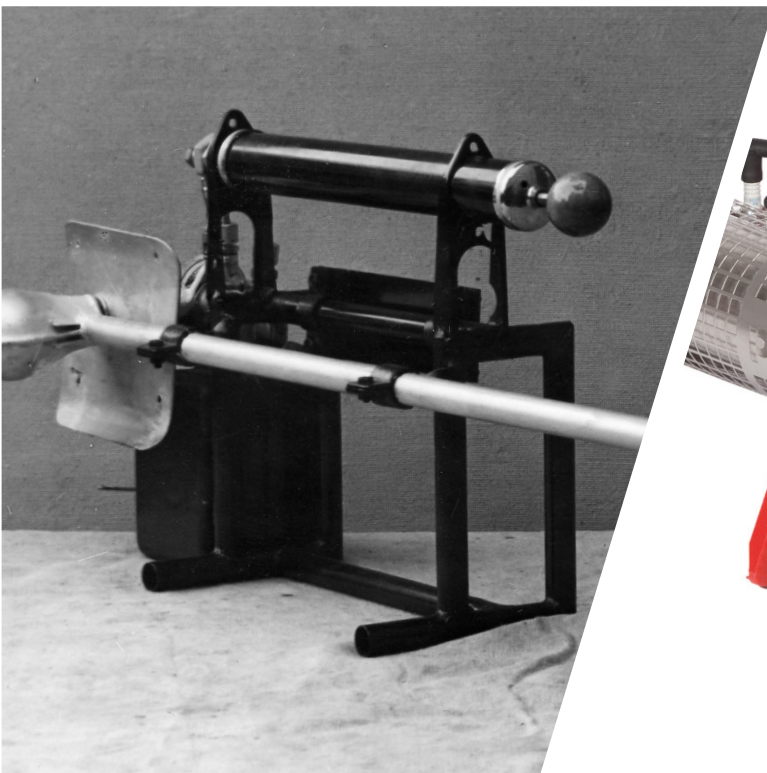


**pulsFOG®**

# THE pulsFOG HISTORY

A HISTORY OF PLANT PROTECTION AND PEST CONTROL

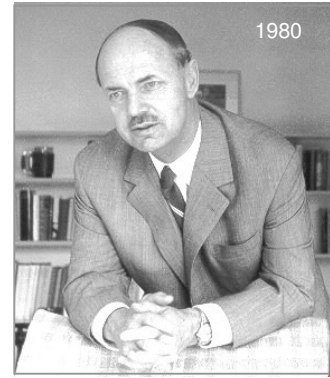


[www.pulsfog.com](http://www.pulsfog.com)



45 years (1968 – 2013)

Dr. Karl-Heinz Stahl  
† 1994



### Brief survey of Company History

#### Looking Back

The success story of the fogger goes way back to 1949 when Dr. Stahl and his partner founded Motan in Überlingen on the shores of Lake Constance. Based on the rediscovered pulse-jet engine technology, foggers were manufactured for the first time for civil use under the brand name "Swingfire" and "Swingfog" (see the Chronicle of the Pulse-Jet Engine). 16 years after the successful launch of the Swingfog, Dr. Stahl dissociated from his partner and, together with his son Werner, founded the Dr. Stahl & Sohn GmbH & Co KG in new premises in 1968 again in Überlingen.

Protected by new patents significantly improving the starting characteristics of the pulse jet engine, the company went on to produce foggers under the brand name "pulsFOG" which quickly gained a substantial share of the market. Dr. Stahl worked tirelessly to introduce his latest development for epidemic control in the tropics, while his son Werner concentrated on plant protection and disinfection in livestock applications. "Pulse-fogging" soon became a byword among users in the Netherlands and the English-speaking world. Numerous university research publications and test reports confirmed the effectiveness of the fogging method and are reflected in the international trade press.

**IDEA CAME FROM V-ROCKET**

...the system from the end of machine blow the chemical fogger for a predetermined period.

**WANTED**

**FARM Equipment NEWS**

ISSUE 99 NOVEMBER 10, 1980

The Grower, July 22, 1976 191

**FOGGING UNDER GLASS—SPECIAL REVIEW**

**This cheap and flexible method of fumigation may have strong future**

A SPECIAL CORRESPONDENT reports

LIKE MANY other so called 'new' horticultural techniques fogging machines have been around for some time. The pulse jet principle on which three makes of machines operate has its origins in the second world war V1 rocket unit. It was in the mid '50s that 'foggers' first appeared on the UK glasshouse market. They required specially formulated chemicals and the range of these was limited.

The pulse jet principle is a simple one. In a combustion or explosion chamber a sparking plug fires a fuel/air mixture. The gases travel down an exhaust tube. The resulting drop in pressure brings in a fresh mixture through a non-return valve. The fuel/air mixture fires again and again the hot exhaust gases move down the tube. So a series of pulses is set up and the machine will continue to operate in this way until turned off. The chemical is fed into the high speed gas flow at the front of the exhaust tube and is broken into small particles which are propelled into the atmosphere as a dense fog.

More powerful machines

A post-eye view of insecticide fog from a Dorman fogging machine billowing down the glasshouse.

SN 11, is nearly 4ft. in length, has an

**DRAMATIC SAVINGS IN SPRAY**

Fog spraying of all pesticides on glasshouse crops resulted in a new dimension last month with the introduction of a new German concept that has got off to a flying start in the sales department.

The system, known as Pulsfog, makes dramatic savings in chemical costs and time and its effectiveness has been demonstrated by ADAP advisers and growers alike (p. 10) for dry and wet weather.

New Dorman (Hemel Hempstead) has the system and the machine costs around £1,000. The first unit will cost £1,000 to £1,500 but a second unit would normally take quarters of half a year.

From today's firm states this unit is best used for the German company and they have now started to sell in the UK.

So quickly still the new system has got here that it is now being sold in the UK.

The machine range from the smallest model to the largest which will fog 30 times of material an hour to a machine which will fog 200 times an hour (p. 10) and will fog 200 times an hour.

**ALL THE K... YOU NI**

**2000e PULSFOG-GASNEVELAPPARAAT GEÏNSTALLEERD**

Dat de Pulsfog-Gasnevelapparaten bijzonder nuttige en kwalitatief hoogstaande apparaten zijn gebleken, die zich een vaste plaats op de moderne tuinbouwbedrijven hebben weten te veroveren, werd deze week nog eens duidelijk, toen de firma Brinkman uit 's-Gravenzande de 2000ste PULSFOG afleverde op het bedrijf van de gebroeders Spruit aan de Anjerweg 10 te Bleiswijk. Deze 2000ste aflevering ging gepaard met overhandiging van een oorkonde en de aanbieding van een seizoen gratis VK-draagstoffen.

Ongeveer 10 jaar geleden heeft BRINKMAN BV te 's-Gravenzande de eerste contacten gelegd met dr. K.H. Stahl GmbH in Duitsland. Door de levensgrote problemen met de witte vlieg, was de noodzaak aanwezig om dit euvel aan te pakken met alle mogelijke middelen. Na enkele proeven bleek al snel dat met de Pulsfog K10 een goede bestrijding mogelijk was. De beschikbare middelen op dat moment waren: Dedevag, Phosdrin, Brijog en Undeen sp.p. Deze middelen waren met VK-1 draagstof uitstekend te verwerken. Ander

Tuinder Spruit met de 2000e Pulsfog en de oorkonde

### Foreign Subsidiaries

The Brazilian subsidiary “pulsFOG Pulverizadores Ltda.” was established in São Paulo in 1982 to service the South American market. Brisk traffic in components with this company ensures a competitive edge. New machines are also developed in Brazil to offer specific solutions for local applications (e.g. the K-10sp SAN, fondly named “Ant Eater”, or transportable ULV machines to combat malaria and dengue fever). Many technical developments for the needs in tropical countries are born in this subsidiary through the inventive genius of Mr. Gunther Fouquet, son of the former partner and co owner.

Founded in Toulouse in 1991, “pulsFOG France Sarl” not only deals with the pulsFOG product range, but also builds its own electrical foggers for the French market.

pulsFOG machines have been manufactured under license in New Delhi, India, since 1991 and since 2001 in Egypt enjoy a steadily increasing share of the market.

### Reshaping and a Change of Generations

In Überlingen, “pulsFOG Dr. Stahl & Sohn GmbH” was formed to take over operations in the course of a split for tax purposes in 1989. “Dr. Stahl & Sohn GmbH & Co KG”, the company founded in 1968, is now solely in charge of the estate and the administration of property and patents.

pulsFOG patents are issued under the following numbers:

**EU** : 0060938, 94112785.4, 0092057, 92 115 438.1,  
**GER**: P2835338, P3214932.8, P3100414.8, P3521941.6,  
P2938958.0, P3230184.7, P3306546.2  
**GB**: 2028170, 2066 367, 2125317   **F**: 7920407, 8020747  
**I**: 982677, 967324   **CH**: 660668   **NL**: 8004432, 149990  
**USA**: 4.298.167, 4.504.214, 08/274.267, 992 039  
**Canada**: 4.556.383, 1.144.227, 1.195.229, 5.224.651  
**Japan**: 1 223491, 133094/80, 195755/81, 5-245 415  
**Brazil**: PI7508223, PI7904982, PI8006095, PI8200067



pulsFOG factory in 1988

Dr. Stahl retires from the Board of Management for reasons of age. His son Werner takes his place. The common economic objective of the two companies remains the use and further development of the successful patents in the field of thermo-pneumatic aerosol technology. More patent applications and design patents follow. In 1989, Werner Stahl becomes the sole proprietor of both companies in the course of succession.

The export management is represented by Mrs. Ingrid Hensler, who started her professional career in 1986 with steadily increasing success and finally leading to the head of department with procurement.

### At Present

Pulse jet machines and cold foggers fill a technological gap in aerosol applications (with droplets < 100 µm) in the fields of self-powered general pest control, plant protection, disinfection and decontamination, while paying special attention to environmental protection by using selective droplet spectra and minimizing application volumes.

New fields of application such as the decontamination of affected environments following terrorist attack have been developed and special machines launched under the trade name “DECOFOG”. Heavy-duty, transportable ULV machines (Ultra Low Volume) to control epidemics in the tropics round off the manufacturing assortment. The newest development and world novelty was an agricultural fogger with PTO (power take off) drive launched in 2006 by the pulsFOG filiale in Brazil.

The range of machines is being constantly extended to meet the needs of the market. In the meantime, 24 different models are on offer. Electrical (1 – 6 kW) and fuel-powered units are available in portable and stationary designs ranging from 25 to 150 hp/17.5 to 75 kW.

#### Certification, Export, Clientele, Financier

The brand name pulsFOG is protected in all OECD countries and others. The company is certified accordingly to DIN EN ISO 9001-2000. The reliability, safety and effectiveness of our equipment are type-tested at regular intervals by the German Federal Biological Research Center for Agriculture and Forestry (BBA), the German technical inspection board (TÜV) and the World Health Organization (WHO). 95 % of the output totaling some 3-4000 units/year is exported to countries all over the world. Main customers are the OECD countries, the tropical countries of the Middle and Far East, Africa, North and South America.

Renowned clients are not limited to governmental institutions, but also include NATO and UNO organizations including the WHO. Authorized and independent trade agents based in the countries concerned or German exporters take care of the sales activities.

The Deutsche Bank AG has been our consultant, financier and principal banker for the last 40 years.

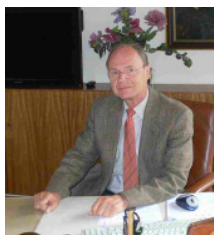
#### Looking Ahead

Company policy places great emphasis on the exchange of experience and close cooperation with the relevant sector of the chemical industry with the common aim of protecting the environment from its biological enemies. The Group is intensifying development in an effort to meet the future requirements with regard to the user and environmental friendliness of this tried and tested technology.

The company history and the history of Dr. Stahl's family are inseparable. Mathias, son of the present sole proprietor, representing the 3rd generation, has taken over the responsibility for the quality management. Under his leadership the manufacturing process was to be subject to the rules of ISO 9001-2008. Since 2012, Mathias supports the head management as executive manager.



Werner Stahl  
President



pulsFOG factory after  
extension in 2006



1968 - 2013

**pulsFOG**



**pulsFOG patents are issued, applied for or pending worldwide under the following numbers:**

**Europe**

**EU** 0060938 // 94112785.4 //  
0092057 // 92 115 438.1

**GER** P2835338 // P3214932.8 //  
P3100414.8 // P3521941.6 //  
P2938958.0 // P3230184.7 //  
P3306546.2

**GB** 2028170 // 2066 367 // 2125317

**F** 7920407 // 8020747

**I** 982677 // 967324

**CH** 660668

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1.195.229 // 5.224.651

**Japan:** 1 223491 // 133094/80 //  
195755/81 // 5-245 415

**Brazil:** PI7508223 // PI7904982 //  
PI8006095 // PI8200067

**Under the registered pulsFOG trade mark the following trade names of pulsFOG products are used:**

**pulsFOG BIO**

(water cooled thermal fogger with 2 tanks for water and pesticide)

**DECOFOG**

(Portable thermal fogger with special design for decontamination)

**COLFOGGER**

(Heavy duty coldfogger mounted on wheels with a flow rate more than 30 l/h)

**Turbo ULV**

(portable electric coldfogger with 5 l tank)

**TracFOG**

(Coldfogger with PTO drive)

**TURBOMATIC**

(Autostationnary electric coldfogger on turntable, computer controlled)

**MINIMATIC**

(Autostationnary electric coldfogger, computer controlled)

**nutriFOG**

(Fogging additive with foliar fertilizing properties, bio-active, for the conversion of plant protective chemicals into a fogging formulation in glasshouses)

**VK-2 special**

(Fog enhancer for water based fogging formulations)



**pulsFOG**

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