



Official Newsletter of the Southern Ontario Glider Group

TASK



Affiliated to the Model Aeronautics Association of Canada

OFFICIAL NEWSLETTER - SEPTEMBER, 1991

Vol. 7 - #5

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The Newsletter is published bi-monthly.

Any material for inclusion should be sent to:-

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Dundas, Ontario
L9H 4L1



For centuries, the eagle has been recognized as a symbol of great power and endurance - a source of inspiration for writers and artists alike. In many countries of the world the image of the eagle has been incorporated into national flags and emblems, heraldic devices, and appears on many of the worlds' postage stamps. It is the single most recognized bird in the world, with the possible exception of the robin, according to naturalists, and the symbol of predatory power and permanence in a hundred folk tales.

Now listed as an endangered species, these magnificent birds are currently the object of a world-wide effort aimed at the re-establishment of the eagle population in many countries; raised in captivity, the birds are reared until they reach maturity, when they are released into the wild, where, it is hoped, they will increase and multiply.

Tipping the scales at an average of 12 lbs. (for an adult bird), eagles are among the largest birds on our planet. Of this weight the wings, including the feathers will account for about 2 lbs. (900gm); a female bald eagle with a span of 8 feet will have a wing loading of up to 25 ozs. per sq. ft! (compare that with the loading of a standard class sailplane - Ed)

The whole skeleton (airframe) will weigh little more than 8 ozs. (272 gm). Many of the bones, as in other large birds, are hollow, with small internal braces at points of structural stress, in order to preserve the lightness, strength and rigidity necessary for the eagle to fly and hunt; eagles are capable of carrying off victims up to the size of a small sheep (lamb) - there is no foundation in fact to the old myth of them snatching away human beings, however small.

The feathers, 7,000 of them in an adult bird, are of keratin, the same stuff as your finger nails - thus they are very strong and flexible. Hooked together by tiny hooks called barbules, they provide covering for the bird, forming a strong flexible sheath, which allows for the feathers to overlap and leave lots of air spaces in between the feathers. Pound for pound, the wings of an eagle are stronger and much more efficient than those of an airplane.

The broad wings are deployed fully for soaring flight, and the feathers are spread out into a more acute curve for the purpose of slowing down and landing. The downward deflection of the tail performs the function of flaps or airbrakes, and the tip feathers can be used as either ailerons or spoilers - the 10 primaries on each wing tip being the main factor in tip stability.

The hawks (turkey vultures, chicken hawks or whatever) we see around the field are close family members of eagles and are every bit as efficient in their soaring capabilities, so next time you are at the field study the flight of the hawk - notice that he, also, has to

Drift with the lift!

F.J.F.

CONTEST RESULTSMAY 5th. 1991 - C.S.S. DAY

		<u>Points</u>
<u>EXPERT:</u>	1. Stan SHAW	1151
	2. Norm KLEBERT	1100
	3. Kurt FRITZ	1082
<u>SPORTSMAN:</u>	1. Ed PLOWES	1092
	2. B. MOAR	1083
	3. Trevor WALKER	896

JULY 28th. - CLUB DAY

<u>EXPERT:</u>	1. B. MOAR	1617
	2. N. KLEBERT	1560
	3. W. WOODWARD	1328
<u>SPORTSMAN:</u>	1. S. CRHA	942
	2. J. BALTAZA	751
	3. C. RADER	656

AUGUST 18th. - NOVATHON

<u>EXPERT:</u>	1. B. MOAR	1280
	2. G. FRITZ	1244
	3. K. FRITZ	1169
<u>SPORTSMAN:</u>	1. Louis KLEIMAN	1347
	2. Peter ASHTON	953
	3. C. RADER	878
<u>2M CONTEST:</u>	1. D. GUTHRIE (Fresh from 3rd. place at Montreal)	
	2. Ed PLOWES	
	3. No 3rd. position (small entry)	

SEPTEMBER 1st. - BIG BIRD BASH

<u>EXPERT:</u>	1. J. NUNN	3237
	2. B. MOAR	2854
	3. J. MCMILLAN	2752
<u>SPORTSMAN:</u>	1. Peter ASHTON	1754

A WINNER ISN'T AS AFRAID OF LOSING AS A LOSER IS SECRETLY AFRAID OF WINNING !!!

THREE NEW AIRFOILS DESIGNED FOR
SLOPE SOARING.

by Michael SELIG

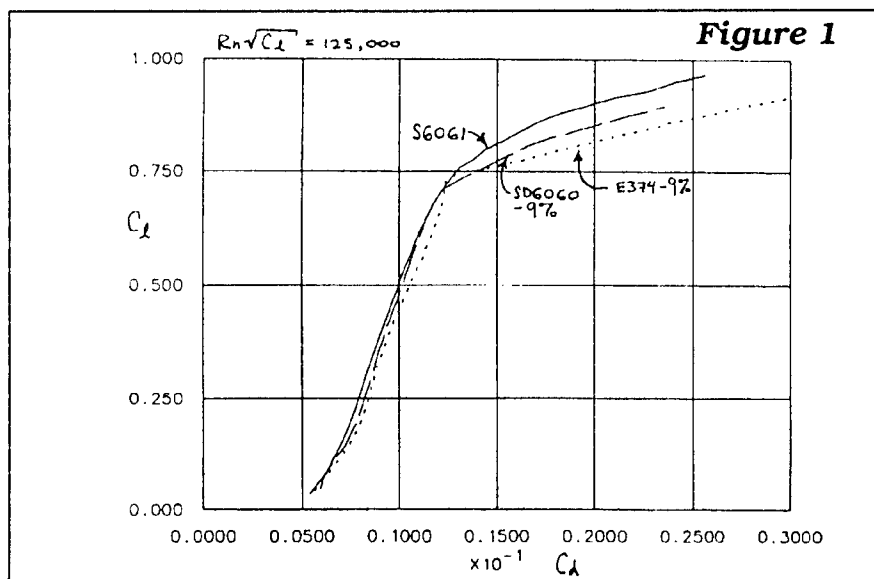
At the request of several people I met this past May at the TRI-CITIES-SCALE FUN FLY, I have designed three new slope soaring airfoils which are spin-offs from the SD 6060.

It is common to find sailplanes with airfoil names like "Modified E205", "E374-9%", or "Thinned E374". Certainly any slight modification to the original airfoil will not devastate performance, but the modified airfoil will no longer retain all of the favorable characteristics of the original airfoil. A typical modification would be to scale all of the "Y" coordinates by some fraction in order to reduce thickness. This simple scaling does not "operate" properly on the airfoil velocity distribution, which itself is derived from the boundary-layer considerations in the airfoil design process. If a particular airfoil thickness is desired, this requirement is best achieved during initial design in order to maintain boundary-layer characteristics while simultaneously matching the thickness specification.

The S6061 is a 9% airfoil designed along the lines of the 10% thick SD6060. The new airfoil is compared in Fig. 1. with both SD 6060-9% and E 374-9%. The drag predictions were made using THE DRELA X FOIL code which is the incompressible version of the "ISES" code used in the design of the "SD" airfoils presented in "Soartech #8". Using the Princeton airfoil data base, it was found that the "X FOIL" code does predict low Reynolds number airfoil performance fairly accurately, and it can be used to compare airfoil designs.

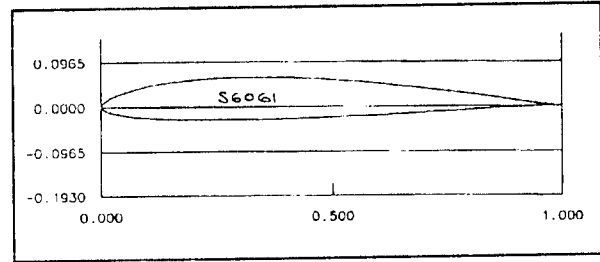
The comparison is made, not at a constant Reynolds number R_n as is typically done, but at $R_n \sqrt{C_L} = 125,000$. Thus the Reynolds number varies like $1/\sqrt{C_L}$, so as C_L increases, the R_n increases, and vice-versa. It can be shown that such a variation in R_n follows that of aircraft in flight. In this case, the C_d plotted corresponds to that of the aircraft in flight. Since the constant is 125,000, the aircraft flying at $C_L = 1.0$ would have $R_n = 125,000$, which is typical of slope-soaring aircraft.

In Fig. 1 it will be seen that the 9% S6061 has a broader lift range than the E 374-9%, and that the drag is practically lower everywhere. The improvement over the S 6060-9% is less dramatic, but it still illustrates the point that simple scaling of an airfoil produces an inferior airfoil.



Three New Airfoils Designed for Slope-Soaring - Contd.

S6061 9%		0.00135	0.00364
1.00000	0.00000	0.00030	-0.00161
0.99674	0.00022	0.00507	-0.00618
0.98707	0.00100	0.01525	-0.01080
0.97131	0.00255	0.03050	-0.01506
0.94987	0.00497	0.05071	-0.01880
0.92321	0.00829	0.07572	-0.02193
0.89186	0.01244	0.10534	-0.02443
0.85637	0.01728	0.13931	-0.02629
0.81726	0.02264	0.17729	-0.02754
0.77507	0.02832	0.21892	-0.02821
0.73032	0.03410	0.26374	-0.02836
0.68352	0.03977	0.31128	-0.02804
0.63517	0.04512	0.36098	-0.02729
0.58576	0.05001	0.41230	-0.02615
0.53580	0.05427	0.46466	-0.02466
0.48580	0.05776	0.51746	-0.02284
0.43623	0.06032	0.57012	-0.02070
0.38750	0.06185	0.62210	-0.01826
0.34000	0.06231	0.67288	-0.01560
0.29417	0.06175	0.72194	-0.01280
0.25047	0.06018	0.76876	-0.01002
0.20931	0.05761	0.81279	-0.00739
0.17107	0.05408	0.85345	-0.00507
0.13608	0.04961	0.89016	-0.00317
0.10463	0.04431	0.92237	-0.00173
0.07697	0.03826	0.94954	-0.00076
0.05331	0.03161	0.97124	-0.00020
0.03379	0.02455	0.98708	0.00002
0.01856	0.01732	0.99674	0.00003
0.00771	0.01020	1.00000	0.00000

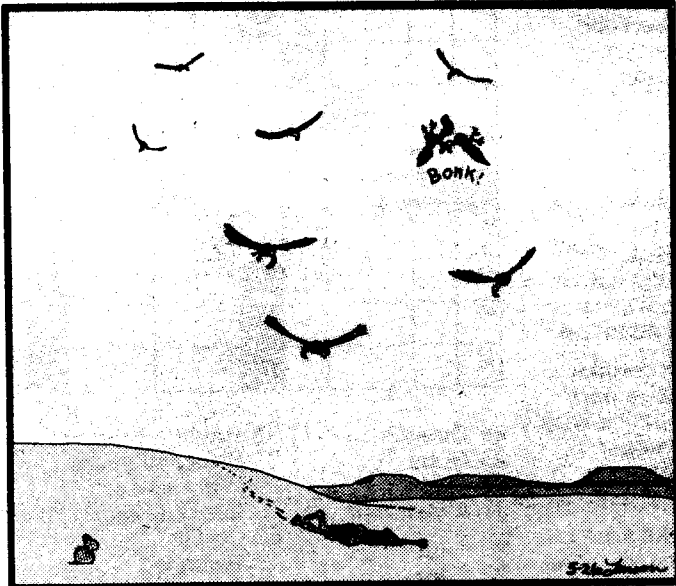


Here are the coordinates for Michael Selig's S6060.

(This article came to me via Stan CRHA - I thought it was about time I used it. Originally from "Soaring Digest" Editor - Jay Slates.)

Ed.

FROM BILL MOAK - COURTESY "SPECTATOR"



The perils of improper circling



M Y S T E R Y ! ! !

THE CASE OF THE PESKY POWER PLANES.

(A "Perry Ashton" Puzzler)

I frequently fly my sailplanes at the nearby K/W Flying Dutchman field; ever since I began using an electric winch to launch my sailplanes I've noticed that, even though I go to great lengths to set up the winch line directly into the wind, a peculiar phenomenon occurs - any power models using the field at that time, immediately begin taking off and landing at right angles to the winch line; a state of affairs which persists until the winch is removed. (Even Paul Drake cannot understand why this happens).

I submit that the friction of the monofilament nylon dragging through the grass must generate some form of magnetic field in the same way as hydro lines are supposed to - could this possibly be over-riding the radio commands given by the power pilots?

Della Street, after some research, assured me that no matter how fast the winch motor runs, the frequency would be all wrong to affect the signals - maybe, she suggests, it's the fliers who are convinced that the wind has changed direction.

Whatever the cause may be it appears to come across like a "Death Wish" for the instant re-kitting of power planes.

That's the problem - now it's back to the padded workshop!

Pete (Perry) Ashton

Stay tuned to this station for more Perry Ashton Mysteries.

FOR SALE:

RON TAYLOR - C.O.G.G. has for sale the following:-

6 ch W/E Expert - nicads - 4 servos Gold sticker.

and

Powerax Merlin - 6 servos - 1200 ma batteries

Both on 72 MHZ

CALL (416) 751-2525

S.O.G.G. MEMBERSHIP RADIO FREQUENCIES

RSC August 2, 1991

NAME	ADDRESS	PHONE NO.	FREQ	CH	1991 (*)
Armstrong, Keith	219 Governor's Road, Dundas L9H 3J7	(416)627-4011	72.190	20	*
Ashton, Peter	200 Edwin St., Kitchener N2H 4P2	(519)576-6750	72.590	40	
Ashton, Peter	200 Edwin St., Kitchener N2H 4P2	(519)576-6750	72.630	42	*
Ashton, Peter	200 Edwin St., Kitchener N2H 4P2	(519)576-6750	72.670	44	*
Aves, Edward	113 Victoria Ave., Cambridge N1S 1X8	(519)622-1964	72.550	38	?
Baltaza, Joseph	19 Gaitwin St., Brantford N3P 1A9	(519)756-1449	72.430	32	
Baltaza, Joseph	19 Gaitwin St., Brantford N3P 1A9	(519)756-1449	72.590	40	*
Baltaza, Victor	19 Gaitwin St., Brantford N3P 1A9	(519)756-1449	72.870	54	
Bewley, William	147 Glendale Ave. N., Hamilton L8L 7J9	(416)544-7548	53.300	--	
Bewley, William	147 Glendale Ave. N., Hamilton L8L 7J9	(416)544-7548	72.350	28	*
Bewley, William	147 Glendale Ave. N., Hamilton L8L 7J9	(416)544-7548	72.470	34	*
Bewley, William	147 Glendale Ave. N., Hamilton L8L 7J9	(416)544-7548	72.550	38	
Bewley, William	147 Glendale Ave. N., Hamilton L8L 7J9	(416)544-7548	72.590	40	
Campbell, Robert	25 Beaucourt Road, Hamilton L8S 2R1	(416)525-1675	72.270	24	*
Campbell, Robert	25 Beaucourt Road, Hamilton L8S 2R1	(416)525-1675	72.510	36	*
Campbell, Robert	25 Beaucourt Road, Hamilton L8S 2R1	(416)525-1675	72.750	48	*
Crawford, John	Box #1, Hanover L4N 3C3	(519)364-2513	72.750	48	*
Crawford, John	Box #1, Hanover L4N 3C3	(519)364-2513	72.750	48	*
Crawford, John	Box #1, Hanover L4N 3C3	(519)364-2513	72.750	48	*
Crawford, John	Box #1, Hanover L4N 3C3	(519)364-2513	72.750	48	*
Crawford, John	Box #1, Hanover L4N 3C3	(519)364-2513	72.750	48	*
Crha, Stan	#1207-2185 Sheridan Pk. Dr., Mississauga L5K 1C7	(416)822-1934	72.270	24	*
Crha, Stan	#1207-2185 Sheridan Pk. Dr., Mississauga L5K 1C7	(416)822-1934	72.470	34	*
Cziraki, Roger	161 W. 24 th St., Hamilton L9C 4W5	(416)388-7380	72.910	56	
Dyer, Cyril	#518-760 Mohawk Road W, Hamilton L9C 6P6	(416)383-8107	72.330	27	*
Dyer, Cyril	#518-760 Mohawk Road W, Hamilton L9C 6P6	(416)383-8107	27.670	44	*
Dyer, Cyril	#518-760 Mohawk Road W, Hamilton L9C 6P6	(416)383-8107	72.750	48	
Freeman, Fred	#17-11 Colmar Place, Dundas L9H4L1	(416)627-9090	72.470	34	*
Freeman, Fred	#17-11 Colmar Place, Dundas L9H4L1	(416)627-9090	72.710	46	
Fritz, Gerald	19 Pepperwood Cres., Kitchener N2A 2R4	(519)893-7558	72.320	--	
Fritz, Kurt	Rock Chapel Rd. RR #2 Dundas L9H 5E2	(416)689-4171	72.160	--	
Fritz, Kurt	Rock Chapel Rd. RR #2 Dundas L9H 5E2	(416)689-4171	72.240	--	
Fritz, Kurt	Rock Chapel Rd. RR #2 Dundas L9H 5E2	(416)689-4171	72.270	24	*
Fritz, Kurt	Rock Chapel Rd. RR #2 Dundas L9H 5E2	(416)689-4171	72.670	44	*
Fritz, Kurt	Rock Chapel Rd. RR #2 Dundas L9H 5E2	(416)689-4171	72.960	--	
Fund, Albert	73 Beech St., Cambridge N3C 1X6	(519)658-9495	72.910	56	?
Fund, Albert	73 Beech St., Cambridge N3C 1X6	(519)658-9495	72.910	56	?
Guthrie, Don	RR #4, Belwood N0B 1J0	(519)843-4537			
Hilborn, Allan	175 Hewat St., Cambridge N3H 4H2	(519)653-0049	72.110	16	
Hilborn, Allan	175 Hewat St., Cambridge N3H 4H2	(519)653-0049	72.960	--	
Hildersheim, Werner	4 Foster Cres., Cambridge N1R 4R1	*(519)673-2663			
Klebert, Jason	1444 Upper Ottawa St., Hamilton L8W 1N3	(416)385-3881	72.800	--	
Klebert, Norman	428 Paling Ave. N., Hamilton L8H 5K4	(416)547-2365	72.160	--	
Klebert, Norman	428 Paling Ave. N., Hamilton L8H 5K4	(416)547-2365	72.390	30	*
Klebert, Norman	428 Paling Ave. N., Hamilton L8H 5K4	(416)547-2365	72.430	32	*
Klebert, Werner	59 Byron Ave., Stoney Creek L8G 3X4	(416)578-9431	72.080	--	
Klebert, Werner	59 Byron Ave., Stoney Creek L8G 3X4	(416)578-9431	72.150	18	*
Klebert, Werner	59 Byron Ave., Stoney Creek L8G 3X4	(416)578-9431	72.320	--	
Klebert, Werner	59 Byron Ave., Stoney Creek L8G 3X4	(416)578-9431	72.790	50	*
Linghorne, Jack	55 Anglesey Blvd., Islington M9A 3B8	(416)233-0230	72.030	12	
Linghorne, Jack	55 Anglesey Blvd., Islington M9A 3B8	(416)233-0230	72.310	26	*
Linghorne, Jack	55 Anglesey Blvd., Islington M9A 3B8	(416)233-0230	72.630	42	*
Linghorne, Jack	55 Anglesey Blvd., Islington M9A 3B8	(416)233-0230	72.910	56	*
Marchesan, Bruno	16 Thorncrest Rd., Etobicoke M9A 1S1	(416)234-9875	72.190	20	*
Marchesan, Bruno	16 Thorncrest Rd., Etobicoke M9A 1S1	(416)234-9875	72.630	42	*
Milinkovic, Miro	11 Cranleigh Crt., Islington M9A 3Y2	(416)231-7745	72.400	--	

S.O.G.G. MEMBERSHIP RADIO FREQUENCIES

August 2, 1991

NAME	ADDRESS	PHONE NO.	FREQ	CH	1991 (*)
Moar, William	944 Concession #6 W. Millgrove LOR 1V0	(416)659-1053	72.470	34	*
Moar, William	944 Concession #6 W. Millgrove LOR 1V0	(416)659-1053	72.630	42	
Moar, William	944 Concession #6 W. Millgrove LOR 1V0	(416)659-1053	72.960	--	
Packham, Craig	RR #1 Caister Centre LOR 1E0	(416)957-3672	53.100	--	
Packham, Craig	RR #1 Caister Centre LOR 1E0	(416)957-3672	72.760	--	
Packham, Jason	RR #1 Caister Centre LOR 1E0	(416)957-3672	72.720	--	
Packham, Jason	RR #1 Caister Centre LOR 1E0	(416)957-3672	72.840	--	
Raider, Charles	4533 Ivy Gardens Cres., Beamsville LOR 1B5	(416)563-4108	72.150	18	*
Raider, Charles	4533 Ivy Gardens Cres., Beamsville LOR 1B5	(416)563-4108	72.240	--	
Raider, Charles	4533 Ivy Gardens Cres., Beamsville LOR 1B5	(416)563-4108	72.400	--	
Riedlinger, Paul	529 Rosemeadow Cres., Waterloo N2T 1Z9	(519)884-2898	72.030	12	
Riedlinger, Paul	529 Rosemeadow Cres., Waterloo N2T 1Z9	(519)884-2898	72.550	38	*
Rodgers, William	500 Orkney Rd. RR #1 Troy LOR 2B0	(416)628-8907	72.550	38	*
Sarbiou, Julian	78 Flushing Ave., Woodbridge L4L 8H9	(416)856-1858	72.190	20	*
Sarbiou, Julian	78 Flushing Ave., Woodbridge L4L 8H9	(416)856-1858	72.310	26	*
Schmidt, Karl	122 Marshall St., Waterloo N2J 2T7	(519)885-4141	72.190	20	*
Schmidt, Karl	122 Marshall St., Waterloo N2J 2T7	(519)885-4141	72.550	38	
Schmidt, Karl	122 Marshall St., Waterloo N2J 2T7	(519)885-4141	72.590	40	
Shaw, Stan	16 Aylesbury Rd. Islington M9A 2M5	*(416)231-7050	72.590	40	?
Shaw, Stan	16 Aylesbury Rd. Islington M9A 2M5	*(416)231-7050	72.710	46	?
Shaw, Stan	16 Aylesbury Rd. Islington M9A 2M5	*(416)231-7050	72.790	50	?
Skerrit, Howard	114 Lowell St. N., Cambridge N1R 5E5	(519)623-3175	72.110	16	
Skerrit, Howard	114 Lowell St. N., Cambridge N1R 5E5	(519)623-3175	72.230	22	
Skerrit, Howard	114 Lowell St. N., Cambridge N1R 5E5	(519)623-3175	72.710	46	
Skerrit, Kevin	65 Speedvale Ave. W., Guelph N1H 1J7	(519)824-7076	72.270	24	
Skerrit, Kevin	65 Speedvale Ave. W., Guelph N1H 1J7	(519)824-7076	72.710	46	
Skerrit, Kevin	65 Speedvale Ave. W., Guelph N1H 1J7	(519)824-7076	72.870	54	
Taylor, Peter	579 Clare Pl., Burlington L7L 4Z6	(416)333-9073	72.960	--	
Van Der Eyren, Gerry	56 32 nd St., Etobicoke M8W 3G4	(416)255-4517	72.190	20	*
Van Der Eyren, Gerry	56 32 nd St., Etobicoke M8W 3G4	(416)255-4517	72.590	40	*
Wallace, Bud	1060 Eastmount Ave., Mississauga L5E 1Z3	(416)274-3177	27.095	--	
Wallace, Bud	1060 Eastmount Ave., Mississauga L5E 1Z3	(416)274-3177	72.430	32	*
Wallace, Bud	1060 Eastmount Ave., Mississauga L5E 1Z3	(416)274-3177	72.670	44	*
Wallace, Bud	1060 Eastmount Ave., Mississauga L5E 1Z3	(416)274-3177	72.750	48	
Woodhouse, David	96 Division St., Guelph N1H 1R6	(519)821-4346	53.100		
Woodhouse, David	96 Division St., Guelph N1H 1R6	(519)821-4346	72.550	38	*
Woodhouse, David	96 Division St., Guelph N1H 1R6	(519)821-4346	72.590	40	*
Woodhouse, David	96 Division St., Guelph N1H 1R6	(519)821-4346	72.670	44	*
Woodward, William	520 Pine St., Cambridge N3H 2S6	(519)653-4251	72.240	--	
Woodward, William	520 Pine St., Cambridge N3H 2S6	(519)653-4251	72.350	28	?
Yates, Paul	96 Highman Ave., Cambridge N1R 3L7	(519)740-0122	72.550	38	

S.O.G.G. RADIO FREQUENCY SPECTRUM OCCUPANCY HISTOGRAM

August 3, 1991

FREQ.	CH	#	FREQ.	CH	#
27.095	--	█	72.510	36	█
53.100	--	█ █	72.530	37	
53.300	--	█	72.550	38	█ █ █ █ █ █
72.010	11		72.570	39	
72.030	12	█ █	72.590	40	█ █ █ █ █ █ █ █
72.050	13		72.610	41	
72.070	14		72.630	42	█ █ █ █
72.080	Br/Wh	█	72.650	43	
72.090	15		72.670	44	█ █ █ █ █
72.110	16	█ █	72.690	45	
72.130	17		72.710	46	█ █ █ █
72.150	18	█ █	72.720	Nil	█
72.160	Blu/Wh	█ █	72.730	47	
72.170	19		72.750	48	█ █ █ █ █ █ █ █ █ █
72.190	20	█ █	72.760	Nil	█ █ █ █ █
72.210	21		72.770	49	
72.230	22	█	72.790	50	█ █
72.240	Red/Wh	█ █	72.800	Nil	█ █
72.250	23		72.810	51	
72.270	24	█ █	72.830	52	█ █
72.290	25		72.840	Nil	█
72.310	26	█ █	72.850	53	
72.320	Pur/Wh	█ █	72.870	54	█ █
72.330	27	█	72.890	55	
72.350	28	█ █	72.910	56	█ █ █ █
72.370	29		72.930	57	
72.390	30	█	72.950	58	
72.400	Or/Wh	█ █	72.960	Yel/Wh	█ █ █ █
72.410	31		72.970	59	
72.430	32	█ █	72.990	60	
72.450	33				
72.470	34	█ █ █ █ █			
72.490	35				

Thanks and a tip of the hat to Rob Campbell for this Frequency List.

Ed.
