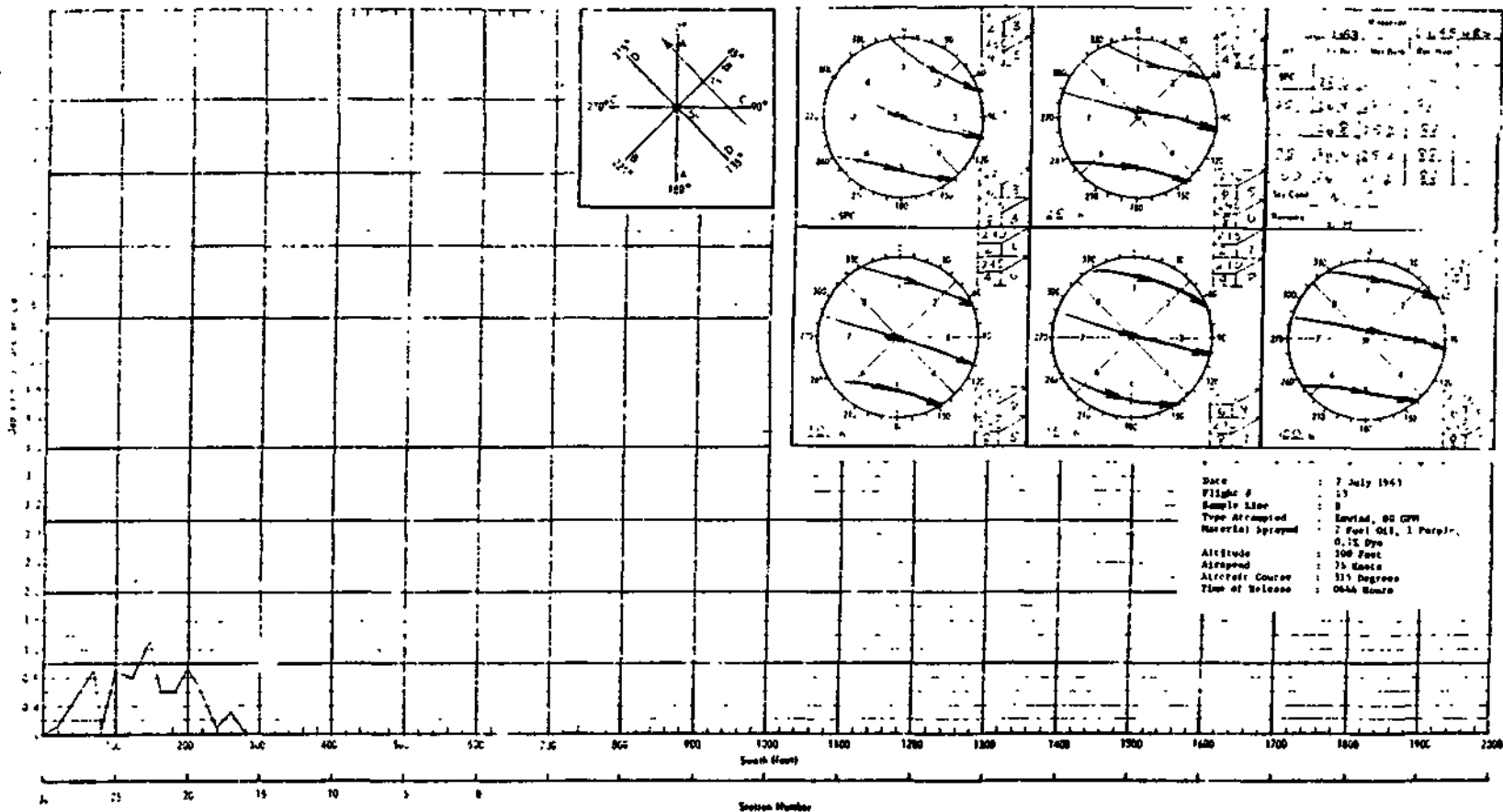
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 7 July 1963SYSTEM: HIDALFLIGHT #: 13AIRSPEED: 75 KnotsSAMPLE LINE: BALTITUDE: 100 FeetTIME OF RELEASE: 0644 HoursAIRCRAFT COURSE: 315 DegreesDURATION: 11.5 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 16 Blank							

17	0.3
18	0.1
19	0.7
20	0.9
21	0.6
22	0.6
23	1.3
24	0.8
25	0.9
26	0.1
27	0.9
28	0.5
29	0.1

Stations 30 - 100 Blank

 Total 7.8



MASS MEDIAN DIAMETER

DATE: 7 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 14PAPER: Kromekote, whiteSAMPLE LINE: BMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
74	1	3100			
74	2	3000			
72	10	2700			
70	9	2400*			
73	3	2300	62	1A	100 (smallest)
73	4	2200			
73	6	2100			
74	5	2000			
73	7	1900			
73	8	1800			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{2400}{6.355 \times 2.2} = 185.7 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 67.72 + 0.1420(3100) = \frac{3100}{6.430} = 507.9 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GmDATE: 7 July 1963SYSTEM: HIDALFLIGHT #: 14AIRSPEED: 75 KnotsSAMPLE LINE: BALTITUDE: 100 FeetTIME OF RELEASE: 0646 HoursAIRCRAFT COURSE: 315 DegreesDURATION: 09 Sec.

<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>
<u>Stations 1 - 69 Blank</u>							

70 0.3

71 0.9

72 0.4

73 0.4

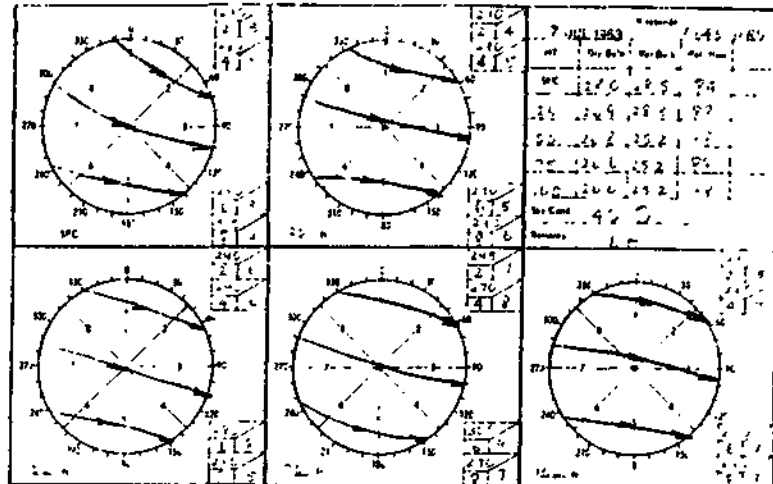
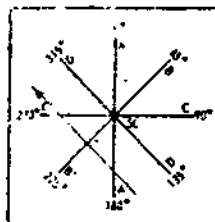
74 0.9

75 0.7

76 0.0

Stations 77 - 100 Blank

% Recovery - 15.6Total 3.6



Date: 7 Aug 1963
 Flight #: 14
 Sample Line: 9
 Type Attempted: Inertia, 45.00
 Material Sprayed: 2 Pts. Oil, 1 Pts. V
 Altitude: 0.15 Sec
 Altitude: 100 Feet
 Altitude: 15 Meters
 Aircraft Course: 215 Degrees
 Time of Release: 1400 Hours

Speed (Feet)

Survey Number

MASS DEPOSIT

MATERIAL* 2 Fuel Oil, 1 Purple FLOW RATE* 80 GPM
 DATE: 7 July 1963 SYSTEM HIDAL
 FLIGHT #: 15 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE. 0658 Hours AIRCRAFT COURSE 270 Degrees
 DURATION* 14 Sec.

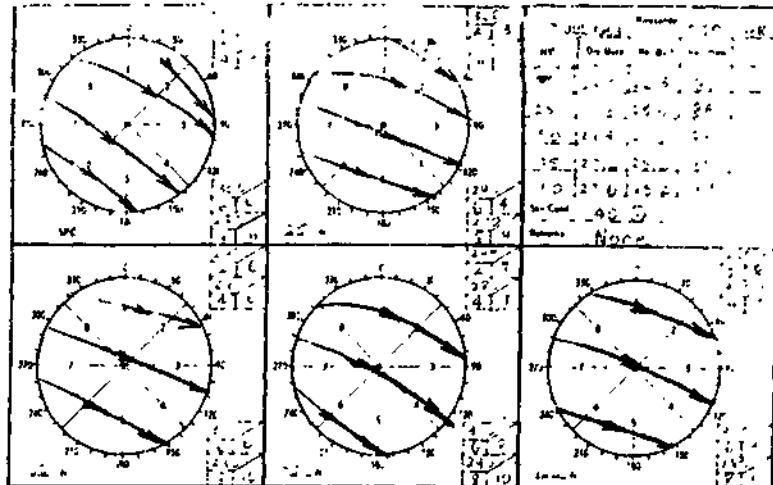
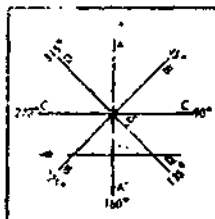
STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 69 Blank

70	0.5
71	0.3
72	2.5
73	2.4
74	1.6
75	1.6
76	1.3
77	0.9
78	1.6
79	2.4
80	0.9
81	0.5

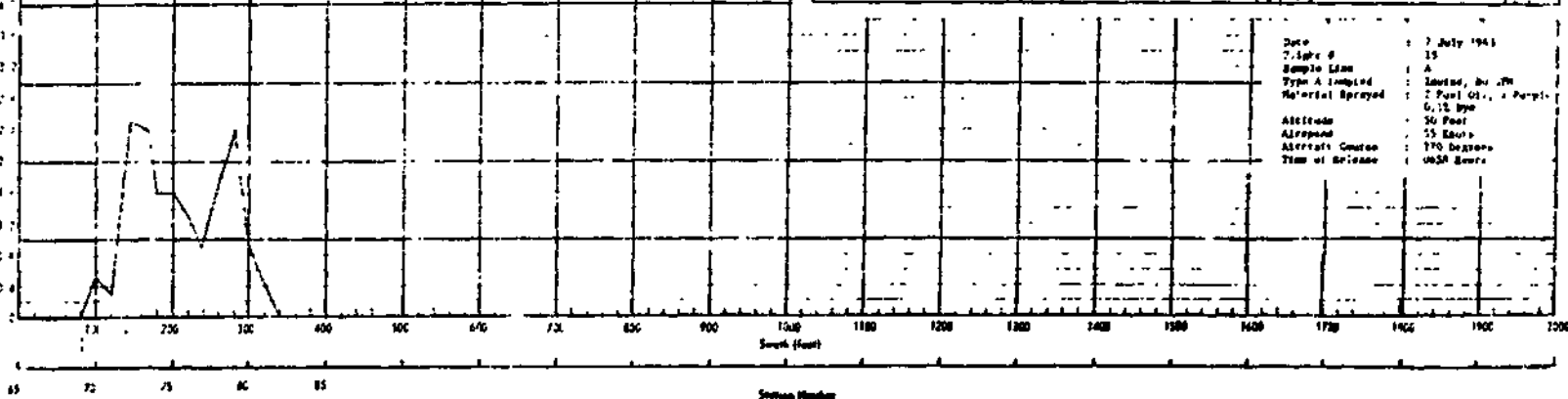
Stations 82 - 100 Blank

% Recovery - 52.7

Total 16.5



Date : 7 July 1943
 Flight : 15
 Sample Line : A
 Type of Impulse : Instant, No. 20
 Material Sprayed : 2 Fuel Oil, 2 Perm.
 Altitude : 50 feet
 Airspeed : 55 knots
 Aircraft Course : 170 degrees
 Time of Release : 0858 hours



MASS MEDIAN DIAMETER

DATE: 7 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 16PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
29	9	4000*			
25	4	3900			
29	3	3800			
28	1	3700			
29	2	3600	43	1A	100(smallest)
25	5	3500			
27	10	3300			
25	7	3200			
25	6	3100			
30	8	3000			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4000}{6.355 \times 2.2} = 288.9 \text{ Microns}$$

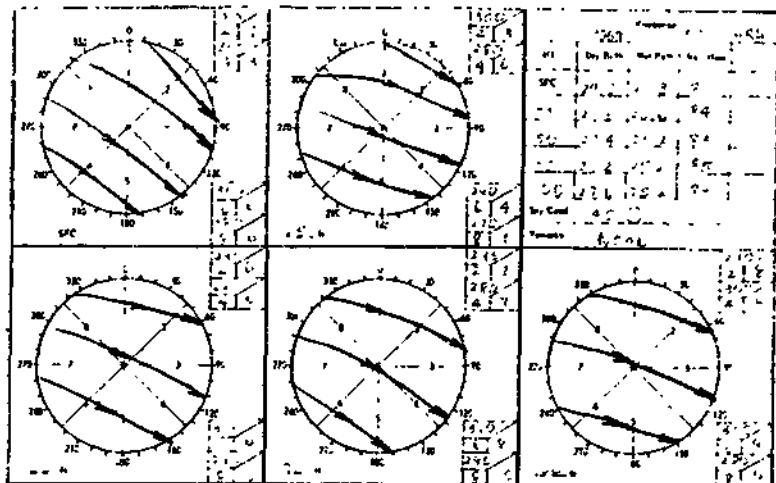
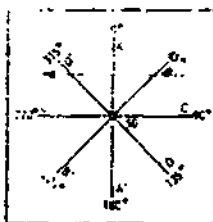
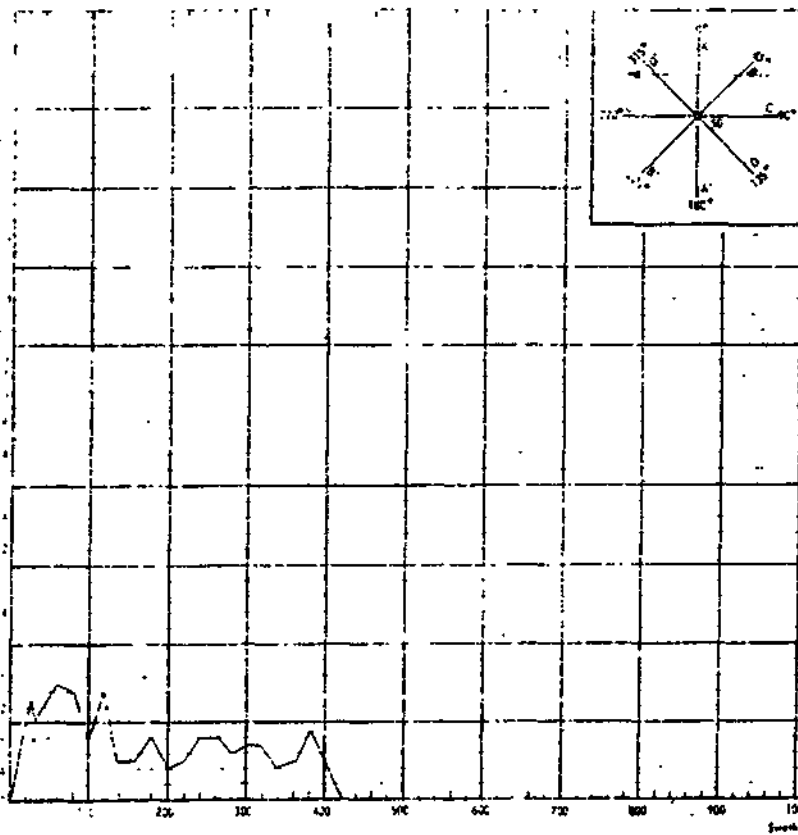
$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(4000)}{6.430} = \frac{4000}{6.430} = 635.6 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 7 July 1963SYSTEM: HIDALFLIGHT #: 16AIRSPEED: 55 KnotsSAMPLE LINE: AALTITUDE: 50 FeetTIME OF RELEASE: 0700 HoursAIRCRAFT COURSE: 270 DegreesDURATION: 16 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 25	Blank	26	1.3				
		27	1.0				
		28	1.5				
		29	1.4				
		30	0.8				
		31	1.4				
		32	0.5				
		33	0.5				
		34	0.8				
		35	0.4				
		36	0.5				
		37	0.8				
		38	0.8				
		39	0.6				
		40	0.7				
		41	0.7				
		42	0.4				
		43	0.5				
		44	0.9				
		45	0.5				
		Stations 46 - 100	Blank				

Total 16.0



Date: 7 July 1963
 Flight #: 16
 Sample Line: A
 Type Altimeter: Smith, E3 GSW
 Material Sprayed: 2 Feet Oil, 1 Foot
 Altitude: 0.12 Dye
 Airspeed: 50 Feet
 Aircraft Course: 55 Degrees
 Time of Release: 0700 hours

Swath (Feet)

Depth (Feet)

H-34/HIDAL GROUND FLOW & FLIGHT DATADATE CALIBRATED: 6 July 1963DATE TEST FLOWN: 8 July 1963LIQUID SPRAYED: 2 Fuel Oil, 1 PurpleTOTAL NOZZLES OPEN: 60NOZZLE TYPE: 8015LIQUID TEMP: 33.5° CDURATION OF SPRAY: 30 Sec.PUMP PRESSURE: 38-28 PSITOTAL AMOUNT SPRAYED 39.5 Gal.FLOW RATE CALIBRATED: 80 GPMOPERATIONAL DATA DURING FLIGHT

Above information is for Runs 1 - 10.

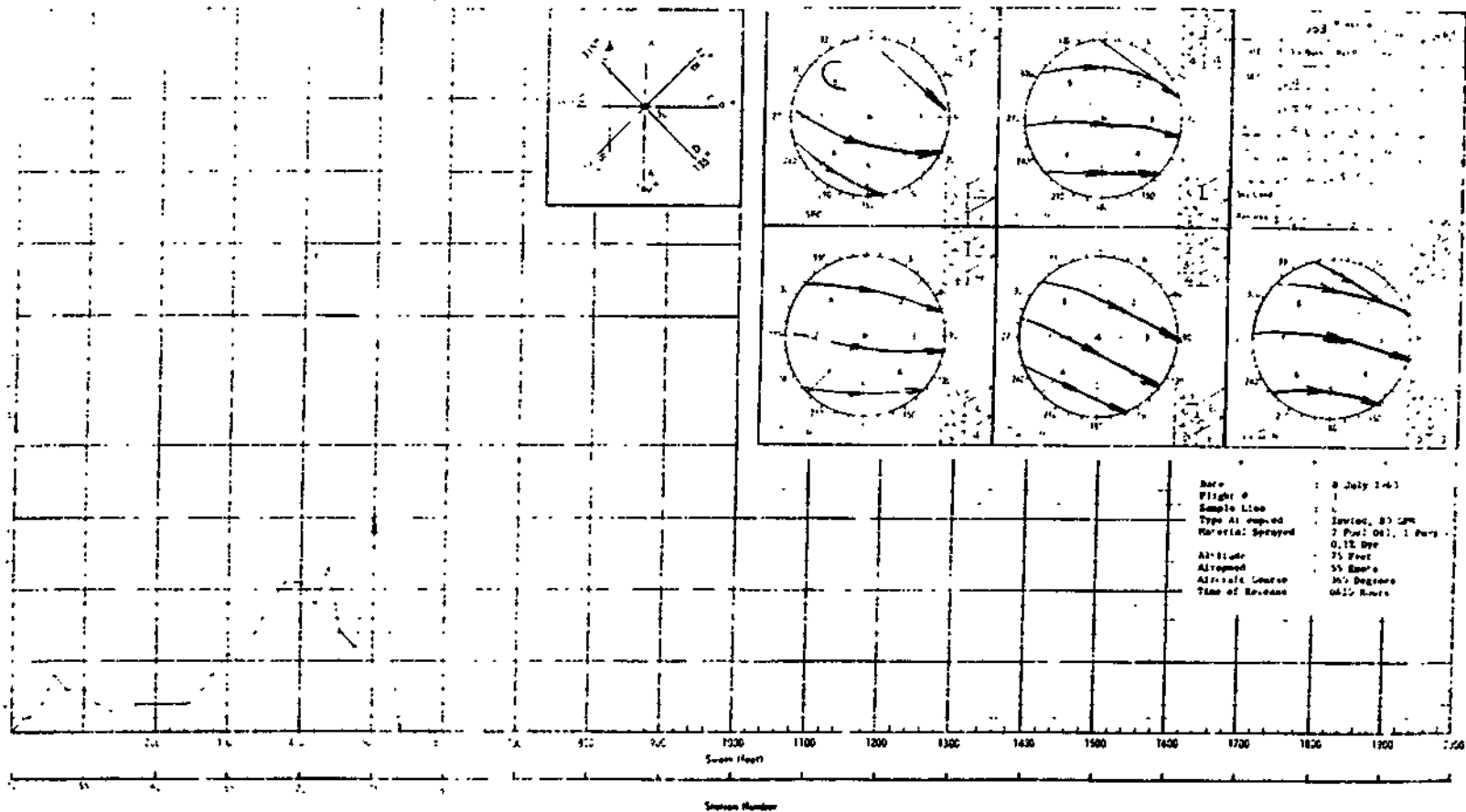
DATE CALIBRATED: 6 July 1963DATE TEST FLOWN: 8 July 1963LIQUID SPRAYED: 2 Fuel Oil, 1 PurpleTOTAL NOZZLES OPEN: 60NOZZLE TYPE: Check ValvesLIQUID TEMP: 36° CDURATION OF SPRAY: 20 Sec.PUMP PRESSURE: 20.5 PSITOTAL AMOUNT SPRAYED: 27.5 Gal.FLOW RATE CALIBRATED: 83 GPMOPERATIONAL DATA DURING FLIGHT

Above information is for Runs 11 - 14.

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 8 July 1963SYSTEM: HIDALFLIGHT #: 1AIRSPEED: 55 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0410 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 12 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 50	Blank	51	0.2	76	1.9		
		52	0.3	Stations 77 - 100			
		53	0.8		Blank		
		54	0.6				
		55	0.6				
		56	0.4				
		57	0.3				
		58	0.3				
		59	0.4				
		60	0.4				
		61	0.4				
		62	0.4				
		63	0.5				
		64	0.8				
		65	1.1				
		66	1.0				
		67	1.4				
		68	1.9				
		69	2.1				
		70	2.1				
		71	1.8				
		72	2.3				
		73	1.4				
		74	1.2				
		75	3.0				

Total 27.2



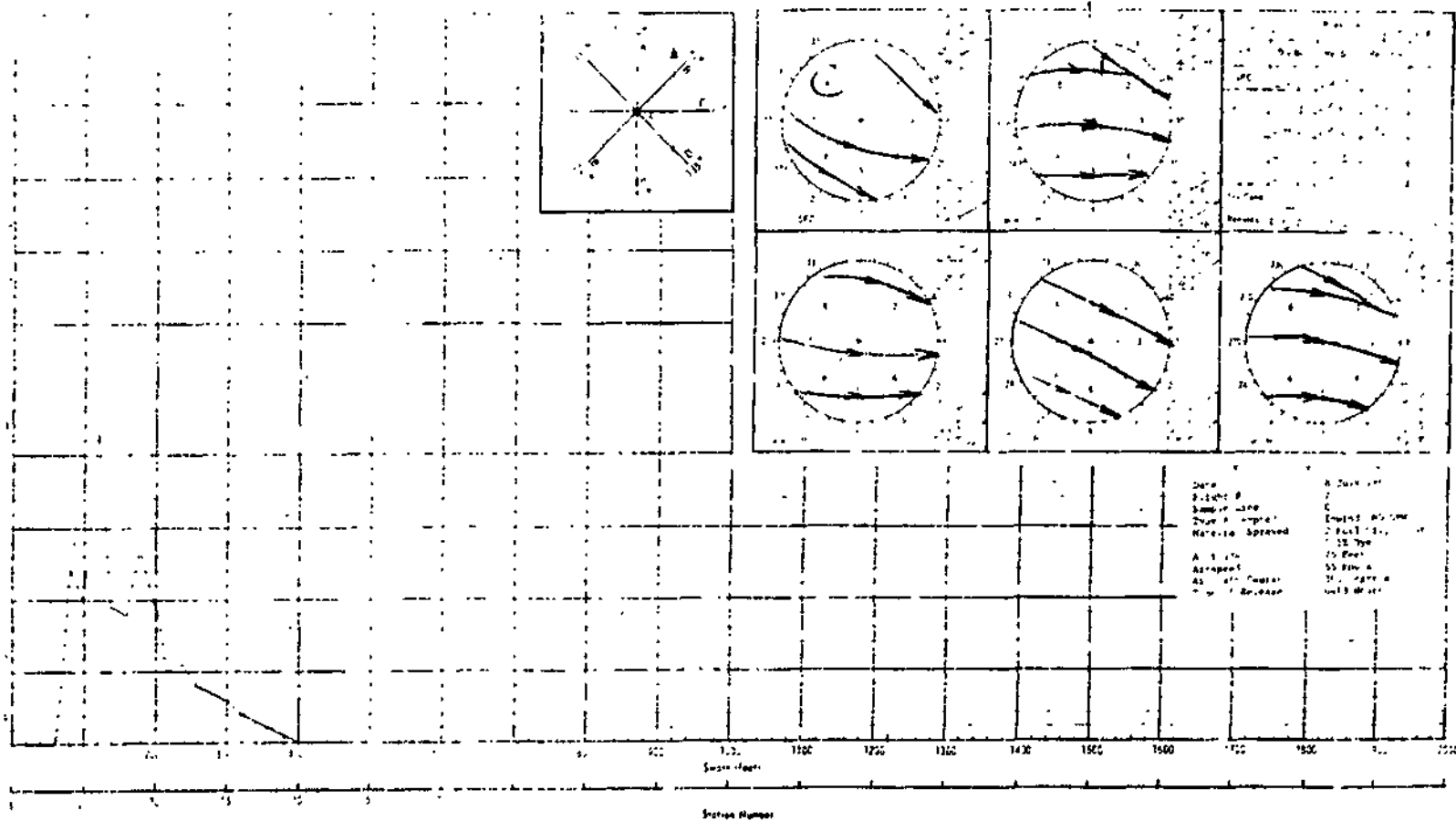
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 8 July 1963SYSTEM: HIDALFLIGHT #: 2AIRSPEED: 55 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0413 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 13 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 10 Blank							

11	0.1
12	0.2
13	0.3
14	0.4
15	0.6
16	0.7
17	0.8
18	1.1
19	1.0
20	1.9
21	2.7
22	1.8
23	1.9
24	4.3
25	2.0
26	2.4

Stations 27 - 100 Blank

Total 22.2



MASS MEDIAN DIAMETER

DATE: 8 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 3PAPER: Kromekote, whiteSAMPLE LINE: BMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
24	2	4000			
24	1	3200*			
20	3	3000			
20	4	2900			
20	5	2800	20	1A	100(smallest)
20	6	2700			
20	7	2600			
20	10	2500			
20	9	2400			
20	8	2300			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3200}{6.355 \times 2.2} = 237.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(4000)}{6.430} = \frac{4000}{6.430} = 635.6 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

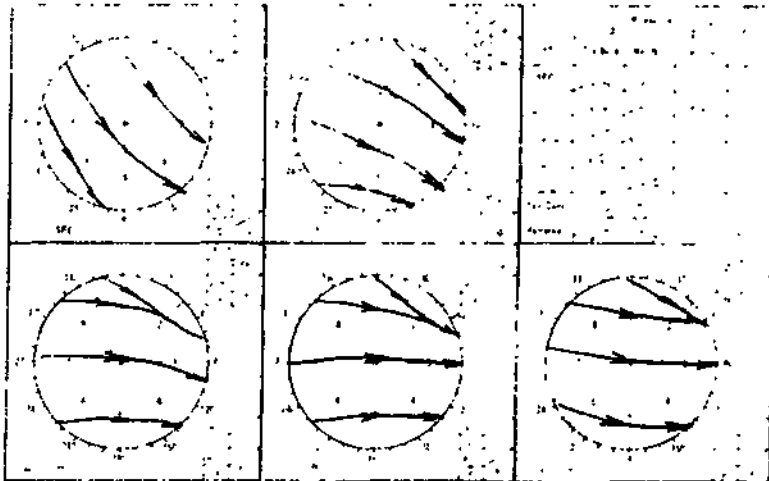
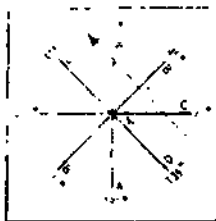
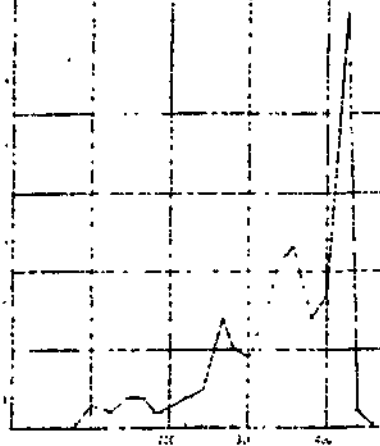
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 8 July 1963SYSTEM: FIDALFLIGHT #: 3AIRSPEED: 75 KnotsSAMPLE LINE: BALTITUDE: 75 FeetTIME OF RELEASE: 0432 HoursAIRCRAFT COURSE: 315 DegreesDURATION: 13 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 9 Blank							

10	0.3
11	0.2
12	0.4
13	0.4
14	0.2
15	0.3
16	0.4
17	0.5
18	1.4
19	1.0
20	0.9
21	1.5
22	2.1
23	2.3
24	1.4
25	1.7
26	5.5
27	0.2

Stations 28 - 100 Blank

Total 20.3



Date: 10/1/50
 Flight # 1
 Sample Time 10:00 AM
 Type of Surveyed: 100 ft. Circle
 Material: 100 ft. Circle
 Altitude: 100 ft.
 Altitude: 100 ft.
 Time of Release: 10:00 AM

Survey Feet

Strata Number

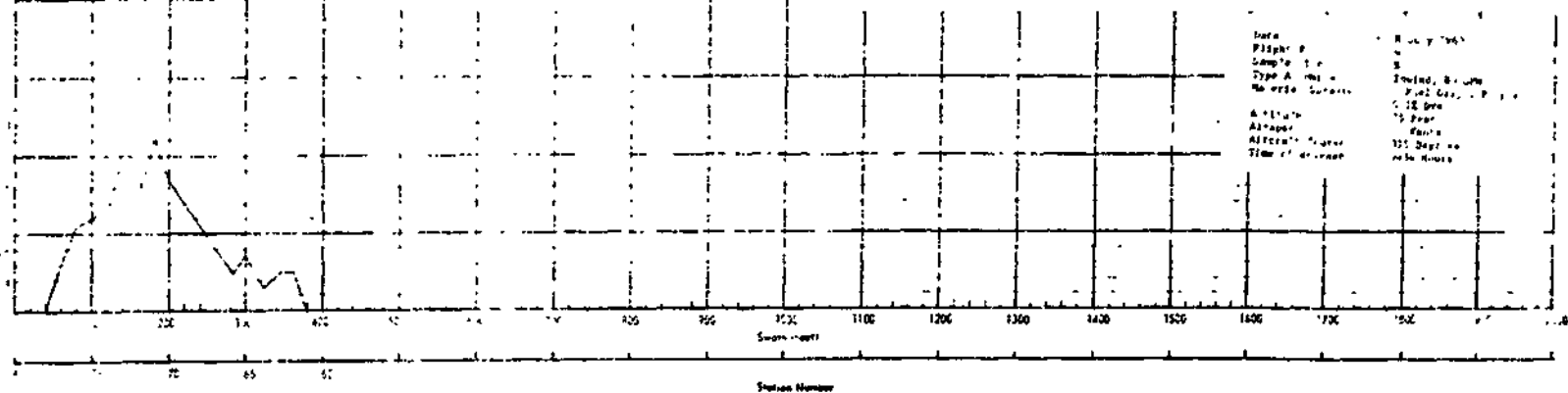
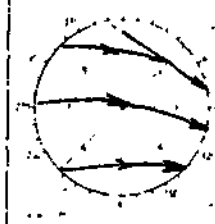
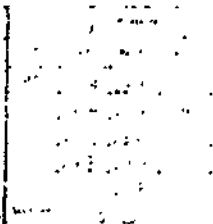
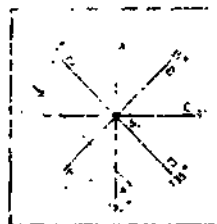
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 8 July 1963SYSTEM: HIDALFLIGHT #: 4AIRSPEED: 75 KnotSAMPLE LINE: BALTITUDE: 75 FeetTIME OF RELEASE: 0434 HoursAIRCRAFT COURSE: 315 DegreesDURATION: 11 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 61 Blank							

62	0.5
63	0.5
64	0.3
65	0.7
66	0.5
67	0.8
68	1.0
69	1.4
70	1.7
71	2.2
72	1.6
73	2.2
74	1.4
75	1.2
76	1.1
77	0.5

Stations 78 - 100 Blank

Total 17.6



Date _____
 Flight # _____
 Sample # _____
 Type A only _____
 No. of 100's _____
 # of 10's _____
 # of 1's _____
 # of 100's _____
 # of 10's _____
 # of 1's _____
 Time of day _____

H. L. F. 1941
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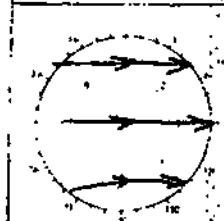
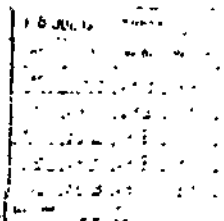
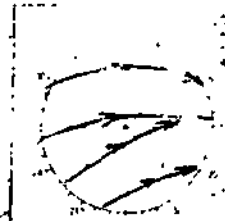
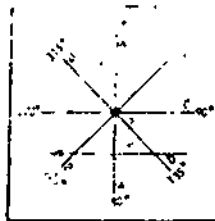
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 8 July 1963SYSTEM: NIDALFLIGHT #: 5AIRSPEED: 75 KnotsSAMPLE LINE: AALTITUDE: 50 FeetTIME OF RELEASE: 0455 HourAIRCRAFT COURSE: 270 DegreesDURATION: 12 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 63 Blank							

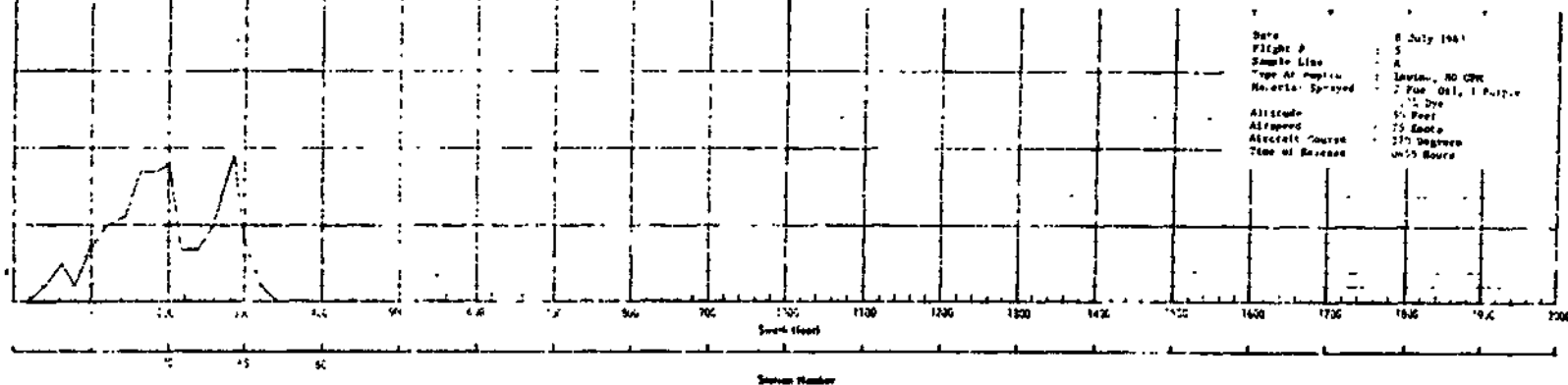
64	0.2
65	0.8
66	1.9
67	1.0
68	0.7
69	0.7
70	1.8
71	1.7
72	1.7
73	1.1
74	1.0
75	0.7
76	0.2
77	0.5
78	0.2

Stations 79 - 100 Blank

Total 14.2



Date: 8 July 1961
 Flight #: 5
 Sample Line: A
 Type of Sample: Lavender, NO GPR
 No. of Sprayed: 2 For Oil, 1 For
 15. Dye
 Altitude: 50 Feet
 Airspeed: 75 Knots
 Aircraft Course: 270 Degrees
 Time of Release: 0055 Hours



MASS MEDIAN DIAMETER

DATE: 8 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 6PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
22	1	2900*			
22	3	2800			
22	2	2700			
23	4	2600			
22	6	2500	22	1A	100(smallest)
24	5	2400			
21	8	2300			
21	7	2200			
22	10	2100			
22	9	2000			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{2900}{6.355 \times 2.2} = 217.9 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(2900)}{6.430} = \frac{2900}{6.430} = 479.5 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

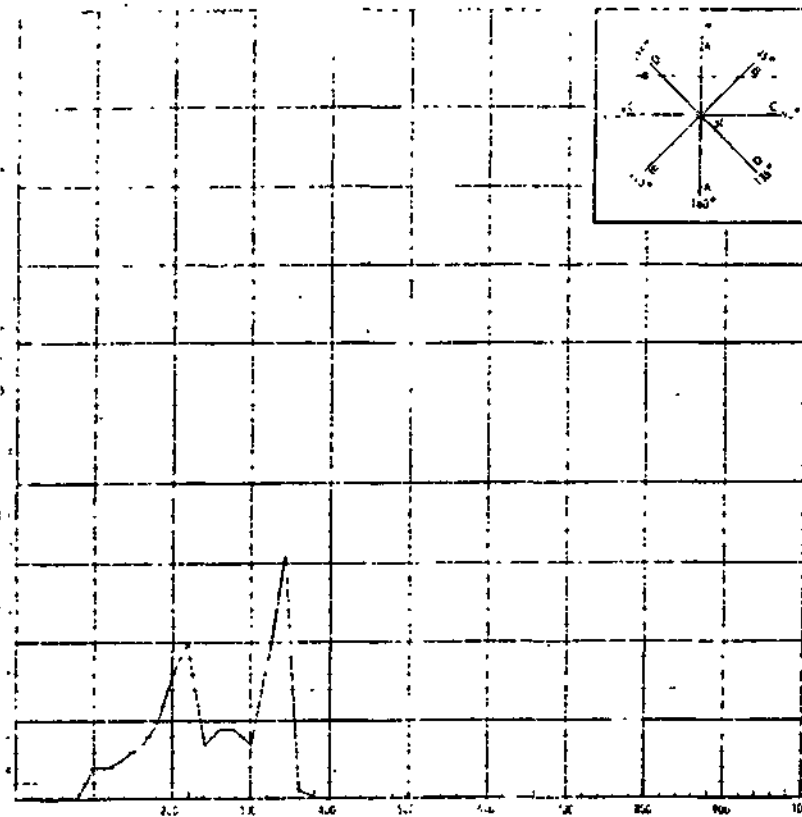
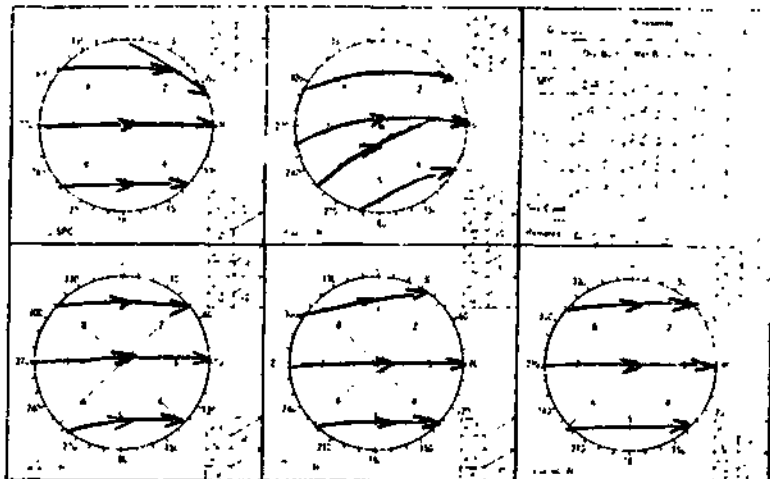
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 8 July 1963SYSTEM: HIDALFLIGHT #: 6AIRSPEED: 75 KnotsSAMPLE LINE: AALTITUDE: 50 FeetTIME OF RELEASE: 0457 HoursAIRCRAFT COURSE: 270 DegreesDURATION: '3 Sec.

<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>
<u>Stations 1 - 14 Blank</u>							

15	0.4
16	0.4
17	0.5
18	0.7
19	1.0
20	1.6
21	2.0
22	0.7
23	0.9
24	0.9
25	0.7
26	1.9
27	3.1
28	0.1

Stations 29 - 100 Blank

Total 14.8

[illegible]

Smith, David

Send your Name

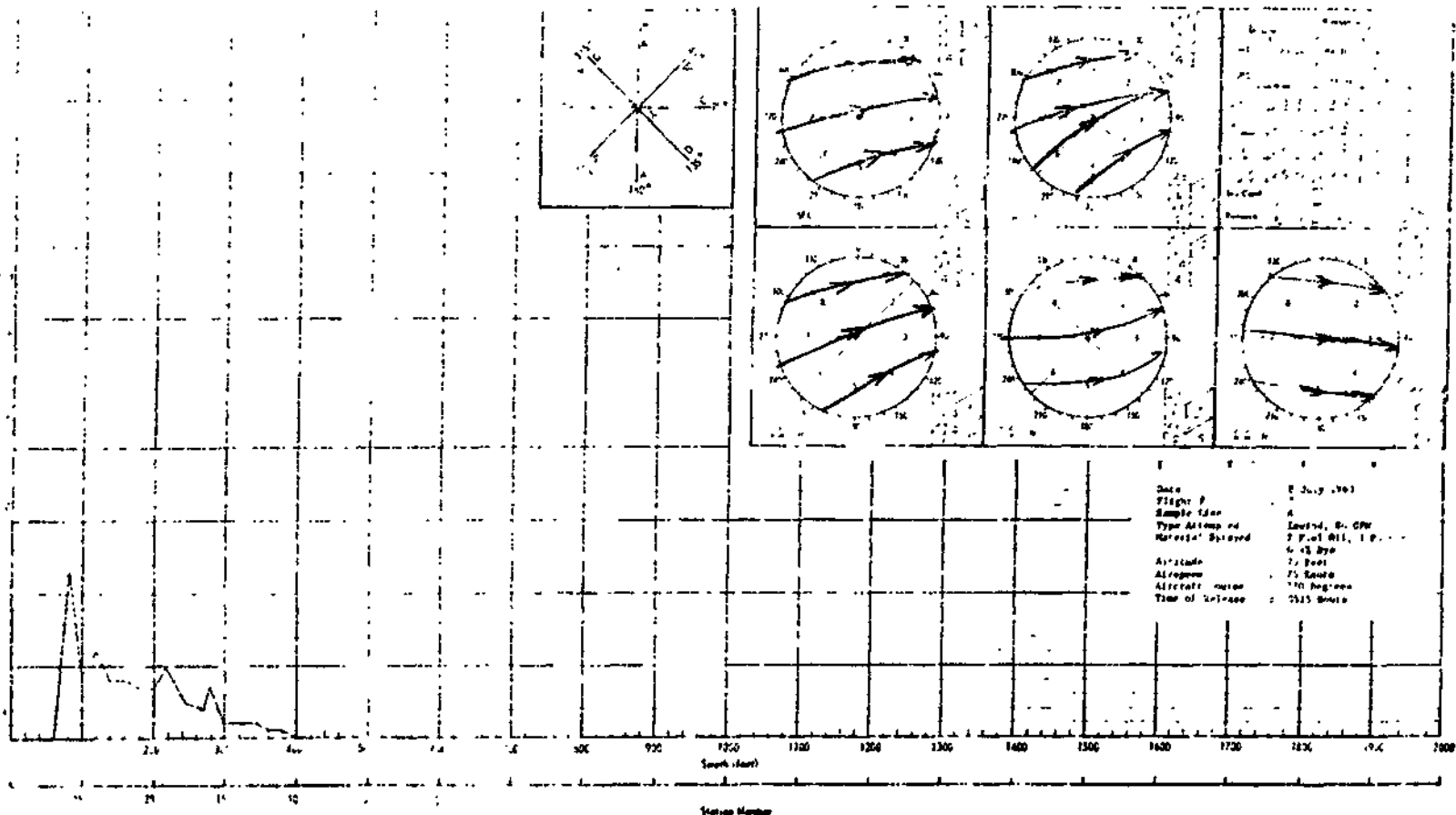
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 8 July 1963SYSTEM: HIDALFLIGHT #: 7AIRSPEED: 75 KnotsSAMPLE LINE: AALTITUDE: 75 FeetTIME OF RELEASE: 0515 HoursAIRCRAFT COURSE: 270 DegreesDURATION: 12 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
<u>Stations 1 - 9 Blank</u>							

10	0.0
11	0.1
12	0.1
13	0.2
14	0.2
15	0.2
16	0.7
17	0.4
18	0.5
19	1.0
20	0.7
21	0.7
22	0.8
23	0.8
24	1.2
25	0.9
26	2.3
27	0.0

Stations 28 - 100 Blank

Total 10.8



MASS DEPOSIT

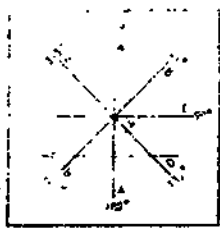
MATERIAL: <u>2 Fuel Oil, 1 Purple</u>	FLOW RATE: <u>80</u> GPM
DATE: <u>8 July 1963</u>	SYSTEM: <u>HIDAL</u>
FLIGHT #: <u>8</u>	AIRSPEED: <u>75</u> Knots
SAMPLE LINE: <u>A</u>	ALTITUDE: <u>75</u> Feet
TIME OF RELEASE: <u>0517</u> Hours	AIRCRAFT COURSE: <u>270</u> Degrees
DURATION: <u>15</u> Sec.	

<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>
Stations 1 - 61 Blank							

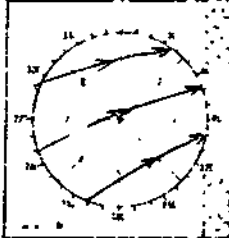
62	0.1
63	0.2
64	0.2
65	0.5
66	0.7
67	Missing
68	0.7
69	0.9
70	1.2
71	1.0
72	0.9
73	1.1
74	0.9
75	0.7
76	2.6
77	0.0

Stations 78 - 100 Blank

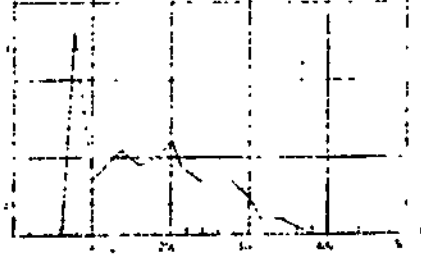
Total 11.7



Date: 8 July 1964
 Time: 14:12
 Location: 17°N 152°W
 Altitude: 75 Feet
 Airspeed: 15 Kts
 Altitude: 270 Feet
 Time of Release: 14:12



Date: 8 July 1964
 Time: 14:12
 Location: 17°N 152°W
 Altitude: 75 Feet
 Airspeed: 15 Kts
 Altitude: 270 Feet
 Time of Release: 14:12



Range (Feet)

Altitude (Feet)

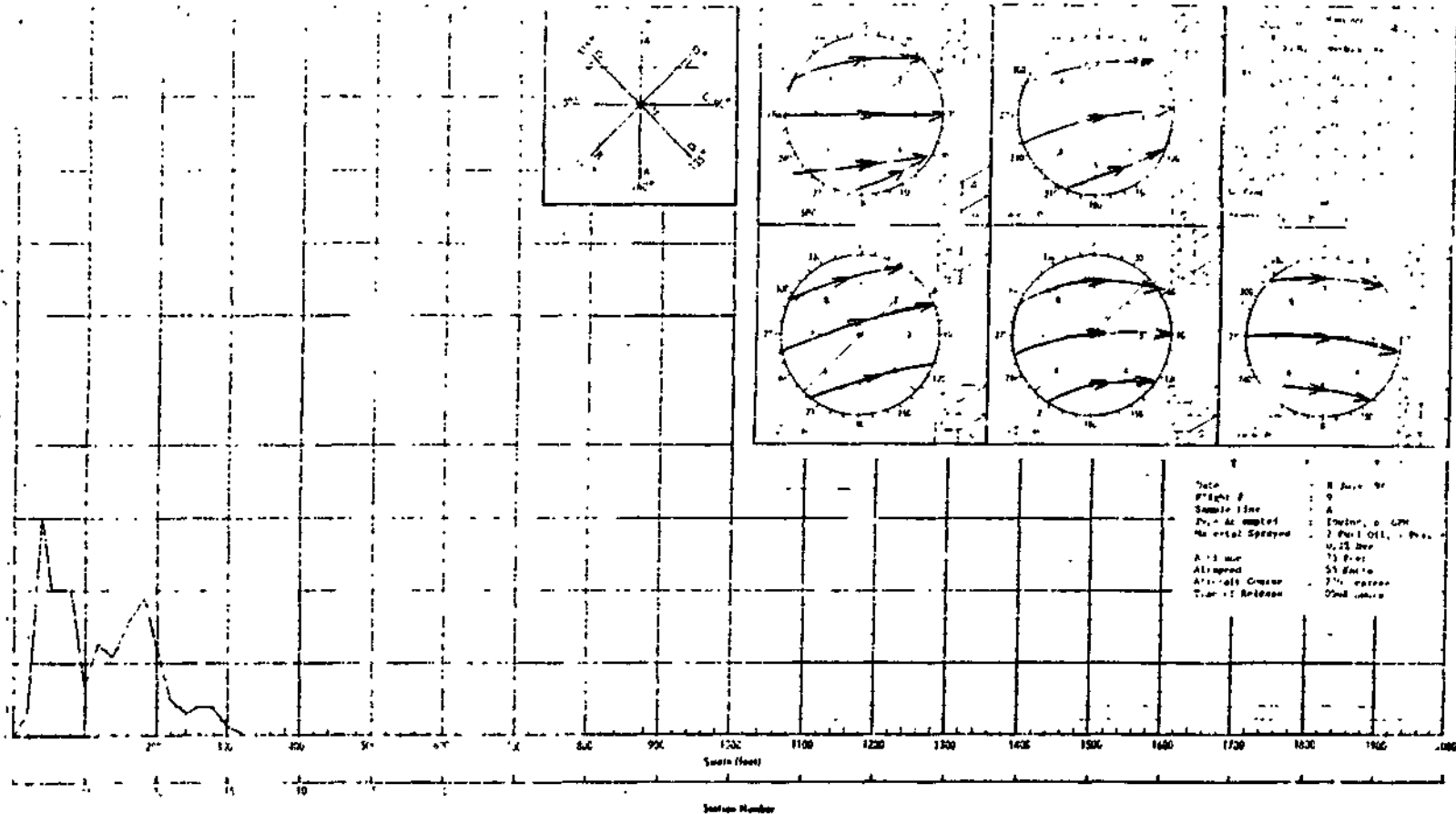
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 8 July 1963SYSTEM: HIDALFLIGHT #: 9AIRSPEED: 55 KnotsSAMPLE LINE: AALTITUDE: 75 FeetTIME OF RELEASE: 0548 HourAIRCRAFT COURSE: 270 DegreesDURATION: 16 Sec.

<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>
Stations 1 - 14 Blank							

15	0.1
16	0.4
17	0.4
18	0.3
19	0.5
20	1.2
21	1.9
22	1.6
23	1.1
24	1.3
25	0.7
26	1.6
27	1.6
28	3.0
29	0.3

Stations 30 - 100 Blank

Total 16.0



MASS MEDIAN DIAMETER

DATE: 8 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 10PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
77	4	3700*			
76	2	3800			
77	3	3700			
73	1	3600			
77	5	3500	75	1A	100(smallest)
77	6	3400			
79	8	3300			
77	10	3200			
71	9	3100			
75	7	3000			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{3900}{6.355 \times 2.2} = 282.4 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(3900)}{6.430} = \frac{3900}{6.430} = 621.4 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 80 GPMDATE: 8 July 1963SYSTEM: HIDALFLIGHT #: 10AIRSPEED: 55 KnotsSAMPLE LINE: AALTITUDE: 75 FeetTIME OF RELEASE: 0550 HoursAIRCRAFT COURSE: 270 DegreesDURATION: 14 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.

Stations 1 - 64 Blank

65 0.3

66 0.3

67 0.4

68 0.9

69 0.9

70 1.3

71 1.5

72 2.0

73 2.0

74 0.9

75 1.1

76 1.7

77 1.5

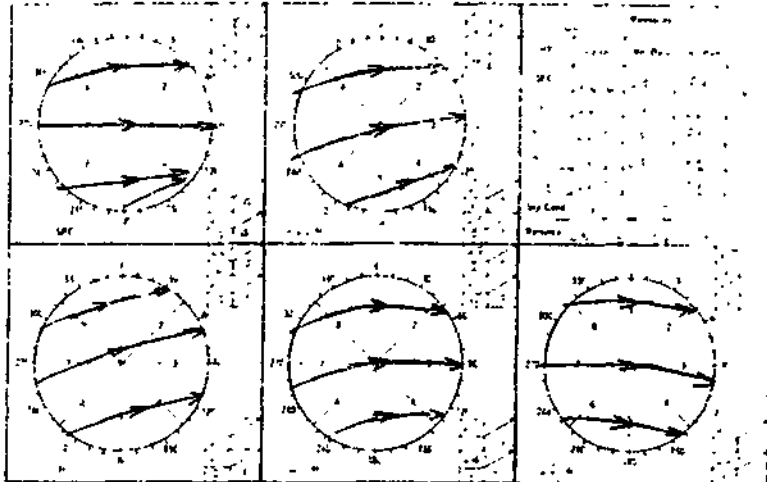
78 2.3

79 1.2

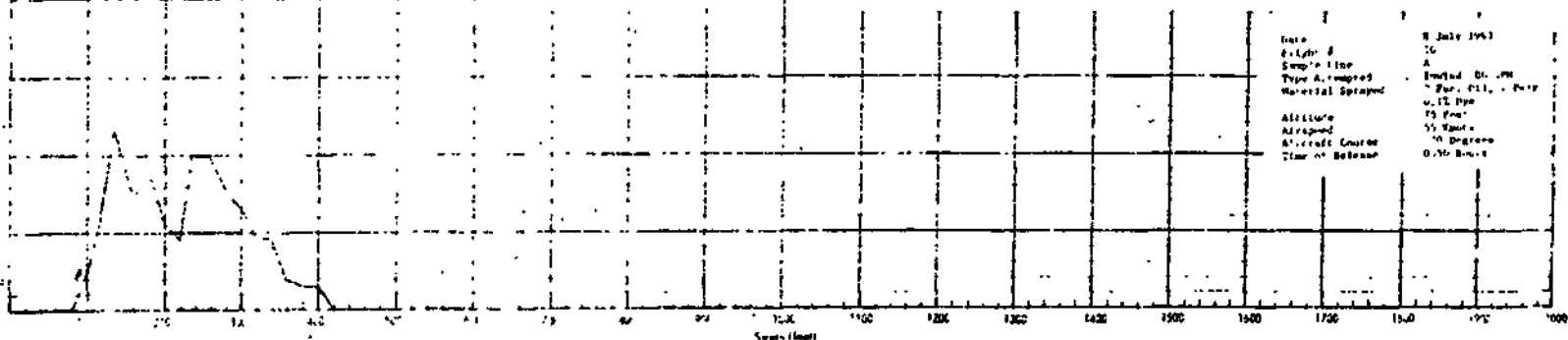
80 0.5

Stations 81 - 100 Blank

Total 16.8



Date 8 July 1943
 Flight 16
 Sample line A
 Type Airspeed
 Material Sprayed
 Altitude 15,000 ft
 Aircraft C-47
 Time of Release 0.75 hours

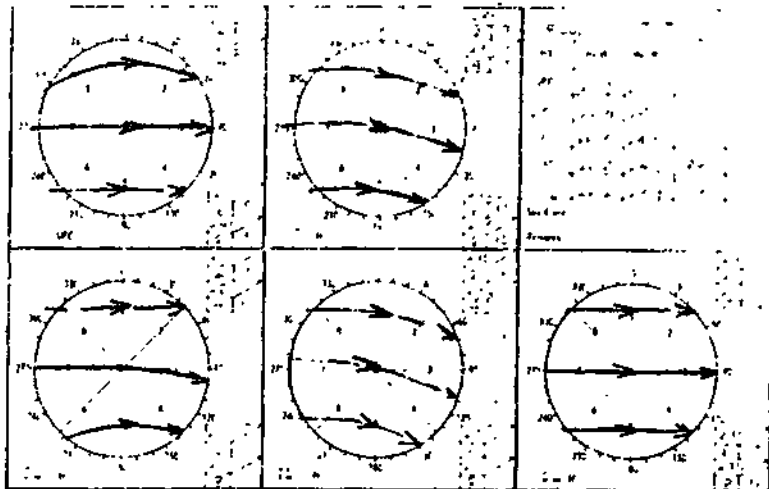
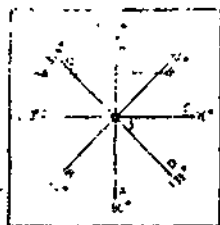


Sample Number

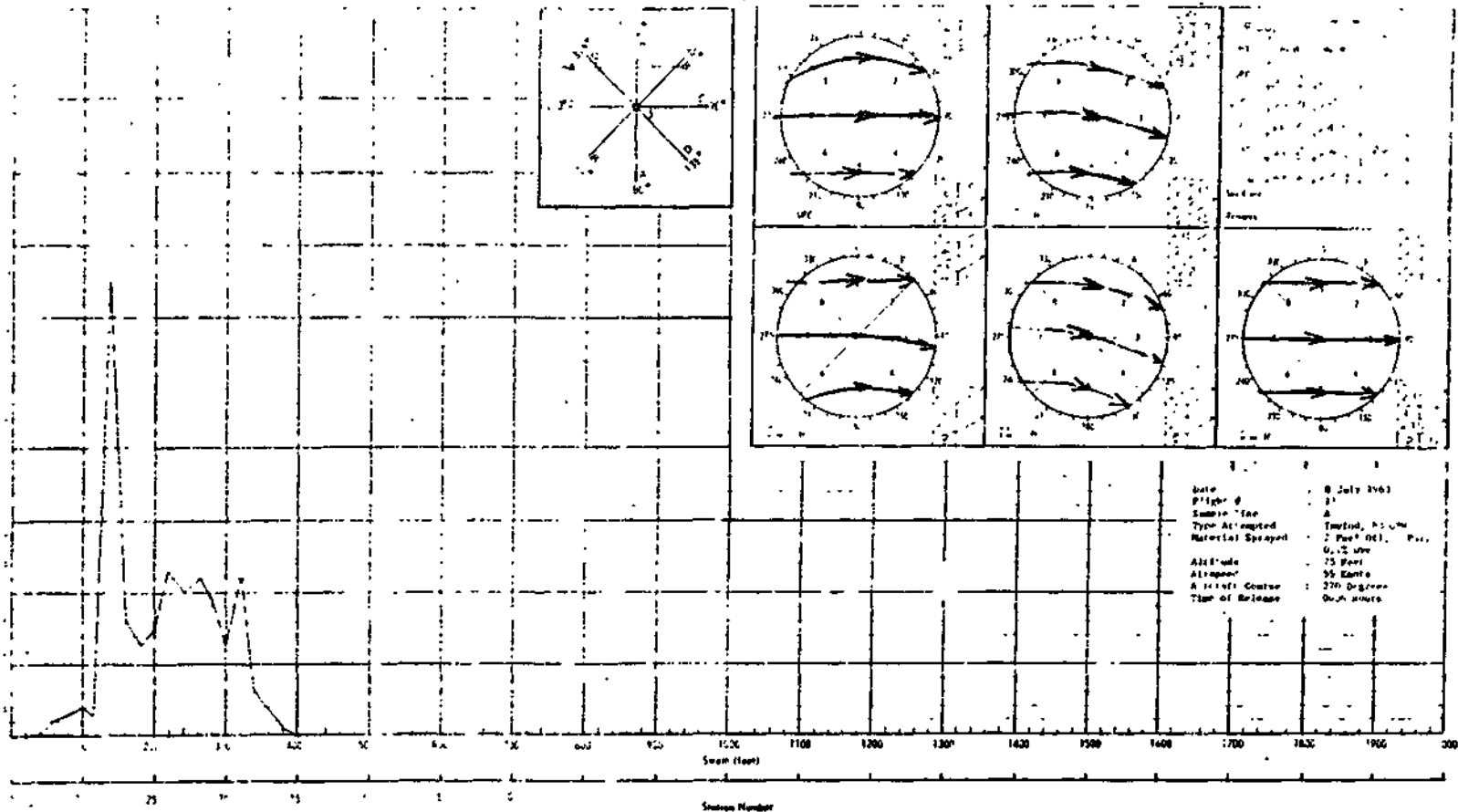
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 83.0 GPMDATE: 8 July 1963SYSTEM: HIDALFLIGHT #: 11AIRSPEED: 55 knotsSAMPLE LINE: AALTITUDE: 75 FeetTIME OF RELEASE: 0606 HoursAIRCRAFT COURSE: 270 DegreesDURATION: 19 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 15	Blank	16	0.1				
		17	0.4				
		18	0.6				
		19	2.2				
		20	1.3				
		21	1.9				
		22	2.2				
		23	2.0				
		24	2.3				
		25	1.5				
		26	1.3				
		27	1.6				
		28	6.3				
		29	0.3				
		30	0.4				
		31	0.3				
		32	0.2				
		Stations 33 - 100	Blank				

Total 24.9



Date: 8 July 1963
 Flight: 21
 Subject: Test
 Type Aircraft: F-4 Phantom II
 Material Spent: 1 Fuel Cell, 1 Par.
 Altitude: 6,125 ft
 Altitude: 75 ft
 Altitude: 95 ft
 Altitude: 270 degrees
 Time of Release: 00.00 hours



MASS MEDIAN DIAMETER

DATE: 8 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 12PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 83 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
77	2	7000			
73	1	6000*			
73	7	5800			
73	3	5700			
73	4	5600	77	1A	100 (smallest)
73	8	5400			
73	6	5300			
73	5	5200			
73	9	5100			
73	10	5000			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{6000}{6.355 \times 2.2} = 418.0 \text{ Microns}$$

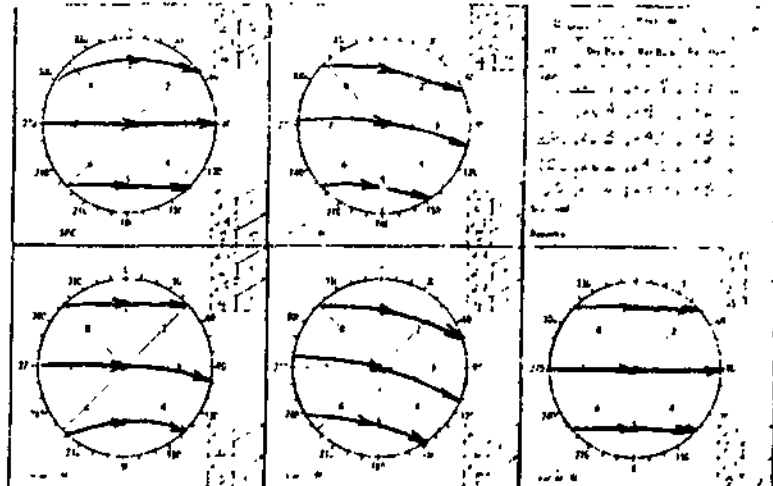
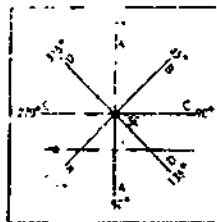
$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(7000)}{6.430} = \frac{7000}{6.430} = 1061.7 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 83.0 GPMDATE: 8 July 1963SYSTEM: HIDALFLIGHT #: 12AIRSPEED: 55 KnotSAMPLE LINE: AALTITUDE: 75 FeetTIME OF RELEASE: 0608 HoursAIRCRAFT COURSE: 270 DegreesDURATION: 14 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 72	Blank					73	1.5
						74	3.2
						75	2.7
						76	2.1
						77	1.5
						78	2.0
						79	3.9
						80	1.1
						81	0.9
						82	0.6
						83	0.3
						84	0.5
						85	0.4
						86	0.6
						87	0.5
						88	0.3
						Stations 89 - 100	
						Blank	

Total 22.1



Date: 8 July 1963
 Flight: 7
 Sample Size: A
 Time: 10:00 AM
 No. of Sprays: 2
 Altitude: 5,150 ft
 Altitude: 75 ft
 Altitude: 55 ft
 Aircraft: 55 ft
 Time of Release: 10:00 AM

Sample Number

Sample Number

MASS MEDIAN DIAMETER

DATE: 8 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 13PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 83 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
79	1	4100*			
76	2	4000			
81	4	3800			
77	5	3700			
76	11	3500	83	1A	100(smallest)
76	6	3400			
76	9	3300			
76	3	3200			
76	7	3100			
81	8	3000			
76	10	2900			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} = \frac{4100}{6.355 \times 2.2} = 295.3 \text{ Microns}$$

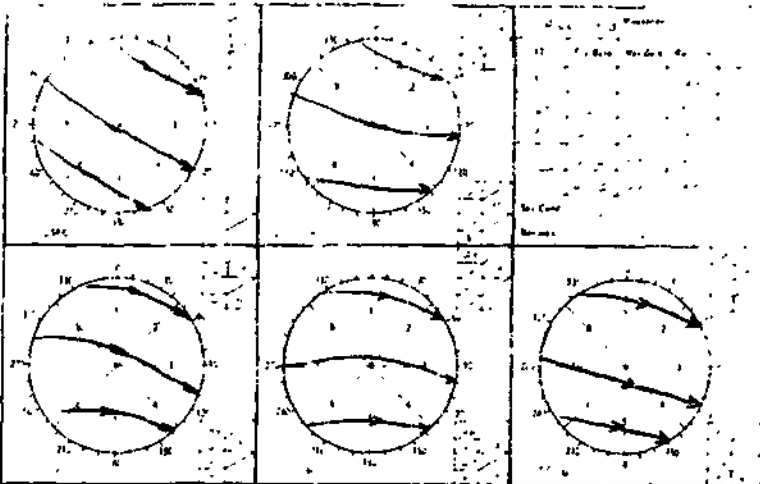
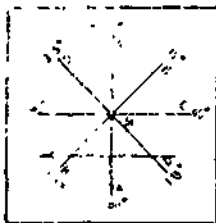
$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(4100)}{6.430} = \frac{4100}{6.430} = 649.8 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

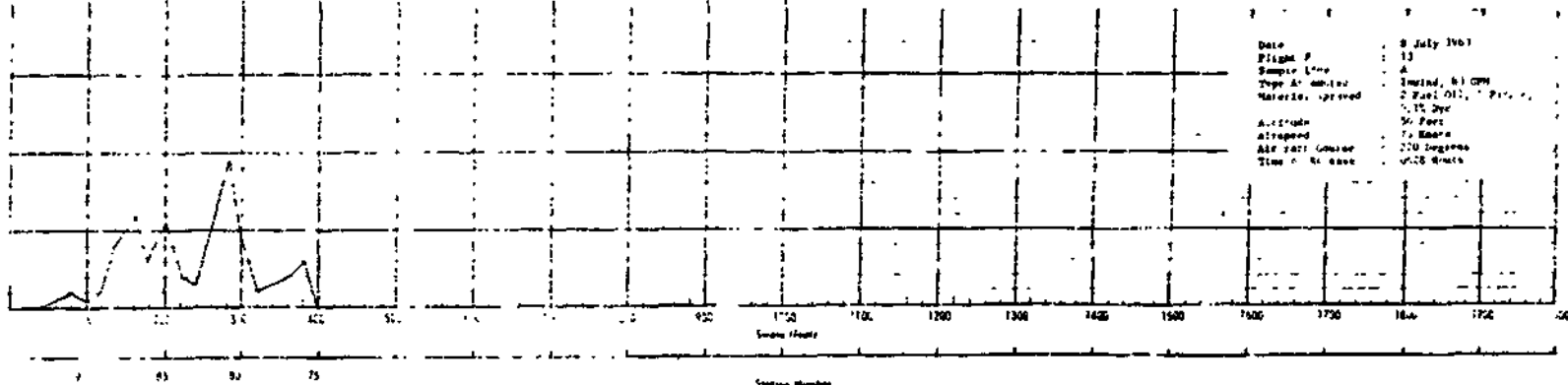
MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 83.0 GPMDATE: 8 July 1963SYSTEM: HIDALFLIGHT #: 13AIRSPEED: 75 KnotsSAMPLE LINE: AALTITUDE: 50 FeetTIME OF RELEASE: 0628 HoursAIRCRAFT COURSE: 270 DegreesDURATION: 11 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 75	Blank					76	0.6
						77	0.4
						78	0.3
						79	0.2
						80	0.9
						81	1.9
						82	1.2
						83	0.3
						84	0.4
						85	1.1
						86	0.6
						87	1.2
						88	0.8
						89	0.2
						90	0.1
						91	0.2
						92	0.1
						93	0.0
						Stations 94 - 100	blank

Total 10.5



Date : 8 July 1961
 Flight # : 13
 Sample Line : A
 Type of sensor : Infrared, 61 GPM
 Material, spread : 2 Fuel Oil, 1 Part, 1
 1, 10 Sec
 Altitude : 50 Feet
 Airspeed : 70 Knots
 Air port : 270 degrees
 Time of day : 0628 hours

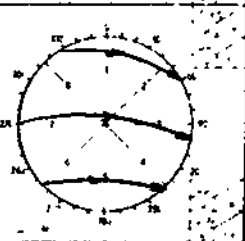
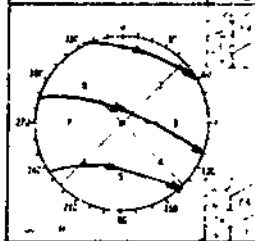
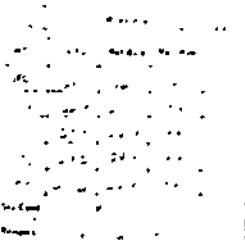
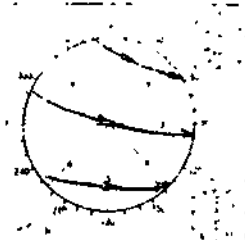
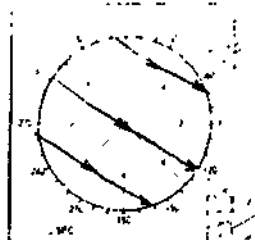
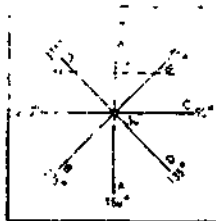


MASS DEPOSITMATERIAL: 2 Fuel Oil, 1 PurpleFLOW RATE: 83.0 GPMDATE: 8 July 1963SYSTEM: HIDALFLIGHT #: 14ALTITUDE: 50 FeetSAMPLE LINE: AAIRSPEED: 75 KNOTSTIME OF RELEASE: 0629 HoursAIRCRAFT COURSE: 270 Degrees

DURATION: _____

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 22	Blank	23	0.0				
		24	1.6				
		25	1.1				
		26	1.3				
		27	1.3				
		28	0.9				
		29	1.0				
		30	1.2				
		31	0.5				
		32	1.4				
		33	0.2				
		34	0.0				
		Stations 35 - 100	Blank				

Total 10.5



Date : 8 July 1963
 Flight : 14
 Sample Size : A
 Type of Sample : Unlabeled, 63-47K
 Material Sampled : 2 Fuel Oil, 1 Prop
 Altitude : 50 Feet
 Altitude : 75 Feet
 Altitude : 270 Degrees
 Time of Release : 0629 Hours

Source: Report

Source Number

H-34/HIDAL GROUND FLOW & FLIGHT DATA

DATE CALIBRATED:	<u>7 July 1963</u>	DATE TEST FLOWN:	<u>12 July 1963</u>
LIQUID SPRAYED.	<u>Purple</u>	TOTAL NOZZLES OPEN:	<u>60</u>
NOZZLE TYPE:	<u>8015</u>	LIQUID TEMP:	<u>36° C</u>
DURATION OF SPRAY:	<u>30</u> Sec.	PUMP PRESSURE:	<u>40</u> PSI
TOTAL AMOUNT SPRAYED:	<u>34.0</u> Gal.	FLOW RATE CALIBRATED:	<u>68</u> GPM

OPERATIONAL DATA DURING FLIGHT

Above information is for Runs 1 - 8.

DATE CALIBRATED.	<u>7 July 1963</u>	DATE TEST FLOWN:	<u>12 July 1963</u>
LIQUID SPRAYED.	<u>Purple</u>	TOTAL NOZZLES OPEN:	<u>60</u>
NOZZLE TYPE	<u>Check Valves</u>	LIQUID TEMP:	<u>38.5° C</u>
DURATION OF SPRAY:	<u>30</u> Sec.	PUMP PRESSURE:	<u>23.5</u> PSI
TOTAL AMOUNT SPRAYED:	<u>34.5</u> Gal.	FLOW RATE CALIBRATED:	<u>69</u> GPM

OPERATIONAL DATA DURING FLIGHT

Above information is for Runs 9 - 14.

MASS MEDIAN DIAMETER

DATE: 12 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 1PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: PurpleFLOW RATE: 68 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
79	2	4400*			
76	6	4300			
76	5	4200			
79	1	4100			
79	3	4000	88	1A	100(smallest)
79	4	3900			
76	8	3800			
77	7	3700			
80	11	3600			
80	9	3500			

$$\text{MMD} = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(4400)}{2.2} = 318.2 \text{ Microns}$$

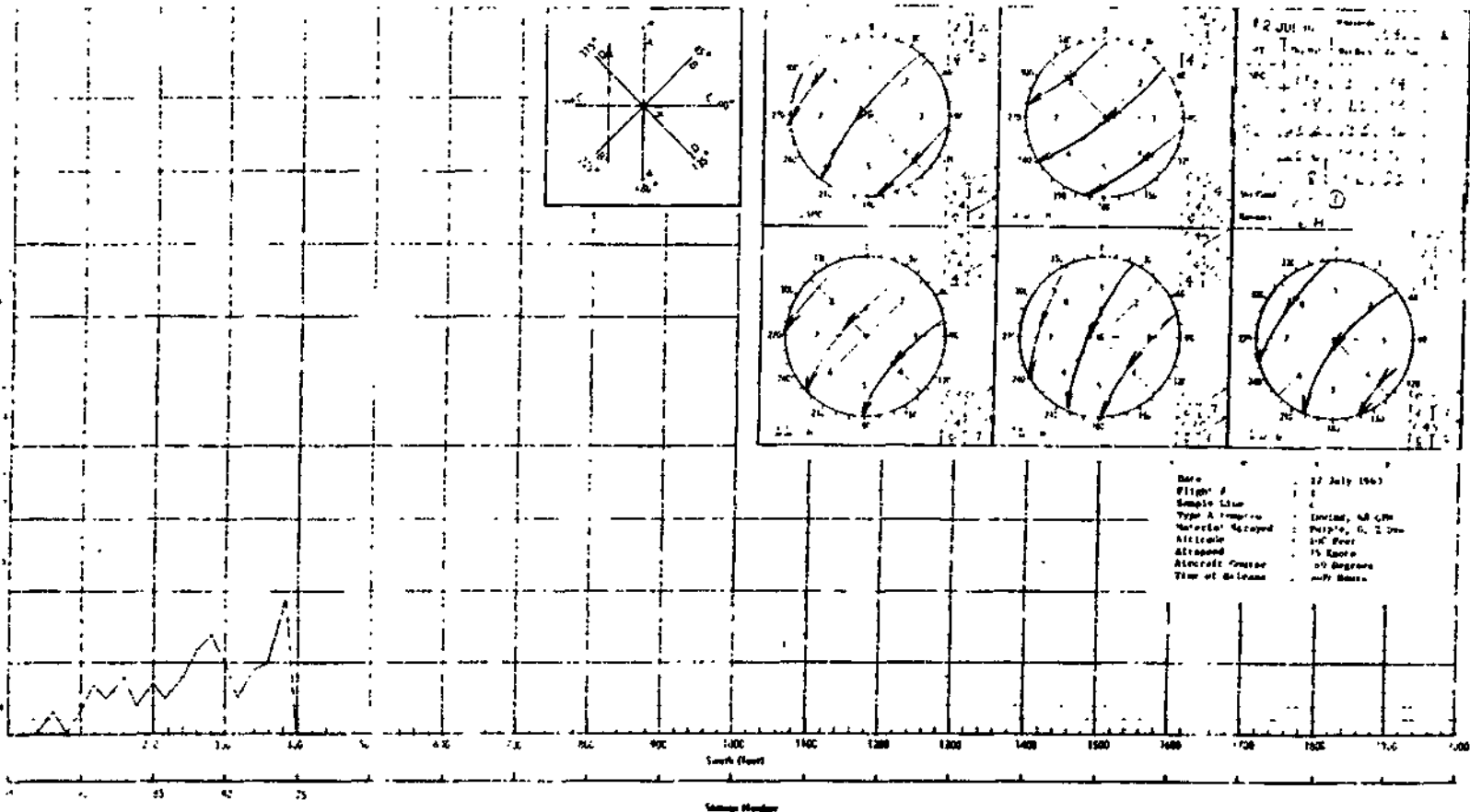
$$\text{Max. Sph. Dia.} = 70.44 + 0.1431 \text{ Max Spot} = 70.44 + 0.1431(4400) = 700.1 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 68 GPMDATE: 12 July 1963SYSTEM: HIDALFLIGHT #: 1AIRSPEED: 75 KnotsSAMPLE LINE: CALTITUDE: 100 FeetTIME OF RELEASE: 0400 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 10 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 75	Blank					76	1.2
						77	1.0
						78	0.9
						79	0.5
						80	1.0
						81	1.4
						82	1.2
						83	0.8
						84	0.5
						85	0.7
						86	0.4
						87	0.8
						88	0.5
						89	0.7
						90	0.3
						91	0.0
						92	0.3
						93	0.0
						Stations 94 - 100	
						Blank	

Total 12.9



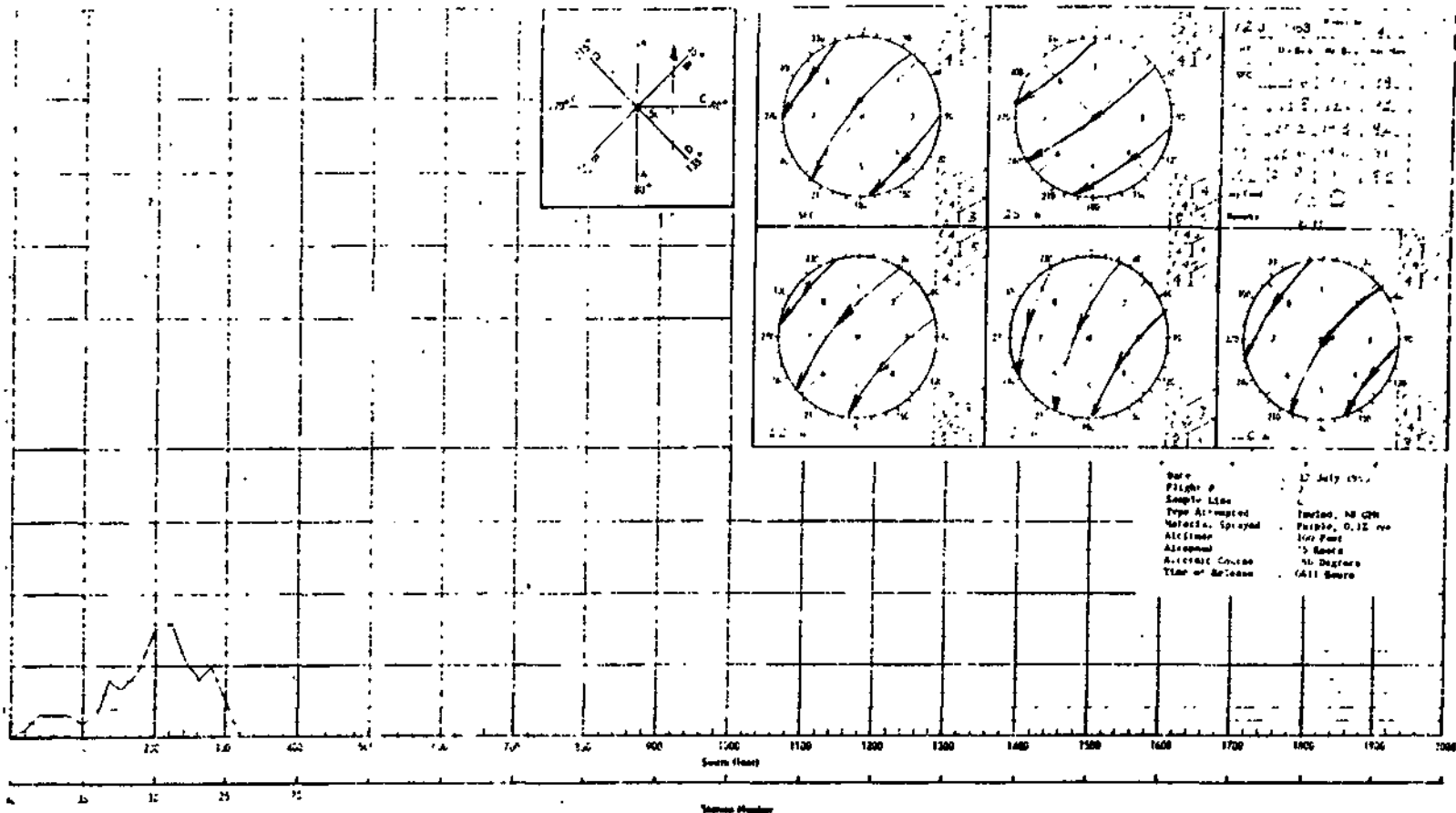
Date: 27 July 1963
 Flight: 1
 Sample Line: 1
 Type: A-1000
 Material: Scraped
 Altitude: 1000 ft
 Altitude: 15 Knots
 Aircraft: Cessna
 Time of Release: 10:00 AM

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 68 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 2 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0411 Hours AIRCRAFT COURSE: 360 Degree
 DURATION: 10 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 24	Blank	25	0.5				
		26	1.0				
		27	0.8				
		28	1.1				
		29	1.6				
		30	1.5				
		31	0.9				
		32	0.7				
		33	0.8				
		34	0.3				
		35	0.2				
		36	0.3				
		37	0.3				
		38	0.3				
		39	0.1				
		40	0.0				
		Stations 41 - 100	Blank				

Total 10.4



MASS DEPOSIT

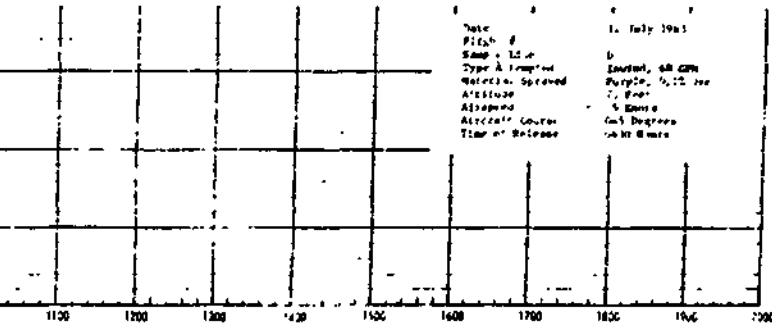
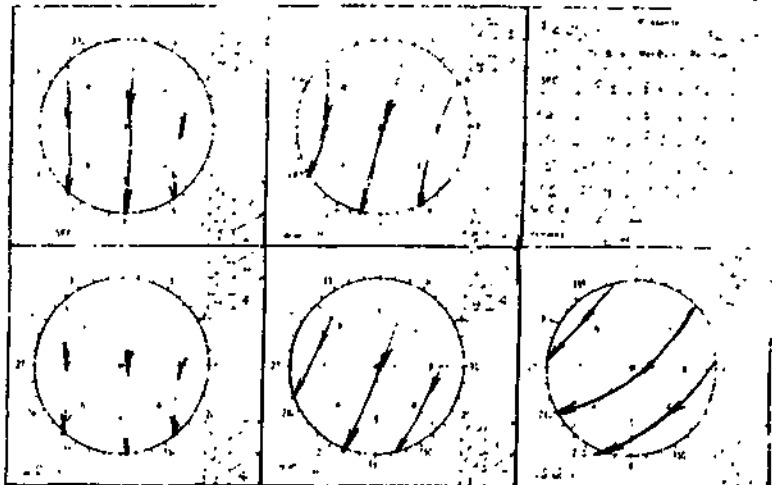
MATERIAL: Purple FLOW RATE: 68 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 3 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0430 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 13 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 57 Blank

58	0.9
59	0.5
60	0.3
61	0.2
62	0.3
63	0.8
64	0.9
65	0.6
66	1.1
67	0.7
68	1.1
69	1.1
70	1.7
71	1.7
72	2.4
73	2.0
74	1.0
75	3.0
76	6.6

Stations 77 - 100 Blank

Total 26.9



Date	14 July 1961
Fish #	
Sample Lot #	6
Type & Imp't	Imported, 6th Gen
Material Sprayed	Purple, 1/2 1/2 oz
Analysis	1, 600
Aluminum	4 Dents
Aluminum Cover	600 Degrees
Time of Release	10:45 AM

MASS DEPOSIT

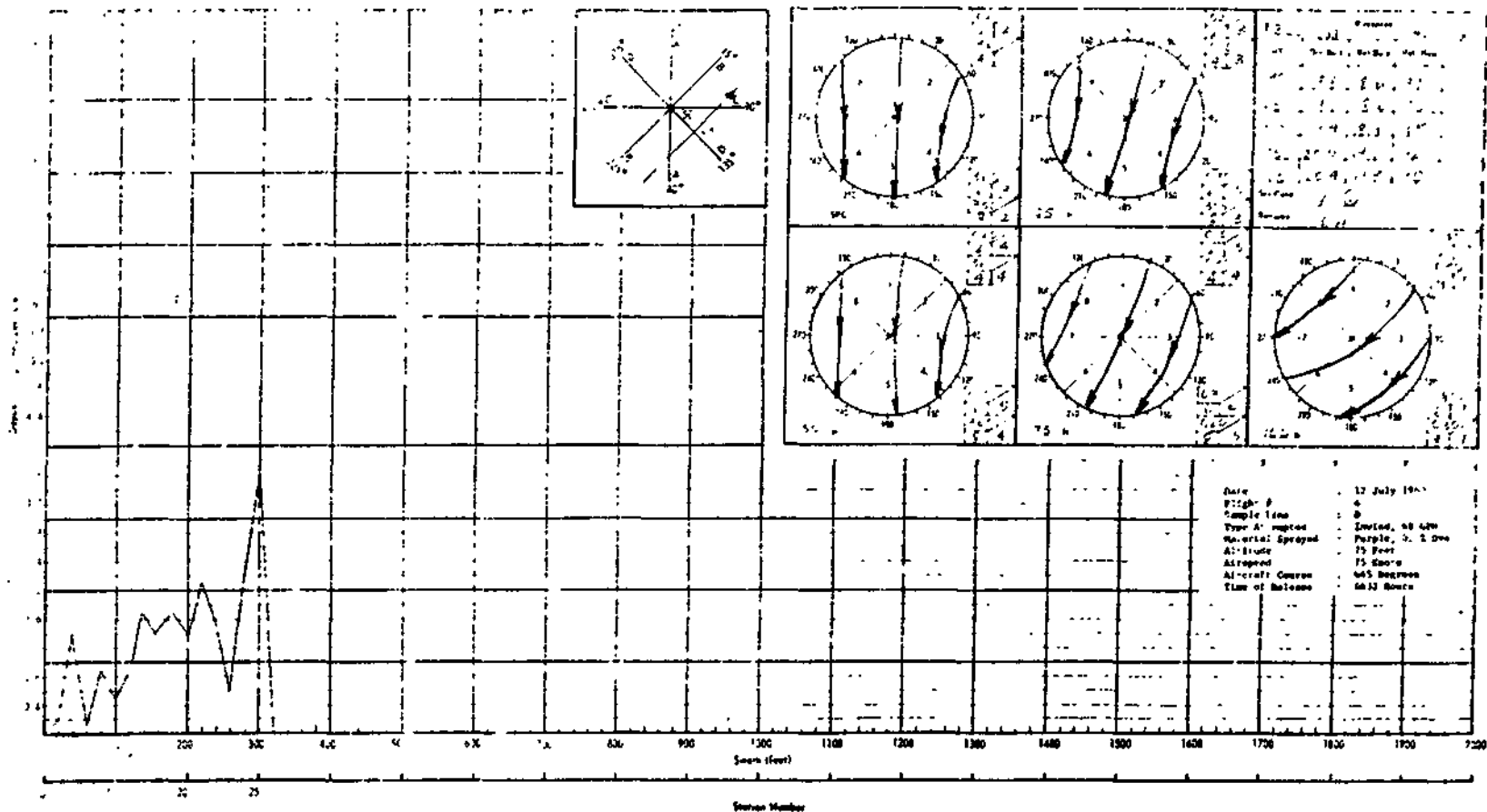
MATERIAL: Purple FLOW RATE: 68 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 4 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 3432 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 11 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 10 Blank

10	0.2
12	1.4
13	0.1
14	0.9
15	0.5
16	0.9
17	1.7
18	1.4
19	1.7
20	1.4
21	2.1
22	1.5
23	0.6
24	2.1
25	3.6

Stations 26 - 100 Blank

Total 20.1



MASS MEDIAN DIAMETER

DATE: 12 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 5PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: PurpleFLOW RATE: 68 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
74	1	6400			
74	2	6100			
73	4	6000			
73	3	5900			
76	6	5300*			
74	5	5200			
73	10	5000	67	1A	100 (smallest)
71	9	4900			
74	7	4800			
74	8	4100			
73	11	4600			
74	12	4500			
76	13	4400			

$$MMD = \frac{70.44 + 0.1431 \text{ Spot D Max}}{\text{Con. Factor}} = \frac{70.44 + 0.1431(5300)}{2.2} = 378.6 \text{ Microns}$$

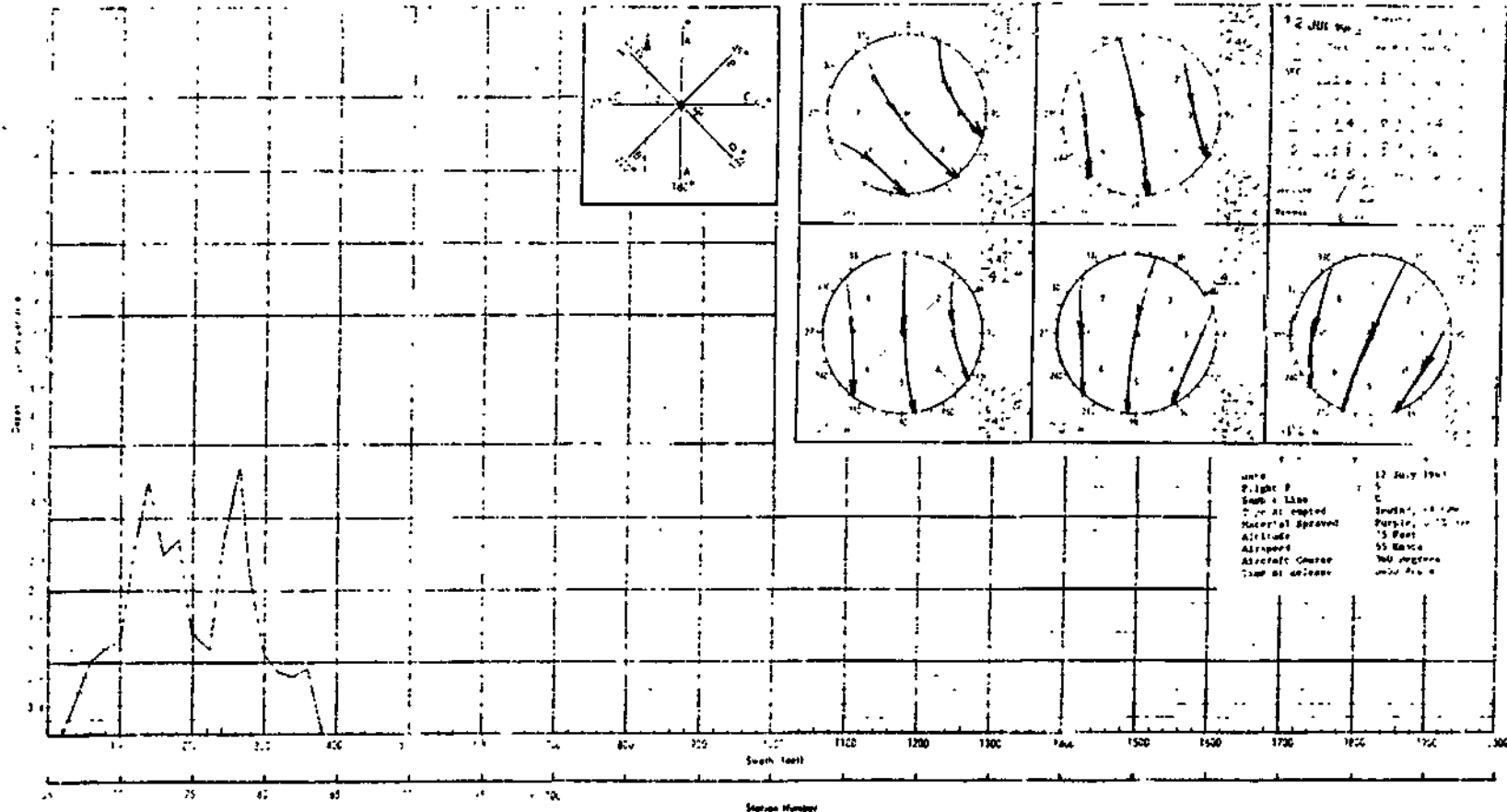
$$\text{Max. Sph. Dia.} = 70.44 + 0.1431 \text{ Max Spot} = 70.44 + 0.1431(6400) = 386.3 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 68 GPMDATE: 12 July 1963SYSTEM: HIDALFLIGHT #: 5AIRSPEED: 55 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0452 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 16 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 66 Blank							
				67	0.5		
				68	1.0		
				69	1.2		
				70	1.3		
				71	2.7		
				72	3.5		
				73	2.5		
				74	2.7		
				75	1.4		
				76	1.2		
				77	2.7		
				78	3.7		
				79	2.2		
				80	1.1		
				81	0.9		
				82	0.8		
				83	0.9		
Stations 84 - 100 Blank							

 % Recovery - 113.9
Total 3.3



MASS DEPOSITMATERIAL: PurpleFLOW RATE: 68 GPMDATE: 12 July 1963SYSTEM: HIDALFLIGHT #: 6AIRSPEED: 55 KNOTSSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0452 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 15 Sec.

STATION C.P.A. STATION G.P.A. STATION C.P.A. STATION G.P.A.

Stations 1 - 19 Blank

20 0.9

21 0.7

22 5.9

23 3.7

24 2.8

25 1.3

26 3.0

27 3.7

28 1.7

29 1.7

30 1.5

31 1.0

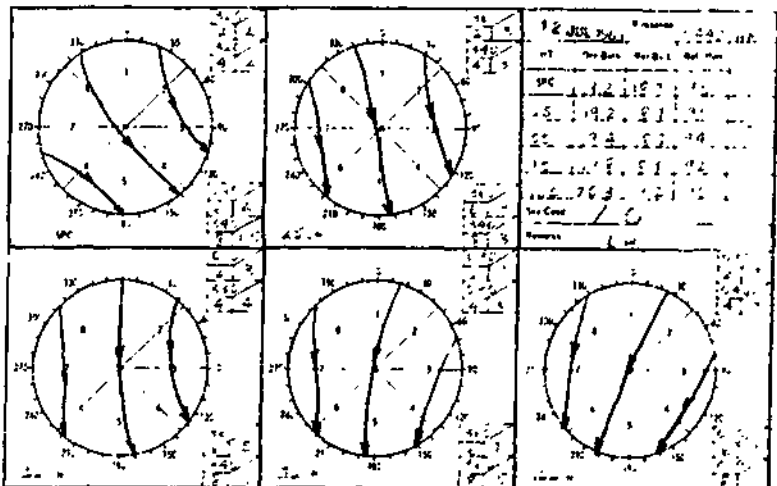
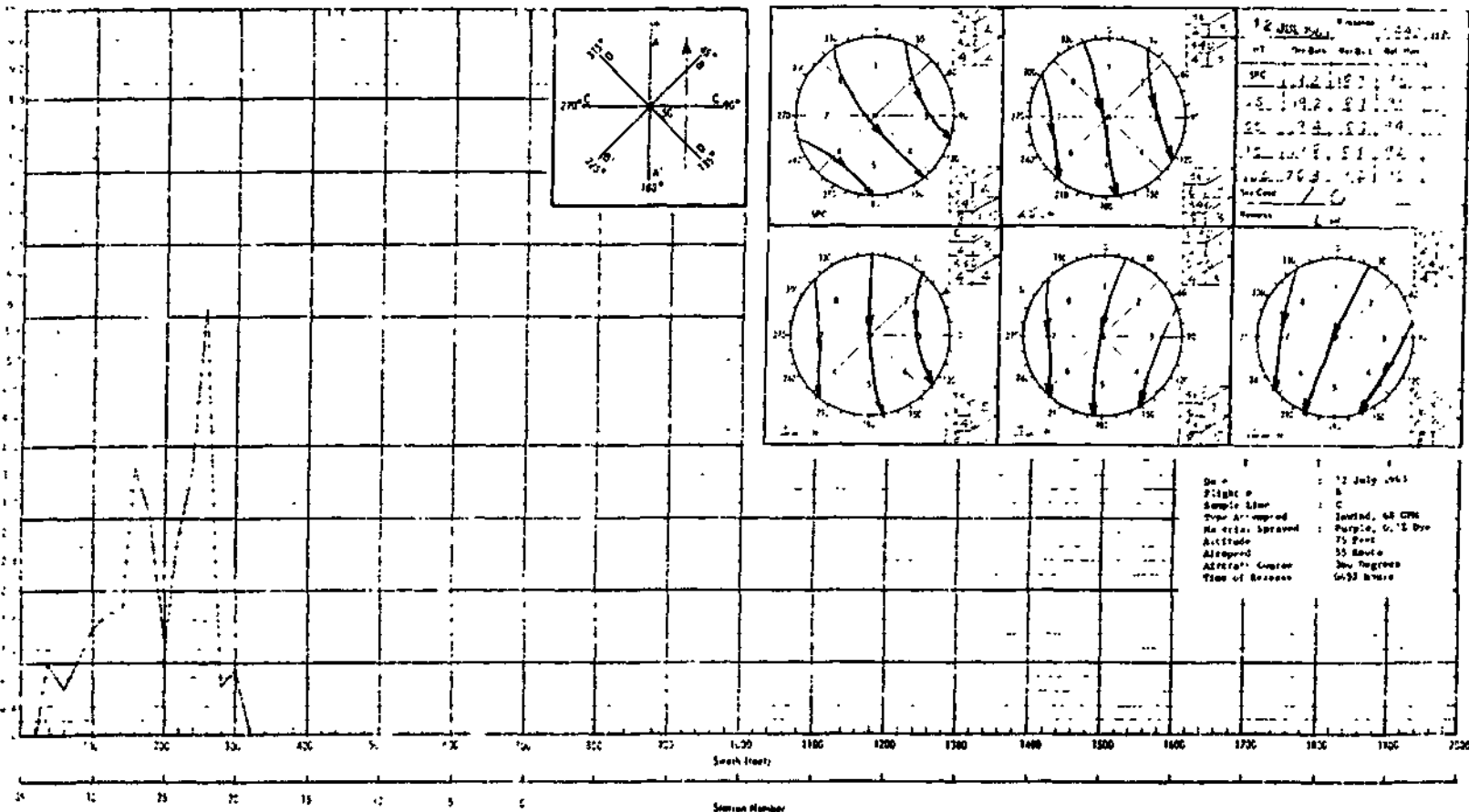
32 0.7

33 1.0

Stations 34 - 100 Blank

7 Recovery - 112.2

Total 29.6



Date: 12 July 1961
 Flight: C
 Sample Line: C
 Type: Air-sprayed
 Material: Sprayed
 Altitude: 75 Feet
 Aircraft: Cessna
 Time of Release: 0632 Hours

12 July 1961
 A
 C
 68 CM
 Purple, G. S. Dye
 55 Route
 6032 Hours

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 68 GPH.DATE 12 July 1963SYSTEM: HIDALFLIGHT #: 7AIRSPEED: 75 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0510 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 12 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
				73	3.5		
				72	2.1		
				75	1.8		
				76	2.5		
				77	3.3		
				78	1.6		
				79	1.0		
				80	1.3		
				81	0.5		
				82	0.3		
				Stations 83 - 100			
							Blank

Total 17.9

MASS MEDIAN DIAMETER

DATE: 12 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 8PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: PurpleFLOW RATE: 68 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
28	2	4700			
28	1	4300*			
27	7	4200			
27	6	4100			
28	3	4000	29	1A	100(smallest)
28	4	3900			
28	8	3700			
28	5	3600			
28	9	3400			
28	10	3300			

$$\text{MMD} = \frac{70.44 + 0.1431(\text{Max Spot})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(4300)}{2.2} = 311.7 \text{ Microns}$$

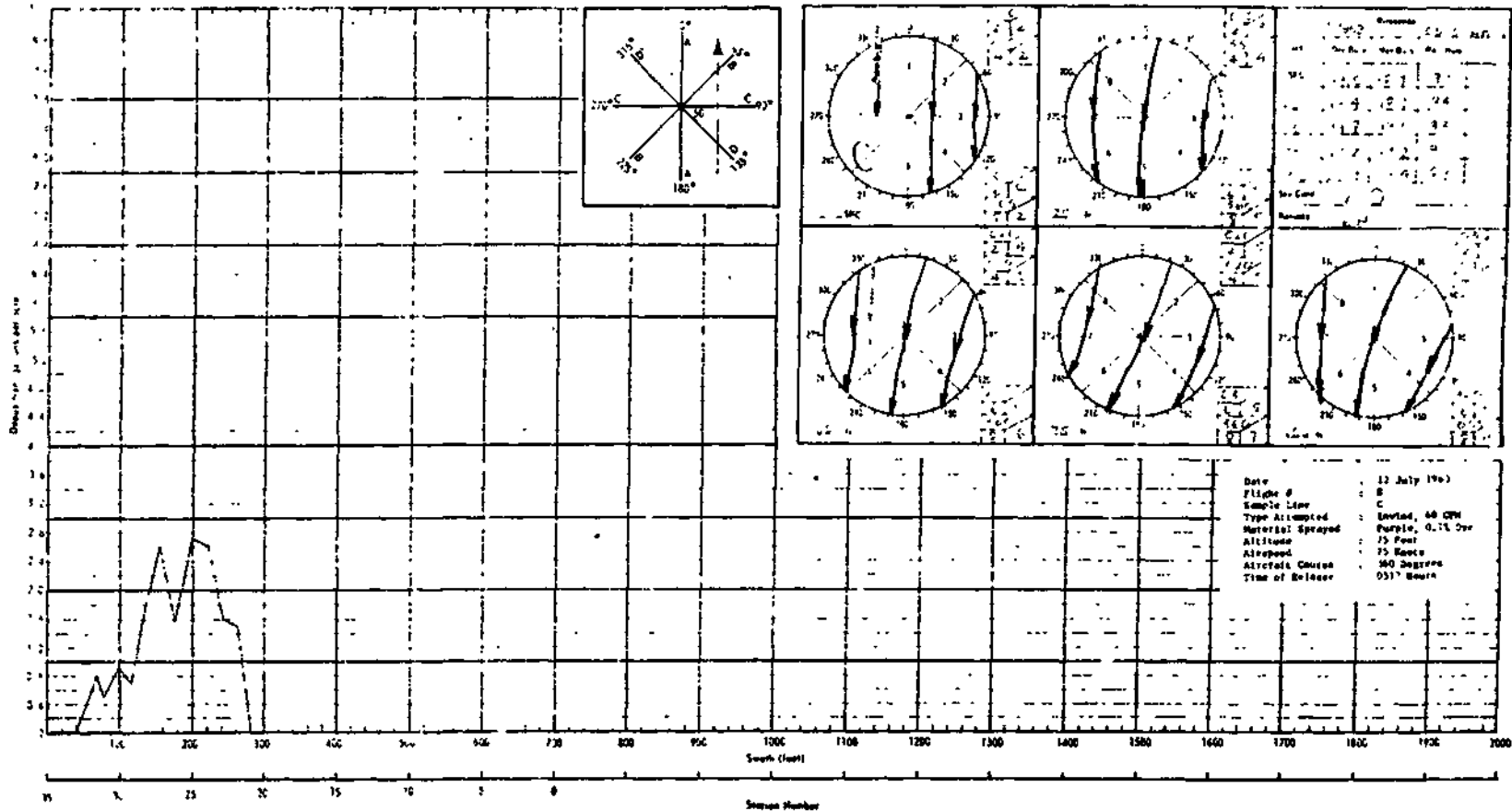
$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(4700) = 743.0 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 68 GPMDATE: 12 July 1963SYSTEM: WIDALFLIGHT #: 8AIRSPEED: 75 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0512 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 10 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 21	Blank	22	1.5				
		23	1.6				
		24	2.6				
		25	2.7				
		26	1.6				
		27	2.6				
		28	1.9				
		29	0.7				
		30	0.9				
		31	0.5				
		32	0.8				
		Stations 33 - 100	Blank				

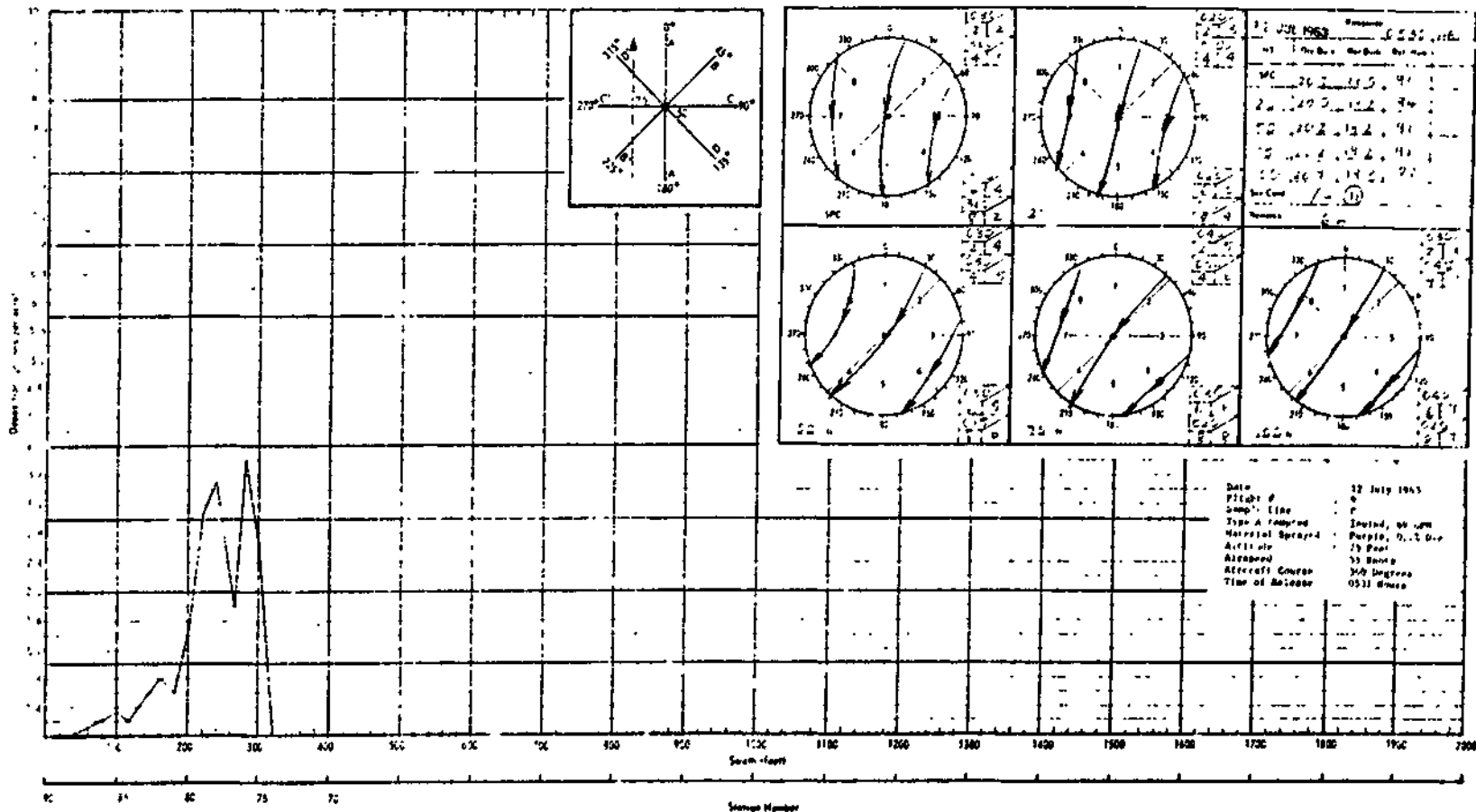
Total 17.4



MASS DEPOSITMATERIAL PurpleFLOW RATE: 69 GPMDATE 12 July 1963SYSTEM: HIDALFLIGHT #: 9AIRSPEED: 55 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0531 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 10 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 73 blank				74	0.0		
				75	2.7		
				76	3.8		
				77	1.5		
				78	3.5		
				79	3.1		
				80	1.4		
				81	0.6		
				82	0.9		
				83	0.5		
				84	0.2		
				85	0.3		
				86	0.2		
				87	0.1		
				Stations 88 - 100			
				Blank			

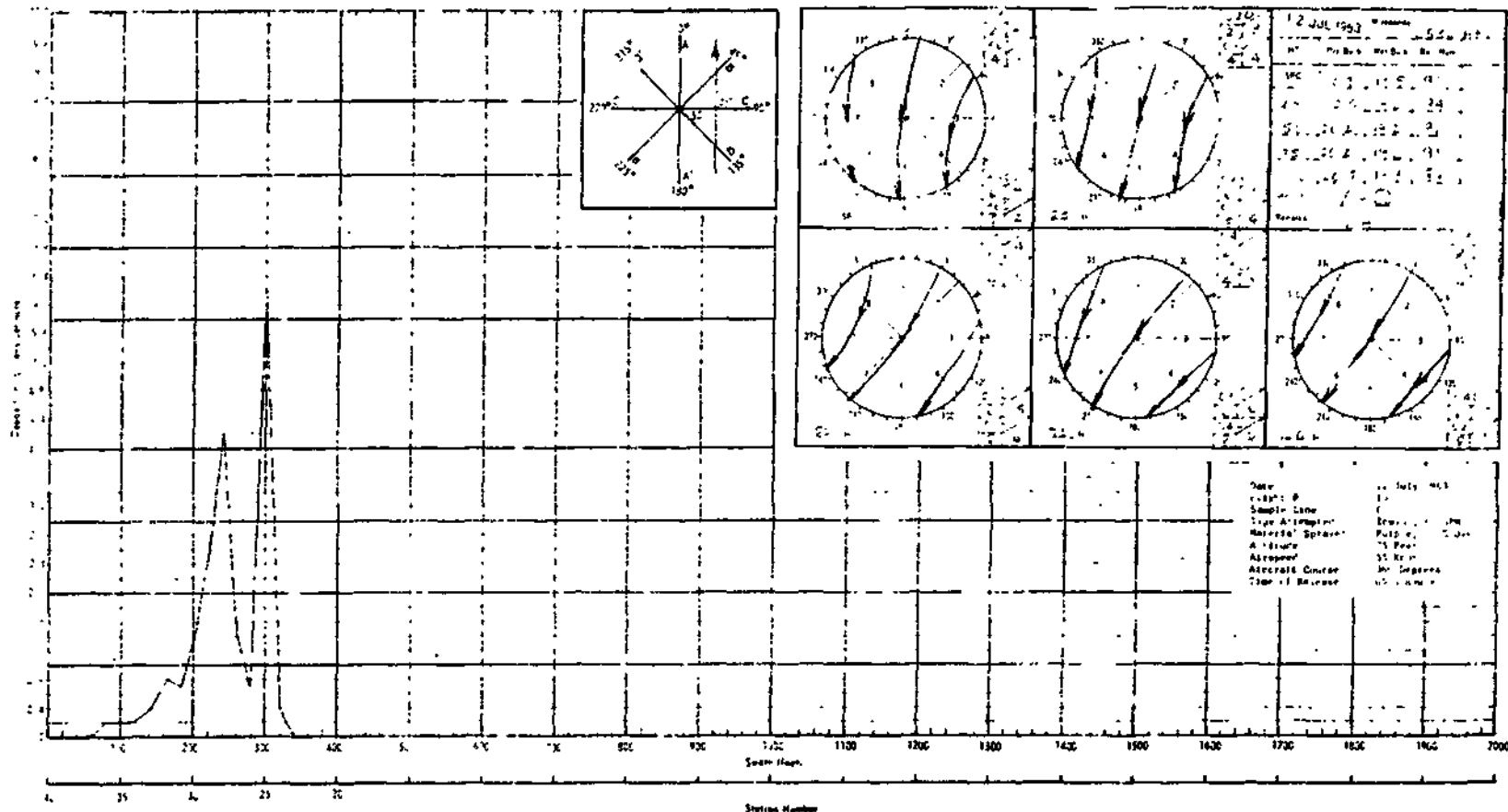
Total 19.0



MASS DEPOSITMATERIAL PurpleFLOW RATE: 69 GPMDATE: 12 July 1963SYSTEM: HIDALFLIGHT #: 10AIRSPEED: 55 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0533 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 13 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 22	Blank	23	0.0				
		24	0.4				
		25	5.9				
		26	0.7				
		27	1.4				
		28	4.2				
		29	2.6				
		30	1.3				
		31	0.7				
		32	0.8				
		33	0.4				
		34	0.2				
		35	0.2				
		36	0.2				
		37	0.0				
		Stations 38 - 100	Blank				

Total 19.0



MASS MEDIAN DIAMETER

DATE: 12 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 11PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: PurpleFLOW RATE: 69 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
30	2	7400			
26	1	7300			
26	3	6400*			
26	8	6300			
29	4	6200	35	1A	100(smallest)
26	5	6100			
26	6	6000			
30	10	5900			
26	7	5700			
30	9	5600			
26	11	5500			

$$MMD = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6400)}{2.2} = 448.3 \text{ Microns}$$

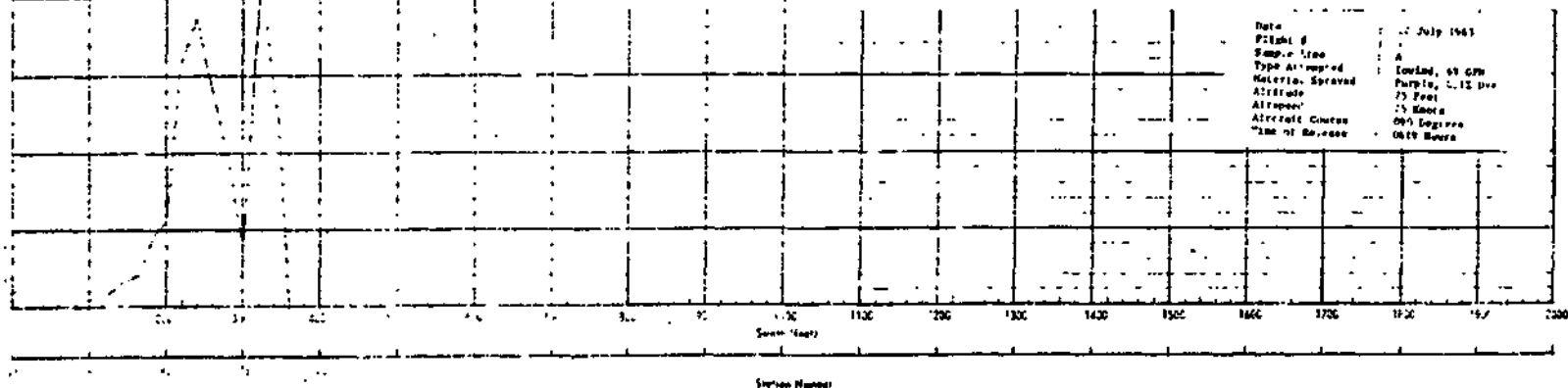
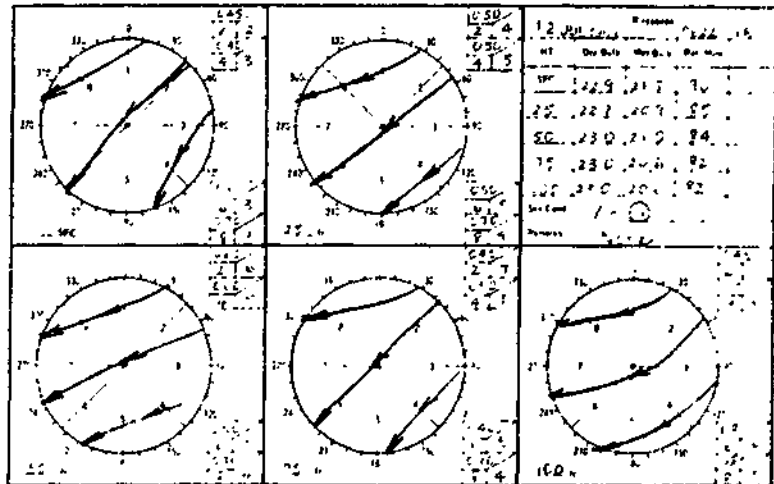
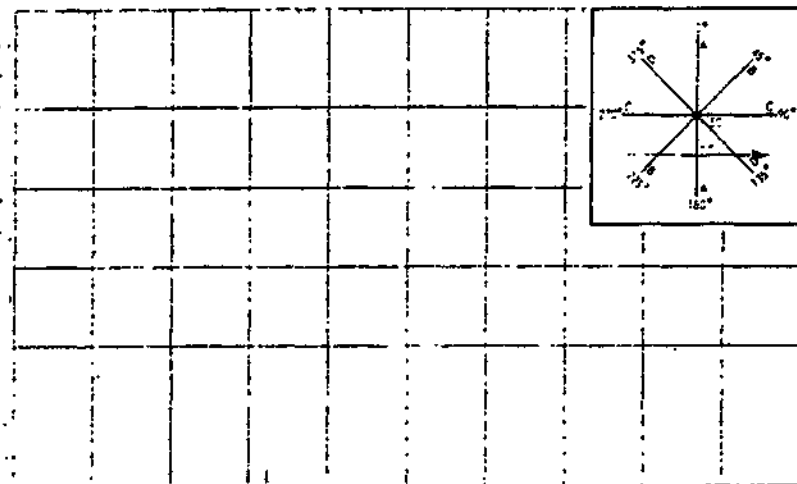
$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(7400) = 1120.4 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 60 gDATE: 12 July 1963SYSTEM: WINDFLIGHT #: 11AIRSPEED: 75 KnotsSAMPLE LINE: AALTITUDE: 75 FeetTIME OF RELEASE: 620 HoursAIRCRAFT COURSE: 000 DegreesDURATION: 1 Sec.

STATION	P.A.	STATION	P.A.	STATION	P.A.	STATION	P.A.
Stations 1 - 71 Blank						72	0.9
						73	2.5
						74	4.2
						75	0.9
						76	2.0
						77	2.8
						78	3.7
						79	3.1
						80	1.1
						81	2.0
						82	0.6
						83	0.3
						84	0.1
						85	0.1
						Stations 86 - 100	Blank

Total 22.0

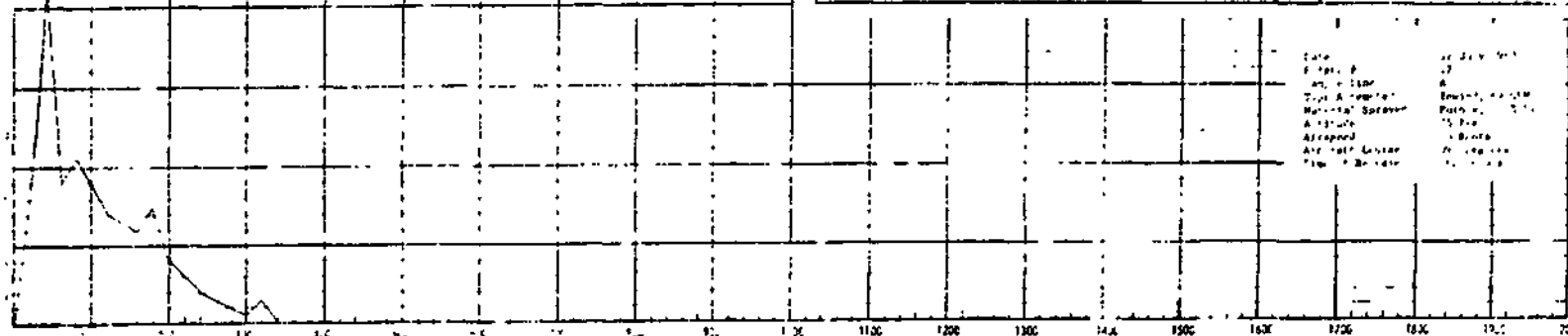
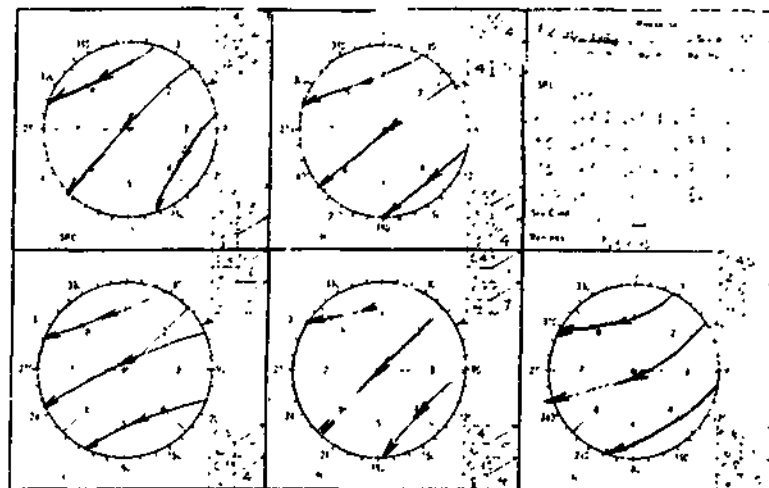
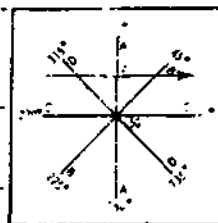


Date: 12 July 1961
 Flight: 1
 Sample Line: A
 Type Airspeed: Low, 45 GPH
 Material: Sprayed
 Altitude: 75 Feet
 Airspeed: 25 Knots
 Altitude Change: 000 Degrees
 Time of Release: 0015 Hours

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 69 GPMDATE: 12 July 1963SYSTEM: HIDALFLIGHT #: 12AIRSPEED: 75 KnotsSAMPLE LINE: AALTITUDE: 75 FeetTIME OF RELEASE: 0613 HoursAIRCRAFT COURSE: 090 DegreesDURATION: 12 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 24	Blank	25	0.0				
		26	1.9				
		27	4.2				
		28	1.8				
		29	2.1				
		30	1.8				
		31	1.4				
		32	1.3				
		33	1.2				
		34	1.5				
		35	0.8				
		36	0.6				
		37	0.4				
		38	0.3				
		39	0.2				
		40	0.1				
		41	0.3				
		42	0.0				
		Stations 43 - 100	Blank				

Total 19.9



Section Number

Depth (m)

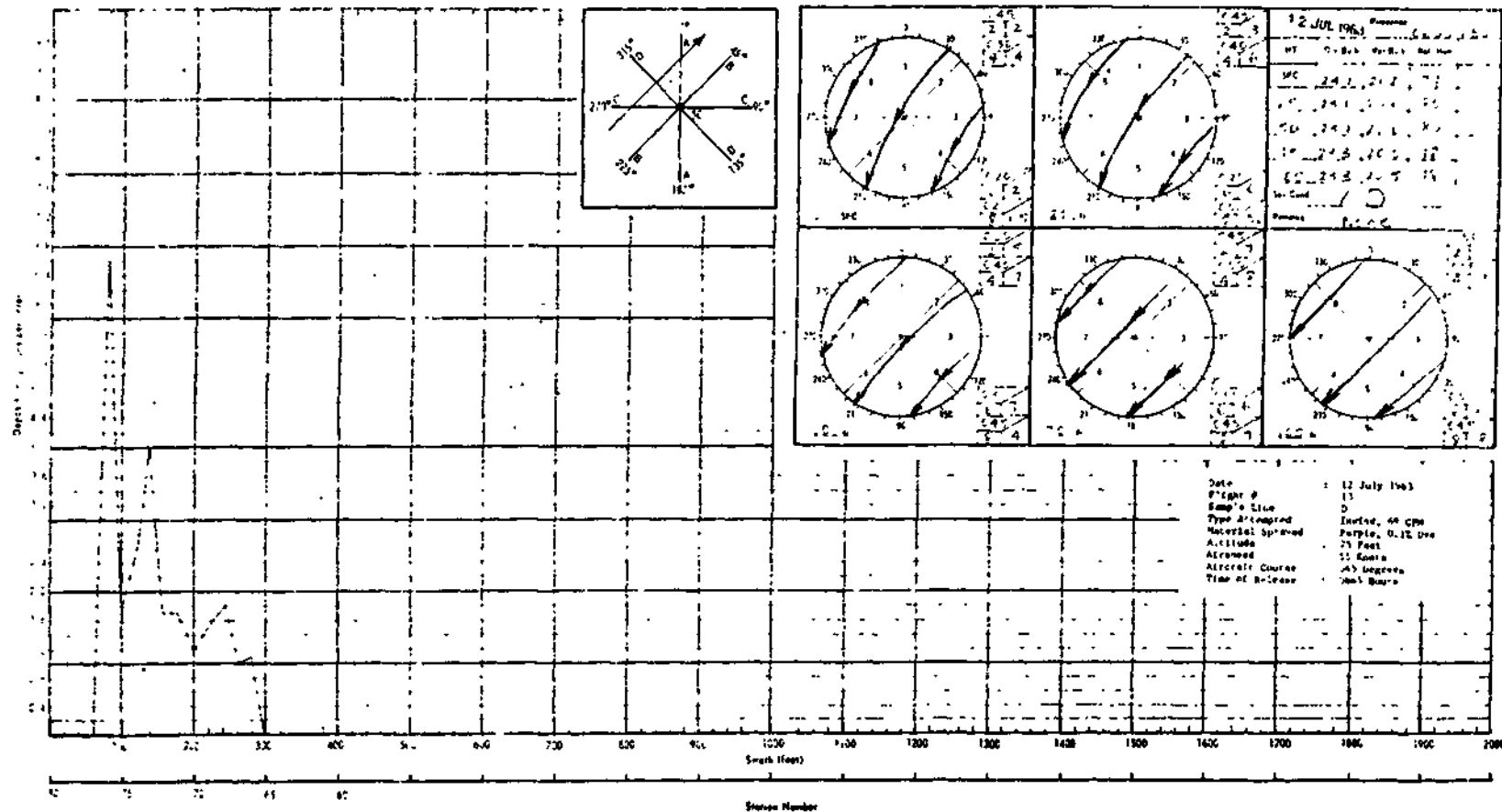
Date: 17 Sept 68
 Site: 1000
 Type: 1000
 Method: 1000
 Angle: 1000
 Altitude: 1000
 Air: 1000
 Time: 1000

MISS DEPOSIT

MATERIAL: <u>Purple</u>	FLOW RATE: <u>60</u> <u>CPM</u>
DATE: <u>12 JUL, 1963</u>	SYSTEM: <u>MIDAL</u>
FLIGHT #: <u>13</u>	AIRSPEED: <u>55</u> <u>Knots</u>
SAMPLE LINE: <u>D</u>	ALTITUDE: <u>75</u> <u>Feet</u>
TIME OF RELEASE: <u>0645</u> <u>Hours</u>	AIRCRAFT COURSE: <u>045</u> <u>Degrees</u>
DURATION: <u>12</u> <u>Sec.</u>	

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 65 Blank				66	1.1		
				67	1.0		
				68	1.8		
				69	1.6		
				70	1.2		
				71	1.7		
				72	1.7		
				73	4.0		
				74	2.6		
				75	1.8		
				76	6.6		
				Stations 77 - 100 Blank			

Total 25.1



MASS MEDIAN DIAMETER

DATE: 12 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 14PAPER: Kronakote, whiteSAMPLE LINE: DMATERIAL: PurpleFLOW RATE: 69 GPMSYSTEM: HYDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
25	1	7200			
23	3	6600*			
23	2	6500			
23	4	6400			
22	7	6300	19	1A	100 (smallest)
22	10	6200			
23	5	6100			
23	3	6000			
23	6	5900			
22	8	5800			

$$MMD = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6600)}{2.2} = 461.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(7200) = 1100.9 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

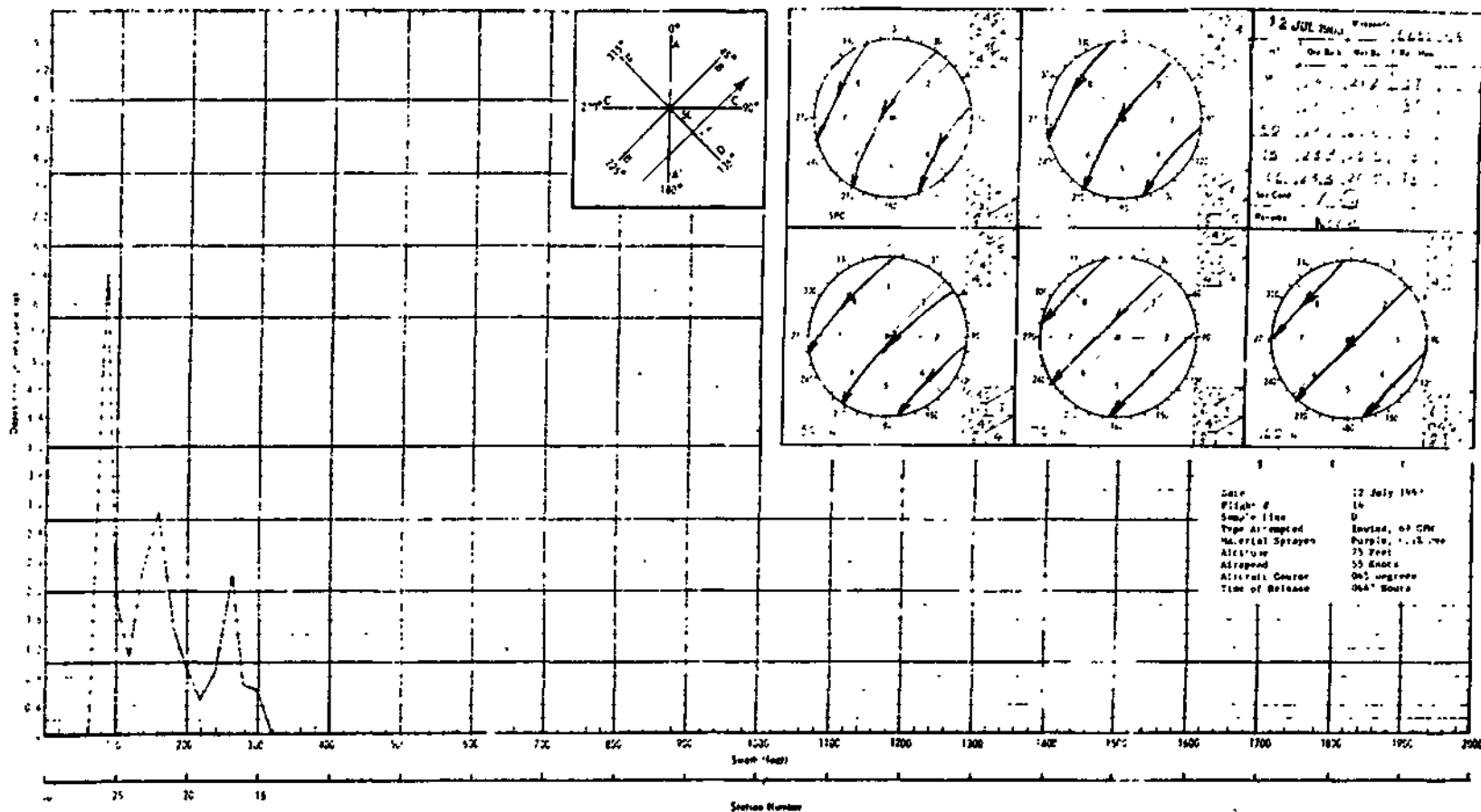
MASS DEPOSITMATERIAL: PurpleFLOW RATE: 69 GPMDATE: 12 July 1963SYSTEM: HIDALFLIGHT #: 14AIRSPEED: 55 KnotsSAMPLE LINE: DALTITUDE: 75 FeetTIME OF RELEASE: 0647 HoursAIRCRAFT COURSE: 045 DegreesDURATION: 14 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
<u>Stations 1 - 14 Blank</u>							

15	0.6
16	0.7
17	2.2
18	0.9
19	0.5
20	0.9
21	1.5
22	3.1
23	2.3
24	1.1
25	1.9
26	6.4

Stations 27 - 100 Blank

Total 22.1



H-34/HIDAL GROUND FLOW AND FLIGHT DATA

DATE CALIBERATED: <u>7 July 1963</u>	DATE TEST FLOWN: <u>13 July 1963</u>
LIQUID SPRAYED: <u>Purple</u>	TOTAL NOZZLES OPEN: <u>60</u>
NOZZLE TYPE: <u>Check Valves</u>	LIQUID TEMP: <u>38.5° C</u>
DURATION OF SPRAY: <u>30</u> <u>Sec.</u>	PUMP PRESSURE: <u>23.5</u> <u>PSI</u>
TOTAL AMOUNT SPRAYED: <u>34.5</u> <u>Gal.</u>	FLOW RATE CALIBERATED: <u>69</u> <u>GPM</u>

OPERATIONAL DATA DURING FLIGHT

Above information is for Runs 1 - 18.

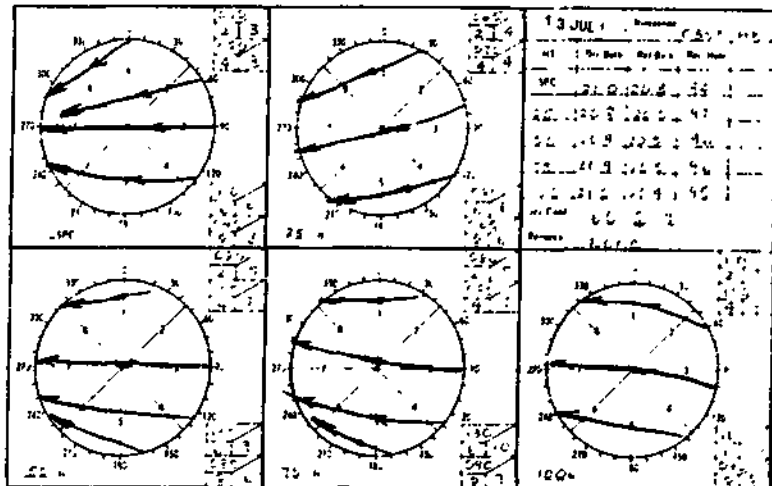
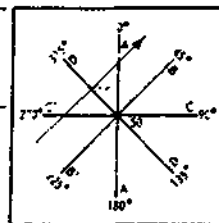
MASS DEPOSITMATERIAL: PurpleFLOW RATE: 6 GPMDATE: 13 July 1963SYSTEM: HEALFLIGHT #: 1AIRSPEED: 75 KnotsSAMPLE LINE: DALTITUDE: 75 FeetTIME OF RELEASE: 0351 HoursAIRCRAFT COURSE: 045 Degrees

DURATION: _____

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 75	Blank					76	1.3
						77	1.3
						78	1.3
						79	1.5
						80	1.5
						81	1.1
						82	1.1
						83	1.2
						84	1.8
						85	1.3
						86	1.8
						87	1.1
						88	0.5
						89	0.5
						90	1.3
						91	0.5
						92	1.0
						93	1.0

Total 15.6

Depth - 34 (100 feet)



Date 13 July 1963
 Flight # 1
 Sample Line 8
 Type Aircraft
 Material Sprayed Purple, O.S. Br.
 Altitude 75 Feet
 Airspeed
 Aircraft Course 045 Degrees
 Time of Release 0151 Hours

Swath (feet)

Station Number

MASS MEDIAN DIAMETER

DATE: 13 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 2PAPER: Kromekote, whiteSAMPLE LINE: DMATERIAL: PurpleFLOW RATE: 69 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
29	1	8500			
26	2	7200			
26	3	6500			
29	7	6100*			
29	6	6000	36	1A	100(smallest)
30	8	5900			
30	9	5800			
26	4	5700			
30	10	5600			
29	5	5500			
26	11	5400			

$$\text{MMD} = \frac{70.44 + 0.1431 \text{Spot D Max}}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6100)}{2.2} = 428.8 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(8500) = 1286.8 \text{ Microns}$$

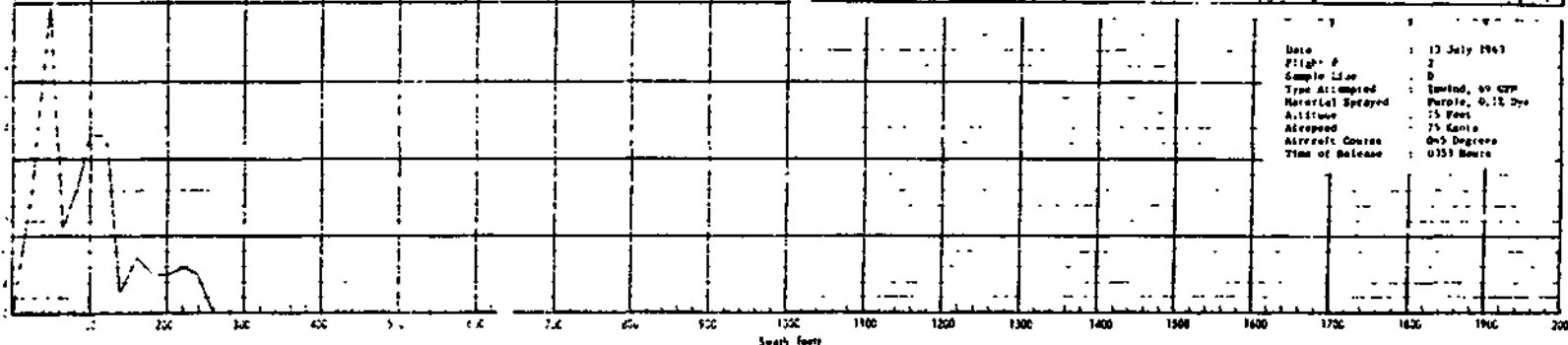
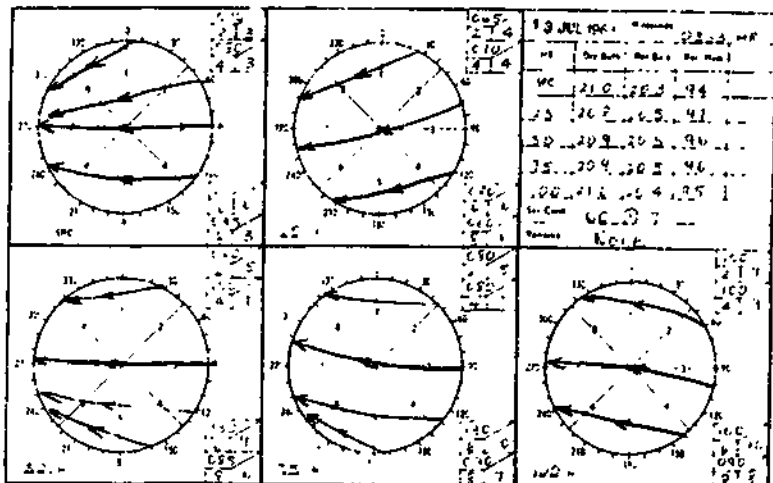
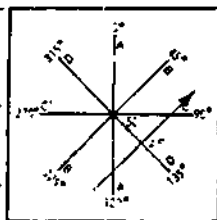
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 60 GPMDATE: 13 July 1963SYSTEM: HIDALFLIGHT #: 2AIRSPEED: 75 KnotSAMPLE LINE: DALTITUDE: 75 FeetTIME OF RELEASE: 0353 HoursAIRCRAFT COURSE: 045 DegreesDURATION: — — —

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 25	Blank	26	1.7				
		27	4.0				
		28	1.1				
		29	1.6				
		30	2.3				
		31	2.3				
		32	0.3				
		33	0.7				
		34	0.5				
		35	0.5				
		36	0.6				
		37	0.5				
		38	0.0				
		Stations 39 - 100	Blank				

Total 16.1

Depth



Date : 13 July 1961
 Flight # : 2
 Sample Line : B
 Type Aircraft : Limited, no GPS
 Horizontal Spread : 0.12 Sec
 Altitude : 15 Feet
 Altitude : 75 Knts
 Aircraft Course : 0-5 Degrees
 Time of Release : 0151 Hours

Swath feet

Swath Number

MASS DEPCSI

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 3 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0414 Hours AIRCRAFT COURSE: 090 Degrees
 DURATION: 12 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 70 Blank

71 0.4
 72 3.5
 73 4.7
 74 0.0
 75 1.2
 76 3.3
 77 3.0
 78 2.9
 79 0.7
 80 0.3
 81 0.4
 82 0.1
 Stations 83 - 100 Blank

Total 29.5

MASS MEDIAN DIAMETER

DATE: 13 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 4PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: PurpleFLOW RATE: 69 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
27	4	7600			
27	1	7000			
27	2	6800*			
27	9	6700			
27	3	6600			
27	11	6400	8	1A	100 (smallest)
27	6	6300			
27	10	6200			
27	5	6100			
27	8	6000			
27	7	5900			

$$MMD = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6800)}{2.2} = 574.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(7600) = 1158.0 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

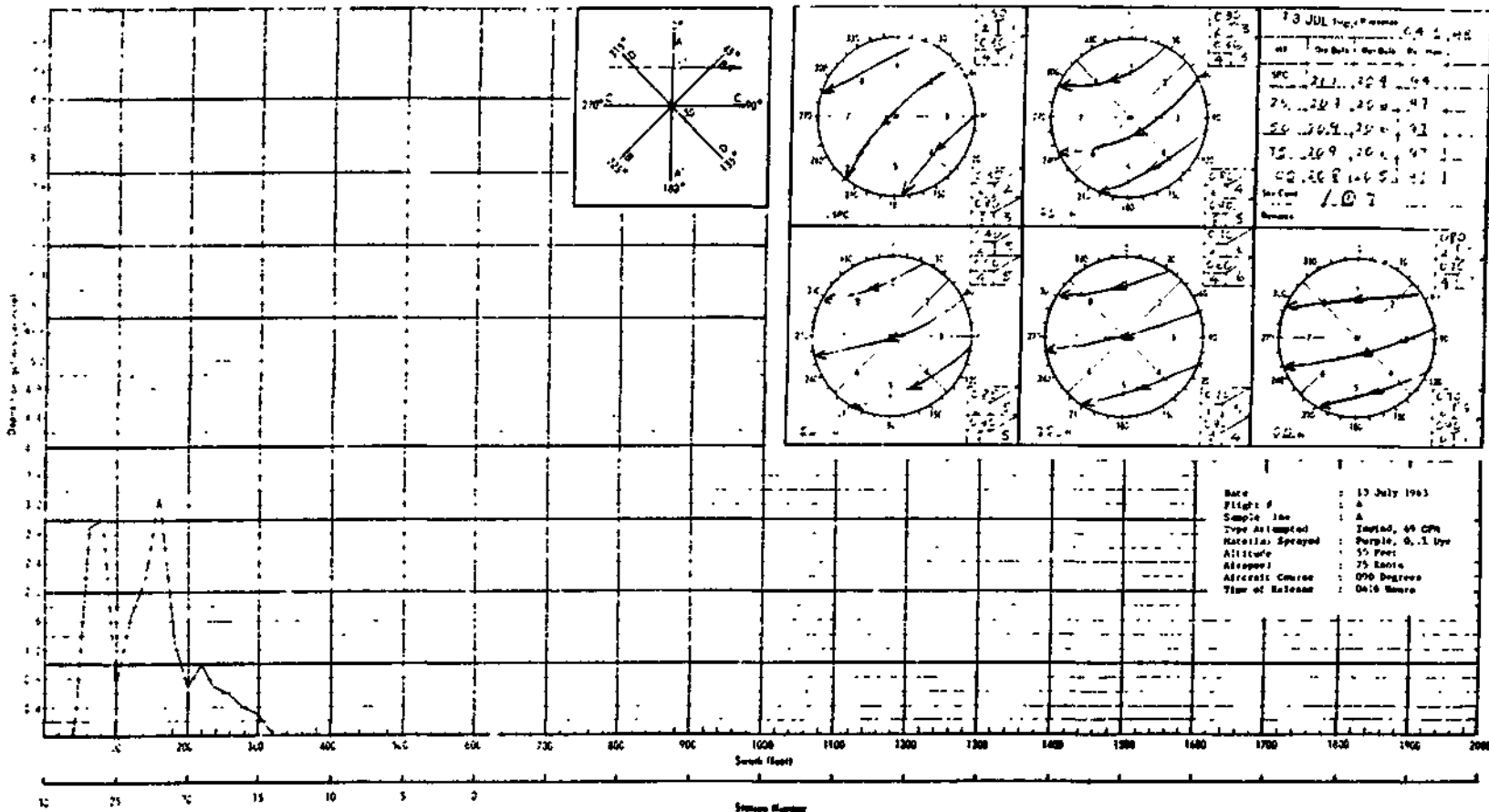
MASS DEPOSITINITIALS: PurpleFLOW RATE: 1.5 1.5DATE: 13 July 1963SYSTEM: HIDALFLIGHT #: 4AIRSPEED: 75 KnotSAMPLE LINE: AALTITUDE: 5 ftTIME OF RELEASE: 0416 HoursAIRCRAFT COURSE: 090DURATION: 11 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 13	Blank						

14	0.0
15	0.3
16	0.4
17	0.6
18	0.7
19	1.0
20	0.7
21	1.3
22	3.3
23	2.2
24	1.7
25	0.8
26	0.1
27	0.0

Stations 28 - 100 Blank.

Total 12.2



MASS DEPOSITMATERIAL: PurpleFLOW RATE: 6.9 GPMDATE: 13 July 1963SYSTEM: HIDALFLIGHT #: 5AIRSPEED: 55 KnotsSAMPLE LINE: DALTITUDE: 50 FeetTIME OF RELEASE: 0439 HoursAIRCRAFT COURSE: 045 DegreesDURATION: 13 Sec.

<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>	<u>STATION</u>	<u>G.P.A.</u>
Stations 1 - 63 Blank							

64 0.0

65 0.0

66 0.0

67 0.0

68 0.1

69 0.5

70 0.9

71 1.5

72 2.6

73 2.3

74 1.7

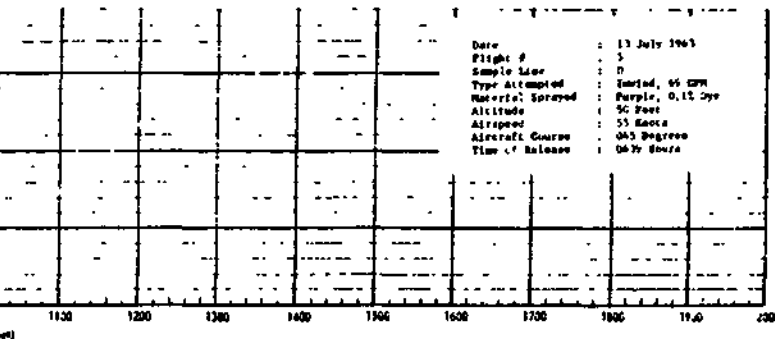
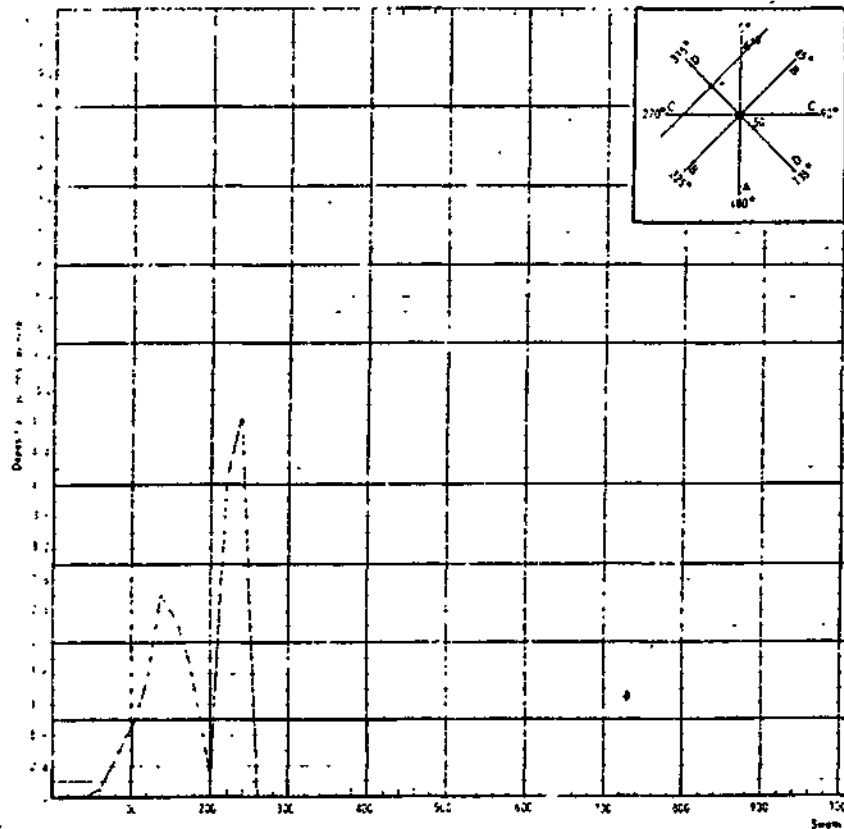
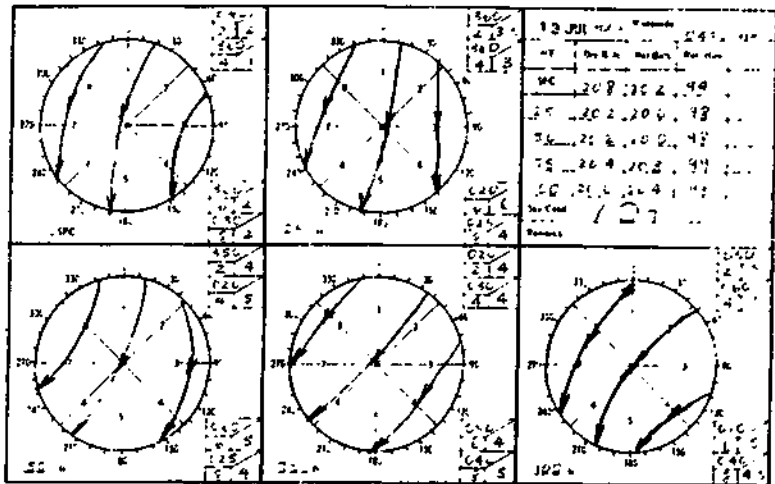
75 0.3

76 4.1

77 4.9

Stations 78 - 100 Blank

Total 18.9



Date : 13 July 1961
Flight # : 5
Sample Line : D
Type Attempted : Unmanned, 65 MPH
Material Sprayed : Purple, 0.1% Dye
Altitude : 50 Feet
Airspeed : 55 Knots
Aircraft Course : 045 Degrees
Time of Release : 0627 hours

Age Group	No	Yes	Don't know	Refuse to answer
55	45	45	10	5
70	50	40	10	5
75	55	35	10	5
80	60	30	10	5
85	65	25	10	5
90	70	20	10	5
95	80	10	10	5
100	100	0	10	5

Session Number

PASS MEDIAN DIAMETER

DATE: 13 July 1953CONVERSION FACTOR: 2.2FLIGHT #: 6TAPER: Kromekote, whiteSAMPLE LINE: DMATERIAL: PurpleFLOW RATE: 60 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
23	1	8800			
24	6	7600			
23	3	7000*			
23	2	6800			
23	4	6600	14	1A	10. (smallest)
22	5	6500			
22	10	6400			
23	5	6300			
25	8	6200			
24	7	6100			
25	11	6000			

$$\text{MMD} = \frac{70.4410.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.4410.1431(7000)}{2.2} = 487.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{70.4410.1431(\text{Max Spot})}{2.2} = \frac{70.4410.1431(8800)}{2.2} = 1329.7 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

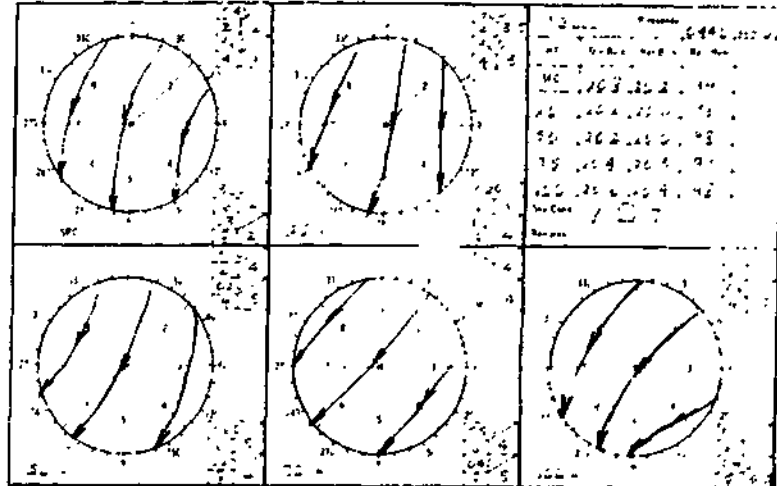
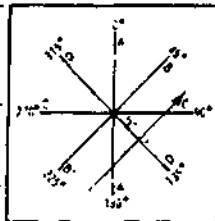
MASS DEPOSITMATERIAL: PurpleFLOW RATE: 69 GPMDATE: 13 July 1963SYSTEM: HIDALFLIGHT #: 6AIRSPEED: 55 KnotsSAMPLE LINE: DALTITUDE: 50 FeetTIME OF RELEASE: 0441 HoursAIRCRAFT COURSE: 045 DegreesDURATION: 16 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 15 Blank							

16	0.0
17	0.2
18	0.2
19	0.7
20	2.1
21	2.7
22	2.9
23	2.7
24	0.7
25	1.0
26	7.8
27	1.2

Stations 28 - 100 Blank

Total 22.2



Date: 13 July 1961
 Flight: 1
 Same: line
 Type: Attempted
 Material: sprayed
 Altitude: 10,000
 Altitude: 15,000
 Aircraft: C-130
 Time of Release: 0401 B-100

Swath Feet

Swath Number

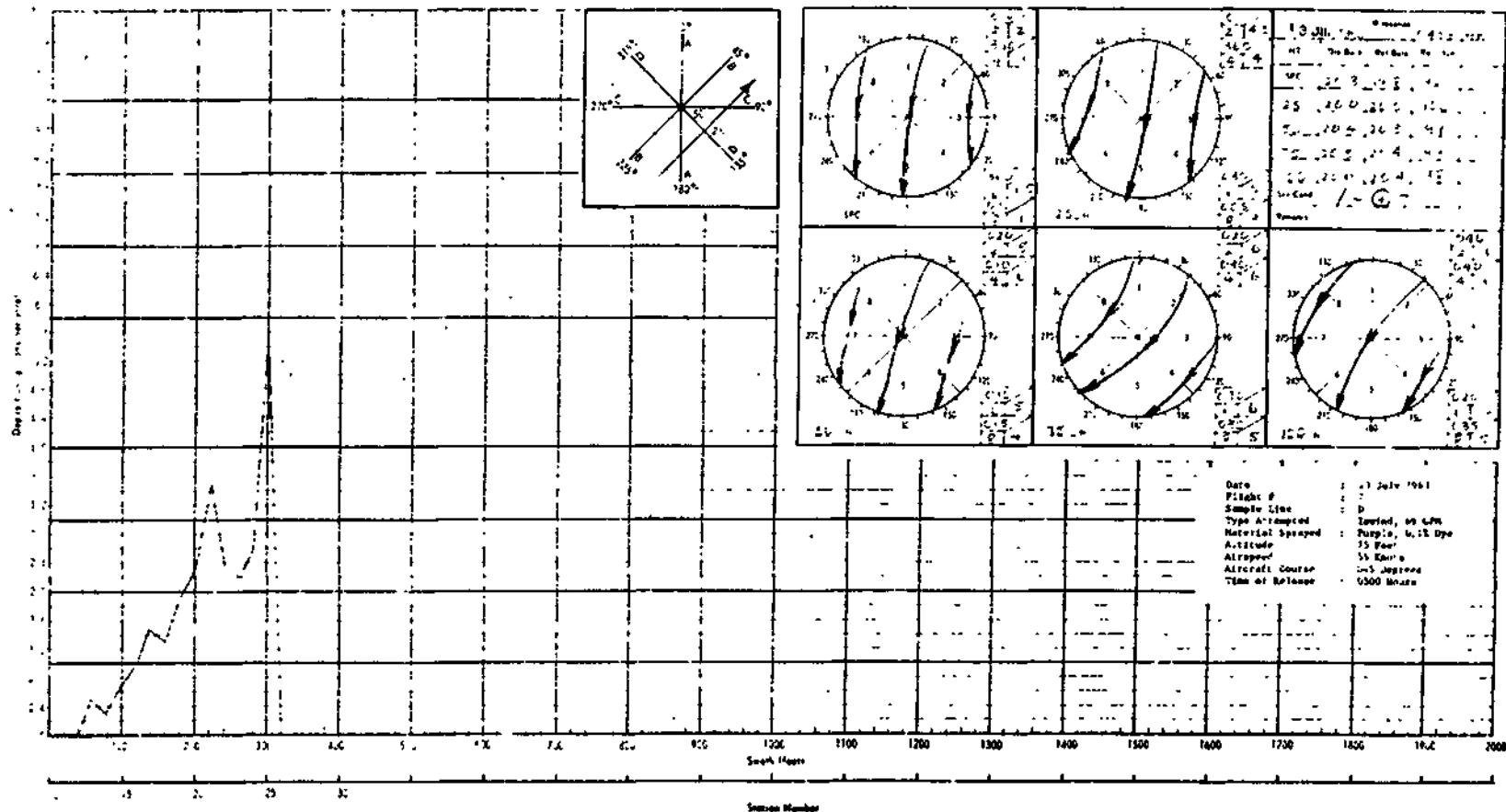
MASS DEPOSITMATERIAL: PurpleFLOW RATE: 69 GPMDATE: 13 July 1963SYSTEM: HIDALFLIGHT #: 7AIRSPEED: 55 KnotsSAMPLE LINE: DALTITUDE: 75 FeetTIME OF RELEASE: 0500 HoursAIRCRAFT COURSE: 045 DegreesDURATION: 12 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
<u>Stations 1 - 12 Blank</u>							

13	0.5
14	0.3
15	0.7
16	1.0
17	1.5
18	1.3
19	1.9
20	2.3
21	3.5
22	2.3
23	2.2
24	2.6
25	5.3
26	0.0

Stations 27 - 100 Blank

Total 25.4



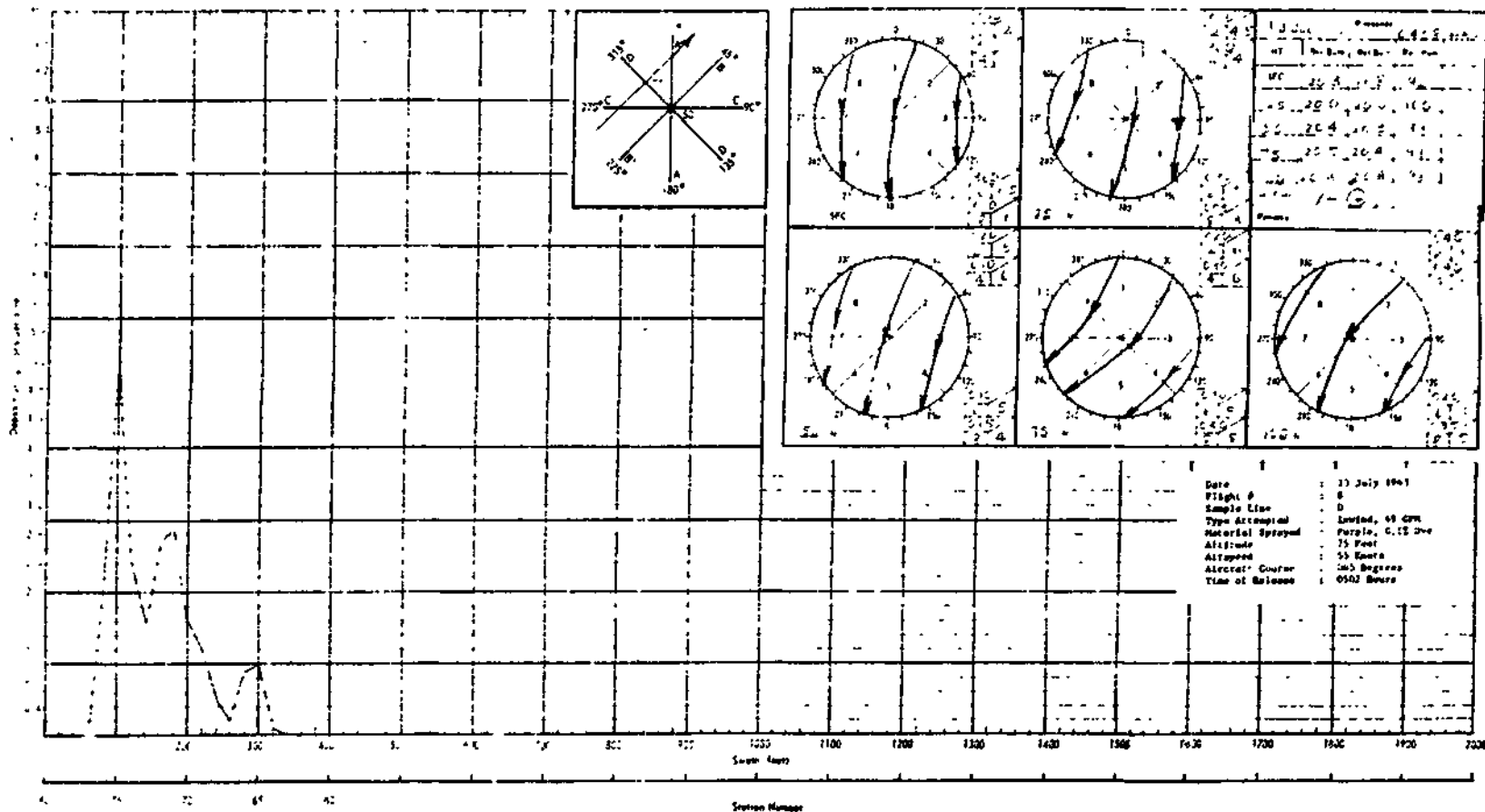
MASS DEPOSITMATERIAL: PurpleFLOW RATE: 69 GPMDATE: 13 July 1963SYSTEM: HIDALFLIGHT #: 8AIRSPEED: 55 KnotsSAMPLE LINE: DALTITUDE: 75 FeetTIME OF RELEASE: 0502 HoursAIRCRAFT COURSE: 045 DegreesDURATION: 15 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 63 Blank							

64	0.1
65	1.0
66	0.9
67	0.2
68	0.5
69	1.2
70	1.6
71	2.9
72	2.7
73	1.6
74	2.2
75	5.1
76	2.1

Stations 77 - 100 Blank

Total 22.1

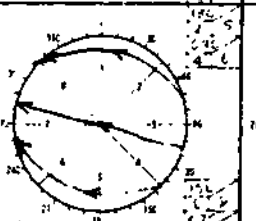
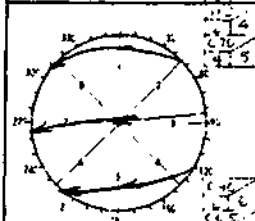
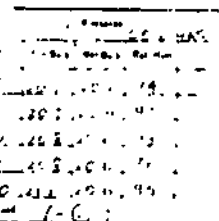
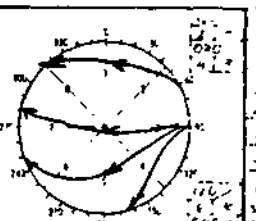
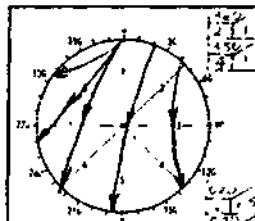
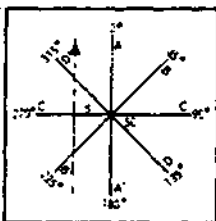
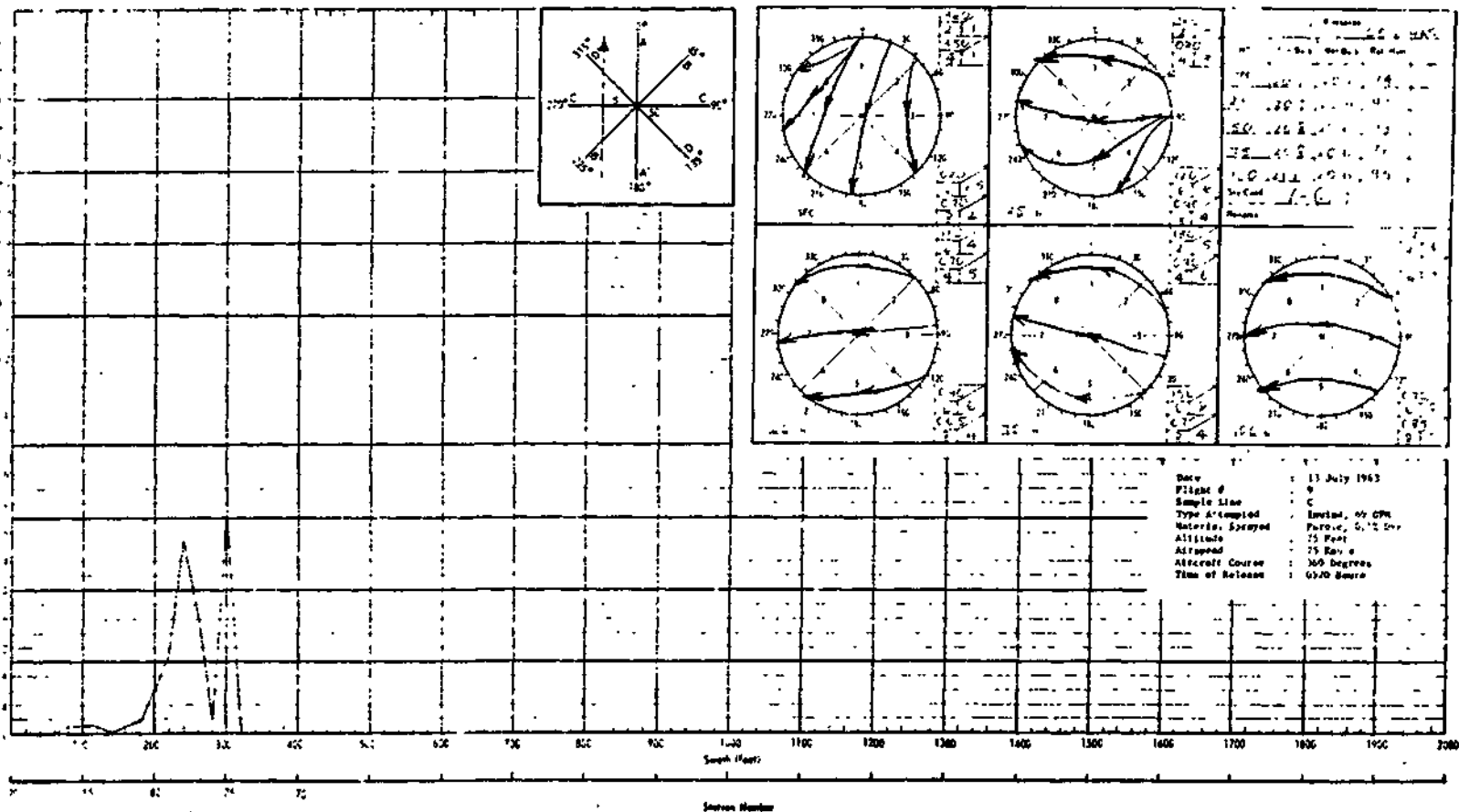


MASS DEPOSITMATERIAL: PurpleFLOW RATE: 69 GPMDATE: 13 July 1963SYSTEM: HIDALFLIGHT #: 9AIRSPEED: 75 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0520 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 13 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 74	Blank					75	3.0
						76	0.2
						77	1.5
						78	2.7
						79	1.1
						80	0.6
						81	0.2
						82	0.1
						83	0.0
						84	0.1
						85	0.1
						86	0.1
						87	0.0
						88	0.0
						Stations 89 - 100	
						Blank	

Total 1.7

Distance in Feet per Second



Date : 13 July 1963
 Flight # : 9
 Sample Line : C
 Type Attempted : Impact, 40 GPM
 Material Sprayed : Paraffin, 5 1/2 lbs
 Altitude : 75 Feet
 Airspeed : 75 Knts
 Aircraft Course : 360 Degrees
 Time of Release : 6570 Hours

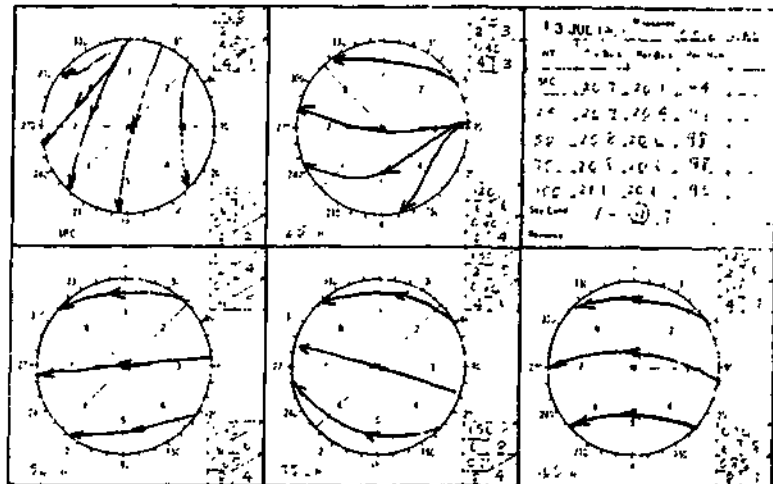
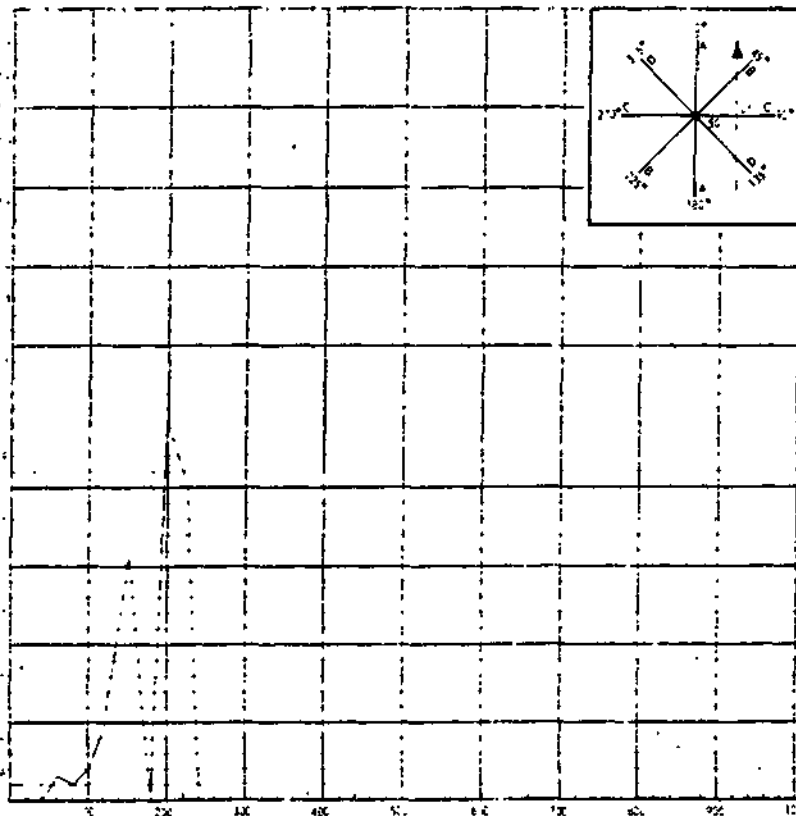
Source Number

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 69 GPMDATE: 13 July 1963SYSTEM: HIDALFLIGHT #: 10AIRSPEED: 75 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0522 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 15 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 23	Blank	24	4.0				
		25	4.8				
		26	0.1				
		27	3.1				
		28	2.2				
		29	0.9				
		30	0.4				
		31	0.2				
		32	0.3				
		33	0.0				
		34	0.0				
		35	0.0				
		36	0.0				
		Stations 37 - 100	Blank				

Total 16.0

Depth in Fathoms



13 JUL 1963
 WT 1.42
 MC 20.7, 20.1, 4
 14 20.7, 20.1, 4
 50 20.7, 20.1, 4
 70 20.7, 20.1, 4
 100 20.7, 20.1, 4
 Net Load 1 - 2.7
 Remarks

Date 15 July 1963
 Flight # 10
 Sample Line C
 Type Acoustic
 Material Spill on Inverted, 66 W/4
 A 15000 Purple, 1.5 W/4
 Alapsed 75 Feet
 Airfall Course 1/4 Knots
 Time of Release 1:00:00
 Remarks

Swath Feet

Swath Number

MASS MEDIAN DIAMETER

DATE: 13 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 11PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: PurpleFLOW RATE: 6.1 GPMSYSTEM: Uical

STA.	DROP #	SIZE	STA.	DROP #	SIZE
74	1	7100			
74	2	6400*			
72	7	6300			
72	6	6200			
74	4	6100	74	1A	100 (smallest)
74	3	5900			
74	5	5800			
73	8	5700			
74	9	5600			
74	10	5500			

$$\text{MMD} = \frac{70.44 \times 0.1431 (\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 \times 0.1431 (6400)}{2.2} = 448.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 \times 0.1431 (\text{Max Spot}) = 70.44 \times 0.1431 (7100) = 1086.5 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 48 \text{ Microns}$$

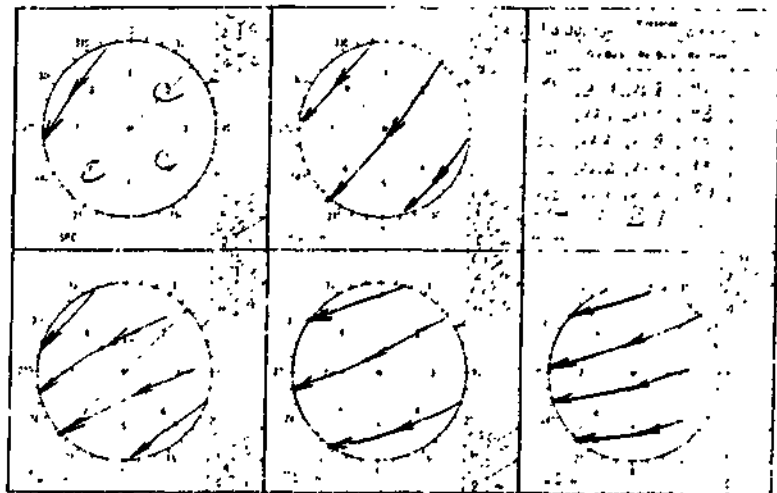
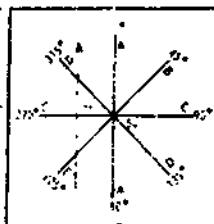
MASS DEPOSITMATERIAL: PurpleFLOW RATE: 60 CPMDATE: 13 July 1963SYSTEM: HYDRAFLIGHT # 11AIRSPEED: 75 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0552 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 15 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
stations 1 - 65 Blank							

66	0.4
67	0.2
68	1.2
69	0.6
70	1.8
71	2.4
72	2.4
73	1.8
74	0.5
75	0.3
76	3.7
77	4.1
78	2.0
79	1.4
80	0.5
81	0.5

Stations 82 - 100 Blank

Total 23.8



Date : 31 July
 Flight # : 31
 Same # line : C
 Type of spray : Sprayed, no. 100
 Material Sprayed : Particle, 12.0m
 Altitude : 75 Feet
 Altitude : 75 Feet
 Aircraft Course : 340 Degrees
 Time of Release : 155.0 hrs

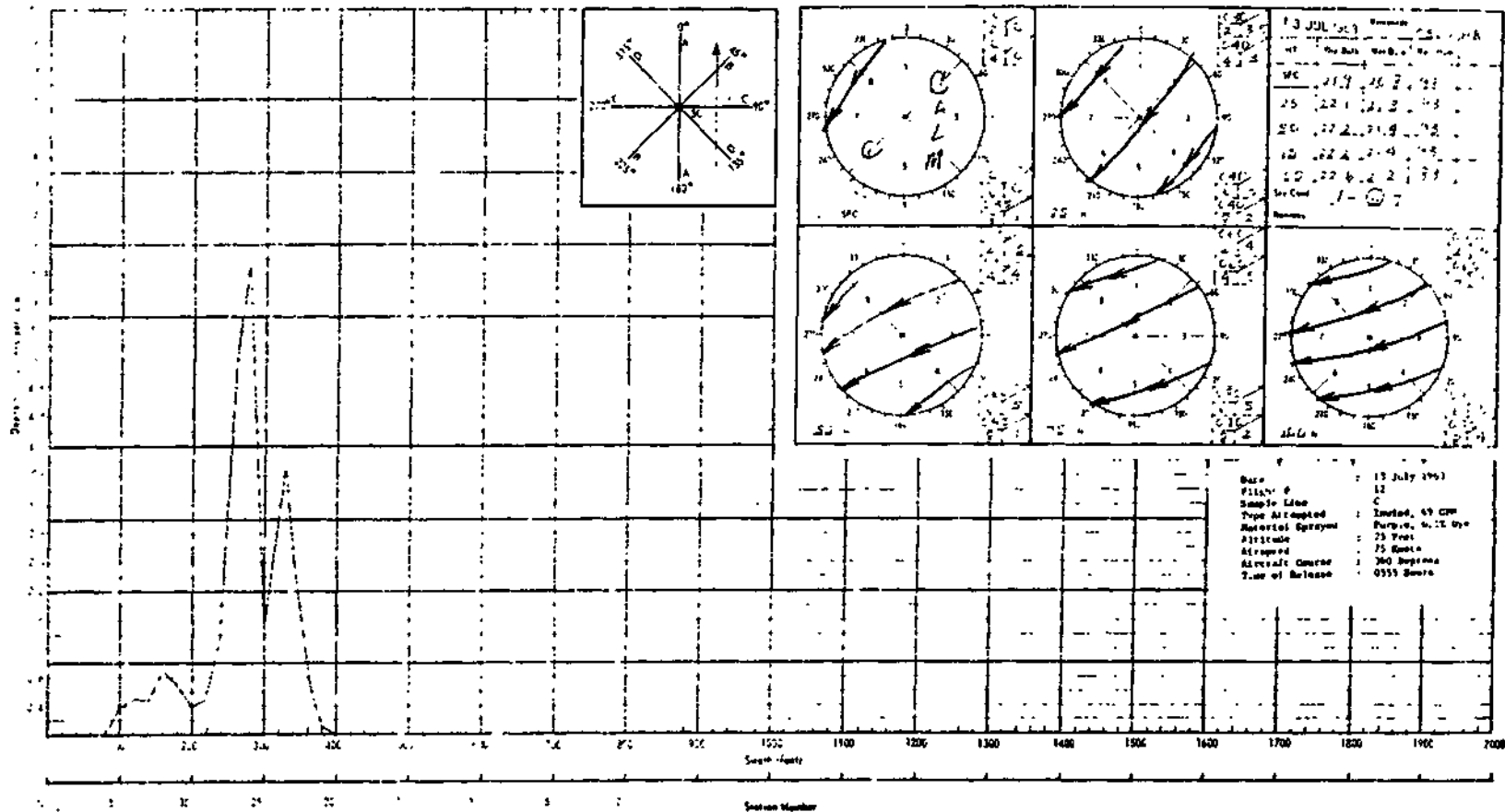
So = 1000

Source Number

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 69 GPMDATE: 3 July 1963SYSTEM: WIDALFLIGHT #: 12AIRSPEED: 75 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0555 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 11 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 20	Blank	21	0.1				
		22	0.8				
		23	2.3				
		24	3.7				
		25	1.6				
		26	6.5				
		27	5.3				
		28	1.3				
		29	0.5				
		30	0.4				
		31	0.7				
		32	0.9				
		33	0.5				
		34	0.5				
		35	0.4				
		36	0.0				
		Stations 37 - 100	Blank				

Total 25.5



MASS MEDIAN DIAMETER

DATE: 13 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 13PAPER: Kromekote, whiteSAMPLE LINE: DMATERIAL: PurpleFLOW RATE: 6, GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
77	1	8400			
75	4	6200*			
77	2	6100			
77	5	5900			
77	8	5800	04	1A	100(smallest)
75	9	5700			
78	7	5500			
77	11	5400			
78	3	5300			
77	6	5200			
78	10	5000			

$$MMD = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6200)}{2.2} = 435.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(8400) = 1202.3 \text{ Microns}$$

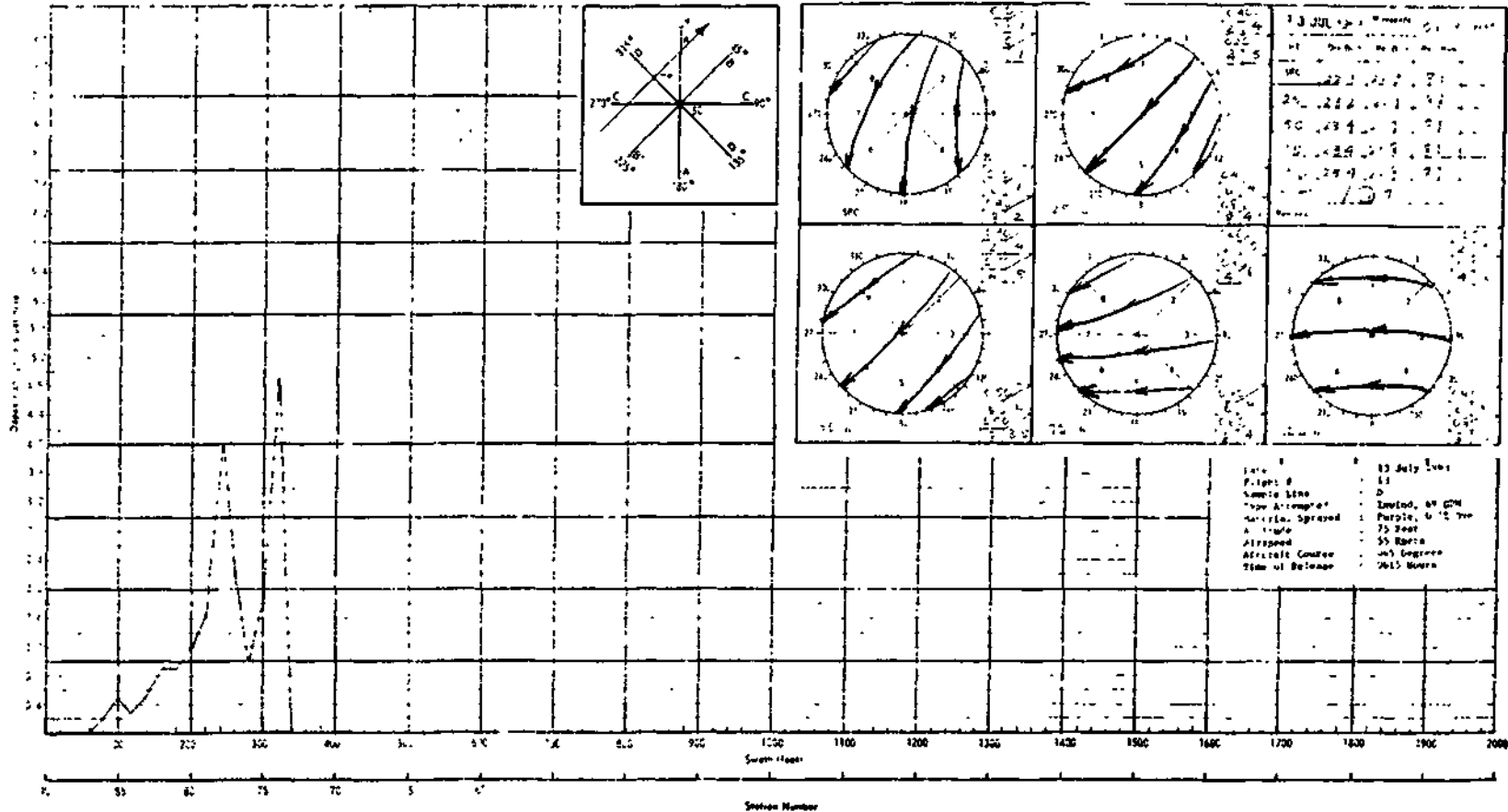
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: TIDAL
 FLIGHT #: 13 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 015 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 13 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 75 Blank				74	4.0		
				75	1.8		
				76	1.0		
				77	2.2		
				78	4.0		
				79	1.0		
				80	1.0		
				81	0.0		
				82	0.0		
				83	0.5		
				84	0.5		
				85	0.5		
				86	0.2		
				Stations 87 - 1			
					Blank		

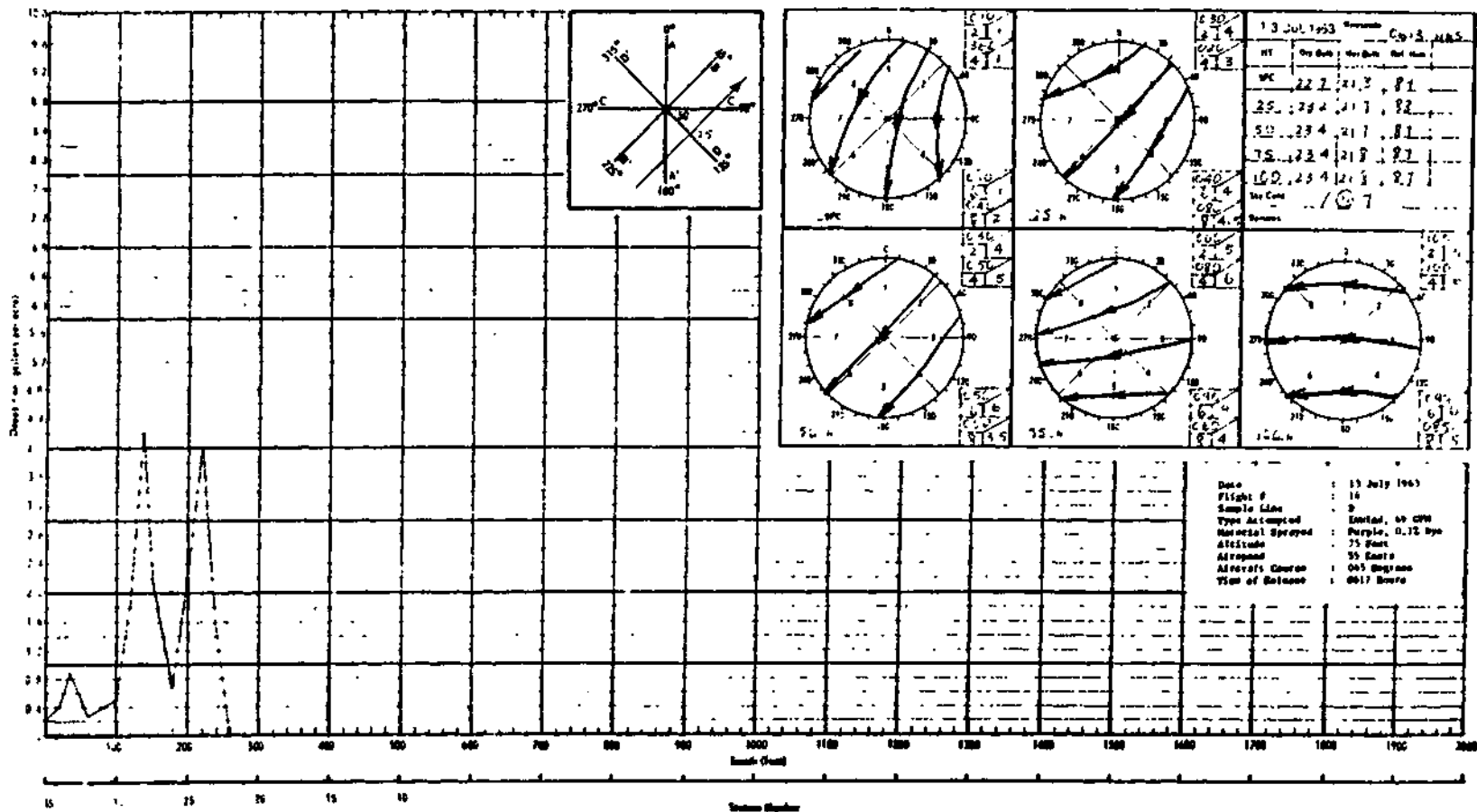
Total 20.0



MASS DEPOSITMATERIAL: PurpleFLOW RATE: 69 GPMDATE: 13 July 1963SYSTEM: HIDALFLIGHT #: 14AIRSPEED: 55 KnotsSAMPLE LINE: DALTITUDE: 75 FeetTIME OF RELEASE: 0617 HoursAIRCRAFT COURSE: 045 DegreesDURATION: 13 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 22	Blank	23	1.5				
		24	4.0				
		25	2.3				
		26	0.7				
		27	2.2				
		28	4.2				
		29	1.9				
		30	0.5				
		31	0.4				
		32	0.3				
		33	0.9				
		34	0.4				
		35	0.2				
		Stations 36 - 100	Blank				

Total 19.5



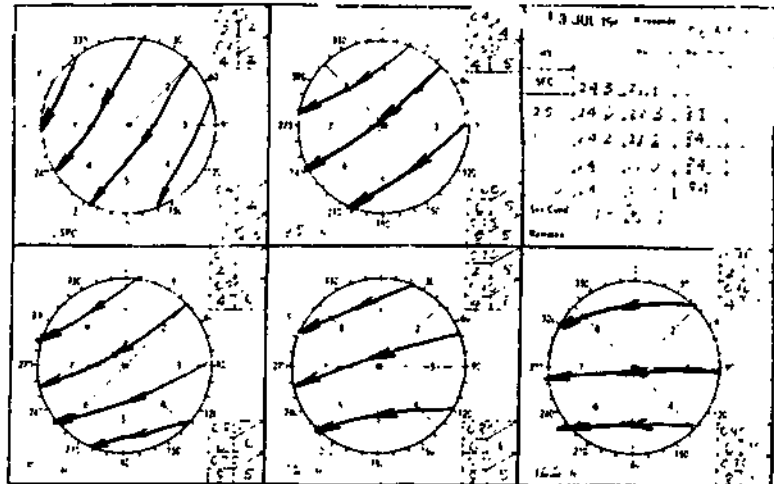
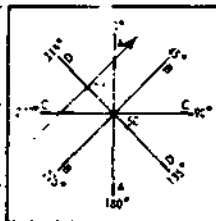
MASS DEPOSITMATERIAL: PurpleFLOW RATE: 69 GPMDATE: 13 July 1963SYSTEM: HIDALFLIGHT #: 15AIRSPEED: 75 KnotsSAMPLE LINE: DALTITUDE: 75 FeetTIME OF RELEASE: 0833 HoursAIRCRAFT COURSE: 045 DegreesDURATION: 15 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 66 Blank							

67	0.0
68	11.8
69	2.0
70	0.6
71	1.4
72	3.2
73	1.3
74	0.5
75	0.4
76	0.1
77	0.2
78	0.1

Stations 79 - 100 Blank

Total 21.6



Date: 21 July 1963
 Flight #: 15
 Sample Size: 3
 Type Atomized: Inerted, as GPC
 Material Sprayed: Purple, 0.12 Dye
 Altitude: 75 Feet
 Airspeed: 75 Kinds
 Aircraft Color: Gun's Degree
 Time of Release: 06:11 Hours

South (ft)

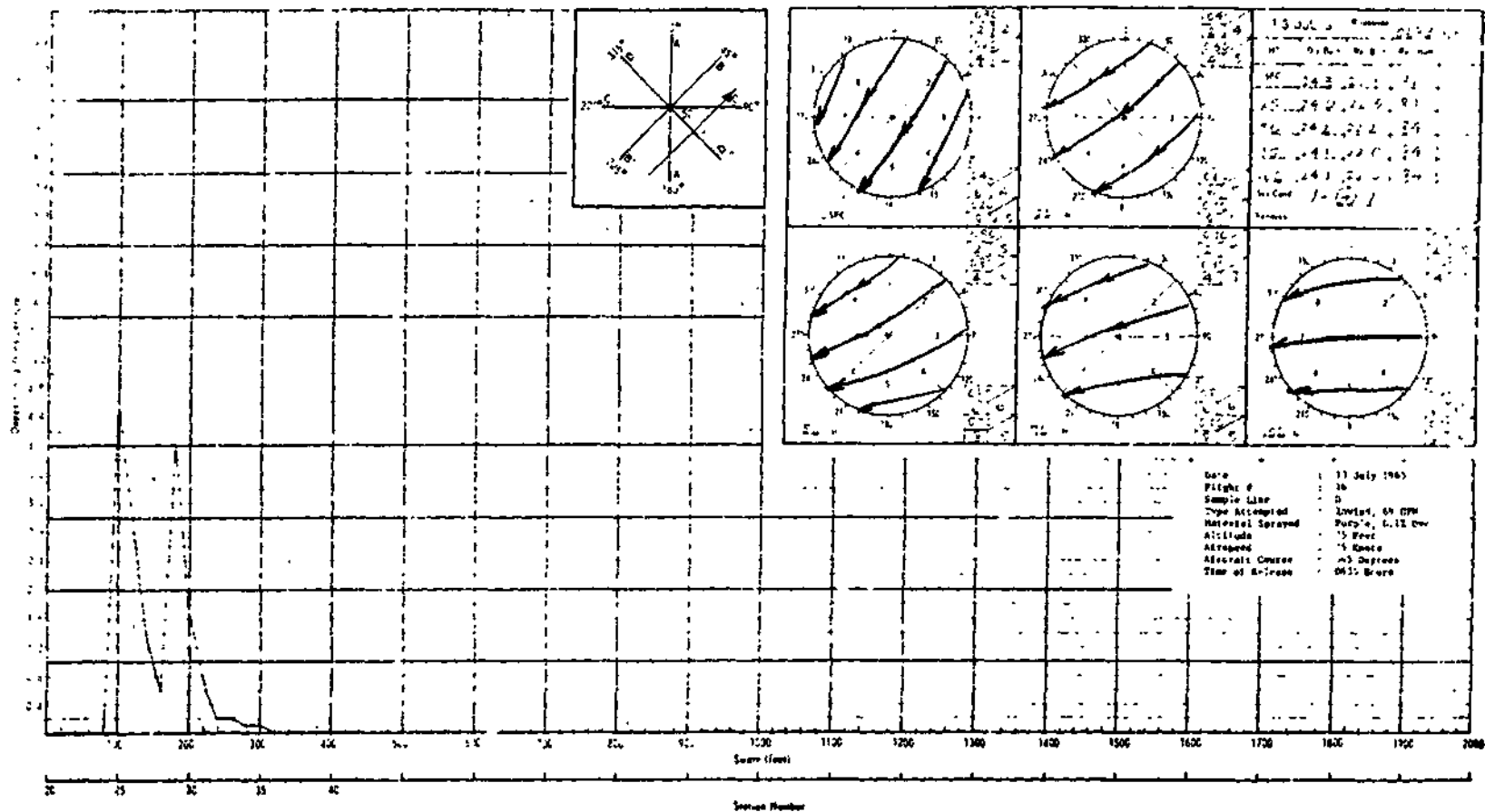
Station Number

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 69 GPMDATE: 13 July 1963SYSTEM: HIDALFLIGHT #: 15AIRSPEED: 75 KnotsSAMPLE LINE: DALTITUDE: 75 FeetTIME OF RELEASE: 0635 HoursAIRCRAFT COURSE: 045 DegreesDURATION: 17 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 23	Blank	24	0.0				
		25	4.5				
		26	2.7				
		27	1.3				
		28	0.6				
		29	4.0				
		30	1.5				
		31	0.6				
		32	0.2				
		33	0.2				
		34	0.1				
		35	0.1				

Stations 36 - 100 Blank

Total 15.8



MASS MEDIAN DIAMETER

DATE: 13 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 17PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: PurpleFLOW RATE: 6.9 GPMSYSTEM: WIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
28	1	7500			
25	4	6700*			
25	3	6600			
25	5	6500			
25	2	6400	45	1A	100(smallest)
25	6	6300			
25	8	6200			
25	7	6100			
25	9	6000			
27	11	5900			
28	10	5800			

$$\text{MMD} = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6700)}{2.2} = 467.8 \text{ Microns}$$

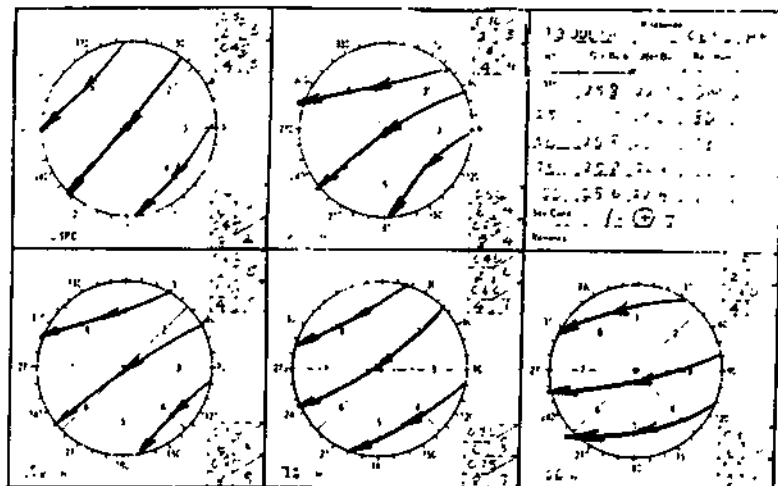
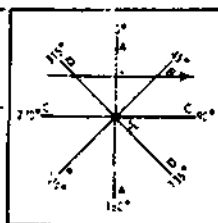
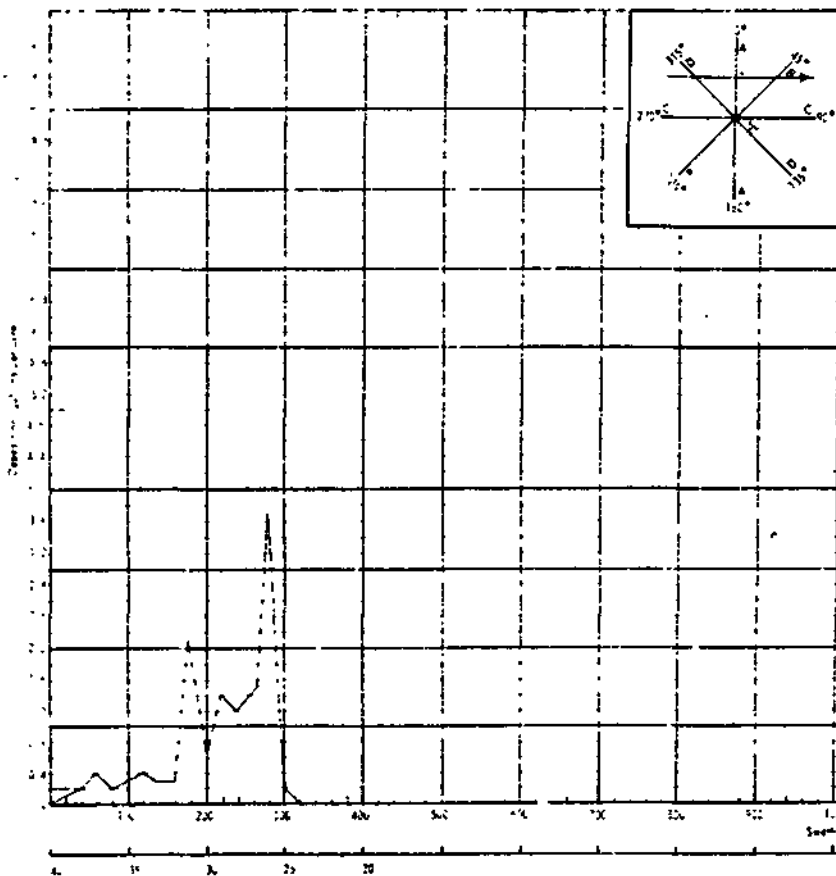
$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(7500) = 1143.7 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 CPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 17 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 100 Feet
 TIME OF RELEASE: 0652 Hours AIRCRAFT COURSE: 090 Degrees
 DURATION: 14 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 23 Blank		24	0.0				
		25	0.2				
		26	3.7				
		27	1.5				
		28	1.2				
		29	1.4				
		30	0.7				
		31	2.1				
		32	0.3				
		33	0.3				
		34	0.4				
		35	0.3				
		36	0.2				
		37	0.4				
		38	0.2				
		39	0.1				
		40	0.0				
		Stations 41 - 100 Blank					

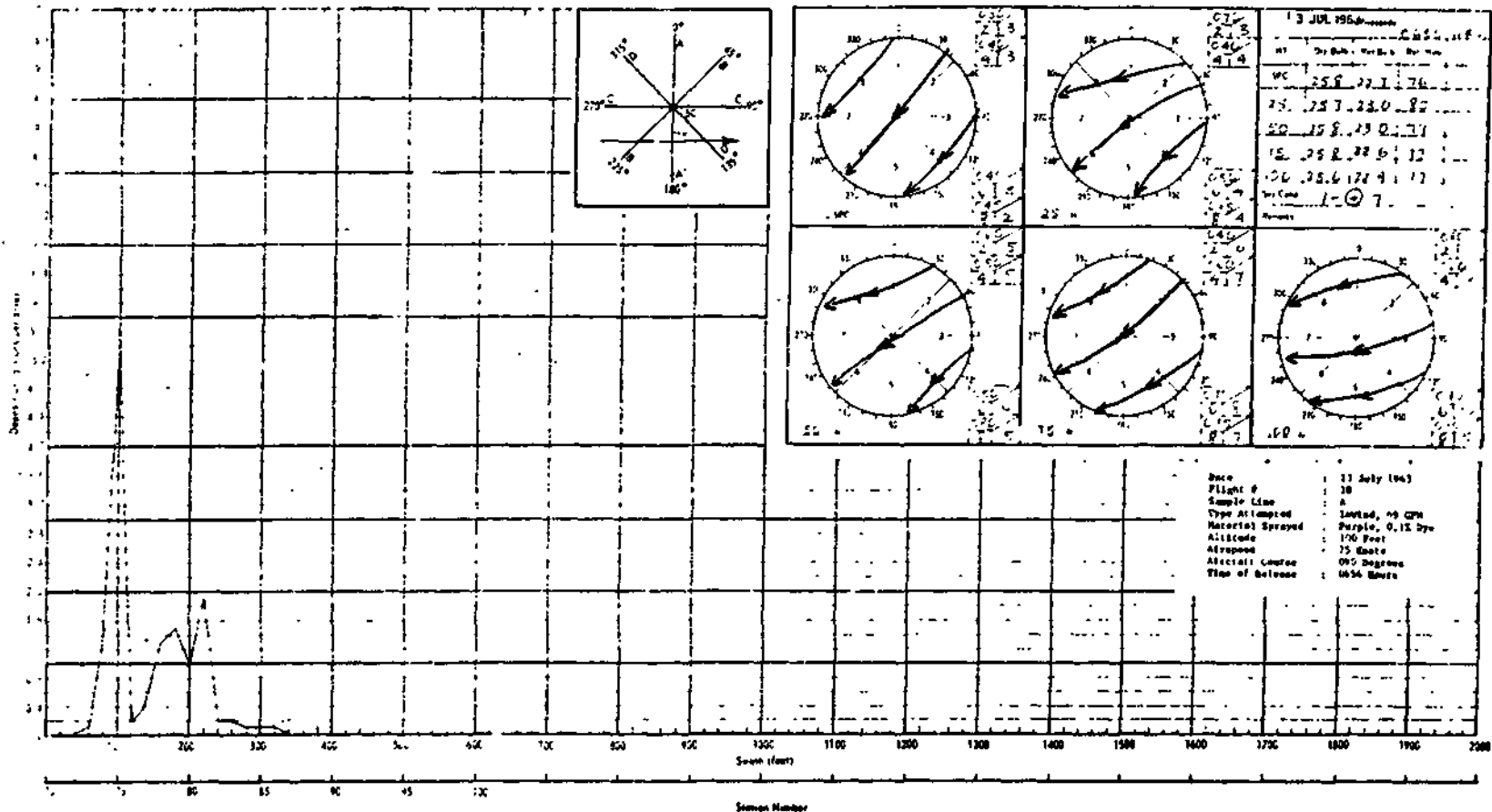


Date : 11 July 1961
 Flight # : 27
 Sample Line : A
 Type Attributed : Lowland, 0.5 CPM
 Material Synthesized : Purple, 0.12 Dye
 Altitude : 100 Feet
 Altitude : 75 Meters
 Aircraft Course : 090 Degrees
 Time of Day : 0632 Hours

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 69 GPMDATE: 13 July 1963SYSTEM: HIDALFLIGHT #: 18AIRSPEED: 75 KnotsSAMPLE LINE: AALTITUDE: 100 FeetTIME OF RELEASE: 0654 HourAIRCRAFT COURSE: 090 DegreesDURATION: 18 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 71 Blank				72	0.0		
				73	0.1		
				74	1.5		
				75	5.3		
				76	0.2		
				77	0.4		
				78	1.3		
				79	1.5		
				80	1.0		
				81	1.9		
				82	0.2		
				83	0.2		
				84	0.1		
				85	0.1		
				86	0.1		
				Station 87 - 100			
				Blank			

Total 13.9



H-34/HIDAL GROUND FLOW & FLIGHT DATA

DATE CALIBRATED: <u>16 July 1963</u>	DATE TEST FLOWN. <u>16 July 1963</u>
LIQUID SPRAYED: <u>Purple</u>	TOTAL NOZZLES OPEN: <u>60</u>
NOZZLE TYPE: <u>8015</u>	LIQUID TEMP. <u>37° C</u>
DURATION OF SPRAY: <u>30</u> <u>Sec.</u>	PUMP PRESSURE. <u>32</u> <u>PSI</u>
TOTAL AMOUNT SPRAYED: <u>28</u> <u>Gal.</u>	FLOW RATE CALIBRATED: <u>56</u> <u>GPM</u>

OPERATIONAL DATA DURING FLIGHT

Above information is for Runs 1 - 16.

REMARKS The pressure readings are from the pressure gauge mounted on the pump which was subsequently proven to be inaccurate.

PASS MEDIAN DIAMETER

DATE: 16 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 1PAPER: Kromekote, whiteSAMPLE LINE: BMATERIAL: PurpleFLOW RATE: 56 CPMSYSTEM: WIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
76	1	6400*			
76	2	6200			
76	3	6100			
73	4	6000			
77	6	5900	100	1A	100(smallest)
77	7	5800			
73	5	5600			
73	6	5500			
77	9	5400			
76	10	5300			

$$\text{FMD} = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6400)}{2.2} = 648.3 \text{ Microns}$$

$$\text{Max. Spot Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(6400) = 986.3 \text{ Microns}$$

$$\text{Min. Spot Dia.} = 63 \text{ Microns}$$

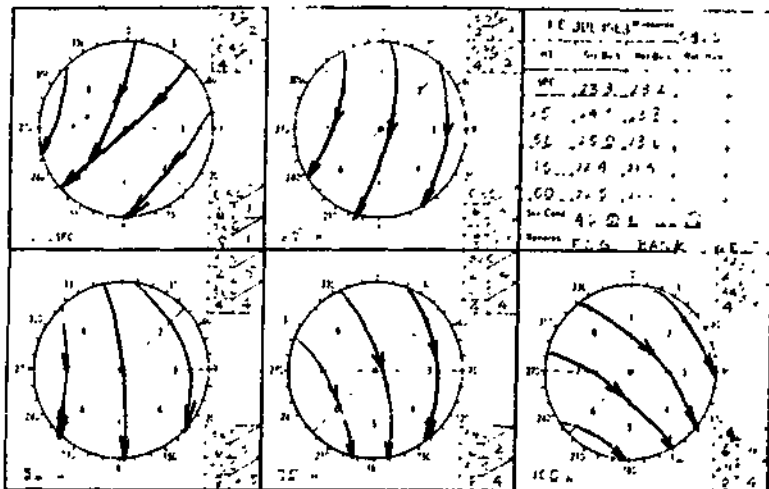
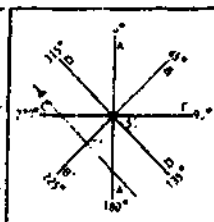
NUSS DEPOSITMATERIAL: P. 101FLOW RATE: 1.6 CMDATE: 15 July 1963SYSTEM: WIDAFLIGHT #: 1AIRSPEED: 25 KnotsSAMPLE LINE BALTITUDE: 75 FeetTIME OF RELEASE: 0410 HoursAIRCRAFT COURSE 315 DegreesDURATION: 7.5

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 69	Blank					70	0.0
						71	0.2
						72	1.3
						73	1.6
						74	1.5
						75	0.5
						76	0.4
						77	1.4
						78	1.2
						79	0.6
						80	0.5
						81	0.4
						82	0.2
						83	0.1
						84	0.1
						85	0.1
						Stations 86 - 100	Blank

Stations 86 - 100

Blank

Total 10.6



Date: 26 July 1961
 Flight #: 1
 Sample Line: Irvine, 36.5 km
 Type of Sample: Purple, 0.12 m
 Altitude: 15 feet
 Airspeed: 11 knots
 Aircraft Course: 155 degrees
 Time of Release: 1417 hours

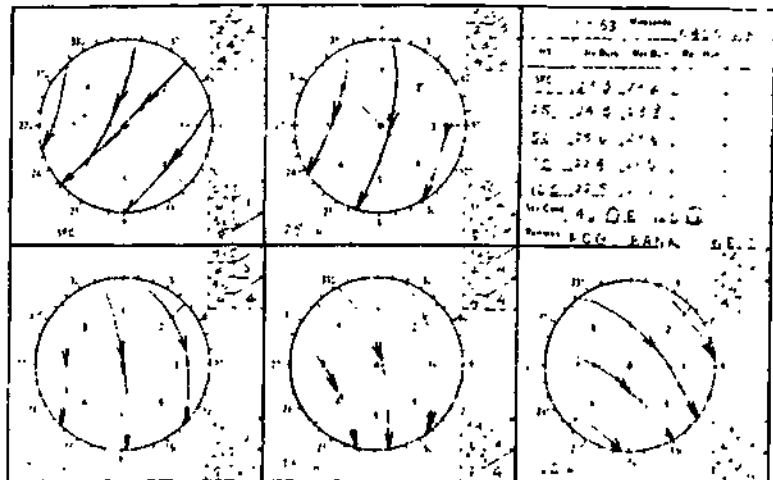
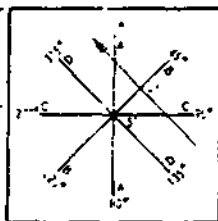
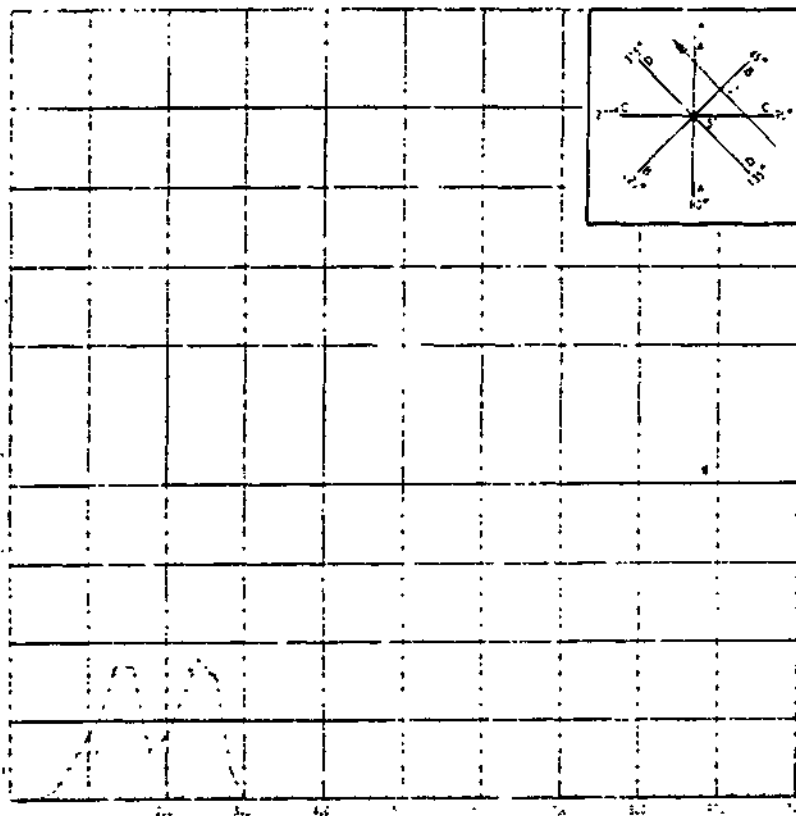
Swath (feet)

Swath Number

MASS DEPOSITIONMATERIAL: PurpleFLOW RATE: 2.5 LPMDATE: 16 July 1963SYSTEM: H'D&LFLIGHT #: 2AIRSPEED: 34 KNOTSSAMPLE LINE: BALTITUDE: 75 FEETTIME OF RELEASE: 0412 HoursAIRCRAFT COURSE: 315 DegreesDURATION: 1.0 Hours

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 20 Black		21	0.4				
		22	1.5				
		23	1.8				
		24	1.4				
		25	0.8				
		26	0.6				
		27	1.7				
		28	1.7				
		29	1.1				
		30	0.8				
		31	0.5				
		32	0.1				
		Stations 33 - 100 Black					

 % Recovery - 56.8
Total 12.5



Date: 10/10/53
 Ship: 10/10/53
 Type of Release: 10/10/53
 Name of Release: 10/10/53
 Location: 10/10/53
 Depth: 10/10/53
 Direction: 10/10/53
 Force: 10/10/53
 Pressure: 10/10/53
 Temperature: 10/10/53
 Humidity: 10/10/53
 Wind: 10/10/53
 Clouds: 10/10/53
 Visibility: 10/10/53
 Barometer: 10/10/53
 Rain: 10/10/53
 Snow: 10/10/53
 Ice: 10/10/53
 Fog: 10/10/53
 Thunder: 10/10/53
 Lightning: 10/10/53
 Hail: 10/10/53
 Sleet: 10/10/53
 Wind: 10/10/53
 Clouds: 10/10/53
 Visibility: 10/10/53
 Barometer: 10/10/53
 Rain: 10/10/53
 Snow: 10/10/53
 Ice: 10/10/53
 Fog: 10/10/53
 Thunder: 10/10/53
 Lightning: 10/10/53
 Hail: 10/10/53
 Sleet: 10/10/53

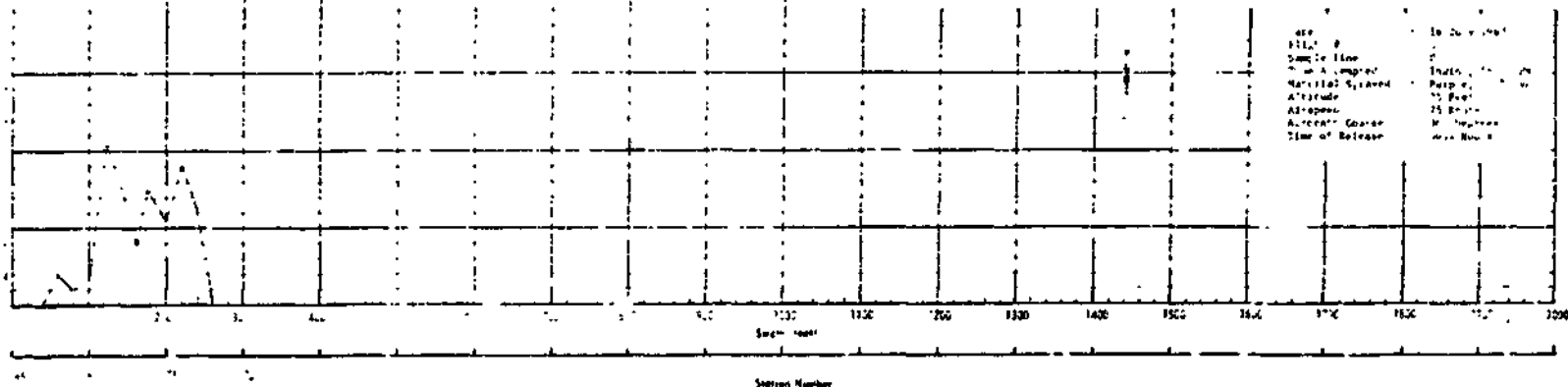
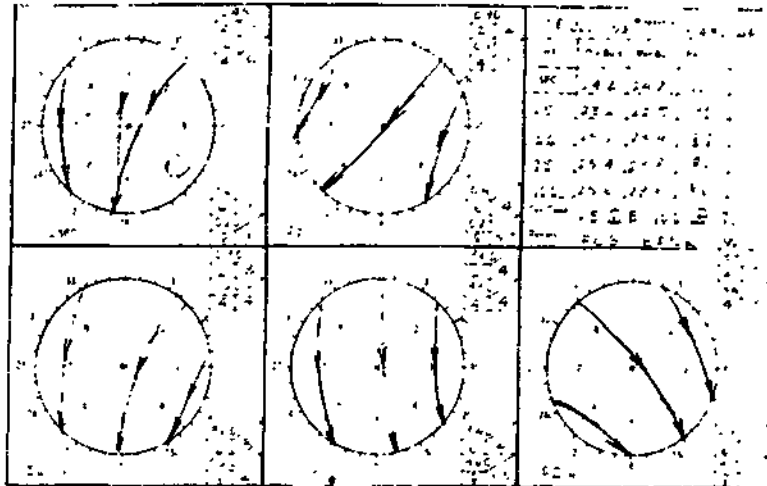
Scale: 1:1000

Source: Map

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 55 GPMDATE: 16 July 1963SYSTEM: HIDALFLIGHT #: 3AIRSPEED: 75 KNOTSSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0434 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 11 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 72	Blank					73	1.2
						74	1.3
						75	1.1
						76	1.5
						77	0.8
						78	1.4
						79	2.1
						80	0.4
						81	0.2
						82	0.4
						Stations 83 - 100	
						Blank	

Total 10.9



MASS MEDIAN DIAMETER

DATE: 16 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 4PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: PurpleFLOW RATE: 56 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
24	1	4300*			
24	4	4200			
24	2	4100			
24	3	4000			
27	6	3900	50	1A	100(smallest)
24	5	3800			
27	7	3700			
27	8	3600			
23	10	3500			
24	9	3400			

$$MMD = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(4300)}{2.2} = 311.7 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(4300) = 685.8 \text{ Microns}$$

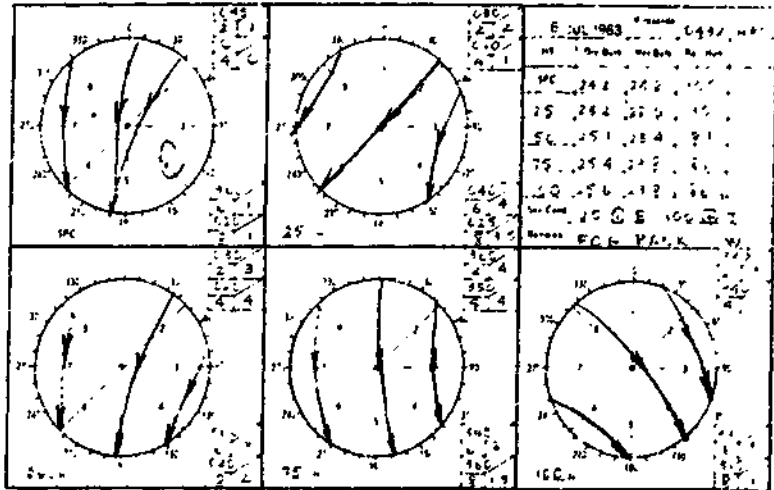
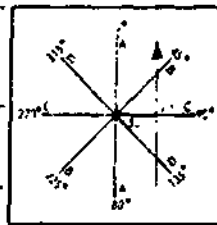
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 56 GPMDATE: 16 July 1963SYSTEM: HYDALFLIGHT #: 4AIRSPEED: 75 KnotsSAMPLE LINE: CALTITUDE: 75 FeetTIME OF RELEASE: 0436 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 9 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 21	Blank	22	0.2				
		23	1.8				
		24	1.4				
		25	1.5				
		26	0.8				
		27	0.9				
		28	2.0				
		29	1.9				
		30	1.4				
		31	0.7				
		32	0.6				
		33	0.2				
		34	0.5				
		35	0.4				
		36	0.8				
		37	0.4				
		38	0.8				
		39	0.7				
		40	0.6				
		41	0.2				
Stations 42 - 100	Blank						

Total 17.8

Depth in feet



Date 14 July 1953
 Flight 4
 Sample Line C
 Type A-dumped
 Material Sprayed Purple, 1.2 m
 Altitude 25 Feet
 Airspeed 25 Knots
 Aircraft Course 30° Degrees
 Time of Release 0434 Hours

Swath feet

Swath Number

MASS MEDIAN DIAMETER

DATE: 16 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 5PAPER: Kromekote, whiteSAMPLE LINE: CMATERIAL: PurpleFLOW RATE: 56 GPMSYSTEM: IIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
73	1	7000			
73	2	5900			
72	7	5600			
77	3	5100*			
73	4	5000			
73	12	4900	100	1A	100(smallest)
72	6	4700			
72	8	4600			
72	5	4500			
72	9	4400			
72	11	4300			
72	10	4200			

$$MMD = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(5100)}{2.2} = 363.7 \text{ Microns}$$

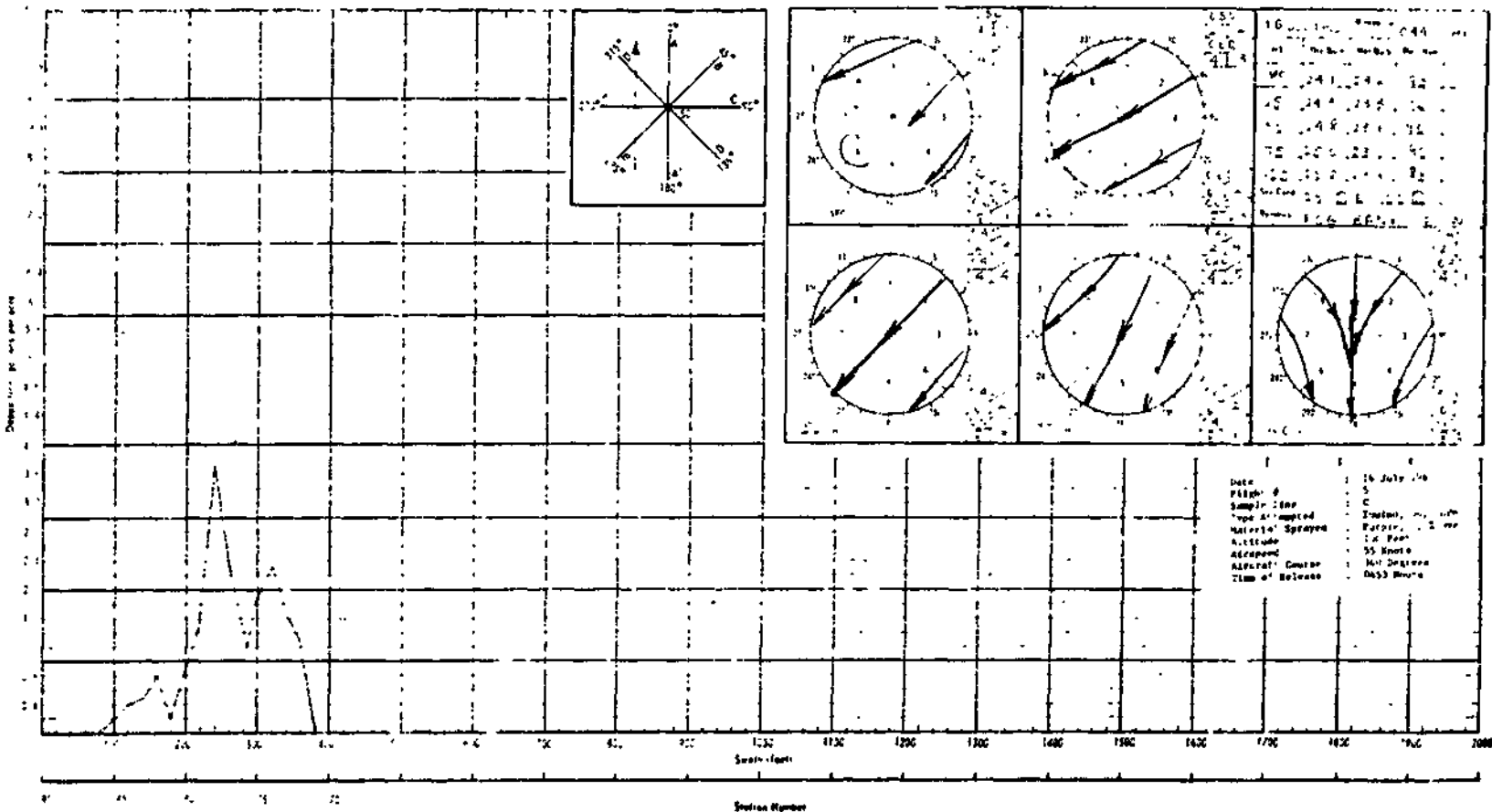
$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(7000) = 1072.1 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 56 GPMDATE: 16 July 1963SYSTEM: HIDALFLIGHT #: 5AIRSPEED: 55 KnotsSAMPLE LINE: CALTITUDE: 100 FeetTIME OF RELEASE: 0455 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 12 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 71	Blank					72	1.3
						73	1.6
						74	2.3
						75	1.9
						76	1.2
						77	2.3
						78	3.7
						79	1.5
						80	0.9
						81	0.2
						82	0.8
						83	0.5
						84	0.4
						85	0.2
						Stations 86 - 100	Blank

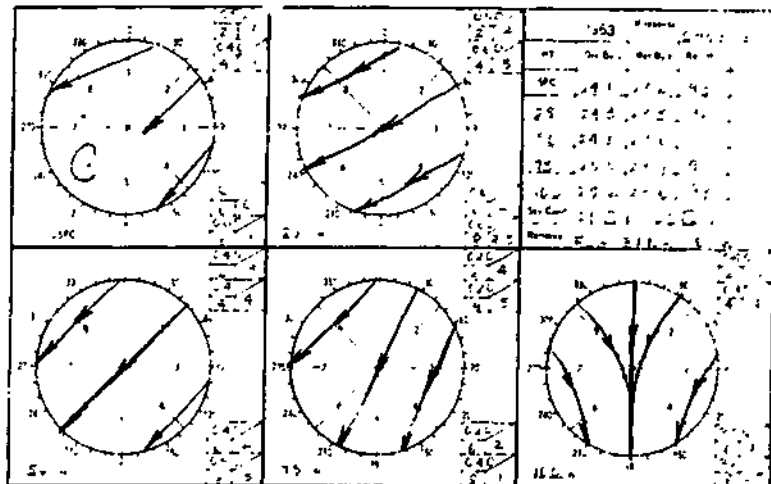
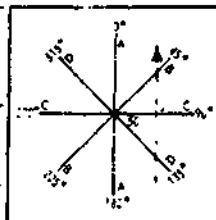
 Total 18.8



MASS DEPOSITMATERIAL: PurpleFLOW RATE: 56 CPMDATE: 16 July 1963SYSTEM: HIDALFLIGHT #: 6AIRSPEED: 55 KnotsSAMPLE LINE: CALTITUDE: 100 FeetTIME OF RELEASE: 0455 HoursAIRCRAFT COURSE: 360 DegreesDURATION: 13 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	C.P.A.	STATION	G.P.A.
Stations 1 - 19	Blank	20	0.2				
		21	1.6				
		22	1.6				
		23	1.9				
		24	1.3				
		25	1.3				
		26	1.3				
		27	2.6				
		28	2.2				
		29	0.8				
		30	0.3				
		31	0.3				
		32	0.7				
		33	0.4				
		34	0.4				
		Stations 35 - 100	Blank				

Total 16.9



Date: 26 July, 1967
 Flight: 8
 Sample Line: C
 Type Aircraft: Inland 31
 Material Sprayed: Purple, 1
 Altitude: 100 feet
 Altitude: 55 ft
 Altitude: 100 feet
 Time of Release: 155 H 00

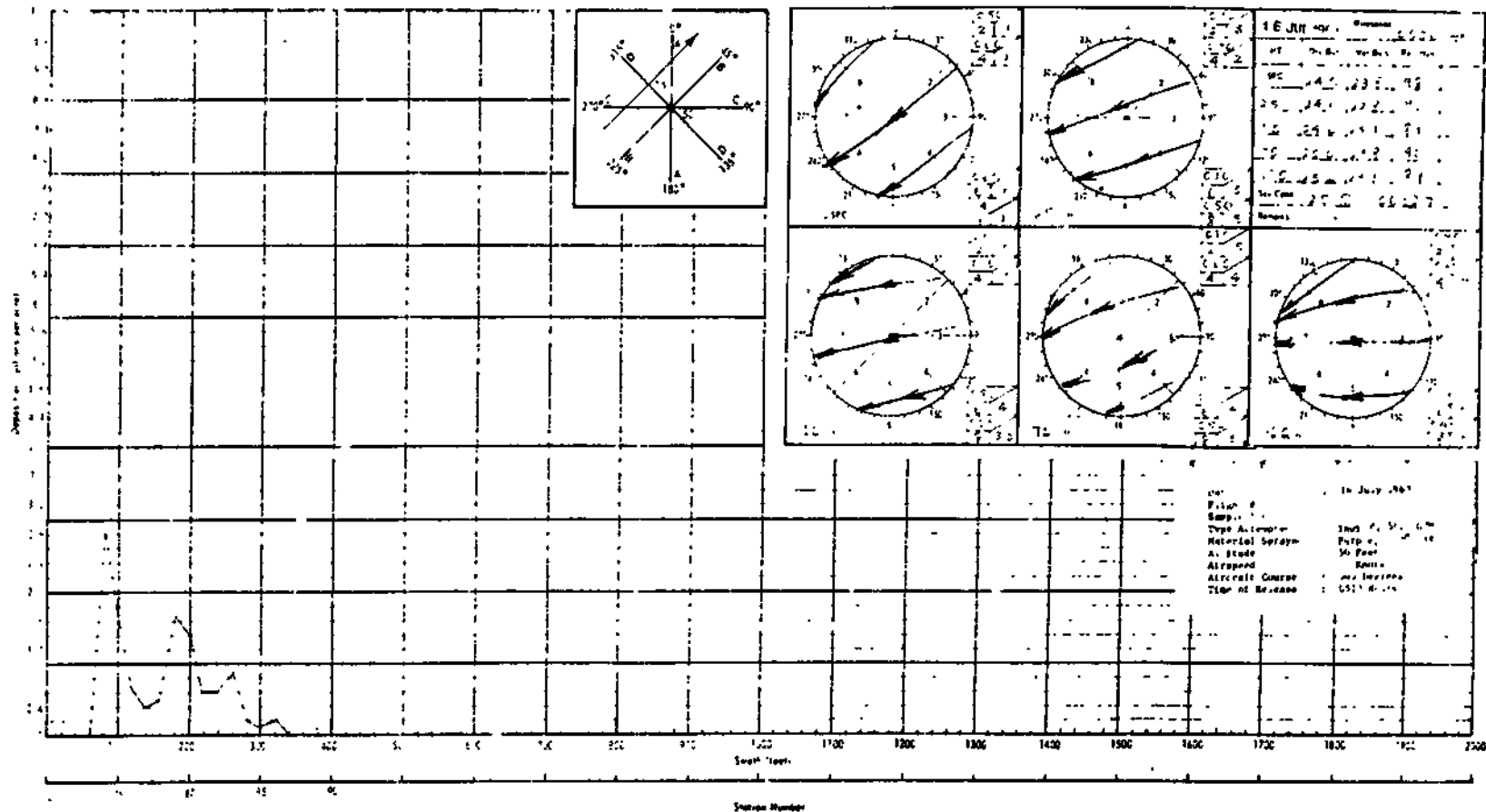
Screen Foots

Station Number

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 56 GPMDATE: 16 July 1963SYSTEM: HIDALFLIGHT #: 7AIRSPEED: 55 KnotsSAMPLE LINE: DAIRCRAFT COURSE: 045 DegreesTIME OF RELEASE: 0513 HoursALTITUDE: 50 FeetDURATION: 16 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 73	Blank					74	2.8
						75	1.7
						76	0.7
						77	0.4
						78	0.5
						79	1.7
						80	1.4
						81	0.6
						82	0.6
						83	0.9
						84	0.2
						85	0.1
						86	0.2
						Stations 87 - 100	
						Blank	

Total 11.8



MASS MEDIAN DIAMETER

DATE: 16 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 8PAPER: Kromekote, whiteSAMPLE LINE: DMATERIAL: PurpleFLOW RATE: 56 GPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
27	2	6100			
26	1	6000			
27	3	5900			
23	5	5100*			
27	4	5000	50	1A	100(smallest)
27	7	4900			
27	8	4800			
25	6	4700			
27	9	4600			
28	11	4400			
23	10	4300			

$$MMD = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(5100)}{2.2} = 363.7 \text{ Microns}$$

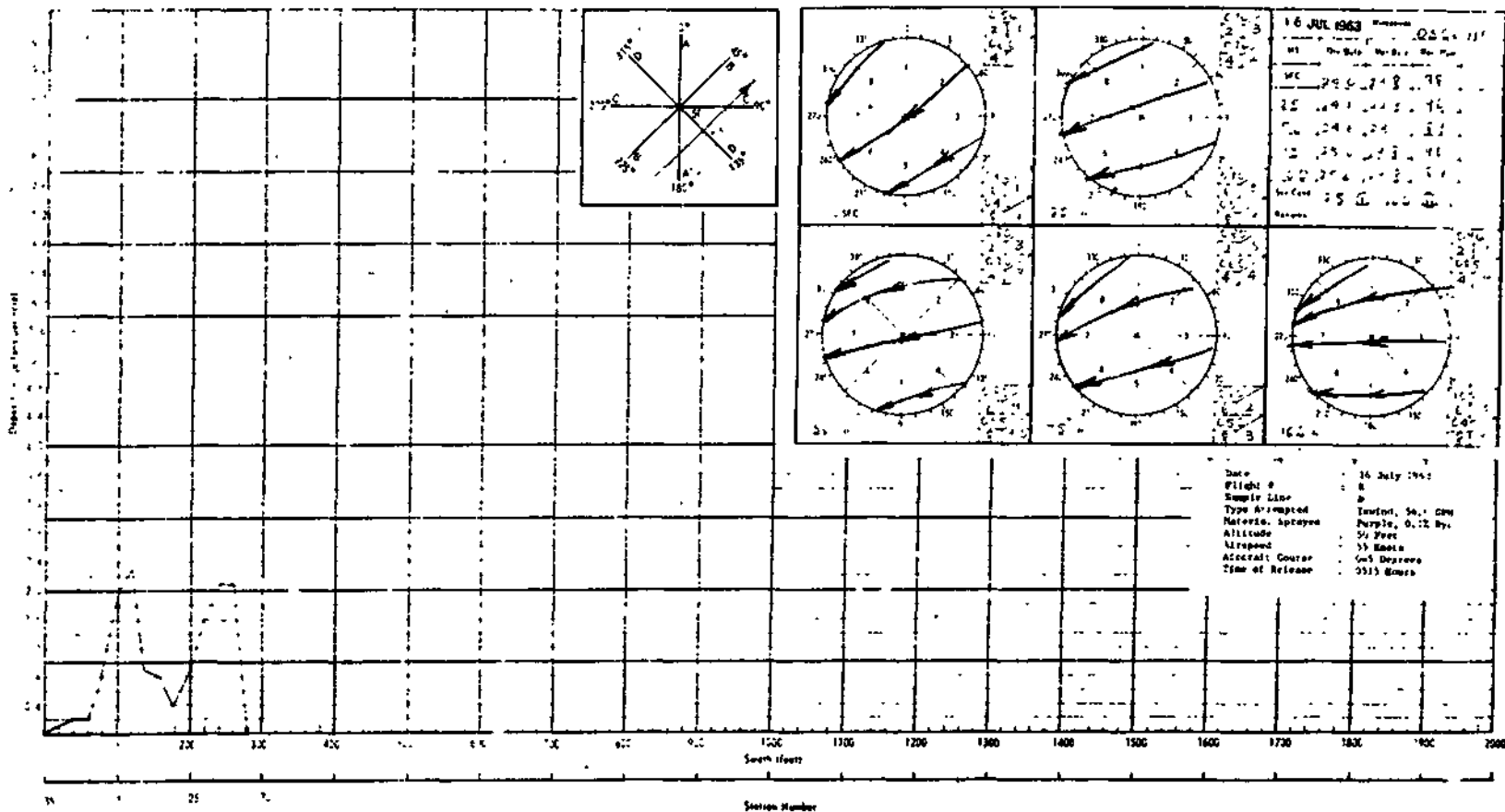
$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(6100) = 943.4 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 56 GPMDATE: 16 July 1963SYSTEM: HIDALFLIGHT #: 8AIRSPEED: 55 KnotsSAMPLE LINE: DALTITUDE: 50 FeetTIME OF RELEASE: 0513 HoursAIRCRAFT COURSE: 045 DegreesDURATION: 12 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 21	Blank	22	2.1				
		23	2.1				
		24	1.6				
		25	0.9				
		26	0.4				
		27	0.8				
		28	0.9				
		29	2.3				
		30	2.0				
		31	0.8				
		32	0.2				
		33	0.2				
		34	0.1				
		Stations 35 - 100	Blank				

 % Recovery - 55.7
Total 14.4



MASS MEDIAN DIAMETER

DATE: 16 July 1963CONVERSION FACTOR: 2.2FLIGHT #: 9PAPER: Kromekote, whiteSAMPLE LINE: AMATERIAL: PurpleFLOW RATE: 56 GPMSYSTEM: UHAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
78	1	5200			
77	2	5000			
78	3	4400*			
78	9	4300			
79	5	4200	99	1A	100(smallest)
79	4	4100			
77	6	4000			
78	10	3900			
77	7	3700			
77	8	3600			

$$MMD = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(4400)}{2.2} = 318.2 \text{ Microns}$$

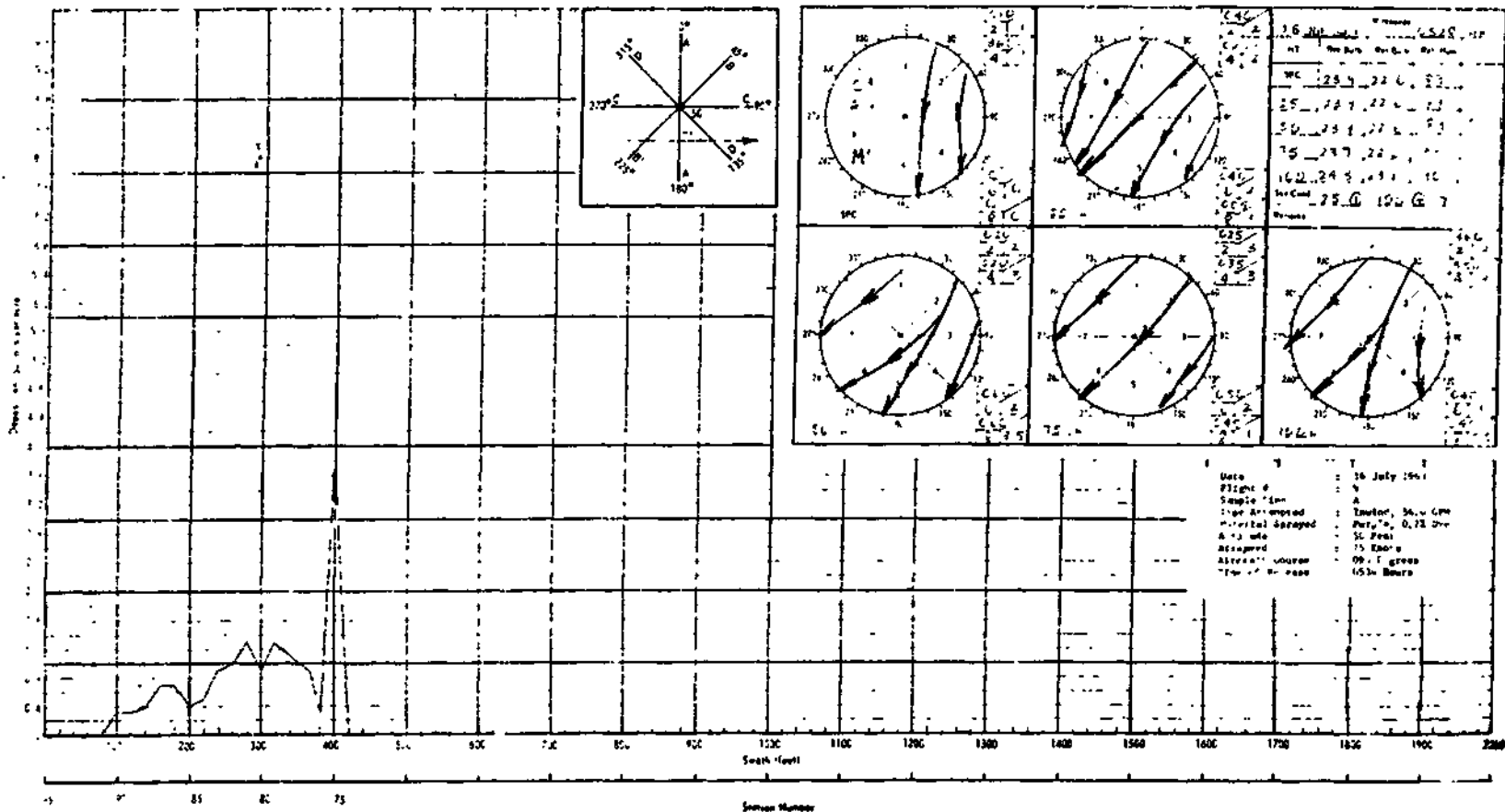
$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(5200) = 814.6 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: PurpleFLOW RATE 50 CFMDATE: 16 July 1963SYSTEM: MODALFLIGHT #: 9AIRSPEED: 75 KNOTSSAMPLE LINE: AALTITUDE: 50 FeetTIME OF RELEASE: 0534 HoursAIRCRAFT COURSE: 090 DegreesDURATION: 09 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 74	Blank					75	5.7
						76	0.3
						77	0.4
						78	1.1
						79	1.3
						80	0.1
						81	1.3
						82	1.0
						83	0.9
						84	0.3
						85	0.3
						86	0.3
						87	0.3
						88	0.4
						89	0.3
						90	0.3
						Stations 91 - 100	Blank

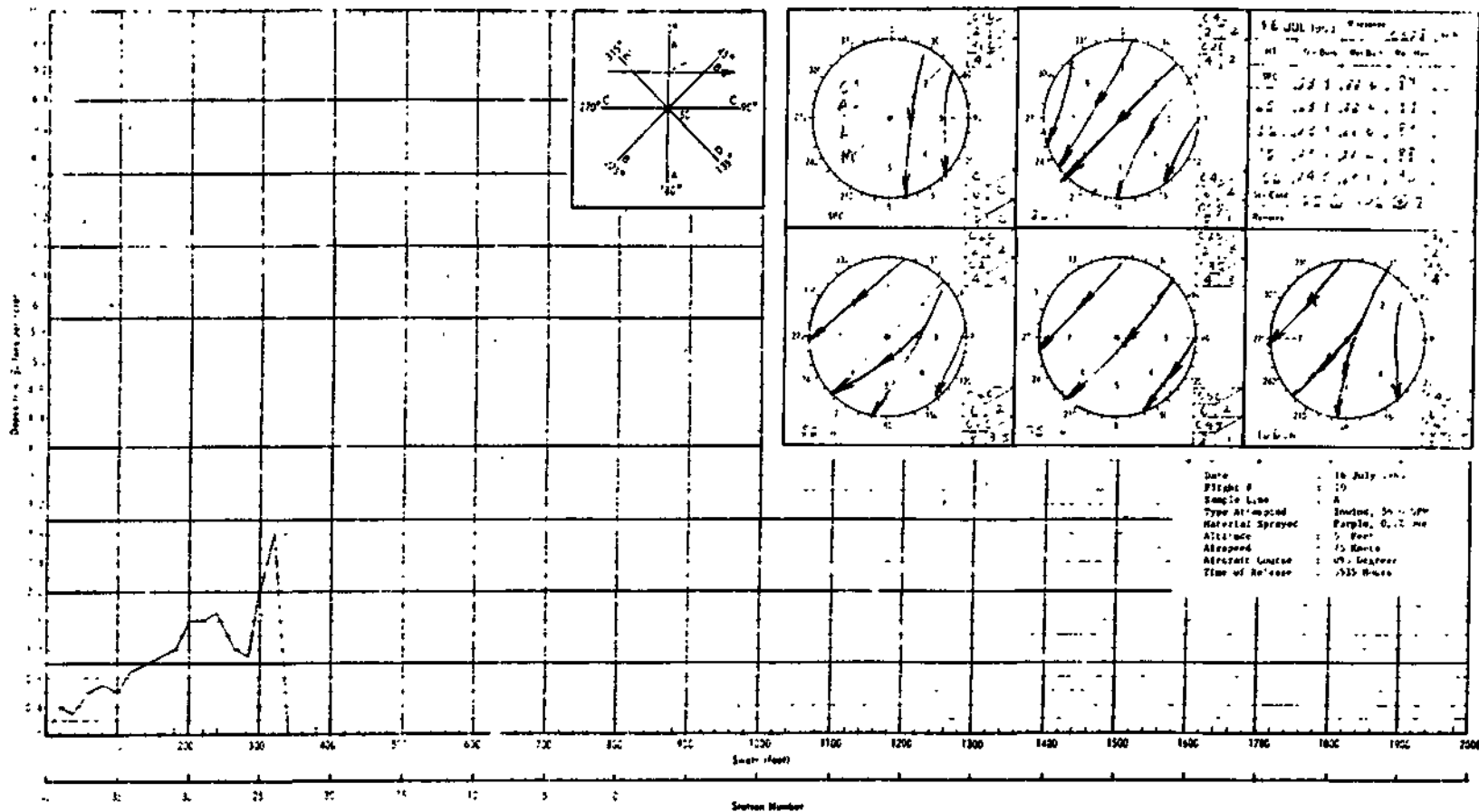
Total: 14.7



MASS DEPOSITMATERIAL: PurpleFLOW RATE: 56 GPMDATE: 16 July 1963SYSTEM: HIDALFLIGHT #: 10AIRSPEED: 75 KnotsSAMPLE LINE: AALTITUDE: 50 FeetTIME OF RELEASE: 0535 HoursAIRCRAFT COURSE: 090 DegreesDURATION: 13 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 23	Blank	24	2.8				
		25	2.0				
		26	1.1				
		27	1.2				
		28	1.7				
		29	1.6				
		30	1.6				
		31	1.2				
		32	1.1				
		33	1.0				
		34	0.9				
		35	0.6				
		36	0.7				
		37	0.6				
		38	0.3				
		39	0.4				
		Stations 40 - 100	Blank				

Total 18.8



MASS MEDIAN DIAMETER

DATE: 16 July 1963CONVERSION FACTOR 2.2FLIGHT #: 11PAPER: Kromekote, whiteSAMPLE LINE: DMATERIAL: PurpleFLOW RATE: 56 CPMSYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
74	1	5000			
75	2	4600*			
73	8	4400			
74	4	4300			
74	3	4100	89	1A	100 (smallest)
74	5	4000			
74	6	3900			
75	7	3800			
75	9	3700			
75	10	3500			

$$MMD = \frac{70.44 + 0.1431 (\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431 (4600)}{2.2} = 331.2 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431 (\text{Max Spot}) = 70.44 + 0.1431 (5000) = 781.9 \text{ Microns}$$

$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 56 GPMDATE: 16 July 1963SYSTEM: HIDALFLIGHT #: 11AIRSPEED: 75 KnotsSAMPLE LINE: DALTITUDE: 100 FeetTIME OF RELEASE: 0555 HoursAIRCRAFT COURSE: 045 DegreesDURATION: 12 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 70 Blank							

71 1.1

72 2.0

73 1.5

74 0.7

75 0.4

76 0.4

77 1.4

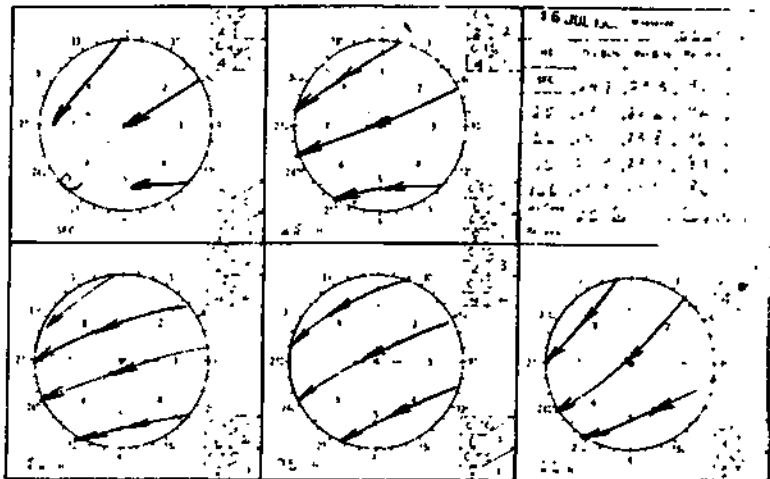
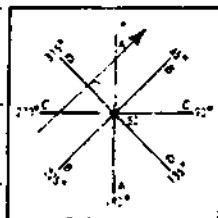
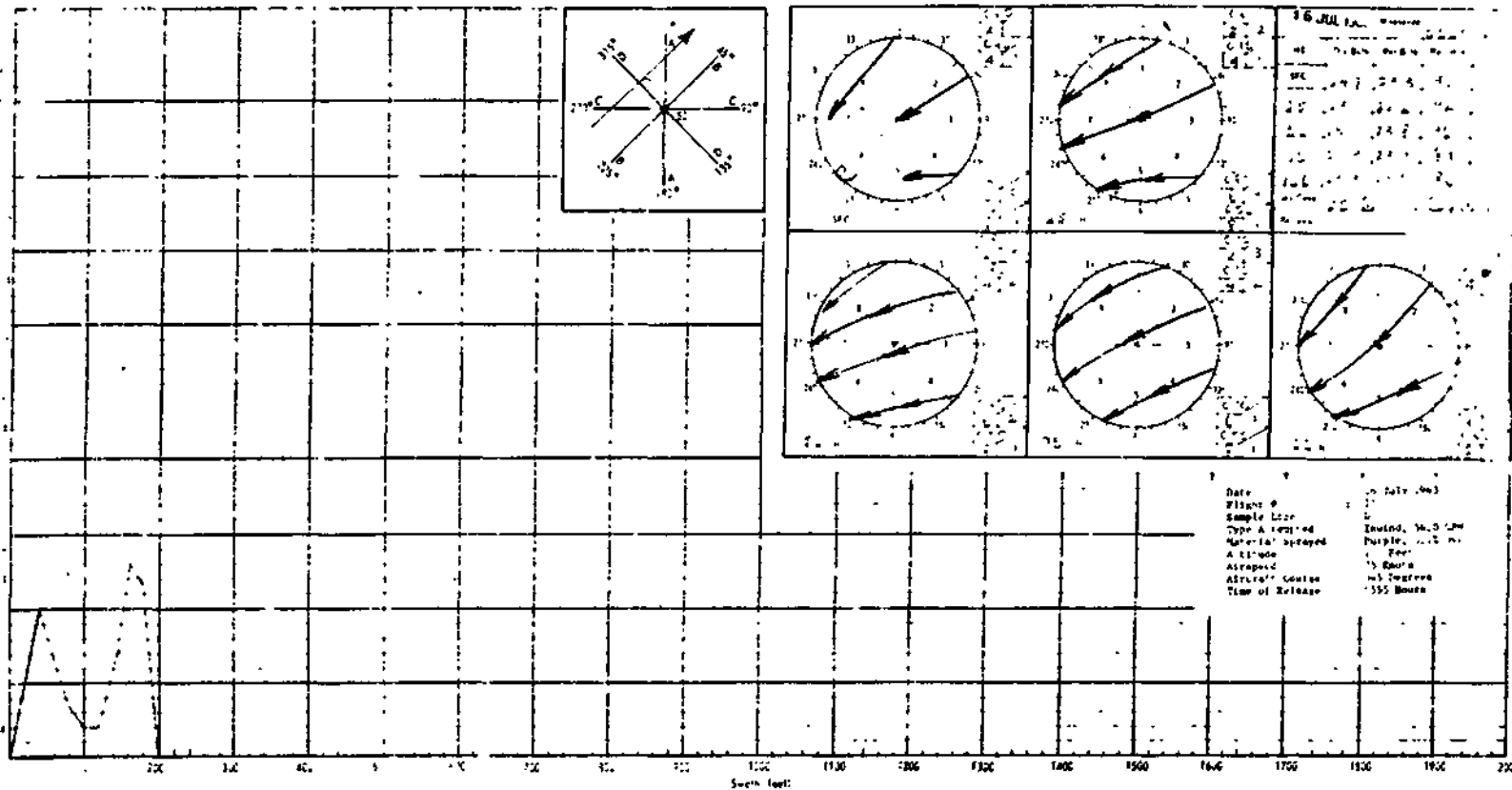
78 2.6

79 2.3

Stations 80 - 100 Blank

% Recovery - 77.2Total 12.4

Depth: 1000 fms



Date: July 1963
 Flight: 9
 Sample Size:
 Type: A-10
 Material: Strapped
 A-10
 Atropid
 Altitude: 10000
 Time of Release: 1555 Hours

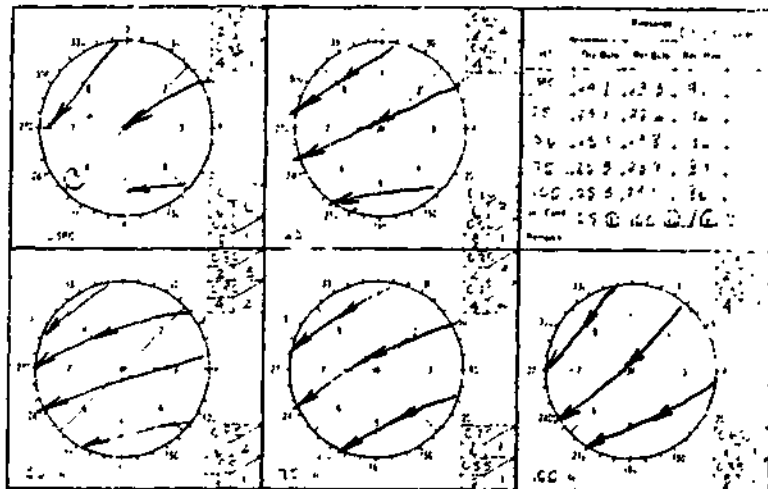
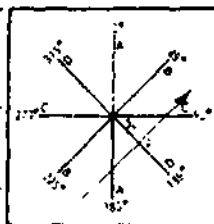
Swath feet

Station Number

MASS DEPOSITMATERIAL: PurpleFLOW RATE: 56 GPMDATE: 16 July 1963SYSTEM: HIDALFLIGHT #: 12AIRSPEED: 75 KnotsSAMPLE LINE: DALTITUDE: 100 FeetTIME OF RELEASE: 0558 HoursAIRCRAFT COURSE: 045 DegreesDURATION: 12 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1- 19	Blank	20	0.0				
		21	2.2				
		22	1.5				
		23	1.2				
		24	1.5				
		25	0.8				
		26	0.6				
		27	2.0				
		28	2.4				
		29	2.7				
		30	0.1				
		31	0.1				
		Stations 32 - 100	Blank				

 Total 15.1



Date: 16 July 54
 Flight #: 22
 Sample size: 5
 Type Aircraft: C-47
 Release: 1000 ft
 Altitude: 1000 ft
 Altitude: 1000 ft
 Aircraft Group: 1000 ft
 Time of Release: 1000 ft

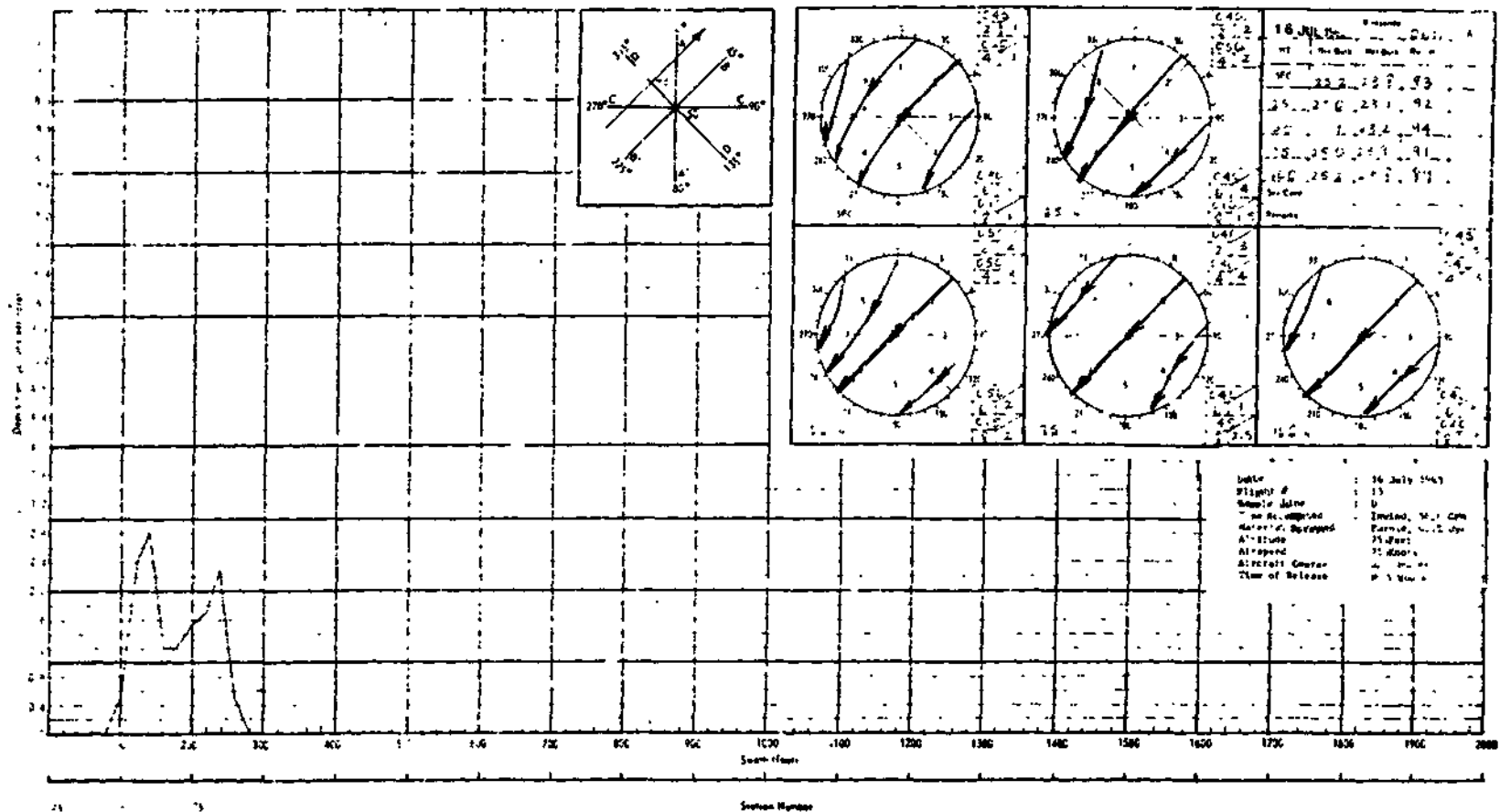
Source: Hqs

Source: Hqs

MASS DEPOSITIONMATERIAL: PurpleFLOW RATE: 56 CFMDATE: 16 July 1963SYSTEM: HIDALFLIGHT #: 13AIRSPEED: 75 KnotsSAMPLE LINE: DALTITUDE: 75 FeetTIME OF RELEASE: 0615 HoursAIRCRAFT COURSE: 045 DegreesDURATION: 8 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 71	Blank			72	0.5		
				73	2.3		
				74	1.7		
				75	1.3		
				76	1.2		
				77	1.2		
				78	2.3		
				79	2.4		
				80	0.5		
				Stations 81 - 100			
							Blank

 % Recovery - 87.7
Total 14.1



MASS DEPOSITMATERIAL: PurpleFLOW RATE: 56 CFMDATE: 16 July 1963SYSTEM: HIDALFLIGHT #: 14AIRSPEED: 75 KntsSAMPLE LINE: DALTITUDE: 75 FeetTIME OF RELEASE: 0617 HoursAIRCRAFT COURSE: 045 DegreesDURATION: 9 Sec.

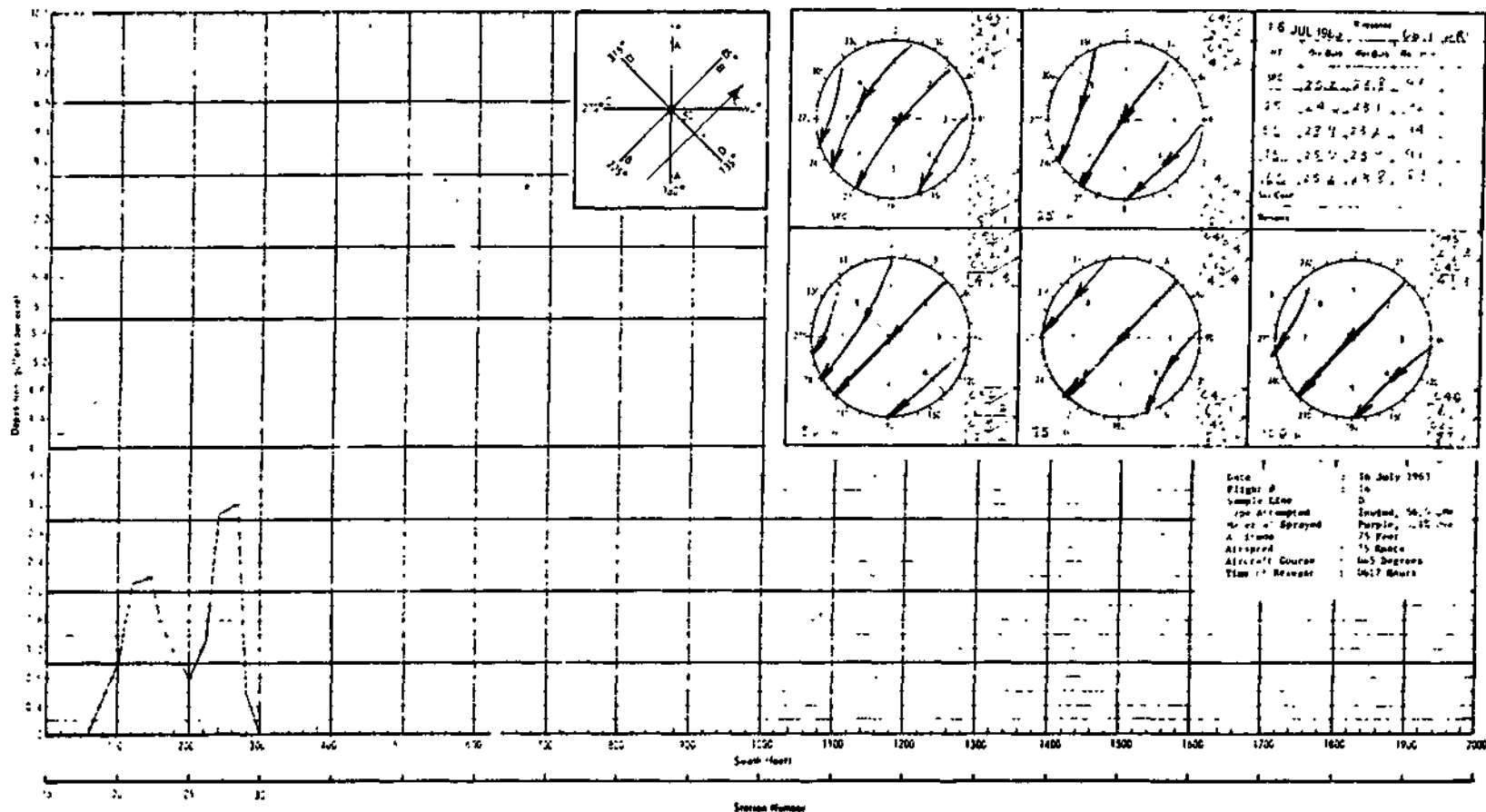
STATION G.P.A. STATION G.P.A. STATION C.P.A. STATION G.P.A.
 Stations 1 - 18 Blank

19 0.5
 20 1.0
 21 2.1
 22 2.2
 23 1.6
 24 1.1
 25 0.8
 26 1.3
 27 3.1
 28 3.2
 29 0.6

Stations 30 - 100 Blank

Z Recovery - 108.9

Total 17.5



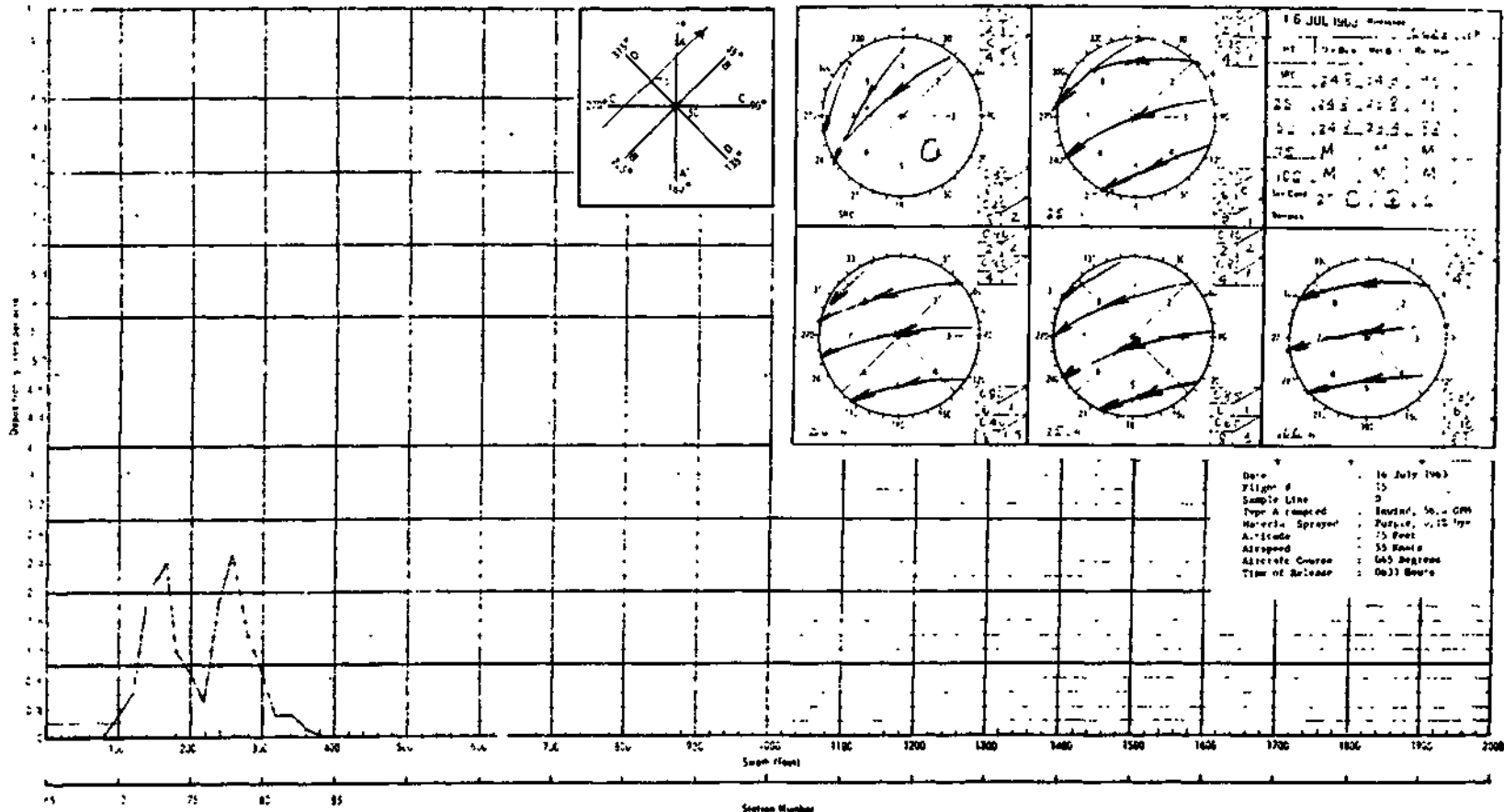
Mass Deposition

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: FED-1
 FLIGHT #: 15 AIRSPEED: 55 KNOTS
 SAMPLE LINE: D ALTITUDE: 75 FEET
 TIME OF RELEASE: 0633 HOURS AIRCRAFT COURSE: 045 DEGREES
 DURATION: 8 SEC.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 69	Blank			70	0.3		
				71	0.6		
				72	2.0		
				73	2.4		
				74	1.2		
				75	0.9		
				76	0.5		
				77	1.9		
				78	2.3		
				79	1.4		
				80	0.9		
				81	0.3		
				82	0.3		
				83	0.1		
				Stations 84	0.0		
					Blank		

7 Recovery - 69.8

Total 11.5



BASE - POS. 1

MATERIAL: Purple FLOW RATE: .6 GPM
 DATE: 10 July 1963 SYSTEM: HIDAL
 FLIGHT #: 16 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0635 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 11 Sec.

STATION	C.P.A.	STATION	G.P.	STATION	C.P.A.	STATION	G.P.A.
Stations 1 - 17	Blank	18	0.2				
		19	1.3				
		20	1.7				
		21	1.4				
		22	1.5				
		23	1.3				
		24	0.8				
		25	0.7				
		26	1.4				
		27	1.4				
		28	2.1				
		29	3.3				
		30	0.5				
		31	0.2				
		32	0.2				
		33	0.0				
		Stations 34 - 100 Blank					

% Recovery - 81.2

Total 17.2

