shown that gross weight can be a robust, rich performance index, being used as a figure-of-merit for numerical optimizations. This index has the advantage of being useful as an indication of conceptual design for the glider.

The prime advantages the program has over other optimizations for airplane (glider) design are that it:
1) includes airplane geometric parameters as independent design variables;
2) has a moderately extensive set of industry statistics for weight;
3) contains a fair representation of the drag aerodynamics;
4) generates stability and control derivatives for flight-quality analyses;
5) includes a model for the interference effects between wing and tail;
6) iterates non-linear force and moment equations to satisfy longitudinal trim requirements;
7) contains a set of equations of motion for both performance and flight quality analyses.

As a means of illustrating its use as a conceptual design tool, direct optimization is used to perform a sensitivity study on parameter variations for a variety of design constants and constraint functions. The optimal design in terms of aircraft geometry is shown to be sensitive to the design. Seeing the sensitivities about the parameters for the baseline configuration, the designer can make some initial decisions about potential changes at the preliminary design stage.

6. REFERENCES

1) Irving, F., 1990: "Boundaries for World Class Sailplanes", *Technical Soaring* Vol. XIII, No. 4.

2) Bennett, G., etc., 1981: "Pilot Evaluation of Sailplane Handling Qualities", OSTIV Publication XVI.

3) Marsden, D.J., 1981: "Sailplane Performance Estimation", OSTIV Publication XVI.

4) Boermans, L.M.M., 1981: "Development of Computer Program for Parametric Sailplane Performance Optimization", OSTIV Publication XVI.

5) Kovacs, J., 1981: "Evolution of High-Performance Sailplanes", OSTIV Publication XVI.

6) Zhao, Dongbiao, 1990: "Preliminary Design and Analysis of Light Canard Airplane and Numerical Analysis of Canard-Wing Interference", Masters Thesis, Nanjing Aeronautical Institute.

7) Roskam, J., 1982: "Airplane Flight Dynamics and Automatic Flight Controls", Published by the Author.

8) Roskam, J., 1985: "Airplane Design, Parts I - VI", Roskam Aviation & Engineering Corporation.

9) Hoak, D.E., 1975: "USAF Stability and Control Datcom", Flight Control Division, AFFDL.

10) Stender, W., 1969: "Sailplane Weight Estimation", OSTIV, 1969.

11) McLaughlin, M.D., 1977: "Calculation and Comparisons with an Ideal Minimum of Trimmed Drag for Conventional and Canard Configurations Having Various Levels of Static Stability", NASA TN-D-8391.

DESIGN AND WIND TUNNEL TESTS OF AN AIRFOIL FOR THE HORIZONTAL TAILPLANE OF A STANDARD CLASS GLIDER

In the above paper, by L.M.M. Boermans and F. Bennis, published in Volume 16, No. 2, the table of ordinates was incomplete. The complete table for this paper is as follows:

TABLE 1. Cordinates of DU86-137/25

100.000	0.000	44.559	6.790	.047	-.301	50.084	-6.582
99.871	.014	41.606	6.846	.294	-.696	53.040	-6.426
99492	.056	38.678	6.864	.764	-1.091	55.980	-6.228
98.880	.124	35.786	6.844	1.435	-1.502	58.894	-5.984
98.043	.219	32.941	6.788	2.290	-1.925	61.773	-5.691
96.988	.341	30.155	6.697	3.318	-2.352	64.612	-5.347
95.722	.488	27.439	6.571	4.516	-2.770	67.410	-4.950
94.254	.661	24.803	6.411	5.882	-3.181	70.167	-4.506
92.592	.860	22.256	6.217	7.410	-3.583	72.880	-4.019
90.745	1.084	19.809	5,992	9.093	-3.972	75.554	-3.500
88.721	1.332	17.471	5.735	10.924	-4.348	78.191	-2.970
86.531	1.605	15.249	5.448	12.894	-4.708	80.775	-2.457
84.183	1.902	13.152	5.132	14.994	-5.048	83.286	-1.981
81.686	2.223	11.186	4.791	17.216	-5.364	85.696	-1.553
79.037	2.571	9.359	4.425	19.552	-5.655	87.982	-1.179
76.229	2.984	7.677	4.039	21.944	5.918	90.121	-.862
73.352	3.541	6.146	3.636	24.533	-6.151	92.092	-.604
70.546	4.177	4.774	3.218	27.157	-6.351	93.875	-.398
67.796	4.723	3.565	2.788	29.857	-6.517	95.455	-.242
65.012	5.168	2.524	2.349	32.625	-6.646	96.821	-.128
62.179	5.555	1.656	1.904	35.450	-6.736	97.963	-.058
59.305	5.881	.964	1.457	38.323	-6.788	98.855	-.030
56.394	6.154	.453	1.015	41.232	-6.799	99.488	-.017
53.454	6.379	.138	.578	44.169	6.768	99.870	-.004
50.494	6.558	.007	.131	47.124	6.695	100.000	0.000
47.526	6.695						