

Aviation is a Science Requiring Much Study

One of the World's Most Daring Fliers Says You Are Never Safe in the Air Until You Are Able to Perform All The Thrillers

(By Lawrence B. Sperry).

On the ground that aviators are assuming unnecessary risks, much has been said and written against what is termed "stunt" flying. This usually consists of loops, stalls, tail slides, up side down flying and tail spins. It is not generally realized that these manoeuvres on the part of the pilot make for safety in flying, but in this country at least such manoeuvres are generally carried out for that definite purpose.

The object of this kind of flying is to teach the pilot to recover quickly from positions that would be dangerous if maintained for any length of time. How many pilots could have saved themselves from tail spins and their disastrous consequences had they known by actual experience how to recover quickly?

Some of the best pilots in this country are opposed to "stunting" because they fear to endanger their reputations as safe, sane, careful pilots. Abroad the reverse is true. The man who does not put his "nose" through, as they say, is not fit to fly a machine at all. Instead of "pussy-footing" around in a machine in a closed field, what we need in this country is "pep" in flying. The pilot should have the confidence that goes with the handling of a machine in all positions, and this can be gained only through actual experience. By practising beforehand all possible manoeuvres, a man does away with the danger of having the paralyzing and numbing effect of surprise added to a situation which of its requires all his faculties to effect a recovery. Of course these operations should be attempted close to the ground even by the most experienced of pilots.

If a pilot contemplates going through these manoeuvres he should first make sure of the strength and stability of his machine. Besides testing the lateral and longitudinal stability it is essential to be certain that the airplane is spirally stable. This can be ascertained by testing the weathercock stability of the machine in the following way: With the machine flying level let the pilot try an unbanked turn by moving the rudder and at the same time holding the machine level with the ailerons. Now let him straighten the rudder and ailerons, and see if the machine comes out of the turn a tangent as a properly proportioned machine should. If the machine tends to go into sharper turns of its own accord during this manoeuvre there is too much vertical surface forward of the center of pressure, which is acted on by the skidding of the machine, forcing the nose around. This lack of weather cock stability is the primary factor in tail

spins. Gradually sharper and sharper unbanked turns should be tried until the pilot is certain that the machine has no tendency to spin.

With respect to balance the writer advocates a machine that is tail heavy, provided the machine has a slight dihedral angle in front to prevent long side slides. A slightly tail heavy machine will give a pilot a maximum control in a downward direction on the tail and will be helpful in looping as well as on tail slides. Furthermore, the slightly-tail heavy machine is less liable to uncontrollable nose dives. The old fear of the tail heavy machine must be forgotten. If a machine is tail heavy it will simply stall until the direction of air flow relative to the machine acts on the tail at a great enough angle to make the stabilizer plane or fixed surface support the tail, whereas if the machine is too nose heavy there is nothing to keep it from going straight over to a vertical dive. Before starting it is all important to be sure that the balance is such that the machine can be readily brought up from a nose dive.

A strong safety strap is as essential as a strong and stable machine. While it is often under no great strain these times when the strap is under very great tension. It is advisable that the pilot be strapped very tightly to the seat, otherwise he is likely to dangle six or eight inches away from it at certain times. This may be avoided as they break away from the controls. A simple strap about the waist is sufficient if it is tight. Straps with quick break buckles should be avoided as they may be accidentally opened. A strap with a buckle is safe and a strap with a huge joint and pin is absolutely reliable.

TUTELA WOMEN'S INSTITUTE

The February meeting of the Tutela Women's Institute was held at the home of Mrs. John Houlding. In the absence of the president, Mrs. Fitzgerald occupied the chair. Mrs. Henry's paper on "The Problem of the Girl on the Farm," and "Household Economy as applied to diet and health," written by Mrs. Moyle, were very interesting to the members and showed careful preparation. The musical part of the program, which delighted all was supplied by Mrs. A. Walsh and Mrs. W. Brooks. A vote of thanks was tendered all those who had kindly taken part and the meeting closed all having a pleasant and profitable afternoon.

The hostess served dainty refreshments. The next meeting will be held at the home of Mrs. Minner.

J. W. Weart, of South Vancouver, has been selected as Speaker of the new R.C. Legislature.

RIDING THE SEA HORSE—LATEST FAD AT PALM BEACH



Miss Ethel Campbell, a Philadelphia society girl, one of the first to ride the vicious sea horse at Palm Beach. It requires quite a little skill to be able to hold the horse steady and to keep it from overturning when caught in a "zude" breaker that has no qualms about overturning you.

Pa Knows What He Wants, No Matter What He Says



GIRL WORKERS RIDE OLD DOBBIN NOW



The caption lines for this London Daily Mirror picture say the sleigh is more generally in use this year in many parts of England than ever before. The farm help in the photo are on their way home from a hard day's work.

SOCCER GAMES IN OLD COUNTRY

Southerners Still Have Big Lead, Though West Ham is Beaten

RANGERS CLIMB

Celtics Beat Greenock Morton and Retain First Place in Scottish

Celtic, by defeating Greenock Morton in an "all-in" game at Cappielow Park ousted first place in the Scottish League table from the Rangers. Celtic started the game only a point ahead of Morton, with the Rangers a good third, and the thousands of enthusiasts who assembled in the hopes of witnessing one of the hardest soccer games of the season were not disappointed. Rangers gave a "rocky" exhibition against Ayr United at Hampden Park, and came out winners by scoring the solitary goal of the game, but the brace of points places them only one point behind Celtic and two points below Morton. After their glorious triumph of a week ago over Rangers, the Aberdeen players were expected to do big things with hearts, but the Tynecastles supporters had the privilege of seeing the "Loons" being kept in their former place, which, when their form of this season is taken into account, is down with the aspirations of St. Mirren. Dundee added to recent scalps on the Dens Park belt that of Patrick Thistle, so that things are beginning to look up Tayside way.

The Huddersfield team is giving Birmingham some trouble to maintain third place. The unexpected happened at Brentford, when the local team accounted for the West Ham United, who held a commanding position over the clubs in the London combination, the Brentford team being far down the scale. Millwall Athletic, Chelsea and Tottenham Hotspurs each recorded wins, so that there is no change on last week's positions in the league record of deeds accomplished. Owing to the frost, the Northern Union games were postponed on Saturday.

Appended are the results:—

The Scottish League
Greenock Morton 0, Celtic 1.
Rangers 1, Ayr United 0.
St. Mirren 2, Hamilton A. 2.
Third Lanark 5, Falkirk 4.
Dundee 5, Patrick Thistle 1.
Hearts 2, Aberdeen 0.
Kilmarnock 4, Queen's Park 2.
Motherwell 3, Dumbarton 0.

Raith Rovers 0, Airdrieonians 2.

Clyde 1, Hibernian 2.

The English Combination

Midland Section
Barnsley 0, Notts Forest 1.
Bradford City 1, Bradford 0.
Chesterfield 1, Rotherham 2.
Grimsby Town 1, Lincoln City 0.
Leeds City 1, Hull City 1.
Leicester Fosse 3, Sheffield Wed. 0.
Notts County 2, Huddersfield 1.
Sheffield United 0, Birmingham 0.
Lancashire Section
Bolton Wanderers 1, Rochdale 3.
Burnley 7, Southport 0.
Burslem Port Vale 1, Everton 1.
Liverpool 4, Bury 0.
Manchester United 4, Stoke 3.
Oldham 2, Manchester City 1.
Preston North End 0, Blackburn Rovers 2.
London Combination
Arsenal 3, Fulham 2.
Brentford 1, West Ham 0.
Chelsea 3, Queen's Park 0.
Crystal Palace 0, Tottenham Hot. 1.
Luton 2, Clapton 2.
Portsmouth 3, Watford 0.
Southampton 1, Millwall 3.

LIGHTER CARS THE AIM OF ALL MANUFACTURERS

Makers Strive for More Strength with Less Weight; Keynote is Simplicity

Light weight is one of the earmarks of that finished simplicity which John Timbs, historian of American invention, says is the ultimate stage in mechanical development. Crude directness at the start leads up to the finished simplicity, which is forced to give way eventually to the final, simple design which makes the complex stage of development seem absurd.

The automobile industry as a whole has passed through the first stage and is now almost through the second. Complexity of design has seen its height in the "eights" and "twelves." It seems hardly probable that it will ever be carried further, at least in the number of cylinders. The multi-cylinder engines are now enjoying greatest popularity, there has been a steady and gradual intensifying undertone, the dominant note of which is less weight.

is continued on this point by even a cursory examination of the printed matter issued and the advertising done by many manufacturers.

We read of aluminum motors, "lightness with great strength," unequalled lightness for strength, "light sixes," and so on, and the theme is invariably weight reduction.

This movement has its parallel in other lines of vehicular transportation. Seventy-five to 100 years ago the first steps were taken to lighten horse-drawn vehicles, the new design taking form in the one-horse chaise. To-day it is almost a maxim that the weight of a vehicle plus that of the horse drawing it shall only total about twice the weight of the passenger load the vehicle is built to carry. In these lighter vehicles it is possible to make the springs much more flexible than where heavy bodies and axles were

are fast replacing the latter and with much better results.

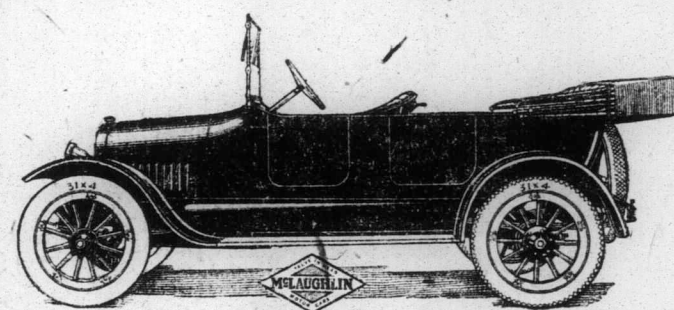
If the great railroads of the country reduced the weight of locomotives and cars they could save millions in the yearly rail bill and the depreciation and upkeep of rolling stock and roadbed would be correspondingly less.

So it is in the automobile trade that the light car will ultimately be looked to for the kind of service that is demanded by comfort, safety and economy. The history of a number of automobiles has for years been built around this condition. When it came to a question of greater ability they followed the dictates of the carriage builder by reducing the weight of the vehicle rather than increasing the size of the "horse."

The crudely simple car of 1900 was not especially costly to run, but neither was it comfortable. Ever since that time the manufacturers have been vying with one another in trying to build comfort into their cars, but in this process weight was practically ignored, with the result that weight and power have continually been added to carry weight. The result is a certain measure of comfort obtained at high cost. The dawn era of finished simplicity will bring both comfort and economy.

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Model D35

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Made in Canada—By Canadian Workmen—For the Canadian Public

GOOD AS THE WHEAT

In the estimation of the Canadian public McLaughlin Valve-in-Head motor cars hold equal rank with wheat as a staple product.

Judged by the insistent and ever growing demand for McLaughlin cars and by the enthusiastic acclaim with which each year the new models are received, it is more and more apparent that the people look upon McLaughlin motor cars as an actual economic necessity of life.

Buyers everywhere insist upon McLaughlins. Motorists have learned that there is no other car with a motor like the noiseless, powerful Valve-in-Head McLaughlin motor. Owners know that no other car has greater durability and serviceability than is built into every part of the McLaughlin chassis—frame, axles, steering gear, transmission. People everywhere admire the unsurpassed beauty in every line of McLaughlin bodies.

Back of the great demand for McLaughlin cars is confidence in the proven correctness of McLaughlin design and the permanence of the great McLaughlin organization.

PRICES: Six Cylinder Cars

Model D 62 Light Roadster ... \$1165.00
Model D 63 Light Touring ... \$1195.00
Model D 44 Medium Roadster ... \$1890.00
Model D 45 Medium Touring ... \$1450.00
Model D 44 Special Roadster ... \$1490.00
Model D 45 Special Touring ... \$1550.00
Model D 47 Sedan ... \$2350.00
Model F 49 Seven Passenger ... \$1900.00

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