SAAFA
Flying Spirit
May 2021

President's Message

Col Mike Louw (Ret)

It is that time of the year when your National Executive Committee (NEC) and respective Branch Executive Committees (BECs) are preparing for Congress and the Annual General Meeting (AGM) which this year is being held at the St Ives Lodge and Venue in Howick, KZN over the period 18-21 May 2021.

Much time and effort will be put in to preparing Portfolio and Branch Reports which are to be presented at Congress. In order to remain compliant with the statutory requirements of our registrations as both a Non-Profit Organisation (NPO) and a Public Benefit Organisation (PBO), Congress will, inter alia, be dealing with the following business in terms of our Constitution:

► To confirm the minutes of the previous Annual General Meeting and Special General Meetings held during the year.

► To receive and consider the Annual Reports as well as the Annual Accounts of the Association together with the Auditor's report thereon.

► To elect/ratify Office Bearers for the National Executive Committee for the ensuing year as well as confirmation of Auditors.

► To consider any matter referred to it by the National Executive Committee or by a Branch.

► To consider and deal with any general business.

Once the reports have been considered and accepted, NEC will commence with preparing, completion and submission of the statutory reports which have to be submitted to the Department of Social Development (DSD) and the South African Revenue Service (SARS). But of course, Congress is not just all work and no play and we thus look forward to opportunities for enjoying camaraderie of the highest order. The National Banquet at Congress will also be an occasion to publicly give recognition to those who have gone beyond the call of duty.

Whilst on the subject of Congress and the AGM, over the past few months there have again been some murmurings regarding classes of membership of the Association and the payment of annual and other fees. In terms of our approved Constitution, membership of the Association shall be of three categories, these being full membership, honorary membership, and associate membership.

Upon approval of membership, a "membership subscription" is payable to attain membership of the Association. This is a once off payment and members in essence become lifelong members of the Association, remaining on either the active or inactive membership lists, depending upon the status of their continued annual payments or otherwise. Annually thereafter a "members levy" is invoiced to a member by the respective SAAFA Branch, at their discretion, payable towards the administration of the Branch. In addition, a "Branch Capitation Fee" shall be invoiced to SAAFA Branches by the NEC, at their discretion, and is also payable annually towards the administration of the Association. Normal practice is for the Branches to include the Capitation Fee in the members' levy that is invoiced annually. The foregoing provisions of the Constitution can only be amended through the adoption of an appropriate resolution at an Annual General Meeting or Extraordinary General Meeting duly called for the purpose of voting on the desirability or otherwise of such alteration, following a defined process as set out in the Constitution. I trust this will provide some clarity and finality to this aspect.

And now onto something different, but still very much topical. Covid-19 has changed the world as we knew it in 2020. Over the last year, we have ridden the waves of assessing how serious COVID-19 is, all the way to emptying the supermarkets, lockdown, changing the way we travel, thinking things were getting better, and now, intermittent rumours and threats of a third wave.

As social animals we are not meant to live in continued isolation. However, as hard, and as hopeless as the situation may seem, there is light. We basically have two choices: to face difficulty with optimism or to face difficulty with pessimism. This absolutely does not dismiss the collective difficulty and challenges being faced, but in looking for the silver linings, we can attempt to enter a state of acceptance and to use our energy otherwise to build stronger physical health and community regardless of the isolation we face whilst tackling this virus. With the overwhelming amount of coverage surrounding this global pandemic on social and other media, it is very easy to pick up on the fear pandemic that runs alongside the virus. There continues to be considerable fear circulating at the moment, and it is very difficult to not get caught up in it. However, fear will not change the situation; it will weaken our fight against the situation. We need to protect ourselves as much as we can from conversations, environments and technology that will engulf us in this type of fear mongering hype.

It is all so easy to say that our individual contributions do not have an impact, but this virus is evidence that we are all in this together and our efforts, both individually and collectively, can and do go a long way. Let us focus on the positives as much as we can and rather share posts, captions and comments that are positive. Positive attracts positive, so let us spread it. Positive thoughts and emotions are known to increase our immune systems, also giving us an increased power in overcoming the virus should it come our way. Sticking to the rules of engagement such as social distancing, wearing of face masks in public, washing of hands and sanitising as much as possible while looking after our immunity are the very best things, we can do for ourselves and for each other.

I wish to make use of this opportunity to express to you all my sincere gratitude for your support of SAAFA over the past difficult year we all faced. Without our members continued participation and contributions, despite the limitations imposed by the various lockdown levels, we would cease to exemplify the spirit for which we are so well known.

God bless.

Mike Louw

National President: South African Air Force Association

MILITARY ATTACHÉ AND ADVISOR CORPS'

MAAC

After something of a surge in activity following months of frustration, our MAAC colleagues have had a quiet month, maybe to replenish their US$ budgets?

At the time of his appointment as Minister of Defence of the Republic of China, a SAAFA letter was directed to General Chiu Kuo-Cheng congratulating him on his appointment. Gen Chiu graciously responded to this with a personal letter, saying in part:

"It has been decades since I was last in South Africa. It was for the rare educational opportunity at the Command and Staff College. I was also deeply impressed by the cultural and scenic beauty of your country. The nurturing experience helped me immensely as a young officer and broadened my perspective on global strategy environment. I do hope to have an opportunity to revisit your country and refresh the memories I held so fondly in my heart".

Quite obviously a rare Officer and Gentleman who no doubt has happy memories of our country and its people!

The Ambassador of the Republic of China, His Excellency Anthony Chung-Yi Ho, was kind enough to invite SAAFA President Mike Louw, SAAF/SAAFA Liaison Officer Craig Stanton and SAAFA Foreign Relations/PRO Philip Weyers to a luncheon at a very upmarket venue to celebrate our friendship, which was an extraordinary occasion. Our Taiwanese friends are kind and graciously generous people who have to dedicate tremendous efforts to achieve their diplomatic and marketing objectives due to them not enjoying diplomatic accreditation, and this they do with tremendous grace and enthusiasm.

It is sometimes interesting to experience and witness the interplay between Military Attachés in South Africa when they represent countries that are not on good terms.

It has happened that a very friendly conversation took place involving the Attachés of both India and Pakistan, whose countries are officially at each other's throats over the long-disputed Kashmir region.

Similarly, SAAFA has members from both the Russian Federation and the Ukraine, which countries are involved in an armed conflict after Russia invaded the Crimea. Despite the daily exchange of fire in the disputed region, the two gentlemen are quite able and happy to enjoy a chat over a tot or two.

History tells us that politicians are the problem, not the solution! Remember that politicians became politicians because they failed to qualify for the Air Force!

L to r: 3rd Sec Tim T-Y Wen, Mike Louw, Philip Weyers, Col Thomas C-T Liu RoCAF, Craig Stanton, HE Ambassador Anthony C-Y Ho, 1st Sec Liam Jian

Ambassador Ho presenting Mike Louw with one of Taiwan's finest exports

- The first meeting for 2021 & AGM will take place on 30 April 2021.

SAAFA

- Linda Bekker, wife of the Chairman Steve Bekker, joined the SAAFA in the month of March 2021.
- The SAAFA Durban Branch AGM and lunch was held at the Durban Club on 26 March 2021.

SAAFA

- The branch had a wonderful SAAFA Outeniqua luncheon at Deacons Bistro in George on 26 March 2021.
- There were 32 members present with new members being Evert and Tertia de Lange, Edwin “Schippie” Scheepers and wife Juanita.
- There are 76 active members at present.

SAAFA

- It is with regret that this month two of our members and distinguished Officers were called to Higher Service as a result of a fatal aircraft accident. We mourn the loss of Maj Gen Desmond Barker (Ret) and Col Rama Iyer (Ret).
- The Branch monthly lunch and rescheduled AGM for March 2021 did not take place due to current lockdown restrictions.

◙ There were still a few contributions for the Lunches for Love initiative during March which is sincerely appreciated.
◙ There is still no date set for the Golf Day.

SAAFA

◙ The Pietermaritzburg Branch held a lunch on Sunday 28 March 2021 at Morgan Holmes' home, which was attended by eight members.
◙ Morgan Holmes is now much better after his heart valve replacement.

SAAFA

◙ At the end of March 2021 there are officially 78 members listed on the Whale Coast Branch database of the 78 members, 73 members are considered to be active members.
◙ We extend a hearty welcome to a new member who registered during the reporting period i.e. Geoff Garrett.
◙ Whale Coast Flier. Volume 2, Issue 2 was distributed on 31 March 2021.
◙ The annual Branch AGM was held on 17 March 2021, at Hermanus Golf Club, followed by a luncheon, with 35 members in attendance.

SAAFA

◙ Freda Garzouzie's husband, John, is receiving dialysis and is at home with the family.
◙ A Committee meeting was held on 20 March 2021.

SAAFA

◙ A breakfast is planned at the local MOTH Shellhole as well tea at the Royal Macadamia Farm during April.
◙ The branch has 5 active members with a possibility of a further 10 people that may join the branch later in the year.

SAAFA

- One of our “Golden Oldies” members Denbigh Bennett passed away aged 93.
- No specific fundraising has occurred, other than some financial contributions to our Centurion fund.
- We are still hoping that our golf day will happen later in the year due to closure and rebuilding of the Somerset West Golf Club house.
- The branch committee held a mini “think tank” at the Goodwood Club, to look ahead for the coming year.
- The branch committee held a mini “think tank” at the Goodwood Club, to look ahead for the coming year. It was decided that the present members of the Committee would stay on for the next year.
- Other decision was that for the next year the branch will only have a meeting and lunch once every 3 months unless there is an opportunity to have a meeting to celebrate something.

SAAFA

- Jhb held an online (75th AGM) on 26 March 2021. Fourteen members attended the meeting.
- The chairman emphasised his gratitude to donors over the lockdown period.
- The new Branch Executive Committee was elected with Carl Bollweg as chairman.

SAAFA

SAAFA

SOUTH AFRICAN AIR FORCE ASSOCIATION

76TH CONGRESS
ST IVES, KZN MIDLANDS
18 - 21 MAY 2021

TIME	FUNCTION	VENUE	DRESS	ATTENDING
Tuesday 18 May				
15h00 – 17h00	Registration	Reception	Casual	
17h00 - Late	Meet & Greet followed by dinner	Restaurant/ balcony	Casual	All
18h00 – 19h00	National President Interaction Meeting	Breakaway room	Casual	National President and Chairmen
Wednesday 19 May				
07h00 – 08h00	Breakfast	Restaurant	SAAFA Uniform	Living in Members
08h30	Welcome, Act of Homage & Congress Opening Ceremony	Chapel	SAAFA Uniform + medals (full size)	All
09h45	Group Photo	Entrance steps	SAAFA Uniform	Delegates
10h00	Tea and refreshments	Balcony	Smart Casual	All
10h30	1st Business Session		Smart Casual	Conference delegates
10h30 -	Spouses Excursion	*Midlands Meander*	Comfortable	Spouses
13h00 – 13h45	Lunch	Restaurant	Smart Casual	Conference delegates
13h45	2nd Business Session	Conference room	Smart Casual	Delegates
15h15	Tea	Balcony		
15h30 – 17h00	3rd Business Session	Conference room	Smart casual	Delegates
18h00 -	Socialising and dinner	Boma restaurant	Casual	All
Thursday 20 May				
07h00 – 08h00	Breakfast	Restaurant	Smart Casual	Living in Members
08h30	4th Business Session		Smart Casual	Conferees
10h00	Spouses depart on excursion	Midlands Meander	Comfortable	Ladies
10h00	Tea			
10h30	5th Business Session	Conference room	Smart Casual	Delegates
13h00	Lunch	Piggly Wiggly Restaurant	Casual	All
17h00 -	Socialising			
18h30	Banquet reception	Reception	Formal/ Dark Suits & Miniature Medals	All
19h00 - 23h00	Banquet, Awards and Official Closure	Banquet room	Formal/ Dark Suits & Miniature Medals	All
Friday 21 May				
07h00 – 08h30	Breakfast	Restaurant	Casual	Living in Members
	Depart for home			All

SAAFA

"NEWSPAPER HISTORY" PROJECT

It is now just over 5 months ago that the SAAFA NEC approved the roll-out of the project as well as a letter to this effect, from SAAFA National President that was distributed to all Branches.

Actions with set Timelines:

● An official e-mail address was created for all related correspondence and enquiries i.e.: newspaperhistory@saafa.co.za.

● A Process Flow was compiled into actions required, with set timelines.

● The services of an administrator/collator was secured, to assist the project team with the collection of contributions, data capturing, research and close co-operation and coordination with National Office.

● Requests for contributions were posted on Facebook.

● Contact was made with the DOD Documentary Services (Archives) to assist and to give advice on access to relevant material from various sources.

● SAAF and other Military Museums will also be approached for assistance with research.

● Letters went out to potential sponsors, to request donations/sponsorships for the project.

The project team, emphasize the absolute and most important key success factor of this project, also stressed by the National President in his letter to Branches i.e.:

"Let us therefore take this opportunity to reflect on milestones and highlights achieved during the development of military aviation/air power in South Africa over the past 100 years, through the eyes of the print media.

The key success factor of this project, first and foremost, depends on the support from all members of SAAFA, to make contributions by means of newspaper clippings on Air Force activities and events over this period and time."

Subsequently, the expertise and advice was obtained from a renowned publisher about layout, editing and printing i.e. Jonathan Ball Publishers. The issue of quality of scanned or copied articles/newspaper clippings was addressed in particular. In conclusion, it was suggested that the following Google Apps be considered to ensure the required quality for such a publication.

Dropbox Account. Users can upload, store, and share files across a wide array of file types. You can even host group projects and team collaboration on Dropbox. Dropbox offers a variety of services for your data. You can upload your files and send them to another user with a Dropbox account.

Google PhotoScan App. Google PhotoScan is a Google Photos companion app that lets users scan and digitize print photos on the fly. Not only can PhotoScan capture print photos in digital form, but it can also automatically correct edges, adjust perspective, and remove glare and reflections. The idea behind the app is to create a photo scanner that works with existing photo storage and sharing applications. That means you can capture images with PhotoScan and store them in Google Photos, Dropbox, or any other cloud storage service.

Note: More detail will be provided by the Project Team in this regard, particularly with regards to the feasibility of these Apps for this project.

The Project Team would once again, like to call upon all our members, to join hands in achieving this historical SAAFA goal, and with a reminder that we would like to have all these contributions delivered, e-mailed to the above-mentioned address or hand-delivered, to SAAFA National Office.

The Project Team

Marthie Visser
(Project Leader)

Hugh Paine
(Writing and Editing)

Philip Weyers
(SAAF/SAAFA Liaison)

Bill de Pinho
(Research)

Craig Stanton
(Research)

Marianne Mostert
(National Office
Admin Support)

The General Smuts Memorial Service

Compiled by Philip Weyers

Every year for the past 59 a Memorial Service has been held at the Smuts House Museum in Irene on the Sunday closest to 24 May, honouring the memory and achievements of General Jan Smuts and always loyally and enthusiastically supported by both the SAAF and SAAF Association.

Why, one might ask, such excellent support over the years from the SAAF and SAAFA?

The Union of South Africa came into being in 1910 largely as a result of the vision of Jan Smuts who met with and persuaded the British that this would be in the interests of both England and the then four countries which existed at the end of the Anglo Boer War of 1899-1902. Smuts held the appointment of Minister of Defence under Prime Minister Louis Botha, and the creation of a formal Defence Force was for him a priority. Due to the efforts and determination of Smuts, the Union Defence Force came into being on 1 July 1912.

Prime Minister
Louis Botha

The South African Air Force actually has roots that trace back also to 1912, when Brigadier General Christiaan Beyers was Commandant General of the fledgling Union Defence Force.

In 1911, the age of aircraft arrived in South Africa when a London based group named the African Aviation Syndicate Ltd arrived in South Africa to “promote the science and practice of aviation” in South Africa.

The following year, 1912, General Beyers undertook a trip to Europe, to witness military manoeuvres in Switzerland, France, Germany, and England. Smuts gave Beyers very specific instructions prior to his departure to visit the British Army’s aviation school on Salisbury Plain to “obtain as many details as possible for a guide in establishing a military aviation school in South Africa on a small and economic scale”.

Brig Gen
Christiaan Beyers

Beyers returned to Pretoria much enthused about what he had seen, particularly regarding the use of aircraft in conflicts. He said that the use of aircraft should be a great saving in horses and men. He foresaw great things for the use of aircraft in future operations.

In 1913, the Government Gazette published an advert inviting applications for “officer aviators” to form the nucleus of the South African Aviation Corps, to be founded in terms of the Defence Article 19(2) of 1912. This was in response to the establishment of the Paterson Aviation Syndicate in Kimberley, an enterprise to be operated with funding by De Beers. Hundreds of young men applied from which ten were chosen to undergo flying training of which five qualified. The five pilots did not have much time before they were deployed. In 1914, General Botha invaded German South West Africa, this done at the request of London to neutralise Walvis Bay and Swakopmund as shipping ports. Our five airmen, who had in the

meantime been seconded to the Royal Flying Corps were recalled from England for this expedition. Technicians were obtained from the mines and hurriedly trained in rudimentary avionics and aircraft maintenance. The South African Aviation Corps was dispatched to South West Africa

Henri Farman F27's

with the five pilots under command of Major Wallace and with new steel framed Henri Farman F27's, 12 of which had been purchased from France.

The German commander in South West Africa was a Colonel Francke, who had led General Botha a merry dance around the country. On 9 July 1915, Francke surrendered at Otavifontein, and the campaign was ended, and with it the end of the South African Aviation Corps. All the members who volunteered were seconded to the Royal Flying Corps and formed into No. 26 (South African) Squadron which was deployed to German East Africa where Gen Smuts was trying without success to corner yet another wily German adversary, General Paul von Lettow-Vorbeck.

Colonel Francke

In 1917, having marched around the veld in then German East Africa in a vain attempt to corner the German commander, General von Lettow Vorbeck, Smuts was sent by Louis Botha to London to attend the Imperial Conference in March of that year.

At the end of the Imperial Conference, the British wanted Smuts to stay in England. The man who a scant 15 years previously had been fighting the British with vigour in South Africa was deemed now indispensable to them and for a few reasons; the Irish question or problem, the problem of the Turks in Palestine and the Palestine question itself, and the fact that he was a unique asset to the War Cabinet being the only member with combat experience. As matters turned out, Smuts declined the Palestine command, made a trip to Ireland under the alias of John Smith with as we know some success, and did indeed join the Imperial War Cabinet.

During the latter part of the 1917 summer, there was growing resentment among the British populace regarding British air defences. London and other cities were being bombed at will. In July 1917, the War Cabinet delegated two of its members to investigate the issues of:

1. home defence against air raids and

2. "the existing organisation for the study and higher direction of aerial operations".

The members chosen were Smuts and Prime Minister David Lloyd-George. Lloyd-George made it clear that he had little or no expertise and left the Commission to Smuts.

Smuts tucked into the assignment with his customary vigour, and within two weeks on 19 July had produced his first report, which recommended four courses of action.

1. Concentration of Executive Command under one senior officer of high ability

2. Immediate concentration and disposition of AA guns

3. Rapid completion and training of air squadrons to fight in formation, and

4. Provision of sufficient air-defence units to cope with the attacks on London

The recommendations were accepted *in toto* by the War Cabinet and implementation instituted. Smuts, however, was not done, and on 17 August presented a further, even more radical report. This report has subsequently been described by RAF Air Vice Marshal Tony Mason in 1986 as "the single most important document in the history of air power".

In this second report, Smuts suggested that air power should have an offensive role, not just a defensive one as was Britain's practice at the time. Due to the ground-breaking nature of what he was suggesting, Smuts drew a parallel with the role of artillery, saying that "artillery was a weapon, an instrument ancillary to a service, but one that could not be an independent service itself".

He went on to elaborate:

"Air Service on the contrary, can be used as an independent means of war operations far from and independently of, both Army and Navy. As far as can be presently foreseen there is absolutely no limit to the scale of its future independent war use. And the day might not be far off when aerial operations with their devastation of enemy lands and destruction of industrial and populous centres on a vast scale may become the principal operations of war to which the older forms of military and naval operations may become secondary and subordinate. In our opinion there is no reason why the Air Board (which was a joint service committee) should any longer continue in its present form and there is every reason why it should be raised to the status of an independent Ministry in control of its own war service"

In essence, Smuts said that Britain could win the war the following year if she mobilised her inventive and mechanical genius to produce sufficient aircraft to strike hard at the enemy's communications and deep into his homeland. For this an independent Air Staff and Air Ministry were required.

The basic recommendations of the report were:

1. An Air Ministry be set up as soon as possible
2. An Air Staff to be set up as soon as possible
3. The Royal Naval Air Service to be merged with the Royal Flying Corps
4. That the Air Service keep most close contact with the Army and Navy
5. That the Air Staff attach to the army and navy such units necessary for military and naval operations.

The War Cabinet accepted the second report.

It should be noted that at the time, the Royal Flying Corps occupied itself with matters on the Western Front, while the Royal Naval Air Service concentrated on the Channel. To add to the chaos, the "Army and Navy had on order 9483 aircraft of 76 varieties and 20000 engines of 76 kinds".

Smuts had created for himself a mountain of work. Lloyd George passed the proverbial buck immediately back to Smuts who became chairman of a new Air Organisation Committee. Of the more difficult tasks was to persuade the Admiralty to part with the RNAS, and to get sufficient production from British industry. Smuts had seen at that stage that neither the Navy nor the army were likely to win the war, even if they did combine their resources. To achieve this, an Aerial Operations Committee was established, later to become the War Priorities Committee, again with Smuts as its Chairman. This committee had the power to determine all questions of industrial priorities, independent of the War Cabinet, at the time itself an unheard-of situation.

It effectively placed Smuts in charge of Britain's industry, from the provision of raw materials, what was to be produced as well as the question of manpower, a unique situation.

With an understanding of the British way of doing things, Smuts managed, without detriment to the army and navy, to pull all the loose ends together and on 1 April 1918, the Royal Air Force, the first independent air force to exist anywhere, was officially born.

South Africans had featured strongly in the Royal Flying Corps during World War I, with Andrew Beauchamp-Proctor topping the heap with the most kills amongst all the Empires airmen, 41, and holder of the VC, MC, DFC, and DSO. Amongst his contemporaries was one Colonel Helperus Andrias van Ryneveld, who was to play a significant role in the establishment of our own South African Air Force. He was not the most successful fighter pilot with only 5 kills, and was known to be cold, ambitious, decisive, authoritarian, took criticism with poor grace, but was inspirational and that rarest of men, a leader of leaders. When Smuts decided to start an air force in South Africa, Sir Pierre was the man he chose to make it happen.

Andrew Beauchamp-Proctor

Colonel Helperus Andrias van Ryneveld

Sir Pierre was better known amongst the South African public for an epic flight he undertook in 1920 with Quinton Brand from England to South Africa in a Vickers Vimy called the Silver Queen. Despite two crashes, and Smuts having to authorise two replacement aircraft, they succeeded in their endeavours and both were knighted.

The SAAF got off to a flying start with an Imperial Gift. The Imperial Gift was according to Carel Birkby a personal gift from the War Cabinet to Smuts, who he describes as one of its most forceful members. Officially the gift was for 100 aircraft, comprising 22 SE 5A's, 30 Avro 504 Trainers, and 48 DH9 bombers. These were augmented by gifts of 10 DH 4's from the London Overseas Club and a DH 9 and two BE 2 Scouts from the City of Birmingham. Apart from the aircraft, the gift included steel frames for 20 hangars, 30 wood and canvas hangars, 50 000 gallons of aero fuel and 20 000 gallons of paint, varnish, and dope. A complete engine shop as well as motor vehicles and photographic equipment were also included.

Sir Pierre was summoned from Cologne where he was engaged in the handover of surrendered German aircraft to the RAF to the Savoy Hotel where Smuts kept residence and was told to return to South Africa and establish the South African Air Force.

Sir Pierre supervised the shipment of the gift to South Africa which cost £32 800, where it was offloaded and railed to Pretoria at a cost of £38 300. It is noted that the auditor general made caustic comments about the cost of the railage.

The whole consignment was transported to 23,5-morgen site some 2 miles east of Roberts Heights which had been purchased to become the SAAF's first airfield. This airfield was named Swartkop, and is still active today, in fact some of the Imperial Gift Hangars are amazingly still in daily use. AFB Swartkop is in fact the oldest still active military airfield in the world.

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22 - SE 5A's

10 - DH 4's

30 - Avro 504 Trainers

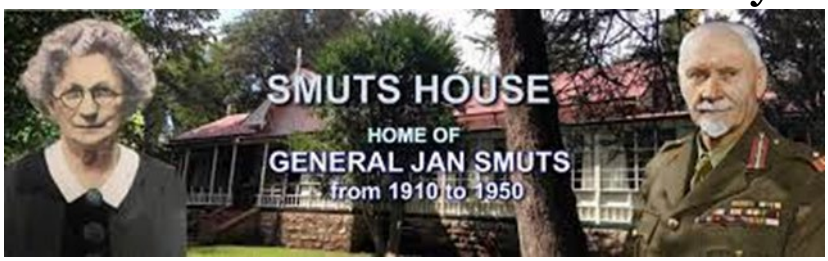
1 - DH 9

48 - DH9 bombers

2 - BE 2 Scouts

The Imperial Gift of aircraft to South Africa

The Big House
Home of the Smuts Family



General Smuts bought the house, for £300, the wood-and-iron building that had served as the officers' mess. It is believed that the building was originally prefabricated in Britain, taken to India by the British Army, and later shipped to South Africa. Now, once again the building was dismantled. It was brought to Pretoria by rail, and thence to the farm Doornkloof by ox wagon, where it was re-erected at the substantial cost of £1000 in 1909.


Smuts' House

General Smuts was at sea, on the way to England as a member of the National Convention delegation, when Mrs Smuts moved her family into the house on 10 July 1909. The plan was altered on rebuilding, and as the years passed a kitchen and pantry (1918) and other rooms were added, and verandahs were enclosed (front verandah, 1942). The Big House is, however, substantially as it was a century ago. The unpretentious building strikingly illustrates Smut's indifference to luxury and ease of living, and here he spent the happiest hours of his life.

Among the famous guests whom Ouma, Smuts' wife, entertained in her home were the British Royal Family, who visited them at Doornkloof while on the Royal Tour in 1947.


General Smuts with the Royal Family and Sir Pierre van Ryneveld 1947
Colourisation by Jerome Kristal of Photos Redux

General Smuts found his peace at Doornkloof. It was to Doornkloof that he retreated from the affairs of State which occupied so much of his life. At Doornkloof Smuts could indulge his absorbing passions for botany and philosophy. There he could enjoy the simple life of a farmer, father, and grandfather.

After his death in 1950, Mrs Smuts continued to live in the only real home she had ever known, until her death in 1954. Both General and Mrs Smuts died in the Big House. Their ashes were scattered, as were those of other family members, on the top of Smuts Koppie - the rugged hill behind the house. The Smuts House also served as Lord Kitchener's Mess in Middelburg, Transvaal.

Tribute to

Maj Gen (Ret.) Desmond Edward Barker SM, MMM, FRAeS, MSETP

25 August 1949 – 17 March 2021

By

Lt-Gen Carlo Gagiano SM MMM

Des was destined to serve in the Air Force. His grandfather was the 22nd member of the South African Air Force. His father served with 3 Squadron during World War 2 in Italy and 17 months with 2 Squadron in Korea. He grew up on Air Force Base Waterkloof 1000 metres from the threshold of runway 19, and with Benni's specific request to also mention the lighter side of Des, he claimed that he preferred jet fuel above mother's milk.

All great men have to start at the beginning, and for Des, it was Flying Training School Langebaanweg as a member of Course 2/68 on the Impala aircraft. After obtaining his wings and a short Vampire conversion, he was back at Langebaanweg as an instructor.

Destiny would have it that Langebaanweg Flying Training School had a primary school. Young Benni Viljoen from Montagu started her teaching career at Langebaanweg, and the loving relationship that followed over many years was clear for all to see.

Des loved playing cricket, but the West Coast style of umpiring and specifically playing against Velddrif tested his patience to the utmost.

Des had an intense side to his character when discussing work, test flying, aviation safety or something he believed in. It comes out in his "Wingman's Contract", where anybody in a high-performance team must be trustworthy, have the ability and capability, and understand man's vulnerability. He understood that man makes mistakes, and he often mentioned that he had made many mistakes during his test flight career. But that the real power of this contract is to recognise weaknesses and errors and correct them. Is this conviction that man makes mistakes, that man is the weakest link in the safety chain, not the motivation that led him to author his first book - Zero Error Margin?

Let us cast our minds back and try to remember in how many high-performance teams Des was a vital cog or the leader of that team. Des's "Wingman's Contract" is vividly demonstrated as a Silver Falcon aerobatic team member. Team 11 had to restart the Silver Falcon flying display in 1975 after the team's temporary grounding during the 1970s oil embargo. They had to

build trust, demonstrate capability, and correct the mistakes. Flight test teams are highly dependent on one another. Flying in a Canberra formation at 50 feet over hostile terrain leaves minimal margin for error. As a Major General and member of the Air Force Command Council responsible for operations, much depended on that collective team's decision-making capability.

That intense nature could switch over to witty humour in a second. When interviewed on the Cheetah high-drag ten bomb configuration release trials, explaining in detail what a rough ride it was and how close he came not making it alive, he added that it was "the most fun you can have with your clothes on".

In November 1978, the Barkers left the carefree life of Langebaanweg behind. They moved to Pretoria, where Kevin and Dean were born. He took up a posting in Air Force Head Quarters, waiting for his opportunity to do the international test pilot's course. However, these were the embargo days, and he had to wait patiently until June 1984 to get his chance at the National Test Pilot School.

Des flew many operational missions in the Canberra. It was not without excitement, and in his words, "the places I have been and seen is material for another interview".

All the waiting was not in vain, and when he returned from the US, Des walked into the most intensive development test flight period in South African history. South Africa, at the time, was isolated and had to do everything itself. The Defence Industry sprang up overnight and developed into a significant capability. Des was exposed to the full range of developmental test flying on aircraft such as the Mirage F1, Kudu and C 47 maritime version and later the Cheetah to mention a few. He fired more than 70 missiles. Des Barker was in his preferred spot.

A long-term association with the Cheetah started when Des was appointed as the project test pilot. This appointment gave Des and Benni international exposure, which stood them in good stead almost ten years later when they were selected as the South African defence attaché team in London. This exposure activated Des's inquisitive mind further in the field of military history. Many were exposed to his interesting emails of long-forgotten accidents or missions and lately his views on the Anglo Boer War. He attended a multitude of The Battle of Britain memorial services with Benni, had numerous discussions with those who flew, the so-called "Few". According to him, it was a mind-blowing experience" and wonderful to mix with the veterans. During this time, Des also developed his international social network, which in later years stood him in good stead when he became Europe's air show safety guru.

Des became the officer commanding of the Test Flight and Development Centre mixing management and leadership with test flying. Time was tight, and he was often observed while others would chit chat studying his emergency procedures or working on his test flight reports.

During his stint as the officer commanding Air Force Base, Makhado Des was the Boss of the Cheetahs, and he enjoyed the aircraft until its phase-out. He was overheard many times, saying, "flying is living; if you don't fly, you don't live". Before retirement, his final deployment was that of Chief of Airstaff Operations, where he managed to lead a team with knowledge, understanding, and foresight. He took those personal traits to the CSIR after retirement and to the SAAF Museum up to his final day.

With all the stimulation and inputs, Des had to write and record what was in that busy brain. He wrote numerous articles for

publications on test flying, aviation history and safety. The International Council of Air

shows, the European Airshow Council and Air shows South Africa approach him to update his first book. The new version is called Anatomy of Airshow Accidents. Des's authority on display flying safety was and is unmatched. He also co-authored Wings over Langebaanweg with Andrew Embleton. He worked on Recollections from a Test Pilot's Logbooks, a history of flight testing in the South African Air Force at the time of his untimely departure.

International recognition was forthcoming with the European Flight Test Safety Award for outstanding contribution to the European display pilots in 2011. In 2018 he received the ceremonial sword from the European Airshow Council, to mention a few. Also, in 2018 the Royal Aeronautical Society conferred onto him their Honorary Fellowship. This is the World's highest distinction for aerospace achievement awarded for only the most outstanding

contributions to the aerospace profession. This honour is conferred on those whose careers, leadership, inspiration, and impact mark them as the most eminent, widely recognised, and influential aerospace professionals of their generation.

Des has moved on, but we are all richer for having had the opportunity of knowing and working with him. We will remember him as that unique individual who could combine excellence, humbleness, humour, good to others, and love in one person.

REST IN PEACE

Maj Gen (Ret.) Desmond Edward Barker SM, MMM, FRAeS, MSETP

Tribute to

Ken Smith

SAAFA National President May 1992 to May 1995.

20 July 1940 – 15 April 2021

Extract of the SAAFA Dec 1993 Newsletter

Ken was born in 1940 in Rustenburg, Transvaal and matriculated at Paarl Boys High in 1956 as the Dux pupil.

The following year, he joined the Air Force Gymnasium and was selected for pilots training. On receiving his pilot wings at the end of 1957, he was awarded the Sword of Honour. At that stage he was still too young to have a motor car license.

He always wanted to study engineering, but the flying bug had bitten him so, in 1958, he joined the Permanent Force and studied at the Military Academy at Stellenbosch and Saldanha, where he attained a B.Mil (BSc) degree.

In 1961, he qualified as a flying instructor and spent two and a half years as a staff instructor at Central Flying School. He was then posted to 1 Squadron (Sqn) at AFB Waterkloof where he flew Sabres. During this period he was a member of the Sabre Formation Aerobatic team. A year later he joined 2 Sqn and converted to Mirage IIIC's.

In 1963 he was promoted to Captain and in 1966 to Major.

In 1967, Ken was attached to a French Reconnaissance Sqn at Strasbourg flying Mirage IIIR's to gain experience in tactical reconnaissance. On his return in 1968, he was posted to the newly formed 3 Sqn, flying Mirage IIIE and IIIR aircraft.

In 1969, he was transferred to AFB Bloemfontein, and appointed Officer Commanding 8 Sqn.

At the end of 1969, Ken resigned from the Air Force and joined the French Aerospace Industry in their marketing organisation OFEMA (French: Office for the Export of Aeronautical Material), based in South Africa. He however, maintained contact with the SAAF by joining 4 Sqn in 1971 flying Impala aircraft.

In 1974, he obtained an MBL degree from Unisa.

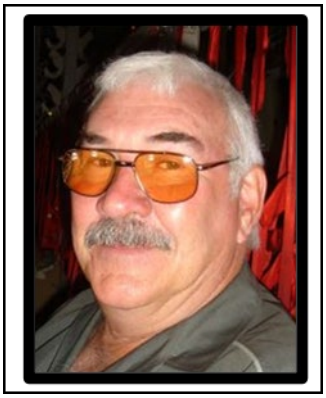
Ken joined the South African Air Force Association (SAAFA) in 1982 and became a member of the Pretoria Committee in 1987. He was chairman of the Pretoria Branch of the SAAFA from 1989 to 1992 and elected Vice President of the SAAFA in 1991, and National President in 1992.

He represented the SAAFA on the SAAF Museum Board, and the Board of Ananda Hotel. He also represented the Association on the executive Council of CMVO and was elected Vice Chairman of CMVO in 1993. He was a Trustee of the Ad Astra Flats in Pretoria, the P.W. Botha Bursary Fund, and an alternate Trustee on the War Fund.

Ken represented Western Province Schools at athletics, Eastern Transvaal under 19, and Junior Boland at rugby, and has also received Northern Transvaal colours for veteran's squash.

Ken was married to Rhoda (nee Prinsloo) and they have two children, Annchen and Kenny.

Tribute to



Arrie de Klerk

SAAFA National President May 1987 to May 1989

9 September 1944 – 8 April 2021

Arnold Walter de Klerk, born on 9 September 1944 and known to all with great affection as Arrie, joined what was then the SAAF Association Eastern Transvaal Branch in 1979. Arrie was elected Vice-Chairman in 1982 and Chairman in 1983. In both capacities he served with distinction.

Arrie progressed up the SAAF Association structure and was elected Vice-President in 1985, during which term he was an official SAAFA delegate to the 70th Anniversary of the Battle of Delville Wood held in the Somme, Northern France in 1986. In 1987 Arrie was elected National President of the SAAF Association, becoming the youngest to achieve this office.

It was Arrie's initiative that resulted in negotiations with the Chief of the Air Force to have all retiring members of the SAAF enrolled as members of the SAAF Association. At the same time, Arrie initiated the wearing of the SAAF Association flight cap at ceremonial occasions.

Beyond the SAAF Association, Arrie will be remembered with great respect for founding the Harvard Club of South Africa in 1990 and having the ten aircraft for which he successfully negotiated declared heritage aircraft by the then National Monuments Council. The Harvard Club continues to operate extremely successfully today, a living memorial to the tenacity and determination of Arrie de Klerk.

After completing his term of office as SAAF Association President Arrie was in 1991 appointed Vice-Chairman of the Council of Military Veteran's Organisations where he served under Major General Roy Anderson and during which time he visited Taiwan on a fact-finding mission regarding Veteran benefits and care.

More recently, Arrie re-established the Silver Queen Air Rally, which to all intents and purposes he ran for a number of years "*man alleen*". These rallies were extremely successful, no doubt due in part to the wonderful question and clue sheets Arrie compiled which resulted in many perplexed navigators and consequently frustrated pilots, all in great fun and with true SAAF Association spirit.

In 2010 Arrie was awarded the Order of the SAAF Association in the Gold class in recognition and appreciation of his extraordinary dedication to and achievements on behalf of the SAAF Association.

In addition to Arrie's many previously noted achievements, when he and Carol retired to KZN, he was appointed a SAAF Association Country Vice President, an appointment made in recognition primarily due to the great affection and respect in which he was held by all his many SAAF Association colleagues around South Africa. In this appointment too Arrie excelled and

continued to serve with distinction, visiting the SAAF Association Branches in KZN and offering advice and support, often having to travel substantial distances.

When in KZN, Arrie, as was his wont and such was his enthusiasm, discovered a memorial to the first flight undertaken in South Africa, that of the John Goodman Household glider flight in 1875. The Memorial had fallen into decay and was derelict, a situation Arrie found unacceptable and set about having the memorial re-furbished and fenced with signage erected to show visitors the way.

This was typical of Arrie, he tackled projects head-on and with energy and determination. He will be remembered for this and for exemplifying the SAAF Association spirit and ideals in every respect, not least of all being wonderful company when in social surrounds, he was a warm and wonderful friend to us all.

To Carol and the de Klerk family, the SAAF Association extends its heartfelt condolences, thank you for sharing Arrie with us, he will be remembered with great affection and much respect.

Enjoying a “kuier” after the weapons demo, April 2009. Apart from one, all RIP
L to r: Ken Snowball, Neville Greyling, Philip Weyers, Arrie de Klerk, Don Johnston, Keith Randall

L to r: Ken Smith; Leon du Plessis; Jules Moolman

DAMBUSTERS

The development of modelling, simulation, and precision strike

written by
Andrew McLaughlin August 30, 2018

May 16th this year marked the 78th anniversary of the Dambusters raid. Thirteen Australian airmen took part in the mission, with each one of them recognised for their gallantry and extraordinary skill. The role of modelling and simulation was central to the success of the mission enabled by intelligence and a highly coupled relationship between the military, science and technology experts, and the Defence industry.

By all measures, the Second World War was by far the most devastating conflict in human history.

In just six short years from 1939 to 1945, between 60 and 85 million fatalities – the majority of whom were non-combatants – were directly attributable to the actions of the opposing Axis and Allies coalitions.

After an initial territory-grabbing blitzkrieg, the war entered a period of comparative calm while both sides consolidated or regrouped. But operations in all three major domains soon rapidly escalated into a total war as combat theatres were expanded and new theatres opened, and the Allies ramped up their industrial base and manpower to match and gradually exceed those of Germany and Japan.

The massive industrial ramp-up also corresponded with equally huge leaps in both technology and tactics as each side sought to gain an edge over the other. Warships and tanks got heavier and faster thanks to advances in metallurgy and armour, and aircraft design surged thanks to new engine technologies and advances in aerodynamics.

By late 1942 both sides were more or less matching each other in warship, armoured vehicle, fighter, and bomber designs and numbers. But as the full political commitment and industrial might of the United States began to build, with a few exceptions, the quality and quantity of the Allies' capabilities and platforms began to outpace those of the Axis nations who by then had reached a peak supply of raw materials and manpower.

The defence industry was becoming vital ground with technology being delivered at the speed of war.

As new designs emerged the traditional test and evaluation schedules often measured in years were vastly compressed into months or even weeks, often being driven by an urgent capability requirement or tasking imperative.

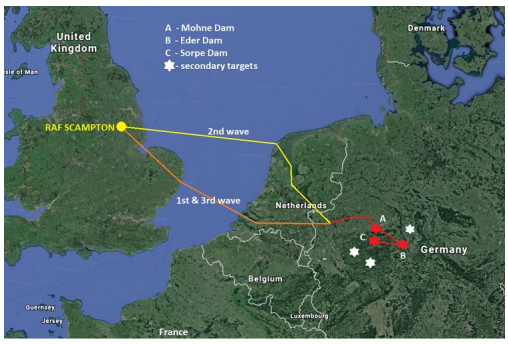
One such imperative was a need to degrade Germany's immense output of machinery and components from its industrial heartland in the Ruhr Valley.

The Ruhr in western Germany is an ideal region for light and heavy industry with many large and medium-sized cities in the region such as Cologne, Düsseldorf, Dortmund, and Essen supporting a ready workforce; the confluence of several major navigable rivers and an intricate network of canals allowing the movement of raw materials; a ready power supply from nearby coal mines and power stations; and several large dams providing water for hydroelectricity and irrigation.

But the Ruhr is a large region, and the various factories that produced everything from ball bearings to aircraft were dispersed and often well disguised. The area was also heavily defended, so indiscriminate high-altitude bombing would have required an excessive amount of treasure, material, and human resources for comparatively little effect, while battle damage assessment would likely have been inconclusive.

Even before the war, the Ruhr region had been identified by the British as an important strategic target. But as the war widened, it was decided that the best way to disrupt the

industrial effort of the Ruhr was to attack some of the dams of the upper Ruhr region. This would not only disrupt hydroelectric power generation capacity and river and canal traffic, but the surge of water would also destroy or damage those industrial facilities located on the river plains below the dams.



The planned route to the dams

Planning for the raid, dubbed Operation Chastise commenced in earnest in late-1942. But it soon became clear that breaching the dams would be a difficult task and one that would require an unconventional solution.

The six dams identified as targets were all large and robust gravity and masonry style dams built using steel-reinforced concrete with rock and earth reinforcement on the upstream sides. The conventional bombing was deemed unlikely to be able to hit let alone breach the dams, while the Germans had rigged an intricate network of nets upstream of the dams to prevent torpedo attacks.

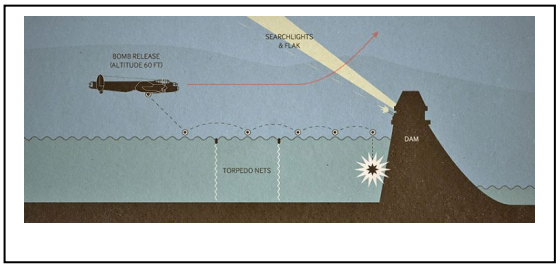
A range of modelling activities was undertaken by defence scientists to test the effectiveness of explosives against the dams.

One of the first models was a 1/50th scale model of the Möhne Dam. It was based on the technical papers that were published during the construction of the dam around 1913 and was constructed with over two million scale concrete bricks!

From here experiments to test the effectiveness of different types of explosives and different detonation points moved on to bigger representative targets to develop and test theories.

After several unsuccessful attempts against the disused Nant-y-Gro Dam in the remote Elan Valley in Wales, British wartime scientist Barnes Wallis was able to successfully demolish a centre section of the dam in July 1942.

Despite Nant-y-Gro being much smaller than the Ruhr dams, the concept was proven. But a suitable delivery method for the necessary explosive force was yet to be devised.



Since 1941 Wallis had been working on a new type of bomb that was designed to attack battleships and other major surface combatants. Released at low altitude, the flat-sided ball-shaped ‘High Ball’ bomb was designed to skip across the water and impact the ship at or just above the waterline, exploding on contact. But initial tests were disappointing, with test bombs often breaking up when they hit the water, and the skipping action easily disrupted or deflected by ocean swells.

On 17 March 1943 Squadron ‘X’ was formed at RAF Scampton in Lincolnshire under the command of Wing Commander Guy Gibson to conduct a special mission. Gibson had recently completed an operational tour flying Avro Lancasters with 106 Sqn and had been posted to 5 Group headquarters. But instead, without knowing the nature of the mission Gibson was tasked with pulling together the new squadron using hand-picked and volunteer crews, initially to carry out just a single raid.

The squadron’s formation gave it little more than two months to equip and work up before water levels in the German dams were seasonally at their highest and thus most

optimal for the bomb's explosion to have maximum effect, usually in mid-May.

The squadron was soon given the designation of 617 Sqn, and flying operations using interim Lancasters IIIs drawn from other units commenced on March 31. The training emphasis was primarily on low-level over-water flying, and a rumour that the target was to be the German battleship Tirpitz which had been effectively locked up in a Norwegian fjord was spread amongst the squadron in order to disguise the true nature of the mission.

The Lancaster was chosen due to it having the required speed and range and a sufficient bomb load. "There are certain objectives in enemy territory which are vulnerable to air attack, and which are themselves very important military objectives," Wallis was quoted as saying in Guy Gibson's post-war book, Enemy Coast Ahead.

"However, these need a vast amount of explosive placed very accurately to shift them or blow them out… viaducts, submarine pens, big ships, and so on," Wallis said. "I have had my eye on such things for a long time, but always the problem has been too great, much too great. First, there wasn't an aeroplane with a high enough performance to carry the required load at the required speed. Then along came the Lancaster bomber, and this problem was solved."

In the meantime, Wallis was refining the bomb's design. While the unreliable ball-shaped High Ball design was retained for the anti-shipping role, the concept was developed into the barrel-shaped 'Upkeep' bomb or mine. The 9,200lb Upkeep – 6,200lb of which was comprised of torpex explosive – was 5ft long and had a diameter of just over 4ft and was designed to be spun backwards at 500rpm using a motorised chain drive in the belly of the Lancaster before being dropped onto the reservoir surface.

"The next [problem] was the explosive itself," Wallis continued in Gibson's book. "It would have to take the form of either a large bomb or an exceptionally large mine. But if it were to be dropped accurately enough to do its job it would have to be placed within a few yards of the right spot.

The bomb

"There are three snags to this," he said. "If the bombing is to be as accurate as that then the attack will have to be at a low level, which means below 300 feet. But with these great big bombs, there is always the danger that they may explode on impact from this height and you know what that means. And if they are dropped above that height then accuracy diminishes, and the job can't be done."

The bomb was designed to skip on the surface of the reservoir to clear the torpedo nets, before impacting the wall and settling. As the bomb sank the backspin would keep it against the dam wall before a pressure barometer detonated the bomb against the wall.

Simulation

Numerous drop tests were conducted of half-scale test bombs from Mosquito and Wellington test aircraft along the shallow waters of the Thames Estuary east of London and on the shallow estuary behind Chesil beach in Dorset from late 1942 and into early 1943 until optimum drop speeds and heights were determined.

The training continued day and night at 617 Sqn into April 1943. The problems of flying a big bomber over still water at night – initially at 300ft but later much lower – were not easily overcome, especially considering how inaccurate the radio altimeters of the era were. The crews trained over reservoirs in England and became proficient at

manoeuvring in the tight valleys around the reservoirs.

Daytime training flights were often conducted with the pilot, co-pilot, navigator, and bombardier wearing what RAAF wartime Spitfire pilot, POW and post-war author Paul Brickhill described as “synthetic night-flying gear”. This system, known as ‘two-stage amber’ or ‘two-stage blue’ saw the Lancaster’s cockpit windows covered with blue celluloid panels and the crew wear amber-tinted goggles, both of which combined to degrade daytime visibility to simulate what the crews would see if flying on a moonlit night.

Modified Lancaster B.III

Also, in April, Gibson was told that the real targets would be dams, although not which ones and the squadron began developing and flying attack profiles, most frequently against Derwent Reservoir in the Peak District near Sheffield.

The Derwent Dam with its masonry construction, size, large towers, and surrounding hills and forests most closely resembled the German dams visually and topographically, so it was an ideal practice target for 617 Sqn. Today, a commemorative plaque dedicated to 617 Sqn is affixed to the dam.

Precision

Barely two months after the squadron was formed, 617 took delivery of 20 modified Lancaster B.III (special) bombers from the Vickers factory. These aircraft had their bombs bays faired over and the spin drive installed, and the underside was modified to carry a single semi-recessed Upkeep bomb.

But it soon became necessary to hastily design and incorporate new tools and methods to meet the ever-increasingly demanding release parameters.

The testing of Upkeep had determined that the optimal drop height of the bomb would be just 60ft, little more than half the Lancaster’s 102ft wingspan, as it had been found that, if released any higher the bombs would frequently break up. Two searchlights were mounted on the Lancaster’s underside forward and aft of the bomb bay and directed so they would intersect when the aircraft was at 60ft.

The optimal release distance was determined to be between 400 and 450 yards from the upstream face of the dam, so a new bombsight was also required. With simplicity in mind, a wooden ‘Y’-shaped hand-held bombsight about 18in long was designed. The aircraft’s navigator would look through a slot attached to the base of the ‘Y’ when approaching the dam wall, and small posts at the ends of the ‘Y’ would align with the towers on the dam to indicate the correct release point.

Modelling

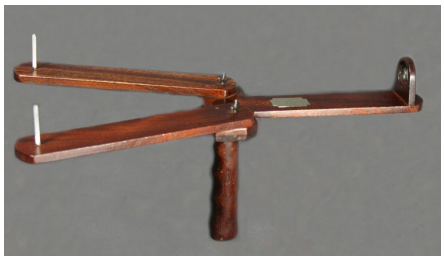
In the meantime, reconnaissance flights over the Ruhr confirmed water levels were rising, and the model makers from RAF Medmenham’s V-Section unit constructed table-sized scale models of the target dams and their surrounding hills.

RAF Medmenham was an RAF unit located at a manor house in Buckinghamshire and specialised in photographic intelligence and interpretation. The unit has been described as to imagery intelligence what the famous Bletchley Park – where the allies broke Germany’s ‘unbreakable’ Enigma code – was to signals intelligence.

It was not until the day before the raid on May 15 that the 617 Sqn crews discovered what the actual targets would be. The primary targets, designated A, B and C were the Möhne Dam, the Eder Dam, and the Sorpe Dam respectively, all located between 20 and 60 miles east of Essen. Three secondary targets in the same region were also selected but were not attacked in the raid.

The crews were instructed to study V-Section’s models carefully and commit them to memory, as these gave them a perspective of the terrain and other obstructions and features surrounding the

targets that aerial photographs could not match.



The bombsight

The mission

Operation Chastise was conducted using 19 Lancasters in three waves. A 20th Squadron aircraft was unavailable for the mission because it had been damaged by the violent splash of an Upkeep weapon impacting the water after being released too low during a mission rehearsal several days prior.

The first wave comprised nine aircraft of three sections, each with three aircraft. Each section took off from RAF Scampton 10 minutes apart and headed south-southeast over East Anglia into the southern North Sea and crossed into enemy territory just north of the Dutch-Belgian border. The first wave's primary target was to be the Möhne Dam, its secondary was the Eder Dam, and if it had any weapons left, the Sorpe Dam.

The second wave of five aircraft departed first at 21.28 and took a longer easterly route across Lincolnshire into the North Sea, before crossing the enemy coast at Vlieland north of Amsterdam. It then turned southeast towards its primary target of the Sorpe Dam. Its secondary targets were to be targets D, E, and F, the Ennepe, Lister and Diemel Dams respectively, but these targets were not attacked.

The third wave of five aircraft departed Scampton two hours later and followed the route of the first wave as a mobile reserve and was to be recalled if all the primary targets had been breached.

All three waves flew at 300ft across the North Sea and enemy territory to avoid being seen on radar, and the routing deliberately avoided known flak batteries and fighter bases.

Legacy

It is now history that the Möhne and Eder Dams were fully breached, and the Sorpe Dam was damaged. But the cost was high – eight of the 19 aircraft crashed or were shot down and 53 crew members were killed, and some 1,600 civilians are reported to have died as a result of the raid, many of them Soviet POWs held in labour camps in the region.

The next day, Spitfire reconnaissance pilot Jerry Frey was flying a battle damage assessment of the raid, and years later described the scene in an interview with The Telegraph newspaper. "When I was about 150 miles from the Möhne Dam, I could see the industrial haze over the Ruhr area and what appeared to be a cloud to the east.

"On flying closer, I saw that what had seemed to be cloud was the sun shining on the floodwaters," he said. "I looked down into the deep valley which had seemed so peaceful three days before, was now a wide torrent. The whole valley of the river was inundated with only patches of high ground and the tops of trees and church steeples showing above the flood. I was overcome by the immensity of it."

Unfortunately, the damage to Germany's industrial heartland was not as significant as Bomber Command had hoped. Many of the factories were either untouched by the floodwater, were quickly rebuilt once the waters subsided, or were relocated deeper into Germany or occupied countries in Eastern Europe.

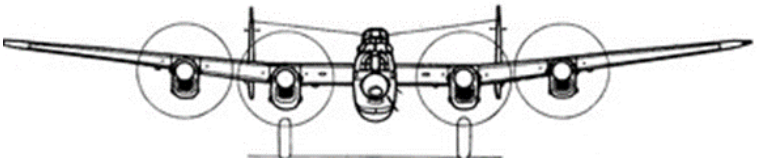
38 members of 617 Sqn involved in the raid were decorated. WGCDR Gibson was awarded the Victoria Cross, while two

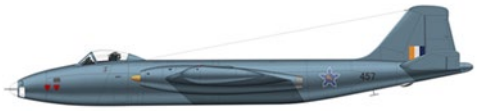
Conspicuous Gallantry Medals, five Distinguished Service Orders, 10 Distinguished Flying Crosses and four Bar to DFCs, 11 Distinguished Flying Medals, and one Bar to DFMs were also awarded.

The Legacy of the Dambusters Raid continues to this day. The raising of an elite unit with specially configured weapon systems, exquisite planning enabled by sophisticated modelling and simulation to practice and hone skills and target familiarity, and excellence in execution, are all concepts which continued to be developed throughout the Cold War and beyond.

Lancaster Bomber

Role	Heavy bomber
National-origin	United Kingdom
Manufacturer	Avro
Designer	Roy Chadwick
First flight	9 January 1941
Introduction	February 1942
Staus	Retired
Primary users	Royal Air Force Royal Canadian Air Force Royal Australian Air Force
Number built	7 377
Developed from	Avro Manchester
Variants	Avro Lanchastrain
Developed into	Avro York Avro Lincoln





Flying the English Electric Canberra B (I) 12

(Part 2 of 2 parts)

By

Brig Gen Des Barker †

Climb

At high weights, the 2nd segment climb away was invariably as shallow as possible and although V_{mca} (125 KIAS) had been obtained, the pilot could only maintain wings level flight, but due to the high weight, not climb away; in other words, flying into the crash was the only option. Achieving safety speed, to get out of the 'dead man's zone' was the next critical phase.

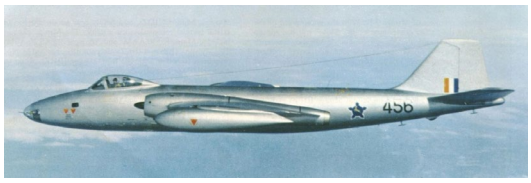
Passing V_2, engines were throttle back to 7,750 RPM and the aircraft accelerated to 330 KIAS/M0.72 for the climb to the typical height of 35,000 ft to 45,000 ft. Initial rate of climb was 3,400 ft/min but this could be increased if off-design climb performance were adopted by 'zooming' excess energy. A pitch-up profile could be conducted at 450 KIAS and airspeed bled to optimum climb speed and even lower if the operational threat warranted. Up to 30,000 ft pressure altitude, the JPT tended to remain fairly constant but above 30,000 ft, continuous monitoring and throttle retardation was required to prevent engine 'over temping'.

Considering the primary operational criteria of high-altitude flight, engines, oxygen, and cabin pressurisation systems operation was of cardinal importance. For optimum efficiency, the Avon engines operated very closely to the surge line. Typical climb time for a mid-weight of 40,000 lbs (no tip tanks) from take-off at Wklf to 45,000 ft was approximately 15 minutes covering a distance of approximately 100 nms.

High altitude operations required that the cabin pressurisation system provide a rough rule of thumb of half height plus 1,000 ie at 45,000 ft the cabin altitude was 23,500 ft. During specific high-altitude tests to determine the ability of the Canberra to overfly the SAM-3 sites in Angola, the maximum altitude achieved was 55,000 ft at which stage the cabin pressure was at 30,000 ft and the decision was made that the decompression risks without pressure suits was not worth pursuing.

Range and Endurance

There are not many aircraft that carry more than their empty weight (21,650 lbs.) in fuel and designed for long range interdiction, the designers provided for the capacity to carry fuel in three fuselage fuel tanks (1,377 galls) + 2 wing integral tanks (860 galls) and 2 tip tanks (488 galls) for a total fuel capacity of 2,725 galls. If that was not enough, it was possible to fit a bomb bay overload tank with an additional 300 galls for a total of 3,025 galls (23,292 lbs). Optimum engine efficiency was obtained above 40,000 ft and with the 'long legs' of the Canberra provided for a combat radius of 810 nms and a ferry range of 2,950 nms.



Configurated with Tip tanks

For wing fatigue considerations, fuelling from the wing integral tanks was delayed until the latter part of the flight. With the large bomb bay and the wide spread of fuel tanks across the fuselage, management of the aircraft CG was one of the pilot's other critical responsibilities and managing the fuel flow

and selections from any of the combinations of tanks which required increased vigilance and monitoring of fuel usage.

Coupled with this was the effect of a 'bomb hang-up' in the Bombay. In the case of a Mk 82 (250 kg) hang-up, an equivalent fuel burn off at the adjacent weapon station was required to maintain the cg within limits. Endurance speed varied between 165 KIAS at sea level to 180 KIAS at 45,000 ft pressure altitude.

Stalling

Stalling speed power off at a weight of 55,000 lbs, was approximately 125 KIAS reducing to 75 KIAS with undercarriage and flaps down at 32,000 lbs – amazing considering the size of the Canberra, a 64 ft wingspan. In old military style, no stall warning device was fitted and warning of approach to stall was through aerodynamic buffet at approximately 10 KIAS above the stall.

The stall was characterised by an uncommanded nose-down pitch and a wing drop with aileron snatching, particularly with wing tip tanks fitted. Stall recovery was nearly immediate upon reducing the angle of attack. If aileron was used to pick up the wing drop, the snatching increased and as such, standard stall recovery taught by the SAAF was to unload the angle of attack by pitch control and any lateral or yawing moments by use of opposite rudder to prevent secondary departures. Recovery height loss of approximately 400 ft was subject to limitations imposed by rate of engine spool up and the careful handling of the engines at high angle of attack.

Mach Number Limitations

The maximum airspeed/Mach Number was dependent on whether or not wing tip tanks were fitted, nevertheless, 450 KIAS at low level and above 25,000 ft, M0.84 were the clean limitations. The onset of compressibility was provided by lateral unsteadiness and the tendency for one wing, generally the left wing, to drop slowly at approximately M0.84. Exceeding M0.84 tended to increase aileron snatching and the loss of aileron effectiveness.

During the latter part of the Angolan conflict, there were a few occasions when pilots, warned by radar controllers at Ondangwa that the FAPA MiG-23s were airborne, pressed the Mach Number barrier to the limits.

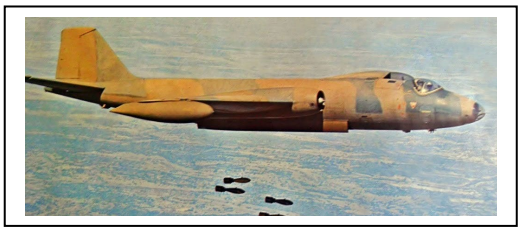
Bombing

Low-level bombing using anti-personnel and soft skin target Alpha bombs was extremely accurate since the aircraft overflew the target and the bombs were dropped from as low as 500 ft agl but of course, the risk was high of taking hits from small arms fire and shoulder launched SAM-7 missiles at 350 KIAS. In fact 12 Sqn lost Canberra #452 to small arms fire with the loss of pilot and navigator.

The perfectly round Alpha bomb was designed to bounce back into the air after ground impact and detonate at 6' to 12' off the ground and were contained in a "Hopper" - a full load was 300 bombs in 3 hoppers each hopper had two cages containing a "clutch" of 50 bombs.

What became termed at 12 Squadron as a survivability enhancer, was the concept of the "time gate" which used the element of surprise to strike targets. Achieving surprise was a science on its own which required extensive knowledge of the enemy's sensors, radar coverage, reaction times, order of battle, etc. in efforts to strike when and where least expected. Despite the use of the time gate, hits were often taken from small arms but the Canberra's ability to absorb small arms fire was its saving grace.

High level bombing runs were conducted typically out of small arms and SAM-7 launch envelopes, typically 15, 000 ft agl and higher and as a result of the rather quiet engines hardly audible on the ground, the name 'Whispering Death' was given to the Canberra while there were those that referred to her as the 'Queen of the Sky', - it depends on which side of the receiving end you were on.



In a typical level bombing profile, bomb door opening and releasing a bomb load of 9 x Mk 82 (250 kg) bombs + 2 x Mk 83 (500 kg) LDGPs, resulted in a very noticeable upward heave as the aircraft appeared to rise instantaneously as the weight nearly instantly reduced by 6,500 lbs.

Descent, Approach and Landing

Normal descent was with throttles to idle/Airbrakes fully extended/M0.75/250 KIAS. Tactical descents, however, were used operationally to descend rapidly by retarding both throttles to flight idle, extending the airbrakes and opening the bomb doors to increase the drag. Maintaining M0.75/400 KIAS resulted in a rate of descent of 20,000 ft/min, not quite the plunge of the Buccaneer, but nevertheless adequate to get low level quickly and escape at 400+ KIAS.

Landing configuration

In the circuit, initial was flown between 250 and 300 KIAS, breaking onto downwind with throttles reduced to 6,500 RPM at 3g provided a rapid deceleration enabling downwind at 150 KIAS. Approach speed was flown at Vref+30 kts with flap only being lowered during the base to finals turn and the airspeed bled to Vref + 10 kts. At a typical landing weight of 37,500 lbs, Vapp was 138 KIAS and threshold speed of 108 KIAS.

An unusual feature was the flap having only one selection, full down. The wing area provided adequate lift for the final approach, the split flaps provided only a small increase in Cl relative to a plain flap but drag increased significantly to counter the clean aerodynamics of the wing and provided for a steeper approach angle and a higher engine RPM; minimum RPM on approach was 4,500.

Flap extension was rather slow at 13 seconds with a strong nose-down pitching moment due to wing centre of pressure aft movement and increased downwash over the tail plane which, in turn, reduced the tail plane stabilising contribution – the out of trim forces had to be trimmed out and the engines had to be spooled up to 6,500 RPM before advancing to full power in the case of a go-around. Due to the inconsistent spooling up characteristics between different engines, touch and go landings were prohibited.

Asymmetric flying required adherence to not reducing airspeed to below 150 KIAS nor height below 600 ft agl until at the visual committal height, the final decision to land was made. Only once committed to the landing were flaps lowered, crossing the threshold at normal landing speed plus 5 kts. With the relatively large rudder surface and low wing dihedral and sweep, the crosswind limit was a healthy 25 kts.

Most probably the most challenging aspect of Canberra flying was the simulated asymmetric approach during instrument flying – what made it particularly challenging was that it was flown limited panel, no attitude indicator for attitude reference, only the turn and slip indicator – in an aircraft with

significant yaw generated by thrust or airspeed changes, maintaining Ground Controlled Approach headings tested the pilot's psycho-motor skills to the limit and usually overstressed the pilot's sweat glands.

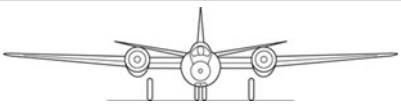
An overshoot could be made comfortably provided that the flaps were up, the airspeed greater than 150 KIAS and height above 600 ft agl. The critical part was to avoid uncontrollable roll/yaw moments from slam accelerations; apparently more Canberra's were lost worldwide to asymmetric training accidents than actual engine failure cases.

Conclusion

The 2nd generation technologies induced handling idiosyncrasies in those days, were part and parcel of that generation of aircraft and was not seen as issues. Flying the Canberra, particularly in operational roles of photo recce and 'mud moving' with lots of fuel, bombs, cameras, a navigator, and adequate excess power, however, was physically demanding which made piloting all the more satisfying – one accepted the available technology versus the operational risks.

The decision to streamline the SAAF as part of the peace dividend following the Angolan conflict saw the announcement by the Chief of the Air Force that 12 squadron would be officially disbanded on 31 December 1990. 'Laying-Down of Colours' on 27 November 1990 was followed by 12 Squadron being officially disbanded on 31 Dec 1990 – a sad day which made grown men and women, cry and the premature loss of a strategic photo-recce capability.

The break on initial from the final Canberra flypast overhead AFB Waterkloof, 22 November 1990.



Memorial Services 2021/22

Date	Time	Service	Venue	Town
		MAY 2021		
16	10h00	SA Air Force Memorial Service	Bays Hill	Pretoria
23	10h00	Heritage Foundation Wreath Laying	Voortrekker Monument	Pretoria
23	15h00	Smuts Memorial Service	Virtual	Irene
		JUNE 2021		
6	11h00	SAPPERS Memorial Service	Sappers Rust	
		JULY 2021		
11	10h00	Delville Wood Memorial Service	Burgers Park	Pretoria
11	10h00	Delville Wood Memorial Service	Soweto	Johannesburg
25	10h00	Korean War Veterans Ass Service	Bays Hill	Pretoria
		AUGUST 2021		
15	11h00	Border Boys Parade	Eloffsdal	Pretoria
21	TBN	61 Mech Memorial Service	Ditsong	Johannesburg
21	10h00	SAP COIN Memorial Service	Doornpoort	Pretoria
		SEPTEMBER 2021		
5	11H00	WARSAW Flight Commemoration Service		Johannesburg
12	10h30	RLI RAFA Battle of Britain Service	Bedfordview	Johannesburg
12	09h00	International Day of Peace Service	NGK Raslow	Pretoria
		OCTOBER 2021		
10	10H00	Alphine 44 Memorial Service	Bays Hill	Pretoria
24	11h00	Battle of El Alamein Pretoria District MOTH	Coal Box MK2	Pretoria
		NOVEMBER 2021		
7	09H30	Italian Prisoners of War Memorial Service	Italian Cemetery	Zonderwater
11	17h30	Cornwall Hill Service	Cornwall Hill	Pretoria
14	11h00	Remembrance Sunday Memorial Service	Commonwealth War Graves Cemetery	Johannesburg
		DECEMBER 2020		
5	09h00	SAMHS Veterans Ass Memorial Service	1 Mil	Pretoria

Zululand Tsetse Fly Spraying 1945-52

CALL BACK THE PAST

In an attempt to eradicate the tsetse fly in Zululand from 1942 to 1950 over 70,000 wild animals were destroyed in Umfolosi and Mkhuze game reserves.

In 1945 the SAAF was requested to provide aircraft for aerial spraying of DDT as an alternative to this wholesale slaughter. The S51 helicopters and Anson aircraft from 28 Squadron proved to be extremely effective with the tsetse fly being eradicated by 1949.

The S-51 was the first helicopter to enter SAAF service when three aircraft (A1, A2 and A3) entered service in 1948 with 28 Squadron for the purpose of spraying Tsetse Fly in Zululand, together with a number of Ansons.

The Sikorsky helicopters at 28 Squadron was reduced by one after A1 struck a tree and crashed at Mtubatuba in October 1950. Operations continued under 28 Sqn Spray Flight Banner until duties were handed over to a civilian contractor, PLAC (Pretoria Light Aircraft Company – (now called PLACO), towards the end of 1951. A1 was then transferred to 17 Squadron at Ysterplaat in December 1957. It was sold in 1964 as ZS-HBT and scrapped some years later. A scrap yard in Cape Town offered the aircraft to the SAAF Museum in 1976, whereupon it was restored to static display.

A3 crashed near Hluhluwe on 20 April 1951, while A2 also crashed near Hluhluwe on 11 September 1952.

While there were substantial side effects from the DDT, this operation secured the future of the game reserves and commercial cattle farming in the region.

Power plant:	1 x 550 hp Alvis Leonides 50
Speed:	166 kph, 103 mph
Range:	483 km; 300 miles
Length:	12.45 m; 40 ft 10 in
Span:	14.94 m
Period of service:	1948 - 1968
Weapons:	None
Squadrons:	28 Sqn and 17 Sqn
Attrition:	2 Incidents recorded

A year has come and gone, who can believe that 12 issues of the Flying Spirit have come to light. Like all good things, the monthly issue of the Flying Spirit has also come to an end with this its last issue. Moving forward the official newsletter of SAAFA revert back to a bi-annual publication, maybe more who knows what the next editor will decide.

I really enjoyed working on the Flying Spirit writes block and all. I must mention that it was not a solo affair, I was assisted by many people but mostly my thanks go to the people in the Thank You section of the newsletter, without them the newsletter would have been uninteresting.

I trust that the future issues of the Flying Spirit will be informative and interesting, conveying with the spirit of this amazing association.

Des †
Philip;
Marianne;
Christel;
Johann.

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