Report No. EPGS-DOM.9-86AMV

Vitrinite Reflectance (Ro Max) of coal samples from Shell-Soquip-Amoco Bradelle L-49

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G.S.C. Locality No: D110 Location: 47°58'31.95"N, 63°07'08.82W

R.T. Elevation: 98' Water Depth: 186' Total Depth: 14530'

Sample Interval: 1000-14490' Interval Studied: 3190-6100'

Information Release: November 25,1975 Depth Units: Feet referenced to R.T.

At the request of J.S. Bell, vitrinite reflectance (Ro Max by rotation) has been determined on 16 coal samples, separated mechanically from selected rotary cuttings (Table 2) for the purpose of estimating the amount of stratigraphic section missing due to erosion.

Shell-Soquip-Amoco Bradelle L-49 is classified as a new-field wildcat well, located in the Gulf of St. Lawrence, approximately 95 km (60 miles) west of the Magdalen Islands and 160 km (100 miles) north of Prince Edward Island.

Reflectances were determined using the Zeiss Photomultiplier III Zonax microcomputer system. Improved software provides three dynamic histograms that are continuously updated as the reflectance data are acquired. Sample preparation followed the procedures listed in Appendix I.

The analysis of the well revealed the thermal maturation levels given in Table I. Specific maturation levels as set out in this report were based on those of Dow (1977) with modified terminology (Appendix II). These data suggest that approximately 5000 ft (1500 m) of section were removed by erosion.

Table I
Inferred Thermal Maturation Levels**

(seafloor)*	0.44	% Ro	immature approaching maturity
(860' - 2030')*	0.5 - 0.6	% Ro	marginally mature
2030'	0.6	% Ro	onset of significant oil generation
3876'	0.8	% Ro	peak of oil generation
5308'	1.0	% Ro	onset of significant wet gas generation
6478'	1.2	% Ro	onset of significant dry gas generation
(7234')*	1.35	% Ro	oil floor
(9757')*	2.0	% Ro	wet gas floor
(12359')*	3.0	% Ro	dry gas floor
(14530')* T.D.	4.21	% Ro	

* Bracketed depths have been projected at a 0.222 log Ro/km maturation gradient.

** Maturation levels provided for all types of organic matter. Actual hydrocarbon products depend on type of organic matter present.

Remarks

The samples from this well span approximately 3000 ft of Pennsylvanian strata of the Pictou Group from depths 3190 to 6100 ft (Hacquebard, 1986, Figure 6; Barss et al., 1976). Figure 1 shows the dispersal of the samples that cover only part of the upper section of the stratigraphic interval penetrated by the well. A linear regression line of Ro data was calculated for these samples by the leasts square method and plotted on a semi-log scale (Figure 1). The slope of this line is 0.222 log Ro/km.

The reflectance histograms (Appendix III) show essentially single populations with normal distributions and therefore they support the reliability of these data.

The slope of the maturation profile of the well is similar to the slope of the Maritime coalification curve; 0.212 log Ro/km (Hacquebard, 1975). The zero level of maturity is usually considered to be approximately 0.2% Ro Max (Dow, 1977). This conclusion is supported by maturation gradients that have been determined for numerous Canadian east coast offshore wells that are believed to be at maximum burial depth at present. Two examples are the Scotian Shelf Wenonah J-75 well (Avery, 1986) and the southern Grand Banks Puffin B-90 well (Avery, 1985). The zero level in these wells are 0.198% Ro and 0.210% Ro respectively. The amount of overburden eroded is based on the projection of the maturation gradient to 0.20% Ro Max. At Bradelle L-49 a projection of the maturation gradient to 0.20% Ro yields an estimate of 5020 feet of removed section.

These vitrinite reflectance maturation data also provide evidence that the thermal regime at Bradelle L-49 was suitable for the generation and prservation of hydrocarbons within the drilled section assuming potential source rocks and traps are present.

References

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November 28, 1986

Andrew Vonk

A.M. Vonk
Eastern Petroleum Geology Subdivision

c.c. J.S. Bell, I.S.P.G., Calgary
K.D. McAlpine, E.P.G.S., Dartmouth
P.A. Hacquebard, E.P.G.S., Dartmouth
A.E. Jackson, E.P.G.S., Dartmouth
E.P.G.S. Files, Dartmouth
G.R. Campbell, COGLA, Ottawa
Central Technical Files, Ottawa
C. Beaumont, Dalhousie University, Halifax
H.J. Maccagno, COGLA, Halifax

Table II

Data Summary

Seq. #	Sample #	Depth in feet	Ro Max (S.D.)	Number of readings
1	PH 1362	3190-3200	.79 (.08)	50
2	PH 1363	3390-3400	.79 (.07)	50
3	PH 1364	3510-3520	.73 (.06)	50
4	PH 1365	3640-3650	.77 (.04)	50
5	PH 1366	3840-3850	.73 (.05)	50
6	PH 1367	3950-3960	.81 (.09)	50
7	PH 1368	4190-4200	.82 (.08)	50
8	PH 1369	4380-4390	.83 (.08)	50
9	PH 1370	4660-4670	.87 (.13)	50
10	PH 1371	4960-4980	.88 (.11)	50
11	PH 1372	5290-5300	1.07 (.07)	50
12	PH 1373	5480-5490	1.14 (.05)	50
13	PH 1374	5640-5650	1.05 (.05)	50
14	PH 1375	5830-5840	1.16 (.09)	50
15	PH 1376	5910-5920	1.08 (.04)	50
16	PH 1377	6090-6100	1.07 (.07)	50

All samples are of the true coal type.

Table III

Formation tops (Howie, pers. comm.) and geological ages (Shell) of strata encountered in Bradelle L-49

Formation	Period	Age	Depth
Pictou Group	(Carboniferous)	Stephanian	186-1782'
		Westphalian D	1782-2832'
		Westphalian C	2832-5732'
	Pennsylvanian	Early Westphalian C	5732-6120'
Riversdale-Canso Group		Westphalian A	6120-8212'
		Namurian	8212-8952'
		Namurian A	8952-9372'
Windsor Group	Mississippian	Viséan	9372-10892'
Horton Group		Tournaisian	10892-12202'
(Weldon Formation)		Early Tournaisian	12202'-bottom

Table IV

Pictou Group (Hacquebard, 1986; Barss et al., 1976)

Age	Spore zone	Depth
Stephanian	D Potoniesporites	1060-3630'
Westphalian D	C Thymospora	3630-4900'
Westphalian late C	B Torispora	4900-5630'
Westphalian early C	A Vestispora	5700-6930'

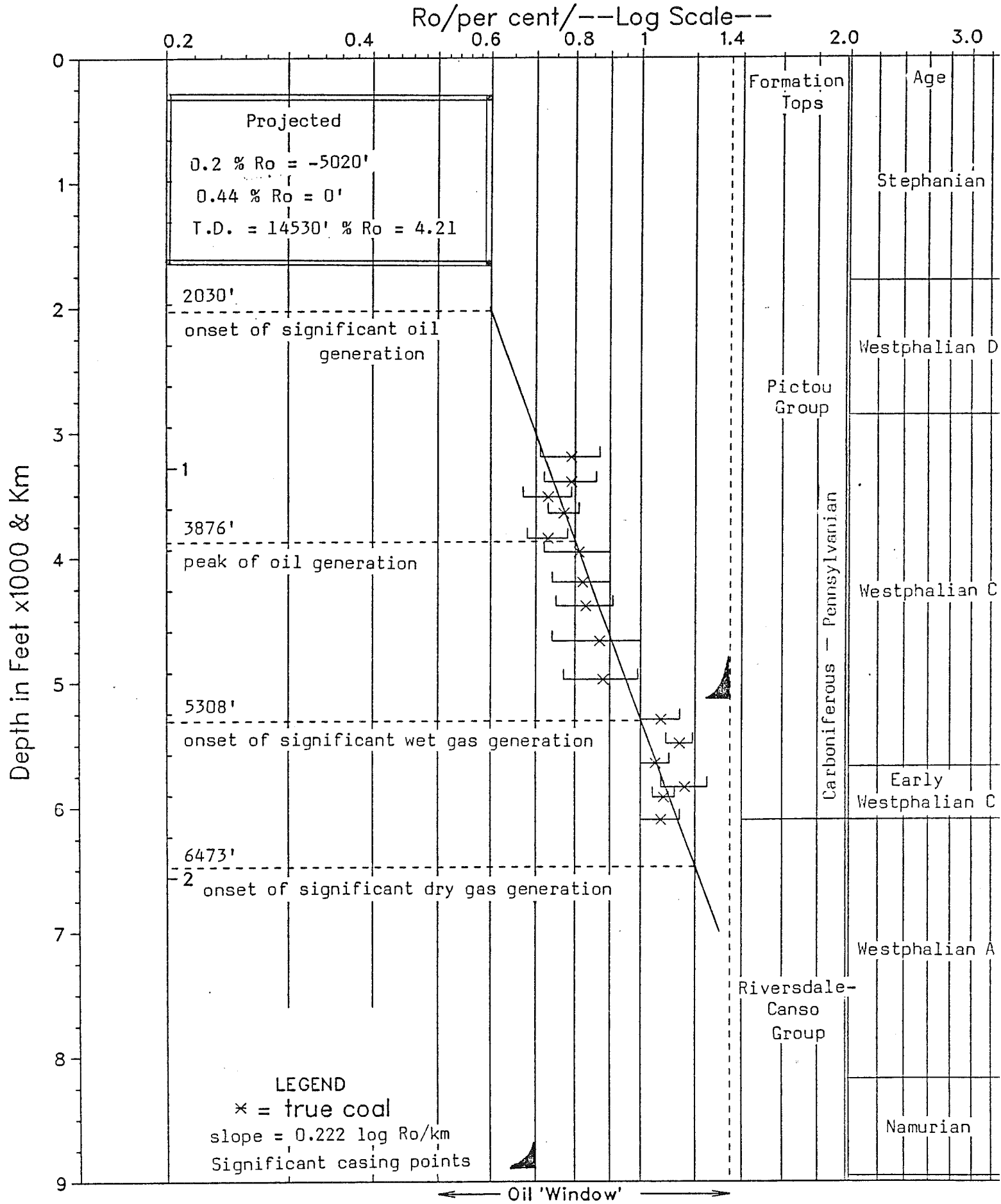


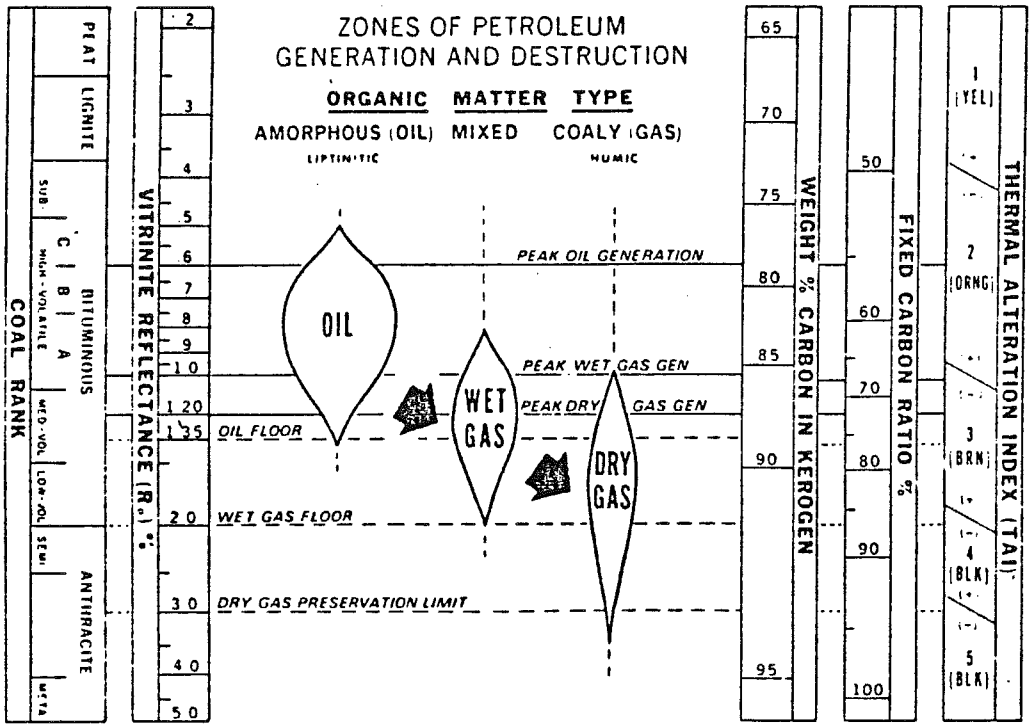
Fig. 1 Bradelle L-49 % Ro Max

Appendix I

Sample preparation

- sample locations to be examined were selected by visual estimates of % of coal particles in prewashed rotary cuttings.
- selected samples were washed to remove drilling mud
- specific gravity separation using tetrachloro ethylene (C_2Cl_2 s.g.= 1.62)
- coal mounted using epoxy resin (epo-tek-301) in predrilled plastic stubs and 1" diameter molds
- mounted samples were polished using modified coal petrology methods
- examined under immersion oil with total magnification of 1000 x

Appendix II (Dow,1977)



Note: For these reports, the terminology used to describe the various maturation levels has been modified. The 'peak' designation, as used in this figure, has been changed to 'onset of significant' and 0.8 Ro is now used as the 'peak of oil generation' (Table I, Figure 1).

Appendix III

Vitrinite Reflectance Histograms

FILE >> PH1362 DESCRIPTION FOLLOWS :
INT. >3190'-3200', BRADELLE L-49, AMV, NOV-3-86

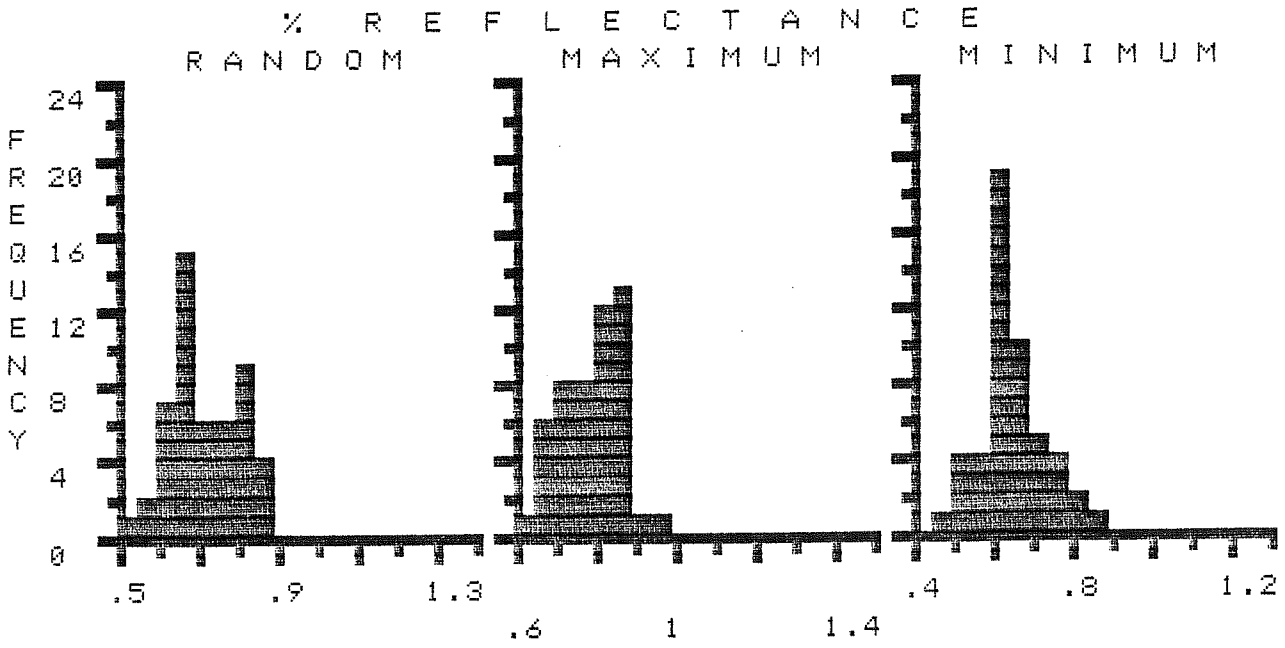
COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	.81	.67	.77	.68	.69	.68	.86	.69	.85	.69
1	.65	.69	.74	.65	.71	.76	.67	.83	.57	.84
2	.70	.69	.66	.73	.64	.80	.68	.52	.78	.78
3	.75	.84	.80	.87	.58	.62	.66	.85	.80	.64
4	.64	.63	.64	.84	.84	.72	.78	.62	.68	.73
MAX										
ROW	.85	.69	.81	.70	.76	.80	.86	.80	.89	.80
1	.67	.71	.86	.67	.76	.82	.79	.89	.74	.84
2	.84	.73	.72	.89	.66	.88	.68	.62	.78	.86
3	.75	.88	.97	.92	.71	.84	.84	.86	.82	.77
4	.79	.79	.80	.88	.85	.74	.88	.67	.73	.80
MIN										
ROW	.72	.60	.64	.65	.63	.66	.70	.69	.69	.63
1	.59	.62	.65	.61	.63	.64	.51	.49	.54	.80
2	.62	.57	.62	.66	.61	.75	.59	.50	.60	.70
3	.69	.81	.78	.85	.54	.60	.66	.70	.63	.62
4	.62	.62	.63	.66	.79	.59	.76	.60	.66	.72

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	.72	.09	.52	.87	36.01
MAX >	.79	.08	.62	.97	39.66
MIN >	.65	.08	.49	.85	32.44

V-TYPES FREQUENCY (PERCENT)

	V 4	V 5	V 6	V 7	V 8	V 9
RND >		6 %	44 %	24 %	26 %	
MAX >			14 %	32 %	50 %	4 %
MIN >	2 %	16 %	58 %	18 %	6 %	



FILE >> PH1363 DESCRIPTION FOLLOWS :
INT. >3390'-3400', BRADELLE L-49, AMV, OCT-30-86

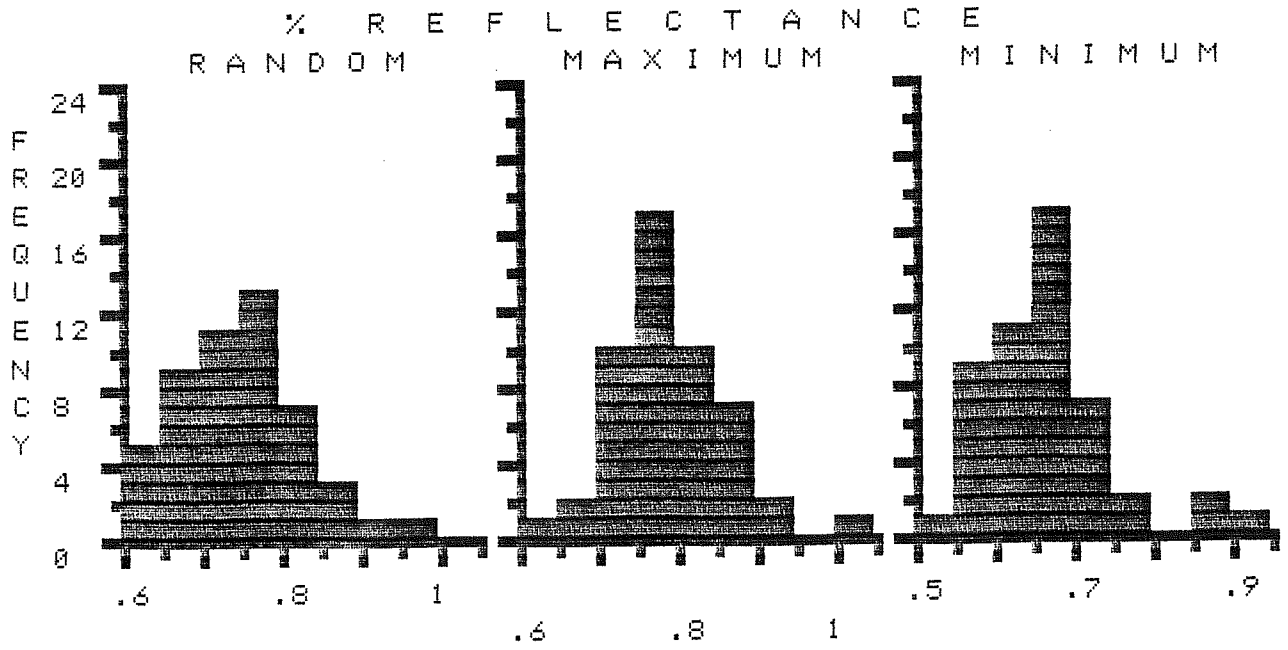
COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	.70	.71	.65	.95	.81	.71	.78	.62	.78	.67
1	.72	.73	.63	.91	.70	.80	.82	.79	.79	.69
2	.75	.78	.74	.67	.69	.78	.88	.88	.68	.68
3	.78	.75	.70	.72	.77	.70	.80	.80	.76	.80
4	.64	.85	.64	.67	.67	.76	.70	.81	.75	.64
MAX										
ROW	.81	.84	.70	1.01	.82	.79	.78	.72	.78	.77
1	.73	.73	.68	.91	.72	.80	.86	.79	.83	.77
2	.76	.79	.81	.75	.78	.85	.88	.90	.77	.77
3	.85	.82	.70	.73	.78	.73	.80	.80	.78	.81
4	.72	.87	.64	.69	.85	.79	.79	.86	.75	.72
MIN										
ROW	.69	.70	.59	.92	.63	.70	.58	.55	.59	.62
1	.71	.61	.60	.68	.65	.78	.67	.66	.65	.69
2	.64	.60	.67	.57	.57	.64	.85	.87	.64	.67
3	.67	.75	.57	.62	.70	.69	.71	.65	.66	.74
4	.57	.67	.61	.58	.66	.73	.69	.69	.64	.53

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	.74	.08	.62	.95	37.2
MAX >	.79	.07	.64	1.01	39.38
MIN >	.66	.08	.53	.92	33.12

V-TYPES FREQUENCY (PERCENT)

	V 5	V 6	V 7	V 8	V 9	V 10
RND >		28 %	48 %	20 %	4 %	
MAX >		6 %	54 %	34 %	4 %	2 %
MIN >	20 %	56 %	18 %	4 %	2 %	



FILE >> PH1364 DESCRIPTION FOLLOWS :
INT. >3510'-3520', BRADELLE L-49, AMV, OCT-30-86

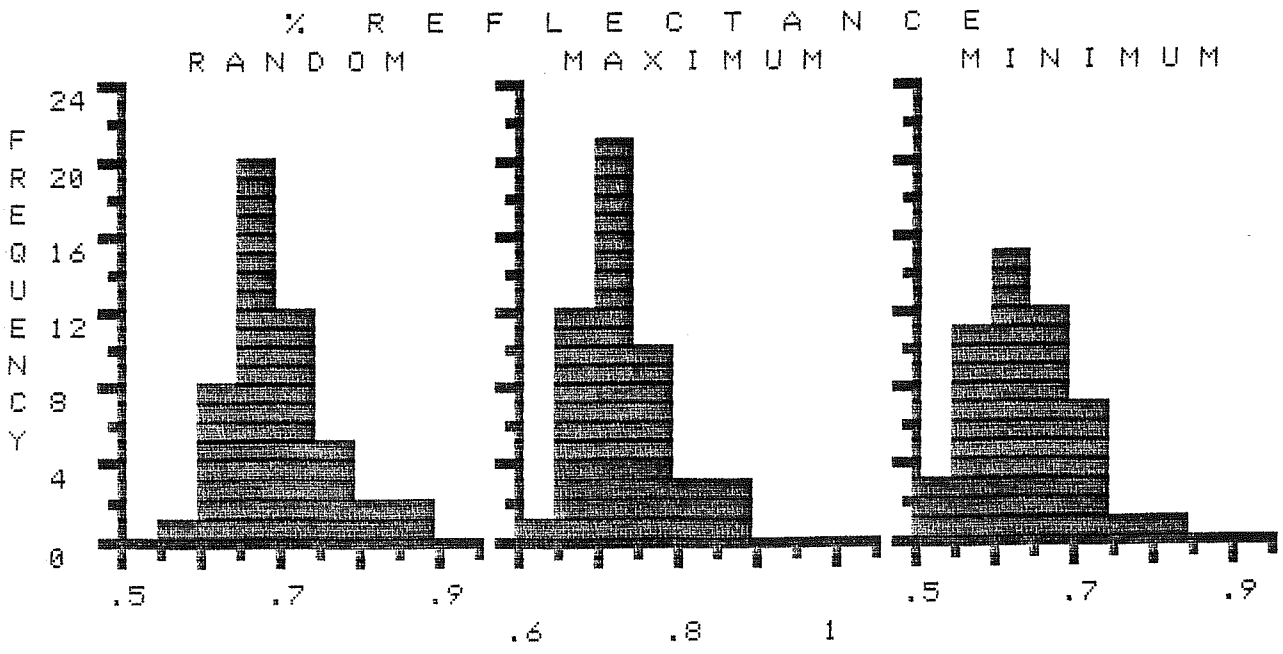
COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	.72	.66	.61	.84	.73	.67	.72	.80	.66	.69
1	.85	.67	.88	.66	.69	.64	.70	.64	.74	.64
2	.76	.65	.72	.63	.65	.68	.73	.77	.58	.73
3	.66	.78	.63	.66	.66	.67	.65	.66	.76	.65
4	.63	.70	.68	.76	.69	.74	.73	.60	.69	.73
MAX										
ROW	.72	.72	.63	.84	.78	.67	.73	.83	.73	.73
1	.85	.67	.88	.67	.74	.69	.70	.69	.74	.65
2	.76	.67	.72	.72	.73	.73	.74	.77	.67	.73
3	.70	.87	.65	.70	.70	.74	.71	.66	.76	.78
4	.69	.82	.68	.79	.76	.75	.75	.74	.76	.73
MIN										
ROW	.56	.58	.52	.70	.70	.65	.69	.58	.62	.61
1	.67	.61	.81	.62	.62	.54	.63	.53	.70	.62
2	.57	.62	.68	.62	.64	.67	.63	.65	.58	.58
3	.65	.77	.60	.57	.55	.67	.61	.65	.71	.60
4	.59	.67	.55	.60	.68	.70	.73	.59	.69	.72

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	.70	.06	.58	.88	34.84
MAX >	.73	.06	.63	.88	36.64
MIN >	.63	.06	.52	.81	31.7

V-TYPES FREQUENCY (PERCENT)

	V 5	V 6	V 7	V 8
RND >	2 %	56 %	34 %	8 %
MAX >		26 %	62 %	12 %
MIN >	28 %	54 %	16 %	2 %



FILE >> PH1365 DESCRIPTION FOLLOWS :
INT. >3640'-3650', BRADELLE L-49, AMV, OCT-31-86

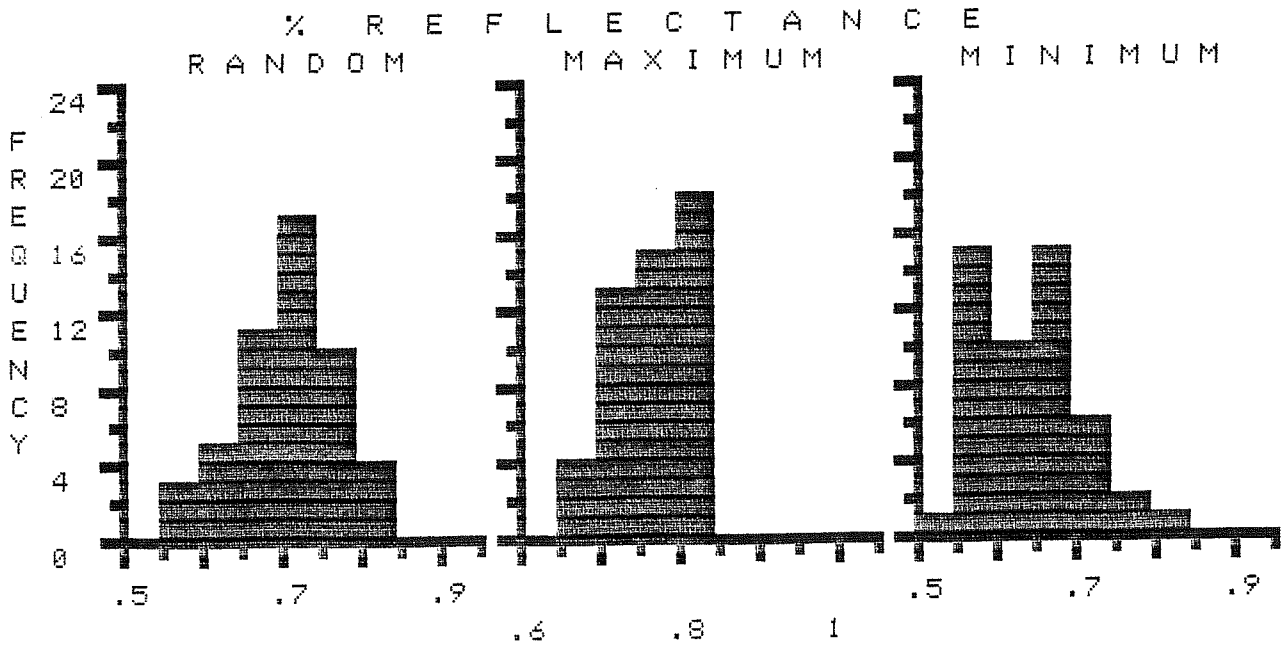
COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	.83	.82	.70	.70	.68	.66	.70	.83	.69	.77
1	.74	.79	.61	.79	.71	.68	.78	.68	.75	.62
2	.71	.69	.73	.69	.74	.78	.74	.83	.62	.72
3	.64	.70	.72	.72	.56	.58	.70	.75	.73	.72
4	.75	.66	.69	.75	.67	.79	.69	.57	.62	.71
MAX										
ROW	.83	.82	.71	.73	.81	.74	.71	.83	.82	.78
1	.75	.80	.73	.80	.72	.72	.80	.77	.82	.69
2	.79	.76	.74	.69	.77	.80	.74	.84	.75	.81
3	.80	.81	.74	.75	.67	.69	.72	.75	.78	.78
4	.78	.71	.75	.80	.76	.81	.83	.72	.79	.82
MIN										
ROW	.77	.80	.67	.60	.56	.58	.55	.70	.58	.74
1	.57	.68	.57	.77	.69	.67	.59	.61	.69	.59
2	.70	.61	.64	.57	.58	.71	.73	.59	.61	.59
3	.62	.69	.69	.62	.55	.58	.69	.66	.54	.61
4	.68	.65	.60	.73	.65	.69	.67	.56	.62	.68

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	.71	.07	.56	.83	35.5
MAX >	.77	.04	.67	.84	38.33
MIN >	.64	.06	.54	.80	32.09

V-TYPES FREQUENCY (PERCENT)

	V 5	V 6	V 7	V 8
RND >	6 %	32 %	54 %	8 %
MAX >		8 %	56 %	36 %
MIN >	32 %	50 %	16 %	2 %



FILE >> PH1366 DESCRIPTION FOLLOWS :
INT. >3840'-3850'. BRADELLE L-49, [illegible] OCT-31-86

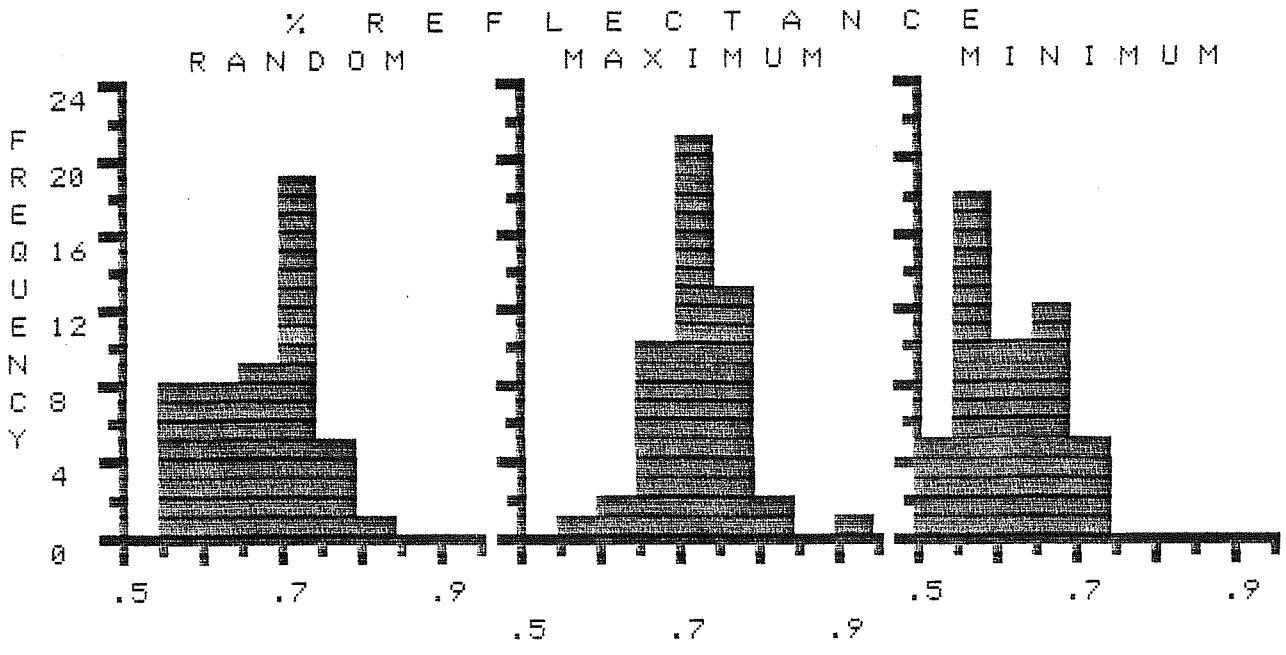
COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	.64	.72	.70	.74	.61	.63	.74	.72	.63	.70
1	.60	.71	.78	.63	.77	.74	.72	.66	.71	.73
2	.72	.68	.80	.70	.70	.70	.59	.68	.67	.77
3	.69	.65	.77	.73	.68	.76	.62	.71	.73	.59
4	.63	.74	.58	.58	.59	.59	.59	.59	.67	.67
MAX										
ROW	.68	.75	.73	.74	.69	.71	.79	.76	.75	.71
1	.69	.74	.78	.64	.77	.74	.72	.70	.74	.75
2	.73	.69	.82	.70	.70	.75	.68	.68	.67	.81
3	.69	.75	.78	.75	.74	.76	.73	.76	.74	.64
4	.71	.74	.94	.59	.65	.70	.73	.72	.68	.70
MIN										
ROW	.61	.70	.61	.67	.53	.63	.68	.64	.62	.65
1	.59	.59	.74	.62	.64	.59	.65	.65	.66	.68
2	.68	.66	.62	.53	.55	.59	.58	.66	.59	.65
3	.56	.59	.59	.72	.64	.67	.59	.55	.70	.56
4	.60	.72	.51	.52	.57	.58	.59	.59	.51	.59

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	.68	.06	.58	.80	34.05
MAX >	.73	.05	.59	.94	36.31
MIN >	.62	.06	.51	.74	30.81

V-TYPES FREQUENCY (PERCENT)

	V 5	V 6	V 7	V 8	V 9
RND >	16 %	34 %	48 %	2 %	
MAX >	2 %	24 %	68 %	4 %	2 %
MIN >	46 %	44 %	10 %		



FILE >> PH1367 DESCRIPTION FOLLOWS :
INT. >3950'-3960', BRADELLE L-49, AMV, NOV-3-86

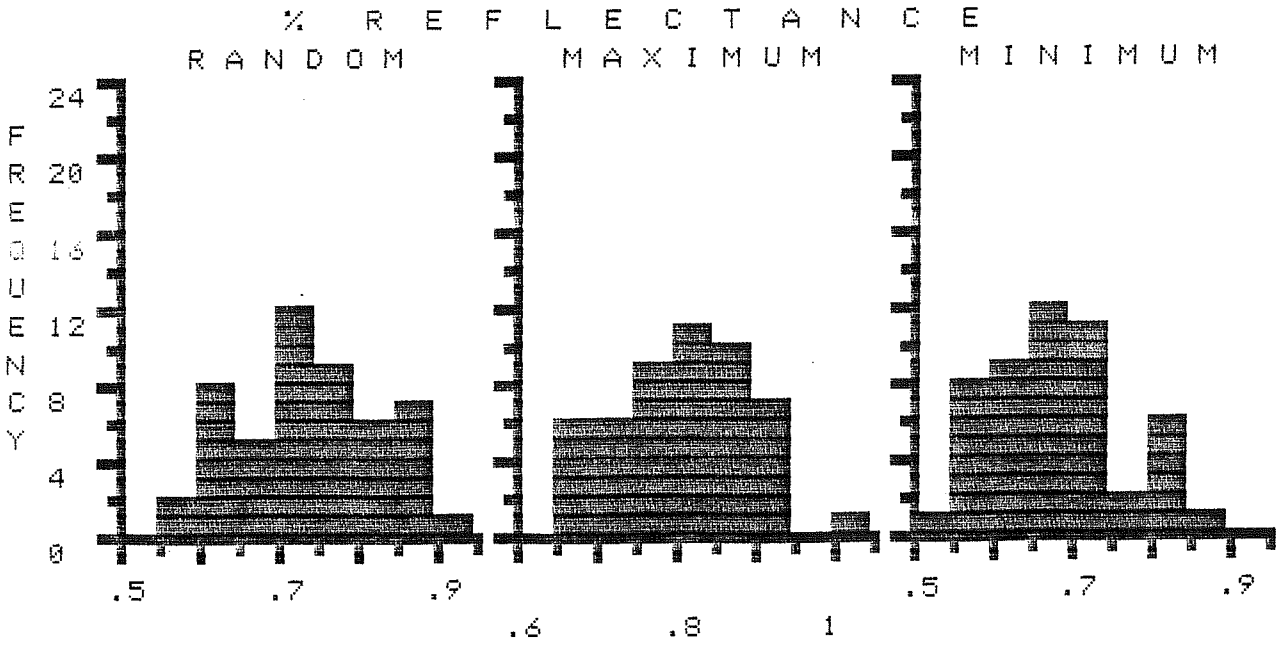
COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	.73	.74	.59	.60	.66	.85	.82	.75	.88	.68
1	.79	.77	.64	.74	.68	.69	.74	.76	.71	.71
2	.71	.66	.75	.81	.59	.87	.81	.83	.71	.76
3	.63	.72	.64	.83	.85	.84	.88	.79	.88	.73
4	.73	.61	.72	.94	.60	.76	.89	.63	.75	.64
MAX										
ROW	.83	.80	.65	.73	.66	.92	.82	.77	.88	.73
1	.87	.87	.66	.83	.87	.92	.78	.80	.71	.80
2	.88	.75	.82	1.03	.65	.89	.84	.87	.74	.76
3	.84	.73	.75	.87	.87	.88	.92	.79	.92	.76
4	.80	.77	.84	.94	.70	.90	.91	.67	.76	.69
MIN										
ROW	.70	.65	.56	.57	.63	.84	.79	.56	.71	.68
1	.65	.66	.61	.72	.66	.68	.71	.72	.60	.71
2	.64	.65	.73	.78	.54	.81	.61	.81	.70	.64
3	.63	.59	.63	.82	.82	.73	.70	.69	.85	.72
4	.65	.59	.65	.81	.60	.69	.59	.58	.69	.55

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	.74	.09	.59	.94	37.09
MAX >	.81	.09	.65	1.03	40.44
MIN >	.68	.08	.54	.85	33.9

V-TYPES FREQUENCY (PERCENT)

	V 5	V 6	V 7	V 8	V 9	V 10
RND >	4 %	26 %	42 %	26 %	2 %	
MAX >		12 %	30 %	42 %	14 %	2 %
MIN >	18 %	42 %	26 %	14 %		



FILE >> PH1368 DESCRIPTION FOLLOWS :
INT. >4190'-4200', BRADELLE L-49, AMV, NOV-3-86

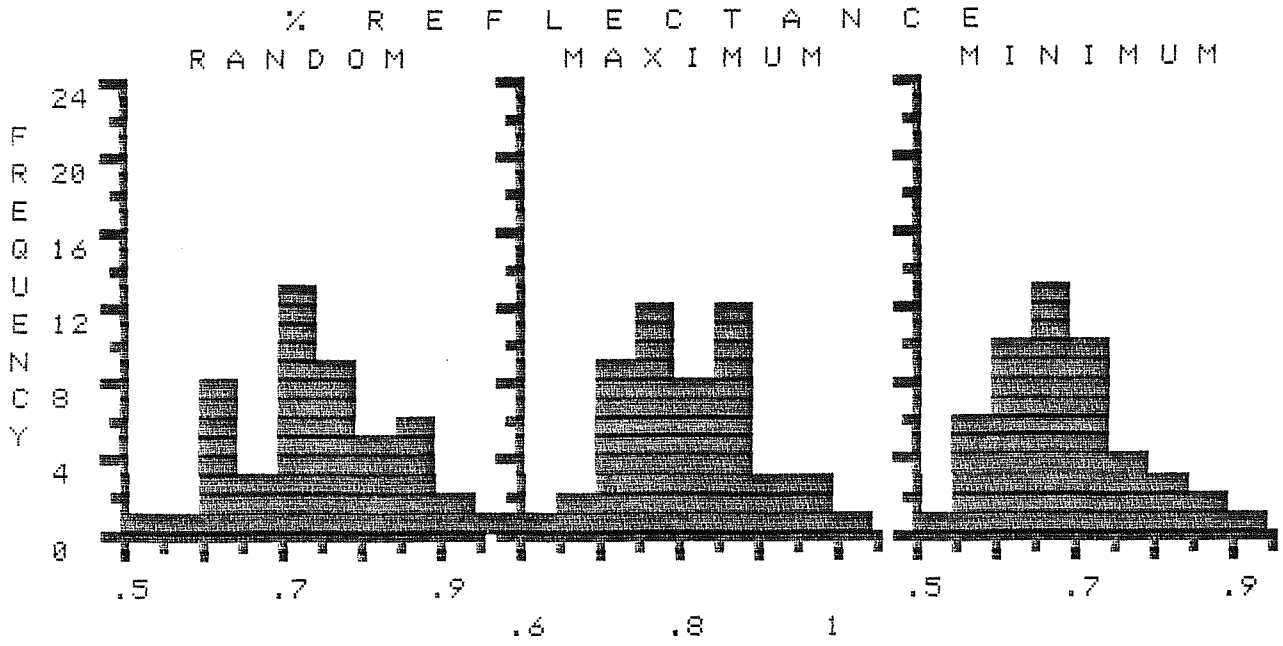
COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	.73	.60	.54	.71	.74	.77	.69	.73	.87	.89
1	.79	.74	.84	.62	.64	.82	.90	.61	.70	.62
2	.85	.73	.73	.60	.83	.84	.66	.78	.73	.95
3	.87	.74	.56	.62	.75	.71	.86	.79	.64	.76
4	1.01	.78	.68	.70	.70	.87	.79	.81	.79	.94
MAX										
ROW	.78	.71	.68	.76	.85	.78	.72	.94	.87	.89
1	.81	.74	.86	.79	.83	.82	.99	.74	.70	.73
2	.87	.77	.83	.71	.84	.85	.82	.78	.73	.95
3	.89	.76	.69	.75	.76	.80	.86	.79	.76	.78
4	1.02	.83	.86	.92	.73	.88	.88	.96	.88	.94
MIN										
ROW	.65	.59	.54	.65	.72	.70	.68	.71	.76	.68
1	.71	.60	.80	.57	.61	.77	.90	.60	.67	.62
2	.72	.61	.72	.59	.83	.74	.65	.70	.59	.68
3	.85	.60	.55	.60	.61	.60	.72	.69	.61	.76
4	.69	.69	.66	.69	.58	.85	.67	.81	.78	.70

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	.75	.10	.54	1.01	37.62
MAX >	.82	.08	.68	1.02	40.88
MIN >	.68	.08	.54	.90	34.07

V-TYPES FREQUENCY (PERCENT)

	V 5	V 6	V 7	V 8	V 9	V 10
RND >	4 %	22 %	44 %	22 %	6 %	2 %
MAX >		4 %	42 %	40 %	12 %	2 %
MIN >	14 %	46 %	28 %	10 %	2 %	



FILE >> PH1369 DESCRIPTION FOLLOWS :
INT. >4380'-4390', BRADELLE L-49, AMV, NOV-4-86

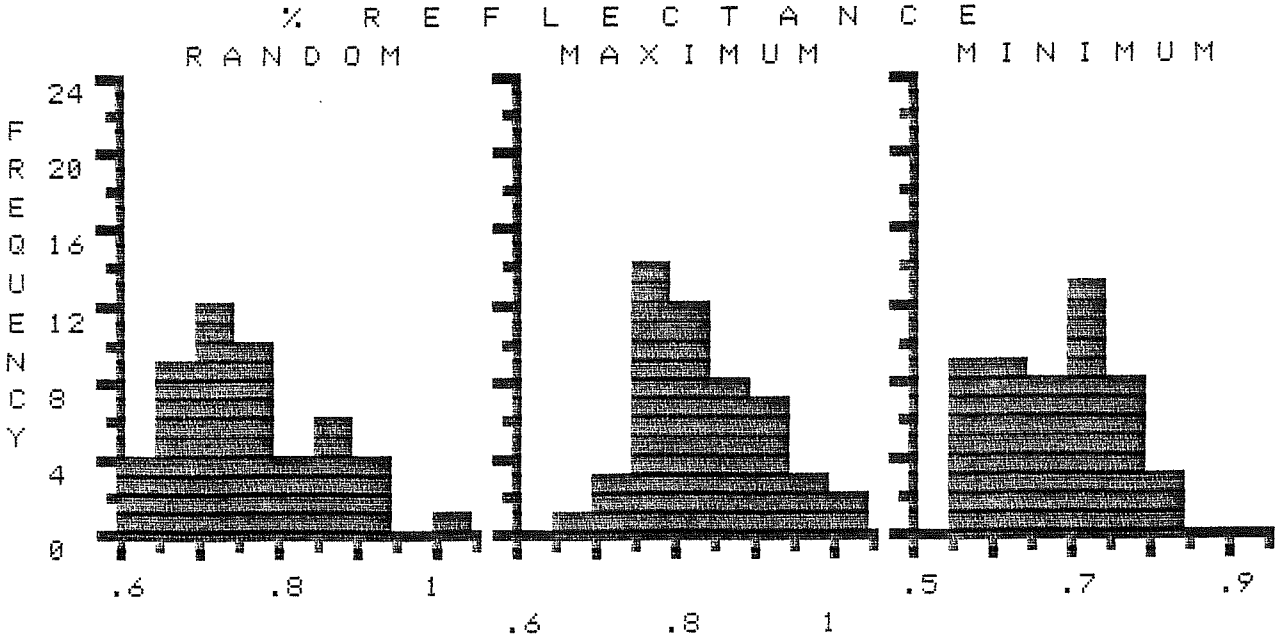
COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	1.00	.91	.78	.88	.78	.74	.69	.88	.64	.85
1	.74	.90	.80	.72	.75	.85	.90	.70	.69	.68
2	.72	.72	.75	.69	.79	.77	.75	.76	.88	.65
3	.86	.81	.71	.94	.62	.73	.73	.74	.68	.75
4	.66	.74	.77	.61	.83	.69	.66	.73	.63	.82
MAX										
ROW	1.00	.92	.85	.90	.83	.79	.86	.90	.71	.89
1	.89	.96	.87	.83	.80	.89	.90	.72	.78	.78
2	.75	.77	.77	.82	.79	.80	.77	.81	.91	.78
3	.86	.84	.76	.94	.80	.77	.80	.76	.79	.86
4	.69	.76	.96	.74	.90	.81	.96	1.01	.81	.82
MIN										
ROW	.74	.80	.76	.71	.76	.64	.67	.84	.57	.78
1	.70	.71	.66	.72	.71	.71	.77	.57	.67	.56
2	.56	.63	.73	.66	.59	.76	.64	.73	.71	.65
3	.79	.78	.55	.67	.55	.62	.59	.69	.67	.71
4	.57	.61	.74	.60	.81	.62	.63	.71	.62	.77

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	.76	.09	.61	1.00	38.07
MAX >	.83	.08	.69	1.01	41.68
MIN >	.68	.08	.55	.84	34.01

V-TYPES FREQUENCY (PERCENT)

	V 5	V 6	V 7	V 8	V 9	V 10
RND >		26 %	44 %	20 %	8 %	2 %
MAX >		2 %	34 %	40 %	20 %	4 %
MIN >	18 %	34 %	42 %	6 %		



FILE >> PH1370 DESCRIPTION FOLLOWS :
INT. >4660'-4670', BRADELLE L-49, AMV, NOV-4-86

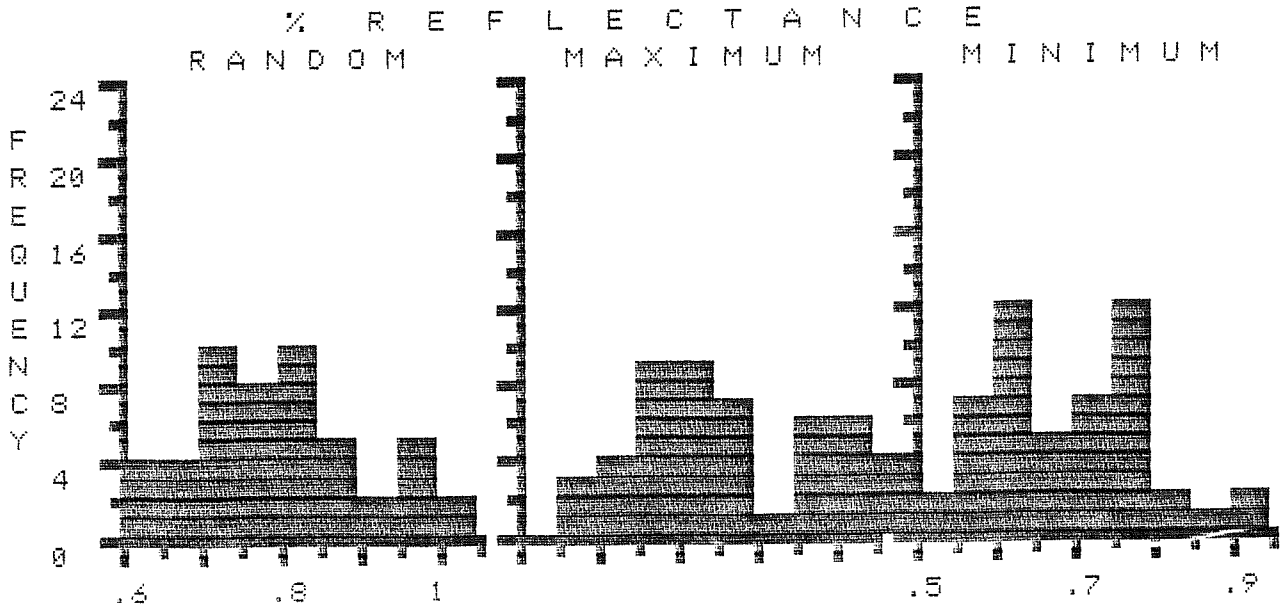
COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	.85	.86	.80	.62	.81	.71	.69	.85	.82	.76
1	.74	.80	.80	.79	.71	.71	.64	.85	.71	.80
2	.98	.82	.70	.68	.70	.60	.87	.66	.98	.79
3	.72	.96	.65	.92	.79	.77	.99	.83	.99	.77
4	.81	.75	1.04	.80	.74	1.04	.94	.72	.62	.79
MAX										
ROW	.86	1.04	.97	.79	1.03	.82	.76	.95	.84	.80
1	.75	.80	.85	.79	.82	.80	.65	.97	1.00	.87
2	1.09	1.01	.72	.72	.85	.66	1.10	.67	.98	.79
3	.85	1.05	.78	.98	.86	.77	.99	.88	1.02	.83
4	1.07	.76	1.04	.80	.79	1.09	.94	.73	.72	.83
MIN										
ROW	.68	.86	.74	.59	.78	.62	.60	.76	.77	.60
1	.62	.72	.59	.71	.60	.59	.60	.75	.71	.73
2	.92	.80	.69	.66	.67	.60	.82	.54	.77	.62
3	.53	.72	.61	.57	.63	.56	.79	.59	.76	.76
4	.70	.67	.76	.75	.60	.79	.93	.57	.60	.79

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	.79	.11	.60	1.04	39.74
MAX >	.87	.13	.65	1.10	43.53
MIN >	.69	.10	.53	.93	34.39

V-TYPES FREQUENCY (PERCENT)

	V 5	V 6	V 7	V 8	V 9	V 10	V 11
RND >		16 %	36 %	30 %	14 %	4 %	
MAX >		6 %	26 %	32 %	14 %	20 %	2 %
MIN >	18 %	34 %	38 %	6 %	4 %		



FILE >> PH1371 DESCRIPTION FOLLOWS :
INT. >4960'-4980', BRADELLE L-49, AMV, NOV-7-86

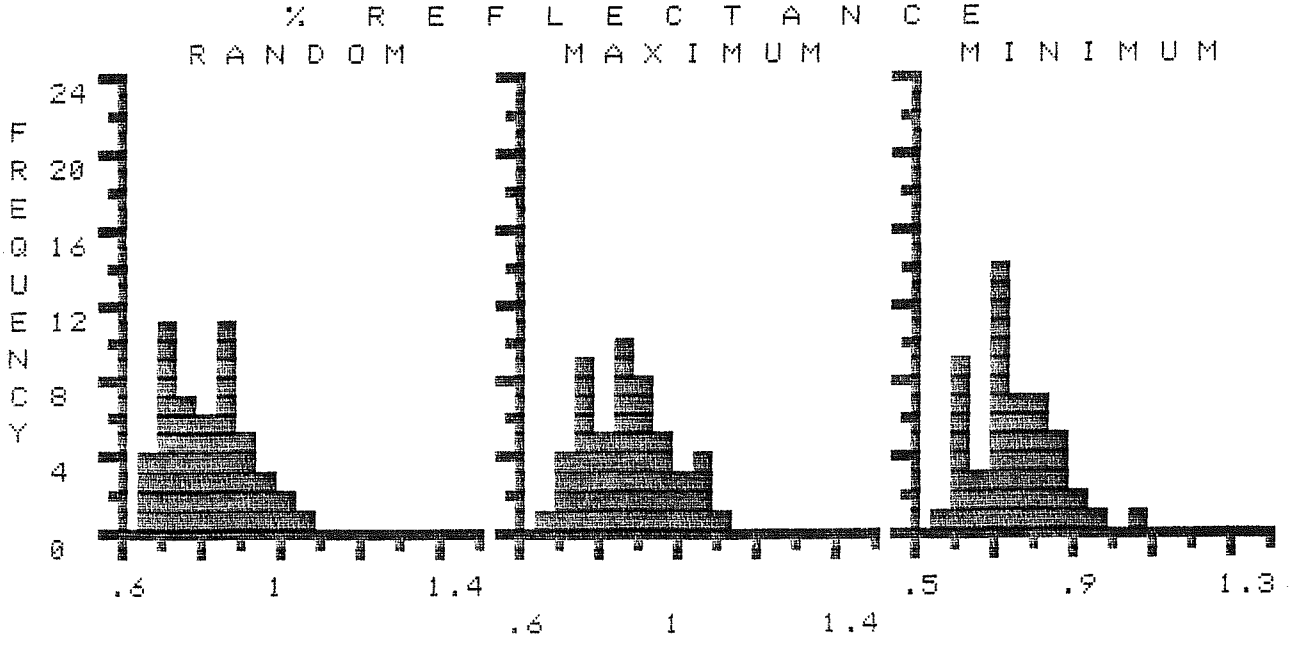
COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	.70	.69	.86	.90	.95	.89	.85	.69	.83	.92
1	.81	.65	.80	.68	.76	.71	1.06	.85	.86	.73
2	.76	.74	.94	.71	.71	.90	.99	.70	1.04	1.04
3	.85	.82	.75	.85	.81	.88	.94	.89	.76	.73
4	.70	.74	.79	.75	.74	.88	.83	.75	.87	.99
MAX										
ROW	.79	.79	.86	.98	.99	.90	.93	.76	.83	.98
1	.90	.70	.80	.68	.76	.72	1.08	1.05	.88	.76
2	.78	.84	.94	.75	.86	.90	1.10	.86	1.05	1.04
3	1.02	.85	.91	.86	.88	.91	.96	1.05	.76	.94
4	.71	.74	.82	.83	.86	.97	.87	.75	.87	1.01
MIN										
ROW	.70	.62	.63	.79	.66	.85	.77	.68	.64	.92
1	.76	.62	.64	.56	.63	.64	1.06	.76	.70	.72
2	.76	.74	.82	.70	.71	.83	.98	.69	.83	.87
3	.85	.80	.74	.73	.74	.77	.91	.81	.71	.71
4	.61	.61	.78	.73	.70	.86	.83	.70	.80	.86

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	.82	.10	.65	1.06	41.04
MAX >	.88	.11	.68	1.10	43.83
MIN >	.75	.10	.56	1.06	37.53

V-TYPES FREQUENCY (PERCENT)

	V 5	V 6	V 7	V 8	V 9	V 10	V 11
RND >		8 %	36 %	34 %	16 %	6 %	
MAX >		2 %	26 %	30 %	26 %	14 %	2 %
MIN >	2 %	24 %	42 %	24 %	6 %	2 %	



FILE >> PH1372 DESCRIPTION FOLLOWS :
INT. >5290'-5300', BRADELLE L-49, AMV, NOV-7-86

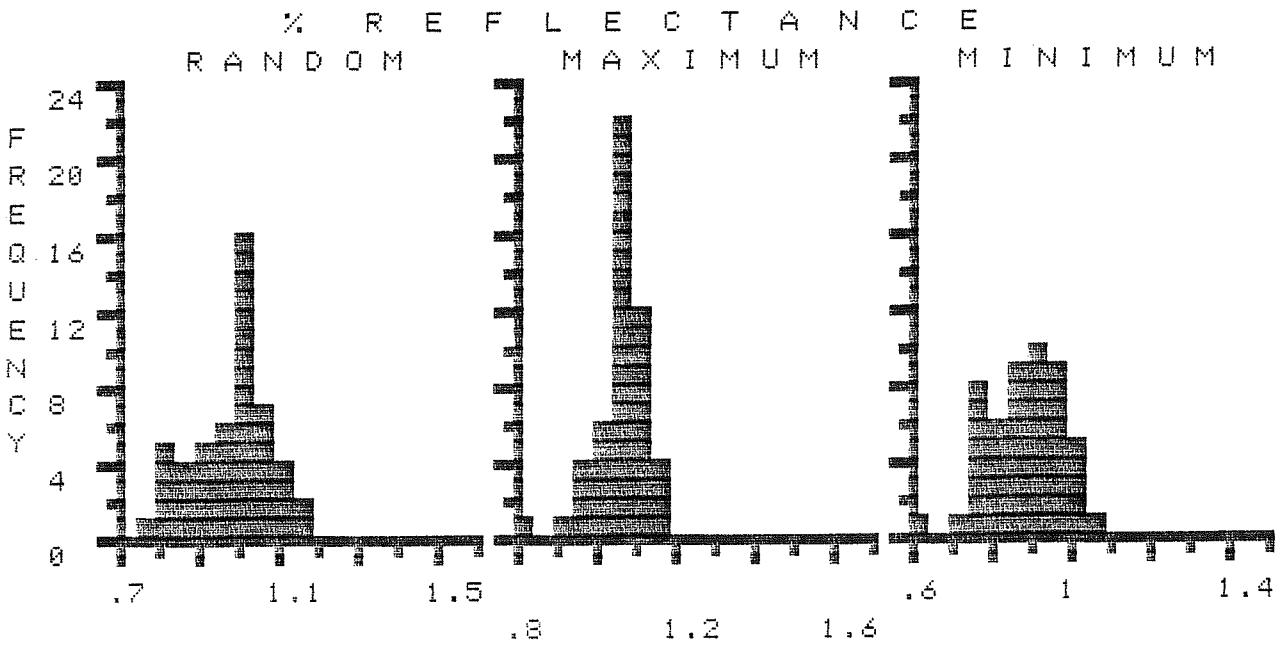
COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	1.02	.94	1.02	.87	1.17	.86	.86	1.00	1.03	1.04
1	.77	.94	1.09	.98	1.00	1.01	1.04	.96	.98	1.03
2	1.00	.82	1.04	1.10	1.03	.94	1.05	1.07	.80	.84
3	1.06	1.16	.92	1.13	.99	1.04	1.06	.92	1.07	.95
4	.81	1.08	.88	1.10	1.04	1.02	.97	.81	1.11	1.04
MAX										
ROW	1.06	.96	1.12	1.07	1.17	1.13	1.02	1.01	1.08	1.04
1	.81	1.10	1.10	1.08	1.06	1.14	1.07	.98	1.05	1.09
2	1.08	1.05	1.09	1.10	1.05	1.06	1.15	1.07	1.00	.95
3	1.07	1.16	.92	1.15	1.01	1.09	1.09	1.00	1.07	.99
4	1.07	1.10	1.10	1.10	1.12	1.08	1.08	1.11	1.14	1.08
MIN										
ROW	.79	.94	.94	.82	.99	.85	.86	.76	.92	.90
1	.61	.83	.91	.83	.86	.88	.90	.93	.97	1.02
2	1.00	.75	.99	.85	.79	.89	.96	.92	.76	.76
3	1.04	1.09	.82	.93	.92	.76	1.02	.74	.83	.95
4	.81	.96	.86	.86	.99	.96	.87	.78	.95	1.04

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	.99	.10	.77	1.17	49.46
MAX >	1.07	.07	.81	1.17	53.27
MIN >	.89	.10	.61	1.09	44.36

V-TYPES FREQUENCY (PERCENT)

	V 6	V 7	V 8	V 9	V 10	V 11
RND >		2 %	18 %	22 %	46 %	12 %
MAX >			2 %	10 %	56 %	32 %
MIN >	2 %	18 %	30 %	38 %	12 %	



FILE >> PH1373 DESCRIPTION FOLLOWS :
INT. >5480'-5490', BRADELLE L-49, AMV, NOV-10-86

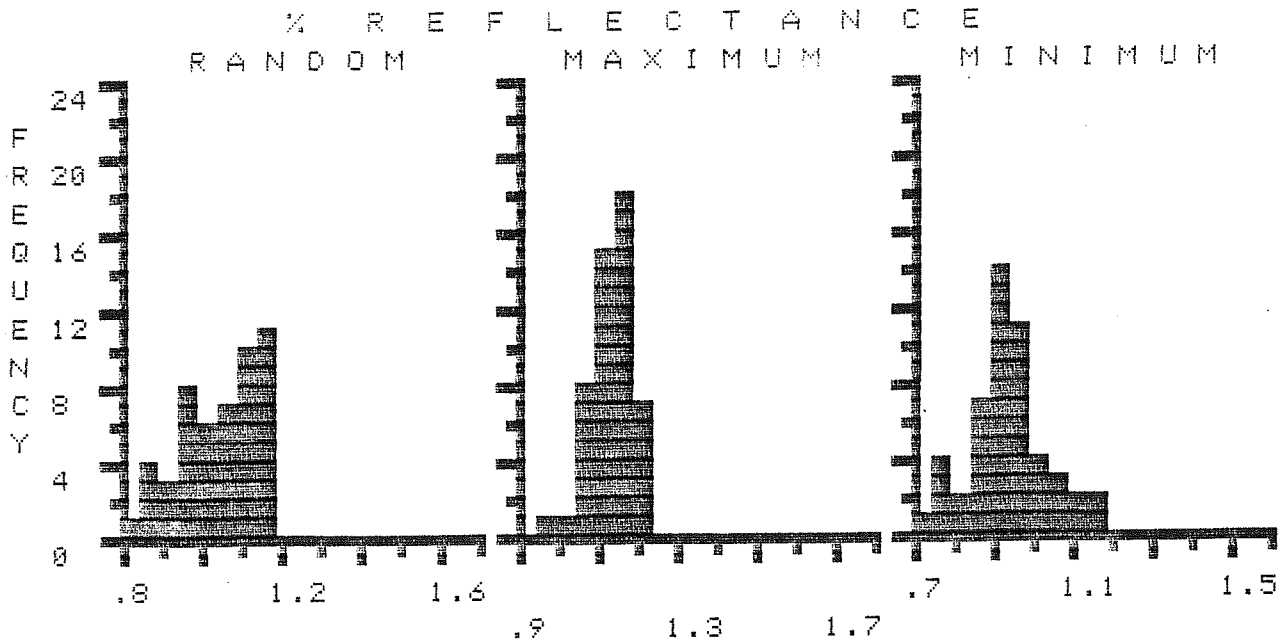
COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	.86	1.17	1.13	1.16	1.11	.88	.98	.94	1.07	1.04
1	1.00	.97	1.03	.98	1.01	1.19	.83	1.16	1.15	1.17
2	1.07	1.05	1.12	1.14	.98	1.13	.95	1.07	1.08	.94
3	1.11	1.18	1.16	1.13	.89	.92	1.07	1.13	.95	1.10
4	1.11	.96	1.19	1.07	.87	1.02	1.16	1.03	.97	1.19
MAX										
ROW	1.12	1.17	1.13	1.18	1.14	1.09	1.06	1.15	1.08	1.08
1	1.09	1.05	1.07	1.13	1.15	1.20	1.08	1.17	1.15	1.20
2	1.11	1.16	1.22	1.20	1.15	1.13	1.19	1.15	1.15	.98
3	1.11	1.18	1.17	1.17	1.16	1.10	1.12	1.16	1.12	1.11
4	1.12	1.20	1.20	1.14	1.14	1.13	1.18	1.03	1.22	1.19
MIN										
ROW	.85	1.13	.98	.97	.93	.82	.87	.94	.74	1.03
1	.77	.80	.96	.79	.90	1.17	.76	.97	.97	1.15
2	1.01	.86	.93	1.00	.94	.98	.91	.97	.99	.93
3	.86	.93	1.06	1.09	.88	.87	.90	1.11	.94	.86
4	.96	.93	.99	1.04	.79	.93	1.05	.93	.95	.91

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	1.05	.10	.83	1.19	52.57
MAX >	1.14	.05	.98	1.22	56.88
MIN >	.94	.10	.74	1.17	47

V-TYPES FREQUENCY (PERCENT)

	V 7	V 8	V 9	V 10	V 11	V 12
RND >		10 %	22 %	26 %	42 %	
MAX >			2 %	18 %	66 %	14 %
MIN >	10 %	18 %	50 %	14 %	8 %	



FILE >> PH1374 DESCRIPTION FOLLOWS :
INT. >5640'-5650', BRADELLE L-49, AMV, NOV-10-86

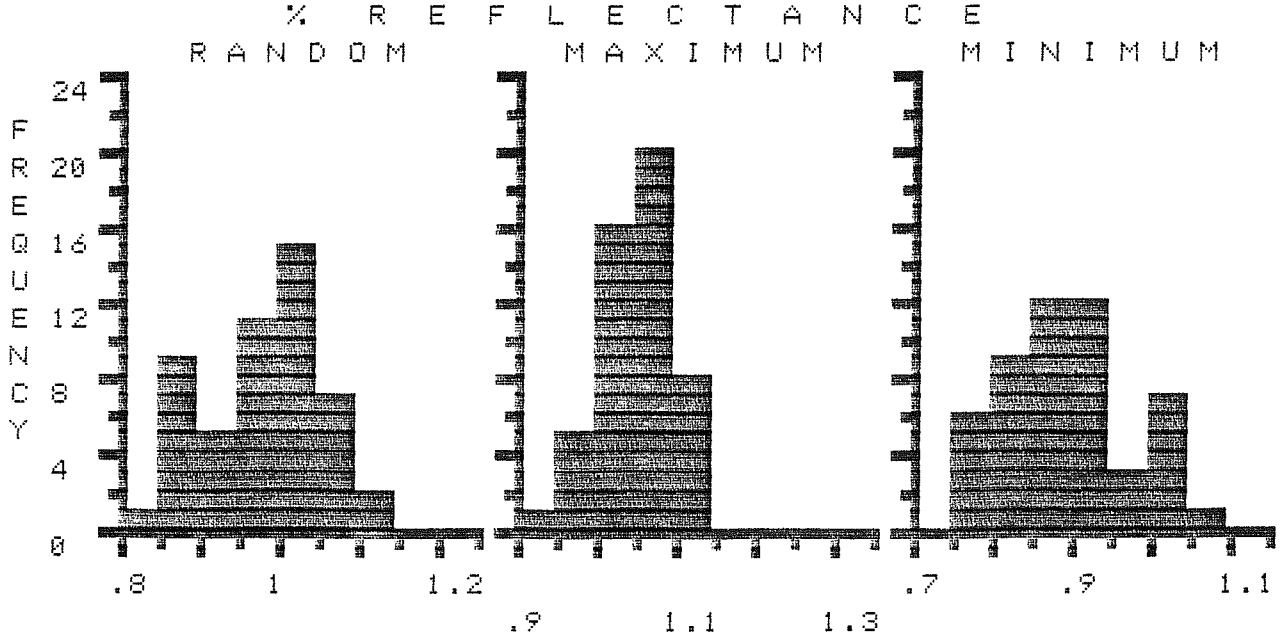
COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	.88	.85	1.12	.92	1.01	1.03	1.13	.96	.98	1.00
1	.89	.95	1.07	1.03	.97	.89	.85	.90	.93	.94
2	.95	1.07	.84	.99	.97	.86	.98	.87	.94	1.03
3	.89	1.08	1.06	1.02	1.00	1.03	1.00	1.06	.89	1.02
4	1.03	1.02	.95	1.01	.96	1.09	.98	1.01	1.03	1.06
MAX										
ROW	1.06	1.10	1.13	1.09	1.12	1.08	1.14	1.07	1.05	1.06
1	1.04	1.02	1.10	1.08	1.03	.98	1.03	.97	1.03	1.03
2	1.04	1.08	1.03	1.04	.97	1.04	.99	.90	1.01	1.04
3	1.01	1.12	1.07	1.03	1.11	1.09	1.06	1.07	1.07	1.08
4	1.05	1.13	.95	1.08	1.02	1.09	1.06	1.03	1.07	1.08
MIN										
ROW	.88	.84	1.02	.90	.98	.90	1.08	.87	.89	.92
1	.89	.94	1.04	.93	.76	.84	.76	.88	.91	.91
2	.81	1.04	.81	.97	.76	.79	.91	.85	.84	.85
3	.87	1.03	.94	.76	.88	.92	.76	.80	.80	.86
4	1.00	1.00	.87	1.00	.84	.92	.97	.83	.91	.85

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	.98	.07	.84	1.13	48.99
MAX >	1.05	.05	.90	1.14	52.62
MIN >	.89	.08	.76	1.08	44.58

V-TYPES FREQUENCY (PERCENT)

	V 7	V 8	V 9	V 10	V 11
RND >		20 %	32 %	44 %	4 %
MAX >			12 %	72 %	16 %
MIN >	12 %	42 %	30 %	16 %	



FILE >> PH1375 DESCRIPTION FOLLOWS :
INT. >5830'-5840', BRADELLE L-49, AMV, NOV-10-86

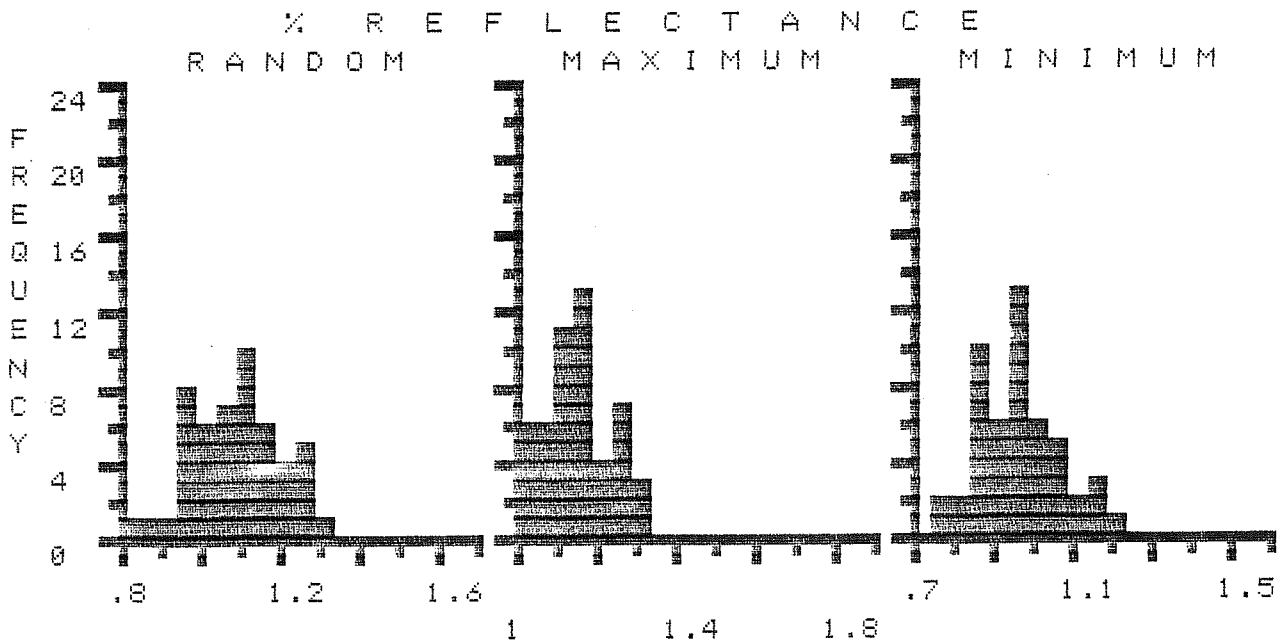
COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	1.07	1.00	.80	1.23	1.00	1.02	.98	1.01	.96	.99
1	1.13	.99	1.11	1.12	1.25	1.30	1.12	1.13	.95	1.15
2	.99	1.21	1.29	1.29	1.03	1.21	1.01	1.10	1.18	1.28
3	.87	.99	.94	1.21	1.25	.98	1.18	1.19	1.19	1.14
4	1.18	1.13	1.11	1.07	1.08	1.08	1.12	1.05	1.05	1.06
MAX										
ROW	1.11	1.30	1.02	1.25	1.10	1.29	1.15	1.18	1.01	1.11
1	1.16	1.14	1.13	1.13	1.28	1.33	1.16	1.14	1.20	1.27
2	1.16	1.22	1.29	1.31	1.04	1.21	1.02	1.10	1.19	1.29
3	1.01	1.00	1.05	1.22	1.25	1.17	1.18	1.19	1.19	1.15
4	1.19	1.13	1.19	1.07	1.13	1.08	1.13	1.07	1.06	1.06
MIN										
ROW	1.02	.97	.78	.99	.89	.91	.97	1.00	.90	.90
1	.82	.96	1.04	1.06	1.19	1.19	1.08	1.03	.89	1.11
2	.99	1.16	.99	.97	.89	1.12	.87	.88	1.05	1.22
3	.82	.78	.85	.92	.89	.98	.95	.89	1.06	1.05
4	.98	.93	.97	.98	.97	1.01	1.04	.90	.87	.88

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	1.10	.11	.80	1.30	54.77
MAX >	1.16	.09	1.00	1.33	57.81
MIN >	.97	.10	.78	1.22	48.56

V-TYPES FREQUENCY (PERCENT)

	V 7	V 8	V 9	V 10	V 11	V 12	V 13
RND >		4 %	18 %	26 %	32 %	18 %	2 %
MAX >				24 %	48 %	22 %	6 %
MIN >	4 %	24 %	38 %	22 %	10 %	2 %	



FILE >> PH1376 DESCRIPTION FOLLOWS :
INT. >5910'-5920', BRADELLE L-49, AMV, NOV-10-86

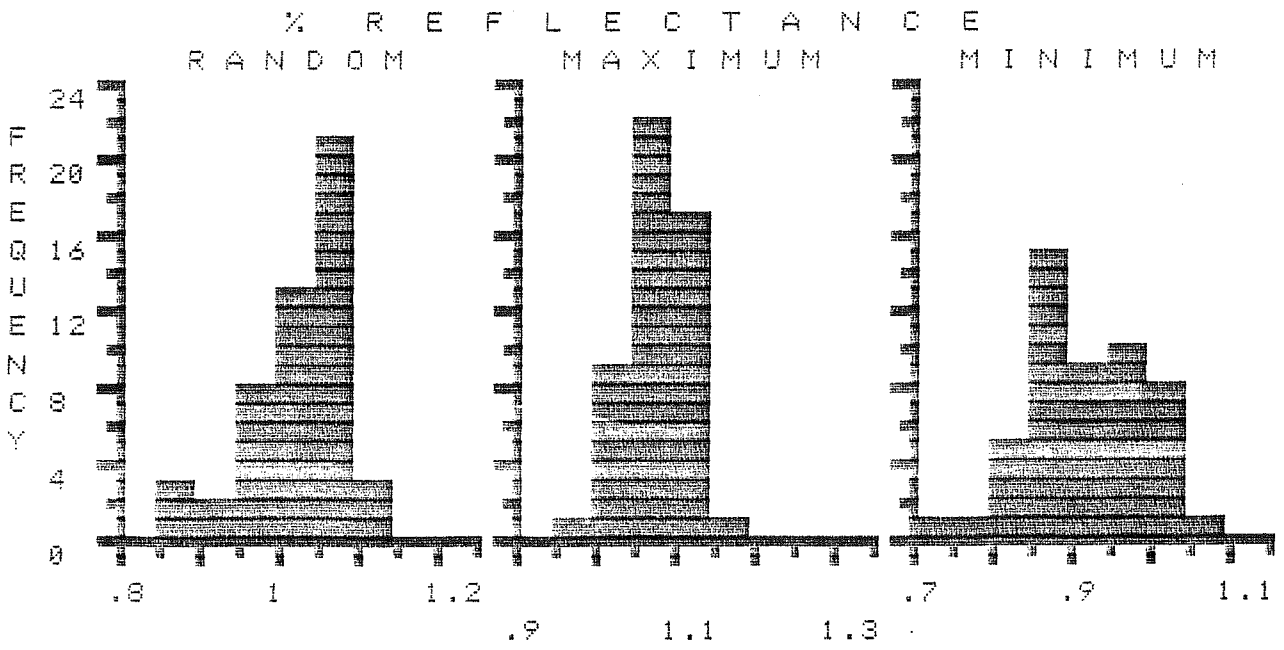
COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	.85	1.02	.87	1.05	1.03	1.00	.98	1.04	1.07	.98
1	1.11	1.06	1.04	1.03	1.04	1.12	1.08	1.04	1.07	1.05
2	1.01	.93	1.09	1.02	1.07	1.12	.98	1.07	1.00	1.07
3	1.07	1.02	.87	.97	.99	1.06	.94	1.09	1.06	.97
4	.97	1.06	1.03	1.05	1.09	1.06	1.07	1.09	1.09	.99
MAX										
ROW	1.05	1.04	1.07	1.05	1.03	1.03	1.00	1.06	1.07	1.06
1	1.12	1.11	1.12	1.04	1.05	1.14	1.09	1.08	1.10	1.08
2	1.09	1.10	1.10	1.04	1.09	1.16	1.04	1.11	1.03	1.09
3	1.07	1.03	1.05	1.08	.99	1.06	1.12	1.09	1.11	1.05
4	1.10	1.11	1.13	1.11	1.09	1.09	1.07	1.10	1.10	1.14
MIN										
ROW	.85	.89	.86	.86	.85	.95	.87	.99	1.01	.96
1	1.06	.88	1.03	1.00	.85	.87	.83	.97	.72	.84
2	.93	.92	.85	.97	.92	1.00	.84	.90	.96	.98
3	.88	.84	.87	.89	.85	.83	.92	.92	1.02	.85
4	.90	.96	.99	1.01	.96	.91	.76	1.04	1.04	.91

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	1.03	.06	.85	1.12	51.43
MAX >	1.08	.04	.99	1.16	53.93
MIN >	.92	.07	.72	1.06	45.76

V-TYPES FREQUENCY (PERCENT)

	V 7	V 8	V 9	V 10	V 11
RND >		6 %	20 %	68 %	6 %
MAX >			2 %	62 %	36 %
MIN >	4 %	40 %	38 %	18 %	



FILE >> PH1377 DESCRIPTION FOLLOWS :
INT. >6090'-6100', BRADELLE L-49, AMV. NOV-10-86

COL>	1	2	3	4	5	6	7	8	9	0
RND										
ROW	1.04	1.14	1.04	.97	1.13	.94	1.01	.81	1.06	1.00
1	.95	1.02	.98	.98	.96	1.09	1.17	.93	.86	1.09
2	.98	1.20	1.01	1.13	.82	.91	1.05	1.13	1.08	.99
3	1.00	.98	1.04	.99	.98	.99	1.02	.93	.87	1.04
4	1.08	.99	1.19	1.02	1.05	1.01	1.06	1.04	.96	.90
MAX										
ROW	1.08	1.14	1.18	.98	1.13	1.05	1.07	.99	1.12	1.04
1	1.14	1.03	1.08	1.01	1.10	1.09	1.20	1.04	1.01	1.09
2	1.02	1.23	1.01	1.17	.99	1.04	1.06	1.13	1.12	.99
3	1.00	1.07	1.07	1.00	.98	1.02	1.02	1.07	.91	1.08
4	1.08	1.07	1.20	1.08	1.07	1.03	1.16	1.11	.97	1.03
MIN										
ROW	.84	.94	1.04	.96	1.08	.91	.94	.80	1.05	.89
1	.89	.93	.92	.89	.87	.89	1.16	.91	.84	.99
2	.88	1.12	.80	.98	.79	.87	.96	.96	1.00	.86
3	.91	.94	1.04	.94	.93	.86	.96	.92	.81	1.04
4	.94	.92	1.12	1.00	.84	.90	.94	.98	.83	.87

STATISTICS BASED ON 50 POINTS.

	MEAN	STAND.DEV.	MIN	MAX	SUM
RND >	1.01	.09	.81	1.20	50.61
MAX >	1.07	.07	.91	1.23	53.35
MIN >	.93	.09	.79	1.16	46.65

V-TYPES FREQUENCY (PERCENT)

	V 7	V 8	V 9	V 10	V 11	V 12
RND >		8 %	36 %	42 %	12 %	2 %
MAX >			14 %	58 %	22 %	6 %
MIN >	2 %	34 %	44 %	14 %	6 %