

Surface Finishers.

Introduction

This document details the origins of the Royal Australian Air Force Surface Finishing mustering. Sadly there is limited information regarding the earliest records, every attempt has been made to ensure correlated information within this document is true and accurate.

The majority of photographs contained in the origins and history of the RAAF Surface Finishing (SURFIN) mustering are courtesy of the Australian War Memorial in Canberra.

Origins and History of the RAAF Surface Finishing (SURFIN) Mustering.

The origins of the SURFIN mustering can be traced back as far as the Australian Flying Corps in 1914. In these early years, aircraft surfaces and insignias were applied by brush. With the creation of the Royal Australian Air Force (RAAF) in 1921, a collective trade group known as Aircraft Riggers was established. This group which included Fabric Workers and a group affectionately referred to as "Dopers", or in today's terminology, Aircraft Life Support Fitters and Aircraft Surface Finishers (ASURFIN).



1916 - Australian Flying Corps Paint Shop.

Dopers were responsible for the application of coatings to the outer aircraft skins of early aircraft types during production activities. They also performed repairs and maintenance of cloth covered surfaces, including the application of paint schemes and markings, used in the protection and identification of Australian aircraft.

What is Dope?

The term Dope comes from the name given to the substance used as far back as World War 1. This material was used to shrink the cotton based covering materials that were used to skin the external surfaces of aircraft, during this era.

The substance was made from a highly explosive material called nitrocellulose (cellulose nitrate) which was basically gun cotton. Gun cotton had many uses, however when manufactured in liquid form (with pigments and solvents added to it), it made a very quick drying paint film. Once applied this material which would shrink and tighten fabric covered surfaces.

There were many problems associated in using nitrocellulose based paints in these early days. Apart from the explosive nature of the product it also had a pungent odour. When applied using a spray gun the vapours were very intoxicating. So much so that workers employed on spraying this product were often observed staggering around and acting dopey. This resulted in those workers becoming known as "Dopers" and the product they were using became known as Dope.

It is worth noting that during the 1940s, due to a very restrictive labour market during World War II (men away fighting overseas) that most of the work was performed by women.



1942 - Women spraying a fabric covered aircraft panel.

Post World War II

Advancements in aeronautical technologies (fabric to metal) necessitated the restructuring of the Fabric Workers trade group, which evolved into the Safety Equipment mustering. It was during this period that the Surface Finishing mustering was established, as an off-shoot/break away from the Fabric Workers mustering. Surface Finishers specialised in the treatment of the metal and alloy surfaced aircraft being introduced into service.

Anecdotal evidence suggests that during this early period, one member of the Fabric Worker mustering was sent to the USA for training on how to paint metal and alloy surfaced aircraft. On return to Australia the member subsequently re-mustered, establishing the Surface Finishing (SURFIN) mustering.

Early Training Records

The early Surface Finishing (SURFIN) training courses (around 1950's) were conducted at Number 1 Aircraft Depot (IAD) RAAF Base Laverton in the Motor Transport Repair Section. It was here during such training that SURFIN trainees learnt about various refinishing products and honed their spray painting skills by repainting and repairing motor vehicles including ground support equipment.

1960's - During the 1960's SURFIN training was transferred to RAAF Base Richmond where trainees were taught on-the-job aircraft painting and corrosion control techniques. However, certain elements of the training were conducted at different venues, in the Sydney area. For example, SURFIN trainees at RAAF Base Richmond would be transported to Neutral Bay to be taught Crash Boat Painting or to Mascot to be taught coach and vehicle painting.

1970's - Around this time the SURFIN Training was relocated to Number.3 Aircraft Depot (3AD) at RAAF Base Amberley, where it was incorporated into the everyday work activities of the 3AD Paint Shop. This coincided with the purchase of the most advanced aircraft at that time by the Australian Government - the F-111. Training at Amberley became more professional with a formal classroom and dedicated instructors being established by the end of the decade. Additionally, from 1977, the course was extended from 26 weeks to 38 weeks, with a two-pack Polyurethane phase being incorporated with a six week training venture to Number 2 Aircraft Depot (2AD), Richmond, where large aircraft were repainted in the new coating system.

1981 - With the advancement in modern paint technologies and corrosion preventive treatments, a dedicated SURFIN Training School was established at RAAF Base Amberley (attached to the 3AD Paint Shop). This revolutionised the SURFIN trade with its own training syllabus and classrooms along with a designated hangar in which to conduct practical "Hands-On" training. Structured and professional training became the focus of the school with qualified and experienced instructors offering comprehensive instruction in both the theoretical and practical aspects of the trade.

1981 to 1997 - In March 1992, 3AD merged with 482 Squadron to form 501 Wing. During the period 1981 to 1997 approximately 160 personnel were trained at the

3AD/501 Wing SURFIN Training School. The SURFIN Training School was the only one of its type in the Pacific region. Not only did it train Australian Defence Force personnel (RAAF/Navy/Army) but under the Defence Corporation Program also trained military personnel from both Indonesia and Malaysia.



1982 – SURFIN Training Course No 26.

1995 - With the on-set of the Defence Commercial Support Program (CSP) the SURFIN mustering went through a major review with many core skills being removed from the SURFIN trade employment standard. This included such skills as Staining and Polishing, Signwriting and Motor Vehicle Painting. The SURFIN mustering employment profile was subsequently re-written to reflect only aircraft related trade skills, leading to the change in mustering name from Surface Finisher (SURFIN) to Aircraft Surface Finisher (ASURFIN), as it is today.

1997 - The Defence Commercial Support Program (CSP) outcomes and a change in trade focus led to the cessation of ASURFIN training at Amberley. With the completion of the 1/97 ASURFIN training course the Surface Finishing Training School was officially closed. Consequently, the ASURFIN training syllabus and development strategy were modified and training transferred to the Corrosion Control Facility (CCF) at RAAF Base Williamtown.

1998 - With the closure of the ASURFIN training school at Amberley, the training curriculum and syllabus, which was a combination of theory based class room learning and practical OJT, was converted to a competency log book training system. It was specifically designed to provide the basic aircraft trade skills and competencies required by the RAAF for an Aircraft Surface Finisher. This revised training program was designed for those trainees who already had the necessary prerequisite automotive spray painting qualifications from civilian industry.

Current Training

The current training for Aircraft Surface Finishers is now undertaken in two phases, which ensures that competent trainees have a thorough understanding of Aviation trade skills.

Phase One: Commences at RAAF Wagga, after completion of recruit training, and consists of approximately 10 weeks of Core Aviation Trade Skills training covering basic maintenance, processes, procedures and documentation used in the aviation environment.

Phase Two: Upon completion of the Core Aviation Skills training the individual will be posted to one of three operational units located at RAAF Base Williamtown, Richmond or Edinburgh to commence Aircraft specific employment training. This training is designed for qualified automotive spray painters to become competent Aircraft Spray Painters/Surface Finishers.

The training provides theoretical and practical “On-the-Job” training in Aircraft Spray Painting in a self-paced learning environment; with trainees having to complete a Learning/Competency Journal as they progress through the defined aircraft training elements.

Current Mustering and Future

The development of the Surface Finishers trade has experienced some significant changes over 100 years. The mustering has been reduced in strength from around 180 members back in its heydays of the 1970s & 1980s. This has been due to the Commercial Support Program and the eventual outsourcing of aircraft deeper maintenance and painting services to civilian industry. The current mustering structure has been reduced to a new steady state strength of 34 which consists of 1 WOFF, 3 FSGTs, 5 SGTs, 13 CPLs, 6 LACs and 6 ACs.

With the introduction into service of the new generation of modern aircraft recruitment of Aircraft Surface Finishers (ASURFIN) has become a priority. Seven new ASURFIN members have been recruited since 2016. Aircraft surface coatings are no longer “Just Paint” they are part of the aircraft capability, in particular, the use of the 5th generation of aircraft Low Observable (LO) coatings now being applied to ADF aircraft. Today’s composite fibre construction of aircraft and components provides a lighter stronger material for aeronautical efficacy. However, while design and construction improvements have revolutionised the aircraft industry, such surfaces still require refinishing to provide tactical cover, while ensuring corrosion protection of the substrate surfaces.

Peace Keeping Campaigns

Over the years numerous members of the SURFIN mustering have been deployed on Peace Keeping missions, however the reality is that most of the activities were conducted here in country supporting United Nations (UN) peacekeeping missions by repainting aircraft and applying UN markings and insignias. The following photographs depict two such peace keeping activities.

Number 2 Aircraft Depot (2 AD) - In 1975 members of the 2AD Paint Shop stripped and resprayed a 38 Squadron Caribou in United Nations (UN) white, in preparation for its deployment with the United Nations Military Observer Group in India and Pakistan.



1975 – 2AD Paint Shop



Number 3 Aircraft Depot (3AD) - The photograph below was taken inside the 3AD Paint Shop. It shows two Royal Australian Air Force (RAAF) Iroquois helicopters, in various stages, of being repainted white and having the United Nations (UN) Multinational Force and Observers (MFO) emblem applied to them. The RAAF

Iroquois helicopters formed part of the Rotary Wing Aviation Unit, at the Multinational Force and Observers (MFO) Base in the Sinai.



1975 – Sergeant Col Barlow “Finishing the Job.”

Overseas Conflicts.

There are members of the SURFIN mustering currently overseas on deployment in support of ADF operations, utilising their trade skills, to carry out aircraft battle damage paint repairs and applying, as required, Australian markings and insignias. However, the most notable deployment was during the Vietnam War. The RAAF Squadrons that were deployed to Vietnam, apart from 35 SQN, included SURFIN members as part of their aircraft maintenance and ground crew support.

RAAF Squadrons deployed to Vietnam included:

- 2SQN - operating and maintaining Canberra Bomber aircraft
- 9SQN - operating and maintaining Iroquois helicopters
- 35SQN - operating and maintaining Caribou aircraft (no SURFIN Member)

The SURFIN role in Vietnam was basically to maintain the integrity of the aircraft paint finish to prevent the on-set of corrosion in the harsh Vietnam climate and to apply Australian markings and insignias as required, however, in reality the role was much more with general painting duties and sign writing being every-day activities.

Additional Information.

SURFIN Web Site - If you would like any additional information on the RAAF Surface Finishing (SURFIN) mustering orto view photos of the mustering training courses and SURFINs at work then visit our web site [HERE](#) where you will find:

- SURFIN Nominal Roll (Names of mustering members).
- SURFIN Course Photos.
- SURFIN Courses at Work.
- SURFIN Crew Photos.
- SURFINs at Work.
- SURFIN Unit Photos.

SURFIN Face Book Page.

However, if you want to chat, catch up, swap stories or watch videos that have been posted by with fellow SURFIN members then log onto to our Face Book page [HERE](#).

“Striving for a Better Finish”

Disclaimer - The accuracy of the information contained in the Origins & History of the RAAF Surface Finishing (SURFIN) Mustering has been gathered from personal interviews and first-hand accounts of what is believed to have occurred over the years. No factual or quality objective evidence could be located to establish an official version pertaining to the origins of the mustering. However, should you note an inaccuracy or have additional information that could further validate the history of the mustering please contact the Author - Mr Garth Steinhardt on (07) 38130853 or via e-mail at: ghstein@tpg.com.au.