



Aviation Agriculture

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This year in August 2021 we celebrate the centenary of Aviation agriculture.

Aerial Crop Dusting

After the First World War, with the availability of surplus aircraft, aviation expanded in many different operations, including agriculture. In the United States, C.R. Nellie, an entomologist with the Ohio Department of Agriculture, came up with the idea of combating pests with an airplane. The concept was met with scepticism at first, but eventually a cooperative project was arranged to test Nellie's idea from the Federal Aviation Experiment Station at McCook Field in Dayton, Ohio.

An outbreak of a destructive moth known as the Catalpa Sphinx in nearby Troy, Ohio, would serve as the test case. The first crop dusting test flight targeted a catalpa grove infested by the moth. Catalpa trees were an important natural resource whose wood was used for building fence posts, telephone poles and railroad ties.

The plane used for the test was called a "Jenny," the nickname for an ex-military biplane trainer (officially the Curtiss JN-6). Lt. John A. Macready piloted the Jenny while passenger Etienne Dormoy manually dispensed the lead arsenate. Dormoy designed a crude metal hopper with a hand crank that was bolted to the plane's fuselage. The hopper's capacity was 32 gallons.



A modified Curtiss JN-6 "Jenny" airplane spreads lead arsenate dust over catalpa trees in Ohio in a successful experiment to kill sphinx moth larvae



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AVIATION AGRICULTURE

On Aug. 3, 1921, Lt. Macready flew from McCook Field to the nearby catalpa grove to conduct the crop-dusting experiment. In all, the dusting plane passed the grove six times and distributed about 175 pounds of the insecticide over 54 seconds. Less than 1% of the insects remained alive on the catalpa trees after six days of observation of the targeted area. The speed, efficiency and overwhelming effectiveness of the aerial dusting experiment spawned the birth of the agricultural aviation industry.

Although crop dusting with insecticides began in the 1920s in the United States it was not until 1949 that the commercial operation of aerial applications of fertiliser, seed and insecticides were used in Australia and of course Tasmania. The first widely used agricultural aircraft were converted war-surplus biplanes, such as the De Havilland Tiger Moth and the Stearman.

After more effective insecticides and fungicides were developed in the 1940s, and aerial topdressing was developed by government research in New Zealand, purpose-built agricultural fixed-wing aircraft became common.

Agricultural Aviation in Australia

The first attempt in Australia to distribute superphosphate from the air was scheduled to be carried out on Mr. A. S. Nivison's property, *Mirani*, in the Walcha district of New South Wales in February 1950. The Daily Examiner in Grafton reported that the work was to be contracted out to Air Agriculture, a recently formed company, which took over the pest control division of East-West Airlines at Tamworth. However, a contract has been undertaken to treat 4,000 acres in another part of the State. Three aircraft and five pilots would be used. It was estimated that 2,000 landings would be made.¹

The Examiner reported: with 12 light aircraft, the company intends to commence operations in early 1950. The aircraft will move about the country with the seasons. It is expected that the final cost to the farmer will be under £1 an acre.²

Agricultural Aviation in Tasmania – Fertilizer Spreading

In June 1951 and for the first time in mainland Tasmania, superphosphate was spread from the air on *Beaufront* the midland property of DD Von Bibra at Ross. The previous day the plane had been on Flinders Island fertilizing and sowing seed. The airstrip used was on the property *Kendon* part of the *Beaufront* estate.³ (Originally *Kenton* was part of the southern end of the vast holdings of *Chiswick* and was sold off firstly to Tulloch Scott of Dunedin and then Henry Reed of Mt Pleasant and finally to W & C Von Bibra remaining in their hands today).

A field day was held on that day on the aerial delivery of superphosphate by an aircraft owned by a NSW firm AirGriculture Ltd.⁴ Earlier in March the Mercury reported that Mr Stokes of *The Grange* at Kempton had asked AirGriculture spread superphosphate by air over 1,000

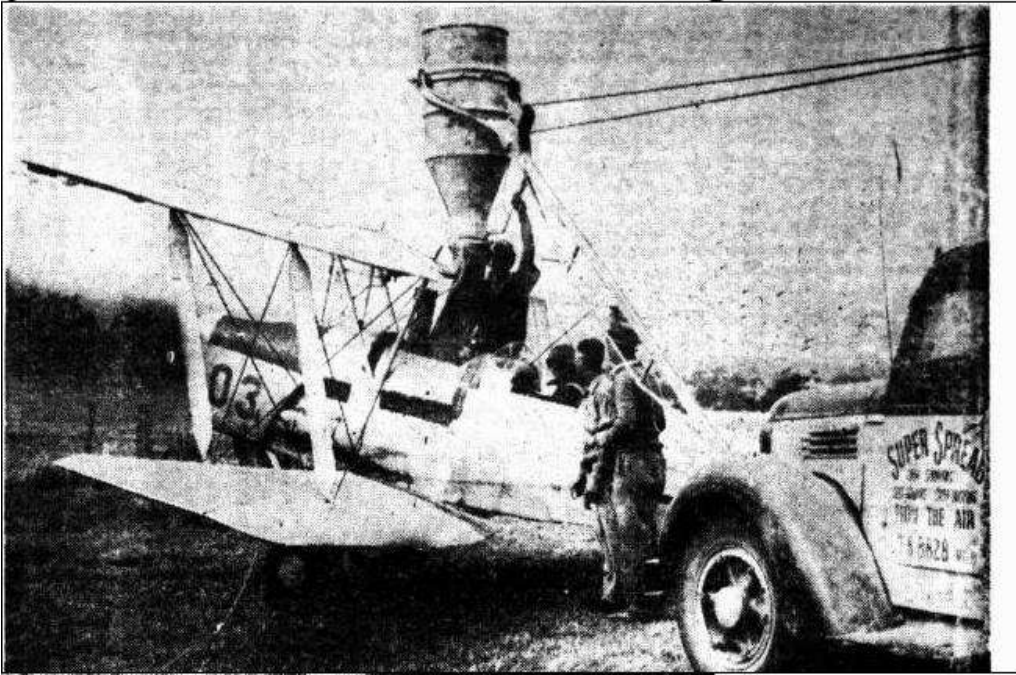


AVIATION AGRICULTURE

acres of hilly country.⁵ The Managing Director of the firm was Mr. L. T. Ross Anderson, of Sydney, who was educated at the Hutchins School, Hobart.

AirGriculture was formed as a proprietary company in 1949 and converted to a public company in January 1950. Its aerial contract business was to plant seeds, distribute fertilisers and spray weedicides and insecticides from specially equipped aircraft. Unfortunately, it went into receivership in 1952.⁶

Superphosphate From The Air



THIS Tiger Moth aeroplane cruised low over White Hills yesterday spreading superphosphate on parts of Curraghmore, the property of Mr. Donald MacKinnon. A Victorian firm of adventurous young pilots has been in Tasmania since the end of February doing low-level spreading of superphosphate under contract at Melton Mowbray, Colebrook, Ross, Cressy, and Evandale. Their planes have special attachments for aerial spreading. Each plane is in the air for only about three minutes but in that time it spreads 380lb. of super. It lands, loads, and takes off again in about two minutes with the help of a special loading device. In the picture above are (from left to right): Mr. G. Hingston (on wing), Mr. W. Oldcastle (pilot), Mr. R. H. Chugg and Mr. G. R. Chugg — "The Examiner" photo.

The Examiner, 13 April 1954, Front Page



Agricultural Aviation in Tasmania – Crop Dusting

In January 1951, The Mercury reported the first attempt at crop dusting in Tasmania.

A PLANE was used for crop dusting for the first time in Tasmania recently, when Mr. Dudley Ransom, Cranston, Campania, treated 40 acres in 45 minutes. Mr. Ransom sought the advice of the Government Entomologist (Mr. L. W. Miller) after barley grubs seriously damaged a 60-acre crop of grey field peas on his property, and then turned their attention to another 40-acre paddock. Mr. Ransom was advised that if 20-lb. to the acre, of 2p.c. D.D.T. dust was spread over the crop it would check the pest, but there appeared to be no means of doing this job.

Mr. Ransom sought the aid of Mr. Lloyd Jones, of the Aero Club of Southern Tasmania, and it was decided to attempt the dusting from the rear cockpit of a Moth plane. Carrying five 28lb bags of the dust, which Mr. Ransom shook out the side into the slipstream, they covered the 40 acres in 45 minutes, including five landings to refill.

The work was most exhausting, as dust was swept back into the cock-pit; but the result was good. Mr. Ransom said he saved 80 p.c. of his crop. He added that, with a properly converted machine, thousands of acres of crop and grass could have been saved this year. He said that the cost of dusting from the air was about the same as by surface work, with a valuable saving of time.

"I understand," said Mr. Ransom, "that the aero club will convert a machine for dusting if sufficient guarantee can be given for its use and maintenance. "In view of my success I hope the Agricultural Department will interest itself in the matter. "He said he had now headed- the damaged crop, and was following with the harvesting of the dusted area. When the work was completed', he would make available details of the result, with cost of operation. ⁷



The Advancement of Agricultural Aviation

By 1960 more than 3,000,000 acres of Australia were being seeded, top dressed, sprayed or dusted from aircraft.



Crop duster at Kevelton- Swansea- East Coast of Tasmania⁸

Today agricultural aviation is an important part of the overall aviation and agriculture industries. The industry consists of small businesses and pilots that use aircraft to aid farmers in producing a safe, affordable and abundant supply of food, fibre and bio-energy. Aerial applicators protect forestry and play an important role in protecting the public by combating mosquitoes carrying West Nile Virus, encephalitis and other diseases.⁹

¹ *Daily Examiner* (Grafton, NSW : 1915 - 1954), Friday 3 February 1950, p. 5

² *Examiner* (Launceston, Tas. : 1900 - 1954), Tuesday 27 December 1949, page 3

³ *Advocate* (Burnie, Tas. : 1890 - 1954), Thursday 31 May 1951, p. 14

⁴ *Ibid*

⁵ *Mercury* (Hobart, Tas. : 1860 - 1954), Wednesday 21 March 1951, p. 14

⁶ *Armidale Express and New England General Advertiser*, Monday 7 July 1952, page 5

⁷ *Mercury* (Hobart, Tas. : 1860 - 1954), Wednesday 17 January 1951, p. 11

⁸ (1967). *Photograph - Crop dusting plane at Kelvedon near Swansea*. Libraries Tasmania

⁹ <https://agaviation100.com/press/>