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SUPPLEMENT II

TO

TECHNICAL REPORT 46

BASIC DATA

FROM H-34/HIDAL CALIBRATION TRIALS
1963

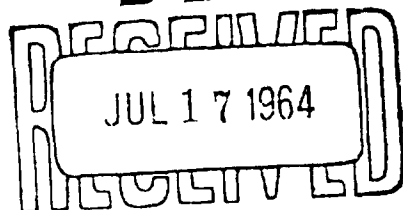
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Fort Detrick, Frederick, Maryland

SUPPLEMENT II
to
TECHNICAL REPORT 46

BASIC DATA FROM
H-34/HIDAL CALIBRATION TRIALS
1963

This research was supported by the
Advanced Research Projects Agency
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Project ARPA Order 256

June 1964

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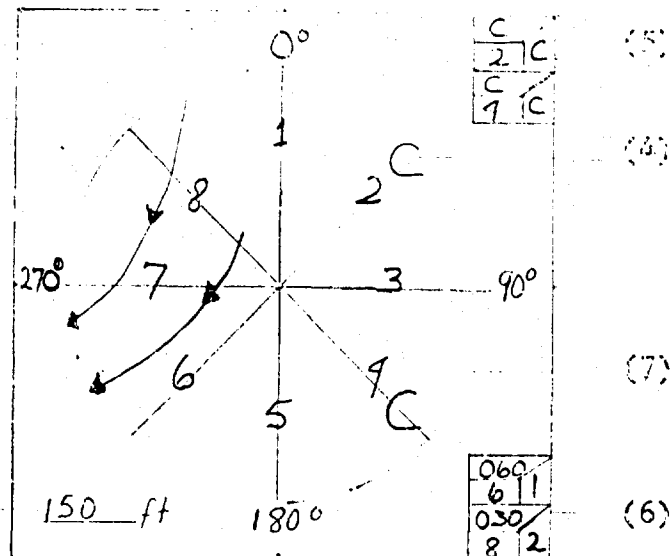
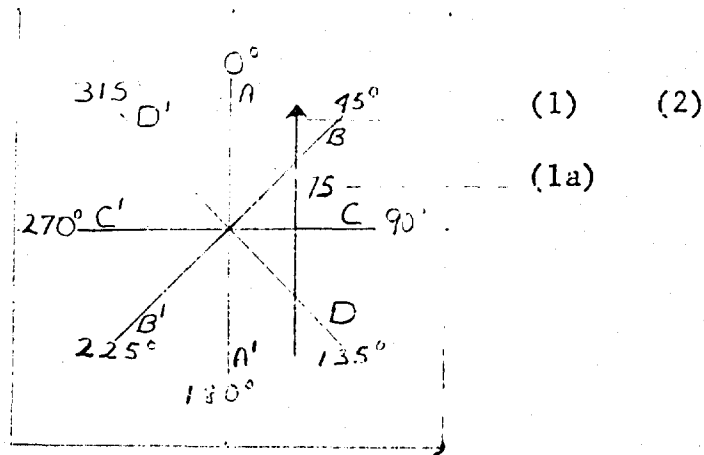
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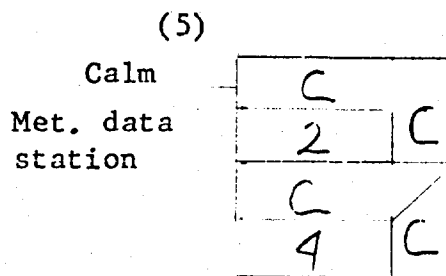
INTRODUCTION

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

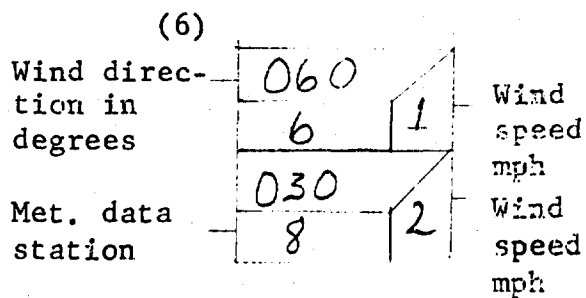


(1) and (1a) Aircraft course
75 — Station No. aircraft crossed

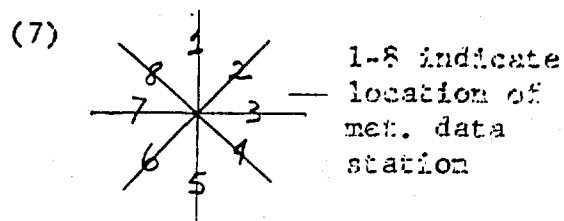


(2) Wind current

(3) 150ft — Altitude in feet, met. data obtained



(4) C — Calm



Sky Conditions

Example: 25 ① 100 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
 / - Visibility in miles

Remarks

GPH - 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/HYDAL GROUND FLOW & FLIGHT DATA

DATE CALIBRATED:	<u>26 June 1963</u>	DATE TEST FLOWN:	<u>27 June 1963</u>
LIQUID SPRAYED:	<u>Fuel Oil</u>	TOTAL NOZZLES OPEN:	<u>60</u>
NOZZLE TYPE:	<u>8010</u>	LIQUID TEMP:	<u>35° F.</u>
DURATION OF SPRAY:	<u>30</u> Sec.	PUMP PRESSURE:	<u>----</u> PSI
TOTAL AMOUNT SPRAYED:	<u>28</u> Gal.	BOOM PRESSURE:	<u>32</u> PSI
		FLOW RATE CALIBRATED:	<u>54</u> GPM

OPERATIONAL DATA DURING FLIGHT

Run 1 - Shakedown flight
Run 2 - Pin sheared in pump

CLASS MEDIAN DIAMETER

DATE: 27 June 1963 SPREAD FACTOR: 6.0
 FLIGHT #: 1 CONVERSION FACTOR: 2.2
 SAMPLE LINE: B PAPER: Kromekote, white
 FLOW RATE: ---- MATERIAL: Fuel Oil
 SYSTEM: 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

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

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

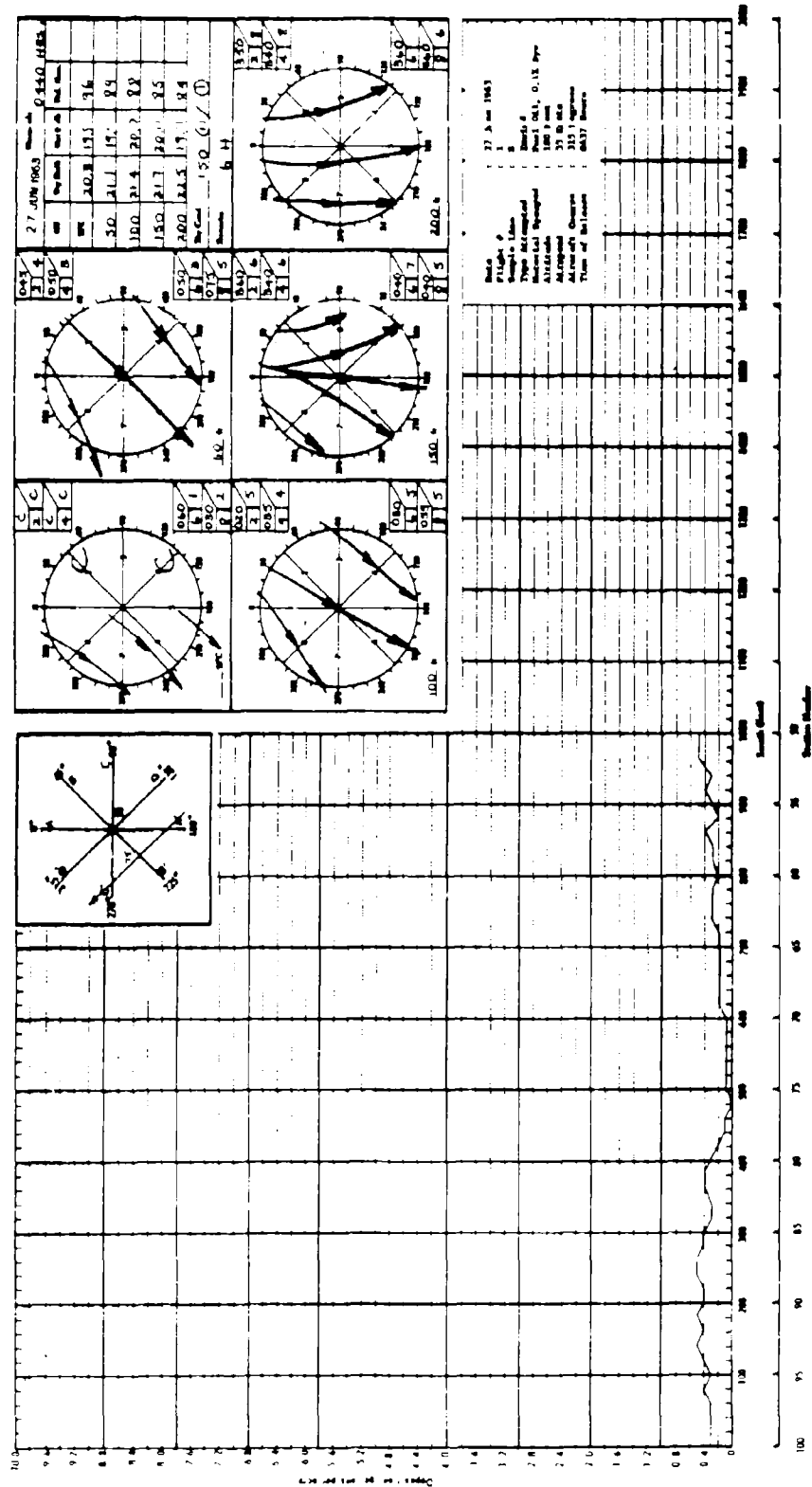
$$\text{Min. Sph. Dia.} = \frac{75}{6.0} = 12.5 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Fuel Oil FLOW RATE: ----
 DATE: 27 June 1963 SYSTEM: HIDAL
 FLIGHT #: 1 AIRSPEED: 55 Knots
 SAMPLE LINE: B ALTITUDE: 100 Feet
 TIME OF RELEASE: 0437 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 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	0.0
				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	0.4
				57	0.4	82	0.4
				58	0.3	83	0.3
				59	0.3	84	0.3
				60	0.2	85	0.4
				61	0.3	86	0.4
				62	0.3	87	0.5
				63	0.3	88	0.5
				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	0.5
				69	0.2	94	0.4
				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: Kromekote, 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	50		100

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

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

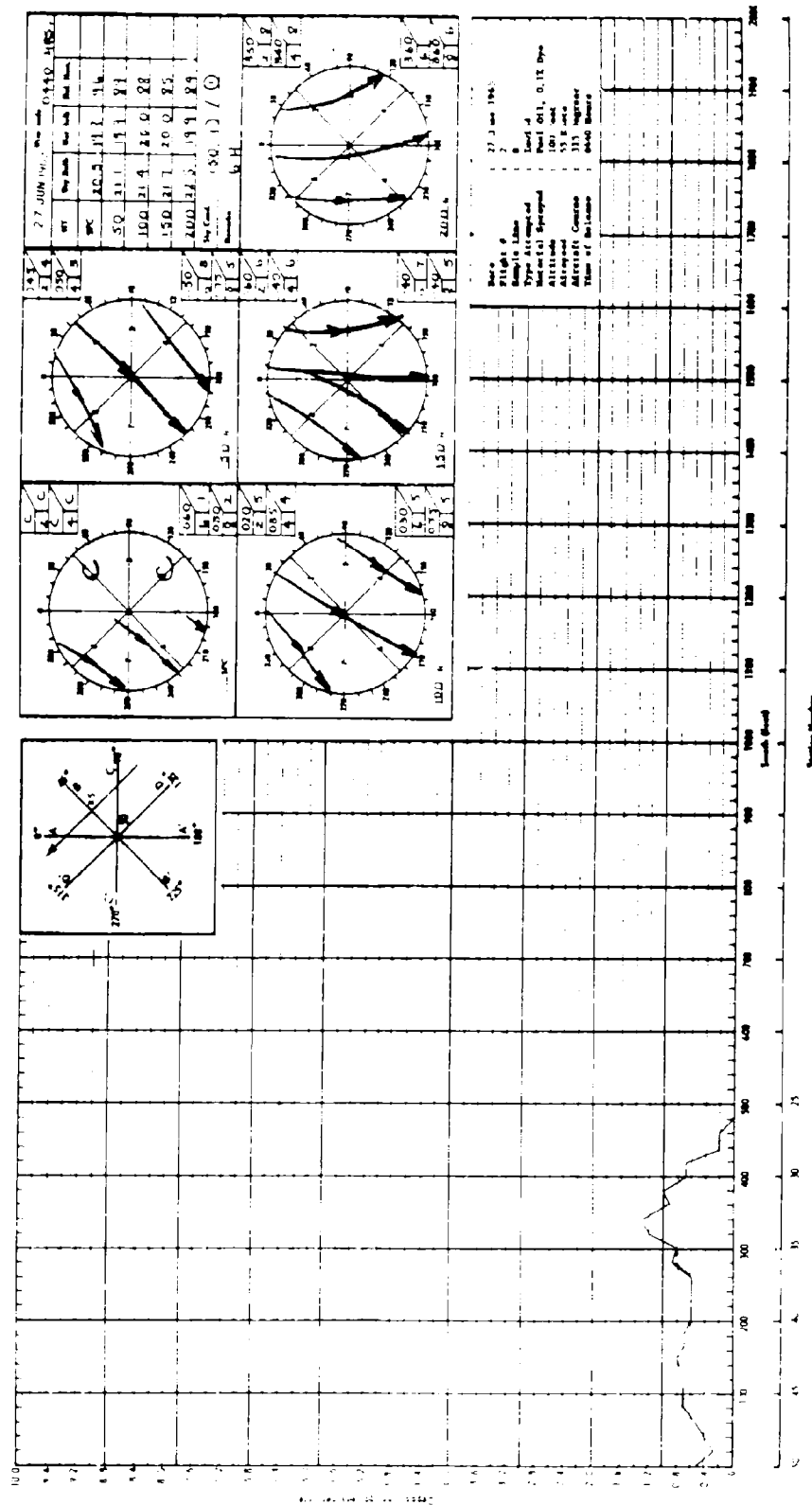
$$\text{Min. Sph. Dia.} = \frac{100}{6.0} = 16.7 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Fuel Oil : FLOW RATE: ----
 DATE: 27 June 1963 SYSTEM: HIDAL
 FLIGHT #: 2 AIRSPEED: 55 Knots
 SAMPLE LINE: B ALTITUDE: 100 Feet
 TIME OF RELEASE: 0440 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 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



H-34/NIDAL 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> Sec.	PUMP PRESSURE: <u>40</u> PSI
TOTAL AMOUNT SPRAYED: <u>30</u> Gal.	BOOM PRESSURE: <u>36</u> PSI
	FLOW RATE CALIBRATED: <u>60</u> GPM

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> Sec.	PUMP PRESSURE: <u>16</u> PSI
TOTAL AMOUNT SPRAYED: <u>40</u> Gal.	BOOM PRESSURE: <u>14</u> PSI
	FLOW RATE CALIBRATED: <u>80</u> GPM

OPERATIONAL DATA DURING FLIGHT

Above information same for Runs 7 - 12.

MASS MEDIAN DIAMETER

DATE: 2 July, 1960 CONVERSION FACTOR: 2.2
 FLIGHT NO.: 1 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 60 GPM SYSTEM: HIDAL

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			

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

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420 (4400)}{6.355} = \frac{4400}{6.355} = 692.4 \text{ Microns}$$

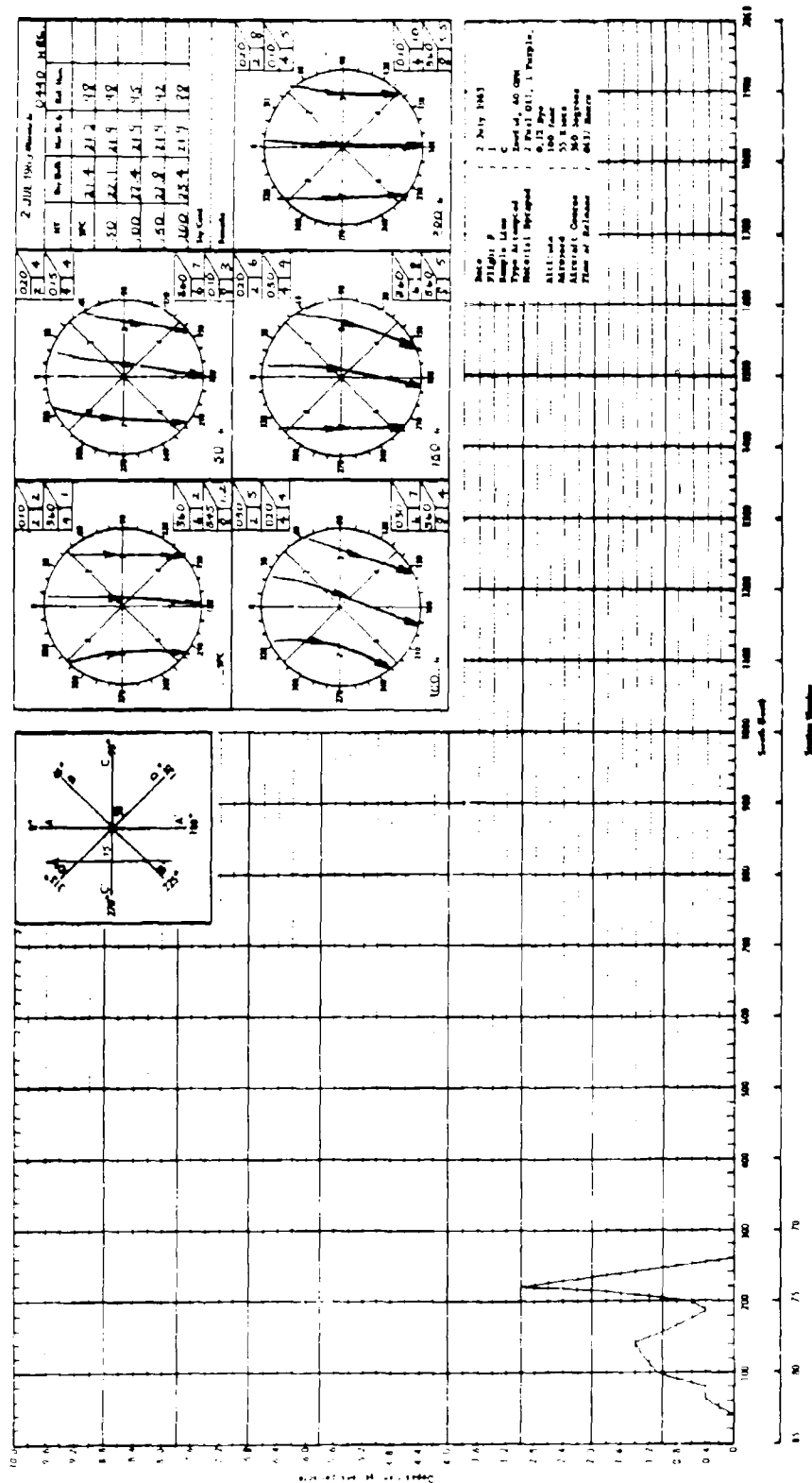
$$\text{Min. Sph. Dia.} = 48 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 60 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 1 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0437 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 2 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 60 GPM SYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
30	3	5000			
30	4	4700			
28	1	4400*			
29	2	4300			
28	8	4200			
30	5	4100			
31	6	4000	38	1	100 (smallest)
25	7	3900			
25	9	3800			
28	10	3700			

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

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

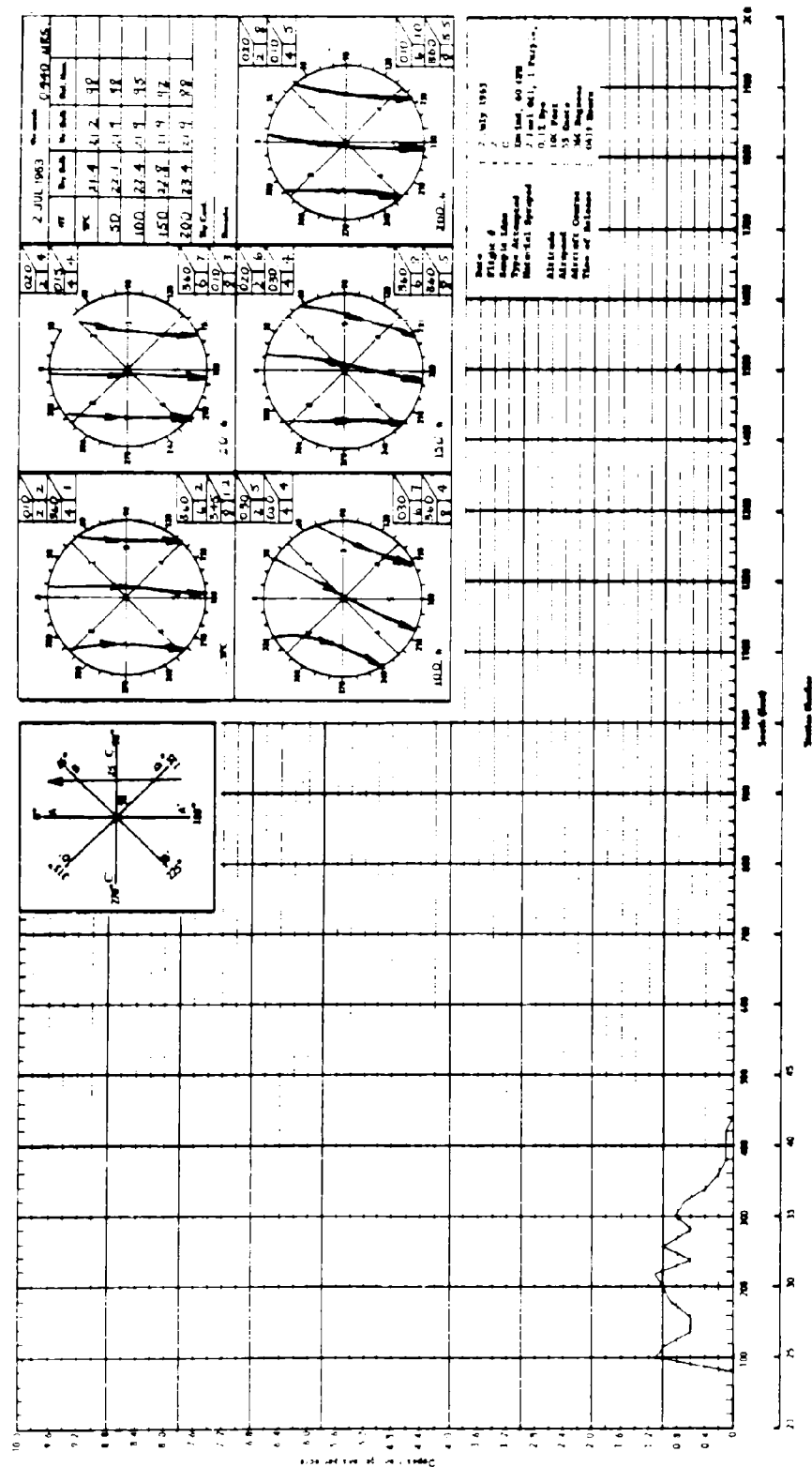
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 60 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 2 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0439 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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			

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

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

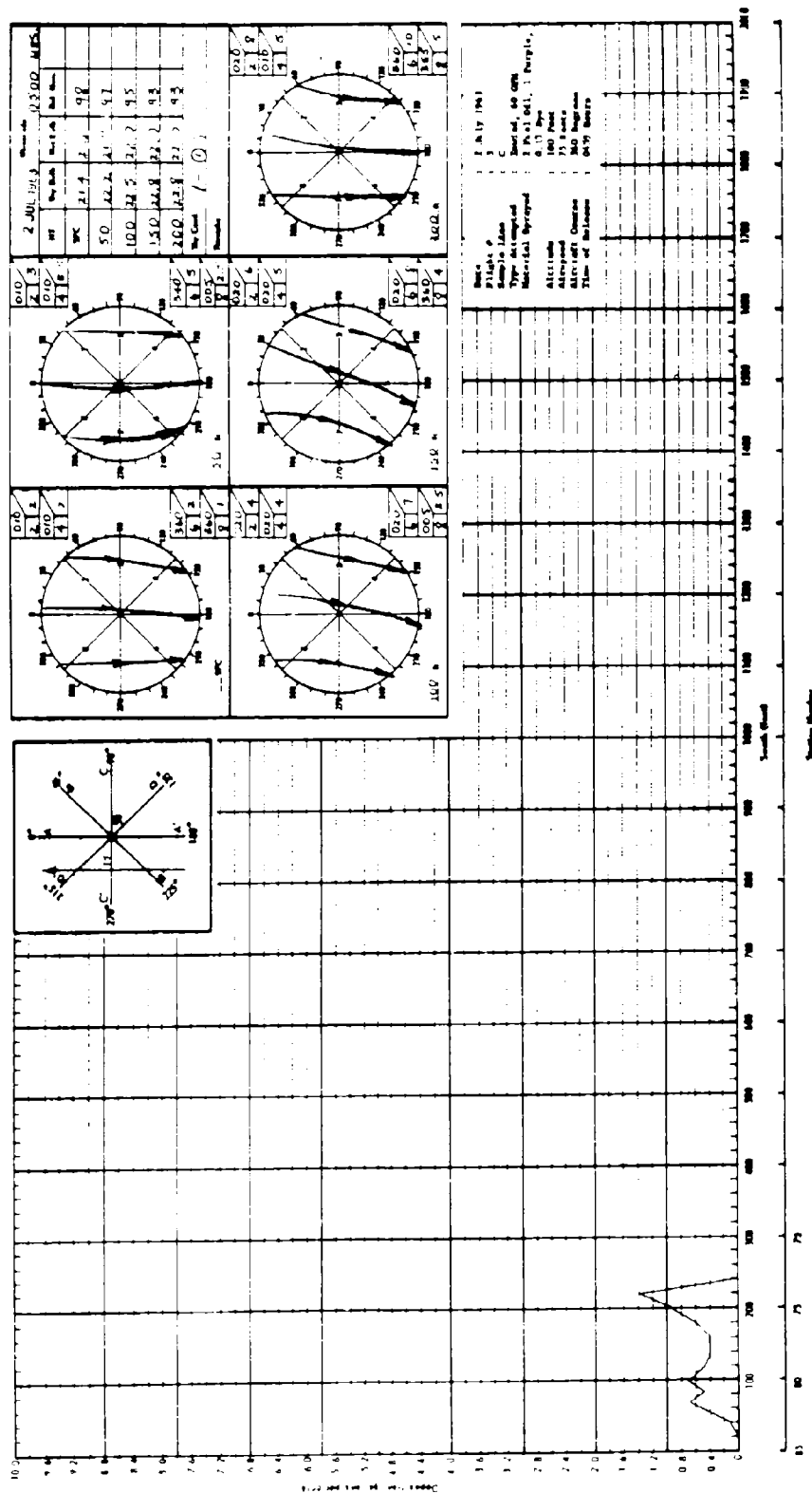
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 60 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 3 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0459 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 4 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 60 GPM SYSTEM: 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			

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

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

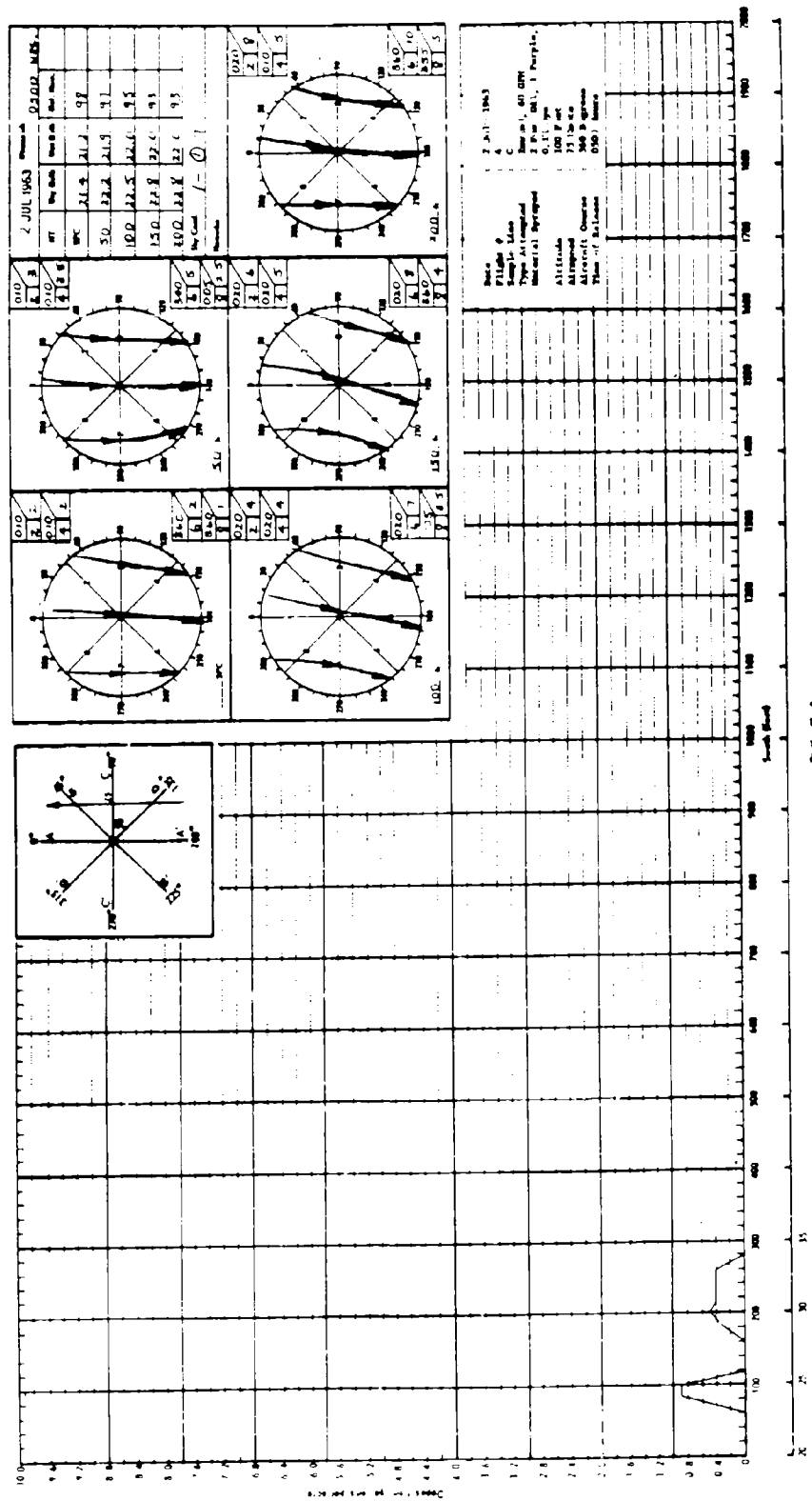
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 60 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 4 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0500 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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 3.6



MASS MEDIAN DIAMETER

DATE: 2 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 5 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 60 GPM SYSTEM: HIDAL

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			

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

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

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

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 60 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 5 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0518 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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	0.2
						79	1.1
						80	1.0
						81	0.8
						82	1.3
						83	0.6
						84	0.5
						85	0.0
						86	0.0
						Stations 87 - 100	
						Blank	

Total 12.0

MASS MEDIAN DIAMETER

DATE: 2 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 6 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 60 GPM SYSTEM: 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			

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

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

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

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 60 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 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 DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 60 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 7 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: HIDAL

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			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{spot D Max})}{\text{Con. Factor} = 2.2} = \frac{5100}{6.355 \times 2.2} = 359.9 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = \frac{67.72 + 0.1420(5100)}{6.430} = \frac{5100}{6.430} = 791.8 \text{ Microns}$$

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

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 7 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0539 Hour 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 - 71	Blank					72	0.3
						73	3.5
						74	1.5
						75	0.9
						76	0.5
						77	1.4
						78	2.3
						79	2.2
						80	1.1
						81	0.5
						82	0.6
						83	0.5
						84	0.2
						Stations 85 - 100	Blank

Total 14.5

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			

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

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

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

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 8 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0540 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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 10.2

MASS MEDIAN DIAMETER

DATE: 2 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 9 PAPER: Kromekote, white
 SAMPLE LINE: D MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: 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			

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

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

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

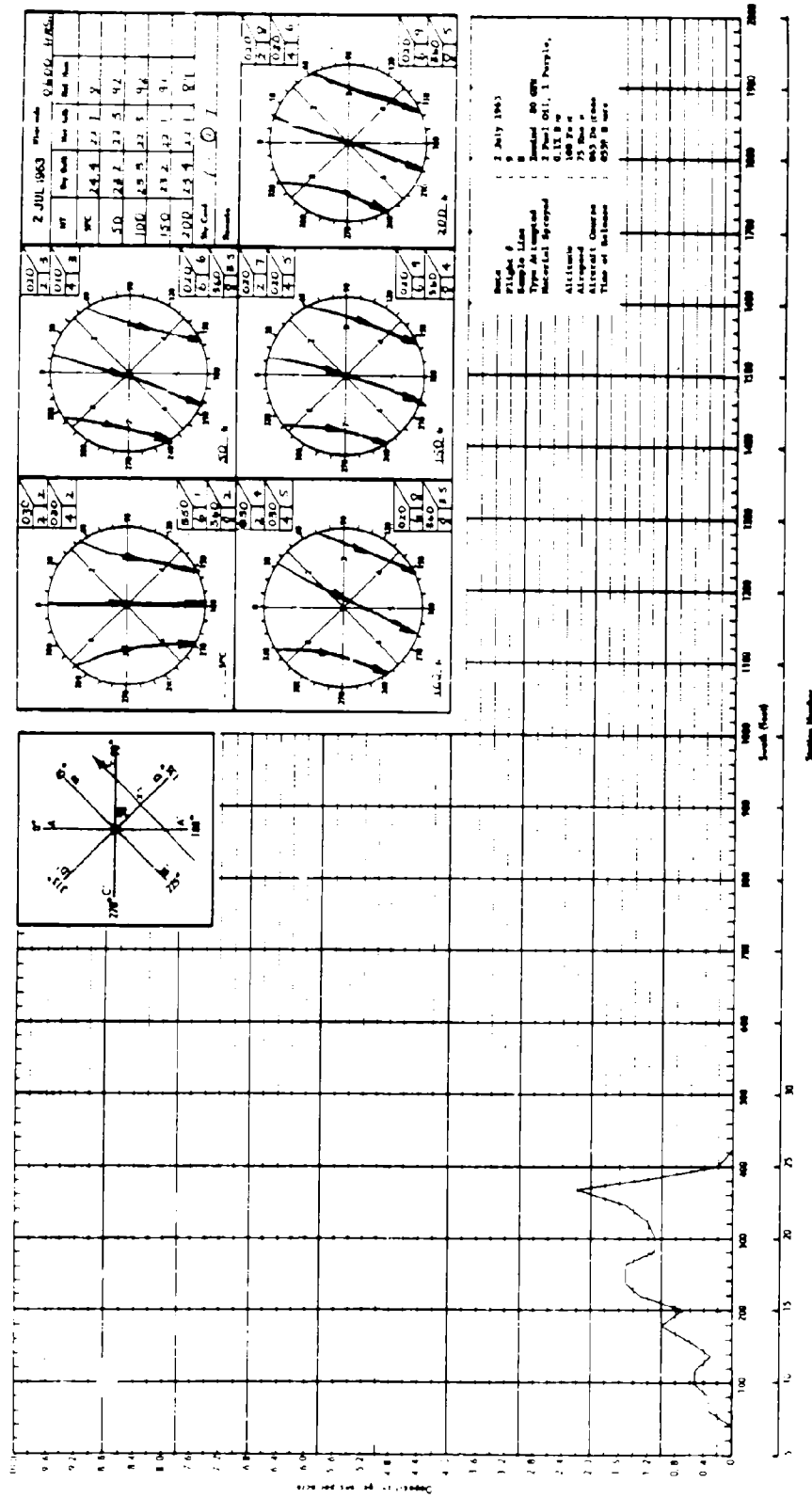
MASS DEPOSIT

MATERIAL: <u>2 Fuel Oil, 1 Purple</u>	FLOW RATE: <u>80</u> <u>GPM</u>
DATE: <u>2 July 1963</u>	SYSTEM: <u>HIDAL</u>
FLIGHT #: <u>9</u>	AIRSPEED: <u>75</u> <u>Knots</u>
SAMPLE LINE: <u>D</u>	ALTITUDE: <u>100</u> <u>Feet</u>
TIME OF RELEASE: <u>0559</u> <u>Hours</u>	AIRCRAFT COURSE: <u>045</u> <u>Degrees</u>
DURATION: <u>08</u> <u>Secs.</u>	

<u>STATION G.P.A.</u>	<u>STATION G.P.A.</u>	<u>STATION G.P.A.</u>	<u>STATION G.P.A.</u>
<u>Stations 1 - 7 Blank</u>			

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



MASS MEDIAN DIAMETER

DATE: 2 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 10 PAPER: Kromekote, white
 SAMPLE LINE: D MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: 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			

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

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

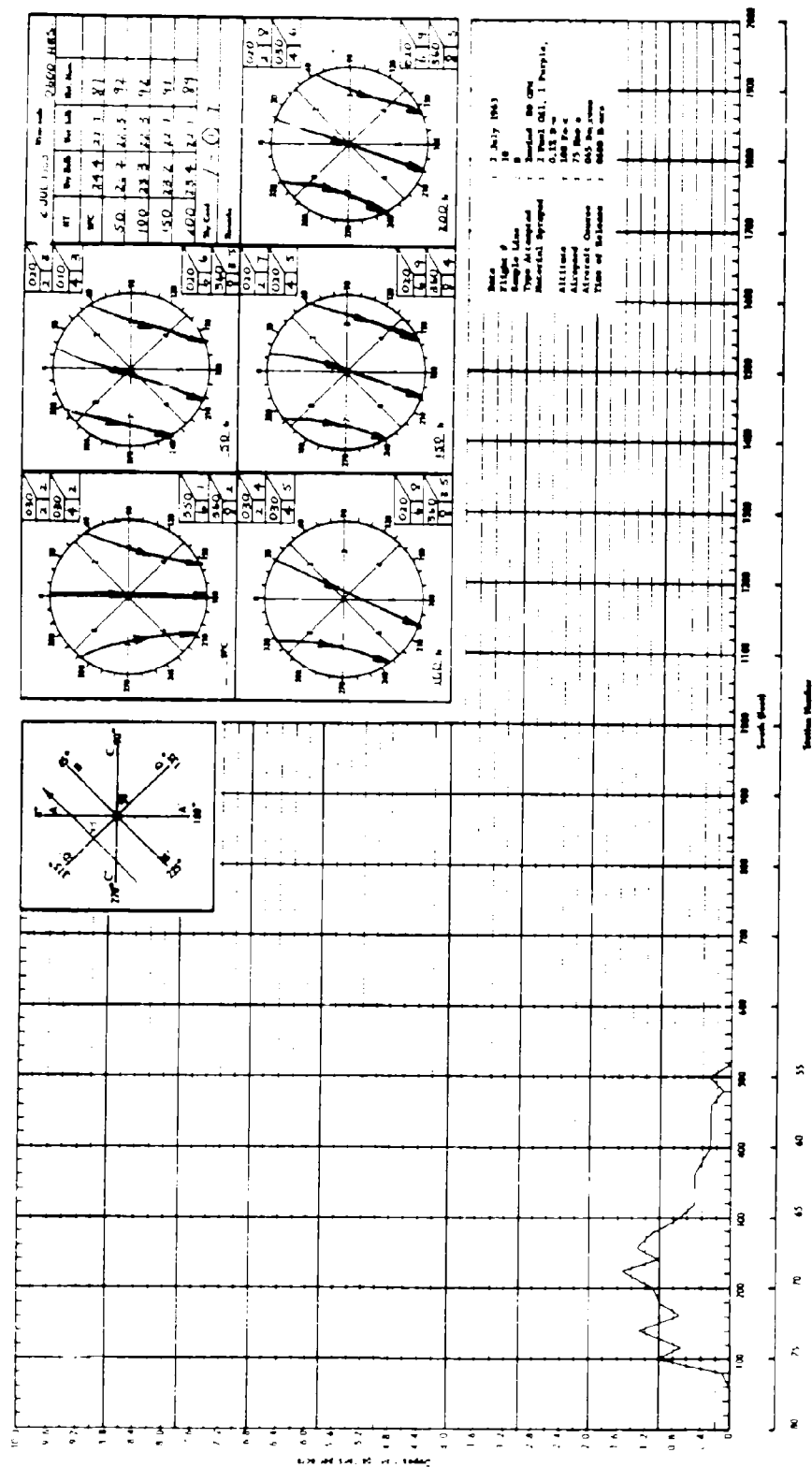
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 10 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 100 Feet
 TIME OF RELEASE: 0600 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT NO: 11 PAPER: Kromskote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: 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 (smallest)
73	6	3900			
72	4	3800			
73	8	3700			
71	10	3600			
73	9	3500			

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

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

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

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 11 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 50 Feet
 TIME OF RELEASE: 0618 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 - 66	Blank	67	0.4				
		68	1.3				
		69	0.4				
		70	1.6				
		71	1.4				
		72	1.5				
		73	0.7				
		74	0.8				
		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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 12 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
21	1	4400			
25	4	3700*			
23	2	3600			
20	6	3500			
24	9	3400	24	1	100 (smallest)
22	5	3300			
23	3	3200			
20	8	3100			
20	7	3000			
24	11	2900			
24	10	2800			

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

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

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

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 90 GPM
 DATE: 2 July 1963 SYSTEM: HIDAL
 FLIGHT #: 12 AIRSPEED: 75 Knots
 SPEED: C ALTITUDE: 50 Feet
 TIME OF RELEASE: 0619 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 07 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 16	Blank	17	0.2				
		18	1.0				
		19	1.4				
		20	1.0				
		21	0.4				
		22	0.3				
		23	0.3				
		24	0.3				
		25	0.7				
		26	2.5				
		27	1.0				
		28	1.0				
		29	0.3				
		Stations 30 - 100	Blank				

% Recovery - 42.7

Total 10.0

H-34/HIDAL GROUND FLOW & FLIGHT DATA

DATE CALIBRATED: <u>1 July 1963</u>	DATE TEST FLOWN: <u>5 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>----</u>
DURATION OF SPRAY: <u>30</u> Sec.	PUMP PRESSURE: <u>32</u> PSI
TOTAL AMOUNT SPRAYED: <u>38.5</u> Gal.	BOOM PRESSURE: <u>30</u> PSI
	FLOW RATE CALIBRATED: <u>77.0</u> GPM

OPERATIONAL DATA DURING FLIGHT

Above information same for Runs 1 - 8.

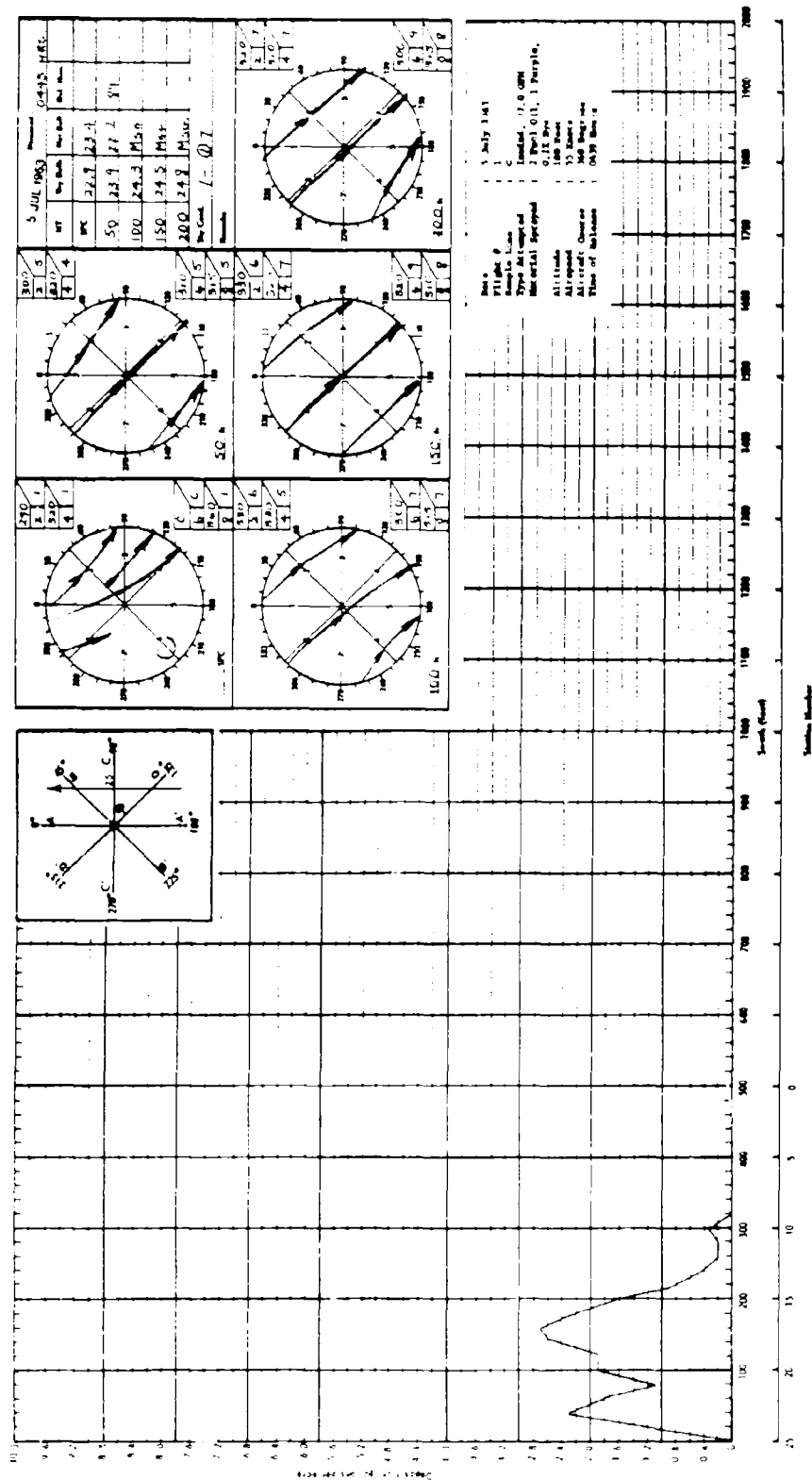
MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: RIDAL
 FLIGHT #: 1 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0439 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 - 9 Blank

10 0.3
 11 0.2
 12 0.2
 13 0.5
 14 0.9
 15 1.6
 16 2.3
 17 2.7
 18 2.6
 19 1.9
 20 1.9
 21 1.1
 22 1.7
 23 2.3
 24 1.3
 Stations 25 - 100 Blank

Total 21.5



MASS MEDIAN DIAMETER

DATE: 5 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 2 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 77.0 GPM SYSTEM: 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			

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

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

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

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: HIDAL
 FLIGHT #: 2 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0441 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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

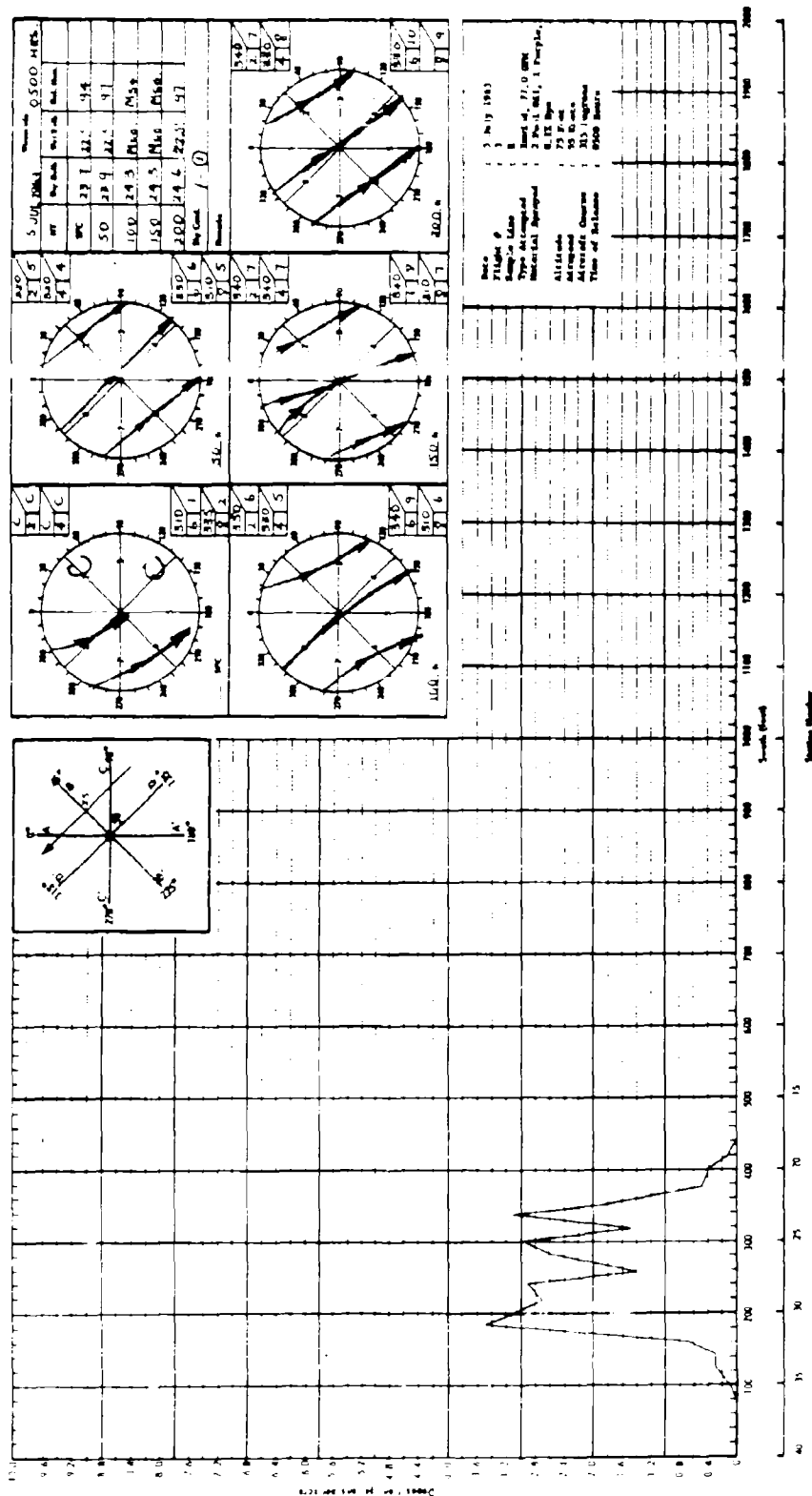
MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: HIDAL
 FLIGHT #: 3 AIRSPEED: 55 Knots
 SAMPLE LINE: B ALTITUDE: 75 Feet
 TIME OF RELEASE: 0500 Hour AIRCRAFT COURSE: 315 Degrees
 DURATION: 18 Sec.

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 28.1



MASS MEDIAN DIAMETER

DATE: 5 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 4 PAPER: Kromskote, white
 SAMPLE LINE: B MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 77.0 GPM SYSTEM: 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			
79	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 DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: HIDAL
 FLIGHT #: 4 AIRSPEED: 55 Knots
 SAMPLE LINE: B ALTITUDE: 75 Feet
 TIME OF RELEASE: 0502 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 11 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 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 - 52.1

Total 13.3

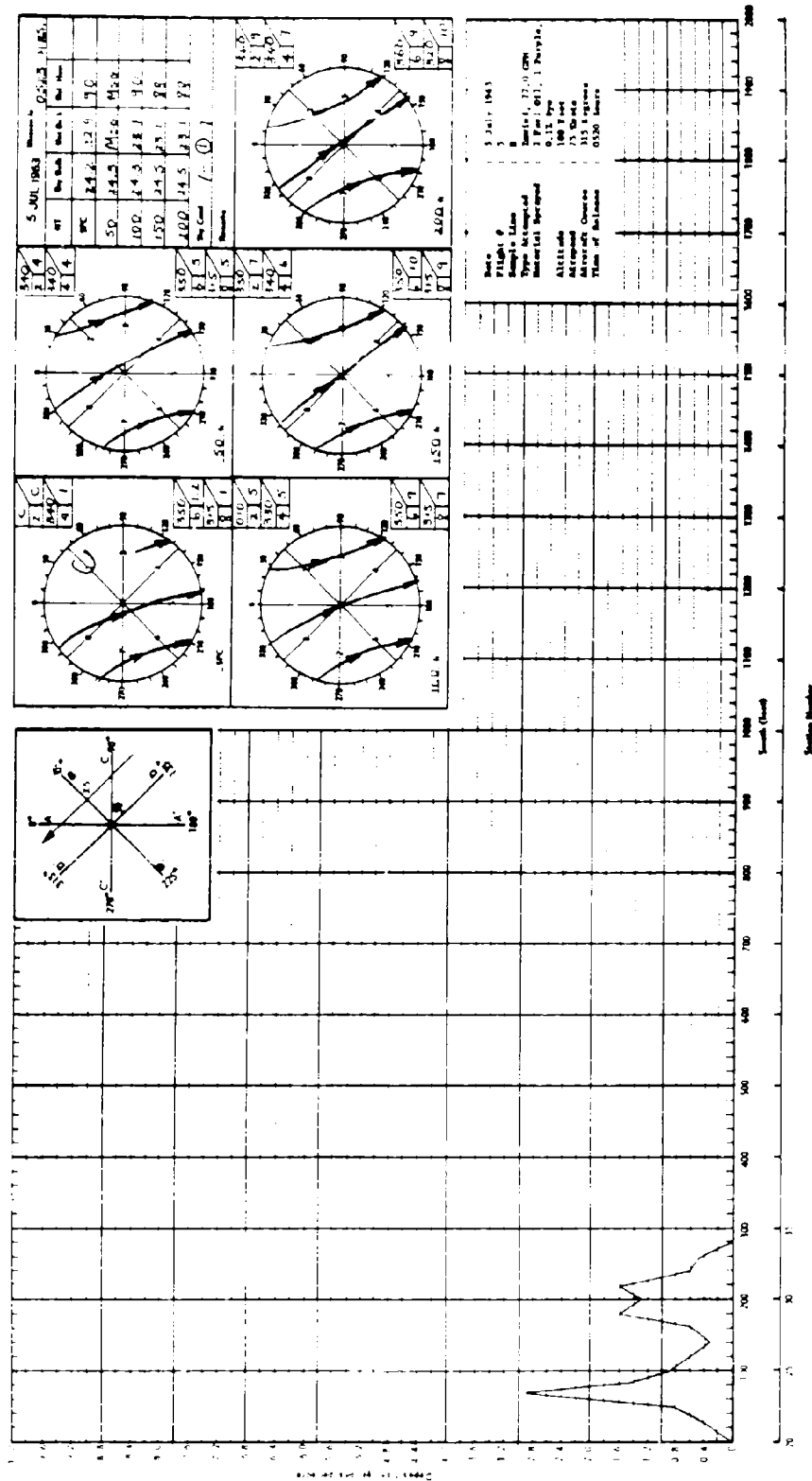
MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: HIDAL
 FLIGHT #: 5 AIRSPEED: 75 Knots
 SAMPLE LINE: B ALTITUDE: 100 Feet
 TIME OF RELEASE: 0520 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 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



MASS MEDIAN DIAMETER

DATE: 5 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 6 PAPER: Kromekote, white
 SAMPLE LINE: B MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 77.0 GPM SYSTEM: 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			

$$\text{MMD} = \frac{67.72 + 0.1420(\text{Spot D Max})}{\text{Con. Factor} = 2.2} - \frac{3200}{6.355 \times 2.2} = 237.0 \text{ Microns}$$

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

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

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: HIDAL
 FLIGHT #: 6 AIRSPEED: 75 Knots
 SAMPLE LINE: B ALTITUDE: 100 Feet
 TIME OF RELEASE: 0521 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 7 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 77.0 GPM SYSTEM: HIDAL

SIA.	DROP #	SIZE	SIA.	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			

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

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

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

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: HIDAL
 FLIGHT #: 7 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0630 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 09 Sec.

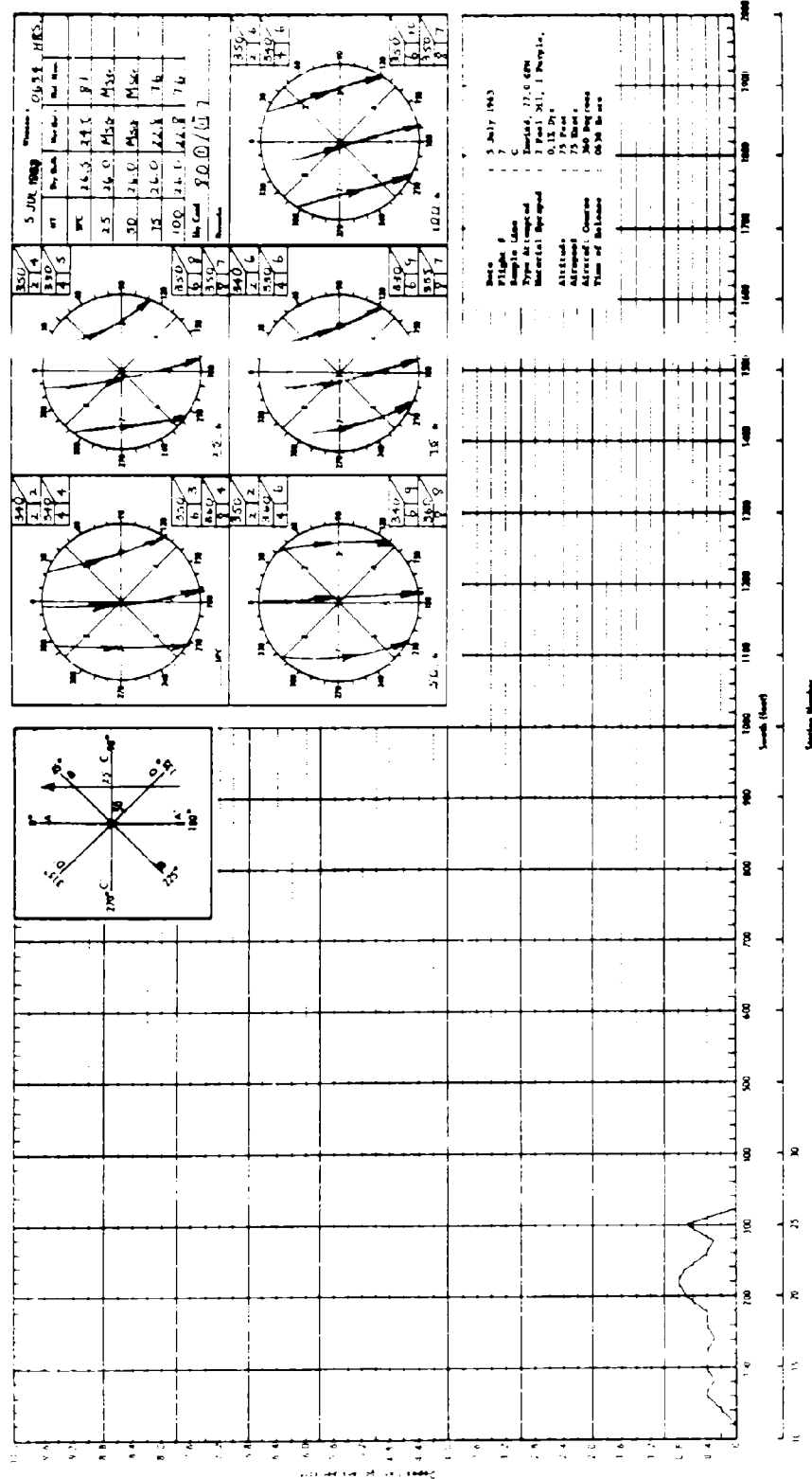
STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 10 Blank

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

Stations 26 - 100 Blank

% Recovery - 27.8

Total 6.0



MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 77.0 GPM
 DATE: 5 July 1963 SYSTEM: HIDAL
 FLIGHT #: 8 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0632 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 12 Sec.

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

2 Recovery - 18.3

Total 4.2



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>8010</u>	LIQUID TEMP: <u>39° C</u>
DURATION OF SPRAY: <u>30</u> Sec.	BOOM PRESSURE: <u>54-55</u> PSI
TOTAL AMOUNT SPRAYED: <u>35.5</u> Gal.	FLOW RATE CALIBRATED: <u>71</u> GPM

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> Sec.	PUMP PRESSURE: <u>38-28</u> PSI
TOTAL AMOUNT SPRAYED: <u>39.5</u> Gal.	FLOW RATE CALIBRATED: <u>80</u> GPM

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 1963 CONVERSION FACTOR: 2.2
 FLIGHT NO.: 1 PAPER: Kromekote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 71.0 GPM SYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
72	1	3900			
70	2	3100*			
72	6	3000			
72	5	2900			
72	8	2800	70	1A	100(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 DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 71 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 1 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 100 Feet
 TIME OF RELEASE: 0413 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: ---

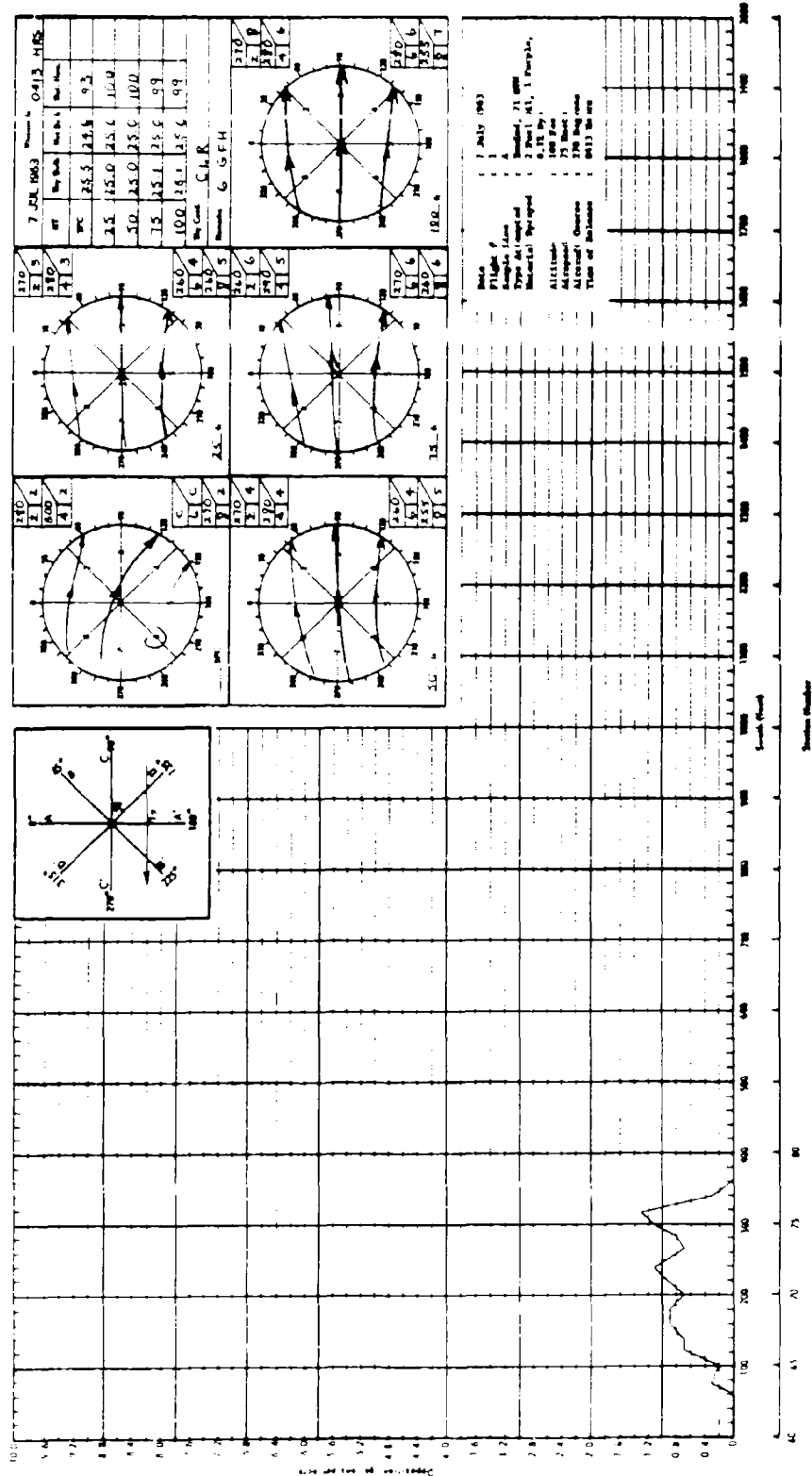
STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 63 Blank

64 0.3
 65 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 0.8
 75 1.1
 76 1.3
 77 0.3

Stations 78 - 100 Blank

% Recovery - 52.0

Total 10.6



MASS DEPOSIT

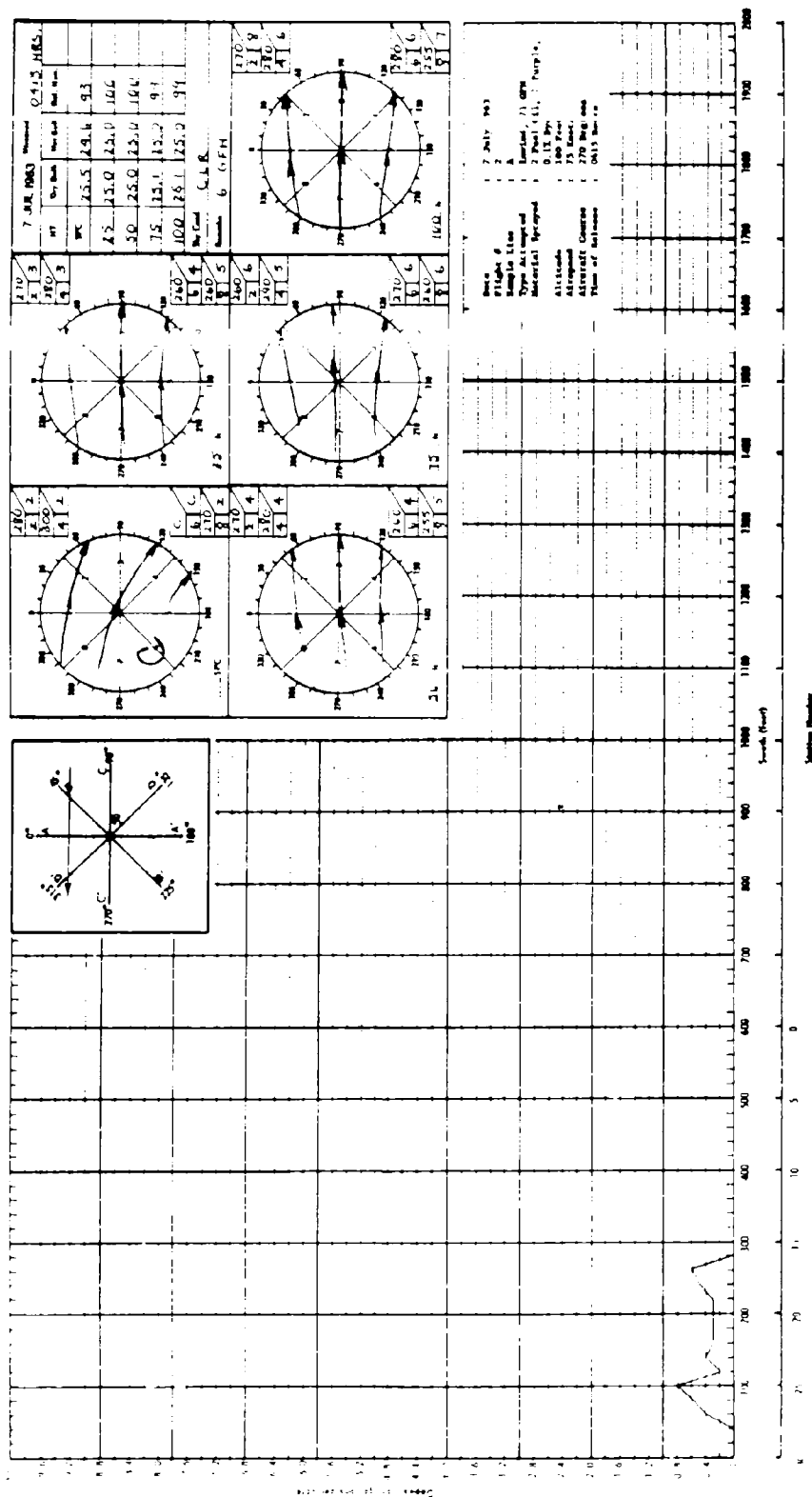
MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 71 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 2 ALTITUDE: 100 Feet
 SAMPLE LINE: A AIRSPEED: 75 Knots
 TIME OF RELEASE: 041 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 08 Sec.

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

17 0.6
 18 0.3
 19 0.3
 20 0.3
 21 0.3
 22 0.3
 23 0.4
 24 0.2
 25 0.3
 26 0.4
 27 0.4
 Stations 28 - 100 Blank

Recovery - 23,0

101



MASS MEDIAN DIAMETER

DATE: 7 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 3 PAPER: Kromekote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 71.0 GPM SYSTEM: 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			

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

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

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

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 8 71 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 3 AIRSPEED: 55 Knot
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0435 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 13.5 Sec.

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

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 71 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 4 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0437 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 12.5 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 5 PAPER: Kromakote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 71.0 GPM SYSTEM: 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			

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

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

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

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 71 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 5 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0456 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 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 - 93.6

Total 26.0

WASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 71 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 6 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0457 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 10 Sec.

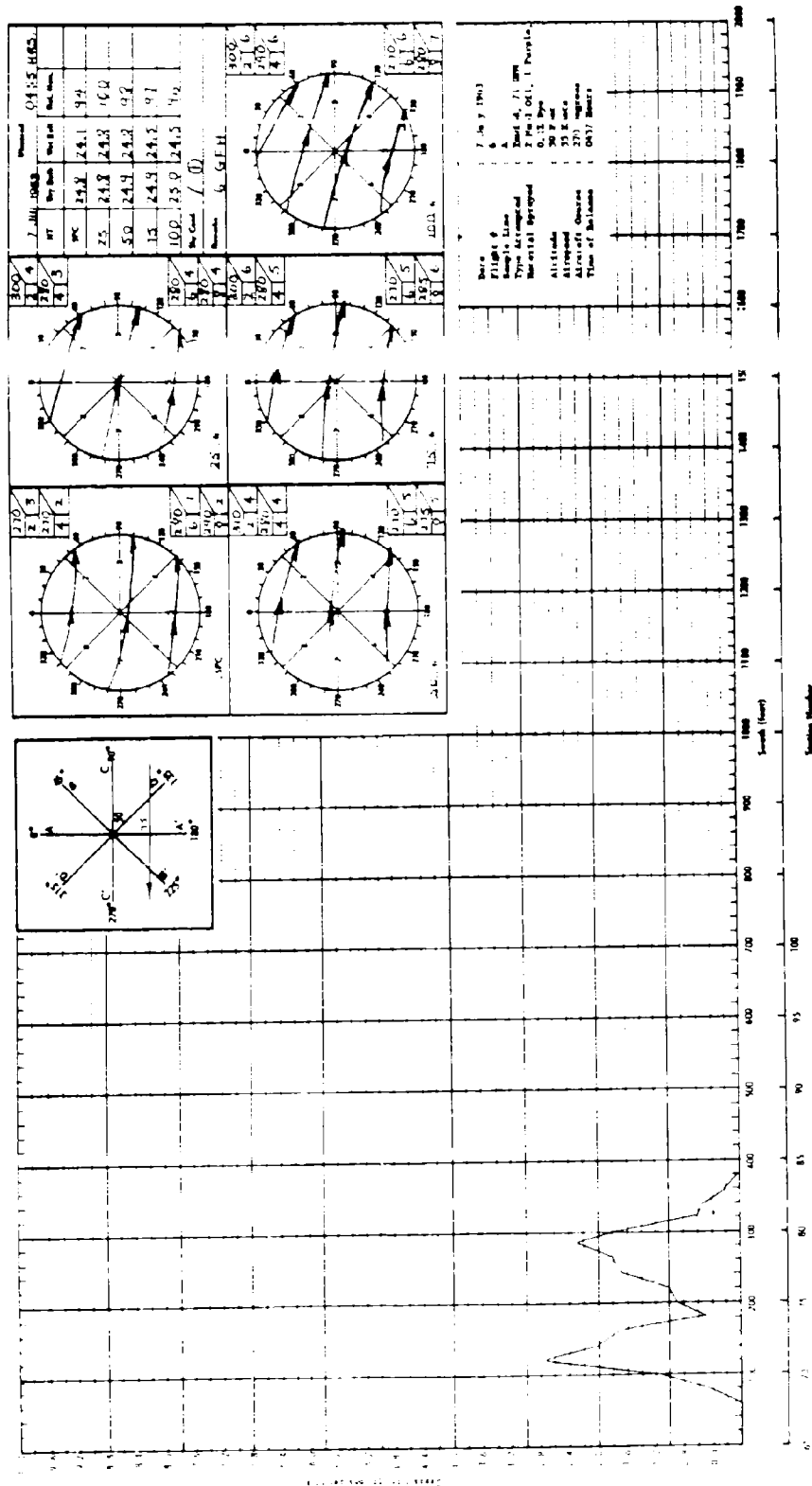
STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 68 Blank

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 - 69.8

Total 19.4



MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 7 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0518 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 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

MASS MEDIAN DIAMETER

DATE: 7 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 8 PAPER: Kromakote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80.0 GPM SYSTEM: 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			

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

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

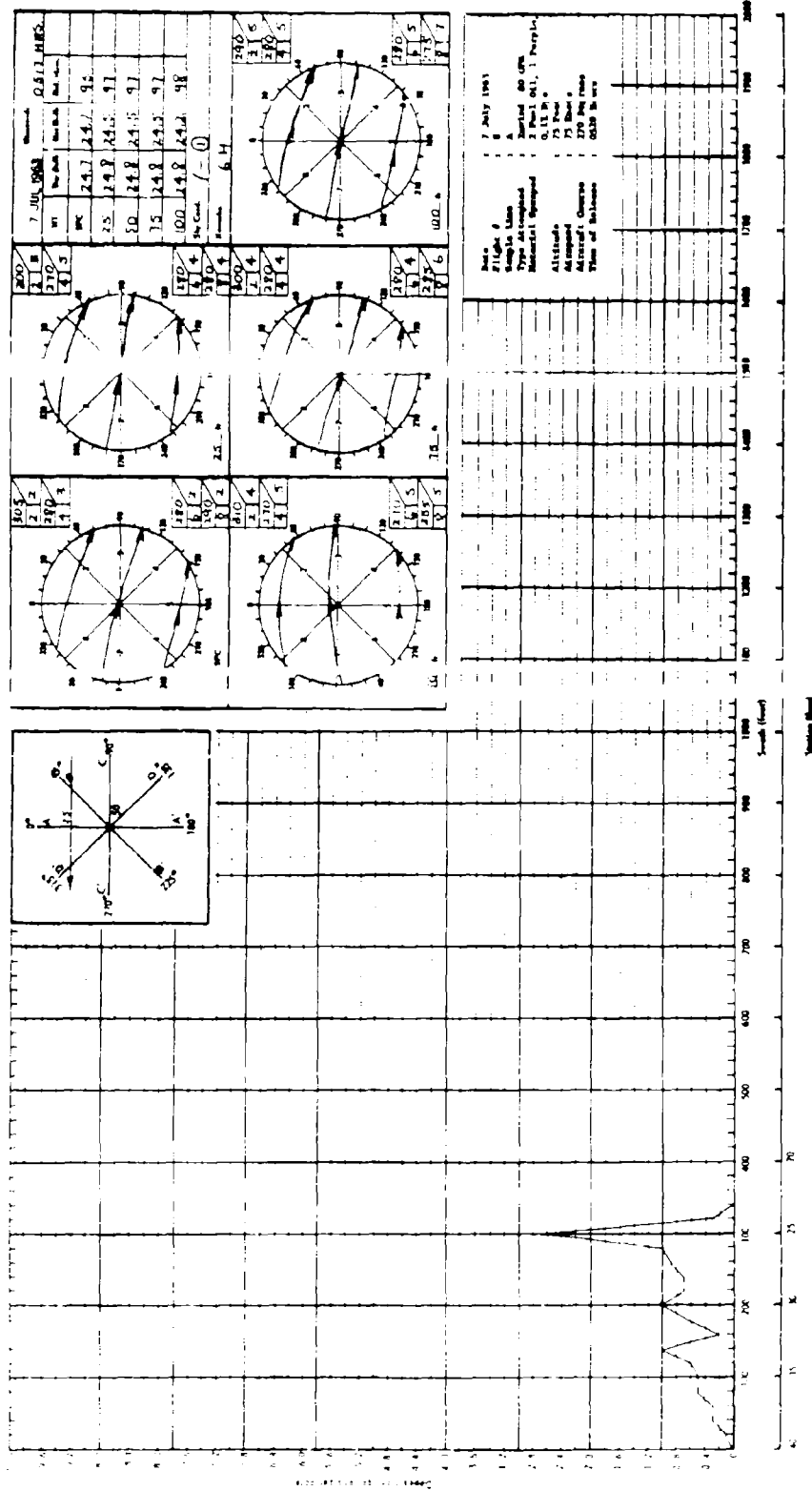
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 8 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 DURATION: 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 9 PAPER: Kromakote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: 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			

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

$$\begin{aligned}
 \text{Max. Sph. Dia.} &= \frac{67.72 + 0.14 \cdot 20(4100)}{6.430} = \frac{4100}{6.430} = 649.8 \text{ Microns}
 \end{aligned}$$

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

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 9 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0533 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 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	0.0
						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	0.1
						91	0.2
						92	0.1
						93	0.1
						94	0.0
						95	0.0
						96	0.0
						Stations 97 - 100	
						Blank	

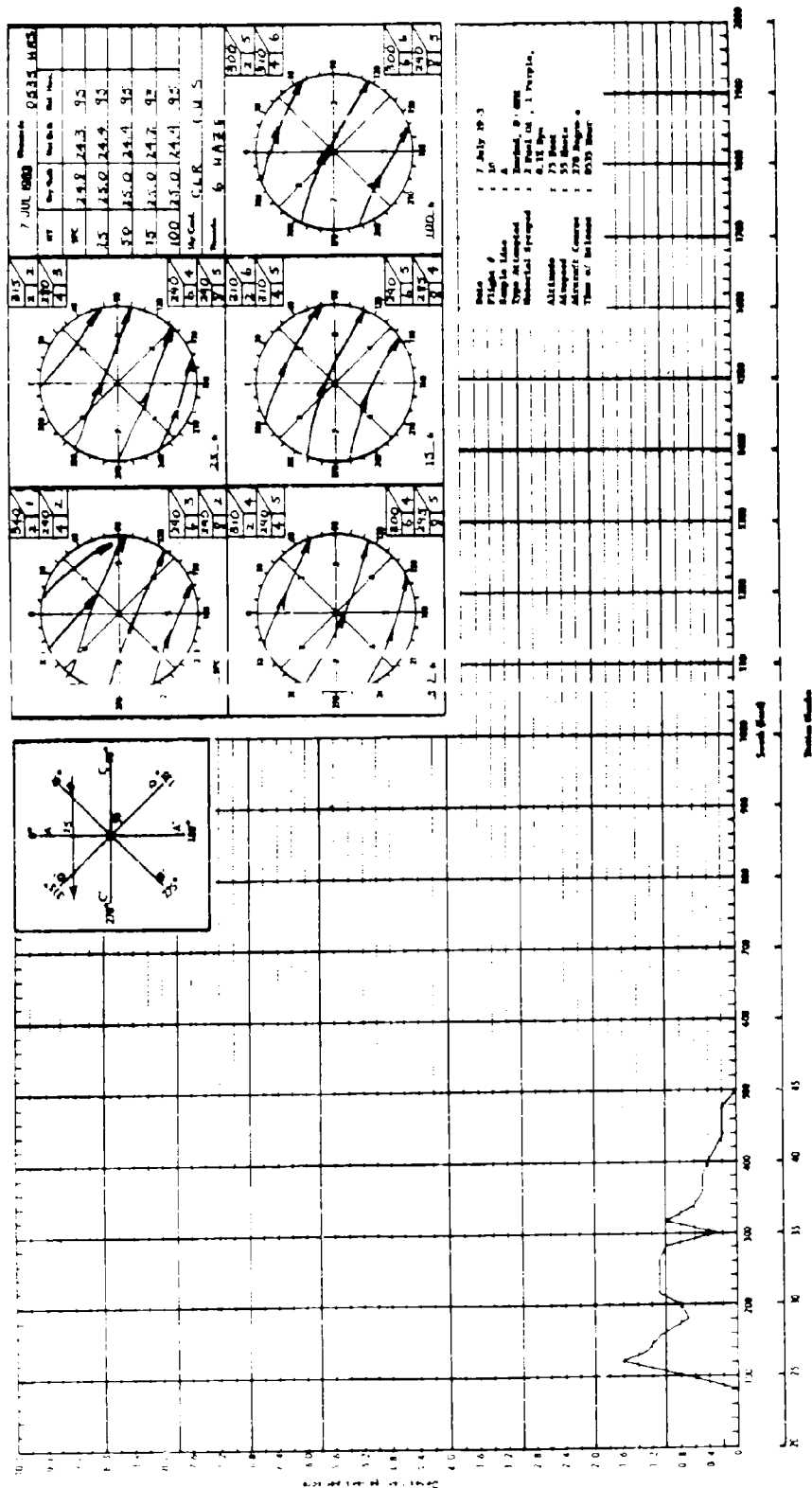
Total 16.3

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 10 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0535 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 13 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	0.7				
		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 DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 11 AIRSPEED: 55 Knots
 SAMPLE LINE: B ALTITUDE: 100 Feet
 TIME OF RELEASE: 0605 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 12 PAPER: Kromskote, white
 SAMPLE LINE: B MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: 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			

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

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

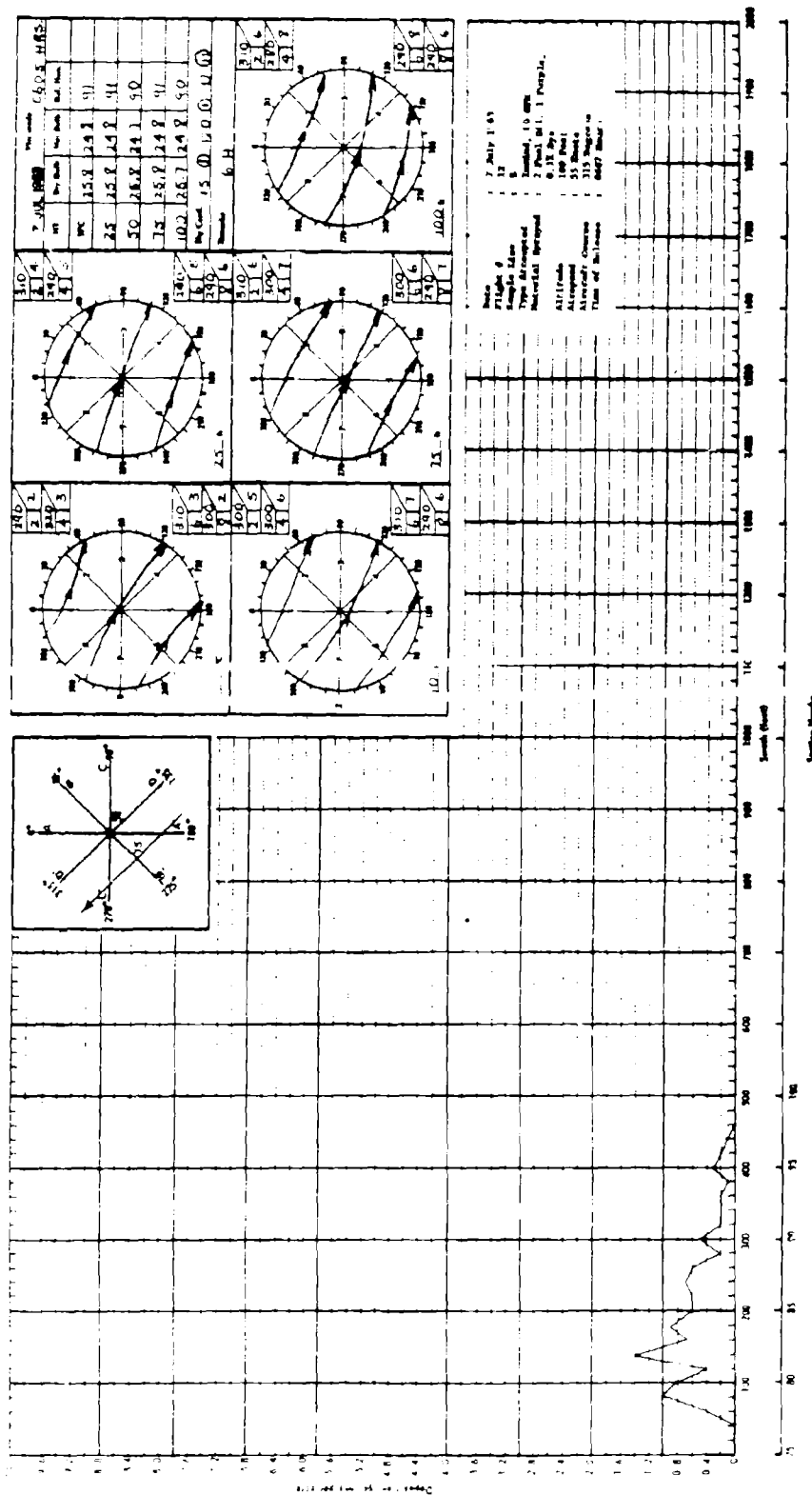
$$\text{Min. Sph. Dia.} = 48 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 12 AIRSPEED: 55 Knots
 SAMPLE LINE: B ALTITUDE: 100 Feet
 TIME OF RELEASE: 0607 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 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



1

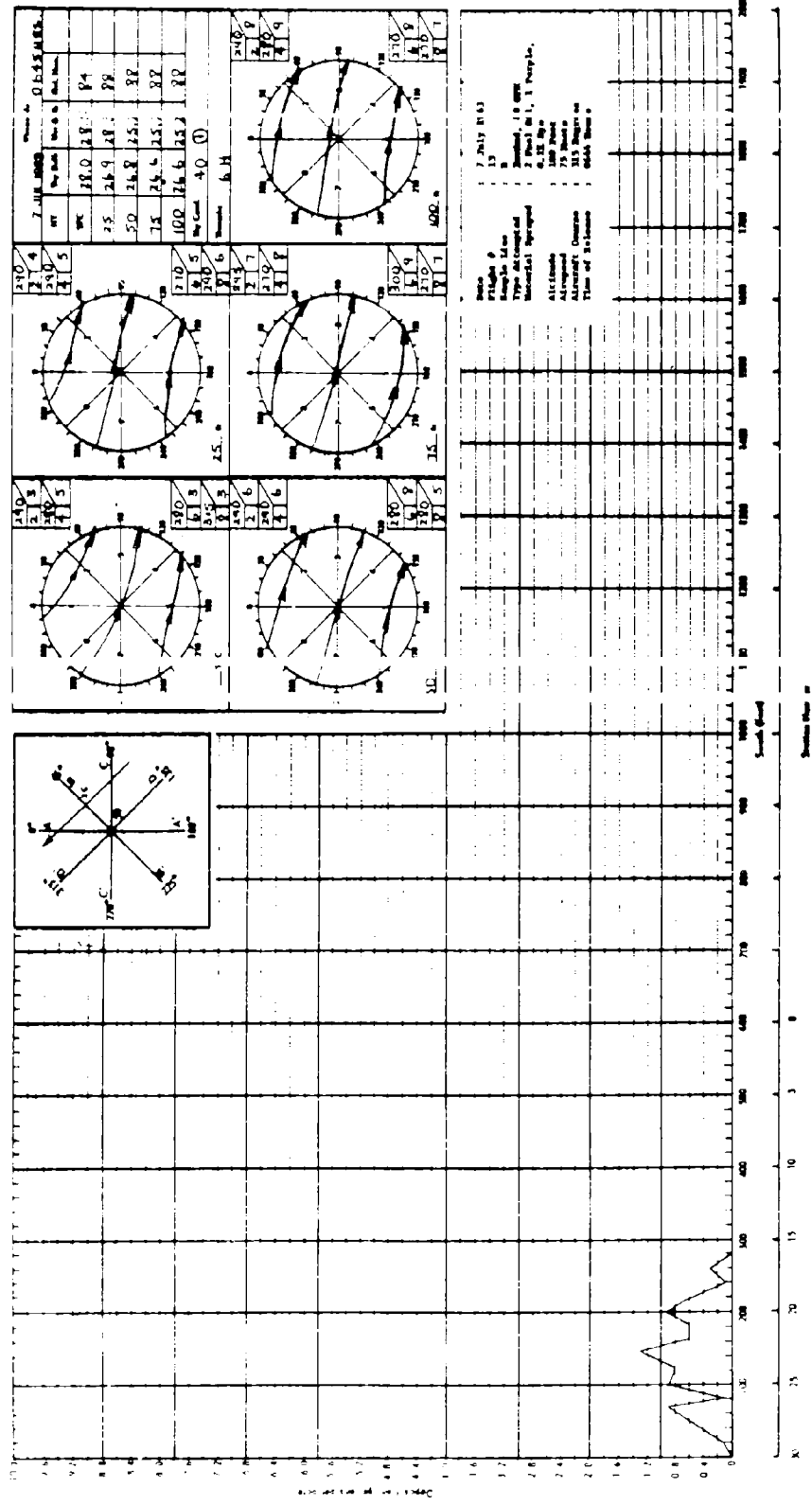
MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 13 AIRSPEED: 75 Knots
 SAMPLE LINE: B ALTITUDE: 100 Feet
 TIME OF RELEASE: 0644 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 14 PAPER: Kromekote, white
 SAMPLE LINE: B MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: 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			

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

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

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

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 14 AIRSPEED: 75 Knots
 SAMPLE LINE: E ALTITUDE: 100 Feet
 TIME OF RELEASE: 0646 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 09 Sec.

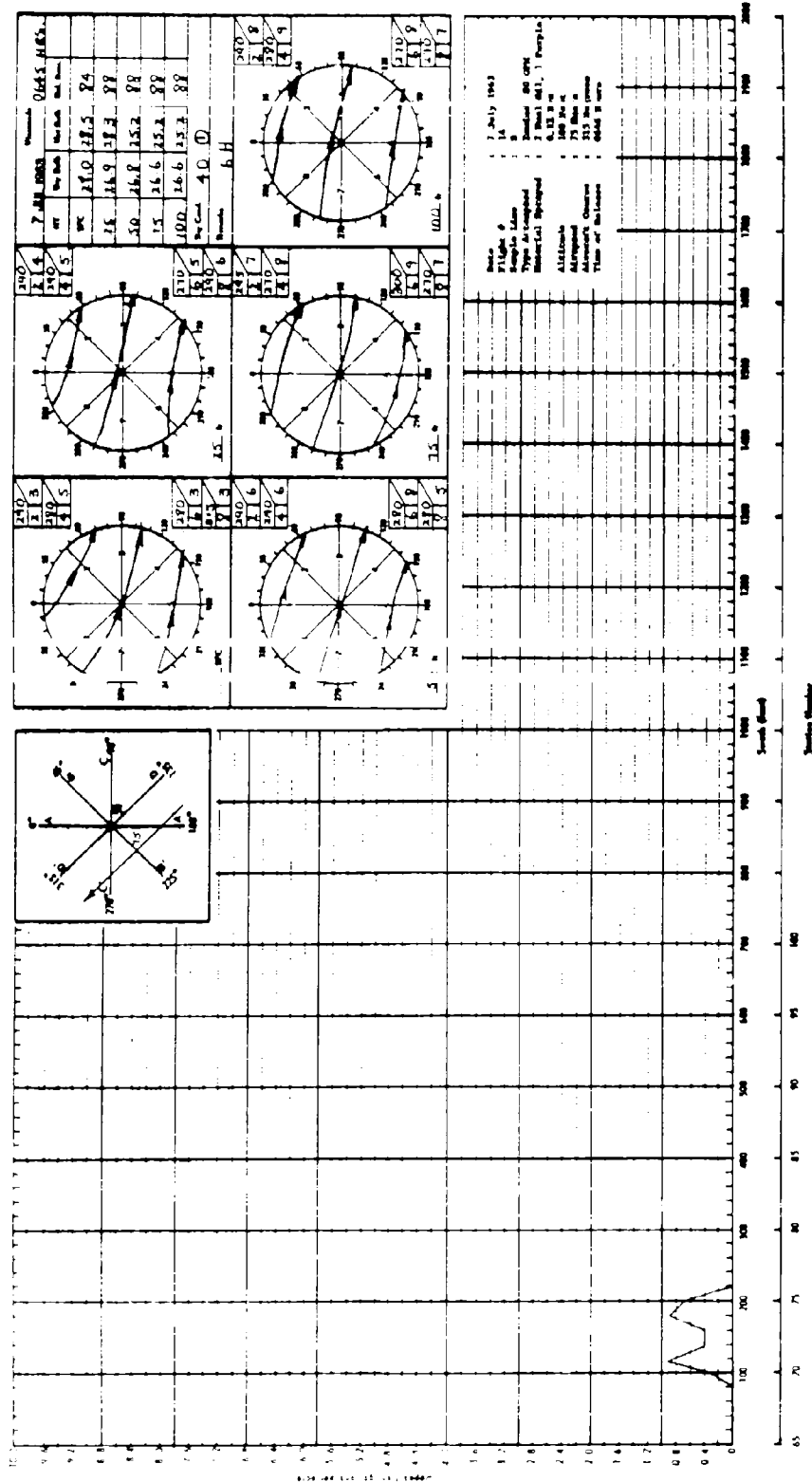
STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 69 Blank

70 0.3
 71 0.9
 72 0.4
 73 0.4
 74 0.9
 75 0.7
 76 0.0

Stations 77 - 100 Blank

% Recovery - 15.6

Total 3.6



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.

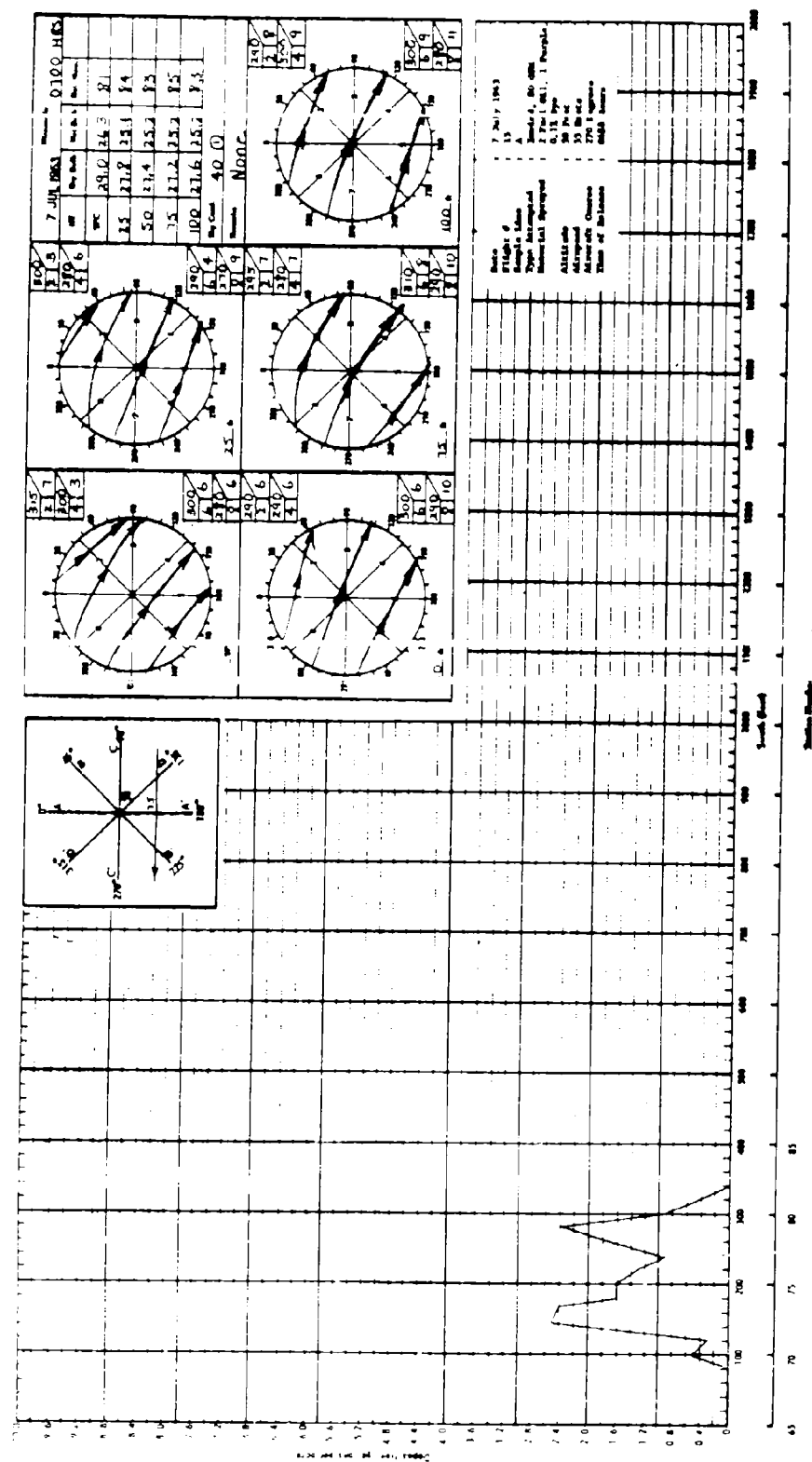
STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 69 Blank

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



MASS MEDIAN DIAMETER

DATE: 7 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 16 PAPER: Kromekote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: 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			

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

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

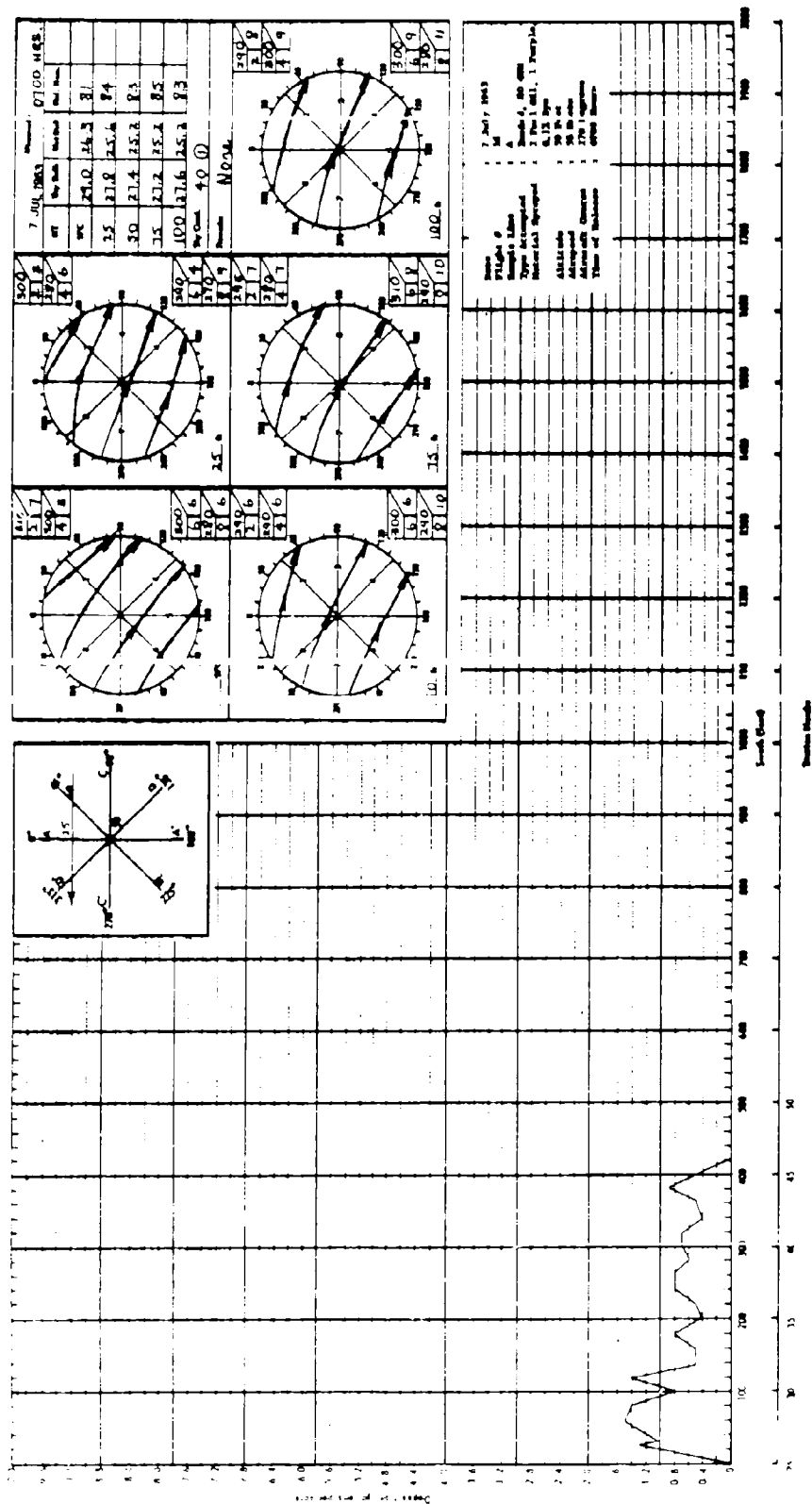
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 7 July 1963 SYSTEM: HIDAL
 FLIGHT #: 16 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0700 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 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



H-34/HIDAL GROUND FLOW & FLIGHT DATA

DATE CALIBRATED: <u>6 July 1963</u>	DATE TEST FLOWN: <u>8 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 is for Runs 1 - 10.

DATE CALIBRATED: <u>6 July 1963</u>	DATE TEST FLOWN: <u>8 July 1963</u>
LIQUID SPRAYED: <u>2 Fuel Oil, 1 Purple</u>	TOTAL NOZZLES OPEN: <u>60</u>
NOZZLE TYPE: <u>Check Valves</u>	LIQUID TEMP: <u>36° C</u>
DURATION OF SPRAY: <u>20</u> <u>Sec.</u>	PUMP PRESSURE: <u>20.5</u> <u>PSI</u>
TOTAL AMOUNT SPRAYED: <u>27.5</u> <u>Gal.</u>	FLOW RATE CALIBRATED: <u>83</u> <u>GPM</u>

OPERATIONAL DATA DURING FLIGHT

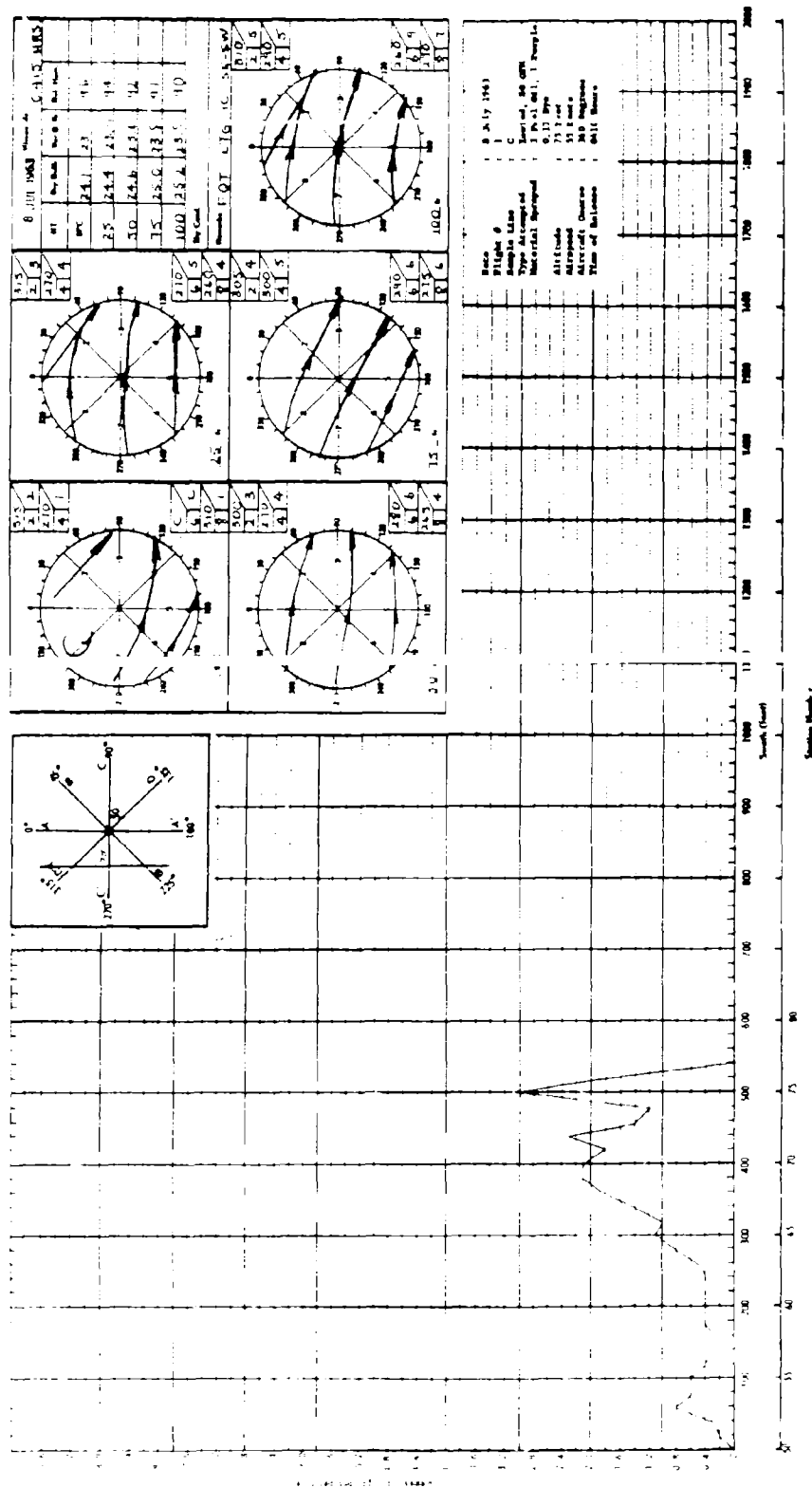
Above information is for Runs 11 - 14.

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple. FLOW RATE: 80 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 1 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0410 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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	0.6				
		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 27.9



MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 2 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0413 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 3 PAPER: Kromekote, white
 SAMPLE LINE: B MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: 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 DEPOSIT

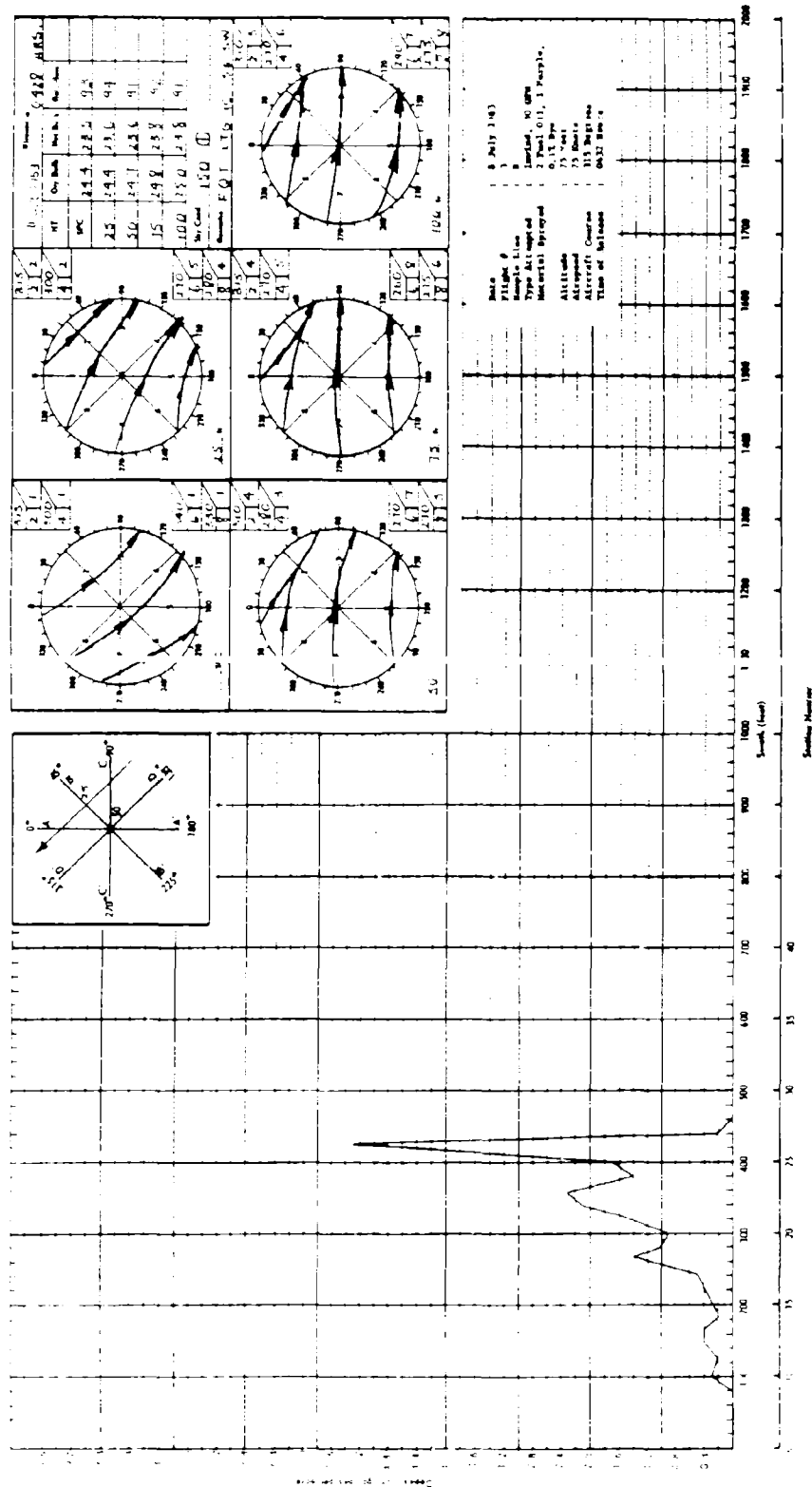
MATERIAL: 2 Fuel Oil, 1 Purple. FLOW RATE: 80 GPM
 DATE: 8 July 1963 SYSTEM: FIDAL
 FLIGHT #: 3 AIRSPEED: 75 Knots
 SAMPLE LINE: B ALTITUDE: 75 Feet
 TIME OF RELEASE: 0432 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 13 Sec.

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	5.3
27	0.2

Stations 28 - 100 Blank

Total 28.3



MASS DEPOSIT

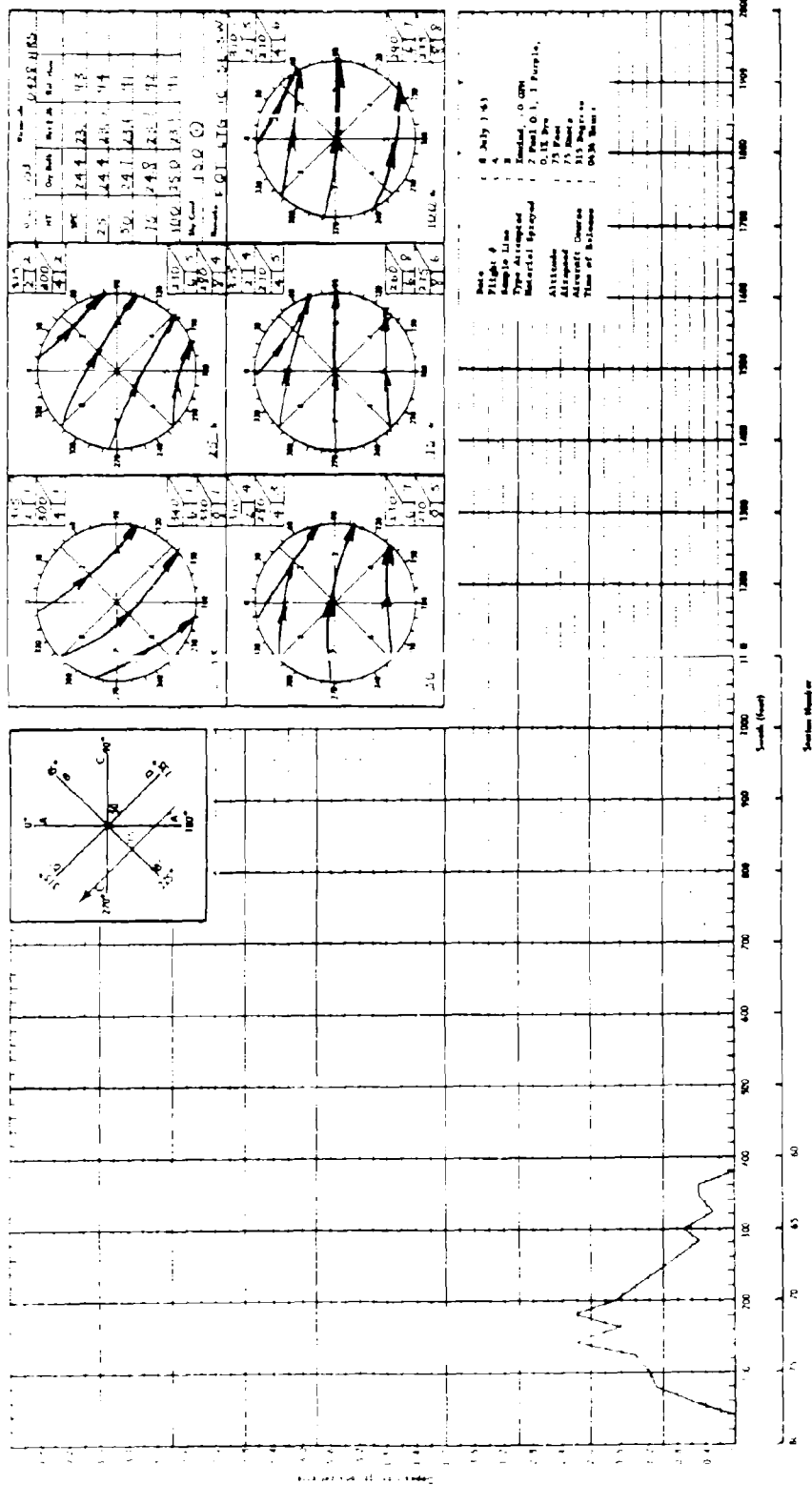
MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 4 AIRSPEED: 75 Knot
 SAMPLE LINE: B ALTITUDE: 75 Feet
 TIME OF RELEASE: 0434 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: 11 Sec.

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



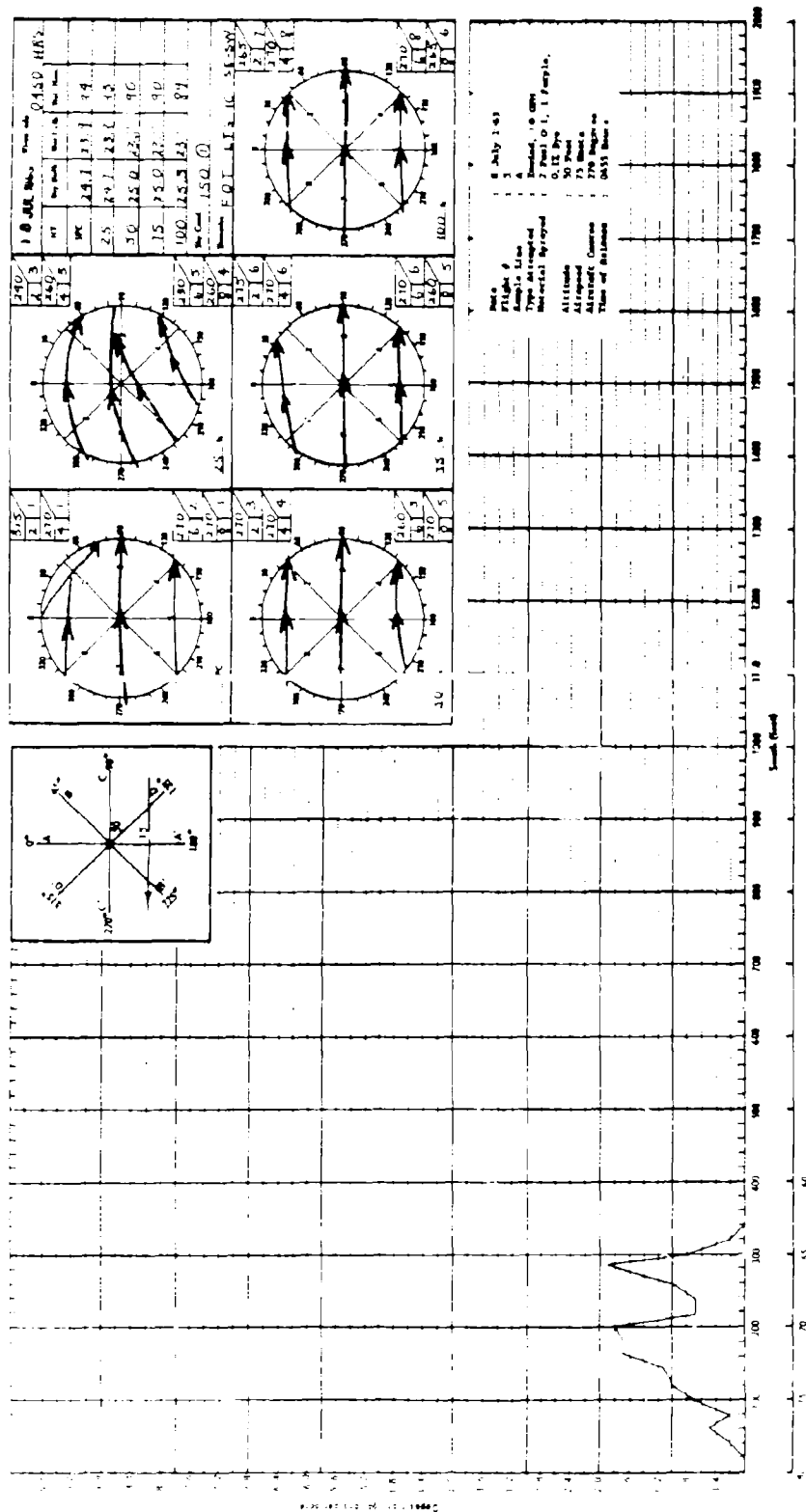
MASS DEPOSIT

MATERIAL: <u>2 Fuel Oil, 1 Purple</u>	FLOW RATE: <u>80</u> <u>GPM</u>
DATE: <u>8 July 1963</u>	SYSTEM: <u>HIDAL</u>
FLIGHT #: <u>5</u>	AIRSPED: <u>75</u> <u>Knots</u>
SAMPLE LINE: <u>A</u>	ALTITUDE: <u>50</u> <u>Feet</u>
TIME OF RELEASE: <u>0455</u> <u>Hour</u>	AIRCRAFT COURSE: <u>270</u> <u>Degrees</u>
DURATION: <u>12</u> <u>Sec.</u>	

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

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



MASS MEDIAN DIAMETER

DATE: 8 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 6 PAPER: Kromakote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: 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 DEPOSIT

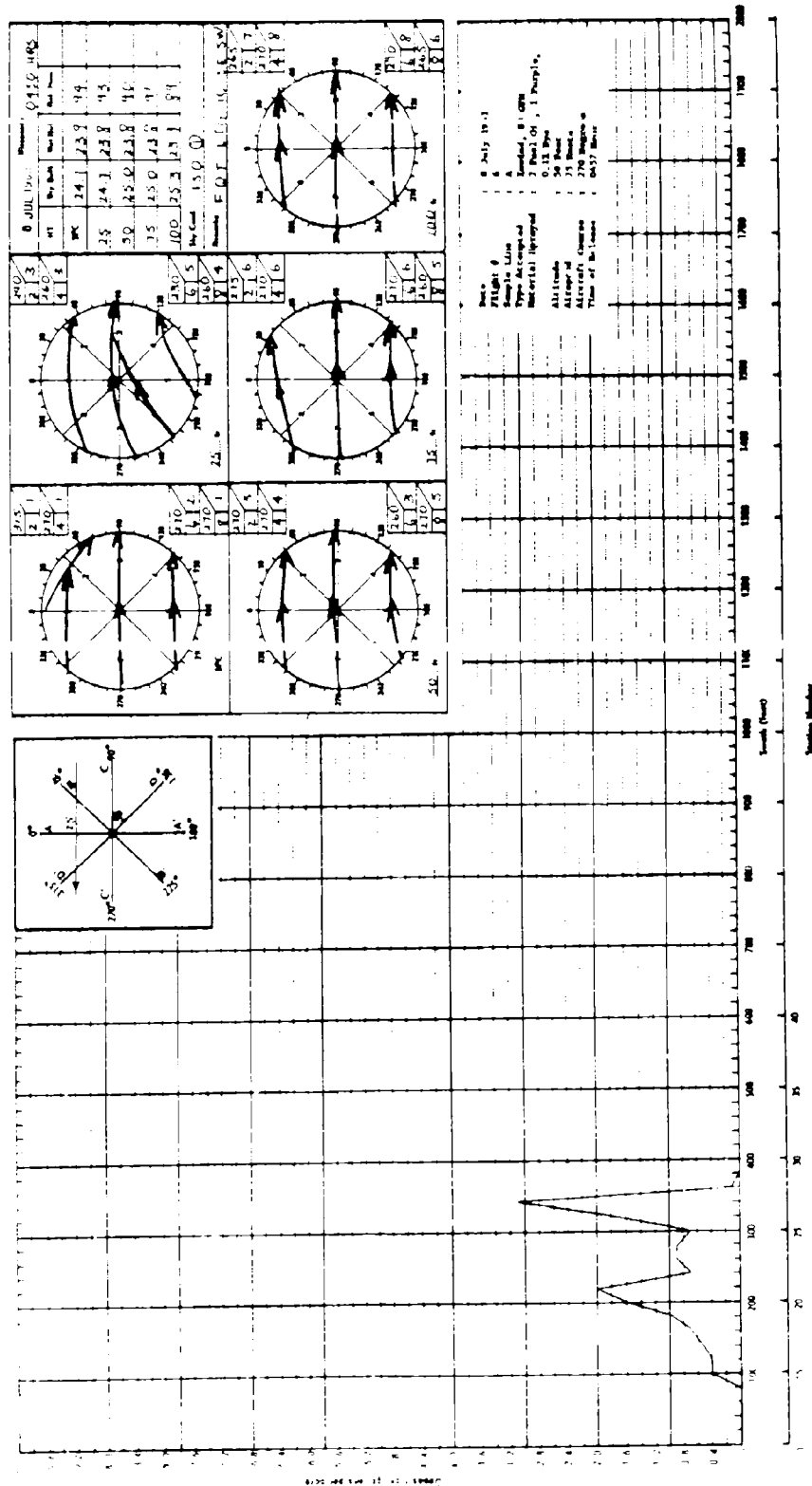
MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 6 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0457 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 13 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 14 Blank

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



MASS DEPOSIT

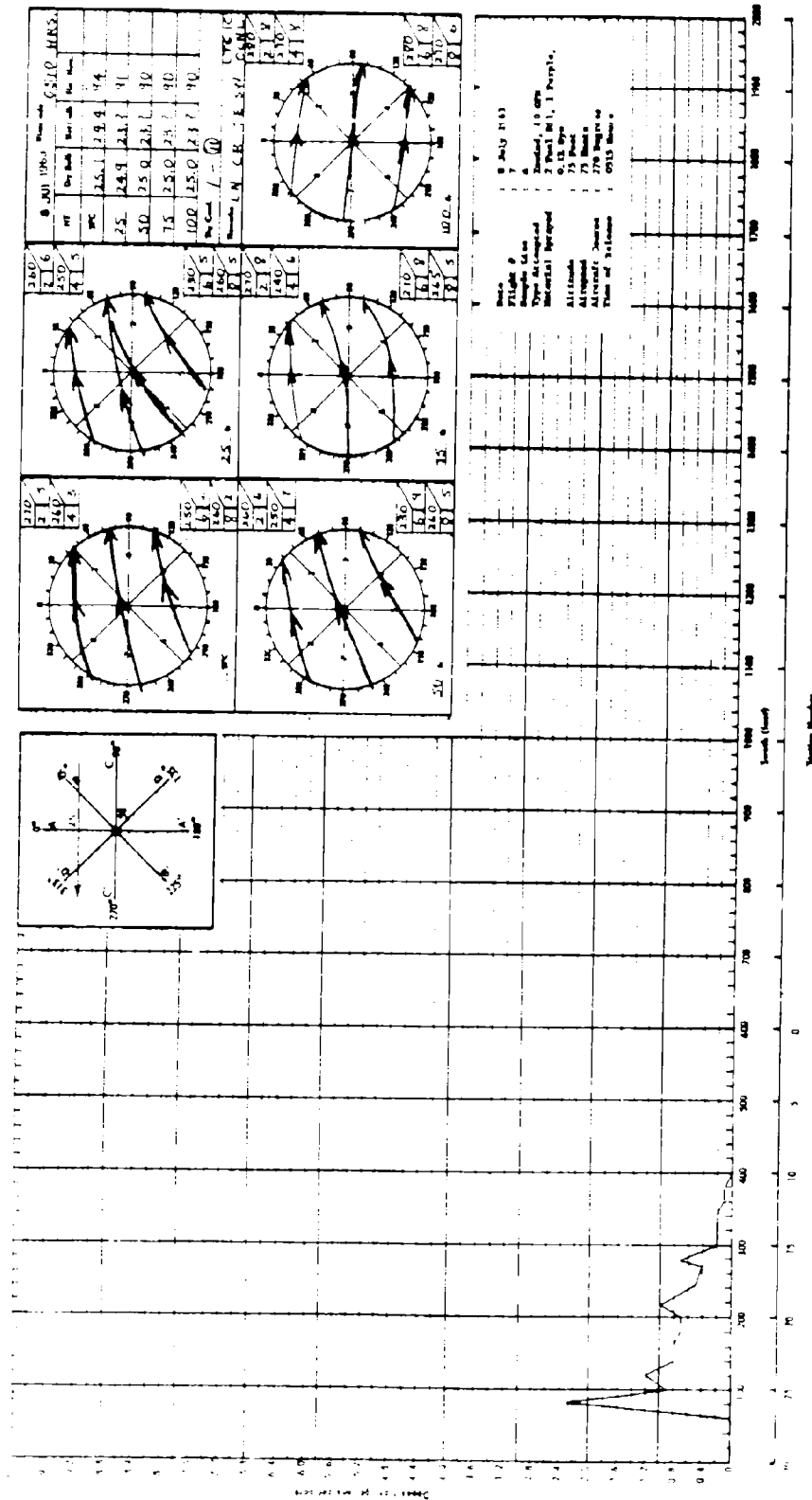
MATERIAL: <u>2 Fuel Oil, 1 Purple</u>	FLOW RATE: <u>80</u> <u>GPM</u>
DATE: <u>8 July 1963</u>	SYSTEM: <u>HIDAL</u>
FLIGHT #: <u>7</u>	AIRSPED: <u>75</u> <u>Knots</u>
SAMPLE LINE: <u>A</u>	ALTITUDE: <u>75</u> <u>Feet</u>
TIME OF RELEASE: <u>0515</u> <u>Hours</u>	AIRCRAFT COURSE: <u>270</u> <u>Degrees</u>
DURATION: <u>12</u> <u>Sec.</u>	

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

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

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

MASS DEPOSIT

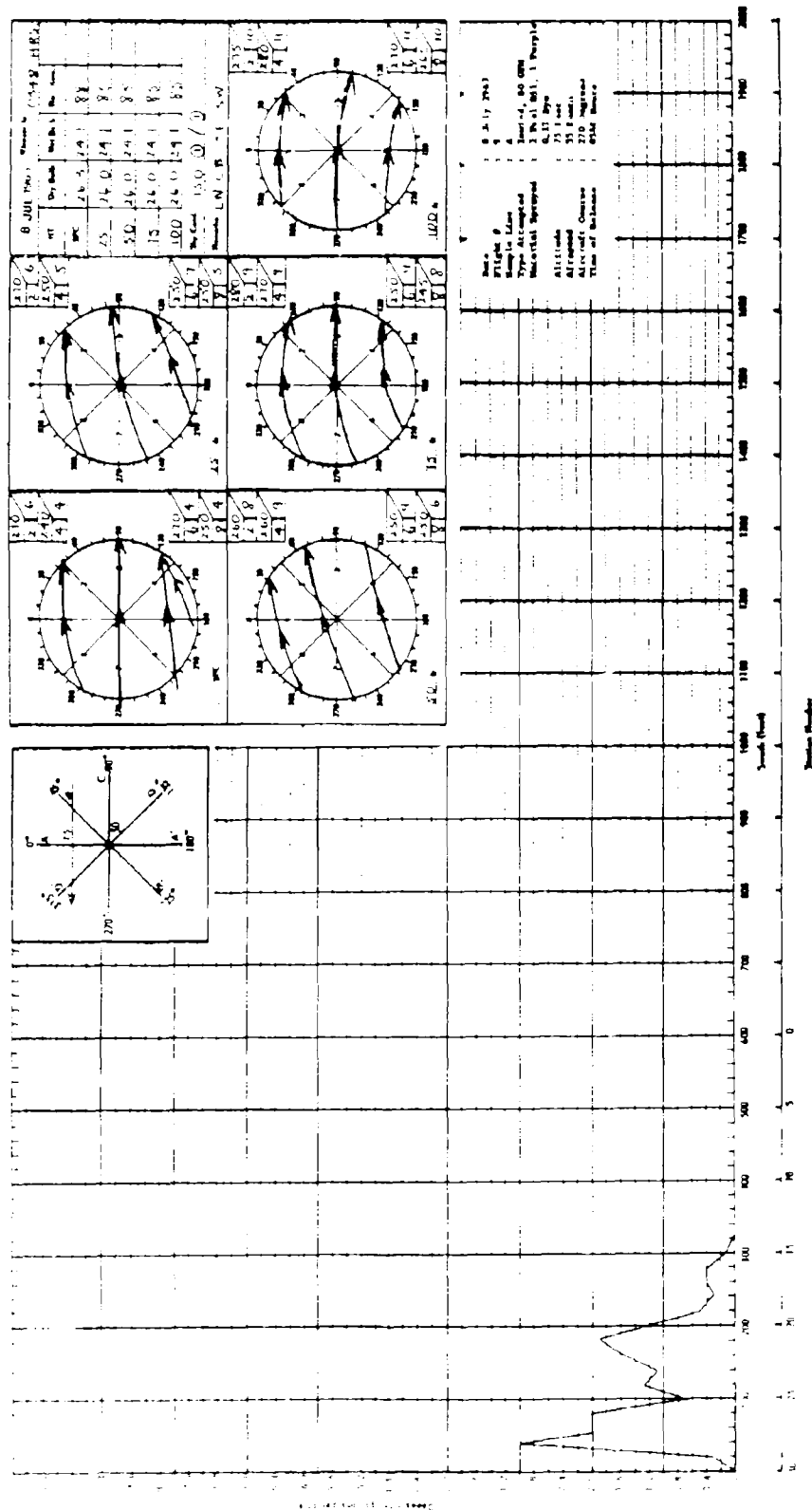
MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 9 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: .0548 Hour AIRCRAFT COURSE: 270 Degrees
 DURATION: 16 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 10 PAPER: Kromekote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 80 GPM SYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
77	4	3900*			
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 DEPOSIT

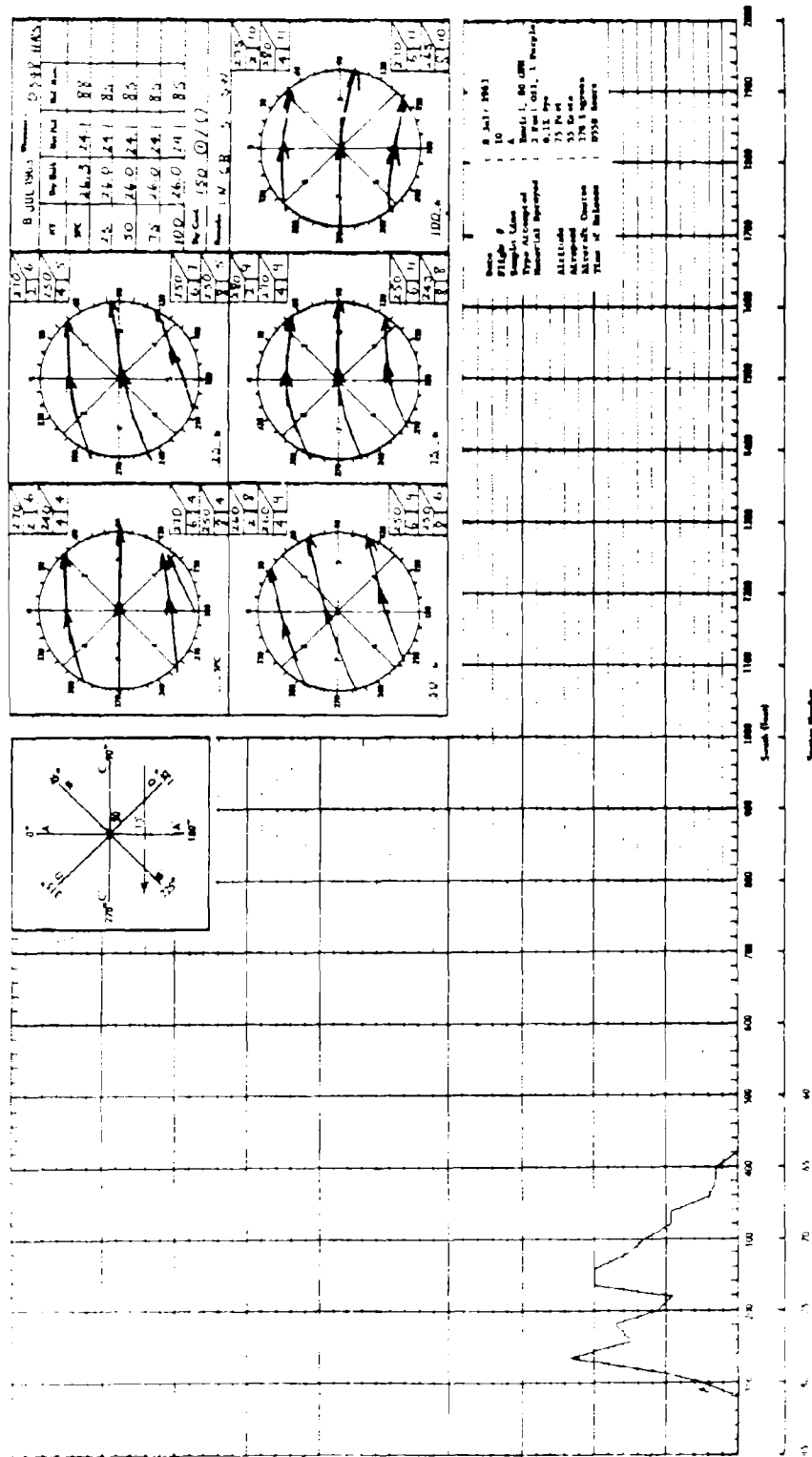
MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 80 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 10 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0550 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 14 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 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 18.8

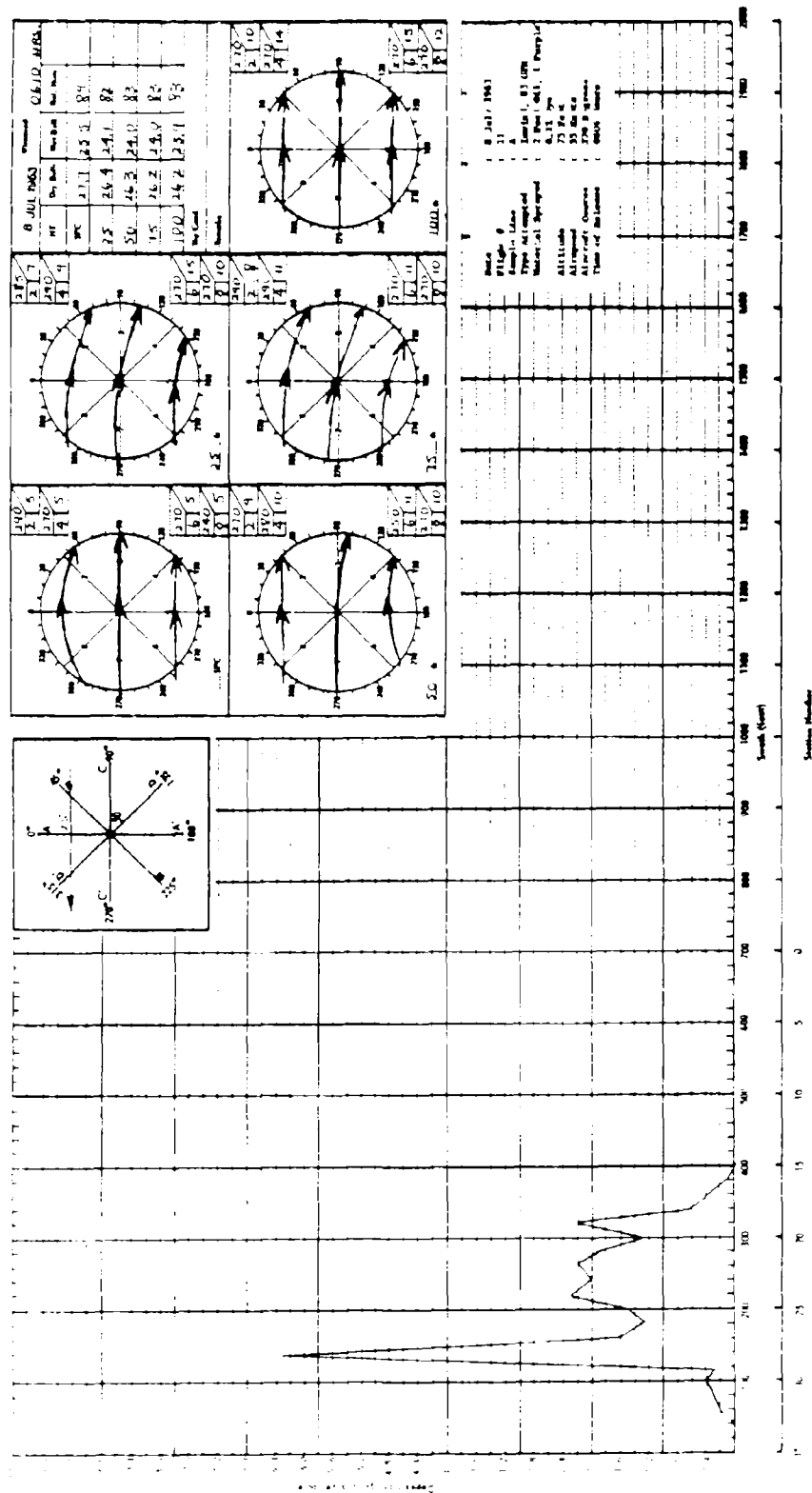


MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 83.0 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 11 AIRSPEED: 55 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0606 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 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



MASS MEDIAN DIAMETER

DATE: 8 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 12 PAPER: Kromekote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 83 GPM SYSTEM: 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			

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

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

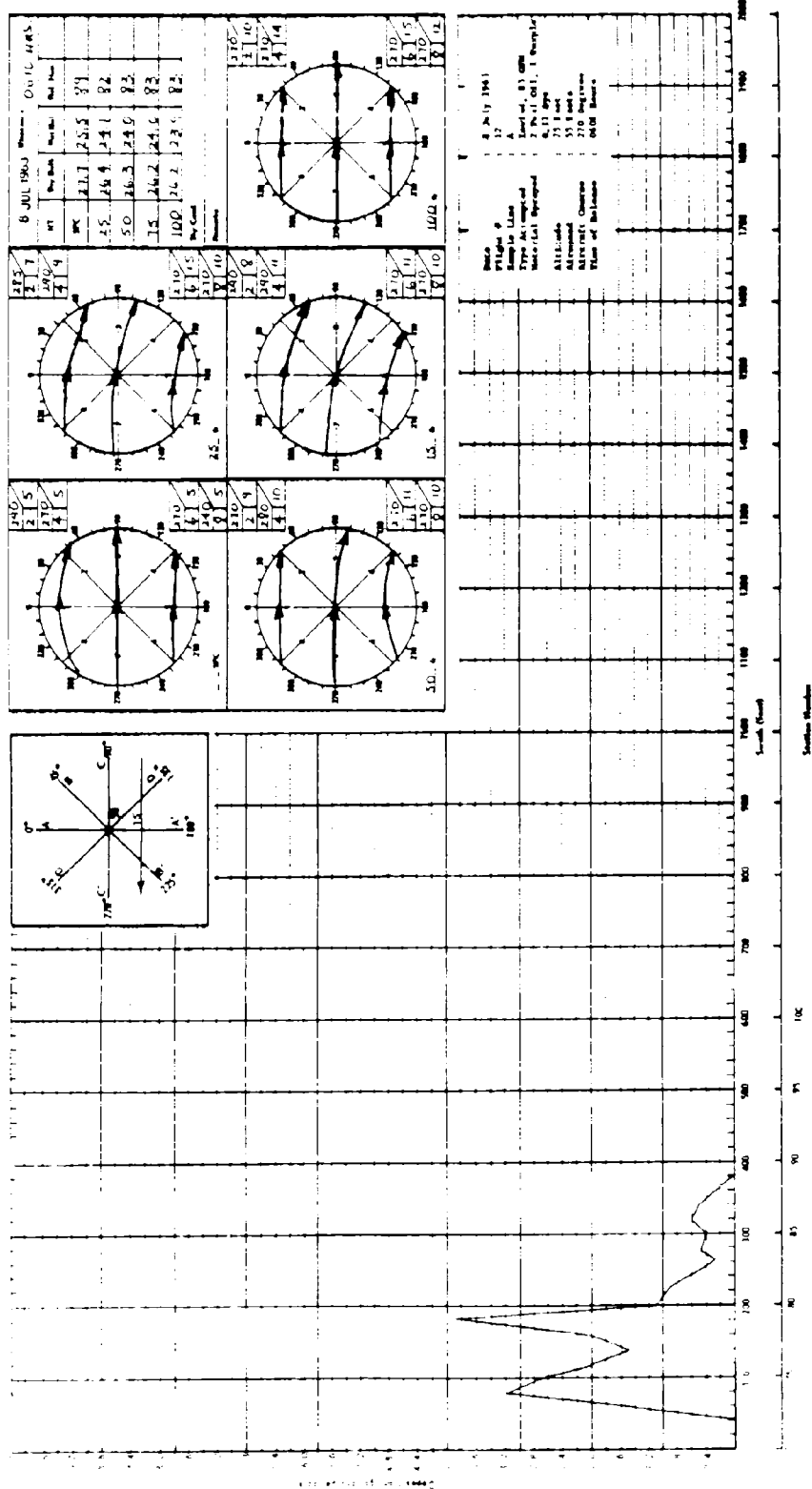
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 83.0 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 12 AIRSPEED: 55 Knot
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0608 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 - 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		
				38	0.3		
				Stations 89 - 100			
				Blank			

Total 22.1



MASS MEDIAN DIAMETER

DATE: 8 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 13 PAPER: Kromekote, white
 SAMPLE LINE: A MATERIAL: 2 Fuel Oil, 1 Purple
 FLOW RATE: 83 GPM SYSTEM: 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			

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

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

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

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 83.0 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 13 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0628 Hours AIRCRAFT COURSE: 270 Degrees
 DURATION: 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

MASS DEPOSIT

MATERIAL: 2 Fuel Oil, 1 Purple FLOW RATE: 83.0 GPM
 DATE: 8 July 1963 SYSTEM: HIDAL
 FLIGHT #: 14 ALTITUDE: 50 Feet
 SAMPLE LINE: A AIRSPEED: 75 Knots
 TIME OF RELEASE: 0629 Hours AIRCRAFT 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

H-24/MEDAL GROUND TEST & 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> <u>Sec.</u>	PUMP PRESSURE: <u>40</u> <u>PSI</u>
TOTAL AMOUNT SPRAYED: <u>34.0</u> <u>Gal.</u>	FLOW RATE CALIBRATED: <u>68</u> <u>GPM</u>

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> <u>Sec.</u>	PUMP PRESSURE: <u>23.5</u> <u>PSI</u>
TOTAL AMOUNT SPRAYED: <u>34.5</u> <u>Gal.</u>	FLOW RATE CALIBRATED: <u>69</u> <u>GPM</u>

OPERATIONAL DATA DURING FLIGHT

Above information is for Runs 9 - 14.

MASS MEDIAN DIAMETER

DATE: 12 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 1 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: Purple
 FLOW RATE: 68 GPM SYSTEM: 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			

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

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

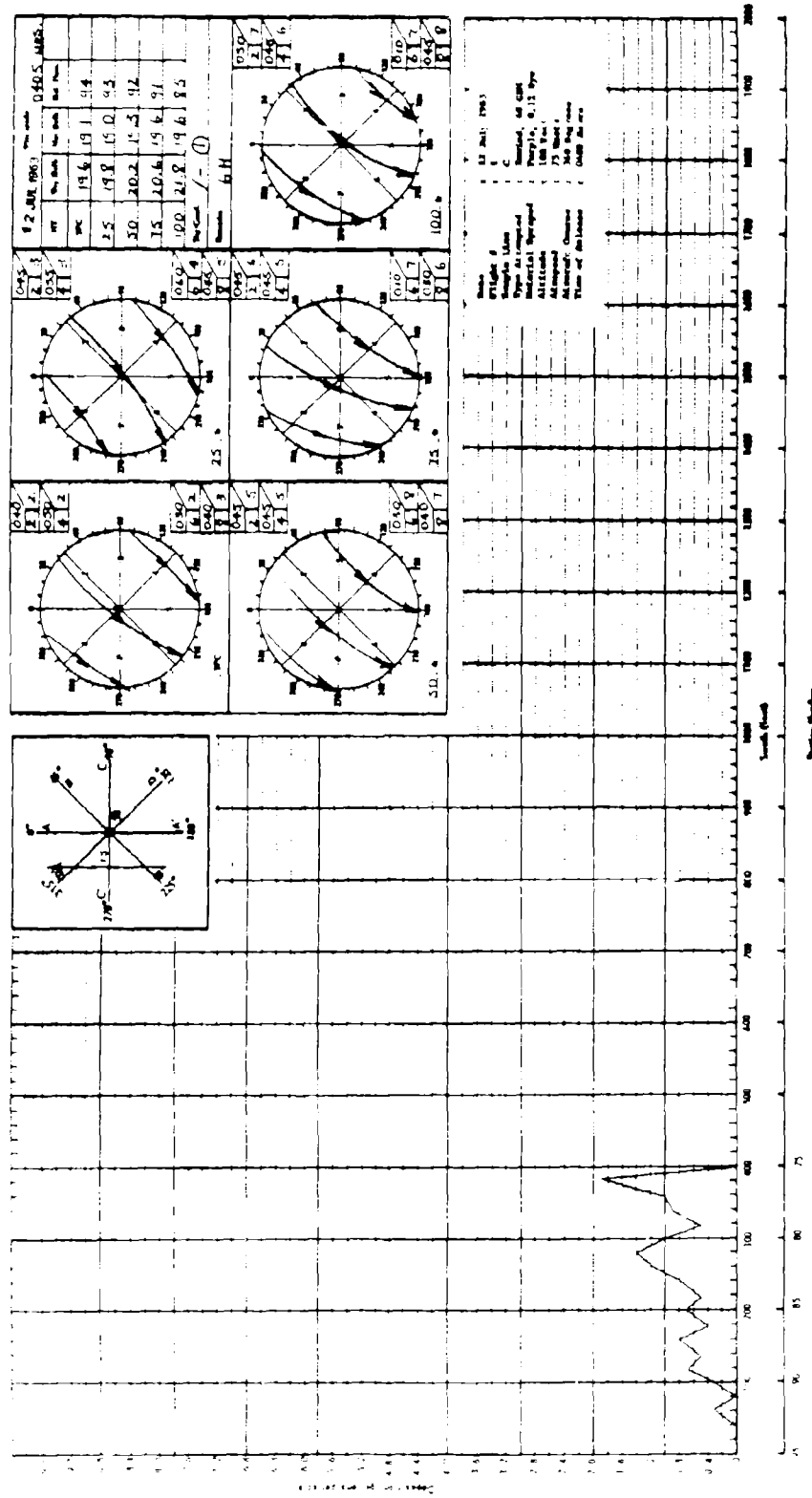
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 68 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 1 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0409 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 10 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 75	Blank					76	1.9
						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

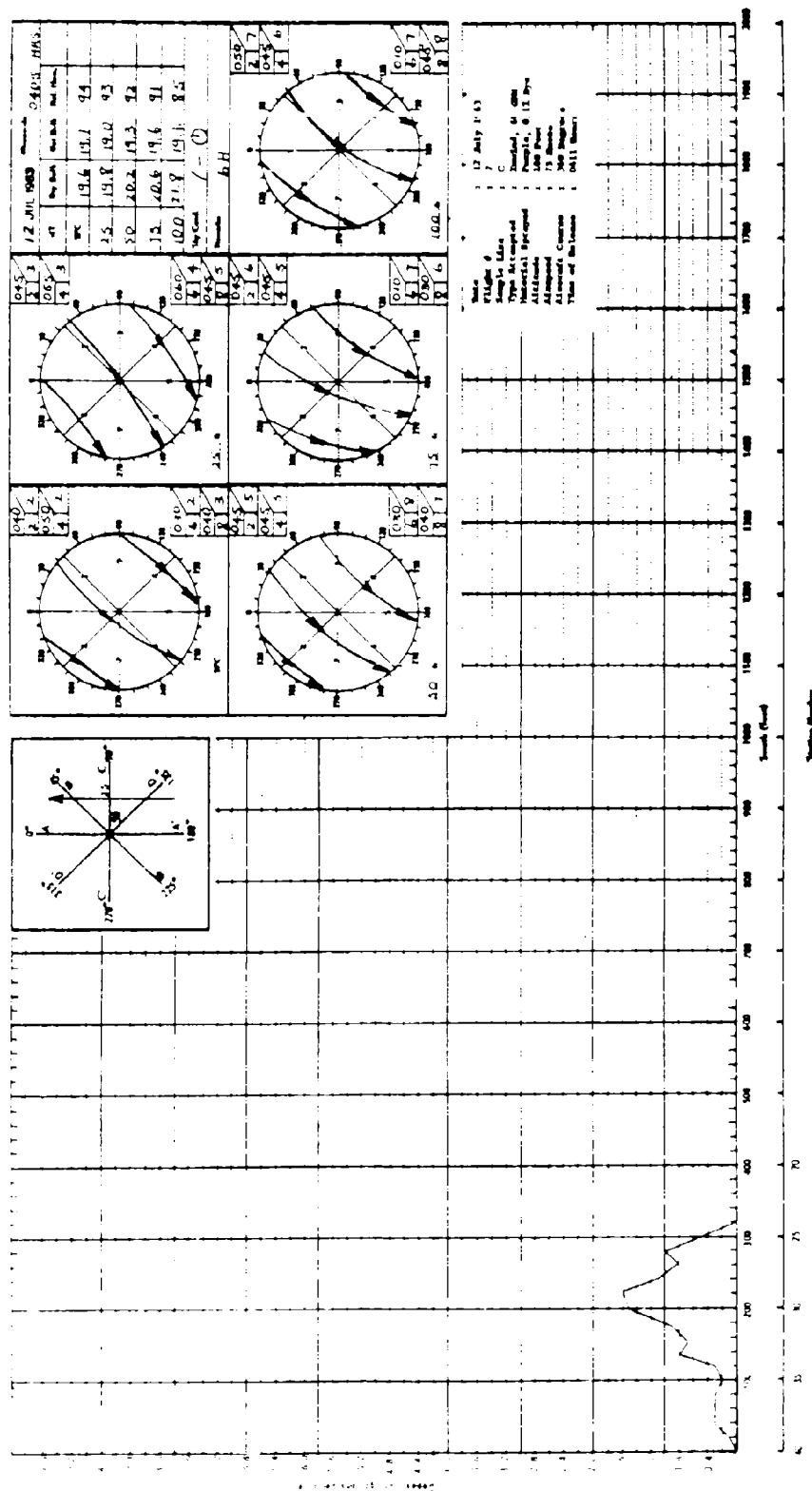


MASS DEPOSIT

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

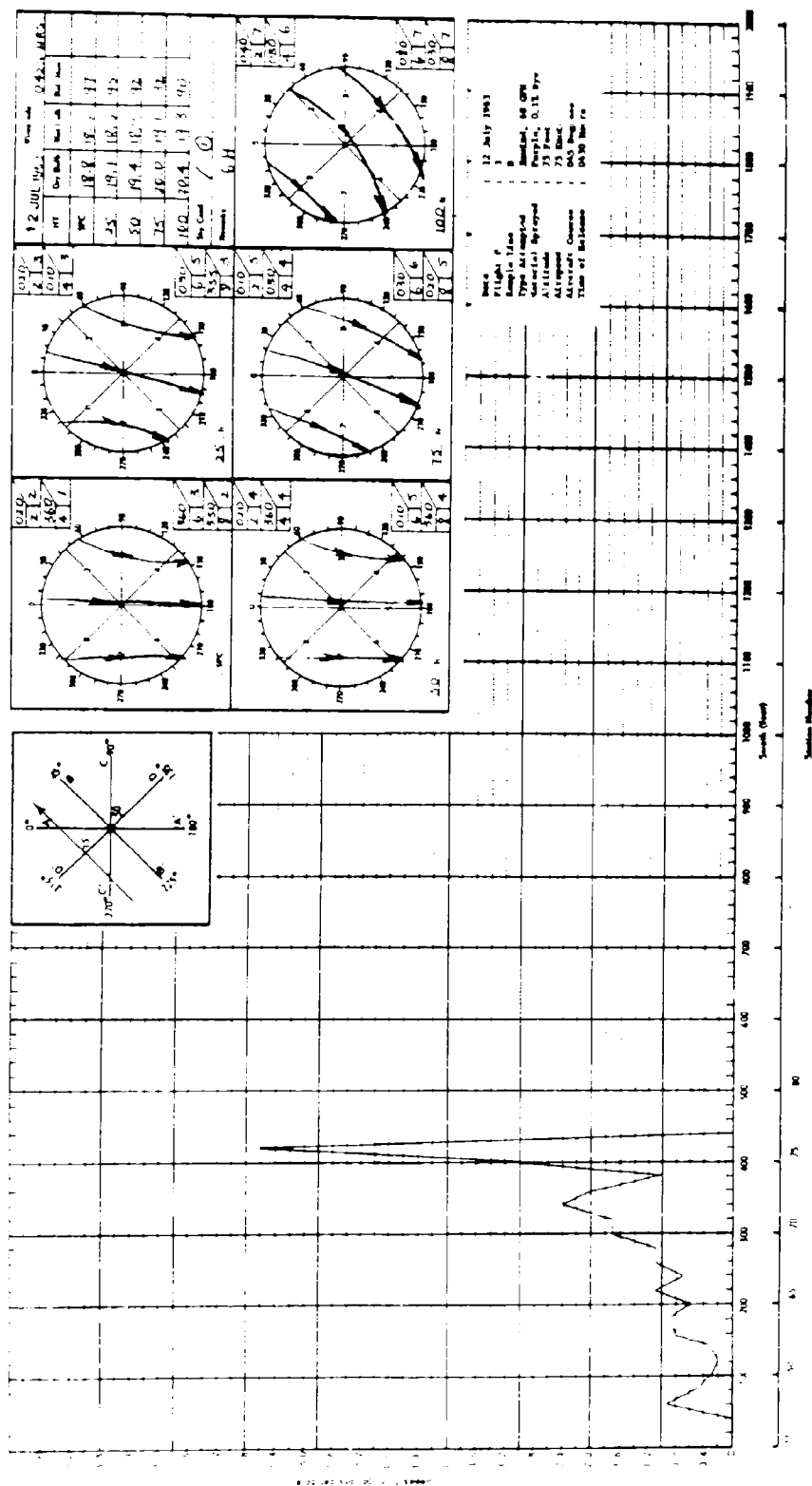
MATERIAL: Purple FLOW RATE: 68 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 3 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0430 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 13 Sec.

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



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: 0432 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 5 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: Purple
 FLOW RATE: 68 GPM SYSTEM: 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			

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

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

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

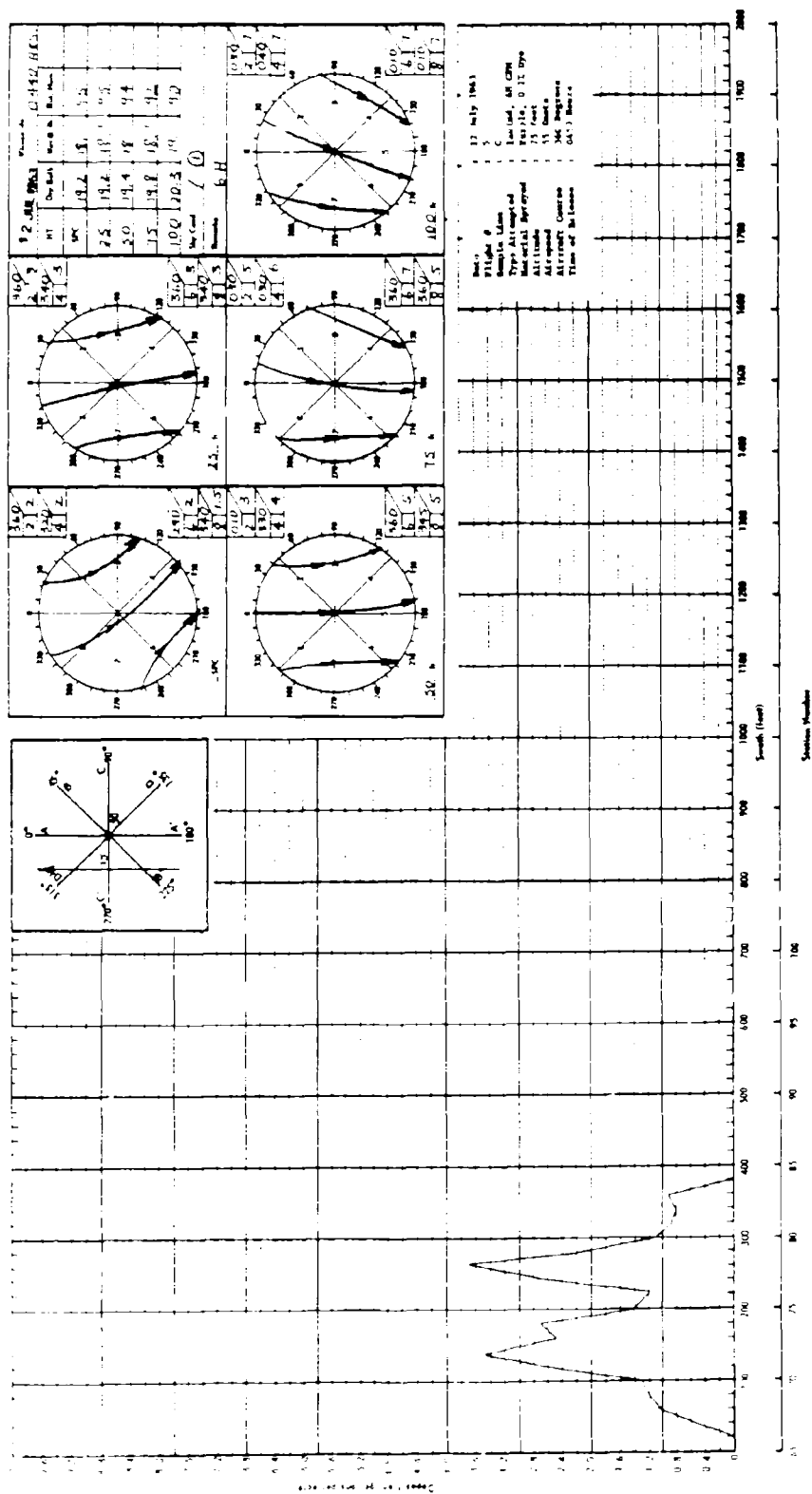
MASS DEPOSIT

MATERIAL: <u>Purple</u>	FLOW RATE: <u>68</u> <u>GPM</u>
DATE: <u>12 July 1963</u>	SYSTEM: <u>RIDAL</u>
FLIGHT #: <u>5</u>	AIRSPED: <u>35</u> <u>Knots</u>
SAMPLE LINE: <u>C</u>	ALTITUDE: <u>75</u> <u>Feet</u>
TIME OF RELEASE: <u>0452</u> <u>Hours</u>	AIRCRAFT COURSE: <u>360</u> <u>Degrees</u>
DURATION: <u>16</u> <u>Sec.</u>	

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 30.3



MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 68 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 6 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0452 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 15 Sec.

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

% Recovery - 112.2

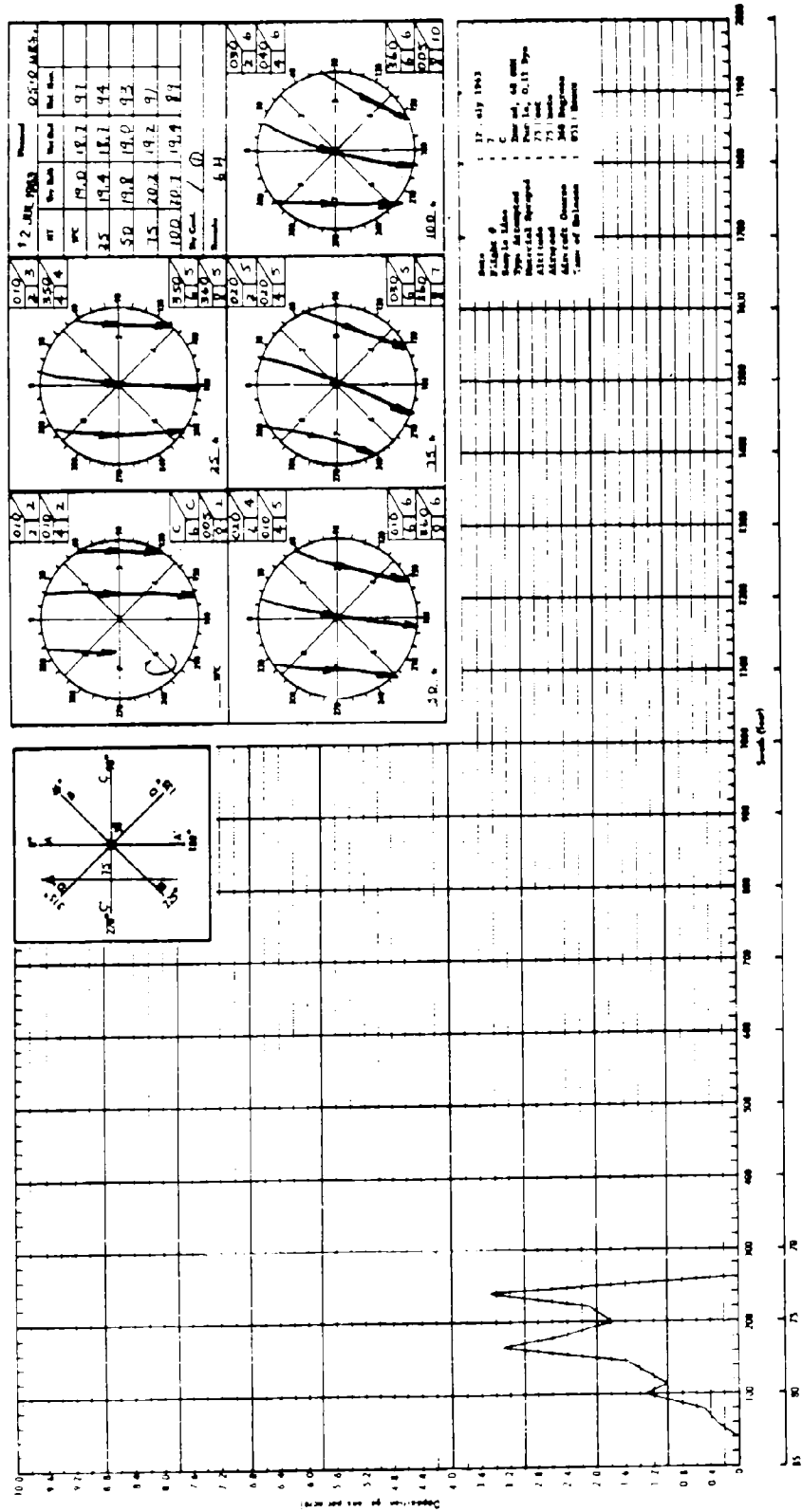
Total 29.6

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 68 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 7 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0510 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 8 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: Purple
 FLOW RATE: 68 GPM SYSTEM: 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			

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

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

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

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 68 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 8 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0512 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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 DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 9 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0531 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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	1.8
						78	3.5
						79	3.1
						80	1.4
						81	0.6
						82	0.8
						83	0.5
						84	0.2
						85	0.3
						86	0.2
						87	0.1
						Stations 88 - 100	Blank

Total 19.0

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 10 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0533 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 11 PAPER: Kromakote, white
 SAMPLE LINE: A MATERIAL: Purple
 FLOW RATE: 69 GPM SYSTEM: 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			

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

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(7400) = 1129.4 \text{ Microns}$$

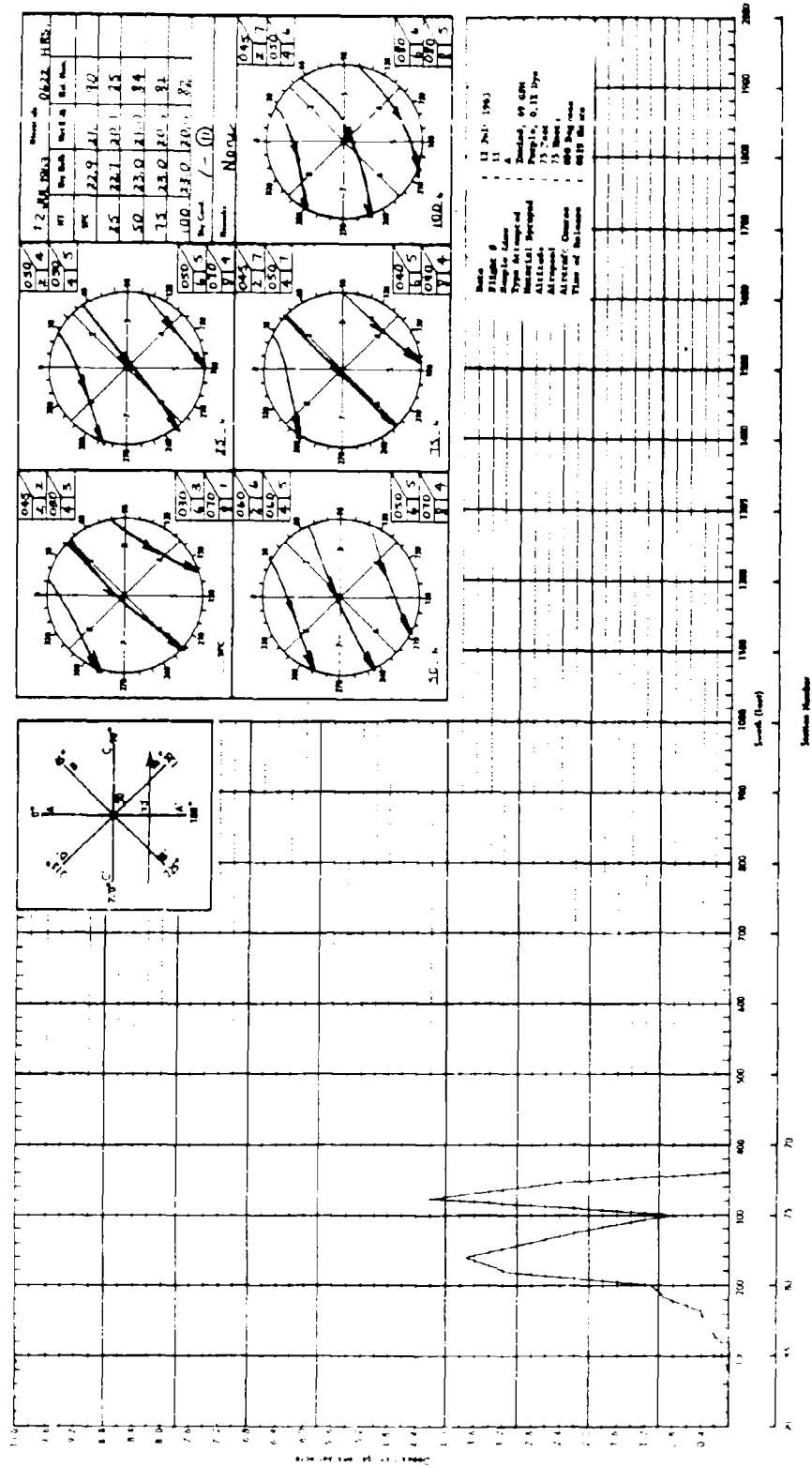
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 11 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0620 Hours AIRCRAFT COURSE: 090 Degrees
 DURATION: 11 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	2.4
						74	4.2
						75	0.9
						76	2.0
						77	2.8
						78	3.7
						79	3.1
						80	1.1
						81	0.9
						82	0.4
						83	0.3
						84	0.1
						85	0.1
						Stations 86 - 100	Blank

Total 22.0

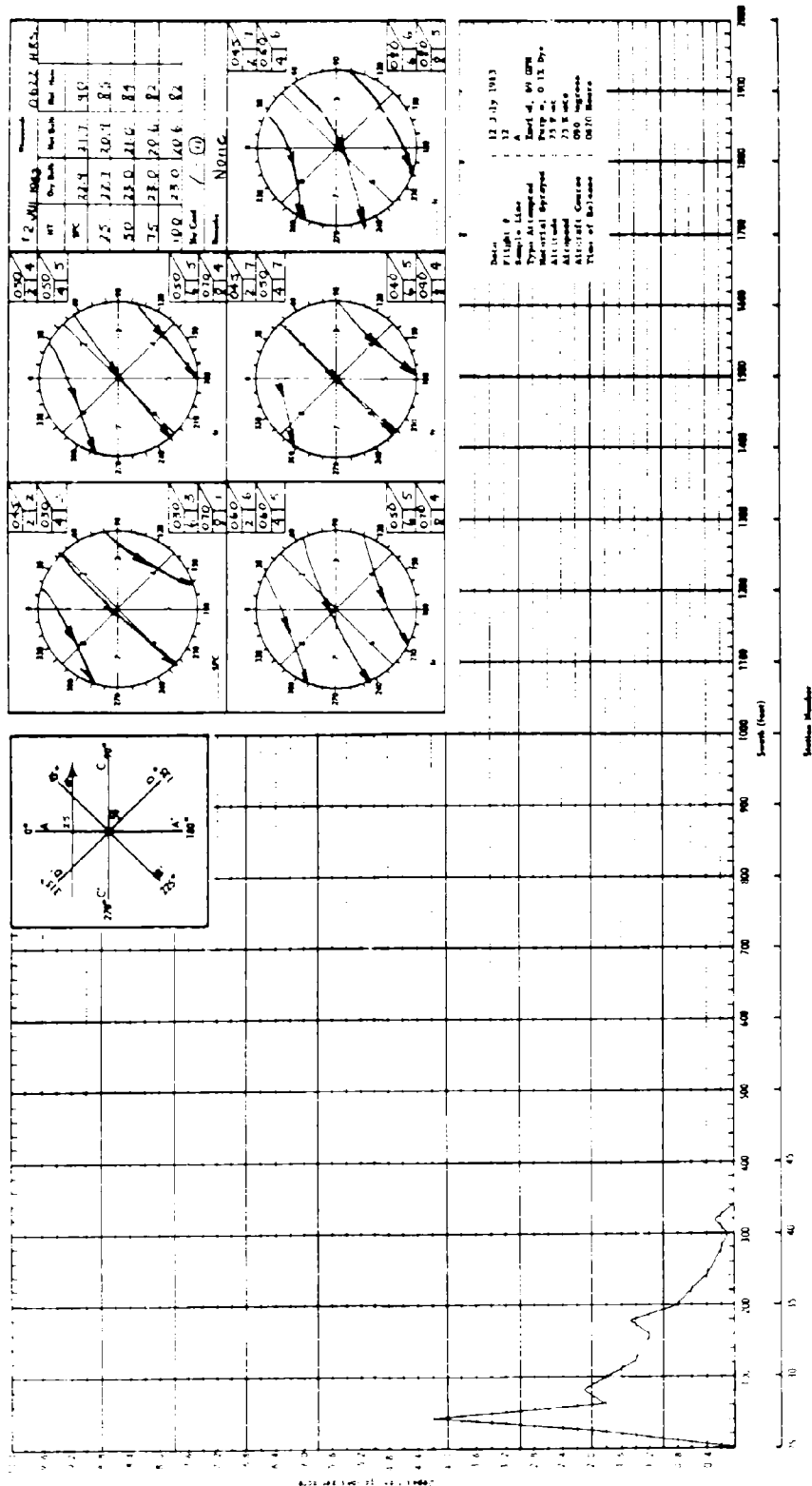


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 12 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 75 Feet
 TIME OF RELEASE: 0619 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 - 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

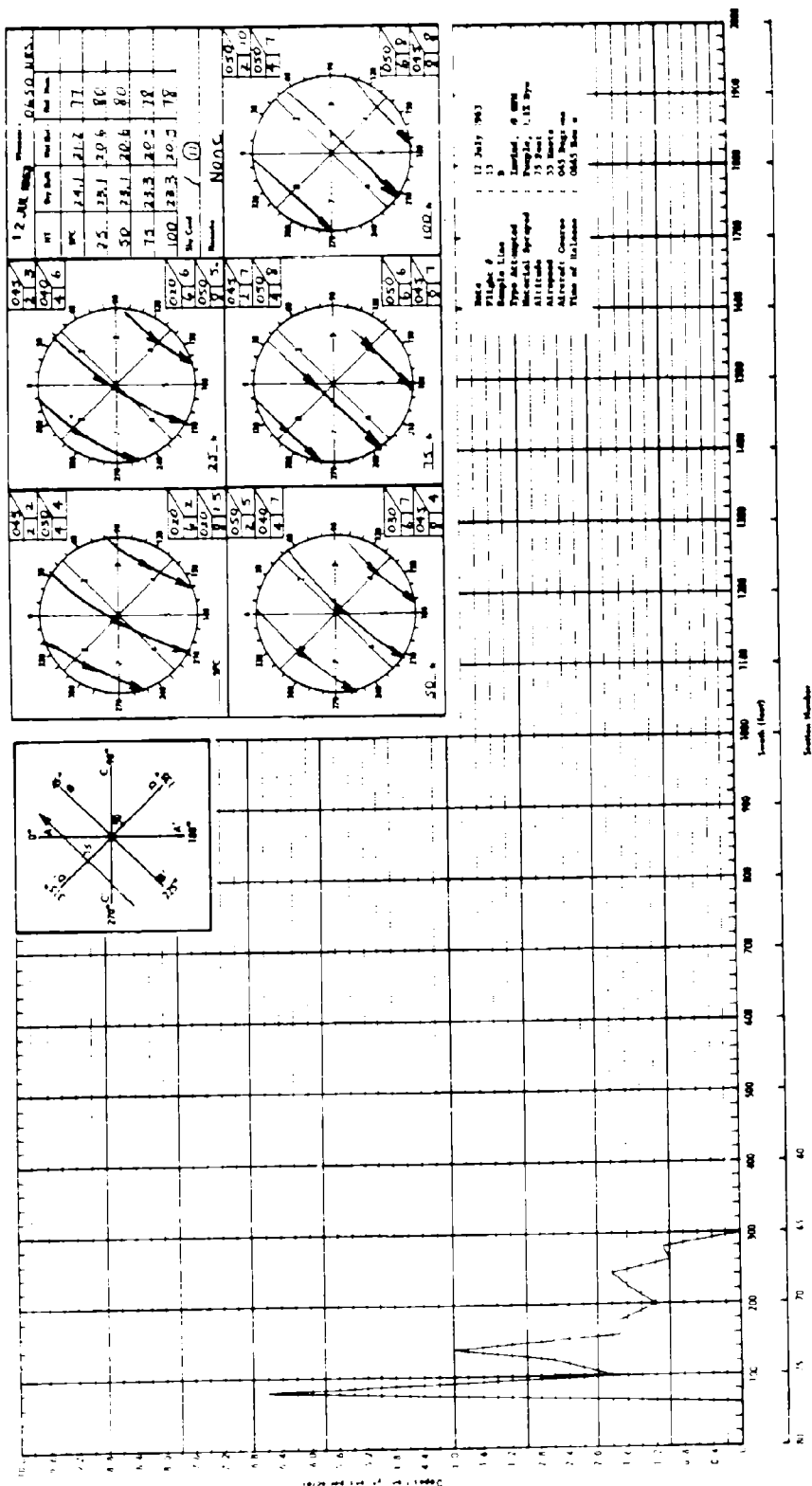


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 12 July 1963 SYSTEM: HIDAL
 FLIGHT #: 13 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0645 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 12 Sec.

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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 14 PAPER: Kromekote, white
 SAMPLE LINE: D MATERIAL: Purple
 FLOW RATE: 69 GPM SYSTEM: HIDAL

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	9	6000			
23	6	5900			
22	8	5800			

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

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(7200) = 1100.8 \text{ Microns}$$

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

MASS DEPOSIT

MATERIAL: <u>Purple</u>	FLOW RATE: <u>69</u> GPM
DATE: <u>12 July 1963</u>	SYSTEM: <u>HIDAL</u>
FLIGHT #: <u>14</u>	AIRSPED: <u>55</u> Knots
SAMPLE LINE: <u>D</u>	ALTITUDE: <u>75</u> Feet
TIME OF RELEASE: <u>0647</u> Hours	AIRCRAFT COURSE: <u>045</u> Degrees
DURATION: <u>14</u> 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/HIBAL GROUND FLOW AND FLIGHT DATA

DATE CALIBRATED: <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 CALIBRATED: <u>69</u> <u>GPM</u>

OPERATIONAL DATA DURING FLIGHT

Above information is for Runs 1 - 18.

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 1 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0351 Hours AIRCRAFT 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	1.9
						77	0.9
						78	2.3
						79	1.5
						80	2.5
						81	1.2
						82	0.9
						83	1.2
						84	0.8
						85	0.3
						86	0.8
						87	0.1
						88	0.5
						89	0.4
						90	0.3
						91	0.0
						Stations 92 - 100	Blank

Total 15.6

MASS MEDIAN DIAMETER

DATE: 13 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 2 PAPER: Kromekote, white
 SAMPLE LINE: D MATERIAL: Purple
 FLOW RATE: 69 GPM SYSTEM: 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			

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

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

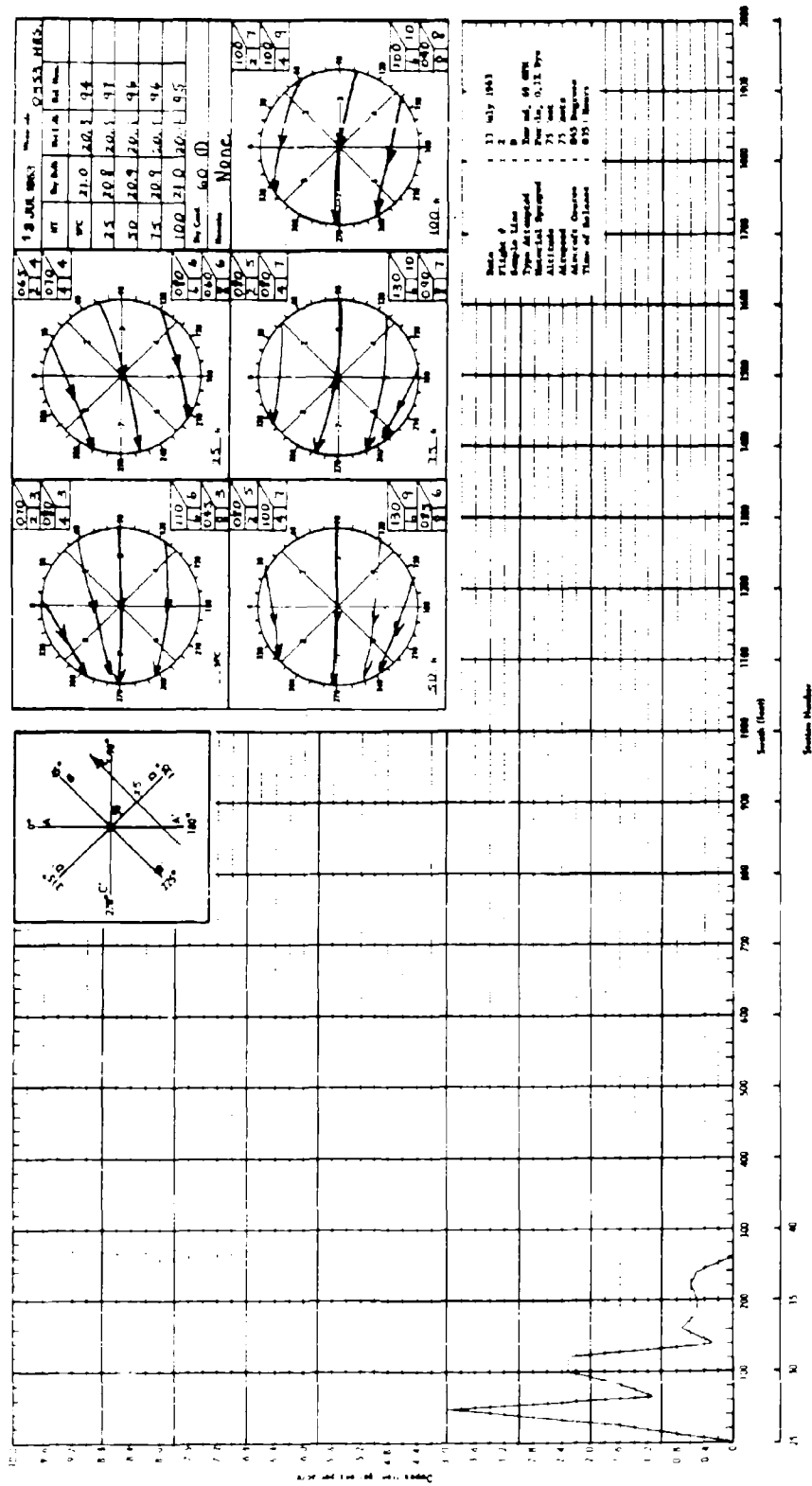
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 2 AIRSPEED: 75 Knot
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0353 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: ---

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



MASS DEPOSIT

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

<u>STATION G.P.A.</u>	<u>STATION G.P.A.</u>	<u>STATION G.P.A.</u>	<u>STATION G.P.A.</u>
<u>Stations 1 - 70 Blank</u>			

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 20.5

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			

$$\text{MMD} = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(6800)}{2.2} = 474.3 \text{ Microns}$$

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

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

MASS DEPOSIT

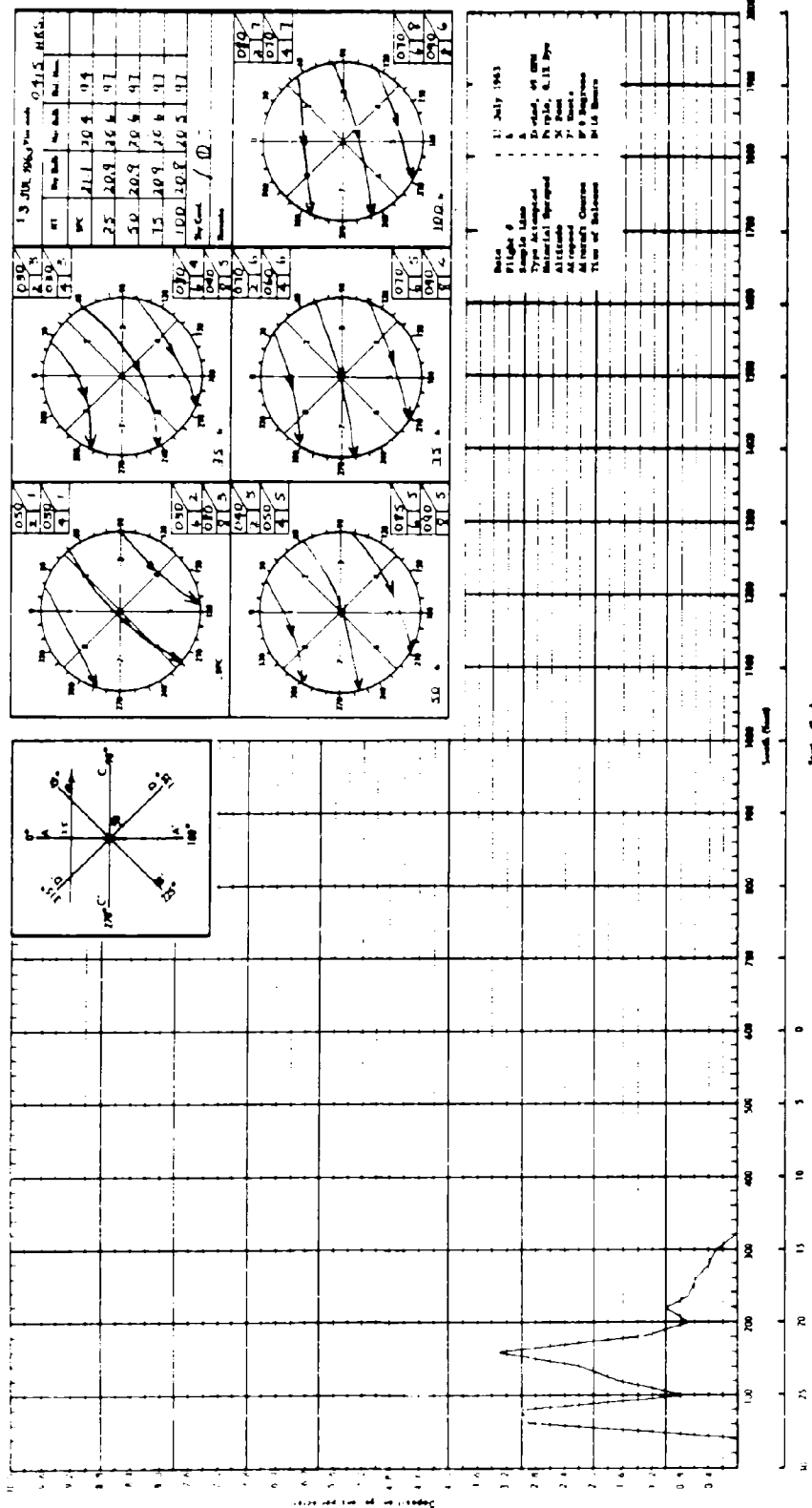
MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 4 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0416 Hours AIRCRAFT COURSE: 090 Degrees
 DURATION: 11 Sec.

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 3.0
 27 2.5

Stations 28 - 100 Blank

Total 20.0



MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 5 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 50 Feet
 TIME OF RELEASE: 0439 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 - 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

MASS MEDIAN DIAMETER

DATE: 13 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 6 PAPER: Kromekote, white
 SAMPLE LINE: D MATERIAL: Purple
 FLOW RATE: 69 GPM SYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
23	1	8800			
24	6	7600			
23	3	7000*			
23	2	6800			
23	4	6600	14	1A	100 (smallest)
22	9	6500			
22	10	6400			
23	5	6300			
25	8	6200			
24	7	6100			
25	11	6000			

$$\text{MMD} = \frac{70.44 + 0.1431(\text{Spot D Max})}{\text{Con. Factor}} = \frac{70.44 + 0.1431(7000)}{2.2} = 487.3 \text{ Microns}$$

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(8800) = 1329.7 \text{ Microns}$$

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

MASS DEPOSIT

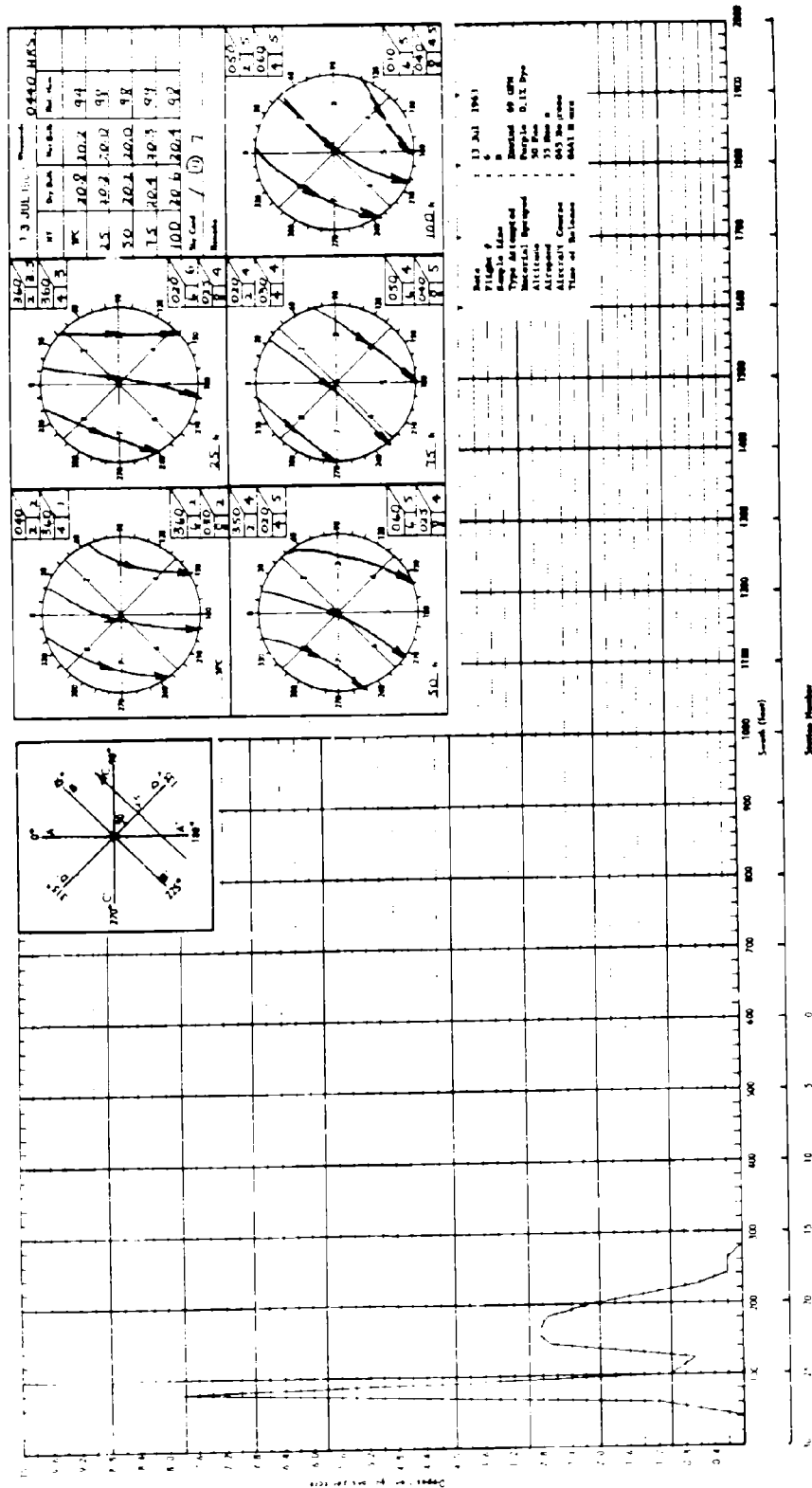
MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 6 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 50 Feet
 TIME OF RELEASE: 0441 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 16 Sec.

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



MASS DEPOSIT

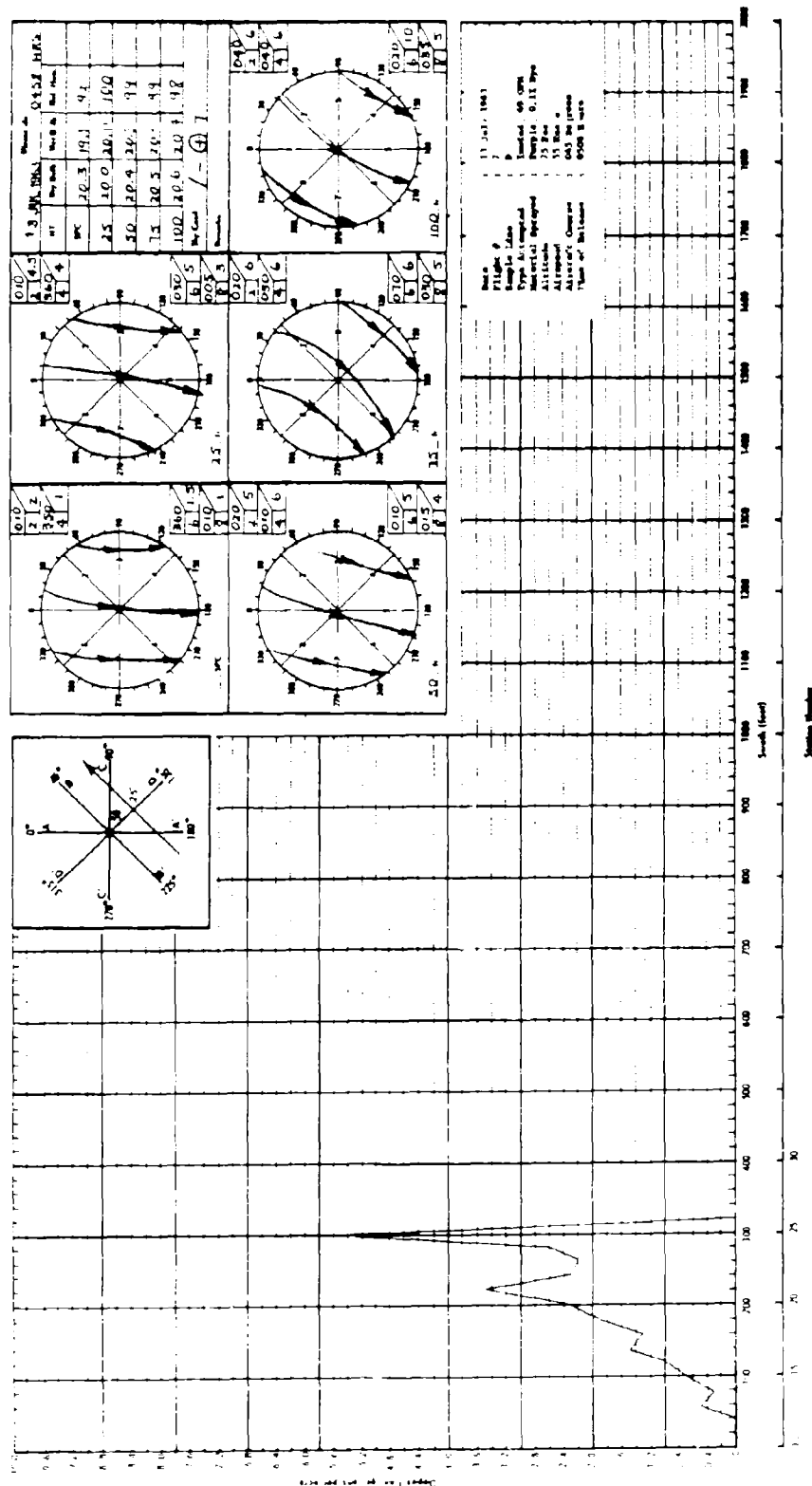
MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 7 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0500 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 12 Sec.

STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 12 Blank

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 DEPOSIT

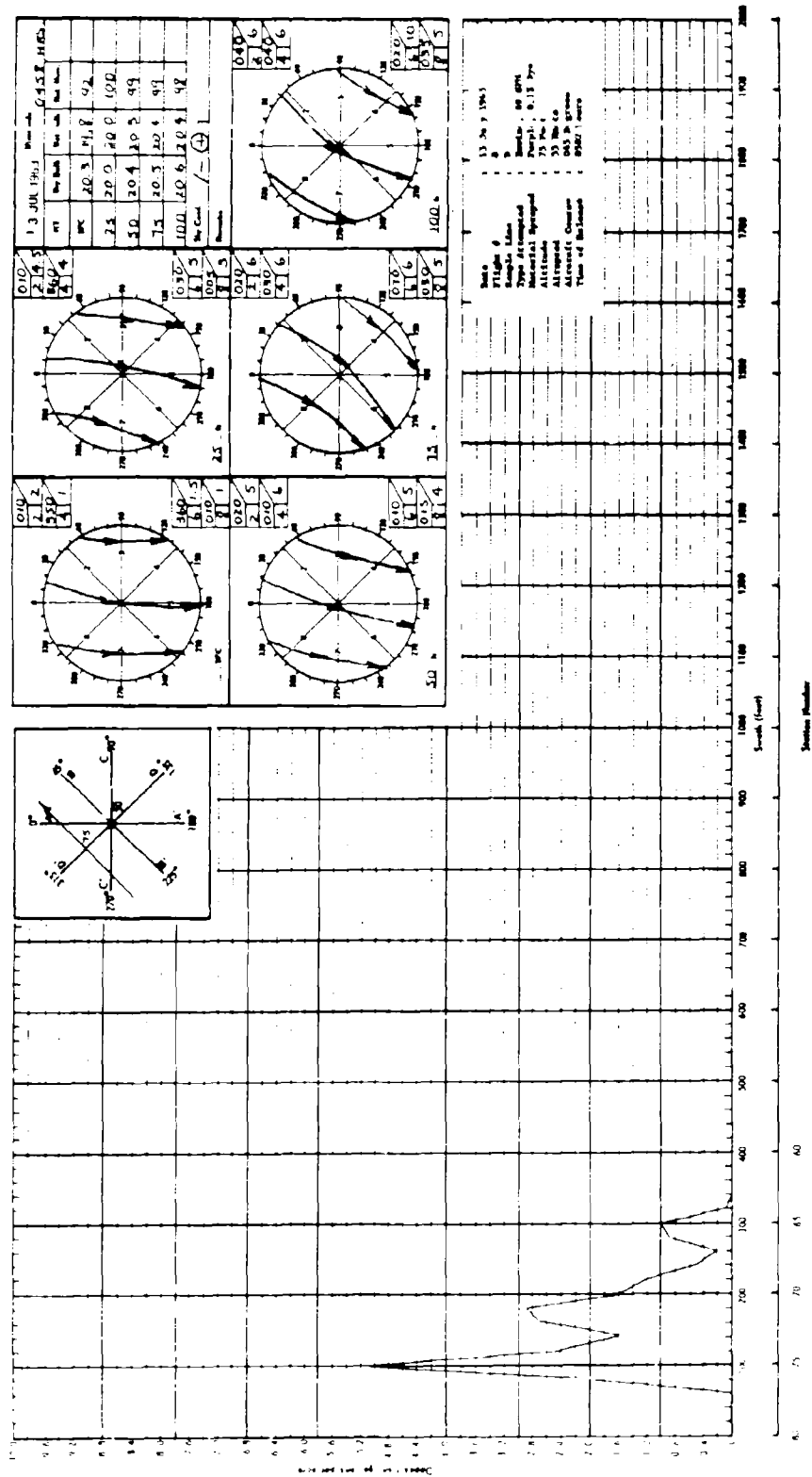
MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 8 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0502 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 15 Sec.

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

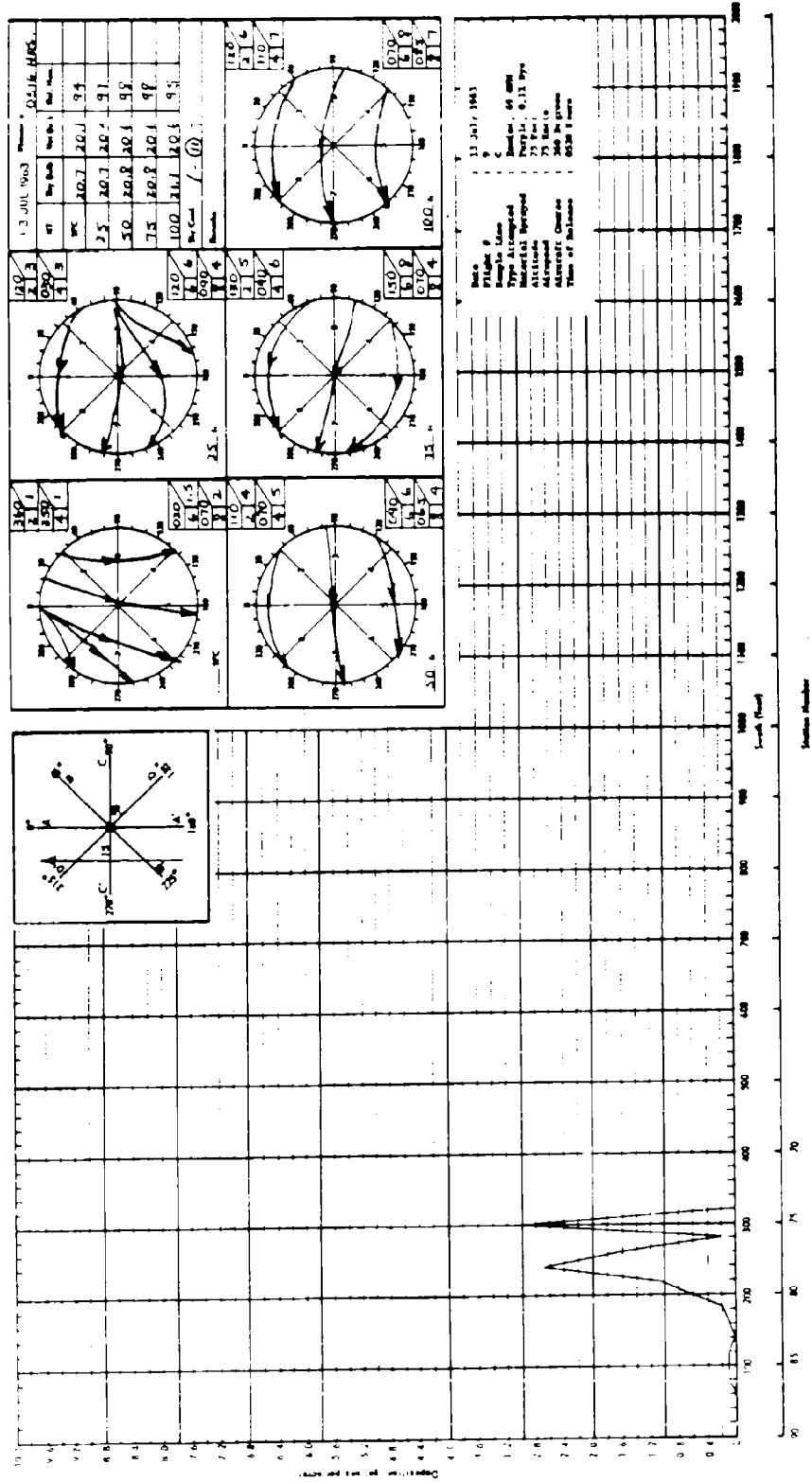


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 9 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0520 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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 4.7



MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 10 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0522 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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

MASS MEDIAN DIAMETER

DATE: 13 July 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 11 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: Purple
 FLOW RATE: 69 GPM SYSTEM: Hidal

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			

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

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

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

MASS DEPOSIT

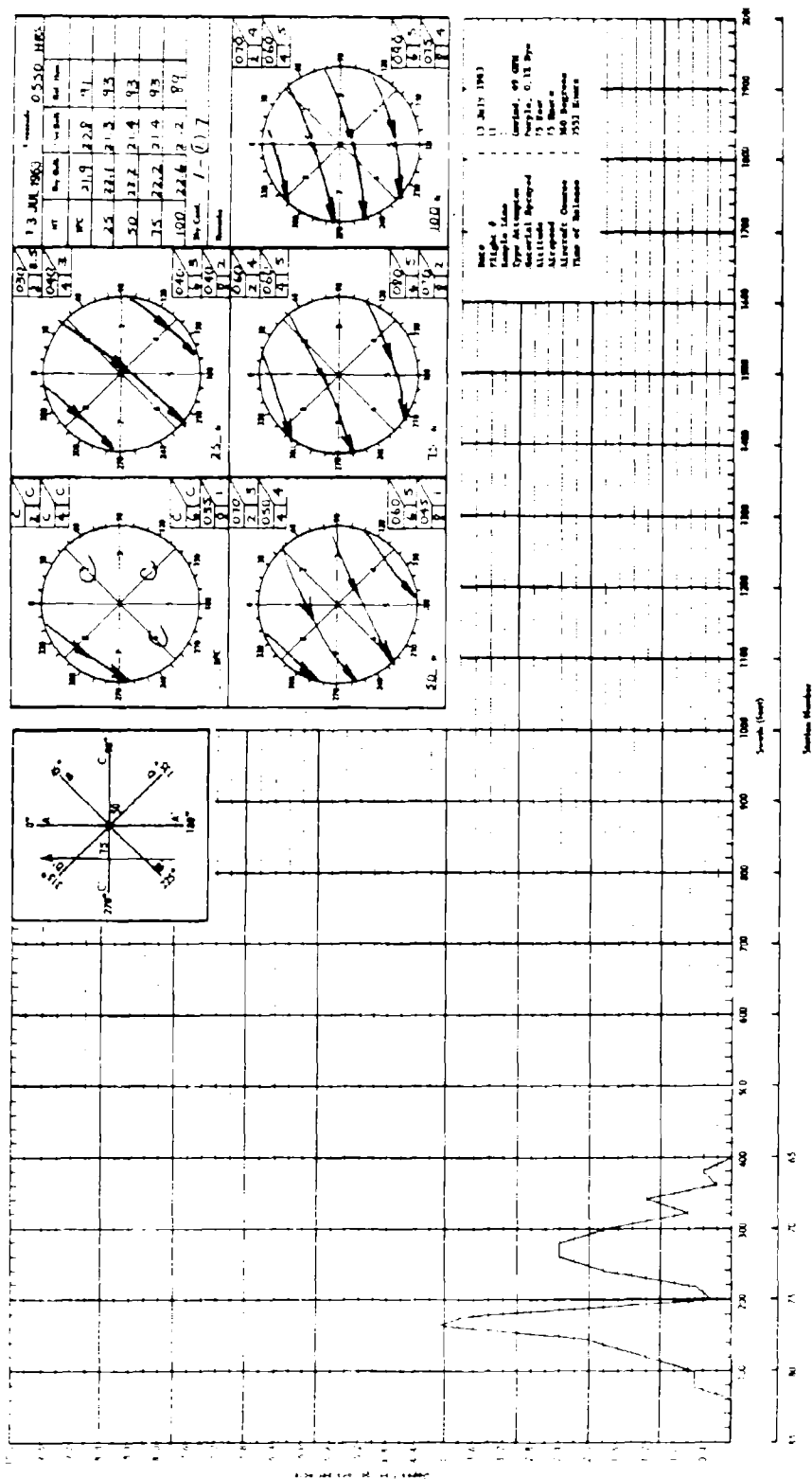
MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 11 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0552 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 15 Sec.

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

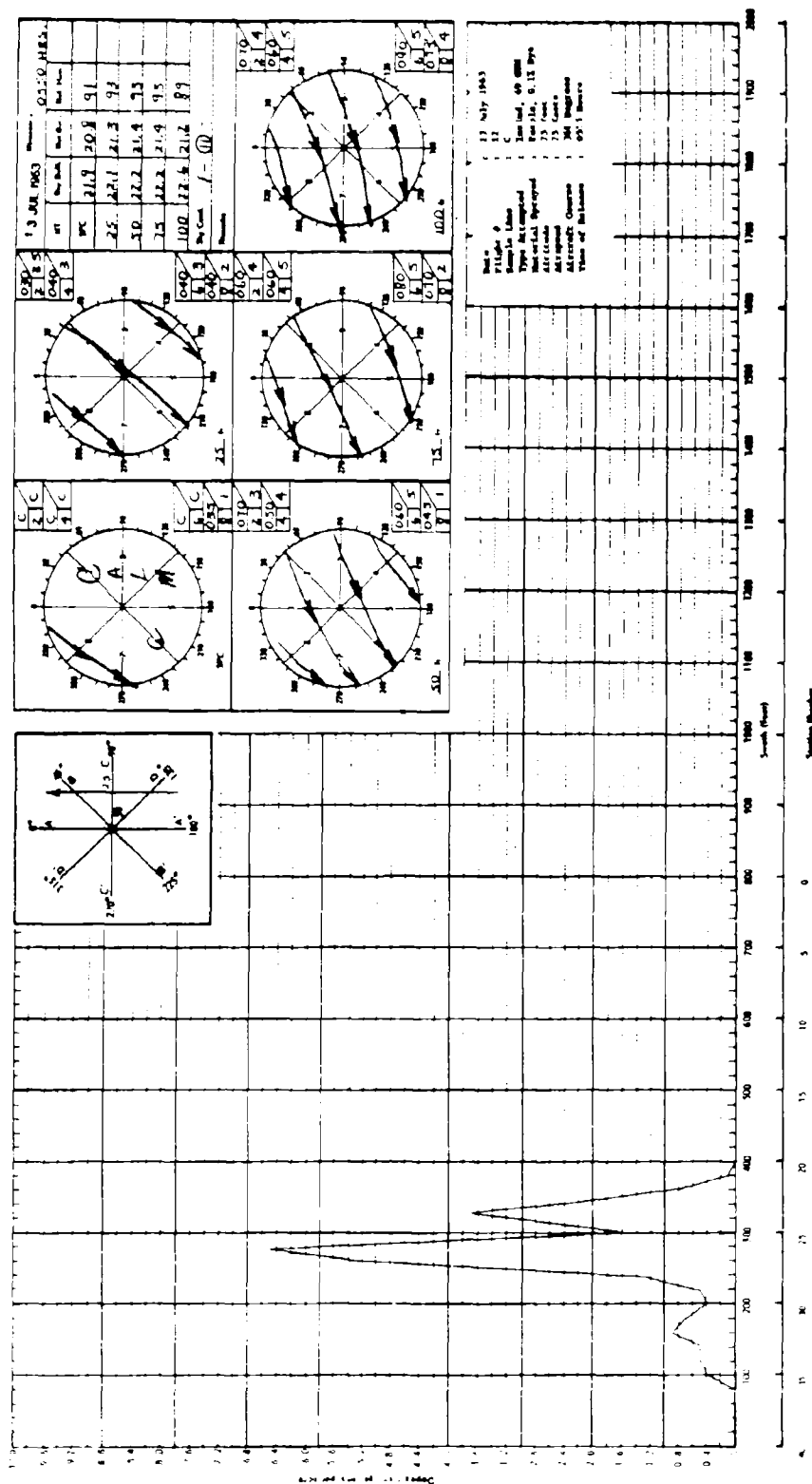


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 23 July 1963 SYSTEM: HIDAL
 FLIGHT #: 12 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0555 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 13 PAPER: Kromekote, white
 SAMPLE LINE: D MATERIAL: Purple
 FLOW RATE: 69 GPM SYSTEM: HIDAL

STA.	DROP #	SIZE	STA.	DROP #	SIZE
77	1	8400			
75	4	6200*			
77	2	6100			
77	5	5900			
77	8	5800	94	1A	100(smallest)
75	9	5700			
78	7	5500			
77	11	5400			
78	3	5300			
77	6	5200			
78	10	5000			

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

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(8400) = 1202.0 \text{ Microns}$$

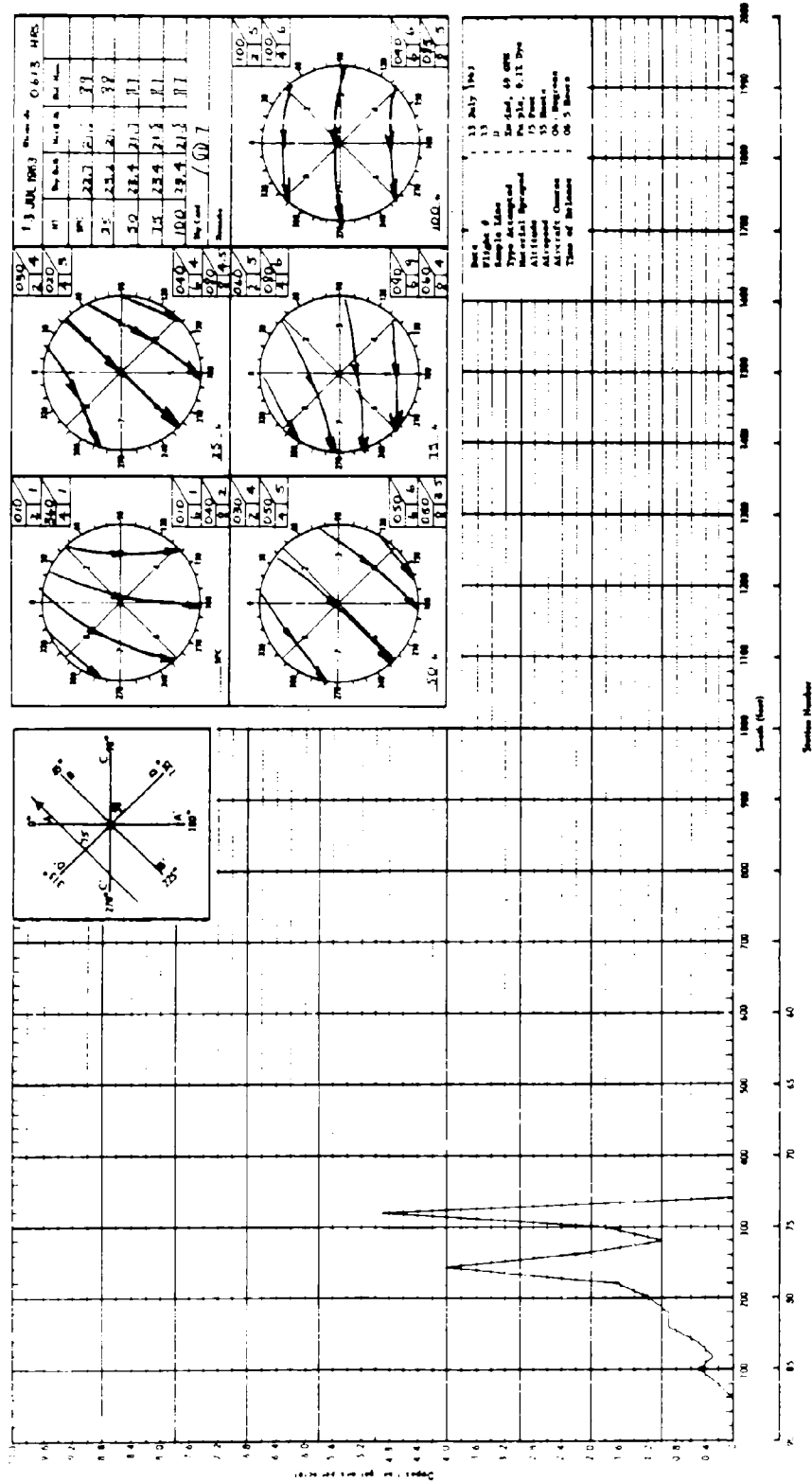
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 13 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0615 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 - 73	Blank					74	4.9
						75	1.8
						76	1.0
						77	2.2
						78	4.0
						79	1.6
						80	1.2
						81	0.9
						82	0.9
						83	0.5
						84	0.3
						85	0.5
						86	0.2
						Stations 87 - 100	
							Blank

Total 20.8

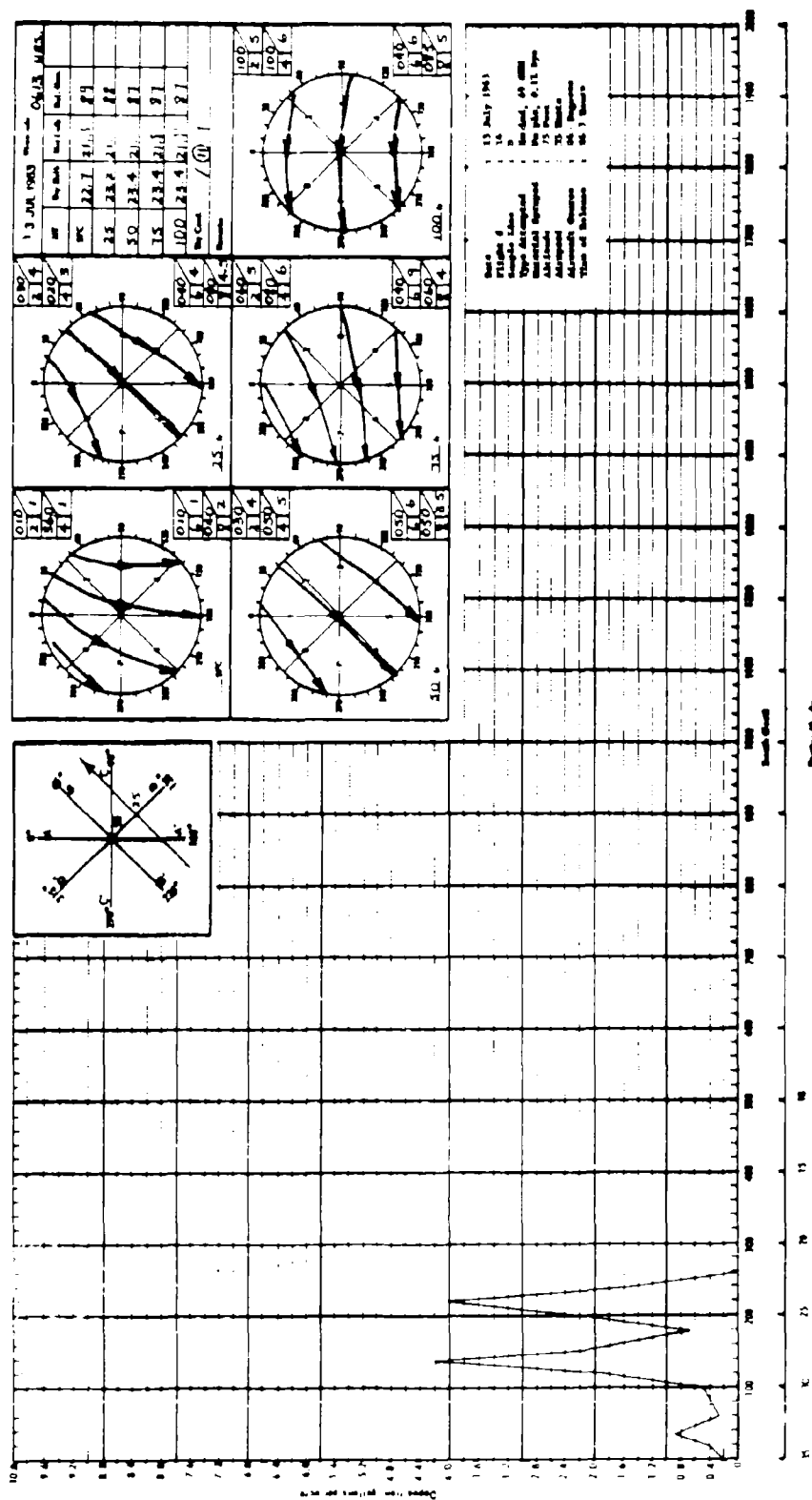


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 14 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0617 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 - 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 DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 15 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0633 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 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

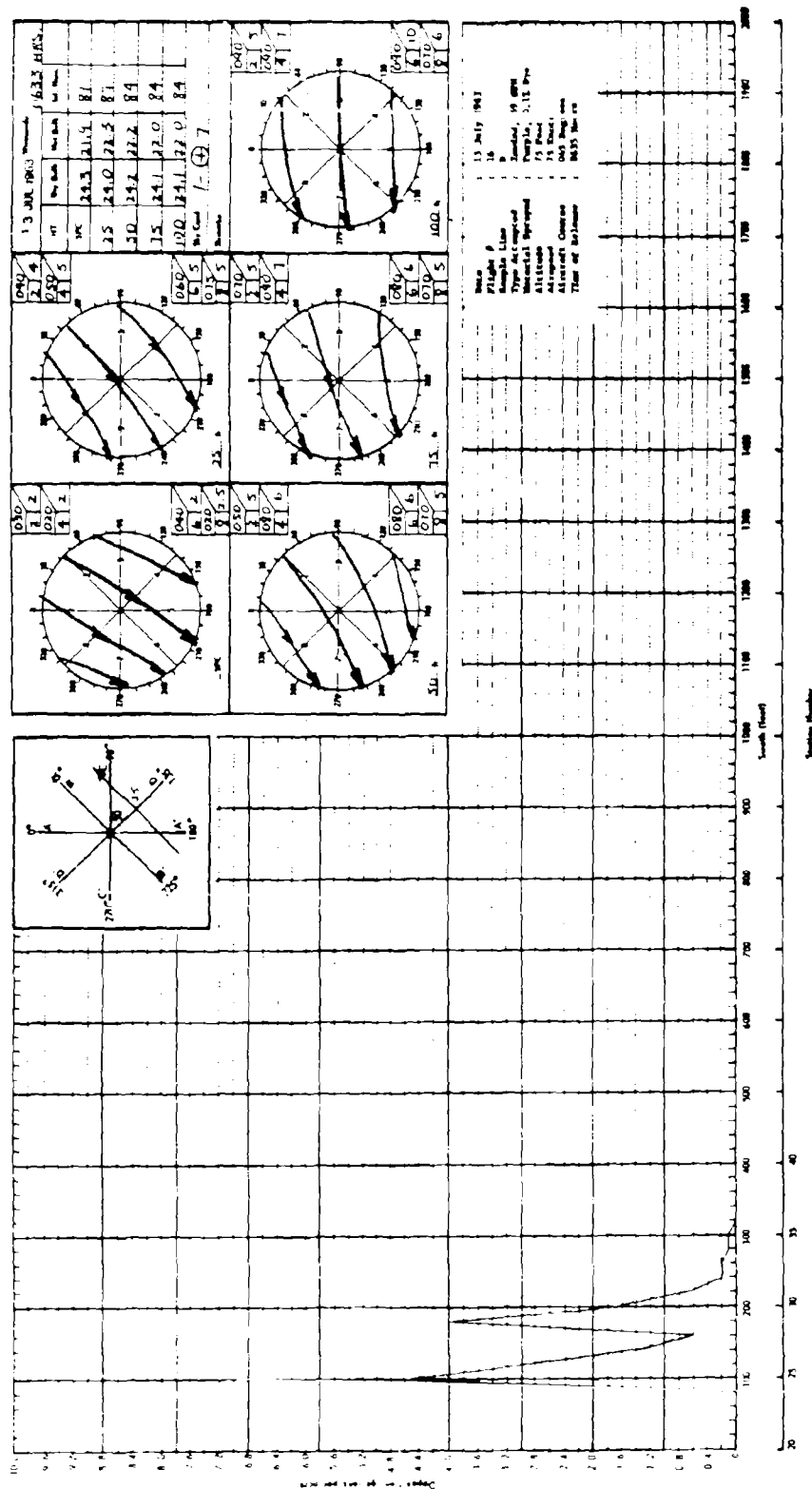
Total 21.6

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 16 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0635 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 17 PAPER: Kromekote, white
 SAMPLE LINE: A MATERIAL: Purple
 FLOW RATE: 69 GPM SYSTEM: HIDAL

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			

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

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

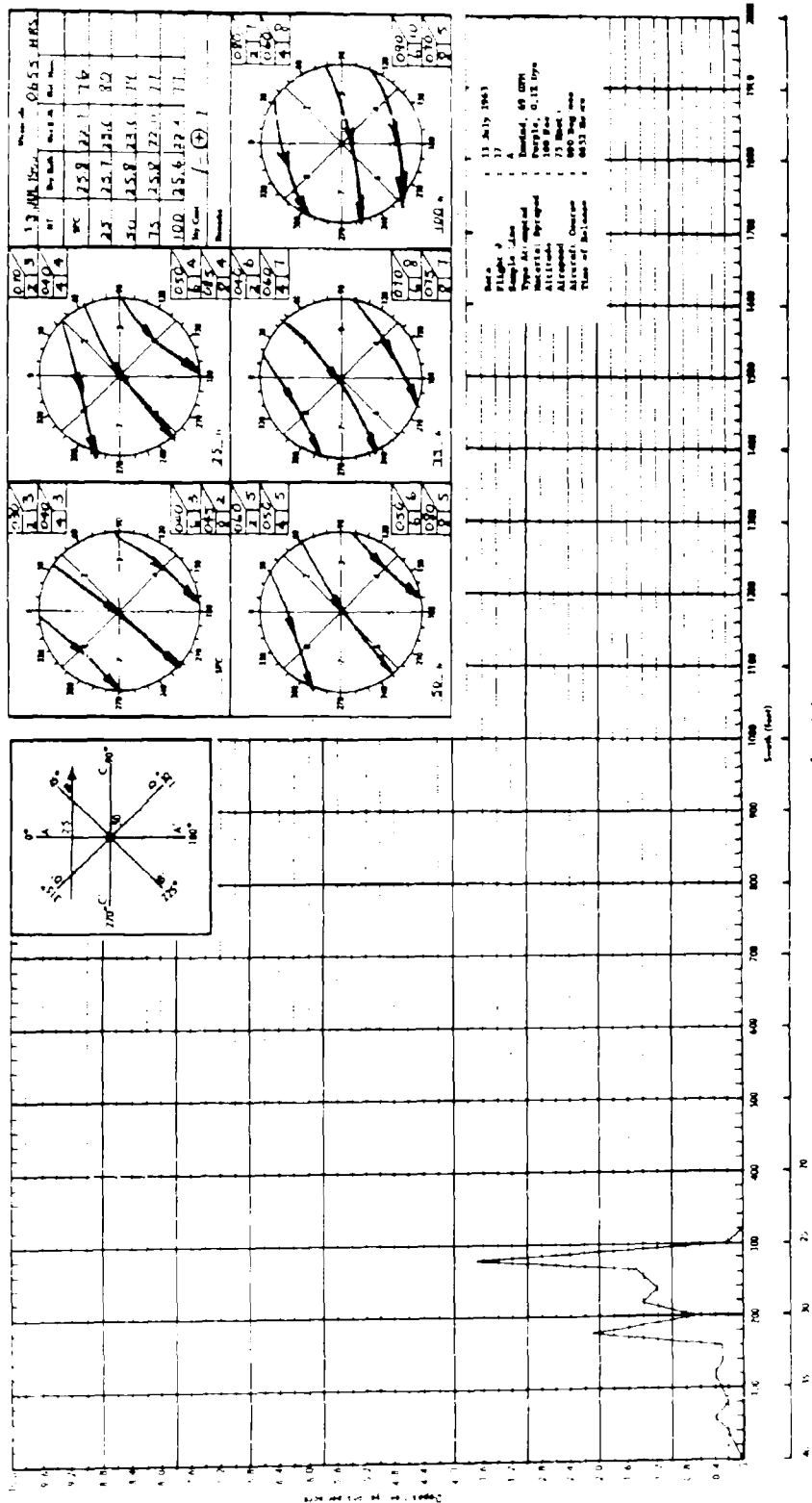
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 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				

Total 19.1



MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 69 GPM
 DATE: 13 July 1963 SYSTEM: HIDAL
 FLIGHT #: 18 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 100 Feet
 TIME OF RELEASE: 0654 Hour AIRCRAFT COURSE: 090 Degrees
 DURATION: 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

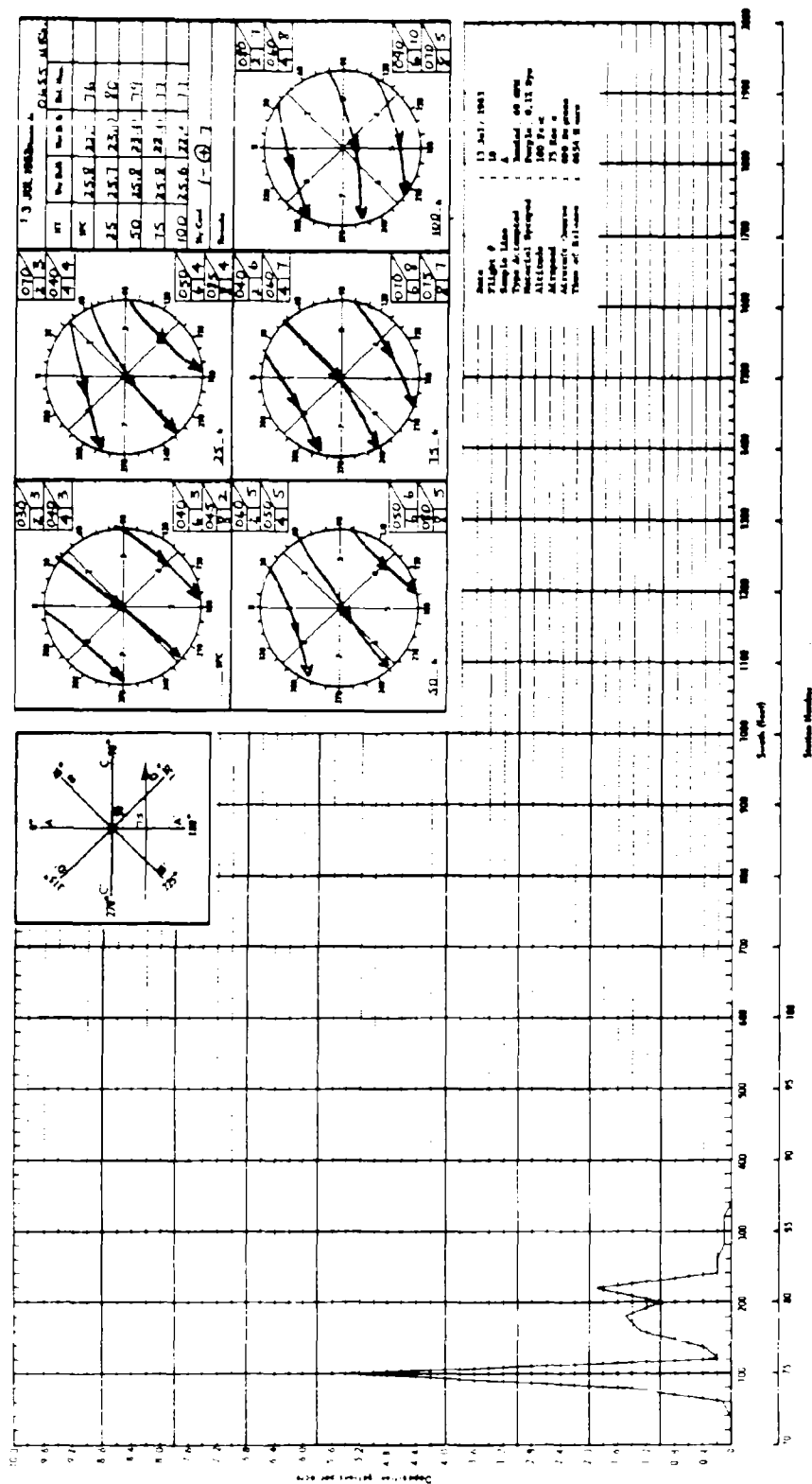


TABLE 24/HYDRA GROUND FLOW & FLIGHT DATA

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> Sec.	PUMP PRESSURE: <u>32</u> PSI
TOTAL AMOUNT SPRAYED: <u>28</u> Gal.	FLOW RATE CALIBRATED: <u>56</u> GPM

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.

MASS MEDIAN DIAMETER

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

STA.	DROP #	SIZE	STA.	DROP #	SIZE
76	1	6400*			
76	2	6200			
76	3	6100			
73	4	6000			
77	8	5900	100	1A	100(smallest)
77	7	5800			
73	5	5600			
73	6	5500			
77	9	5400			
76	10	5300			

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

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

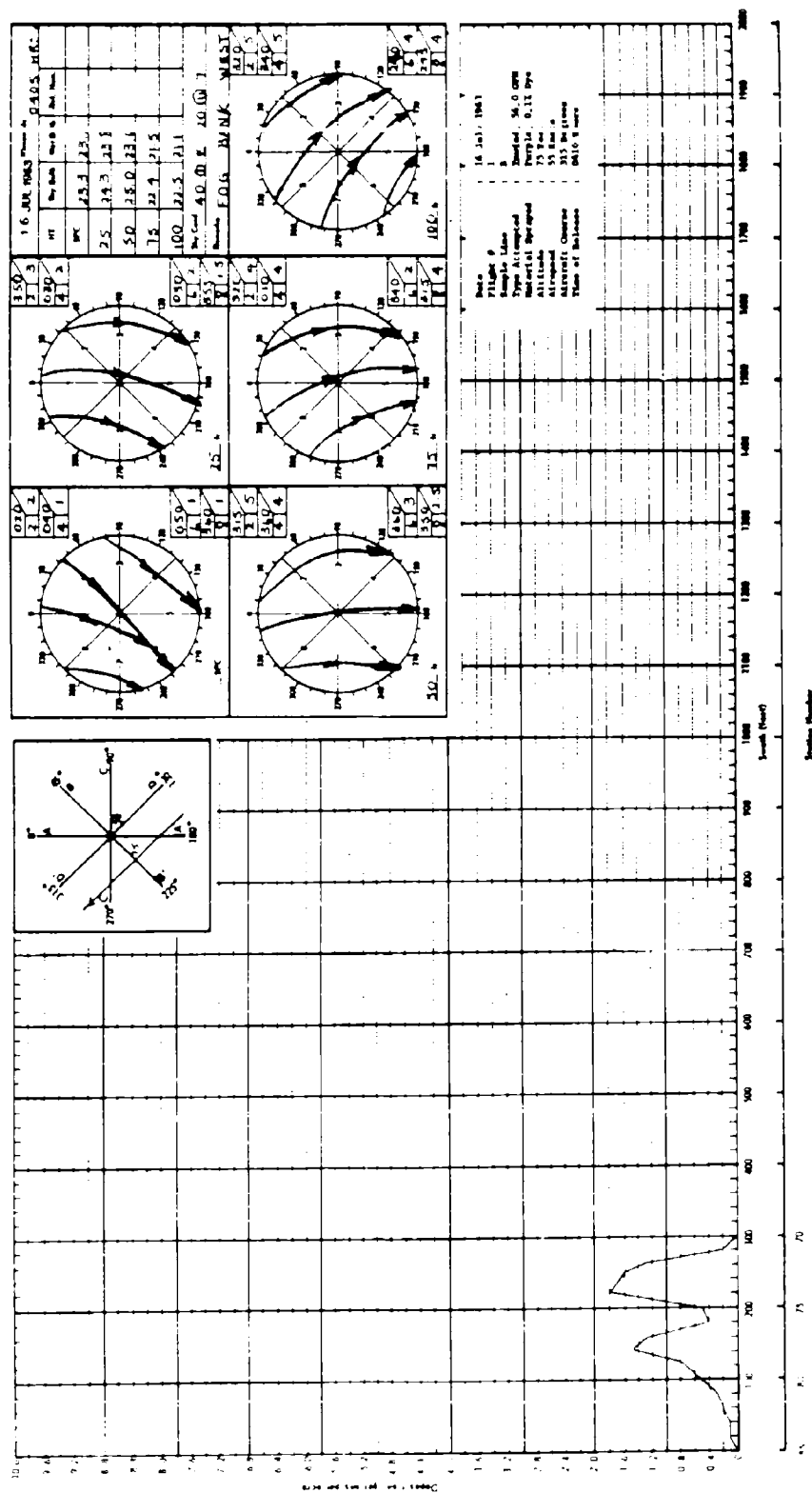
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 1 AIRSPEED: 55 Knot
 SAMPLE LINE: B ALTITUDE: 75 Feet
 TIME OF RELEASE: 0410 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: ---

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	1.8
						75	0.5
						76	0.4
						77	1.3
						78	1.5
						79	0.8
						80	0.5
						81	0.3
						82	0.2
						83	0.1
						84	0.1
						85	0.0
						Stations 86 - 100	
						Blank	

Total 10.6



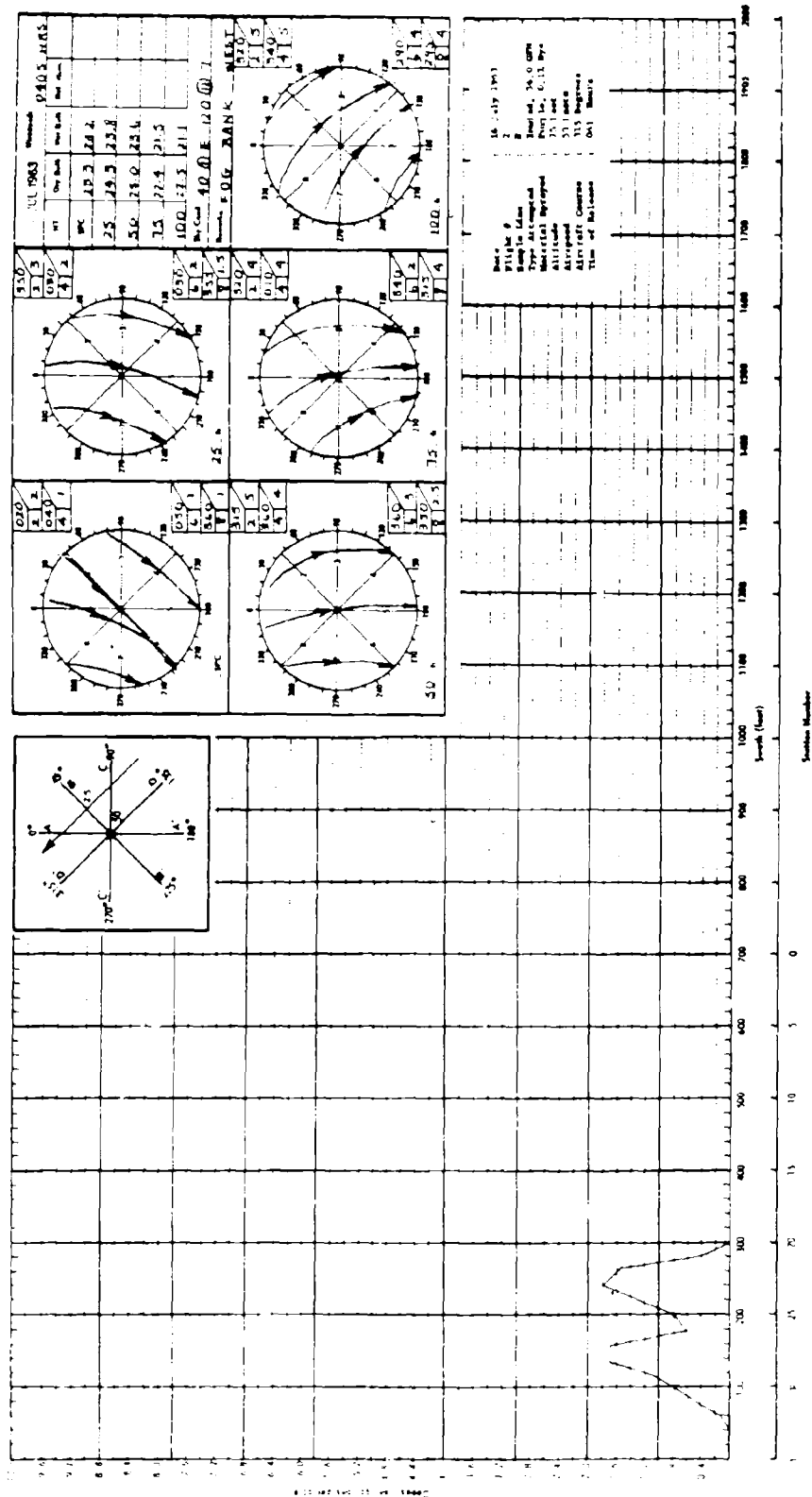
MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 2 AIRSPEED: 55 Knots
 SAMPLE LINE: B ALTITUDE: 75 Feet
 TIME OF RELEASE: 0412 Hours AIRCRAFT COURSE: 315 Degrees
 DURATION: ---

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 20	Blank	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 Blank					

% Recovery - 56.4

Total 12.4



MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 3 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0434 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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	1.8		
				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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 4 PAPER: Kromekote, white
 SAMPLE LINE: C MATERIAL: Purple
 FLOW RATE: 56 GPM SYSTEM: 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			

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

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(4300) = 665.8 \text{ Microns}$$

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

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 4 AIRSPEED: 75 Knots
 SAMPLE LINE: C ALTITUDE: 75 Feet
 TIME OF RELEASE: 0436 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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

MASS MEDIAN DIAMETER

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

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			

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

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

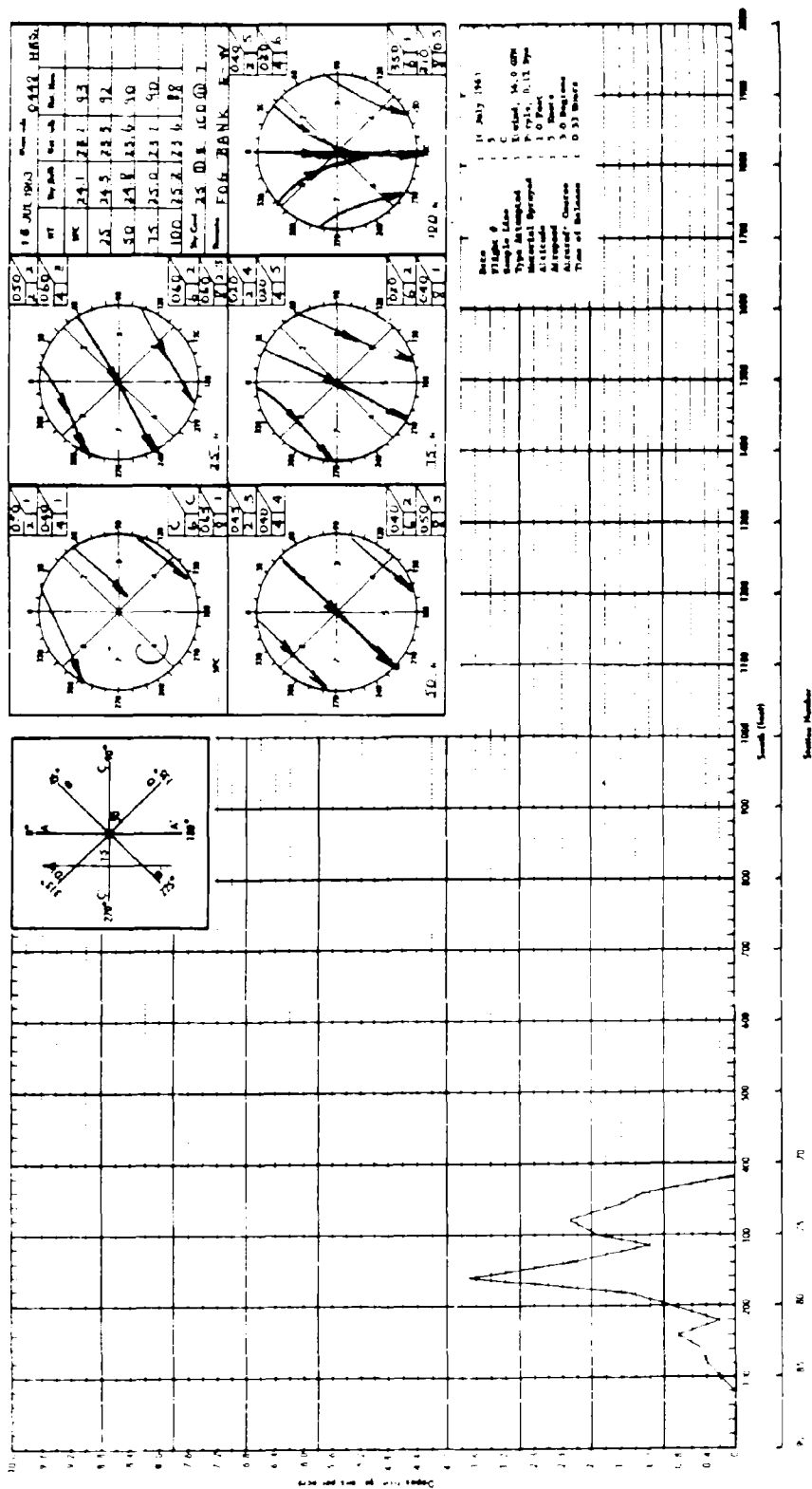
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 5 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0455 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 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

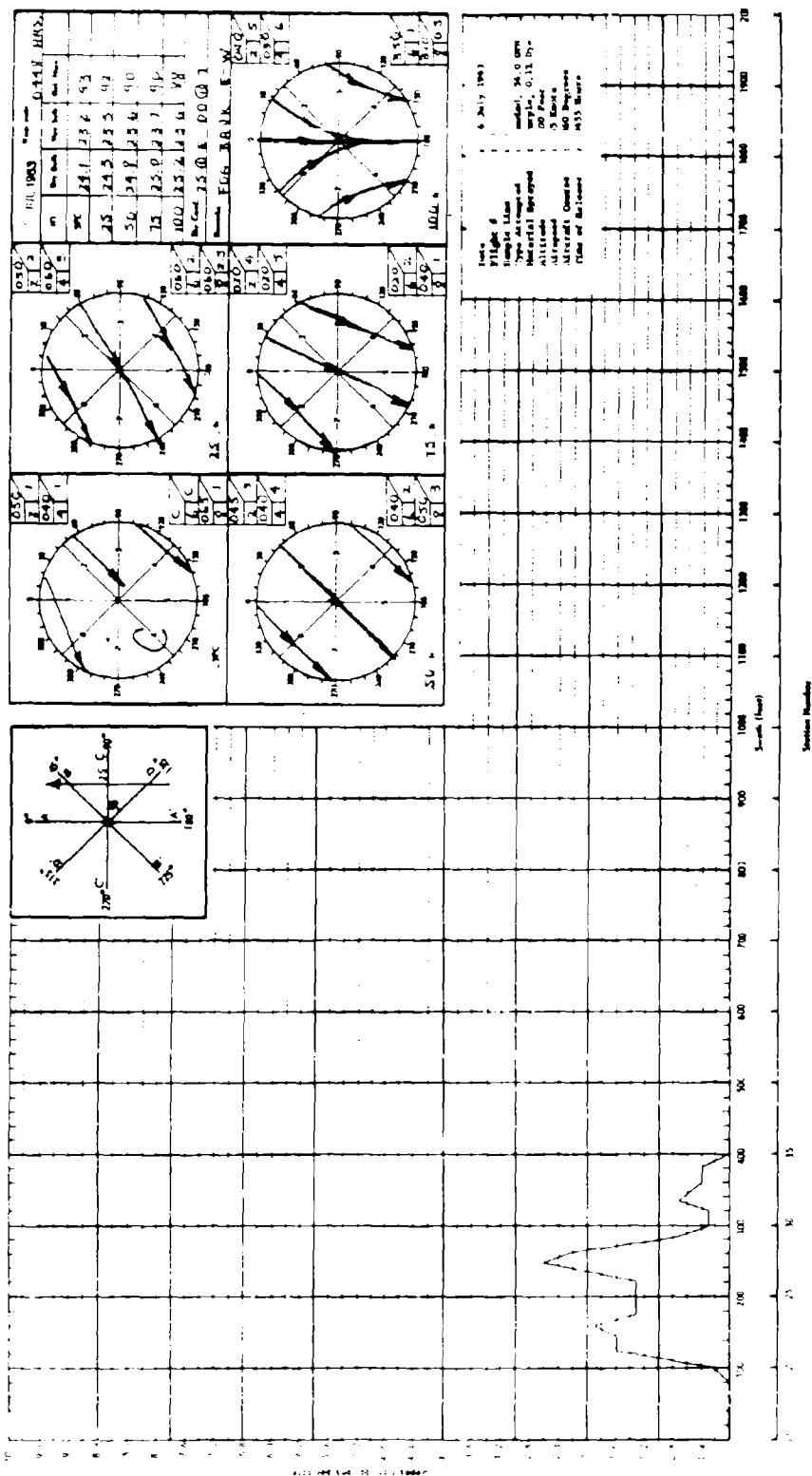


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 6 AIRSPEED: 55 Knots
 SAMPLE LINE: C ALTITUDE: 100 Feet
 TIME OF RELEASE: 0455 Hours AIRCRAFT COURSE: 360 Degrees
 DURATION: 13 Sec.

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



MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 7 AIRSPEED: 55 Knots
 SAMPLE LINE: D AIRCRAFT COURSE: 045 Degrees
 TIME OF RELEASE: 0513 Hours ALTITUDE: 50 Feet
 DURATION: 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 1963 CONVERSION FACTOR: 2.2
 FLIGHT #: 8 PAPER: Kromekote, white
 SAMPLE LINE: D MATERIAL: Purple
 FLOW RATE: 56 GPM SYSTEM: 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			

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

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

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

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 8 AIRSPEED: 55 Knots
 SAMPLE LINE: D ALTITUDE: 50 Feet
 TIME OF RELEASE: 0513 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 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 - 65.7

Total 14.4

MASS MEDIAN DIAMETER

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

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			

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

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

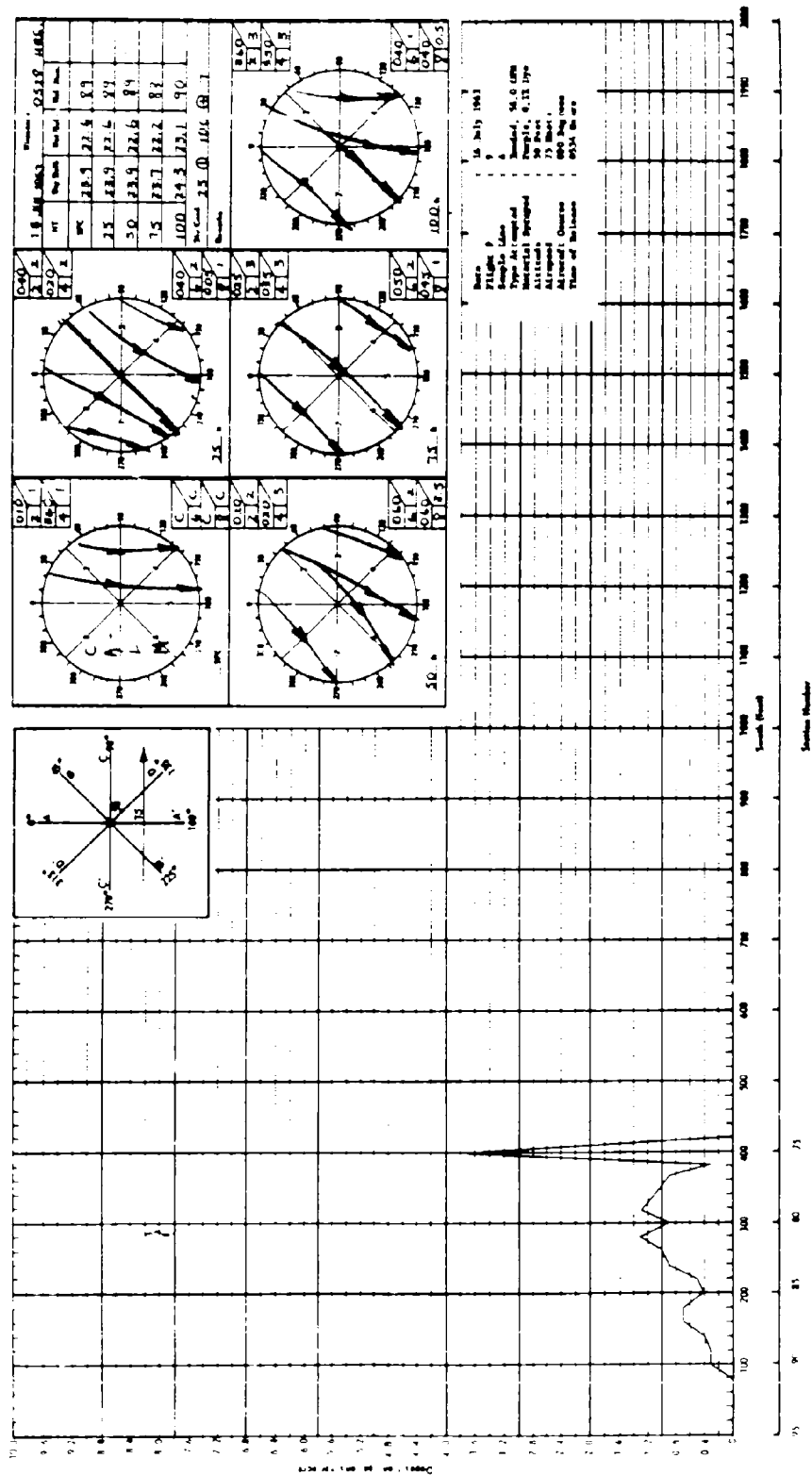
$$\text{Min. Sph. Dia.} = 63 \text{ Microns}$$

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 9 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0534 Hours AIRCRAFT COURSE: 090 Degrees
 DURATION: 09 Sec.

STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.	STATION	G.P.A.
Stations 1 - 74	Blank					75	3.7
						76	0.3
						77	0.9
						78	1.1
						79	1.3
						80	0.9
						81	1.3
						82	1.0
						83	0.9
						84	0.5
						85	0.4
						86	0.7
						87	0.7
						88	0.4
						89	0.3
						90	0.3
						Stations 91 - 100	
						Blank	

Total 14.7



MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 10 AIRSPEED: 75 Knots
 SAMPLE LINE: A ALTITUDE: 50 Feet
 TIME OF RELEASE: 0535 Hours AIRCRAFT COURSE: 090 Degrees
 DURATION: 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 GPMSYSTEM: 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			

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

$$\text{Max. Sph. Dia.} = 70.44 + 0.1431(\text{Max Spot}) = 70.44 + 0.1431(5000) = 785.9 \text{ Microns}$$

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

MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 11 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 100 Feet
 TIME OF RELEASE: 0555 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 12 Sec.

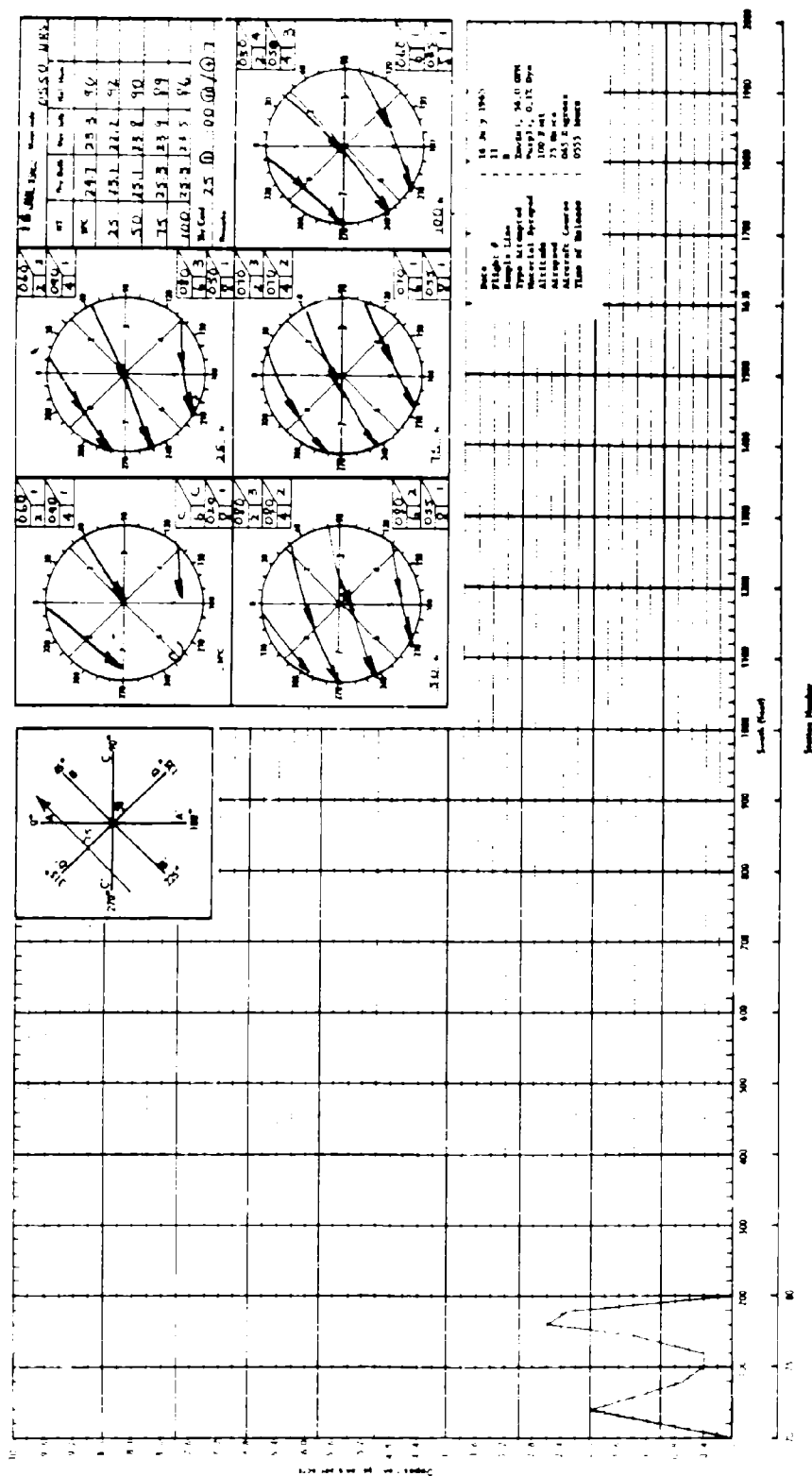
STATION G.P.A. STATION G.P.A. STATION G.P.A. STATION G.P.A.
 Stations 1 - 70 Blank

71 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 - 72.2

Total 12.4

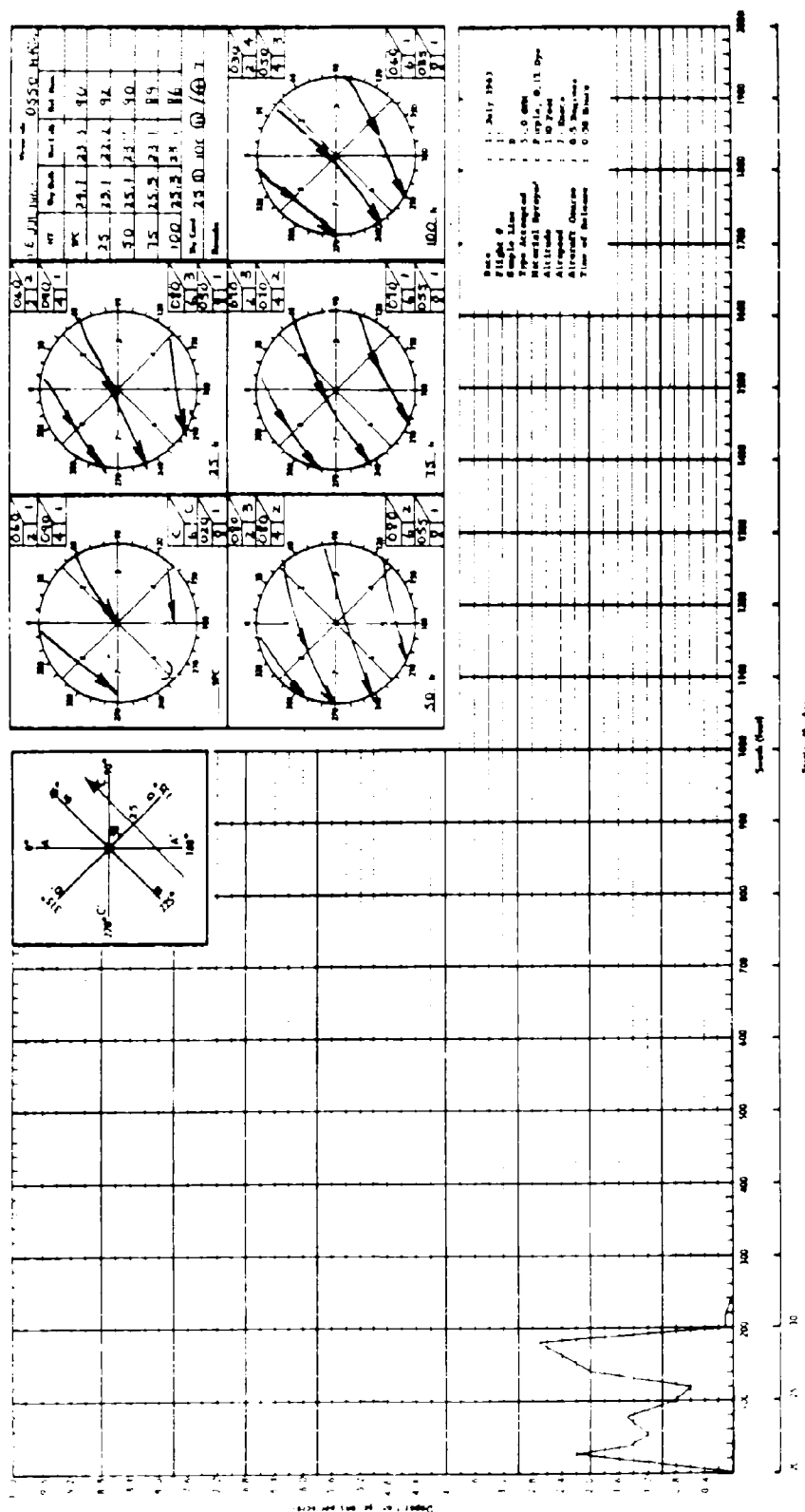


MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 12 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 100 Feet
 TIME OF RELEASE: 0558 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 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



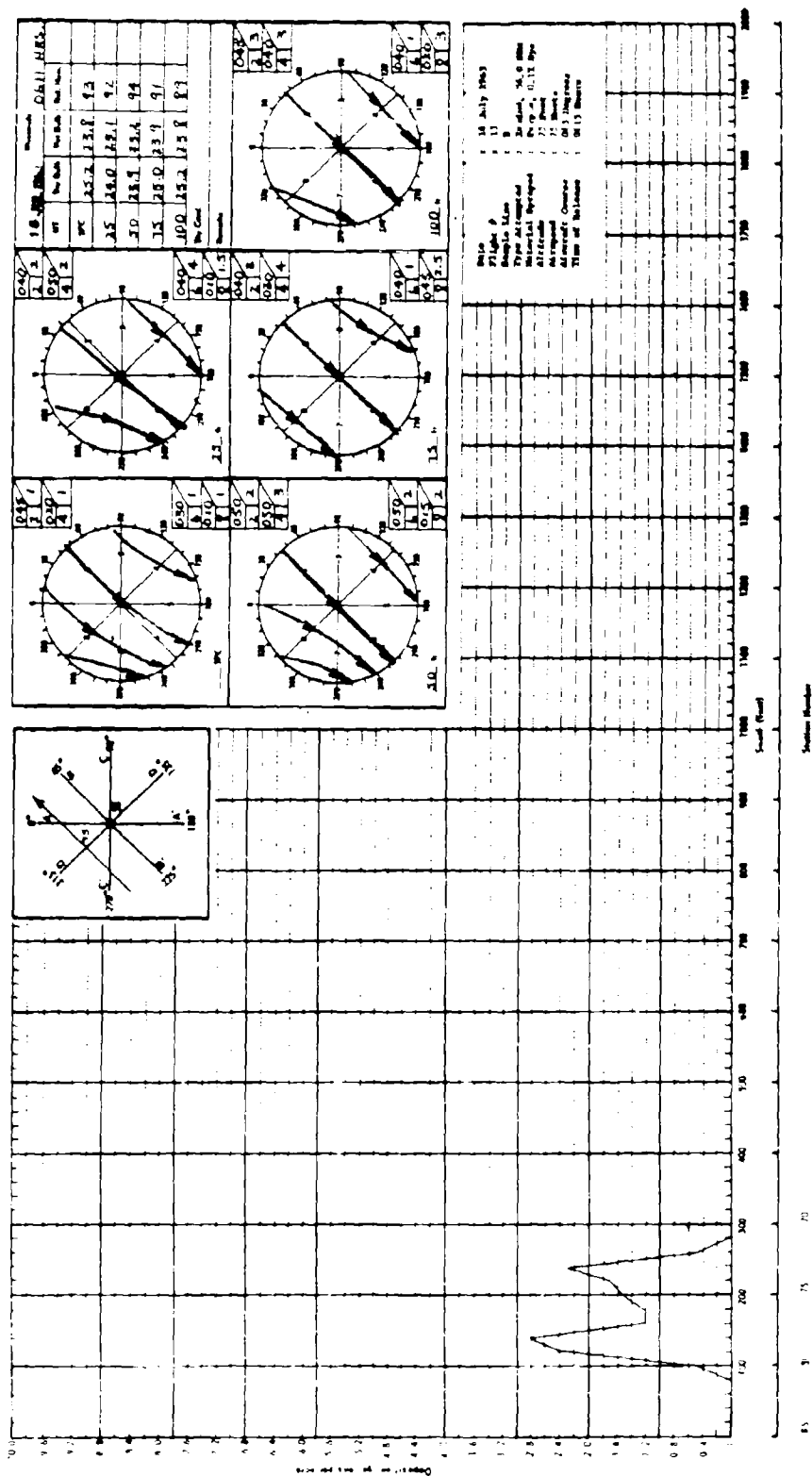
MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 13 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0615 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 - 71	Blank					72	0.5
						73	2.3
						74	1.7
						75	1.5
						76	1.2
						77	1.2
						78	2.8
						79	2.4
						80	0.5
						Stations 81 - 100	
						Blank	

% Recovery - 87.7

Total 14.1



MASS DEPOSIT

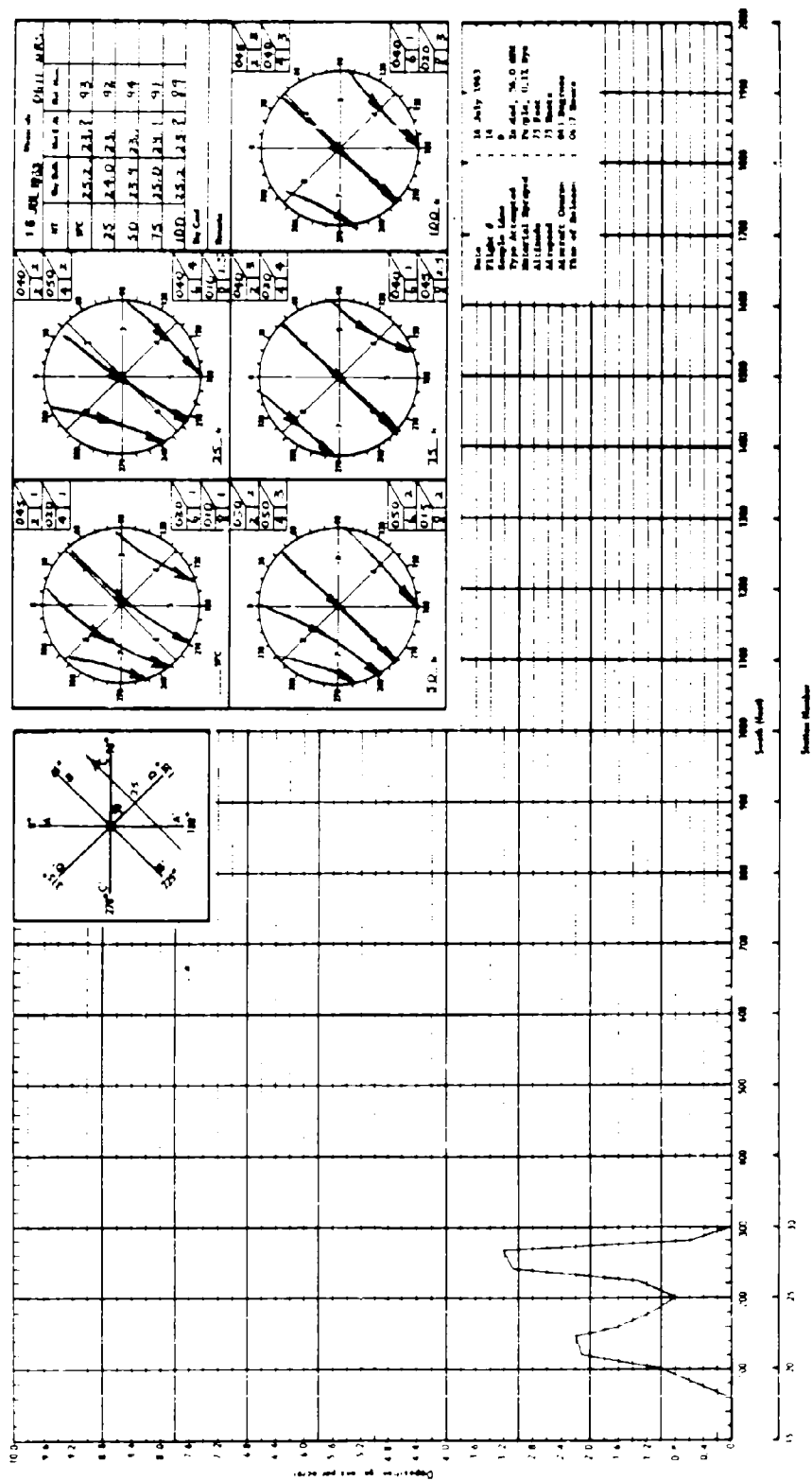
MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 FLIGHT #: 14 AIRSPEED: 75 Knots
 SAMPLE LINE: D ALTITUDE: 75 Feet
 TIME OF RELEASE: 0617 Hours AIRCRAFT COURSE: 045 Degrees
 DURATION: 9 Sec.

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

% Recovery - 108.9

Total 17.5



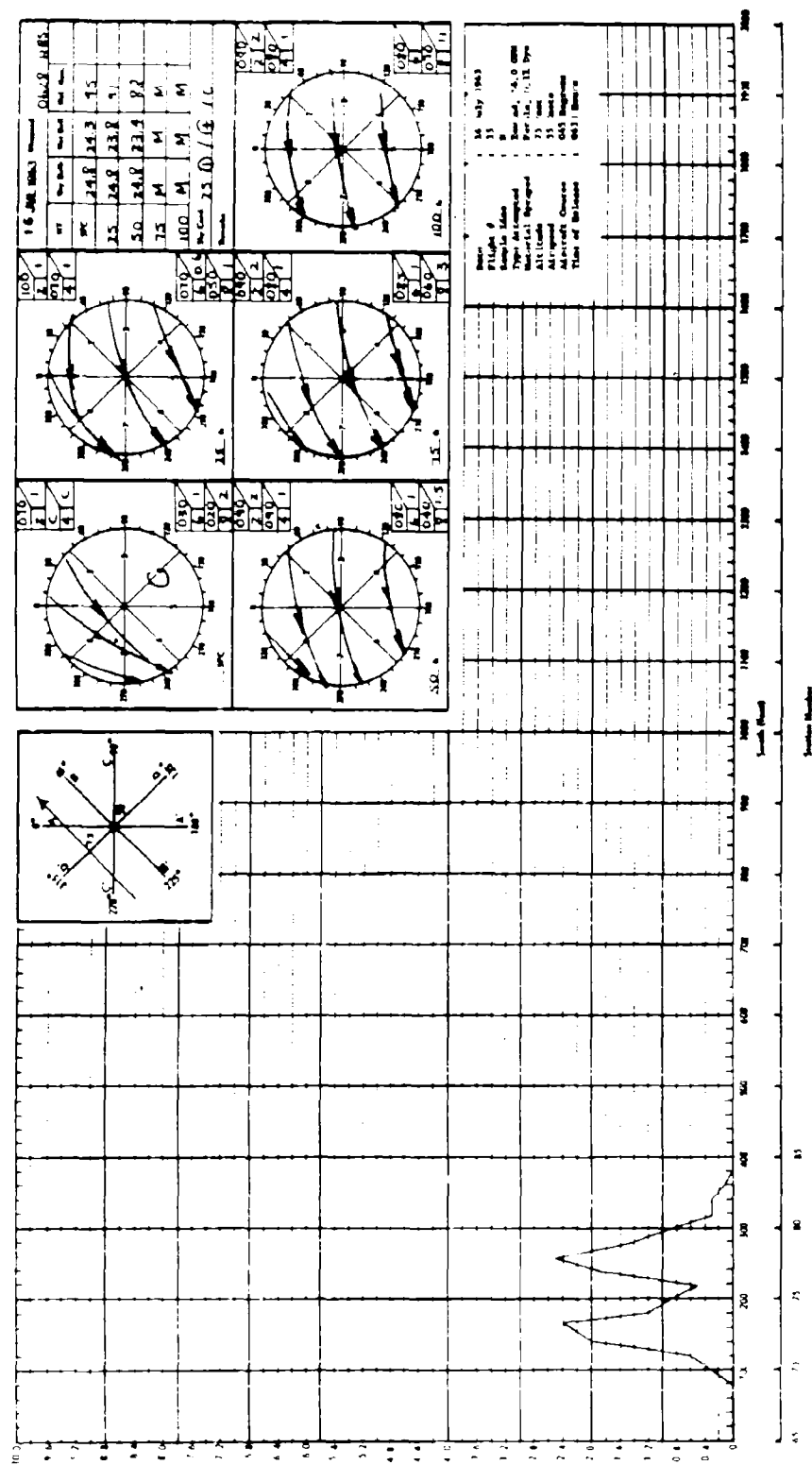
MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 July 1963 SYSTEM: HIDAL
 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	2.5		
				79	1.4		
				80	0.9		
				81	0.3		
				82	0.3		
				83	0.1		
				Stations 84 - 100			
					Blank		

% Recovery - 69.8

Total 15.3



MASS DEPOSIT

MATERIAL: Purple FLOW RATE: 56 GPM
 DATE: 16 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	G.P.A.	STATION	G.P.A.	STATION	G.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	0.3				
		31	0.2				
		32	0.2				
		33	0.0				
		Stations 34 - 100	Blank				

% Recovery - 81.2

Total 17.8

