

TAKE-OFF PERFORMANCE OF SELECTED
PISTON-ENGINE AIRCRAFT IN ROUTINE OPERATION

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SUPPLEMENT III

TAKE-OFF PERFORMANCE OF SELECTED PISTON-ENGINE AIRCRAFT IN ROUTINE OPERATION

This supplement presents the results of analysis of take-off performance of 36 piston-engine aircraft for use in airport research studies. The technique used for developing this information has been described in AIL Report No. 5791-15.* This report included a complete technical description of data-taking facilities, data-handling techniques, and an analysis of the results.

The aircraft were divided into eight categories; several samples were taken on each category. The following categories were chosen.

<u>Category</u>	<u>Number in Sample</u>
Apache	5
Twin Beech	2
Martin	2
CH 240	4
DC-3	6
Viscount	6
DC-7	6
Electra	6

Each sample has been statistically evaluated to determine the means and standard deviations of the elapsed times, the velocities, and the accelerations at 300-foot intervals. Displacement is measured from the runway threshold.

* "Runway Characteristics and Performance of Jet Transports in Routine Operations," Report No. 5791-15, Vol 1 and 2, Airborne Instruments Laboratory, March 1960.

Time has been measured from the moment the aircraft passes a point 300 feet past the runway threshold to provide the reference point $t = 0$.

Table III-1 lists all available information on each flight included in the data-taking sample. The take-off weights for the aircraft were not available.

Table III-2 gives the summary tables for each class of aircraft. All data are obtained by interpolation of the "smoothed" data at common reference points that are multiples of 300 feet from the displacement at which the take-off roll begins. The headings are defined as follows.

Displacement.--Average displacement in feet from point that aircraft start take-off roll.

Observation Time.--Number of aircraft considered in determining elapsed time from start of take-off roll to a given displacement.

Average Time.--Average time in seconds elapsed from start of take-off roll to a given displacement.

Standard Time.--Standard deviation of average time.

Max Time.--Maximum time required in combined operations to reach a given displacement.

Min Time.--Minimum time required in combined operations to reach a given displacement.

Observation.--Number of aircraft considered in determining average velocity and acceleration at a given displacement.

Average Velocity.--Average velocity at a given displacement.

Standard Velocity.--Standard deviation of velocity.

Max Velocity.--Average velocity plus standard deviation.

Min Velocity.--Average velocity less standard deviation.

Average Acceleration.--Average acceleration at a given displacement.

Standard Acceleration.--Standard deviation of acceleration.

Max Acceleration.--Average acceleration plus standard deviation.

Min Acceleration.--Average acceleration less standard deviation.

Table III-3 includes the records of the individual runs of each of the aircraft. To facilitate interpretation, the following terms are explained.

Time.--Elapsed time in seconds from first measured displacement of aircraft. Fractional numbers are interpolated values of time and correspond to 300-foot displacement intervals.

Dist Meas.--Actual measured displacement in feet.

Dist Calc.--Displacement in feet calculated by fitting parabolas to actual measured displacements.

Vel.--Calculated velocity of aircraft in feet per second.

Acc.--Calculated acceleration of aircraft in feet per second squared.

Res.--Root mean square sample deviation in feet.

TABLE III-1
FLIGHT INFORMATION FOR TAKE-OFFS

<u>Identification No.</u>	<u>Aircraft Type</u>	<u>Operation Date</u>	<u>Headwind (knots)</u>	<u>Ceiling (100 ft.)</u>
55	Apache	6/24/59	+4	None
56	Apache	6/24/59	+7	None
57	Apache	6/24/59	+6	None
58	Apache	6/25/59	+9	4
59	Apache	6/20/59	+8	None
60	Viscount	6/24/59	+6	None
61	Viscount	6/25/59	+5	6
62	Viscount	6/25/59	+4	5
63	Viscount	6/25/59	+4	4
64	Viscount	6/25/59	+1	5
65	Viscount	6/30/59	+12	None
66	Martin	6/25/59	-5	12
67	Martin	6/25/59	-5	12
68	Twin Beech	6/25/59	+7	2
69	Twin Beech	6/25/59	+7	2
70	Electra	6/30/59	+10	None
71	Electra	6/25/59	+7	4
72	Electra	6/25/59	-8	5
73	Electra	6/25/59	+5	5
74	Electra	6/30/59	+10	None
75	Electra	6/30/59	+8	None
76	DC-7	6/25/59	+7	2
77	DC-7	6/25/59	+8	4
78	DC-7	6/25/59	+1	5
79	DC-7	6/25/59	+8	4
80	DC-7	6/25/59	+8	2
81	DC-7	6/25/59	+1	5

TABLE III-1 (cont)

<u>Identification No.</u>	<u>Aircraft Type</u>	<u>Operation Date</u>	<u>Headwind (knots)</u>	<u>Ceiling (100 ft.)</u>
82	DC-3	6/24/59	+5	None
83	DC-3	6/29/59	+7	None
84	DC-3	6/30/59	+11	None
85	DC-3	6/23/59	+9	None
86	DC-3	6/20/59	+5	None
87	DC-3	6/20/59	+6	None
88	Convair	6/25/59	+5	6
89	Convair	6/25/59	+4	8
90	Convair	6/25/59	+4	8
91	Convair	6/25/59	+5	4
92	Connie	6/25/59	+8	2

TABLE III-2
SUMMARY DATA FOR TAKE-OFFS

Apache (Aircraft 55 through 59)

<u>Displacement</u>	<u>Time</u>				<u>Observation</u>	<u>Velocity</u>				<u>Acceleration</u>			
	<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>		<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>	<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>
300	0.	0.	0.	0.	5	73.5	7.1	80.6	66.4	8.62	0.88	9.50	7.74
600	3.38	0.18	3.59	3.05	5	96.4	2.7	99.1	93.7	6.52	1.02	7.54	5.51
900	6.15	0.24	6.47	5.77	5	112.4	3.3	115.7	109.1	4.88	1.19	6.08	3.69
1200	8.69	0.34	9.26	8.26	5	123.4	5.8	129.2	117.6	4.24	1.45	5.69	2.78
1500	10.98	0.42	11.71	10.54	5	132.7	7.6	140.3	125.0	3.60	1.17	4.77	2.44
1800	13.17	0.56	14.10	12.44	5	139.8	8.8	148.5	131.0	3.42	1.46	4.88	1.96
2100	15.22	0.67	16.19	14.19	5	145.1	9.6	154.7	135.4	2.89	1.25	4.14	1.64
2400	17.17	0.80	18.13	15.83	5	152.2	8.9	161.1	143.2	2.06	1.34	3.40	0.71
2700	19.08	0.95	20.00	17.40	5	156.9	10.7	167.5	146.2	2.37	1.88	4.25	0.49
3000	20.94	1.09	21.82	18.94	5	166.7	12.6	179.4	154.1	1.74	2.62	4.36	-0.88
3300	22.80	1.22	23.69	20.51	5	179.2	10.2	189.3	169.0	0.19	3.04	3.23	-2.84
3600	24.29	1.56	25.49	22.09	3	184.4	9.7	194.0	174.7	-0.62	1.37	0.75	-1.99
3900	25.93	1.56	27.27	23.74	3	180.9	1.7	182.5	179.2	0.30	0.58	0.88	-0.28
4200	27.15	1.79	28.93	25.36	2	184.4	2.8	187.3	181.6	-0.28	1.60	1.31	-1.88
4500	26.94	0.	26.94	26.94	1	185.8	0.0	185.9	185.8	-1.97	0.00	-1.97	-1.97
4800	28.53	0.	28.53	28.53	1	184.1	0.	184.1	184.1	-6.26	0.	-6.26	-6.26
5100	30.05	0.	30.05	30.05	1	171.6	0.	171.6	171.6	-31.43	0.00	-31.43	-31.43

TABLE III-2 (cont)

Viscount (Aircraft 60 through 65)

<u>Displacement</u>	<u>Time</u>				<u>Observation</u>	<u>Velocity</u>				<u>Acceleration</u>			
	<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>		<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>	<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>
300	0.	0.	0.	0.	6	64.9	7.4	72.3	57.5	6.37	1.00	7.37	5.37
600	3.85	0.46	4.58	3.21	6	89.2	5.6	94.8	83.6	6.23	1.20	7.43	5.04
900	6.90	0.55	7.71	6.26	6	109.1	6.1	115.2	102.9	6.27	1.01	7.27	5.26
1200	9.45	0.64	10.30	8.64	6	124.8	7.5	132.2	117.3	5.86	1.34	7.20	4.52
1500	11.71	0.75	12.86	10.77	6	137.4	7.7	145.1	129.7	5.36	1.12	6.48	4.23
1800	13.81	0.90	15.29	12.73	6	149.1	6.9	156.1	142.2	5.40	0.71	6.11	4.68
2100	15.73	1.02	17.50	14.57	6	158.7	6.7	165.4	151.9	5.07	0.51	5.58	4.57
2400	17.53	1.12	19.51	16.30	6	168.6	6.3	174.9	162.2	5.02	0.79	5.81	4.22
2700	19.24	1.19	21.36	17.96	6	177.2	5.7	182.9	171.5	4.50	1.28	5.78	3.21
3000	20.89	1.23	23.08	19.56	6	184.5	4.7	189.2	179.8	4.38	1.20	5.58	3.19
3300	22.48	1.23	24.65	21.10	6	190.8	3.8	194.5	187.0	4.00	0.55	4.55	3.45
3600	24.02	1.22	26.18	22.60	6	197.0	3.8	200.8	193.2	3.91	0.48	4.39	3.43
3900	25.51	1.22	27.67	24.10	6	202.4	3.6	206.1	198.8	3.74	0.64	4.38	3.11
4200	26.96	1.24	29.13	25.50	6	207.1	3.7	210.8	203.3	3.37	0.86	4.23	2.50
4500	28.36	1.25	30.54	26.87	6	210.7	5.0	215.7	205.7	2.65	1.05	3.70	1.60
4800	29.76	1.28	31.93	28.20	6	214.1	4.5	218.6	209.6	2.17	0.85	3.02	1.32
5100	31.11	1.31	33.30	29.48	6	216.6	5.0	221.5	211.6	1.62	0.72	2.34	0.89
5400	32.45	1.36	34.66	30.66	6	218.5	4.2	222.6	214.3	1.21	0.51	1.73	0.70
5700	33.73	1.45	36.00	31.64	6	219.5	6.2	225.7	213.3	0.80	0.90	1.70	-0.10
6000	35.03	1.53	37.32	32.72	6	221.9	5.1	227.0	216.7	0.35	2.51	2.86	-2.16
6300	36.90	1.19	38.65	35.46	5	223.0	7.0	230.0	215.9	-0.07	3.65	3.58	-3.72
6600	38.45	1.29	40.02	36.72	4	224.1	4.5	228.6	219.6	2.35	1.20	3.55	1.15
6900	40.01	1.40	41.39	38.08	3	226.9	6.4	233.3	220.4	8.07	8.03	16.10	0.04
7200	41.32	1.51	42.68	39.22	3	236.1	22.1	258.2	214.0	10.80	15.85	26.65	-5.05
7500	43.93	0.	43.93	43.93	1	243.1	0.0	243.1	243.1	5.71	0.00	5.71	5.71

TABLE III-2 (cont)

Martin 202 (Aircraft 66 and 67)

<u>Displacement</u>	<u>Time</u>				<u>Observation</u>	<u>Velocity</u>				<u>Acceleration</u>			
	<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>		<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>	<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>
300	0.	0.	0.	0.	2	82.1	2.1	84.2	80.0	8.39	0.10	8.49	8.29
600	3.18	0.03	3.21	3.15	2	104.0	0.8	104.8	103.2	7.48	0.37	7.85	7.10
900	5.76	0.07	5.82	5.69	2	122.9	1.6	124.5	121.3	6.45	0.28	6.73	6.16
1200	8.09	0.12	8.21	7.97	2	138.2	1.6	139.8	136.6	6.59	0.09	6.68	6.49
1500	10.16	0.16	10.32	10.00	2	150.8	2.0	152.8	148.9	6.28	0.07	6.35	6.21
1800	12.06	0.18	12.25	11.88	2	162.8	2.1	164.9	160.7	5.92	0.02	5.94	5.90
2100	13.83	0.19	14.02	13.64	2	172.5	1.5	174.1	171.0	5.34	0.25	5.59	5.09
2400	15.52	0.21	15.73	15.31	2	180.8	1.9	182.7	178.8	5.13	0.16	5.29	4.97
2700	17.15	0.25	17.40	16.90	2	188.3	2.2	190.5	186.2	5.04	0.14	5.18	4.90
3000	18.69	0.25	18.94	18.43	2	195.9	2.3	198.2	193.6	4.49	0.08	4.57	4.40
3300	20.18	0.27	20.45	19.91	2	202.7	2.1	204.8	200.6	4.22	0.14	4.36	4.08
3600	21.63	0.28	21.91	21.34	2	209.0	2.3	211.3	206.8	3.96	0.11	4.07	3.85
3900	23.04	0.30	23.34	22.75	2	212.4	0.5	213.0	211.9	3.80	0.22	4.02	3.58
4200	24.43	0.31	24.74	24.11	2	219.2	3.0	222.2	216.3	3.79	0.16	3.95	3.64
4500	25.78	0.33	26.11	25.45	2	223.5	3.4	226.9	220.2	3.64	0.30	3.94	3.34
4800	27.09	0.34	27.43	26.75	2	228.1	3.4	231.5	224.7	3.05	0.30	3.35	2.74
5100	28.38	0.36	28.74	28.01	2	230.4	3.0	233.4	227.4	2.78	0.05	2.82	2.73
5400	29.65	0.37	30.02	29.28	2	232.5	1.6	234.1	230.8	2.18	0.24	2.43	1.94
5700	30.90	0.39	31.29	30.50	2	234.3	1.3	235.6	233.0	1.80	0.28	2.08	1.52
6000	32.56	0.	32.56	32.56	1	235.6	0.0	235.6	235.6	1.61	0.00	1.61	1.60
6300	33.80	0.	33.80	33.80	1	237.7	0.0	237.7	237.7	0.95	0.00	0.95	0.95
6600	35.04	0.	35.04	35.04	1	240.9	0.0	240.9	240.8	0.94	0.	0.94	0.94
6900	36.29	0.	36.29	36.29	1	241.9	0.0	241.9	241.8	1.01	0.00	1.01	1.01
7200	37.52	0.	37.52	37.52	1	242.6	0.0	242.6	242.6	1.33	0.00	1.33	1.33
7500	38.79	0.	38.79	38.79	1	241.7	0.0	241.8	241.7	10.75	0.00	10.75	10.74
7800	40.03	0.	40.03	40.03	1	255.2	0.0	255.2	255.2	17.14	0.00	17.15	17.14
8100	41.16	0.	41.16	41.16	1	274.7	0.0	274.7	274.6	17.14	0.00	17.15	17.14

TABLE III-2 (cont)

Twin Beech (Aircraft 68 and 69)

<u>Displacement</u>	<u>Time</u>				<u>Observation</u>	<u>Velocity</u>				<u>Acceleration</u>			
	<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>		<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>	<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>
300	0.	0.	0.	0.	2	57.3	0.0	57.3	57.2	5.73	0.09	5.82	5.64
600	4.32	0.01	4.33	4.31	2	82.3	0.6	82.9	81.7	5.78	0.36	6.15	5.42
900	7.58	0.04	7.61	7.54	2	100.3	0.4	100.7	99.9	5.52	0.11	5.63	5.41
1200	10.32	0.10	10.42	10.21	2	113.4	0.2	113.6	113.3	4.60	0.56	5.16	4.04
1500	12.83	0.05	12.88	12.77	2	126.4	1.4	127.8	125.0	4.73	0.23	4.95	4.50
1800	15.13	0.07	15.20	15.06	2	137.9	1.8	139.6	136.1	5.27	0.49	5.76	4.78
2100	17.25	0.08	17.33	17.17	2	151.3	1.7	152.9	149.6	5.90	0.63	6.53	5.28
2400	19.17	0.11	19.28	19.07	2	161.0	2.9	163.8	158.1	5.95	0.70	6.65	5.26
2700	20.95	0.15	21.10	20.80	2	167.5	3.3	170.8	164.2	5.02	0.44	5.46	4.58
3000	22.61	0.21	22.82	22.40	2	172.7	3.6	176.3	169.1	3.23	0.04	3.26	3.19
3300	24.23	0.26	24.49	23.97	2	176.3	3.3	179.6	173.0	1.42	0.29	1.71	1.13
3600	25.79	0.32	26.10	25.47	2	179.2	5.0	184.2	174.2	-1.17	0.95	-0.22	-2.13
3900	27.37	0.32	27.69	27.05	2	180.3	1.9	182.2	178.3	-3.51	0.26	-3.25	-3.78
4200	29.02	0.42	29.44	28.61	2	169.5	2.2	171.7	167.2	-0.10	1.65	1.55	-1.75
4500	30.88	0.36	31.23	30.52	2	168.5	0.5	169.0	168.1	2.42	1.21	3.63	1.21
4800	32.63	0.37	33.00	32.27	2	174.1	1.8	175.9	172.3	4.06	0.52	4.58	3.54

TABLE III-2 (cont)

Electra (Aircraft 70 through 75)

<u>Displacement</u>	<u>Time</u>				<u>Observation</u>	<u>Velocity</u>				<u>Acceleration</u>			
	<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>		<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>	<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>
300	0.	0.	0.	0.	6	64.4	4.5	68.9	59.9	7.22	0.93	8.16	6.29
600	3.93	0.30	4.42	3.63	6	95.6	3.7	99.3	91.9	8.58	0.69	9.27	7.89
900	6.68	0.37	7.25	6.32	6	117.1	3.8	120.9	113.3	7.69	1.05	8.74	6.64
1200	9.05	0.40	9.55	8.56	6	135.1	4.5	139.6	130.7	7.59	0.84	8.43	6.75
1500	11.10	0.43	11.71	10.50	6	151.1	4.9	155.9	146.2	7.00	0.57	7.56	6.43
1800	12.97	0.46	13.67	12.25	6	164.7	5.6	170.4	159.1	6.70	0.46	7.16	6.24
2100	14.72	0.49	15.46	13.94	6	176.3	5.6	181.9	170.7	6.57	0.74	7.30	5.83
2400	16.34	0.50	17.07	15.51	6	186.7	5.8	192.5	180.9	6.01	0.66	6.67	5.35
2700	17.91	0.51	18.59	17.01	6	195.9	5.8	201.8	190.1	5.85	0.48	6.33	5.37
3000	19.40	0.52	20.04	18.45	6	204.3	6.8	211.1	197.6	5.66	0.66	6.32	5.00
3300	20.82	0.53	21.44	19.84	6	210.3	7.5	217.8	202.8	5.05	0.84	5.89	4.21
3600	22.17	0.58	22.85	21.08	6	214.7	5.9	220.6	208.8	3.84	0.31	4.15	3.53
3900	23.52	0.60	24.24	22.38	6	220.3	6.4	226.7	214.0	3.30	0.35	3.65	2.94
4200	24.84	0.62	25.61	23.64	6	225.0	6.9	231.8	218.1	3.13	0.55	3.68	2.57
4500	26.13	0.66	26.96	24.87	6	228.9	7.4	236.3	221.5	2.87	0.98	3.85	1.90
4800	27.40	0.69	28.28	26.10	6	232.2	7.9	240.2	224.3	2.58	1.60	4.18	0.98
5100	28.66	0.73	29.62	27.27	6	234.1	8.0	242.1	226.2	2.57	1.38	3.95	1.20
5400	29.92	0.78	30.96	28.42	6	237.7	8.6	246.3	229.1	2.74	1.16	3.90	1.58
5700	31.19	0.89	32.26	29.57	5	243.5	9.8	253.3	233.6	2.20	1.04	3.24	1.15
6000	32.41	0.92	33.54	30.74	5	247.4	8.2	255.6	239.2	3.09	2.09	5.17	1.00
6300	33.61	0.96	34.84	31.87	5	243.8	13.9	257.7	229.8	1.47	8.04	9.51	-6.57
6600	34.82	1.12	36.27	32.81	5	247.2	21.2	268.4	226.0	0.23	12.71	12.94	-12.48
6900	35.58	1.08	36.22	33.70	4	264.4	8.4	272.8	256.0	14.79	4.92	19.71	9.88
7200	36.35	1.34	37.31	34.46	3	281.7	6.3	288.0	275.5	22.65	4.34	26.99	18.31
7500	38.33	0.	38.33	38.33	1	304.6	0.0	304.6	304.5	22.86	0.	22.86	22.86

TABLE III-2 (cont)

DC-7 (Aircraft 76 through 81)

Displacement	Time				Observation	Velocity				Acceleration			
	Av.	S. D.	Max.	Min.		Av.	S. D.	Max.	Min.	Av.	S. D.	Max.	Min.
300	0.	0.	0.	0.	6	66.7	6.3	73.0	60.3	7.99	1.18	9.16	6.81
600	3.67	0.36	4.25	3.27	6	94.8	4.5	99.4	90.3	7.75	0.87	8.62	6.88
900	6.47	0.48	7.18	5.81	6	117.2	4.5	121.7	112.6	7.41	1.17	8.58	6.24
1200	8.81	0.52	9.61	8.02	6	133.9	5.3	139.2	128.6	6.95	1.05	8.01	5.90
1500	10.90	0.56	11.75	10.00	6	148.4	5.8	154.2	142.6	6.71	0.74	7.45	5.97
1800	12.81	0.59	13.67	11.84	6	160.6	5.5	166.1	155.1	6.39	0.49	6.88	5.90
2100	14.59	0.62	15.47	13.55	6	171.8	6.0	177.7	165.8	5.89	1.06	6.95	4.83
2400	16.24	0.67	17.19	15.18	6	181.3	6.4	187.7	174.9	5.49	1.25	6.75	4.24
2700	17.82	0.73	18.82	16.73	6	189.8	6.6	196.4	183.1	5.03	1.13	6.16	3.91
3000	19.32	0.78	20.37	18.21	6	197.3	7.0	204.3	190.4	4.47	0.91	5.37	3.56
3300	20.78	0.85	21.89	19.63	6	202.9	6.7	209.6	196.3	4.22	0.81	5.02	3.41
3600	22.20	0.90	23.36	21.02	6	209.1	6.5	215.6	202.7	4.06	0.58	4.64	3.48
3900	23.58	0.94	24.76	22.38	6	214.5	6.1	220.6	208.4	3.76	0.46	4.23	3.30
4200	24.93	0.99	26.13	23.70	6	219.5	6.4	225.9	213.1	3.51	0.84	4.35	2.67
4500	26.24	1.03	27.49	24.98	6	222.3	6.4	228.7	215.9	3.04	1.21	4.25	1.83
4800	27.55	1.05	28.85	26.31	6	227.3	7.9	235.1	219.4	2.45	1.28	3.73	1.17
5100	28.86	1.03	30.19	27.74	6	230.4	9.8	240.2	220.6	1.38	1.39	2.77	-0.00
5400	30.32	1.03	31.50	29.00	5	232.4	8.8	241.1	223.6	0.31	1.11	1.42	-0.80
5700	31.63	1.03	32.85	30.34	5	234.4	8.9	243.3	225.4	1.56	1.89	3.45	-0.33
6000	32.83	1.16	34.18	31.63	4	236.6	7.7	244.4	228.9	2.35	1.76	4.12	0.59
6300	34.08	1.20	35.51	32.87	4	239.8	8.7	248.5	231.1	3.15	1.48	4.63	1.66
6600	35.75	1.20	36.84	34.08	3	246.0	6.6	252.6	239.4	2.16	1.91	4.06	0.25
6900	36.71	1.46	38.17	35.26	2	250.6	5.3	255.8	245.3	-0.31	0.42	0.11	-0.73
7200	36.45	0.	36.45	36.45	1	249.6	-0.0	249.6	249.6	3.32	0.00	3.32	3.32
7500	37.65	0.	37.65	37.65	1	253.3	0.0	253.4	253.3	4.29	0.00	4.29	4.29

TABLE III-2 (cont)

DC-3 (Aircraft 82 through 87)

<u>Displacement</u>	<u>Time</u>				<u>Observation</u>	<u>Velocity</u>				<u>Acceleration</u>			
	<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>		<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>	<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>
300	0.	0.	0.	0.	6	58.9	6.8	65.7	52.0	6.00	0.80	6.79	5.20
600	4.14	0.47	4.85	3.40	6	85.1	6.3	91.4	78.9	6.06	0.38	6.44	5.67
900	7.30	0.72	8.37	6.16	6	103.4	5.8	109.2	97.6	5.55	0.55	6.10	5.00
1200	9.99	0.84	11.17	8.65	6	118.9	5.4	124.3	113.6	5.38	0.57	5.94	4.81
1500	12.37	0.92	13.61	10.91	6	130.2	5.4	135.6	124.9	4.98	0.65	5.63	4.32
1800	14.54	0.98	15.81	13.01	6	139.9	5.7	145.6	134.3	4.29	0.73	5.02	3.56
2100	16.59	1.03	17.82	14.97	6	147.5	5.9	153.5	141.6	3.48	0.74	4.22	2.73
2400	18.56	1.08	19.73	16.90	6	153.8	6.5	160.3	147.3	3.01	0.59	3.60	2.42
2700	20.44	1.12	21.55	18.75	6	159.1	7.3	166.5	151.8	2.29	0.65	2.94	1.64
3000	22.29	1.21	23.47	20.54	6	163.7	7.6	171.3	156.1	1.77	0.57	2.34	1.20
3300	24.12	1.28	25.47	22.32	6	169.2	7.4	176.7	161.8	1.76	1.07	2.83	0.69
3600	25.88	1.33	27.28	24.06	6	171.9	7.1	179.0	164.8	2.06	1.70	3.75	0.36
3900	27.69	1.47	29.45	25.73	6	173.8	10.7	184.5	163.1	1.38	2.80	4.18	-1.42
4200	29.06	1.50	30.82	27.38	5	178.8	12.7	191.5	166.1	1.53	1.69	3.21	-0.16
4500	29.52	0.68	30.48	28.96	3	184.1	3.3	187.4	180.8	2.24	1.13	3.37	1.11
4800	31.08	0.65	31.98	30.51	3	190.9	2.1	192.9	188.8	-0.69	1.79	1.10	-2.48
5100	32.74	0.68	33.41	32.06	2	190.1	6.9	196.9	183.2	-8.26	1.98	-6.28	-10.24
5400	34.93	0.	34.93	34.93	1	180.8	0.0	180.8	180.7	-8.10	0.00	-8.10	-8.10
5700	36.62	0.	36.62	36.62	1	165.6	0.0	165.6	165.5	-18.57	0.00	-18.57	-18.57

TABLE III-2 (cont)

Convair (Aircraft 88 through 92)

<u>Displacement</u>	<u>Time</u>				<u>Observation</u>	<u>Velocity</u>				<u>Acceleration</u>			
	<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>		<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>	<u>Av.</u>	<u>S. D.</u>	<u>Max.</u>	<u>Min.</u>
300	0.	0.	0.	0.	4	65.9	3.7	69.6	62.1	7.48	1.02	8.50	6.46
600	3.76	0.25	4.09	3.42	4	92.2	3.5	95.6	88.7	7.22	0.36	7.58	6.86
900	6.62	0.42	7.12	6.03	4	112.6	2.8	115.4	109.8	6.71	0.45	7.15	6.26
1200	9.06	0.48	9.62	8.39	4	129.8	2.6	132.4	127.2	6.42	0.89	7.32	5.53
1500	11.25	0.47	11.76	10.61	4	143.5	2.9	146.4	140.7	6.22	0.65	6.88	5.57
1800	13.27	0.47	13.75	12.69	4	156.4	2.6	159.0	153.8	6.42	0.44	6.86	5.99
2100	15.12	0.49	15.65	14.55	4	167.9	3.0	170.9	164.9	6.24	0.94	7.18	5.30
2400	16.85	0.45	17.32	16.34	4	178.2	4.6	182.8	173.6	6.06	0.81	6.87	5.25
2700	18.46	0.46	18.95	18.00	4	186.6	5.6	192.2	181.0	5.45	0.82	6.27	4.63
3000	20.01	0.44	20.53	19.51	4	194.5	6.3	200.8	188.2	4.96	1.02	5.98	3.95
3300	21.50	0.42	22.00	20.99	4	201.8	7.6	209.4	194.3	4.68	1.29	5.97	3.40
3600	22.93	0.38	23.38	22.42	4	208.4	8.5	216.9	199.9	4.39	1.46	5.85	2.93
3900	24.32	0.35	24.73	23.80	4	214.4	10.2	224.6	204.2	4.37	1.88	6.25	2.49
4200	25.68	0.33	25.99	25.14	4	219.5	10.1	229.6	209.4	4.10	2.11	6.21	1.99
4500	26.99	0.32	27.24	26.43	4	226.6	9.8	236.4	216.8	3.50	2.20	5.70	1.30
4800	28.28	0.36	28.61	27.68	4	232.9	9.9	242.8	223.1	3.31	1.70	5.01	1.61
5100	29.57	0.44	30.04	28.90	4	231.7	13.3	244.9	218.4	2.95	1.27	4.21	1.68
5400	30.81	0.52	31.41	30.11	4	236.8	14.2	251.0	222.6	2.94	1.58	4.51	1.36
5700	31.93	0.64	32.80	31.30	3	243.9	12.3	256.1	231.6	2.76	1.07	3.83	1.69
6000	33.17	0.73	34.17	32.47	3	243.2	10.7	253.9	232.5	4.14	5.27	9.41	-1.12
6300	34.33	0.77	35.40	33.62	3	254.2	1.2	255.4	253.0	3.74	6.01	9.75	-2.27
6600	35.10	0.36	35.47	34.47	2	255.3	2.0	257.3	253.3	-0.26	0.73	0.46	-0.99
6900	35.89	0.	35.89	35.89	1	258.3	0.0	258.4	258.3	-0.44	0.00	-0.44	-0.44
7200	37.05	0.	37.05	37.05	1	258.0	0.0	258.0	258.0	-0.74	0.00	-0.74	-0.74
7500	38.20	0.	38.20	38.20	1	258.4	0.0	258.4	258.4	-2.70	0.00	-2.70	-2.70
7800	39.32	0.	39.32	39.32	1	257.9	0.0	258.0	257.9	-8.84	0.00	-8.84	-8.84
8100	40.47	0.	40.47	40.47	1	249.3	0.0	249.4	249.3	-20.00	0.00	-20.00	-20.00
8400	41.74	0.	41.74	41.74	1	223.8	0.0	223.8	223.8	-20.00	0.00	-20.00	-20.00

TABLE III-3
INDIVIDUAL AIRCRAFT RUNS IN
TAKE-OFF ANALYSIS

TIMF	DIST MEAS	DIST CALC	VFL	ACC	RFS
1	0	-1.	40.9	8.57	3.
2	40	44.	49.4	8.57	3.
3	100	97.	58.0	8.57	3.
4	160	156.	68.2	11.19	10.
5	230	232.	80.0	11.08	12.
5.75		300.0	85.3	9.00	
6	300	323.	87.1	8.30	16.
7	420	420.	97.5	6.46	21.
8	540	517.	96.9	5.66	28.
8.80		600.0	98.9	5.13	
9	630	621.	99.4	4.99	29.
10	750	775.	105.5	4.75	31.
11	840	838.	110.2	4.15	30.
11.51		900.0	111.8	3.68	
12	980	958.	113.4	3.23	33.
13	1060	1079.	116.6	2.65	32.
14	1140	1199.	119.6	2.35	31.
14.00		1200.0	119.6	2.35	
15	1360	1322.	127.1	2.21	31.
16	1450	1443.	124.2	2.39	30.
16.45		1500.0	125.0	2.29	
17	1570	1570.	126.0	2.16	31.
18	1660	1700.	128.2	1.85	31.
18.77		1800.0	129.6	1.76	
19	1900	1830.	130.1	1.73	31.
20	1980	1962.	132.5	1.69	30.
21	2060	2095.	134.4	1.73	31.
21.04		2100.0	134.5	1.73	
22	2220	2230.	137.2	1.81	31.
23	2370	2359.	141.2	3.00	42.
23.31		2400.0	142.1	3.36	
24	2510	2491.	143.9	4.16	37.
25	2660	2634.	145.1	4.56	40.
25.49		2700.0	147.3	5.57	
26	2770	2770.	149.6	6.64	30.
27	2920	2925.	156.5	6.16	32.
27.51		3000.0	158.5	7.87	
28	3070	3072.	160.4	9.51	26.
29	3240	3228.	168.3	12.60	27.
29.41		3300.0	173.3	12.80	
30	3380	3402.	180.4	13.10	32.
31	3570	3591.	194.0	11.43	45.
31.05		3600.0	194.5	11.43	
32	3840	3790.	205.4	11.43	45.
32.52		3900.0	211.4	11.43	
33	3980	4001.	216.9	11.43	45.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	6.	36.6	5.71	14.
2	60	45.	42.3	5.71	14.
3	80	90.	48.0	5.71	14.
4	140	140.	47.5	1.19	12.
5	200	186.	52.2	3.74	11.
6	230	234.	61.4	7.30	17.
7	290	297.	70.0	8.07	16.
7.04		300.0	70.3	8.10	
8	360	368.	79.3	8.78	17.
9	430	459.	83.7	7.43	25.
10	540	556.	90.1	6.29	29.
10.45		600.0	92.5	6.08	
11	650	653.	95.4	5.83	32.
12	750	757.	101.0	5.16	31.
13	870	863.	106.6	4.96	31.
13.32		900.0	108.3	4.78	
14	990	977.	111.8	4.39	29.
15	1160	1096.	117.1	3.91	24.
15.85		1200.0	120.9	3.63	
16	1230	1218.	121.5	3.58	22.
17	1340	1343.	125.6	3.42	21.
18	1470	1473.	128.7	3.11	22.
18.21		1500.0	129.3	3.16	
19	1570	1602.	131.8	3.34	22.
20	1710	1737.	134.2	3.09	23.
20.46		1800.0	135.4	3.00	
21	1850	1874.	136.7	2.88	24.
22	2030	2014.	138.7	2.65	26.
22.62		2100.0	138.6	2.67	
23	2150	2154.	138.6	2.69	31.
24	2320	2307.	145.6	1.20	20.
24.60		2400.0	147.3	0.15	
25	2460	2462.	148.4	-0.55	14.
26	2620	2613.	148.2	-1.07	15.
26.59		2700.0	148.0	-1.45	
27	2740	2761.	147.8	-1.71	15.
28	2930	2907.	146.4	-1.43	17.
28.62		3000.0	146.8	-4.97	
29	3040	3057.	147.0	-7.14	22.
30	3200	3201.	139.9	-7.14	22.
30.73		3300.0	134.6	-7.14	
31	3340	3337.	132.7	-7.14	22.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	3.	44.7	-12.86	8.
2	50	41.	31.9	-12.86	8.
3	60	67.	19.0	-12.86	8.
4	80	77.	12.5	-6.90	10.
5	80	78.	17.5	1.84	21.
6	80	85.	30.5	8.97	33.
7	90	120.	40.1	9.24	30.
8	140	164.	49.5	9.34	27.
9	180	220.	57.2	9.08	28.
10	290	286.	66.7	8.69	27.
10.20		300.0	68.2	8.73	
11	380	355.	74.3	8.88	26.
12	450	436.	82.7	8.60	26.
13	520	529.	90.6	7.92	28.
13.69		600.0	96.1	7.33	
14	630	631.	98.6	7.06	25.
15	740	740.	106.0	6.32	20.
16	880	853.	113.1	5.96	16.
16.39		900.0	115.3	5.81	
17	950	973.	118.7	5.59	16.
18	1110	1097.	124.0	5.27	17.
18.80		1200.0	127.4	5.08	
19	1210	1225.	128.3	5.03	19.
20	1360	1361.	132.6	4.42	22.
21.00		1500.0	137.3	3.94	
21	1510	1500.	137.4	3.94	19.
22	1630	1644.	141.3	3.44	18.
23	1780	1791.	144.1	2.99	20.
23.06		1800.0	144.2	2.96	
24	1940	1941.	146.7	2.53	20.
25	2120	2090.	149.4	2.32	20.
25.06		2100.0	149.5	2.29	
26	2250	2246.	149.6	1.81	22.
26.98		2400.0	154.5	1.41	
27	2410	2402.	154.5	1.41	14.
28	2550	2561.	156.5	0.75	14.
28.91		2700.0	156.5	1.59	
29	2700	2714.	156.5	1.68	15.
30	2890	2870.	158.5	1.88	14.
30.80		3000.0	160.6	0.94	
31	3040	3031.	161.1	0.71	17.
32	3180	3182.	158.0	14.29	9.
32.72		3300.0	168.2	14.29	
33	3340	3347.	172.3	14.29	9.
34	3530	3526.	186.6	14.29	9.

TIME	DIST MEAS	DIST CALC	VFL	ACC	RES
1	0	-16.	175.0	-30.00	42.
2	100	144.	145.0	-30.00	42.
2	310	274.	115.0	-30.00	42.
3.29		300.0	108.9	-26.66	
4	370	363.	94.3	-18.57	41.
5	440	428.	94.7	-2.81	58.
6	470	513.	99.4	2.07	54.
6.88		600.0	102.6	2.89	
7	590	611.	103.1	3.00	48.
8	640	720.	103.4	1.78	47.
9	850	823.	103.4	1.92	45.
9.76		900.0	107.5	2.40	
10	930	924.	108.7	2.55	43.
11	1060	1025.	111.5	3.59	42.
12	1170	1131.	114.1	4.35	36.
12.55		1200.0	116.1	3.84	
13	1290	1255.	117.7	3.44	38.
14	1330	1375.	122.7	3.49	38.
15.00		1500.0	127.2	3.46	
15	1490	1500.	127.2	3.46	38.
16	1600	1623.	131.1	4.14	38.
17	1740	1749.	136.2	5.03	41.
17.39		1800.0	137.4	5.29	
18	1860	1881.	139.2	5.68	32.
19	2050	2027.	143.4	5.11	36.
19.48		2100.0	144.8	4.72	
20	2210	2179.	146.3	4.29	44.
21	2330	2334.	150.1	3.63	45.
21.42		2400.0	151.6	3.31	
22	2410	2492.	153.7	2.86	43.
23	2660	2654.	157.8	2.25	38.
23.29		2700.0	158.4	2.18	
24	2810	2815.	159.8	2.01	39.
25	3000	2981.	159.6	1.39	42.
25.12		3000.0	160.1	1.38	
26	3230	3145.	164.0	1.36	42.
26.89		3300.0	166.8	-0.40	
27	3330	3320.	167.1	-0.62	42.
28	3470	3481.	164.5	1.19	37.
28.78		3600.0	162.8	5.42	
29	3590	3633.	162.3	6.58	35.
30	3800	3791.	170.4	8.81	27.
30.56		3900.0	178.0	-4.08	
31	3970	3986.	184.0	-14.29	17.
32	4180	4163.	169.7	-14.29	17.
32.23		4200.0	166.5	-14.29	
33	4320	4326.	155.4	-14.29	17.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	-4.	33.6	-4.29	25.
2	10	27.	29.3	-4.29	25.
3	80	54.	25.0	-4.29	25.
4	60	71.	39.3	12.38	26.
5	100	116.	50.7	11.99	22.
6	160	178.	52.1	6.08	41.
7	260	224.	63.5	9.24	42.
8	310	292.	72.6	9.21	38.
8.10		300.0	73.3	9.15	
9	420	373.	79.4	8.58	37.
10	360	464.	87.3	7.76	37.
11	530	557.	94.8	7.50	37.
11.43		600.0	97.8	7.39	
12	650	658.	101.9	7.25	37.
13	810	773.	108.5	6.11	38.
14	900	887.	114.9	5.91	37.
14.12		900.0	115.9	6.05	
15	1020	996.	123.4	7.03	40.
16	1150	1116.	131.7	7.79	51.
16.62		1200.0	136.9	7.83	
17	1270	1252.	140.1	7.86	52.
18	1400	1399.	147.3	7.50	52.
18.64		1500.0	152.0	6.94	
19	1530	1557.	154.7	6.63	51.
20	1700	1711.	159.1	6.97	48.
20.53		1800.0	161.6	6.70	
21	1850	1877.	163.8	6.46	52.
22	1950	2049.	168.3	5.80	57.
22.28		2100.0	169.8	5.53	
23	2160	2229.	173.6	4.84	56.
23.92		2400.0	177.3	3.81	
24	2490	2415.	177.6	3.72	58.
25	2670	2604.	181.2	2.67	56.
25.49		2700.0	182.4	1.95	
26	2850	2799.	183.5	1.21	54.
27	3000	2992.	185.6	0.26	49.
27.04		3000.0	185.7	0.24	
28	3190	3185.	187.2	-0.37	44.
28.61		3300.0	187.9	-0.47	
29	3380	3374.	188.3	-0.53	43.
30	3540	3565.	188.8	-0.82	41.
30.18		3600.0	188.6	-0.92	
31	3730	3758.	187.5	-1.39	42.
31.84		3900.0	181.2	0.33	
32	3950	3927.	179.9	0.67	31.
33	4110	4114.	184.5	0.28	26.
33.45		4200.0	184.9	-0.10	
34	4310	4303.	185.3	-0.55	27.
35	4450	4494.	185.9	-1.98	28.
35.04		4500.0	185.8	-1.97	
36	4670	4678.	183.7	-1.65	33.
36.62		4800.0	184.1	-6.26	
37	4870	4874.	184.3	-9.05	34.
38	5080	5077.	176.0	-31.43	16.
38.14		5100.0	171.6	-31.43	

PLANE NUMBER 59

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
39	5250	5238.	144.6	-31.43	16.
40	5360	5367.	113.1	-31.43	16.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	15.	12.1	21.43	34.
2	70	38.	33.6	21.43	34.
3	80	83.	55.0	21.43	34.
4	120	146.	68.6	16.19	26.
5	250	231.	75.3	8.83	28.
5.84		300.0	79.3	6.77	
6	300	314.	80.1	6.36	26.
7	430	395.	87.1	6.81	24.
8	510	498.	89.9	4.40	43.
9	580	596.	89.7	3.05	45.
9.04		600.0	90.1	3.12	
10	670	679.	98.1	4.61	50.
11	790	776.	104.5	5.10	53.
12	910	880.	111.7	5.60	57.
12.18		900.0	112.6	5.63	
13	1050	992.	116.8	5.77	57.
14	1180	1106.	121.8	6.42	54.
14.76		1200.0	126.4	6.55	
15	1140	1229.	127.8	6.59	53.
16	1270	1359.	132.7	6.64	53.
17	1410	1495.	139.1	6.62	53.
17.04		1500.0	139.4	6.61	
18	1690	1638.	145.6	6.57	53.
19	1770	1787.	151.6	6.53	53.
19.08		1800.0	152.0	6.50	
20	1980	1945.	156.6	6.11	55.
20.93		2100.0	160.7	5.23	
21	2180	2112.	161.0	5.16	60.
22	2270	2284.	165.7	4.24	60.
22.66		2400.0	169.6	3.69	
23	2460	2460.	171.6	3.41	53.
24	2640	2646.	177.1	2.06	35.
24.30		2700.0	178.0	2.16	
25	2780	2822.	180.0	2.39	37.
26	3010	2999.	182.2	2.82	36.
26.00		3000.0	182.2	2.83	
27	3210	3173.	184.8	3.92	30.
27.67		3300.0	187.7	3.78	
28	3400	3362.	189.2	3.72	30.
29	3550	3549.	192.0	4.06	27.
29.26		3600.0	193.1	4.07	
30	3700	3742.	196.0	4.09	27.
30.78		3900.0	199.8	3.88	
31	3910	3944.	200.9	3.83	25.
32	4160	4146.	204.0	3.86	25.
32.26		4200.0	204.7	3.75	
33	4340	4355.	206.6	3.41	28.
33.70		4500.0	206.0	3.65	
34	4570	4561.	205.7	3.75	35.
35	4760	4777.	214.1	3.14	29.
35.10		4800.0	214.6	2.89	
36	5020	5006.	219.3	0.64	19.
36.43		5100.0	219.4	0.86	
37	5220	5223.	219.5	1.14	21.
37.78		5400.0	221.1	-0.51	

PLANE NUMBER 60

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
38	5430	5450.	221.5	-0.97	21.
39	5670	5674.	220.0	-1.90	22.
39.11		5700.0	220.1	-4.06	
40	5920	5911.	221.0	-21.43	10.
40.42		6000.0	212.0	-21.43	
41	6120	6122.	199.6	-21.43	10.
41.94		6300.0	179.3	-21.43	
42	6310	6311.	178.1	-21.43	10.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	1.	14.9	8.57	3.
2	20	20.	23.4	8.57	3.
3	50	47.	32.0	8.57	3.
4	80	81.	49.6	16.43	9.
5	130	146.	57.0	9.44	18.
6	210	212.	62.7	6.99	18.
7	310	283.	66.8	5.34	19.
7.76		300.0	68.4	5.48	
8	370	351.	73.2	5.86	20.
9	430	430.	76.7	5.32	21.
10	520	512.	82.8	5.12	19.
11	600	598.	88.8	5.03	18.
11.02		600.0	88.9	5.03	
12	670	689.	94.8	5.17	19.
13	770	774.	103.4	6.74	46.
14	920	870.	111.4	7.98	50.
14.29		900.0	113.4	8.19	
15	1000	978.	118.5	8.74	46.
16	1100	1098.	125.7	9.00	43.
16.78		1200.0	131.9	8.91	
17	1210	1228.	133.6	8.88	44.
18	1330	1369.	141.1	8.53	46.
18.88		1500.0	147.4	8.15	
19	1460	1517.	148.2	8.10	48.
20	1620	1676.	155.1	7.37	51.
20.76		1800.0	160.5	6.94	
21	1780	1839.	162.2	6.81	51.
22	2110	2012.	167.8	5.97	54.
22.50		2100.0	170.5	5.62	
23	2260	2189.	173.3	5.26	54.
24	2400	2376.	179.0	4.05	48.
24.13		2400.0	179.7	3.95	
25	2560	2565.	184.2	3.25	43.
25.70		2700.0	187.2	2.81	
26	2760	2757.	188.5	2.62	38.
27	2940	2950.	192.2	2.30	36.
27.26		3000.0	193.0	2.32	
28	3130	3143.	195.3	2.38	36.
28.82		3300.0	197.5	2.84	
29	3320	3335.	198.0	2.95	37.
30	3550	3526.	200.8	3.85	33.
30.38		3600.0	201.4	4.15	
31	3710	3721.	202.5	4.63	17.
31.84		3900.0	205.2	3.68	
32	3930	3935.	205.8	3.49	26.
33	4130	4147.	209.8	3.07	24.
33.25		4200.0	210.6	3.03	
34	4360	4359.	213.2	2.92	23.
34.65		4500.0	214.8	2.78	
35	4570	4576.	215.7	2.71	24.
36	4790	4798.	217.6	2.03	26.
36.01		4800.0	217.6	2.03	
37	5020	5019.	219.8	1.81	26.
37.37		5100.0	220.8	1.87	
38	5260	5239.	222.6	1.96	27.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
38.71		5400.0	221.9	1.60	
39	5510	5467.	221.6	1.44	33.
40	5700	5693.	226.9	1.42	29.
40.03		5700.0	226.9	1.43	
41	5860	5919.	228.0	1.67	31.
41.36		6000.0	228.1	2.27	
42	6160	6142.	228.4	3.31	33.
42.72		6300.0	229.5	5.75	
43	6400	6362.	230.0	6.71	35.
43.97		6600.0	238.7	0.41	
44	6610	6607.	238.9	0.24	38.
45	6800	6815.	236.0	31.43	16.
45.34		6900.0	246.7	31.43	
46	7070	7066.	267.4	31.43	16.
46.47		7200.0	282.3	31.43	
47	7350	7349.	298.9	31.43	16.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	-0.	15.6	15.71	8.
2	20	23.	31.3	15.71	8.
3	70	62.	47.0	15.71	8.
4	110	116.	51.8	7.86	13.
5	190	173.	54.2	5.48	12.
6	220	229.	63.7	6.83	12.
7	310	295.	72.1	7.59	13.
7.06		300.0	72.5	7.57	
8	360	373.	78.9	7.18	13.
9	440	456.	84.5	7.11	14.
10	540	540.	94.3	7.82	23.
10.60		600.0	98.5	7.60	
11	640	641.	101.4	7.45	26.
12	770	749.	107.6	7.06	29.
13	860	861.	114.4	6.89	29.
13.32		900.0	116.4	6.79	
14	980	982.	120.7	6.59	30.
15	1090	1109.	127.6	6.25	29.
15.70		1200.0	132.2	6.27	
16	1230	1240.	134.2	6.28	29.
17	1370	1378.	141.1	6.14	28.
17.83		1500.0	145.8	5.89	
18	1510	1525.	146.7	5.84	29.
19	1770	1675.	152.3	5.74	29.
19.79		1800.0	156.6	5.57	
20	1820	1832.	157.7	5.52	29.
21	1960	1995.	162.9	5.30	30.
21.63		2100.0	166.6	5.18	
22	2160	2162.	168.8	5.11	29.
23	2310	2335.	174.0	4.96	29.
23.36		2400.0	175.8	4.88	
24	2510	2513.	178.9	4.75	29.
25	2710	2695.	183.3	4.65	29.
25.02		2700.0	183.4	4.65	
26	2910	2881.	187.7	4.62	29.
26.62		3000.0	190.1	4.49	
27	3060	3073.	191.5	4.42	30.
28	3270	3267.	195.0	4.31	30.
28.16		3300.0	195.9	4.13	
29	3460	3475.	200.3	3.20	15.
29.66		3600.0	204.9	4.18	
30	3660	3665.	207.3	4.69	47.
31	3900	3866.	212.9	5.64	48.
31.16		3900.0	213.7	5.67	
32	4100	4081.	218.1	5.79	48.
32.56		4200.0	218.5	6.34	
33	4310	4293.	218.8	6.78	52.
33.93		4500.0	228.3	7.17	
34	4520	4516.	229.0	7.20	51.
35	4750	4741.	234.9	8.58	54.
35.26		4800.0	236.5	9.41	
36	4950	4968.	241.1	11.75	56.
36.54		5100.0	247.1	12.51	
37	5170	5211.	252.2	13.14	65.
37.72		5400.0	262.6	10.72	

PLANE NUMBER 62

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
38	5400	5475.	266.8	9.76	79.
38.70		5700.0	280.3	-27.26	
39	5860	5795.	286.0	-42.86	81.
39.78		6000.0	252.8	-42.86	
40	6060	6059.	243.1	-42.86	81.
41	6270	6281.	200.3	-42.86	81.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	5.	9.3	12.86	11.
2	30	21.	22.1	12.86	11.
3	50	49.	35.0	12.86	11.
4	80	94.	32.1	-0.48	16.
5	150	121.	38.0	4.33	17.
6	160	159.	44.7	5.83	16.
7	180	207.	50.3	5.69	14.
8	250	261.	55.5	5.45	13.
8.66		300.0	58.0	5.31	
9	320	320.	59.2	5.24	15.
10	390	382.	66.1	5.38	14.
11	460	450.	71.5	5.50	14.
12	530	524.	77.0	5.50	14.
12.97		600.0	82.6	5.69	
13	610	602.	82.7	5.70	14.
14	690	686.	88.5	5.90	14.
15	780	780.	94.9	5.71	13.
16	850	886.	98.5	4.67	29.
16.14		900.0	99.1	4.65	
17	980	988.	102.5	4.50	30.
18	1100	1095.	106.4	4.19	31.
18.93		1200.0	109.8	3.72	
19	1190	1208.	110.1	3.69	32.
20	1320	1319.	114.9	3.80	32.
21	1440	1438.	119.1	3.59	32.
21.52		1500.0	121.7	3.77	
22	1590	1557.	124.2	3.93	34.
23	1730	1680.	129.3	4.30	37.
23.95		1800.0	134.6	4.89	
24	1870	1807.	134.9	4.92	40.
25	1880	1941.	140.1	5.26	40.
26	2070	2077.	145.3	6.05	38.
26.16		2100.0	146.2	6.12	
27	2200	2221.	150.8	6.47	37.
28	2320	2373.	156.8	6.71	36.
28.17		2400.0	157.7	6.70	
29	2540	2532.	161.7	6.65	36.
30	2660	2697.	167.3	6.60	37.
30.02		2700.0	167.4	6.60	
31	2880	2866.	173.4	6.73	36.
31.74		3000.0	177.8	6.33	
32	3060	3048.	179.4	6.18	38.
33	3270	3239.	185.4	5.25	36.
33.31		3300.0	187.4	4.91	
34	3430	3437.	191.8	4.15	22.
34.84		3600.0	195.3	4.12	
35	3650	3631.	195.9	4.11	22.
36	3840	3833.	200.6	3.70	19.
36.32		3900.0	201.9	3.62	
37	4050	4038.	204.6	3.44	18.
37.79		4200.0	207.0	3.54	
38	4210	4243.	207.6	3.56	17.
39	4440	4458.	210.8	2.98	18.
39.20		4500.0	211.2	2.94	
40	4690	4671.	212.6	2.79	21.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
40.59		4800.0	214.0	2.57	
41	4880	4888.	214.9	2.42	21.
41.96		5100.0	216.7	1.99	
42	5090	5108.	216.7	1.97	23.
43	5330	5330.	219.0	1.53	21.
43.32		5400.0	219.6	1.51	
44	5560	5551.	220.8	1.46	21.
44.66		5700.0	219.6	1.03	
45	5790	5778.	219.0	0.80	29.
45.98		6000.0	224.0	0.51	
46	6020	6005.	224.1	0.51	16.
47	6250	6231.	225.2	-0.02	15.
47.31		6300.0	224.9	0.25	
48	6450	6453.	224.4	0.84	15.
48.67		6600.0	224.0	2.53	
49	6660	6671.	223.8	3.35	13.
50	6900	6888.	225.7	8.10	8.
50.05		6900.0	226.1	7.97	
51	7110	7120.	234.0	5.71	11.
51.34		7200.0	235.9	5.71	
52	7360	7357.	239.7	5.71	11.
52.59		7500.0	243.1	5.71	
53	7600	7600.	245.4	5.71	11.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	3.	43.1	-8.57	7.
2	50	42.	34.6	-8.57	7.
3	70	73.	26.0	-8.57	7.
4	90	96.	40.4	8.33	24.
5	110	144.	44.0	4.81	21.
6	220	188.	51.4	6.41	19.
7	250	241.	58.5	6.84	17.
8.00		300.0	66.6	7.56	
8	300	300.	66.6	7.56	18.
9	350	372.	72.5	7.32	19.
10	450	450.	81.0	7.26	16.
11	530	533.	88.1	7.47	16.
11.70		600.0	92.8	7.12	
12	620	629.	94.8	6.97	19.
13	720	730.	101.6	6.66	19.
14	830	837.	107.7	6.32	20.
14.56		900.0	110.9	6.28	
15	970	949.	113.3	6.24	21.
16	1080	1069.	120.2	5.82	17.
17	1180	1194.	126.6	5.60	15.
17.04		1200.0	126.8	5.59	
18	1330	1327.	132.0	5.19	15.
19	1470	1463.	136.9	5.06	15.
19.26		1500.0	138.3	4.99	
20	1630	1605.	142.0	4.79	14.
21	1730	1750.	147.1	4.74	14.
21.33		1800.0	148.5	4.69	
22	1900	1901.	151.5	4.59	14.
23	2040	2055.	155.8	4.50	15.
23.29		2100.0	157.3	4.58	
24	2200	2211.	160.8	4.78	16.
25	2390	2373.	166.3	4.90	17.
25.16		2400.0	167.0	4.87	
26	2570	2544.	170.9	4.70	17.
26.91		2700.0	174.8	4.79	
27	2710	2716.	175.2	4.80	17.
28	2890	2894.	179.8	4.78	17.
28.58		3000.0	182.2	4.59	
29	3070	3078.	184.0	4.46	18.
30	3270	3270.	188.3	3.87	18.
30.16		3300.0	188.9	3.89	
31	3440	3459.	192.3	4.00	18.
31.73		3600.0	195.7	4.08	
32	3630	3653.	196.9	4.11	19.
33	3870	3853.	200.3	3.89	20.
33.23		3900.0	201.1	3.88	
34	4090	4056.	203.8	3.82	20.
34.68		4200.0	205.7	3.34	
35	4260	4267.	206.6	3.12	24.
36	4480	4483.	209.3	2.22	24.
36.08		4500.0	209.5	2.20	
37	4700	4696.	211.7	1.96	24.
37.48		4800.0	212.5	1.71	
38	4890	4914.	213.4	1.44	24.
38.85		5100.0	211.9	0.92	

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
39	5100	5133.	211.6	0.83	32.
40	5360	5348.	216.3	1.02	24.
40.23		5400.0	216.8	0.68	
41	5610	5572.	218.6	-0.43	22.
41.57		5700.0	218.8	-1.03	
42	5790	5795.	219.0	-1.47	24.
42.92		6000.0	218.1	-2.91	
43	6030	6018.	218.0	-3.03	25.
44	6210	6220.	212.5	5.00	21.
44.38		6300.0	213.4	6.89	
45	6420	6432.	215.0	10.00	25.
45.76		6600.0	222.6	10.00	
46	6680	6652.	225.0	10.00	25.
47	6870	6882.	235.0	10.00	25.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	4.	39.4	-5.71	31.
2	60	41.	33.7	-5.71	31.
3	40	72.	28.0	-5.71	31.
4	120	91.	26.1	-0.71	26.
5	110	116.	23.7	-1.34	24.
6	120	129.	30.0	3.82	30.
7	180	164.	33.6	3.35	32.
8	160	201.	36.0	2.94	30.
9	210	227.	42.7	5.04	39.
10	270	270.	49.6	5.48	37.
10.68		300.0	53.5	6.16	
11	360	314.	55.4	6.48	36.
12	420	371.	61.3	6.58	36.
13	390	431.	67.2	7.10	33.
14	450	502.	74.6	7.12	33.
15	530	579.	81.5	7.18	33.
15.26		600.0	83.6	7.34	
16	690	659.	89.3	7.77	34.
17	780	756.	96.5	7.29	35.
18	870	859.	102.0	6.89	39.
18.38		900.0	104.4	6.86	
19	940	965.	108.3	6.82	39.
20	1110	1080.	114.6	6.49	39.
20.98		1200.0	121.6	5.92	
21	1180	1203.	121.8	5.91	36.
22	1320	1337.	128.6	4.95	28.
23	1470	1468.	133.8	4.93	28.
23.24		1500.0	135.1	5.03	
24	1600	1601.	139.1	5.34	28.
25	1810	1738.	144.2	5.86	26.
25.41		1800.0	146.5	5.74	
26	1890	1888.	149.9	5.56	26.
27	2000	2045.	154.9	4.99	27.
27.34		2100.0	156.6	4.89	
28	2200	2205.	159.9	4.71	27.
29	2350	2363.	165.2	5.26	28.
29.22		2400.0	166.2	5.15	
30	2540	2535.	170.2	4.76	27.
30.97		2700.0	174.9	5.11	
31	2690	2704.	175.1	5.12	27.
32	2880	2880.	179.9	5.27	27.
32.65		3000.0	183.0	5.20	
33	3090	3064.	184.7	5.15	27.
34	3280	3255.	188.3	4.59	32.
34.22		3300.0	189.3	4.30	
35	3450	3458.	192.6	3.27	29.
35.71		3600.0	194.8	2.78	
36	3610	3658.	195.7	2.57	28.
37	3830	3853.	198.8	2.85	29.
37.23		3900.0	199.5	2.76	
38	4090	4057.	201.7	2.46	28.
38.69		4200.0	202.8	2.05	
39	4240	4265.	203.2	1.86	31.
40	4500	4476.	204.5	1.04	32.
40.12		4500.0	204.8	1.08	

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
41	4710	4678.	206.8	1.41	34.
41.59		4800.0	208.0	1.52	
42	4920	4884.	208.9	1.60	35.
43	5080	5096.	210.8	1.36	34.
43.02		5100.0	210.8	1.36	
44	5280	5310.	212.7	1.16	34.
44.41		5400.0	212.6	0.81	
45	5500	5530.	212.3	0.29	39.
45.82		5700.0	208.9	0.77	
46	5780	5738.	208.1	0.87	45.
47	5960	5949.	212.3	1.15	42.
47.23		6000.0	212.8	0.89	
48	6130	6167.	214.5	0.03	45.
48.59		6300.0	215.4	-1.48	
49	6320	6393.	216.1	-2.54	45.
49.98		6600.0	212.9	-1.52	
50	6640	6605.	212.8	-1.49	52.
51	6850	6850.	218.2	-20.71	37.
51.23		6900.0	212.4	-21.54	
52	7050	7066.	193.0	-24.29	29.
52.74		7200.0	175.0	-24.29	
53	7280	7247.	168.7	-24.29	29.
54	7390	7404.	144.4	-24.29	29.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	7.	6.1	21.43	16.
2	40	24.	27.6	21.43	16.
3	60	63.	49.0	21.43	16.
4	110	124.	60.4	13.10	14.
5	210	194.	70.8	10.71	15.
6	270	274.	78.0	8.44	16.
6.31		300.0	80.7	8.45	
7	360	357.	86.6	8.46	15.
8	470	449.	94.8	8.26	15.
9	550	550.	100.4	7.83	17.
9.46		600.0	104.4	7.67	
10	650	659.	109.2	7.47	16.
11	760	776.	116.5	6.99	15.
12	910	900.	123.8	6.61	12.
12.00		900.0	123.9	6.61	
13	1020	1026.	130.9	6.70	13.
14	1180	1160.	137.3	6.72	13.
14.28		1200.0	139.1	6.64	
15	1300	1303.	143.9	6.44	12.
16	1450	1452.	150.0	6.24	13.
16.31		1500.0	152.0	6.24	
17	1610	1605.	156.4	6.23	13.
18	1780	1767.	163.0	6.02	12.
18.19		1800.0	164.0	5.93	
19	1920	1937.	168.4	5.59	15.
19.95		2100.0	173.6	5.50	
20	2090	2109.	173.8	5.50	15.
21	2280	2285.	179.0	5.48	15.
21.62		2400.0	182.3	5.25	
22	2490	2470.	184.3	5.12	15.
23	2660	2658.	189.1	4.96	15.
23.22		2700.0	190.3	4.92	
24	2850	2852.	194.5	4.74	14.
24.74		3000.0	197.9	4.56	
25	3040	3051.	199.0	4.49	14.
26	3270	3253.	203.5	4.37	14.
26.23		3300.0	204.6	4.34	
27	3480	3460.	208.2	4.27	14.
27.66		3600.0	211.0	4.06	
28	3650	3673.	212.5	3.94	12.
29	3890	3887.	212.6	4.09	24.
29.06		3900.0	213.1	4.08	
30	4110	4106.	220.6	4.00	12.
30.42		4200.0	222.3	3.98	
31	4320	4328.	224.5	3.96	13.
31.76		4500.0	227.5	4.16	
32	4550	4553.	228.5	4.22	13.
33	4800	4786.	232.3	3.94	10.
33.06		4800.0	232.6	3.82	
34	5010	5023.	237.1	1.90	10.
34.33		5100.0	237.4	3.15	
35	5260	5258.	238.0	5.71	14.
35.59		5400.0	241.4	5.71	
36	5510	5499.	243.7	5.71	14.
36.81		5700.0	248.4	5.71	

PLANE NUMBER 66

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
37	5740	5746•	249•4	5•71	14•

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	-2.	35.0	10.00	12.
2	30	38.	45.0	10.00	12.
3	100	88.	55.0	10.00	12.
4	140	146.	72.1	16.19	11.
5	220	230.	80.3	10.56	15.
5.74		300.0	85.2	8.22	
6	320	324.	86.9	7.41	26.
7	440	416.	89.5	5.25	44.
8	510	502.	98.0	6.95	43.
8.96		600.0	102.6	6.74	
9	630	605.	102.9	6.73	41.
10	770	714.	110.6	6.47	37.
11	810	832.	116.7	5.95	38.
11.57		900.0	120.3	5.97	
12	830	952.	123.0	5.98	38.
13	1090	1079.	129.3	5.91	38.
13.95		1200.0	135.5	6.43	
14	1230	1206.	135.8	6.45	39.
15	1380	1344.	141.4	6.51	38.
16	1500	1490.	147.1	6.41	39.
16.07		1500.0	147.6	6.40	
17	1650	1641.	153.8	6.25	38.
17.99		1800.0	159.1	5.88	
18	1790	1801.	159.2	5.87	40.
19	1970	1967.	165.2	5.51	39.
19.76		2100.0	170.2	4.96	
20	2100	2142.	171.8	4.79	33.
21	2310	2319.	176.8	4.51	32.
21.48		2400.0	178.3	4.93	
22	2490	2489.	180.0	5.39	20.
23	2720	2673.	185.3	5.29	20.
23.14		2700.0	185.9	5.20	
24	2860	2866.	189.7	4.65	24.
24.68		3000.0	193.2	4.39	
25	3050	3062.	194.8	4.27	21.
26	3280	3260.	199.5	4.12	20.
26.19		3300.0	200.4	4.06	
27	3440	3465.	203.8	3.84	20.
27.66		3600.0	206.4	3.84	
28	3670	3670.	207.8	3.83	20.
29	3890	3882.	211.7	3.61	19.
29.08		3900.0	212.0	3.63	
30	4090	4093.	214.9	3.84	18.
30.49		4200.0	216.4	3.66	
31	4320	4313.	217.8	3.47	21.
31.85		4500.0	220.7	3.47	
32	4550	4533.	221.2	3.47	21.
33	4720	4761.	225.0	2.95	17.
33.17		4800.0	225.5	2.93	
34	4990	4988.	227.9	2.83	17.
34.49		5100.0	229.1	2.77	
35	5230	5218.	230.4	2.71	17.
35.76		5400.0	232.2	2.17	
36	5450	5456.	232.7	2.00	18.
37	5700	5692.	234.1	1.78	19.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
37.04		5700.0	234.2	1.78	
38	5930	5928.	236.2	1.71	19.
38.30		6000.0	235.6	1.61	
39	6180	6168.	234.1	1.36	30.
39.54		6300.0	237.7	0.95	
40	6380	6413.	240.7	0.59	17.
40.79		6600.0	240.9	0.94	
41	6660	6650.	240.9	1.04	17.
42	6900	6892.	241.8	1.03	18.
42.03		6900.0	241.9	1.01	
43	7150	7136.	243.0	0.61	21.
43.27		7200.0	242.6	1.33	
44	7390	7376.	241.4	3.33	18.
44.54		7500.0	241.7	10.75	
45	7600	7607.	242.0	17.14	15.
45.77		7800.0	255.2	17.14	
46	7850	7857.	259.1	17.14	15.
46.91		8100.0	274.7	17.14	
47	8130	8125.	276.3	17.14	15.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	1.	18.1	1.43	21.
2	30	20.	19.6	1.43	21.
3	20	41.	21.0	1.43	21.
4	80	61.	23.9	3.10	15.
5	80	83.	29.7	5.54	16.
6	110	115.	34.5	5.24	15.
7	150	153.	38.8	4.76	14.
8	180	194.	43.4	4.74	13.
9	260	234.	49.3	5.77	20.
10	280	287.	56.0	5.73	18.
10.23		300.0	57.3	5.82	
11	360	343.	61.8	6.10	18.
12	400	410.	67.3	5.86	19.
13	470	476.	73.4	6.33	19.
14	530	553.	79.7	6.21	19.
14.56		600.0	82.9	6.12	
15	620	637.	85.3	6.04	20.
16	720	727.	90.9	5.91	20.
17	860	821.	96.7	5.80	20.
17.78		900.0	100.7	5.62	
18	920	923.	101.8	5.57	22.
19	1020	1033.	107.1	4.91	21.
20	1160	1148.	111.1	4.27	25.
20.44		1200.0	113.3	4.08	
21	1230	1265.	116.0	3.85	21.
22	1410	1378.	122.2	4.53	32.
23	1520	1499.	128.0	5.00	35.
23.01		1500.0	128.0	5.00	
24	1630	1625.	133.3	5.50	35.
25	1770	1759.	138.3	5.77	34.
25.29		1800.0	139.6	5.74	
26	1920	1900.	142.8	5.68	35.
27	2040	2041.	150.4	6.35	41.
27.40		2100.0	152.9	6.53	
28	2170	2190.	156.8	6.81	41.
29	2280	2349.	162.4	6.88	40.
29.30		2400.0	163.9	6.66	
30	2470	2521.	167.5	6.14	45.
31	2740	2695.	171.1	5.55	51.
31.03		2700.0	171.2	5.52	
32	2900	2881.	174.9	4.16	57.
32.63		3000.0	176.8	3.26	
33	3070	3070.	177.8	2.74	59.
34	3230	3260.	179.9	1.51	60.
34.20		3300.0	180.1	1.09	
35	3380	3459.	180.6	-0.59	55.
35.70		3600.0	184.7	-2.36	
36	3720	3661.	186.5	-3.13	42.
37	3890	3844.	182.9	-2.76	46.
37.28		3900.0	182.9	-3.94	
38	4060	4042.	183.1	-6.95	42.
38.84		4200.0	178.1	-9.38	
39	4210	4231.	177.2	-9.85	45.
40	4380	4377.	165.4	3.10	6.
40.75		4500.0	168.1	3.98	

PLANE NUMBER 68

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
41	4540	4542.	169.0	4.29	5.
42	4710	4713.	173.3	4.29	5.
42.50		4800.0	175.4	4.29	
43	4890	4888.	177.6	4.29	5.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	6.	0.6	5.71	14.
2	20	9.	6.3	5.71	14.
3	20	18.	12.0	5.71	14.
4	20	34.	14.6	3.10	10.
5	60	48.	19.5	4.61	10.
6	70	69.	23.7	4.50	9.
7	90	92.	31.0	5.99	13.
8	120	124.	37.6	6.37	14.
9	170	168.	41.8	5.75	17.
10	190	211.	49.1	6.08	17.
11	250	264.	54.2	5.89	19.
11.59		300.0	57.2	5.64	
12	340	325.	59.4	5.46	21.
13	390	390.	64.5	5.14	22.
14	450	454.	70.4	5.48	24.
15	560	529.	76.3	5.35	23.
15.90		600.0	81.6	5.38	
16	580	608.	82.2	5.39	23.
17	690	692.	87.8	5.43	23.
18	820	782.	93.5	5.58	24.
19	900	879.	98.9	5.42	24.
19.20		900.0	99.9	5.41	
20	960	981.	103.6	5.38	24.
21	1050	1089.	107.8	5.14	26.
22	1160	1199.	113.6	5.20	26.
22.01		1200.0	113.6	5.20	
23	1340	1317.	118.4	4.99	27.
24	1440	1439.	123.0	4.87	27.
24.47		1500.0	125.2	4.53	
25	1580	1570.	127.6	4.15	27.
26	1710	1701.	131.1	3.99	27.
26.79		1800.0	136.0	4.76	
27	1860	1827.	137.4	4.97	39.
28	1980	1966.	143.8	5.13	40.
28.92		2100.0	149.6	5.28	
29	2110	2111.	150.1	5.29	41.
30	2230	2264.	154.7	5.24	41.
30.87		2400.0	158.1	5.27	
31	2450	2420.	158.7	5.27	41.
32	2570	2582.	161.9	5.14	42.
32.69		2700.0	164.5	4.63	
33	2730	2752.	165.7	4.41	45.
34	2860	2927.	168.4	3.57	50.
34.41		3000.0	169.5	3.19	
35	3020	3105.	171.0	2.65	52.
36	3350	3285.	173.2	1.76	52.
36.08		3300.0	173.4	1.67	
37	3510	3470.	175.1	0.63	49.
37.69		3600.0	174.8	-0.41	
38	3710	3658.	174.6	-0.87	48.
39	3850	3848.	179.0	-2.70	40.
39.28		3900.0	178.9	-3.36	
40	4030	4038.	178.4	-5.08	37.
41	4190	4195.	168.9	0.14	11.
41.03		4200.0	168.9	0.19	

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
42	4370	4360.	168.0	1.73	10.
42.82		4500.0	169.1	1.48	
43	4520	4530.	169.3	1.43	8.
44	4700	4699.	170.0	2.86	11.
44.59		4800.0	171.7	2.86	
45	4880	4871.	172.9	2.86	11.
46	5040	5045.	175.7	2.86	11.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	10.	20.6	5.71	26.
2	50	33.	26.3	5.71	26.
3	70	62.	32.0	5.71	26.
4	70	96.	28.6	-0.95	21.
5	150	123.	28.3	-0.22	17.
6	140	147.	31.9	2.31	18.
7	180	177.	36.7	3.60	19.
8	200	212.	42.0	4.48	19.
9	240	247.	49.1	6.12	29.
10	290	293.	58.3	7.12	32.
10.12		300.0	59.0	7.20	
11	350	349.	64.5	7.77	26.
12	430	414.	71.7	8.08	24.
13	460	487.	79.4	8.39	23.
14	550	566.	87.0	8.83	18.
14.37		600.0	90.3	8.77	
15	630	659.	95.9	8.67	18.
16	740	762.	103.5	8.28	22.
17	900	882.	109.3	6.85	39.
17.16		900.0	110.6	6.84	
18	1010	995.	117.1	6.83	39.
19	1140	1116.	124.9	6.85	39.
19.68		1200.0	130.7	7.17	
20	1240	1241.	133.5	7.33	43.
21	1380	1377.	141.7	7.47	44.
21.83		1500.0	148.5	7.32	
22	1540	1524.	149.8	7.29	43.
23	1700	1675.	157.5	7.65	43.
23.79		1800.0	163.3	7.84	
24	1870	1834.	164.9	7.89	43.
25	1990	1998.	172.3	8.39	41.
25.58		2100.0	176.2	8.40	
26	2040	2173.	178.9	8.41	41.
27	2350	2362.	185.7	7.67	46.
27.19		2400.0	186.9	7.53	
28	2540	2558.	192.2	6.97	48.
28.71		2700.0	197.3	6.65	
29	2800	2757.	199.4	6.53	47.
30	2980	2965.	205.1	5.89	49.
30.16		3000.0	206.0	5.81	
31	3180	3177.	210.9	5.43	49.
31.56		3300.0	213.9	5.04	
32	3420	3397.	216.4	4.73	47.
32.90		3600.0	221.3	4.07	
33	3640	3623.	221.9	3.99	43.
34	3890	3853.	227.9	3.44	36.
34.20		3900.0	228.8	3.33	
35	4080	4088.	232.1	2.90	33.
35.50		4200.0	233.0	3.35	
36	4280	4313.	233.9	3.81	22.
36.79		4500.0	236.3	3.65	
37	4520	4550.	236.9	3.60	24.
38	4810	4788.	239.6	3.63	23.
38.05		4800.0	239.8	3.63	
39	5010	5031.	243.8	3.52	23.

PLANE NUMBER 70

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
39.28		5100.0	243.5	3.57	
40	5280	5275.	242.8	3.70	33.
40.50		5400.0	246.9	3.63	
41	5520	5525.	251.0	3.57	26.
41.67		5700.0	254.3	2.39	
42	5780	5787.	256.0	1.81	22.
42.84		6000.0	256.8	2.62	
43	6080	6041.	257.0	2.77	23.
43.99		6300.0	259.6	2.00	
44	6300	6302.	259.7	1.99	23.
45	6570	6558.	260.0	5.24	26.
45.17		6600.0	261.0	7.24	
46	6800	6807.	266.0	17.14	19.
46.34		6900.0	271.8	17.14	
47	7070	7081.	283.1	17.14	19.
47.41		7200.0	290.1	17.14	
48	7380	7373.	300.3	17.14	19.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	-0.	47.0	-10.00	6.
2	40	42.	37.0	-10.00	6.
3	80	74.	27.0	-10.00	6.
4	90	99.	44.3	10.00	29.
5	110	150.	47.2	5.22	26.
6	240	206.	47.4	1.93	26.
7	270	247.	52.6	4.09	31.
8	300	299.	58.4	4.88	31.
8.01		300.0	58.5	4.89	
9	380	357.	63.5	5.42	30.
10	410	408.	75.5	7.84	50.
11	450	478.	83.7	8.88	49.
12	530	560.	92.3	9.57	47.
12.43		600.0	96.1	9.69	
13	680	654.	101.1	9.86	46.
14	770	762.	108.0	9.45	51.
15	820	868.	116.4	10.14	47.
15.26		900.0	119.1	10.10	
16	930	991.	126.6	9.98	47.
17	1070	1124.	136.7	9.79	47.
17.52		1200.0	141.6	9.57	
18	1340	1269.	146.0	9.38	47.
19	1470	1429.	155.1	8.40	46.
19.43		1500.0	158.6	8.04	
20	1630	1596.	163.2	7.56	46.
21	1790	1768.	170.2	6.96	46.
21.18		1800.0	171.4	6.89	
22	1950	1945.	176.8	6.55	47.
22.82		2100.0	182.4	5.73	
23	2030	2134.	183.6	5.55	43.
24	2320	2325.	190.8	5.13	39.
24.39		2400.0	193.0	5.20	
25	2530	2517.	196.5	5.32	40.
25.94		2700.0	201.1	5.74	
26	2750	2712.	201.4	5.76	38.
27	2940	2909.	206.3	6.53	32.
27.42		3000.0	208.8	6.24	
28	3130	3124.	212.3	5.85	33.
28.79		3300.0	216.2	5.22	
29	3340	3346.	217.2	5.05	36.
30	3550	3575.	221.5	4.01	38.
30.11		3600.0	221.6	3.88	
31	3780	3809.	222.8	2.85	41.
31.41		3900.0	225.4	3.26	
32	3990	4030.	229.0	3.86	31.
32.72		4200.0	232.7	2.84	
33	4280	4268.	234.2	2.44	31.
33.94		4500.0	238.6	-0.59	
34	4520	4516.	238.9	-0.79	26.
35	4760	4768.	240.7	-5.80	19.
35.13		4800.0	239.8	-6.04	
36	5030	5011.	234.3	-7.62	13.
36.38		5100.0	231.5	-9.60	
37	5240	5247.	227.0	-12.86	15.
37.69		5400.0	218.1	-12.86	

PLANE NUMBER 71

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
38	5460	5467•	214•1	-12•86	15•
39	5680	5675•	201•3	-12•86	15•

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	2.	55.0	-10.00	12.
2	60	52.	45.0	-10.00	12.
3	80	92.	35.0	-10.00	12.
4	130	111.	22.5	-7.86	31.
5	140	118.	38.3	8.79	46.
6	90	163.	45.2	7.58	40.
7	170	214.	51.9	7.02	36.
8	300	268.	60.0	7.53	33.
8.50		300.0	62.8	7.40	
9	360	333.	65.6	7.27	32.
10	400	401.	74.6	7.50	31.
11	480	479.	80.9	7.52	31.
12	570	563.	88.8	7.60	31.
12.40		600.0	91.9	7.59	
13	640	656.	96.6	7.59	31.
14	780	759.	105.0	7.27	29.
15	870	870.	113.3	7.15	28.
15.27		900.0	114.8	7.22	
16	970	983.	119.1	7.44	25.
17	1100	1103.	125.5	7.76	21.
17.73		1200.0	131.0	7.47	
18	1210	1235.	132.9	7.36	22.
19	1410	1374.	140.6	7.10	21.
19.85		1500.0	146.1	6.78	
20	1480	1522.	147.1	6.72	22.
21	1680	1675.	153.5	6.40	23.
21.78		1800.0	158.5	6.14	
22	1840	1835.	159.9	6.07	22.
23	2010	1998.	165.8	6.03	22.
23.60		2100.0	170.2	6.03	
24	2200	2167.	173.1	6.03	22.
25	2330	2345.	179.4	5.87	22.
25.30		2400.0	181.0	5.79	
26	2530	2530.	184.8	5.61	23.
26.90		2700.0	189.5	5.36	
27	2710	2719.	190.1	5.34	23.
28	2930	2913.	194.4	5.14	25.
28.43		3000.0	196.6	4.83	
29	3090	3117.	199.5	4.42	23.
29.90		3300.0	202.3	4.18	
30	3300	3320.	202.6	4.15	25.
31	3510	3527.	206.9	3.98	25.
31.34		3600.0	208.0	3.76	
32	3730	3741.	210.1	3.34	27.
32.74		3900.0	212.7	3.05	
33	4000	3956.	213.6	2.94	26.
34	4200	4177.	217.2	2.39	22.
34.10		4200.0	217.4	2.35	
35	4400	4398.	219.4	2.06	22.
35.45		4500.0	220.1	1.80	
36	4630	4623.	221.1	1.49	22.
36.77		4800.0	220.1	0.93	
37	4840	4851.	219.8	0.76	28.
38	5070	5075.	224.3	0.84	21.
38.11		5100.0	224.3	0.97	

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
39	5270	5294.	224.0	1.96	19.
39.46		5400.0	225.3	1.31	
40	5550	5524.	226.9	0.56	19.
40.76		5700.0	228.1	-0.67	
41	5730	5756.	228.5	-1.06	21.
42	5990	5991.	229.3	-5.71	22.
42.04		6000.0	229.3	-6.18	
43	6230	6227.	229.0	-18.57	6.
43.33		6300.0	222.8	-18.57	
44	6440	6446.	210.4	-18.57	6.
44.76		6600.0	196.2	-18.57	
45	6650	6647.	191.9	-18.57	6.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	7.	66.3	-17.14	14.
2	80	65.	49.1	-17.14	14.
3	100	105.	32.0	-17.14	14.
4	120	126.	28.2	-5.95	15.
5	140	140.	39.2	6.73	31.
6	170	183.	46.7	6.95	29.
7	190	232.	52.1	6.50	35.
8	280	282.	62.0	8.20	36.
8.30		300.0	64.8	8.49	
9	380	343.	71.1	9.18	36.
10	450	419.	82.0	9.33	34.
11	490	499.	90.5	10.05	28.
12	510	597.	99.5	9.74	30.
12.03		600.0	99.8	9.73	
13	700	703.	108.8	9.49	31.
14	830	820.	118.0	9.09	31.
14.64		900.0	123.7	8.88	
15	930	945.	126.9	8.76	31.
16	1100	1077.	136.2	8.77	31.
16.87		1200.0	142.7	8.54	
17	1230	1219.	143.8	8.51	33.
18	1390	1369.	152.2	8.31	33.
18.80		1500.0	159.1	7.72	
19	1530	1532.	160.8	7.58	30.
20	1720	1704.	169.1	6.84	23.
20.55		1800.0	173.3	6.76	
21	1850	1878.	176.8	6.70	22.
22	2050	2054.	182.3	7.04	17.
22.24		2100.0	183.9	6.96	
23	2230	2242.	188.8	6.73	19.
23.81		2400.0	194.3	6.57	
24	2430	2437.	195.6	6.53	18.
25	2670	2636.	201.5	6.42	19.
25.31		2700.0	203.6	6.38	
26	2820	2842.	208.4	6.30	19.
26.75		3000.0	213.4	6.35	
27	3070	3054.	215.1	6.36	19.
28	3270	3266.	223.7	7.17	32.
28.14		3300.0	223.9	6.82	
29	3500	3513.	225.1	4.66	76.
29.38		3600.0	227.5	4.61	
30	3760	3742.	231.2	4.52	76.
30.68		3900.0	235.1	4.79	
31	3960	3973.	236.8	4.91	76.
31.94		4200.0	241.2	4.63	
32	4190	4215.	241.5	4.61	77.
33	4460	4459.	246.0	4.51	77.
33.17		4500.0	247.2	4.74	
34	4690	4697.	253.3	5.82	84.
34.40		4800.0	253.3	5.90	
35	4980	4952.	253.5	6.02	93.
35.57		5100.0	259.5	6.38	
36	5260	5210.	264.0	6.64	96.
36.72		5400.0	268.5	7.02	
37	5650	5474.	270.2	7.17	104.

PLANE NUMBER 73

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
37.87		5700.0	274.2	10.03	
38	5510	5735.	274.8	10.47	115.
39	6040	5990.	279.7	20.00	125.
39.04		6000.0	280.2	20.80	
40	6340	6244.	293.2	40.24	142.
40.18		6300.0	295.6	43.46	
41	6560	6563.	307.0	58.57	58.
41.11		6600.0	313.4	58.57	
42	6850	6900.	365.6	58.57	58.
42.00		6900.0	365.6	58.57	
42.76		7200.0	410.1	58.57	
43	7320	7295.	424.1	58.57	58.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	8.	23.0	10.00	21.
2	50	36.	33.0	10.00	21.
3	80	74.	43.0	10.00	21.
4	100	123.	47.9	5.71	15.
5	190	173.	52.8	5.35	13.
6	230	227.	58.3	5.62	13.
7	290	285.	66.6	7.11	15.
7.22		300.0	68.6	7.30	
8	350	353.	75.7	7.96	22.
9	430	434.	81.7	7.67	22.
10	490	518.	91.6	8.07	21.
10.87		600.0	98.4	8.26	
11	600	612.	99.4	8.29	20.
12	720	719.	106.5	7.80	24.
13	820	835.	113.2	7.21	28.
13.56		900.0	117.0	7.18	
14	1000	951.	120.0	7.16	28.
15	1060	1076.	128.1	7.10	28.
15.92		1200.0	134.8	6.83	
16	1210	1211.	135.4	6.81	27.
17	1330	1351.	142.6	6.62	26.
18	1510	1497.	149.9	6.63	26.
18.02		1500.0	150.0	6.63	
19	1690	1650.	157.2	6.74	27.
19.92		1800.0	162.3	6.50	
20	1840	1812.	162.7	6.48	29.
21	1950	1979.	168.5	6.34	30.
21.70		2100.0	172.8	6.27	
22	2100	2152.	174.7	6.25	30.
23	2310	2333.	179.4	5.77	34.
23.36		2400.0	181.9	5.66	
24	2540	2519.	186.4	5.46	31.
24.95		2700.0	191.2	5.29	
25	2700	2709.	191.4	5.28	31.
26	2910	2906.	196.5	4.97	32.
26.47		3000.0	198.3	4.81	
27	3130	3107.	200.3	4.62	34.
27.94		3300.0	205.1	4.50	
28	3360	3311.	205.4	4.50	33.
29	3500	3528.	209.6	3.50	32.
29.33		3600.0	211.2	3.36	
30	3730	3744.	214.4	3.08	28.
30.73		3900.0	217.1	3.15	
31	3970	3959.	218.1	3.18	28.
32	4130	4176.	220.9	3.44	27.
32.11		4200.0	221.2	3.46	
33	4440	4397.	224.1	3.64	26.
33.45		4500.0	225.4	3.42	
34	4630	4627.	227.1	3.15	28.
34.76		4800.0	229.3	3.20	
35	4860	4855.	230.0	3.21	27.
36	5060	5087.	229.4	3.13	36.
36.05		5100.0	229.8	3.10	
37	5350	5326.	236.9	2.66	27.
37.31		5400.0	237.9	2.47	

PLANE NUMBER 74

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
38	5520	5567.	240.1	2.06	29.
38.56		5700.0	241.5	2.14	
39	5820	5806.	242.6	2.21	25.
39.77		6000.0	245.5	0.23	
40	6070	6057.	246.3	-0.35	26.
40.96		6300.0	249.2	-5.50	
41	6300	6310.	249.3	-5.71	22.
42	6560	6543.	243.0	7.14	19.
42.23		6600.0	244.7	7.14	
43	6770	6789.	250.1	7.14	19.
43.44		6900.0	253.3	7.14	
44	7050	7043.	257.3	7.14	19.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	-3.	20.9	8.57	20.
2	20	22.	29.4	8.57	20.
3	40	55.	38.0	8.57	20.
4	120	95.	38.2	3.10	19.
5	140	133.	49.0	8.05	21.
6	160	188.	53.5	6.11	23.
7	230	240.	62.1	7.63	23.
7.92		300.0	69.7	7.85	
8	340	305.	70.3	7.87	22.
9	390	382.	76.0	7.46	22.
10	420	460.	85.6	7.83	21.
11	540	547.	93.8	8.14	22.
11.55		600.0	98.1	8.16	
12	640	644.	101.6	8.18	22.
13	770	754.	107.8	7.66	29.
14	890	871.	115.1	6.97	29.
14.24		900.0	116.9	6.95	
15	980	991.	122.7	6.89	29.
16	1100	1115.	129.8	7.08	29.
16.63		1200.0	134.1	7.02	
17	1230	1249.	136.5	6.98	29.
18	1390	1395.	143.6	6.35	27.
18.71		1500.0	149.0	6.35	
19	1570	1543.	151.2	6.35	27.
20	1740	1693.	157.6	6.76	27.
20.66		1800.0	161.9	6.78	
21	1880	1854.	164.1	6.79	27.
22	1970	2024.	169.7	6.43	30.
22.43		2100.0	172.2	6.24	
23	2160	2201.	175.6	5.98	30.
24	2390	2384.	181.5	5.42	30.
24.09		2400.0	182.1	5.46	
25	2580	2566.	188.2	5.84	33.
25.70		2700.0	192.1	5.85	
26	2750	2756.	193.8	5.85	33.
27	2930	2953.	198.9	5.85	33.
27.23		3000.0	200.1	5.81	
28	3190	3156.	204.0	5.70	33.
28.68		3300.0	207.3	5.20	
29	3400	3369.	208.9	4.96	35.
30	3600	3588.	214.1	4.09	32.
30.05		3600.0	214.3	4.06	
31	3770	3810.	218.9	3.45	27.
31.40		3900.0	220.0	3.40	
32	4000	4032.	221.6	3.32	28.
32.75		4200.0	223.8	3.33	
33	4220	4255.	224.5	3.33	27.
34	4540	4485.	227.6	2.84	27.
34.06		4500.0	227.8	2.81	
35	4730	4719.	230.5	2.29	26.
35.35		4800.0	231.3	2.23	
36	4960	4953.	232.8	2.11	26.
36.64		5100.0	234.5	2.40	
37	5200	5183.	235.4	2.57	27.
37.93		5400.0	239.1	2.81	

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
38	5410	5418.	239.4	2.83	29.
39	5660	5663.	238.8	2.28	37.
39.16		5700.0	239.6	2.46	
40	5920	5900.	243.9	3.45	29.
40.42		6000.0	245.0	3.95	
41	6140	6137.	246.5	4.65	20.
41.67		6300.0	249.0	5.48	
42	6400	6381.	250.3	5.90	21.
42.89		6600.0	253.9	8.39	
43	6630	6628.	254.3	8.70	19.
44	6870	6876.	261.8	14.05	15.
44.09		6900.0	263.1	14.86	
45	7130	7135.	276.0	22.86	7.
45.23		7200.0	281.2	22.86	
46	7430	7423.	298.9	22.86	7.
46.25		7500.0	304.6	22.86	
47	7730	7733.	321.7	22.86	7.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	3.	23.7	-2.86	10.
2	30	25.	20.9	-2.86	10.
3	50	45.	18.0	-2.86	10.
4	50	60.	21.8	2.62	9.
5	80	78.	35.2	10.24	19.
6	110	115.	44.4	10.30	28.
7	140	163.	55.2	10.61	25.
8	240	225.	65.0	10.31	24.
9	310	297.	72.5	9.77	26.
9.04		300.0	72.9	9.76	
10	320	378.	83.2	9.48	24.
11	500	468.	91.6	9.22	26.
12	570	567.	100.6	8.90	26.
12.31		600.0	103.5	8.79	
13	690	675.	109.9	8.54	24.
14	780	794.	118.1	8.05	25.
14.85		900.0	125.2	7.79	
15	940	919.	126.5	7.75	23.
16	1020	1052.	134.2	7.43	23.
17	1210	1191.	141.1	7.29	24.
17.06		1200.0	141.6	7.27	
18	1340	1339.	148.6	6.92	22.
19	1500	1494.	156.0	6.62	21.
19.04		1500.0	156.2	6.63	
20	1630	1651.	161.5	6.83	18.
20.88		1800.0	167.6	6.41	
21	1820	1820.	168.4	6.35	16.
22	2010	1995.	174.2	5.95	18.
22.58		2100.0	177.9	5.79	
23	2160	2175.	180.5	5.68	16.
24	2370	2358.	186.1	5.66	16.
24.22		2400.0	187.3	5.54	
25	2550	2552.	191.8	5.13	15.
25.77		2700.0	195.6	5.26	
26	2740	2745.	196.7	5.30	14.
27	2950	2947.	202.1	4.96	13.
27.25		3000.0	203.0	4.73	
28	3170	3159.	205.6	4.05	24.
28.67		3300.0	206.1	3.83	
29	3360	3370.	206.3	3.73	31.
30	3580	3587.	214.6	3.05	23.
30.06		3600.0	214.8	3.00	
31	3780	3806.	218.3	2.33	24.
31.42		3900.0	219.5	1.97	
32	4030	4029.	221.2	1.47	26.
32.74		4200.0	223.8	-0.97	
33	4260	4259.	224.7	-1.82	26.
34	4470	4496.	225.7	-9.52	24.
34.02		4500.0	225.6	-9.72	
35	4730	4727.	219.0	-21.43	29.
35.35		4800.0	211.5	-21.43	
36	4960	4936.	197.6	-21.43	29.
36.88		5100.0	178.7	-21.43	
37	5110	5123.	176.1	-21.43	29.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	3.	56.9	-11.43	6.
2	60	54.	45.4	-11.43	6.
3	90	93.	34.0	-11.43	6.
4	120	120.	30.0	-5.24	7.
5	140	138.	34.2	2.66	25.
6	170	167.	44.5	7.37	29.
7	190	214.	52.4	7.64	26.
8	220	271.	59.4	7.39	24.
8.47		300.0	62.6	7.54	
9	330	333.	66.2	7.71	24.
10	430	405.	75.0	7.59	22.
11	490	482.	81.4	7.71	20.
12	570	567.	89.1	7.72	20.
12.24		600.0	91.7	7.64	
13	670	662.	96.8	7.50	20.
14	750	764.	105.1	7.43	19.
15	870	874.	113.1	7.32	19.
15.21		900.0	114.5	7.17	
16	1010	997.	119.6	6.60	22.
17	1120	1121.	126.1	6.48	22.
17.63		1200.0	129.9	6.69	
18	1250	1247.	132.1	6.81	20.
19	1380	1383.	138.6	6.71	20.
19.81		1500.0	144.3	6.50	
20	1500	1527.	145.6	6.45	19.
21	1680	1679.	151.8	6.13	19.
21.77		1800.0	156.3	5.87	
22	1830	1837.	157.6	5.78	20.
23	2030	2002.	163.0	5.29	21.
23.58		2100.0	165.6	5.04	
24	2200	2171.	167.4	4.85	23.
25	2300	2343.	172.0	4.55	24.
25.32		2400.0	173.7	4.47	
26	2510	2520.	177.2	4.30	22.
26.99		2700.0	181.7	4.03	
27	2710	2702.	181.8	4.02	21.
28	2890	2887.	186.5	3.95	20.
28.60		3000.0	189.2	3.97	
29	3100	3075.	190.9	3.99	21.
30	3280	3267.	194.5	4.15	20.
30.17		3300.0	195.2	4.12	
31	3470	3465.	198.2	3.96	21.
31.68		3600.0	200.5	3.97	
32	3660	3665.	201.7	3.98	21.
33	3840	3871.	205.8	3.70	20.
33.14		3900.0	206.3	3.61	
34	4060	4084.	209.4	3.04	18.
34.55		4200.0	210.6	3.04	
35	4300	4295.	211.6	3.04	18.
35.96		4500.0	214.2	2.99	
36	4500	4508.	214.3	2.99	18.
37	4740	4729.	216.4	2.36	23.
37.32		4800.0	217.1	2.27	
38	4970	4949.	218.6	2.07	22.
38.66		5100.0	218.1	1.50	

PLANE NUMBER 77

TIME	DIST MFAS	DIST CALC	VFL	ACC	RES
39	5180	5177.	217.9	1.21	28.
39.97		5400.0	224.0	0.27	
40	5390	5406.	224.1	0.25	14.
41	5630	5629.	224.1	0.44	15.
41.32		5700.0	224.1	0.51	
42	5870	5853.	224.2	0.65	15.
42.65		6000.0	225.0	0.05	
43	6070	6080.	225.5	-0.28	17.
43.98		6300.0	224.3	0.93	
44	6300	6304.	224.3	0.95	19.
45	6550	6529.	227.0	-1.43	24.
45.31		6600.0	226.6	-1.43	
46	6730	6756.	225.6	-1.43	24.
46.64		6900.0	224.7	-1.43	
47	6990	6981.	224.1	-1.43	24.

TIME	DIST MFAS	DIST CALC	VEL	ACC	RES
1	0	-6.	34.0	0.	21.
2	20	28.	34.0	0.	21.
3	50	62.	34.0	0.	21.
4	120	97.	30.0	-3.33	16.
5	120	120.	32.0	0.91	17.
6	150	149.	36.6	3.24	17.
7	170	180.	43.9	5.68	23.
8	210	226.	49.8	5.81	21.
9	270	278.	55.2	6.07	20.
9.41		300.0	58.7	6.34	
10	330	332.	63.7	6.73	22.
11	380	395.	70.3	7.23	20.
12	460	465.	76.9	7.60	16.
13	580	542.	84.1	7.95	13.
13.66		600.0	89.8	8.01	
14	630	630.	92.7	8.05	14.
15	720	725.	101.1	8.21	15.
16	820	832.	108.9	7.99	15.
16.59		900.0	113.2	7.85	
17	930	947.	116.1	7.75	17.
18	1060	1069.	123.1	7.46	20.
19	1210	1197.	130.4	7.30	20.
19.02		1200.0	130.6	7.30	
20	1330	1333.	137.8	7.14	19.
21	1460	1476.	144.3	6.87	21.
21.16		1500.0	145.4	6.83	
22	1620	1626.	150.9	6.65	21.
23	1810	1786.	157.9	6.00	16.
23.08		1800.0	158.4	5.97	
24	1980	1950.	164.2	5.73	15.
24.88		2100.0	169.1	5.41	
25	2120	2120.	169.7	5.36	15.
26	2280	2293.	175.5	5.36	15.
26.60		2400.0	178.6	5.29	
27	2450	2472.	180.6	5.25	15.
28	2660	2655.	186.0	5.31	15.
28.23		2700.0	187.1	5.15	
29	2860	2849.	190.5	4.63	20.
29.78		3000.0	194.1	4.53	
30	3030	3043.	195.2	4.50	19.
31	3240	3239.	199.7	4.67	19.
31.30		3300.0	201.0	4.68	
32	3440	3440.	204.0	4.71	19.
32.77		3600.0	207.9	4.62	
33	3660	3648.	209.1	4.59	19.
34	3850	3864.	213.5	4.02	17.
34.17		3900.0	214.3	4.03	
35	4100	4080.	218.3	4.09	18.
35.54		4200.0	220.1	3.90	
36	4300	4303.	221.6	3.75	20.
36.87		4500.0	223.9	3.47	
37	4550	4529.	224.3	3.43	23.
38	4710	4759.	227.1	2.92	25.
38.18		4800.0	227.0	2.84	
39	4980	4991.	226.5	2.48	33.

PLANE NUMBER 78

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
39.46		5100.0	229.7	2.30	
40	5230	5226.	233.5	2.10	26.
40.73		5400.0	235.2	1.72	
41	5460	5464.	235.8	1.58	27.
41.97		5700.0	238.5	-0.20	
42	5720	5708.	238.6	-0.26	27.
43	5930	5955.	238.8	-2.75	20.
43.19		6000.0	238.5	-3.22	
44	6230	6196.	237.1	-5.24	23.
44.43		6300.0	235.8	-7.92	
45	6420	6435.	234.0	-11.43	31.
45.72		6600.0	225.8	-11.43	
46	6650	6664.	222.6	-11.43	31.
47	6890	6881.	211.1	-11.43	31.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	-2.	25.4	-5.71	10.
2	20	21.	19.7	-5.71	10.
3	30	38.	14.0	-5.71	10.
4	60	48.	17.5	1.67	11.
5	50	63.	21.3	3.68	12.
6	90	86.	26.1	4.31	11.
7	110	111.	31.9	5.21	12.
8	130	145.	37.0	5.28	13.
9	190	180.	43.6	6.20	17.
10	230	221.	52.3	7.01	22.
11	270	270.	59.6	7.78	21.
11.51		300.0	63.6	8.06	
12	330	329.	67.4	8.34	20.
13	410	402.	74.0	8.04	24.
14	440	479.	82.1	8.11	24.
15	550	565.	89.6	8.19	24.
15.41		600.0	93.9	8.62	
16	660	650.	100.0	9.23	36.
17	750	748.	110.2	9.96	39.
18	860	859.	120.0	10.43	38.
18.33		900.0	123.3	10.44	
19	1020	984.	130.1	10.46	38.
20	1150	1121.	139.8	10.25	39.
20.53		1200.0	144.5	9.97	
21	1290	1270.	148.6	9.72	42.
22	1340	1427.	157.6	9.29	43.
22.44		1500.0	161.5	9.02	
23	1550	1595.	166.6	8.67	43.
24	1690	1771.	173.5	7.96	48.
24.16		1800.0	174.6	7.83	
25	2010	1956.	180.4	7.14	50.
25.75		2100.0	185.4	6.40	
26	2190	2148.	187.1	6.16	50.
27	2370	2348.	192.3	5.06	52.
27.26		2400.0	193.5	4.82	
28	2570	2551.	196.9	4.11	52.
28.72		2700.0	200.8	3.58	
29	2770	2757.	202.4	3.38	46.
30	2950	2967.	207.6	2.81	40.
30.15		3000.0	208.3	2.72	
31	3190	3183.	212.2	2.21	33.
31.56		3300.0	213.5	2.49	
32	3420	3391.	214.5	2.71	33.
32.98		3600.0	217.3	3.12	
33	3590	3604.	217.3	3.13	32.
34	3820	3814.	218.9	3.98	19.
34.39		3900.0	220.5	3.95	
35	4040	4036.	222.9	3.91	18.
35.73		4200.0	225.7	3.83	
36	4230	4261.	226.7	3.80	19.
37	4450	4489.	226.3	3.89	30.
37.05		4500.0	226.6	3.91	
38	4730	4719.	233.7	4.41	20.
38.34		4800.0	235.5	4.08	
39	4980	4959.	239.1	3.45	18.

PLANE NUMBER 79

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
39.58		5100.0	241.6	2.80	
40	5210	5204.	243.5	2.33	19.
40.78		5400.0	246.0	0.45	
41	5450	5456.	246.7	-0.09	15.
42	5700	5693.	245.4	5.00	7.
42.03		5700.0	245.5	5.02	
43	5930	5940.	250.0	5.71	10.
43.24		6000.0	251.3	5.71	
44	6200	6193.	255.7	5.71	10.
44.41		6300.0	258.1	5.71	
45	6450	6452.	261.4	5.71	10.

TIME	DIST MFAS	DIST CALC	VEL	ACC	RES
1	0	5.	19.7	17.14	19.
2	40	33.	36.9	17.14	19.
3	90	79.	54.0	17.14	19.
4	120	140.	56.4	6.19	20.
5	230	198.	64.2	7.47	17.
6	250	265.	73.3	8.48	15.
6.43		300.0	76.2	8.02	
7	340	346.	80.1	7.40	16.
8	420	434.	85.3	6.25	18.
9	520	523.	89.8	6.25	20.
9.81		600.0	96.1	6.17	
10	630	618.	97.5	6.15	17.
11	740	719.	104.0	6.12	17.
12	850	825.	110.7	6.21	17.
12.64		900.0	114.5	6.04	
13	940	941.	116.7	5.95	17.
14	1060	1060.	122.3	6.03	17.
15	1160	1186.	129.4	6.02	17.
15.11		1200.0	130.1	6.07	
16	1310	1314.	135.8	6.47	18.
17	1460	1452.	142.0	6.66	17.
17.34		1500.0	144.2	6.75	
18	1580	1594.	148.4	6.93	15.
19	1750	1746.	154.4	6.88	16.
19.34		1800.0	156.4	6.78	
20	1910	1906.	160.5	6.60	18.
21	2090	2075.	166.3	6.03	21.
21.14		2100.0	167.2	5.95	
22	2220	2249.	172.4	5.52	20.
22.85		2400.0	177.1	5.23	
23	2400	2427.	177.9	5.18	19.
24	2620	2610.	183.5	4.89	17.
24.48		2700.0	185.8	4.88	
25	2820	2796.	188.4	4.87	17.
26	3000	2990.	193.1	4.56	17.
26.05		3000.0	193.4	4.57	
27	3210	3185.	198.7	4.63	18.
27.57		3300.0	201.3	4.64	
28	3390	3386.	203.2	4.65	18.
29	3590	3593.	207.6	4.44	18.
29.03		3600.0	207.7	4.43	
30	3780	3807.	211.3	4.00	21.
30.43		3900.0	211.4	3.96	
31	4010	4021.	211.5	3.90	29.
31.84		4200.0	217.6	4.34	
32	4230	4235.	218.8	4.42	20.
33	4460	4459.	223.6	3.95	21.
33.18		4500.0	224.5	3.59	
34	4690	4692.	228.9	1.96	19.
34.46		4800.0	230.2	1.04	
35	4900	4928.	231.7	-0.04	19.
35.72		5100.0	232.5	-2.76	
36	5190	5166.	232.9	-3.81	21.
36.95		5400.0	232.0	-19.21	
37	5400	5412.	232.0	-20.00	18.

PLANE NUMBER 80

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
38	5630	5634.	212.0	-20.00	18.
38.33		5700.0	205.5	-20.00	
39	5840	5836.	192.0	-20.00	18.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	0.	22.4	4.29	17.
2	20	25.	26.7	4.29	17.
3	70	54.	31.0	4.29	17.
4	70	88.	35.4	4.05	12.
5	130	126.	41.2	4.78	14.
6	170	168.	48.0	6.11	13.
7	210	207.	59.6	9.60	31.
8	290	272.	69.4	9.67	28.
8.36		300.0	72.0	9.45	
9	320	349.	76.6	9.07	28.
10	410	437.	85.2	8.32	29.
11	490	529.	92.7	8.05	31.
11.72		600.0	98.1	7.84	
12	590	628.	100.2	7.76	32.
13	800	738.	107.5	7.03	32.
14	870	851.	114.9	6.91	32.
14.40		900.0	117.7	6.67	
15	990	974.	121.8	6.30	30.
16	1120	1103.	128.8	5.94	28.
16.74		1200.0	134.1	6.03	
17	1240	1234.	136.0	6.06	29.
18	1390	1377.	142.7	5.72	27.
18.84		1500.0	147.4	5.69	
19	1500	1523.	148.2	5.68	27.
20	1660	1671.	154.2	6.01	27.
20.85		1800.0	159.2	6.49	
21	1820	1823.	160.0	6.58	25.
22	1960	1968.	168.7	8.67	39.
22.79		2100.0	177.1	9.41	
23	2170	2134.	179.3	9.59	46.
24	2310	2315.	187.9	9.88	45.
24.44		2400.0	191.5	9.80	
25	2510	2509.	196.1	9.71	46.
25.93		2700.0	203.2	9.07	
26	2740	2715.	203.7	9.02	51.
27	2900	2930.	210.5	8.09	57.
27.31		3000.0	212.6	7.72	
28	3080	3155.	217.2	6.91	61.
28.63		3300.0	220.2	6.06	
29	3320	3387.	222.1	5.56	67.
29.90		3600.0	226.0	4.28	
30	3540	3624.	226.5	4.13	69.
31	3950	3866.	229.9	2.58	68.
31.14		3900.0	230.3	2.43	
32	4210	4107.	232.7	1.56	66.
32.38		4200.0	233.7	1.10	
33	4390	4352.	235.4	0.35	59.
33.62		4500.0	236.5	0.02	
34	4620	4593.	237.1	-0.18	56.
34.87		4800.0	238.9	-0.22	
35	4840	4831.	239.2	-0.22	55.
36	5070	5075.	240.8	-0.66	52.
36.10		5100.0	240.8	-0.67	
37	5320	5317.	240.6	-0.78	52.
37.36		5400.0	240.6	-0.40	

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
38	5520	5548.	240.5	0.28	52.
38.70		5700.0	235.1	2.27	
39	5760	5764.	232.8	3.11	30.
39.99		6000.0	240.1	3.13	
40	5980	6003.	240.2	3.13	20.
41	6240	6243.	243.1	3.30	22.
41.23		6300.0	243.8	3.37	
42	6480	6487.	246.2	3.59	24.
42.44		6600.0	248.2	2.50	
43	6740	6742.	250.8	1.15	25.
43.62		6900.0	251.6	-0.15	
44	7030	6998.	252.1	-0.95	28.
44.82		7200.0	249.6	3.32	
45	7250	7246.	249.0	4.29	38.
46	7460	7497.	253.3	4.29	38.
46.01		7500.0	253.3	4.29	
47	7770	7752.	257.6	4.29	38.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	7.	24.3	2.86	29.
2	40	33.	27.1	2.86	29.
3	80	61.	30.0	2.86	29.
4	60	95.	42.9	9.52	25.
5	140	146.	46.3	5.32	22.
6	220	194.	52.4	5.78	19.
7	260	248.	58.4	6.04	19.
7.88		300.0	64.7	6.52	
8	300	307.	65.5	6.59	18.
9	370	376.	70.8	6.57	18.
10	450	451.	78.7	6.58	16.
11	530	533.	84.8	6.55	16.
11.76		600.0	90.0	6.58	
12	600	621.	91.6	6.59	16.
13	720	719.	98.2	6.29	16.
14	830	820.	103.1	6.18	18.
14.75		900.0	107.9	6.25	
15	930	926.	109.4	6.28	18.
16	1030	1039.	116.7	6.30	18.
17	1170	1159.	123.6	6.27	18.
17.32		1200.0	125.6	6.28	
18	1300	1286.	129.9	6.30	18.
19	1420	1421.	135.5	6.02	19.
19.56		1500.0	138.6	5.84	
20	1550	1567.	141.0	5.69	20.
21	1720	1710.	145.9	5.19	23.
21.60		1800.0	148.7	5.10	
22	1850	1860.	150.6	5.04	24.
23	1960	2018.	154.7	4.42	27.
23.51		2100.0	156.9	4.15	
24	2170	2180.	159.0	3.88	26.
25	2370	2343.	163.4	3.68	25.
25.34		2400.0	164.7	3.62	
26	2540	2510.	167.1	3.50	25.
27	2710	2683.	170.4	3.00	24.
27.10		2700.0	170.7	2.93	
28	2860	2861.	173.2	2.34	24.
28.78		3000.0	175.1	2.03	
29	3040	3039.	175.6	1.95	23.
30	3200	3218.	177.5	1.64	23.
30.45		3300.0	178.4	1.44	
31	3400	3401.	179.5	1.19	20.
32	3550	3578.	176.7	1.50	25.
32.12		3600.0	177.3	1.52	
33	3750	3758.	181.5	1.69	17.
33.76		3900.0	183.5	0.86	
34	3970	3946.	184.2	0.60	16.
35	4150	4135.	185.7	-0.63	15.
35.34		4200.0	185.9	-1.26	
36	4320	4325.	186.3	-2.47	15.
37	4490	4500.	181.4	3.81	7.
37.00		4500.0	181.4	3.81	
38	4690	4683.	186.0	2.86	8.
38.62		4800.0	187.8	2.86	
39	4870	4871.	188.9	2.86	8.

PLANE NUMBER 82

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
40	5060	5061.	191.7	2.86	8.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	-2.	45.4	-5.71	10.
2	40	41.	39.7	-5.71	10.
3	70	78.	34.0	-5.71	10.
4	120	106.	25.7	-6.67	11.
5	130	119.	30.5	2.40	25.
6	130	148.	33.3	2.98	24.
7	160	183.	36.6	3.11	22.
8	200	217.	41.0	3.94	26.
9	290	255.	46.0	4.85	27.
9.92		300.0	51.1	4.79	
10	280	304.	51.5	4.79	27.
11	370	353.	56.0	5.30	24.
12	420	409.	60.9	5.56	23.
13	450	470.	66.6	5.89	23.
14	500	544.	71.9	5.40	25.
14.77		600.0	76.8	5.56	
15	640	617.	78.3	5.61	26.
16	710	695.	84.2	5.93	26.
17	810	780.	89.9	6.16	26.
18	840	870.	96.1	6.55	25.
18.29		900.0	97.9	6.38	
19	980	974.	102.2	5.98	26.
20	1080	1078.	107.8	6.11	25.
21	1180	1190.	114.3	6.02	25.
21.09		1200.0	114.8	5.99	
22	1320	1310.	120.2	5.68	25.
23	1380	1432.	125.8	5.79	25.
23.53		1500.0	128.3	5.81	
24	1580	1560.	130.4	5.84	24.
25	1710	1698.	135.8	5.31	25.
25.72		1800.0	139.8	5.10	
26	1840	1839.	141.3	5.02	24.
27	2010	1992.	145.5	3.92	26.
27.74		2100.0	148.7	4.07	
28	2110	2138.	149.9	4.13	27.
29	2290	2297.	153.2	3.34	29.
29.65		2400.0	155.3	2.98	
30	2470	2457.	156.5	2.78	28.
31	2610	2620.	158.6	2.13	29.
31.47		2700.0	159.3	1.60	
32	2800	2790.	160.0	1.00	31.
33	2940	2947.	161.3	1.33	31.
33.31		3000.0	161.2	1.09	
34	3110	3116.	161.0	0.57	34.
35	3310	3287.	165.4	-0.40	30.
35.08		3300.0	165.4	-0.38	
36	3410	3450.	164.8	-0.17	32.
36.90		3600.0	164.6	-0.31	
37	3670	3616.	164.5	-0.33	35.
38	3770	3782.	164.0	-0.52	40.
38.72		3900.0	164.5	-1.00	
39	3960	3945.	164.6	-1.19	47.
40	4100	4090.	166.0	14.29	42.
40.64		4200.0	175.1	14.29	
41	4220	4263.	180.3	14.29	42.

PLANE NUMBER 83

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
42	4470	4450•	194•6	14•29	42•

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	-3.	42.7	-12.86	11.
2	30	33.	29.9	-12.86	11.
3	50	57.	17.0	-12.86	11.
4	80	62.	16.8	-1.19	16.
5	60	79.	14.3	-2.03	14.
6	80	84.	20.9	3.40	24.
7	120	105.	24.6	3.65	22.
8	110	130.	29.2	4.18	21.
9	120	157.	34.7	5.00	23.
10	210	191.	41.5	5.57	24.
11	250	233.	45.8	5.75	21.
12	260	277.	51.8	6.30	21.
12.42		300.0	54.2	6.27	
13	330	332.	57.4	6.23	22.
14	390	392.	64.2	6.28	22.
15	440	458.	70.5	6.46	22.
16	550	533.	76.3	6.24	23.
16.80		600.0	81.1	5.84	
17	610	617.	82.3	5.73	23.
18	700	702.	88.1	5.74	23.
19	820	791.	93.5	5.96	22.
20	850	892.	99.1	5.44	22.
20.08		900.0	99.6	5.43	
21	1020	995.	105.6	5.40	22.
22	1080	1104.	110.6	5.28	22.
22.84		1200.0	115.3	5.25	
23	1240	1218.	116.1	5.25	22.
24	1360	1338.	121.1	5.04	22.
25	1450	1465.	124.8	4.63	26.
25.26		1500.0	125.6	4.33	
26	1570	1602.	127.8	3.48	35.
27	1730	1736.	130.8	2.89	35.
27.47		1800.0	132.4	2.77	
28	1870	1871.	134.1	2.65	35.
29	1980	2015.	136.6	1.66	33.
29.62		2100.0	137.7	1.70	
30	2190	2152.	138.3	1.73	33.
31	2300	2293.	141.6	1.65	32.
31.75		2400.0	142.6	1.63	
32	2480	2435.	142.9	1.63	32.
33	2620	2583.	144.6	1.17	31.
33.78		2700.0	144.1	0.84	
34	2730	2732.	144.0	0.76	34.
35	2820	2876.	146.6	1.23	33.
35.90		3000.0	146.0	2.74	
36	3000	3014.	145.9	2.92	31.
37	3190	3157.	147.6	4.29	32.
37.90		3300.0	153.7	0.86	
38	3280	3316.	154.3	0.48	33.
39	3470	3479.	154.6	-3.10	32.
39.70		3600.0	157.7	-20.00	
40	3670	3651.	159.0	-27.14	19.
41	3780	3797.	131.9	-27.14	19.
41.87		3900.0	108.1	-27.14	
42	3920	3915.	104.7	-27.14	19.

PLANE NUMBER 84

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
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TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	-2.	20.0	-0.00	21.
2	20	18.	20.0	-0.00	21.
3	20	38.	20.0	-0.00	21.
4	80	57.	10.4	-6.90	18.
5	70	54.	20.7	5.50	31.
6	50	79.	25.9	5.10	28.
7	60	109.	28.9	4.04	27.
8	150	141.	32.9	3.98	25.
9	200	171.	37.7	4.80	26.
10	240	209.	44.4	5.26	25.
11	260	253.	49.5	5.59	24.
11.94		300.0	54.7	5.81	
12	280	303.	55.1	5.82	24.
13	360	360.	60.2	5.95	23.
14	420	426.	66.4	5.66	22.
15	460	495.	72.7	5.73	22.
16	560	570.	77.5	5.66	23.
16.39		600.0	79.3	5.78	
17	660	647.	82.1	5.96	19.
18	740	735.	87.5	5.69	21.
19	840	829.	93.0	5.20	20.
19.71		900.0	97.2	4.93	
20	930	929.	98.9	4.82	16.
21	1040	1030.	105.0	4.94	18.
22	1130	1136.	109.9	5.01	18.
22.56		1200.0	112.7	4.93	
23	1250	1250.	115.0	4.87	18.
24	1400	1369.	119.8	4.69	18.
25	1470	1489.	124.1	4.90	17.
25.08		1500.0	124.4	4.88	
26	1610	1617.	128.2	4.75	18.
27	1730	1750.	132.5	4.42	19.
27.37		1800.0	134.1	4.39	
28	1860	1885.	136.9	4.34	19.
29	2020	2028.	140.8	3.92	20.
29.49		2100.0	142.5	3.75	
30	2210	2174.	144.4	3.58	21.
31	2330	2323.	147.9	3.17	20.
31.50		2400.0	149.3	3.01	
32	2480	2476.	150.7	2.85	21.
33	2630	2632.	153.1	2.35	22.
33.42		2700.0	154.2	2.00	
34	2800	2794.	155.7	1.52	15.
35	2940	2954.	156.9	1.07	16.
35.28		3000.0	156.6	0.95	
36	3100	3116.	155.7	0.64	21.
37	3290	3273.	158.9	0.97	15.
37.17		3300.0	159.2	0.78	
38	3430	3438.	160.7	-0.17	11.
38.99		3600.0	161.0	-0.86	
39	3600	3602.	161.0	-0.86	11.
40	3770	3767.	160.7	-2.29	9.
40.83		3900.0	159.8	-3.74	
41	3930	3928.	159.6	-4.05	4.
42	4080	4083.	155.0	-1.43	3.

PLANE NUMBER 85

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
42.76		4200.0	153.9	-1.43	
43	4240	4238.	153.6	-1.43	3.
44	4390	4391.	152.1	-1.43	3.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	4.	37.6	-4.29	25.
2	40	39.	33.3	-4.29	25.
3	90	70.	29.0	-4.29	25.
4	70	98.	43.2	9.76	25.
5	130	147.	48.7	7.01	22.
6	220	199.	54.0	6.11	20.
7	270	255.	61.0	6.68	18.
7.67		300.0	64.4	6.12	
8	310	322.	66.0	5.85	19.
9	400	390.	70.8	5.97	19.
10	450	462.	79.1	6.40	18.
11	550	547.	84.5	6.10	21.
11.59		600.0	87.9	5.94	
12	640	637.	90.3	5.83	22.
13	750	734.	96.4	5.44	20.
14	810	834.	101.0	5.31	21.
14.64		900.0	103.9	5.24	
15	920	938.	105.6	5.20	21.
16	1030	1049.	111.0	4.86	20.
17	1170	1164.	116.6	4.75	19.
17.31		1200.0	118.2	4.82	
18	1320	1281.	121.9	4.97	20.
19	1440	1411.	126.0	4.31	24.
19.69		1500.0	128.7	4.18	
20	1520	1541.	129.9	4.12	24.
21	1670	1675.	133.9	3.89	24.
21.91		1800.0	137.7	3.77	
22	1820	1812.	138.1	3.76	24.
23	1930	1955.	142.3	3.46	22.
24	2080	2097.	146.0	3.64	22.
24.02		2100.0	146.1	3.64	
25	2240	2245.	149.2	3.61	22.
26	2420	2397.	151.8	3.52	23.
26.02		2400.0	151.9	3.52	
27	2600	2551.	155.0	3.39	23.
27.92		2700.0	158.1	2.93	
28	2680	2712.	158.4	2.89	22.
29	2860	2877.	161.7	2.44	19.
29.75		3000.0	163.2	2.30	
30	3030	3041.	163.7	2.25	20.
31	3210	3198.	168.5	3.25	36.
31.61		3300.0	171.2	3.50	
32	3380	3365.	172.9	3.66	38.
33	3570	3538.	176.0	3.88	37.
33.36		3600.0	177.1	3.97	
34	3720	3713.	179.2	4.11	36.
35	3880	3895.	181.8	3.94	37.
35.03		3900.0	181.9	3.92	
36	4070	4085.	184.2	3.17	42.
36.58		4200.0	185.4	2.35	
37	4240	4283.	186.2	1.76	45.
38	4430	4472.	184.4	1.58	53.
38.15		4500.0	185.3	1.48	
39	4590	4666.	190.7	0.86	51.
39.65		4800.0	192.9	-0.93	

PLANE NUMBER 86

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
40	4940	4871.	194.1	-1.87	49.
41	5110	5082.	195.5	-6.39	45.
41.08		5100.0	195.2	-7.02	
42	5270	5295.	192.8	-13.92	38.
42.60		5400.0	180.8	-8.10	
43	5480	5469.	172.9	-4.29	16.
44	5650	5653.	171.0	-18.57	7.
44.29		5700.0	165.6	-18.57	
45	5810	5814.	152.4	-18.57	7.
46	5960	5957.	133.9	-18.57	7.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	3.	60.7	-12.86	16.
2	60	57.	47.9	-12.86	16.
3	110	99.	35.0	-12.86	16.
4	110	121.	44.3	6.67	24.
5	150	163.	56.8	11.45	24.
6	210	227.	67.4	10.75	21.
6.91		300.0	73.0	8.35	
7	300	307.	73.6	8.12	25.
8	370	386.	80.4	7.58	24.
9	500	470.	86.5	7.61	25.
10	590	569.	93.5	6.60	27.
10.31		600.0	95.4	6.53	
11	690	668.	99.8	6.37	28.
12	770	777.	106.0	5.72	27.
13	870	891.	112.8	5.20	21.
13.08		900.0	113.2	5.18	
14	980	1009.	118.3	4.89	19.
15	1140	1128.	124.0	5.15	21.
15.56		1200.0	126.3	5.02	
16	1290	1256.	128.2	4.92	23.
17	1410	1389.	132.4	4.60	24.
17.82		1500.0	135.7	4.58	
18	1510	1524.	136.4	4.57	25.
19	1640	1666.	141.0	4.26	24.
19.92		1800.0	145.2	4.00	
20	1810	1811.	145.5	3.97	23.
21	1940	1964.	149.2	3.35	23.
21.88		2100.0	152.1	3.07	
22	2130	2118.	152.4	3.04	23.
23	2270	2273.	155.3	2.92	23.
23.81		2400.0	157.2	2.90	
24	2480	2430.	157.6	2.90	23.
25	2580	2589.	161.0	2.93	23.
25.66		2700.0	162.9	2.54	
26	2740	2757.	163.9	2.34	21.
27	2920	2925.	166.8	1.97	18.
27.45		3000.0	168.0	2.06	
28	3100	3091.	169.5	2.18	20.
29	3280	3260.	171.7	2.44	19.
29.23		3300.0	172.3	2.47	
30	3420	3432.	174.2	2.56	20.
30.97		3600.0	175.9	2.68	
31	3600	3606.	176.0	2.68	18.
32	3780	3781.	175.0	2.89	26.
32.65		3900.0	179.3	2.62	
33	3950	3965.	181.6	2.48	16.
34	4170	4144.	183.5	3.00	17.
34.29		4200.0	184.7	2.64	
35	4310	4334.	187.5	1.79	16.
35.88		4500.0	189.4	1.32	
36	4510	4524.	189.7	1.26	18.
37	4730	4714.	190.4	1.67	22.
37.42		4800.0	191.0	-3.82	
38	4910	4919.	192.0	-11.43	10.
38.97		5100.0	180.9	-11.43	

PLANE NUMBER 87

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
39	5110	5106.	180.6	-11.43	10.
40	5280	5281.	169.1	-11.43	10.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	2.	14.6	5.71	10.
2	20	19.	20.3	5.71	10.
3	50	42.	26.0	5.71	10.
4	-60	73.	30.7	4.29	8.
5	110	103.	35.8	5.35	10.
6	150	140.	41.5	5.76	11.
7	180	184.	47.5	5.89	10.
8	220	232.	54.5	6.53	11.
9	300	287.	61.3	7.15	15.
9.20		300.0	62.9	7.10	
10	340	354.	69.0	6.92	13.
11	430	427.	75.2	6.83	14.
12	490	505.	81.9	6.89	14.
13	580	591.	88.8	6.78	14.
13.09		600.0	89.4	6.80	
14	670	682.	95.6	6.95	14.
15	790	783.	102.4	6.76	14.
16	920	890.	109.5	6.64	14.
16.09		900.0	110.1	6.63	
17	1020	1004.	116.2	6.52	13.
18	1120	1124.	122.5	6.45	14.
18.59		1200.0	126.3	6.25	
19	1250	1252.	128.9	6.12	13.
20	1360	1384.	135.1	6.14	13.
20.83		1500.0	140.2	5.96	
21	1520	1524.	141.2	5.92	12.
22	1660	1669.	146.9	5.86	13.
22.95		1800.0	155.0	7.17	
23	1830	1808.	155.5	7.25	37.
24	1970	1960.	163.2	8.06	37.
24.85		2100.0	169.6	8.27	
25	2150	2124.	170.7	8.30	36.
26	2310	2302.	178.1	7.92	38.
26.52		2400.0	181.3	7.49	
27	2480	2491.	184.3	7.10	44.
28	2650	2682.	190.4	6.66	45.
28.09		2700.0	191.0	6.60	
29	2850	2881.	196.2	6.02	47.
29.58		3000.0	198.8	5.60	
30	3030	3086.	200.8	5.30	50.
31	3220	3298.	205.1	4.36	52.
31.01		3300.0	205.1	4.35	
32	3610	3512.	209.0	3.53	53.
32.40		3600.0	210.3	3.07	
33	3790	3733.	212.2	2.37	51.
33.75		3900.0	213.9	1.62	
34	3990	3956.	214.5	1.37	49.
35	4190	4179.	216.8	0.51	44.
35.09		4200.0	216.9	0.47	
36	4370	4401.	218.8	0.09	41.
36.44		4500.0	217.6	-0.27	
37	4630	4627.	216.1	-0.73	45.
37.80		4800.0	217.8	-0.11	
38	4850	4842.	218.2	0.04	41.
39	5050	5047.	217.0	2.01	17.

PLANE NUMBER 88

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
39.24		5100.0	217.6	1.80	
40	5270	5269.0	219.6	1.12	18.0
40.61		5400.0	219.1	2.64	
41	5500	5484.0	218.8	3.61	12.0
42.00		5700.0	222.1	5.23	
42	5700	5701.0	222.1	5.24	14.0
43	5910	5913.0	225.0	18.57	3.0
43.37		6000.0	231.9	18.57	
44	6150	6148.0	243.6	18.57	3.0
44.60		6300.0	254.8	18.57	
45	6400	6401.0	262.1	18.57	3.0

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	2.	49.4	-5.71	14.
2	50	49.	43.7	-5.71	14.
3	100	90.	38.0	-5.71	14.
4	110	125.	39.3	-0.48	12.
5	160	158.	47.2	5.87	17.
6	210	206.	54.6	7.06	17.
7	240	262.	63.1	7.80	16.
7.57		300.0	67.9	7.96	
8	320	329.	71.5	8.08	16.
9	410	406.	77.7	7.87	17.
10	470	491.	86.4	7.57	15.
11	580	581.	93.1	7.52	16.
11.20		600.0	94.5	7.49	
12	690	679.	100.4	7.37	16.
13	780	786.	108.0	7.02	14.
14	920	899.	115.1	6.84	13.
14.00		900.0	115.2	6.84	
15	1020	1018.	122.7	6.84	13.
16	1160	1146.	130.1	6.74	12.
16.41		1200.0	132.9	6.82	
17	1280	1277.	137.0	6.94	12.
18	1410	1418.	143.7	6.97	12.
18.55		1500.0	147.3	6.81	
19	1570	1567.	150.2	6.68	14.
20	1700	1721.	156.3	6.66	14.
20.49		1800.0	159.3	6.58	
21	1870	1881.	162.5	6.50	15.
22	2040	2050.	168.6	6.19	16.
22.30		2100.0	170.5	6.26	
23	2210	2220.	175.1	6.41	16.
24	2420	2397.	182.6	6.60	19.
24.02		2400.0	182.7	6.59	
25	2600	2587.	188.0	6.06	24.
25.57		2700.0	191.0	5.60	
26	2800	2785.	193.2	5.25	27.
27	2990	2985.	198.2	4.74	27.
27.07		3000.0	198.6	4.74	
28	3170	3186.	203.6	4.77	27.
28.55		3300.0	206.7	4.76	
29	3380	3392.	209.3	4.75	27.
29.99		3600.0	214.4	4.97	
30	3590	3602.	214.4	4.97	28.
31	3800	3819.	219.4	5.04	28.
31.37		3900.0	221.2	5.09	
32	4070	4039.	224.4	5.17	27.
32.71		4200.0	227.5	5.14	
33	4340	4266.	228.7	5.13	28.
34	4480	4500.	233.5	4.86	28.
34.00		4500.0	233.5	4.86	
35	4690	4740.	237.5	4.38	30.
35.25		4800.0	238.5	4.25	
36	4940	4984.	241.5	3.84	30.
36.47		5100.0	243.2	3.58	
37	5230	5232.	245.2	3.28	30.
37.67		5400.0	247.4	3.16	

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
38	5490	5481.	248.5	3.10	30.
38.86		5700.0	250.8	2.75	
39	5750	5734.	251.1	2.69	31.
40	6000	5990.	253.3	2.32	32.
40.04		6000.0	253.3	2.29	
41	6270	6249.	254.2	1.69	36.
41.19		6300.0	254.1	1.35	
42	6510	6520.	253.9	-0.12	31.
42.31		6600.0	255.3	-0.25	
43	6780	6782.	258.7	-0.56	17.
43.46		6900.0	258.3	-0.44	
44	7020	7038.	257.9	-0.31	17.
44.62		7200.0	258.0	-0.74	
45	7290	7299.	258.1	-1.00	18.
45.76		7500.0	258.4	-2.70	
46	7550	7562.	258.5	-3.23	18.
46.89		7800.0	257.9	-8.84	
47	7840	7829.	257.9	-9.52	14.
48	8080	8092.	250.0	-20.00	12.
48.03		8100.0	249.3	-20.00	
49	8340	8332.	230.0	-20.00	12.
49.31		8400.0	223.8	-20.00	
50	8550	8552.	210.0	-20.00	12.

TIME	DIST MFAS	DIST CALC	VFL	ACC	RES
1	0	-1.	19.1	11.43	10.
2	20	24.	30.6	11.43	10.
3	70	61.	42.0	11.43	10.
4	100	112.	44.6	3.10	13.
5	170	156.	45.2	2.14	18.
6	220	199.	50.1	3.99	18.
7	250	249.	56.2	5.12	18.
7.91		300.0	62.3	5.84	
8	270	305.	62.9	5.91	18.
9	370	369.	68.3	6.22	19.
10	430	439.	76.6	6.61	18.
11	510	518.	82.6	6.67	18.
12.00		600.0	89.2	7.09	
12	610	600.	89.2	7.09	16.
13	680	692.	96.0	7.18	16.
14	810	791.	102.4	7.14	16.
15	890	897.	110.0	7.17	16.
15.03		900.0	110.2	7.18	
16	1000	1008.	118.9	7.58	23.
17	1140	1131.	126.4	7.48	23.
17.53		1200.0	129.9	7.51	
18	1270	1261.	133.0	7.53	22.
19	1410	1401.	139.6	7.09	25.
19.67		1500.0	143.7	6.79	
20	1520	1548.	145.7	6.64	28.
21	1700	1698.	152.2	6.47	28.
21.65		1800.0	156.5	6.32	
22	1840	1856.	158.9	6.24	27.
23	1980	2020.	164.8	6.02	28.
23.47		2100.0	168.0	5.95	
24	2190	2189.	171.6	5.88	27.
25	2440	2367.	177.0	5.50	28.
25.18		2400.0	177.9	5.44	
26	2570	2550.	181.9	5.15	29.
26.86		2700.0	189.1	6.16	
27	2740	2725.	190.3	6.33	46.
28	2910	2913.	198.2	7.03	50.
28.44		3000.0	201.4	7.16	
29	3090	3112.	205.7	7.33	51.
29.91		3300.0	211.5	7.58	
30	3320	3319.	212.1	7.60	49.
31	3540	3534.	218.9	7.56	49.
31.29		3600.0	220.5	7.43	
32	3730	3760.	224.3	7.11	53.
32.64		3900.0	228.9	7.73	
33	3990	3979.	231.5	8.08	51.
33.90		4200.0	235.3	6.97	
34	4160	4224.	235.8	6.85	66.
35	4370	4482.	240.3	4.61	74.
35.07		4500.0	240.4	4.50	
36	4810	4740.	242.2	2.90	78.
36.23		4800.0	244.5	2.49	
37	5040	5002.	252.1	1.12	74.
37.36		5100.0	253.8	-0.34	
38	5280	5275.	256.9	-2.93	71.

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TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
38.44		5400.0	257.8	-5.87	
39	5520	5556.	259.0	-9.53	66.
39.59		5700.0	250.8	-6.41	
40	5790	5799.	245.2	-4.26	65.
40.76		6000.0	245.0	-13.37	
41	6000	6062.	245.0	-16.19	72.
41.89		6300.0	234.3	-43.76	
42	6420	6329.	233.0	-47.14	91.
43	6490	6539.	185.9	-47.14	91.
43.38		6600.0	168.0	-47.14	
44	6710	6701.	138.7	-47.14	91.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
1	0	-1.	-1.1	8.57	6.
2	0	2.	7.4	8.57	6.
3	10	13.	16.0	8.57	6.
4	40	38.	19.6	3.10	12.
5	60	56.	25.0	5.19	13.
6	100	81.	32.1	6.46	12.
7	100	114.	40.0	7.35	13.
8	140	150.	51.7	9.50	24.
9	210	210.	58.9	8.83	25.
10	260	276.	68.7	8.76	26.
10.33		300.0	71.5	8.78	
11	330	348.	77.1	8.81	26.
12	400	432.	84.7	8.49	28.
13	500	523.	92.5	8.19	29.
13.76		600.0	98.3	7.79	
14	670	625.	100.2	7.66	30.
15	760	733.	107.9	7.16	29.
16	860	855.	114.3	5.92	30.
16.37		900.0	116.6	5.76	
17	940	977.	120.6	5.47	28.
18	1140	1105.	125.9	4.92	28.
18.72		1200.0	130.2	4.74	
19	1220	1236.	131.8	4.67	25.
20	1390	1370.	137.5	4.76	26.
20.94		1500.0	142.8	5.05	
21	1500	1508.	143.1	5.06	28.
22	1660	1650.	148.0	5.45	27.
23	1810	1797.	152.8	5.83	24.
23.02		1800.0	152.9	5.82	
24	1980	1955.	158.4	5.51	24.
24.89		2100.0	163.0	5.28	
25	2070	2119.	163.6	5.25	24.
26	2280	2286.	168.6	5.10	25.
26.67		2400.0	171.5	5.25	
27	2420	2455.	172.9	5.32	22.
28	2630	2638.	177.2	4.39	27.
28.34		2700.0	178.7	4.39	
29	2830	2818.	181.6	4.40	27.
29.98		3000.0	186.3	4.09	
30	3030	3005.	186.4	4.08	25.
31	3210	3195.	190.3	3.83	25.
31.54		3300.0	192.4	3.63	
32	3400	3391.	194.2	3.45	24.
33	3590	3589.	198.4	3.28	23.
33.06		3600.0	198.3	3.27	
34	3790	3792.	198.3	2.97	27.
34.54		3900.0	201.5	3.24	
35	4000	3993.	204.2	3.47	18.
36	4210	4194.	206.9	4.26	17.
36.03		4200.0	207.0	4.26	
37	4360	4403.	211.1	4.34	19.
37.46		4500.0	212.9	4.65	
38	4630	4614.	215.0	5.02	22.
38.86		4800.0	219.6	5.00	
39	4850	4831.	220.4	5.00	26.

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TIME	DIST MFAS	DIST CALC	VEL	ACC	RFS
40	5050	5053.	220.0	11.43	11.
40.21		5100.0	222.4	11.43	
41	5270	5278.	231.4	11.43	11.
41.51		5400.0	237.3	11.43	
42	5520	5515.	242.9	11.43	11.

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
	0	10.	48.0	-0.00	21.
1					
2	80	58.	48.0	-0.00	21.
3	100	106.	48.0	-0.00	21.
4	140	151.	51.4	3.81	17.
5	210	205.	60.7	6.84	21.
6	250	268.	69.3	7.83	19.
6.43		300.0	72.3	7.67	
7	330	342.	76.3	7.45	18.
8	450	423.	83.0	7.09	17.
9	490	510.	87.9	6.89	20.
9.95		600.0	95.4	6.62	
10	620	605.	95.8	6.61	17.
11	710	703.	102.3	6.77	17.
12	800	811.	109.6	6.56	16.
12.79		900.0	115.1	6.57	
13	940	923.	116.6	6.57	16.
14	1050	1042.	123.5	6.74	16.
15	1170	1170.	130.3	6.65	16.
15.23		1200.0	131.8	6.71	
16	1280	1301.	136.9	6.93	15.
17	1460	1441.	142.9	6.86	16.
17.39		1500.0	145.4	6.67	
18	1570	1592.	149.4	6.36	17.
19	1730	1744.	155.2	6.42	17.
19.35		1800.0	157.5	6.32	
20	1900	1905.	161.6	6.15	16.
21	2070	2070.	168.2	6.12	16.
21.18		2100.0	169.2	6.12	
22	2250	2241.	174.1	6.11	16.
22.87		2400.0	179.1	5.63	
23	2440	2423.	179.8	5.57	17.
24	2610	2610.	184.9	4.99	18.
24.47		2700.0	187.2	4.79	
25	2820	2802.	189.8	4.55	17.
26	2980	2997.	193.7	4.17	20.
26.02		3000.0	193.7	4.16	
27	3170	3198.	198.0	3.55	16.
27.48		3300.0	198.3	2.79	
28	3390	3411.	198.6	1.97	41.
28.96		3600.0	202.1	2.24	
29	3600	3609.	202.2	2.26	43.
30	3840	3810.	205.9	2.55	45.
30.43		3900.0	207.1	2.55	
31	4050	4017.	208.8	2.55	45.
31.88		4200.0	211.8	2.79	
32	4240	4226.	212.2	2.82	46.
33	4450	4441.	214.9	2.57	46.
33.27		4500.0	215.5	2.49	
34	4680	4660.	216.9	2.28	47.
34.63		4800.0	218.3	2.05	
35	4880	4881.	219.1	1.91	46.
36.00		5100.0	221.0	1.99	
36	5110	5101.	221.0	1.99	46.
37	5160	5318.	218.2	2.53	53.
37.37		5400.0	220.5	2.65	

TIME	DIST MEAS	DIST CALC	VEL	ACC	RES
38	5570	5539.	224.6	2.86	52.
38.70		5700.0	226.9	2.38	
39	5810	5769.	227.9	2.18	56.
39.97		6000.0	231.9	-0.08	
40	6010	6006.	232.0	-0.14	60.
41	6280	6266.	238.2	-10.84	50.
41.17		6300.0	236.0	-8.50	
42	6470	6470.	225.0	3.33	21.
42.61		6600.0	223.8	14.38	
43	6680	6683.	223.0	21.43	3.
43.93		6900.0	242.9	21.43	
44	6920	6916.	244.4	21.43	3.
45	7170	7171.	265.9	21.43	3.