



1932 Chrysler's
Experimental Triphon



1934
Chrysler
CX Sedan



1934
DeSoto
SE Coupe



1935
Chrysler
C-2 Sedan



1935
DeSoto
SG Coupe



1936
Chrysler
C-10 Sedan



1936
DeSoto
S-2 Coupe



1937
Chrysler
C-17 Sedan



1939
Dodge
Tanker

A brief history of the Airflow

by Jim Lightfoot

An often-told story involving a flock of geese is credited with the beginning of the study of aerodynamics that resulted in the development of the Airflow cars produced by Chrysler Corporation from 1934 through 1937. Carl Breer, Executive Engineer and Director of Research for the Chrysler Corporation, was returning to Detroit one evening in 1927 when he saw in the distance what appeared to be a flock of geese. As he came closer he discovered that what he had seen was actually a flight of airplanes. This experience caused Breer to wonder if the same principles of aerodynamics used in designing airplanes could be used to advantage in the design of automobiles. To answer these questions, Breer had his staff contact Orville Wright who helped them design a small wind tunnel, the first built by any of the automobile manufacturers in Detroit.

Breer was one of a triumvirate of brilliant engineers who, together with Fred Zeder and Owen Skelton, had designed the first Chrysler car introduced in 1924. They were largely responsible for Chrysler's reputation for outstanding engineering.

The studies of various shapes in the wind tunnel led to the conclusion that the ideal shape to emulate was that of a teardrop which was wide and rounded at the front tapering to a point at the rear. This was just the reverse of current automotive design practice at the time which called for a relatively narrow radiator at the front of a vehicle, a body wide enough for two passengers in the front seats and three in the rear seat and a high square back.

To achieve a sloping rear, the passenger compartment would have to be moved forward. This would require that the engine also would have to be moved forward. The engineers came up with a design cradling the engine over the front axle that allowed the passenger compartment to be moved forward a full 20-inches. In addition to the sloping rear deck, this resulted in several other benefits. The rear seat passengers were now moved forward of the rear axle and closer to the center of gravity of the vehicle resulting in much reduced jouncing over bumps. In keeping with the ideal teardrop shape, the front seat was widened by ten inches, giving room for three passengers, making this the first six passenger sedan.

There was a major interest developing at the time, both in the United States and in Europe, about the whole idea of "streamlining." This was reflected in designs of everything from railroad locomotives to coffee pots and toasters. The concept of shaping a body so it would move smoothly through some fluid medium such as water or air was well known. If a body is shaped to move smoothly through its medium without creating turbulence or vortexes it

is said to be "streamlined".

Wind tunnel tests were continued through 1931. After building several wood mockup prototypes, Breer and his team in 1932 produced a running steel bodied prototype expressing their streamlining principles. It had a short, wide, rounded hood with no valley between the fenders and the hood, and had headlights mounted flush with the body. It incorporated the relocated, widened passenger compartment and had its engine over the front axle. It had a steeply sloping curved glass windshield and a gently undulating rear deck sloping down to the rear bumper. When they demonstrated their prototype for Walter Chrysler at their secret test site in northern Michigan he was delighted and authorized the project to go forward.

The design of the Airflows was a true engineering "tour de force." Beginning with the relocated and widened passenger compartment and the placement of the engine over the front axle, a surprising number of improvements were incorporated in the design, many of them for the first time in a production automobile. It incorporated all steel bodies at a time when most bodies were framed in wood with sheet metal attached. It used a semiunit body design with most of the strength of the unit provided by a bridge-truss latticework within the body structure. It incorporated an automatic overdrive transmission in conjunction with free-wheeling. They continued the use of hydraulic brakes, a feature on Chrysler cars since the first Chrysler in 1924. The new design provided a luggage compartment inside of the body behind the rear seats. In addition, the engines used precision bearing inserts and hardened valve seats for long reliable service.

The design and styling of the Airflows was highly controversial. It was intensely admired in some quarters, particularly in Europe where it resulted in several imitators. The sloping rear deck was widely admired, particularly in the coupe models. In profile, the lines of the coupe swept up from the front bumper in a clean arc over the roof and tapered to the rear bumper with only a step for the windshield interrupting the teardrop form. However, the design of the front of the Airflows was another matter. The stubby hood with the headlights, radiator grille and fenders all blended into a massive cascade of metal contrasted totally with the prow-like grille, free standing headlights and graceful outrigger fenders on most of the Airflow's contemporaries.

Chrysler recognized the styling problems with the 1934 Airflows and made significant changes for subsequent years by adapting more conventional upright grilles.

By 1940, virtually all American cars shared most of the major features that had been pioneered by the Airflow including the engine location over the front axle, the widened and forward placement of passenger compartments, and the adoption of rounded streamlined forms.

Airflow CLUB of AMERICA

The AIRFLOW CLUB OF AMERICA, INCORPORATED is a non-profit organization founded in June 1962. The Club is dedicated to (1) the preservation, restoration, exhibition, and use of Chrysler and DeSoto Airflow cars and Dodge Airflow trucks; (2) the collection, recording and preservation, of Airflow historical data; (3) the dissemination to the public of the story of Airflow contributions to the automotive industry and (4) the promotion of good fellowship and cooperation among its members.

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