

11 SEPTEMBER 2013

PHASE 1

CHAIRPERSON: Good morning. Ms Ramagaga.

MS RAMAGAGA: Good morning Chair, thank you. It's Mr Mphaga who will be leading the witness today.

ADV MPHAGA: Thank you very much Chair. We'll be calling
5 General Burger and he is available to proceed with the
evidence today. He will give evidence with reference to bundle
J which is before you, and I don't think he will need any other
bundle except bundle J.

CHAIRPERSON: Let's see. General can you ... Can you ask
10 the witness to take the oath

(Witness is sworn in.)

CHAIRPERSON: Thank you.

ADV MPHAGA: Thank you Chair.

15 **WITNESS NUMBER 5 : BRIGADIER GENERAL PIETER BURGER**
(Hereinafter referred to as "BRIG GEN BURGER"), GIVES
EVIDENCE UNDER OATH

EXAMINATION IN CHIEF:

ADV MPHAGA: General, you are a brigadier general in the
20 employ of the South African National Defence Force, am I
correct?

BRIG GEN BURGER: Correct Mr Chair.

ADV MPHAGA: And you are currently the Director Helicopter
Systems in the South African Air Force and responsible for the
25 light utility helicopter system for the South African Air Force.

11 SEPTEMBER 2013

PHASE 1

Am I correct?

BRIG GEN BURGER: Correct Mr Chair.

ADV MPHAGA: You have deposed to an affidavit, an affidavit which you are going to use to give your evidence, am I correct
5 General?

BRIG GEN BURGER: Correct Mr Chair.

ADV MPHAGA: If you go to page 10 of the affidavit, is that your signature appended to the document?

BRIG GEN BURGER: That is my signature Mr Chair.

10 ADV MPHAGA: In your statement in paragraph 4 you mention that you will provide evidence within your knowledge that may be relevant to utilisation of the equipment acquired in terms of the SDPP, is that correct?

BRIG GEN BURGER: Correct Mr Chair.

15 ADV MPHAGA: And in paragraph 5 you also mention that you were not directly involved in the setting up of the SDPP and therefore you don't have any personal knowledge and relevant facts in respect thereto, is it correct?

BRIG GEN BURGER: Correct Mr Chair.

20 ADV MPHAGA: If I understand you well is that you will put more emphasis on the utilisation of the equipment which was acquired during the SDPP process.

BRIG GEN BURGER: Correct Mr Chair.

25 ADV MPHAGA: Can you then go to page 11 of the bundle and take us through your *Curriculum Vitae*. In paragraph 1 you

11 SEPTEMBER 2013

PHASE 1

indicate that you joined the South African Air Force in 1976 and qualified as a regimental PT instructor. Can you elaborate on that?

BRIG GEN BURGER: Thank you Mr Chair. That is the responsibility, a PTI instructor is responsible to train new recruits. Now the requirements of this task is to install discipline and to create teamwork amongst troops to do musketry training, to get them to a high level of fitness, drilling, basic map reading and also to teach them about the other functions in the South African Air Force.

ADV MPHAGA: And you proceed then to say that you went for ...

CHAIRPERSON: Just hold on, I'm just trying to sort out something here. Okay thank you, you can proceed.

ADV MPHAGA: Thank you very much Chair. You proceed to indicate that you underwent a People Pilots Course 1/77 on Harvard's and obtained wings on Impala aircraft, when was that?

BRIG GEN BURGER: The course started in 1977 at Dunnottar where we flew on, did a ground school and flew the Harvard and then we continued flying at Air Force Base Langebaan on the Impala where we concluded our wings course, and that was during that year Sir.

ADV MPHAGA: And you also indicate that you attended the Officers Forming Course at SAF College in 1978, can you take

11 SEPTEMBER 2013

PHASE 1

us through that?

BRIG GEN BURGER: Yes Sir, that is part of our path that we, our career takes in the Air Force. I've been on that course in 1978 where we were taught communication skills, some, to do
5 research, officership, leadership, management, problem solving, security awareness, military ceremonial protocol, military law, a bit of civic education which means you know, you learn about government and how levels of government work, OHS, occupational health and safety, warfare history,
10 airpower, the basics of airpower, LOAC, it's Law and Armed Conflict, how you should apply your weapons and what is expected of you when you are in a fight or battle or delivering weapons.

ADV MPHAGA: Thank you General. And you went further then
15 to complete the Rotary Operations Conversion Course at AFB Bloemspruit on Alouette III helicopters in 1978. Any comment on that?

BRIG GEN BURGER: Well Sir, that is I was screened, I was chosen to do helicopter flying and then at that time the
20 operational or the conversion course was done at Air Force Base Bloemspruit where I went through that course during that period.

ADV MPHAGA: And the next one was the course in respect of the Puma that you completed in 1979, can you just elaborate a
25 bit?

11 SEPTEMBER 2013

PHASE 1

BRIG GEN BURGER: Yes Sir, then I was transferred to 19 Squadron at that time in Pretoria, Air Force Base Swartkop, and then I did my conversion course on to the Puma as a copilot and then that was during the Bush War period, so we
5 were operationally deployed up at the borders and we flew quite a lot over that period.

ADV MPHAGA: Then in 1981 you say you left to join the family business which was agriculturally related?

BRIG GEN BURGER: Affirmative Sir. It was on demand of my
10 father, so I left the SAAF and I went to the former Western Transvaal, North West Province, and but we experienced a lot of, a prolonged period of drought for four to five years and I was contacted by some of my colleagues that at that time were flying in the Bophuthatswana Defence Force Air Wing and they
15 offered me a position there, so I gladly accepted that.

ADV MPHAGA: So, but for the drought we would have lost you in the South African Air Force General?

BRIG GEN BURGER: Just repeat the question again please Sir?

ADV MPHAGA: But for the drought that occurred in
20 Bophuthatswana we would have lost you in the South African Air Force.

BRIG GEN BURGER: Yes that's, I think that worked out very nicely Sir, so some bad things happen that at the end of the
25 day the change is for the better.

11 SEPTEMBER 2013

PHASE 1

ADV MPHAGA: Then you indicate that you joined this former Bophuthatswana Defence Force Air Wing in 1985 and remained there until integration in 1994, can you elaborate?

BRIG GEN BURGER: Yes Sir, I went there and they also had
5 Alouette helicopters and I was very happy to fly Alouette's again, but we were flying quite a number of aircraft, we had a mixture of fixed wing and rotary wing and I was fortunate to fly on both of the aircraft or both types, and I was also fortunate to attend conversion courses overseas on new aircraft, but
10 what was also fortunate is the fact that we did our South African Air Force courses during that period and by the time when we were finished I was qualified up to the rank of colonel on developmental side.

ADV MPHAGA: And did the Bophuthatswana Defence Force
15 have similar aircraft and/or rotary wings as the South African Air Force then?

BRIG GEN BURGER: No Sir, it's only on the side of the rotary wing we had Alouette's and the PK's later on, that we still utilise in the Air Force, we've inherited when we came
20 together, when we, after the first election the TBVC states integrated and most of them had PK helicopters and we still have them on our inventory.

ADV MPHAGA: General Malinga when he gave evidence he says during his integration he had to undergo an integration
25 course, was it a similar situation with yourself?

11 SEPTEMBER 2013

PHASE 1

BRIG GEN BURGER: No Sir, because I've done, as I've said I've done all the courses in the Air Force up to that point, it was not necessary.

5 ADV MPHAGA: And you say that during 1994 you were a colonel and the officer commanding of Air Force Base Mmabatho. What did that entail General?

BRIG GEN BURGER: Sir yes, we've just built a new base at the international airfield, to the west of Mmabatho at that time and that was about, we were there for a bit more than a year
10 before integration, and I was in charge of all the aircraft, the maintenance as the OC of the, officer commanding of the base and the people and the administration.

ADV MPHAGA: And you further indicate that you were appointed as an officer commanding 1995, Tactical Air Unit for
15 Exercise Southern Cross at Upington and Postmasburg in 1995. What, can you elaborate on that?

BRIG GEN BURGER: Yes Sir. It was a joint exercise with all the services, it was quite a large exercise, we went through all the conventional requirements that we had to do or to exercise.
20 The Air Force has put down a big base, the TAU at, a mobile temporary base at Upington, but we had a helicopter admin area in Postmasburg, we had some of the Army elements in Smutsdrift and then the main battle took place at Lohathla which is still the place where we exercise our operations, but
25 at that point in time it was the last days of the F1 combat

11 SEPTEMBER 2013

PHASE 1

aircraft, fighter as well as the Cheetah and the Impala's, and I had at that point in time 36 fighters on that tactical airbase and we provided all the support on the admin side to the people, the medical as well as the support to the aircraft.

5 ADV MPHAGA: During this exercise where were you based General?

BRIG GEN BURGER: I was based in Upington then.

ADV MPHAGA: Then you proceed to indicate that you were appointed as the officer commanding Forward Air Force Command Post, Centurion in July 1998. Can you elaborate on that?

BRIG GEN BURGER: Sir yes, we had, in all the provinces we had forward air force command posts, that was to support the internal operations, mainly to support the SAPS and other government departments with regard to relief operations, flood relief, drought relief *et cetera, et cetera*. In Gauteng, specifically Centurion supported the Anti-Crime Drive, we were on a daily basis deployed in the area, we had aircraft allocated to us, rotary wings as well as light fixed wings to do reconnaissance and the reconnaissance part had to look for chop-shops and intelligence they gathered in conjunction for the SAPS planned operations and then we went in by road and by air to get the culprits.

20
25 ADV MPHAGA: When you say you are an officer commanding what does that entail, that post of officer commanding?

11 SEPTEMBER 2013

PHASE 1

BRIG GEN BURGER: Yes Sir, that is the most senior person that is responsible for all the roles and functions of that unit, so you are delegated that post and that position and you are responsible to act and do that and on behalf of your chief and, the Chief of the Defence Force and so at the end of the day the commander in chief.

ADV MPHAGA: You further indicate that you were appointed as SSO Air Regional Task Force Central, August 1999 in the Joint Operations Division, can you elaborate on that?

10 BRIG GEN BURGER: Yes Sir. They've restructured the internal structures that they had, so we had to get smaller, so our inputs into the internal operations shouldn't have been that big anymore and so they've started off with the regional joint task forces. In the simple case, the one that I'm referring to, it included the Free State, North West Province and Gauteng, so we were the Defence Force part supporting the Police and other departments in internal operations.

ADV MPHAGA: And what does the SSO stand for?

20 BRIG GEN BURGER: Senior staff officer, in this case Air, I gave all the Air asset input.

ADV MPHAGA: And you further proceed to indicate also that you were appointed as Chief of Staff Regional Task Force Central in May 2002 and promoted to brigadier general, can you elaborate on that?

25 BRIG GEN BURGER: Yes Sir, just before that I've done the

11 SEPTEMBER 2013

PHASE 1

Joint Staff Course, that is equivalent to the ENSP today, so I was then qualified on the developmental side to become brigadier general, and they started to ... Well, let me put it this way, the chief of staff at that time has resigned, went on a
5 package and I was promoted into that post. And the responsibilities was basically the admin of that task force, to look at the personnel, the equipment and all the plans, budget and those things of that structure.

ADV MPHAGA: And where was General based?

10 BRIG GEN BURGER: I was based up at Speskop where the Special Forces and Joint Operations Division, HQ currently is.

ADV MPHAGA: You subsequently acted as General Officer Commanding at RJTF Central from October 2002 until closure in February 2003, can you elaborate on that General?

15 BRIG GEN BURGER: Yes Sir, this is also part of the scaling down, it went a step further and then the President or the GOC that we had was appointed to do something externally and being in this restructuring effort they decided that they will appoint before that period of closing down, and then we
20 established the Joint Ops HQ under the division, level 2 division, Joint Ops Division, Joint Ops HQ at level 3, the operational level, and then the groups and the FACP's were replaced by a tactical HQ in all the provinces to support the government, provincial governments as well as the police in
25 those provinces.

11 SEPTEMBER 2013

PHASE 1

ADV MPHAGA: And why were you acting at that time?

BRIG GEN BURGER: I was acting because they've transferred GOC and some of the other personnel were also transferred and I was on the closing down of that structure, I was in charge
5 of that.

ADV MPHAGA: And you further indicate that you were appointed as Officer Commanding Air Force Command Post in February 2003, can you elaborate on that?

BRIG GEN BURGER: Yes Sir, that is on the Air Force side,
10 that is our, we call it a command post but it's our main Ops, and we are planning, executing and monitor all air operations including VIP tasks in that command post, so we work in collaboration with the Joint Ops HQ and this structure is attending to the air side of it.

ADV MPHAGA: And you further indicate that you were appointed Director Military Aviation Regulations and Policy in March 2005, can you elaborate on that?

BRIG GEN BURGER: Yes Sir. That is the directorate that's in charge of policy and service bulletins, all the technical
20 documentation related to aircraft systems and we are in that directorate responsible to do the configuration management thereof, take policy as they come down from higher levels, DODI's from the Defence level and implement it with an Air Force flavour into the Air Force, that it's all going through
25 processes and it's been put on systems and there must be

11 SEPTEMBER 2013

PHASE 1

configuration control on it and you keep data of timings to relook or revisit to change the policies, so the configuration management thereof was the main responsibility. I must just also say, I've referred to it, is that all your service bulletins coming in for the aircraft is also put through that system and distributed down to the squadron levels, so it's all controlled for that system.

ADV MPHAGA: And thereafter you are appointed as Director Education, Training and Development in January 2008, can you just take us through that.

BRIG GEN BURGER: Yes Sir, that is the directorate that was, or still is responsible for basic military training, that's where you start off, where the instructors start, where I started with my CV, as well as the basic flying training, so the flying school down at Langebaan was under this directorate's control, all the developmental training, that is the course that you do at the college is part of this, and you also have to implement all the policies that's coming from higher levels to be on par with what is required from the SANDF at corporate level.

ADV MPHAGA: You were further appointed as a Director Peace Support Operations at the Joint Operations Headquarters in August 2008, can you elaborate on that?

BRIG GEN BURGER: Yes Sir. That directorate is on operational level responsible for all the external operations, in this case what currently is happening we have Ops Mistral in

11 SEPTEMBER 2013

PHASE 1

the DRC, we have Ops Cordite in Sudan, we had Vimbizela in Central African Republic, Operation Copper is also part of this, we support it through the Navy, but the main function was to plan the operations, implement the control and advise and evaluate the support thereof, the larger part, the bigger part lies with the support, so the sustainment and maintenance of the operations outside.

I can just say that Ops Mistral was quite a handful, we had a contingent HQ that we had to administer, a battalion HQ plus four companies that was in the North Kivu province in different locations, we still have an engineer unit there, we support them with, by building roads and helping them with construction work. We have the AMED there, that's the Air Medical Evacuation Team, that's on the medical side, that we have to support, we have an air unit there where we have helicopters, we have the SANEF Spec Unit that is based in Kinshasa, they are responsible to look at smaller groupings that support, that gives aerodrome support, airport support like the firefighting *et cetera*, *et cetera*, and ambulances. And then there are military liaison offices that we attend to, but they are all over Africa and sometimes outside the continent. Thanks.

ADV MPHAGA: And the Op Cordite, the battalion in Sudan, what was it all about?

BRIG GEN BURGER: Sir, that's the battalion that's supporting the UN in the Darfur province, it's to keep the (indistinct)

11 SEPTEMBER 2013

PHASE 1

apart, that is, it's quite a huge task but it's the same Chapter 6 type of operation that we're executing there under the UN.

ADV MPHAGA: And the one at the Mozambican, the Mozambique Channel, was it maritime related?

5 BRIG GEN BURGER: It's mainly maritime related Sir, it was alluded to by all the Navy admirals as well as Admiral Schoultz where we are contributing. Well, I'm talking now on behalf of the Air Force but there's helicopters involved and maritime fixed wing aircraft, but in this case we were doing the support
10 side of it from this directorate.

ADV MPHAGA: And why was it necessary to liaise with the UN, you are meaning United Nations?

BRIG GEN BURGER: That is, Copper has got nothing to do with the UN, that is a SADC responsibility or South African, within the SADC environment, but the UN, all the United
15 Nations operations is under the umbrella of the UN and controlled by them.

ADV MPHAGA: You further indicate that you were appointed as Director Human Resources Development in November 2011, can
20 you elaborate on that?

BRIG GEN BURGER: Yes Sir, that's ... I was the Director Peace Support, I was in the Joint Ops Division, I came back to the Air Force and this (indistinct) directorate was changed to this Human Resources, so I came back to my old, old
25 responsibility, my old job if I could put it that way, and we did

11 SEPTEMBER 2013

PHASE 1

basically the same except for the basic flying training, we were doing the same work, or I was doing the same work there.

ADV MPHAGA: And lastly you were appointed February 2013 as the Director Helicopter Systems, can you just elaborate on what are your responsibilities and functions?

BRIG GEN BURGER: Sir yes, I'm very happy to be appointed there, we are responsible to provide combat ready systems for execution of the SANDF mandate, the Defence Force mandate. I'm referring to systems, the systems are the LUH, the A109 system, the Oryx medium transport utility system, it is the BK117 system which is part of the light utility helicopters, although it's a different aircraft, it is the Rooivalk system, that's combat support helicopter system, as well as the maritime Lynx system.

So we are responsible to train people to be able to man the aircraft, give them all their competencies. On the training side we are collaborating with another directorate to get people trained and take them through their careers and give them experience to be able to operate on the system.

ADV MPHAGA: And it appears that you have received several medals during your career, the first one being the Merit Medal, can you just explain a bit what it entails?

BRIG GEN BURGER: Sir, a Merit Medal is normally handed out to a person that does more than the normal, it's called Distinguished Services Rendered, so it's a bit, you are more

11 SEPTEMBER 2013

PHASE 1

active and more focused on certain things and you do a bit more than what you normally are appointed to do.

ADV MPHAGA: And when was it General, can you remember the year?

5 BRIG GEN BURGER: Sir, now you are asking me. I'm not good with those things but I would think it was in the area of 1987.

ADV MPHAGA: Then you proceeded to get the Commendation Medal, the first medal, the Merit Medal was from the former Bophuthatswana Defence Force, am I correct?

10 BRIG GEN BURGER: Correct Sir.

ADV MPHAGA: And the second medal also was from the Bophuthatswana Defence Force, what's it all about, Commendation Medal?

15 BRIG GEN BURGER: Yes Sir, the Merit Medal is a bit, is a high order medal and a commendation, I got a commendation before I got a merit medal, so it's also service of a high standard.

ADV MPHAGA: Then you proceeded to receive the Pro Patria Medal, what is it?

20 BRIG GEN BURGER: Sir, that's a campaign medal, that's for service in the operational area of the former South West Africa.

ADV MPHAGA: Then you have the Southern Africa Medal that you also received, can you explain?

25 BRIG GEN BURGER: Sir yes, that's for service in operations outside South Africa and South West Africa.

11 SEPTEMBER 2013

PHASE 1

ADV MPHAGA: During which period was it General when you received the Pro Patria and Southern African Medal?

BRIG GEN BURGER: Sir that is in between 1979 and 1981.

ADV MPHAGA: And then you had also the Tumelo Ikatela Medal, what is it?
5

BRIG GEN BURGER: That is for participation and support of operations inside and outside our country's borders for a period of longer than 55 days.

ADV MPHAGA: 155 days?

10 BRIG GEN BURGER: 55 Sir.

ADV MPHAGA: Okay.

BRIG GEN BURGER: 5-5.

ADV MPHAGA: Was it also from the South African Defence Force?

15 BRIG GEN BURGER: This was the last medal that I've received Sir, it was two, three years ago.

ADV MPHAGA: And then you proceeded to receive the General Service Medal, can you just take us through?

BRIG GEN BURGER: That, this one was also in the former Bophuthatswana, there was a similar one in South Africa, that's for the suppression of terrorism or internal unrest.
20

ADV MPHAGA: Then the Independence Medal, what is it?

BRIG GEN BURGER: Sir, that was for the, it's a commemoration of the independence of Bophuthatswana.

25 ADV MPHAGA: And then you had the UNITAS Medal also that

11 SEPTEMBER 2013

PHASE 1

you received, can you explain to me?

BRIG GEN BURGER: Sir, that's to commemorate the unification of defence forces and armed forces in South Africa when we integrated.

5 ADV MPHAGA: And you also received the 10 Year and 20 Year Good Service Medals, am I correct?

BRIG GEN BURGER: That is correct Sir.

ADV MPHAGA: Were these given by the South African Defence Force or Bophuthatswana?

10 BRIG GEN BURGER: Sir no, this is South African Defence Force.

ADV MPHAGA: During this period that we have gone through General were you still flying or were you office bound?

BRIG GEN BURGER: Sir I was, most of the time I was flying.
15 When I was the OC FACP I did some of the taskings myself and I was the past few years, I would not operational flying but I'm fortunate enough to fly at the museum which I currently still do, that's on the older aircraft that's part of the museum.

ADV MPHAGA: General Bayne and them, they said they
20 stopped flying at about age of 40, are you still flying in operations or you have retired?

BRIG GEN BURGER: No, I've also stopped when I was in the
vicinity of 50 after I've left the Alouette's, when we terminated
the Alouette's, then my operational days stopped basically.
25 So, I'm flying for pleasure and leisure at the museum.

11 SEPTEMBER 2013

PHASE 1

ADV MPHAGA: Thank you General, you may then go back to page 1 of your affidavit under the "History of Helicopters in the South African Air Force". I think from paragraph 1 to 14 it deals with the history of helicopters in the South African Air Force, starting with the Sikorsky's. General Malinga has taken us through the history, do you want to add or make any comments insofar as General Malinga's evidence in this regard have been?

BRIG GEN BURGER: Sir, I can maybe just add to say that the Alouette's had a huge influence on the helicopter environment, we've operated them for, let me just be correct on that, for 45 years, and ...

CHAIRPERSON: I'm sorry General, I'm struggling to hear you, can you try and talk a bit louder into the mic, I'm struggling to hear you.

BRIG GEN BURGER: Alright Mr Chair, is this better? I can then just add on what General Malinga has said, is that the Alouette's had a huge influence on our helicopter environment, that is basically where we started and what we have today originated from those days. On those aircraft, the Alouette, we've established most of our concepts of operations and our SOP. And then because it was also utilised in the operational environment the people sort of get to (indistinct) the system, it was very much reliable.

And then we changed and we acquired the Puma,

11 SEPTEMBER 2013

PHASE 1

the Puma helicopter service also quite well, it was the cornerstone or the basis for the Oryx development. The Puma also at most of its time in the Air Force, bush operational experience, we utilised it then often and most of the times in operational area. A very reliable aircraft also. And I had the opportunity to fly the Oryx that was derived out of the lessons that we've learnt on the shortcomings of the Puma, our own industry built the Oryx, and that's really a platform machine to be very proud of.

10 I've flown it the other day up to the mountains where you normally have, you don't have the power that you have closer to the coast, hot and high conditions, and it performs magnificently, so that was a good thing that happened to the helicopter environment. And yes, to replace the Alouette takes some doing, but I'm quite sure that this LUH would live up to that expectation and yes Sir, I'll conclude with what I've said now.

ADV MPHAGA: Were you ever involved in the replacement of the Alouette's and the Puma's?

20 BRIG GEN BURGER: No Sir, I was never involved with that.

ADV MPHAGA: Then we then can proceed to the requirement for and description of the light utility helicopter on page 3 of your affidavit, paragraph 15 relates to the budget cut which had a major effect in respect of the helicopter fraternity. Are you able to comment on that paragraph General?

11 SEPTEMBER 2013

PHASE 1

BRIG GEN BURGER: Sir, all that I can say is all over the world the military is moving to smaller numbers of equipment that can do more or better work, more specific work. With the Alouette's at the end of the day we had , we procured 118
5 helicopters and okay, that was quite a large number, but with the systems that we are acquiring now a lot of the requirement, specialist requirements are built into one platform, so we can do more with this aircraft. So yes, and that is part of the budget cut, it was alluded to the GDP, that is not the same
10 anymore, we have to work very skillfully with our money, so it is not easy to run systems with resources that's not, that's as readily available as normal, but we are working smart now, so we're getting the requirements done, the tasks that we are doing with the aircraft, but like what was said is the Alouette's
15 were old, they were being phased out, we experienced obsolescence, the aircraft spares and availability was not there anymore and we needed an upgraded, more modern aircraft.

ADV MPHAGA: General Viljoen has taken us through the study that was launched and also the compilation of the Staff Target
20 and that deals with paragraph 17, 18, 19 and 20 of your statement, am I correct General?

BRIG GEN BURGER: Correct Chair.

ADV MPHAGA: Do you have anything to add on the explanation given and the background given by General Viljoen in respect
25 of the Project Flange?

11 SEPTEMBER 2013

PHASE 1

BRIG GEN BURGER: Sir no, I don't have firsthand knowledge, what I know about the projects and the stages is what I've learnt during this commission, so I would not elaborate on that.

ADV MPHAGA: General Viljoen has indicated that he is still
5 being a reservist, he still works under yourself. What task is he implementing under yourself?

BRIG GEN BURGER: Colonel Viljoen is still part of the projects, the project has not been handed fully over to the Air Force, so there's, as was mentioned by him there are a few
10 outstanding OT&E, operational testing and evaluation aspects outstanding and he is attending to that on my behalf.

ADV MPHAGA: Now on page 5 of your affidavit paragraph 21 you refer that there were 30 A109 LUH helicopters which were delivered in, is it in 2005, am I correct?

BRIG GEN BURGER: Well, they started the delivery in 2005 and the last one was delivered in September 2009 Mr Chair.

ADV MPHAGA: I think you will later take us through what is the current numbers left of the 30 that were delivered, but let's now deal with the roles and capabilities on page 5 paragraph
20 23, you indicate that:

"The primary role of the SANDF is to prepare itself in order to deter any external hostilities".

Now insofar as your position is concerned can you take us through what that role entails?

BRIG GEN BURGER: Sir that is, those was also explained by

11 SEPTEMBER 2013

PHASE 1

all the admirals and generals, is we are acquiring capabilities to support the primary role, now the primary role is to defend the borders of the country, the sovereignty and keep our people safe. In a helicopter world like I've said we have a balanced system or systems where we have utility, we have the maritime, we have the combat helicopters in conjunction and in support of other arms of service. We are supporting the people in the case of the Army grouping hot extractions, close air support on the combat side, evacuation, medevac's and casuvac's of people and on the maritime side we are an extension of the platform to give them a better capability because we are getting elevated, remember it was mentioned when they explained airpower that elevation and range and speed gives you more flexibility and airpower. So yes Sir, so that is in the primary role.

But on the helicopter side as we sit here we are utilising our capabilities on the secondary role also, or in the secondary role, basically the collateral value that we have on the system. I must refer to the peace support operations, now I'm talking about helicopters in general, not only the LUH, maybe I should first say that the LUH and the Oryx can do the same work, they've got the same capabilities but the Oryx is just the bigger aircraft, it can do double the work but look at the cost again, if there's no need for a smaller, or if there is a need for a smaller aircraft for a smaller task you would utilise

11 SEPTEMBER 2013

PHASE 1

this LUH.

What also is important is the fact that we are doing our training on the LUH, that is where the chopper orientation start and that is done by the LUH helicopter. We are planning also to utilise it more externally. I maybe just should quickly refer to paragraph 25.1, we are doing work as earlier was alluded to in support of the Police Services in the maintenance of the internal stability and support of other services of the SANDF as was explained outside the primary role, not only combat and fighting but we are supporting them (indistinct) communication flights *et cetera*.

Assisting both local and foreign government departments in completion of their tasks and/or missions such as support in the maintenance of regional stability and the rendering of aid, we are doing some work sometimes for DIRCO, the Department of International Relations and Cooperation, especially when dignitaries are coming over South Africa. In the case of the visit of the President Obama we supported the Police with helicopters to move the police protection around.

Then like I said in crime prevention, we are very much involved there, I've mentioned Foreign Affairs, that's not correct, it's DIRCO. And then in rescue missions and mountainous terrain. Further on I will also allude to all the capabilities that is acquired that was part of the URS at the

11 SEPTEMBER 2013

PHASE 1

helicopter should do or must do, so that all forms part of the collateral value, but very important that I must mention is the fact that it's our current training and it's high technology, advanced technology helicopter, so in a basic mode we utilise
5 it for the basic training and then on the computer systems we are also training people to get or to be better adjusted to fly the bigger platforms like the Rooivalk, the Lynx and the Oryx.

What is also important to mention is the trainers, the simulators that we have, we have simulators in
10 Bloemfontein where our training still takes place and we have the cockpit procedural trainer which makes it more cost effective, that you take your people through that to do training, and you've got your computer based training that you also do where you learn the systems and how the computer works, it's
15 not necessary to start up the real machine and that's also for the technical people, so this new asset that we acquired gave us that opportunity to introduce more advanced systems, that we need these days.

ADV MPHAGA: Now in respect to training if I can refer you to
20 page 112 of the bundle, it is part and parcel of the presentation that you gave us General. May I proceed Chairperson? Now if you look at page 112 it indicates the Pilatus aircraft, the A109 LUH and the Oryx, now are you also following the three-tier system like the, in terms of the Lynx
25 craft.

11 SEPTEMBER 2013

PHASE 1

BRIG GEN BURGER: Sir you can basically say that, that is a three-tier system, all the pilots in the Air Force starts off with the PC7 where they do the *ab initio* training, and then on the helicopter-side we take them to the LUH to do the basic
5 helicopter training as only to fly the helicopter and get au fait with helicopter aerodynamics *et cetera, et cetera*. And then from there we take them over to the more advanced machines or bigger machines rather, I can't say advanced, bigger machines like the Oryx where they get the Copilot Operational
10 Training Conversion Course. So that comes back to the third part of it.

Then you bring them back again to the LUH after they've gained a bit of experience as a copilot on the Oryx and being exposed to operations. Excuse me, we bring them back
15 to the LUH again to do the operational course on the LUH, and when they're finished there they are now commanders and they can do operations on that aircraft, and then they do a tour on that LUH. From there we take them to Oryx as commander tour, they do a bit of training to become a commander, they've
20 done all the basics, it's just the hour-period that they have to fly to get the system under their belts again, and then from there we take them either to the Rooivalk and they could stay with the Oryx, we take them to the Rooivalk if the need is there, or we take them to the Lynx, the maritime helicopter.

25 ADV MPHAGA: And before the A109 LUH was acquired during

11 SEPTEMBER 2013

PHASE 1

the SDP Process, which helicopter was used in its place?

BRIG GEN BURGER: We always followed the PC7 and then we made use of what we call ASD, alternate service delivery where we outsource and made use of a civilian company to train our
5 people. From there we took them to the Oryx, but that's very expensive because the basis were laid on that ASP but then on the Oryx we had to do the military part of it, so that did not work out, so we've changed our way of doing the training.

ADV MPHAGA: And what are the advantages of the simulators
10 General?

BRIG GEN BURGER: There are certain competencies that is basically very procedural like instrument flying where you have to go through procedures to be able to do that task, to execute that, so instead of being in the platform that runs at a certain
15 amount of hours, Rand-per-hours which is very expensive, you put them on this simulator to do that training, so they get that under their belts and it's easier for them when they get onto the platform itself to apply that, those procedures, but it's not only for that, it's also emergencies that you could not introduce
20 when you are doing training, that you can exercise and practice emergencies on the simulator that you can't do in the real world.

ADV MPHAGA: I think in paragraph 27 you are indicating how the instructors were trained on the LUH and that then was
25 transmitted to the SA Air Force in terms of training instructors

11 SEPTEMBER 2013

PHASE 1

on the LUH, can you take us through that?

BRIG GEN BURGER: Mr Chair, I would like just to make a correction here, in my statement I was referring to one course which is not true, the initial training of the pilots and technicians were all done in South Africa by the company, the OEM instructors, but we had two courses of four pilots each on the pilot side and we had two courses of eight technicians, each on the technical side, so these people were then trained and they were instructors and they are now teaching the other people, so they were the core group to be taught and now they are doing the instruction for that again. Trainer training.

ADV MPHAGA: You say it was the trainer kind of training?

BRIG GEN BURGER: Yes Sir.

ADV MPHAGA: And then paragraph 28 you indicate that:

“Peace time training for operational missions is done under all weather conditions”.

Can you elaborate on that?

BRIG GEN BURGER: Sir, that is one of the requirements that we had for the LUH and the advantage that we have with the LUH which we did not have with the Alouette, it's fully RFR, complying to all the requirements and in any weather we can train and that is basically if you are flying in other parts of the continent like the Equator and where we are currently busy in Goma. You need to meet up with the adverse weather conditions, so this is most important to do the training on this

11 SEPTEMBER 2013

PHASE 1

aircraft on a cheaper platform to be able to do that work there. The other thing is also, and coming back to the computer based trainer, the procedural trainer, you can also do your night-vision, NVG competencies, not the full competency, but you
5 can go through the procedures in the simulator and this is a good platform to start off with. And also on the LUH we are doing NVG flying and up in the DRC it's very frequently used, that competency.

I can just mention, and it should come with the
10 operation Mr Chair, is that at the end of 2011, beginning 2012 some of our troops, 14 of them were wrongly dropped by another contingent, a helicopter contingent in the DRC and they dropped them amongst rebels and then there were negotiations and rebels said to us listen, if you don't take them
15 out within the next two or three hours there's going to be trouble. So the two Oryx's flew under those NVG conditions and we picked up our troops and we brought them to safety, so that is very important, and if you install that competency at a younger stage of the career the better it is.

20 ADV MPHAGA: The LUH which we acquired, the 109 has got the capabilities to be used during night time?

BRIG GEN BURGER: Yes Sir very much so, it's got all the instruments and capabilities to do night flying.

ADV MPHAGA: Now can you just move to paragraph 29 where
25 you speak about the specific roles and capabilities of the LUH

11 SEPTEMBER 2013

PHASE 1

and the first one you deal with is the landward operations.

BRIG GEN BURGER: Mr Chair, that is also taken out of the URS and that was the requirement. Now the landward operations is not only in support of the Army sometimes, or the
5 Navy landward operation, you won't believe it, but like it is utilised in border patrol, we all know that there is an Operation Corona established to protect our borders where we are deploying companies of the Army to do border protection and these helicopters are very suitable to support them to do
10 trooping, resupplying, communication flights in that area, or a reaction force for that matter.

ADV MPHAGA: General just in respect of the border I think evidence has been led that previously the border control was done by the South African Police Service and now it is done by
15 the South African Defence Force, am I correct?

BRIG GEN BURGER: Yes, border control to the best of my knowledge has always been done by Police but the border protection, the patrol, the control is at the control points, but the protection was our responsibility and it was taken away,
20 now it's back with us again.

ADV MPHAGA: So the LUH is utilised in respect of border patrols and ...

BRIG GEN BURGER: Sir, that is the most suitable aircraft or helicopter platform to be utilised as support of border patrols.

25 ADV MPHAGA: Now the third one is the cargo transport, can

11 SEPTEMBER 2013

PHASE 1

you take us through that?

BRIG GEN BURGER: That's a utility helicopter Mr Chair, it's just a lighter load that it can take than the Oryx, but normally it's much cheaper than flying the, operating the Oryx, and if we
5 don't have to take heavy loads they utilise the LUH.

ADV MPHAGA: Cargo slinging and hoisting?

BRIG GEN BURGER: Cargo slinging and hoisting, the slinging part is under the belly of the helicopter, you normally have a net or you hook some load to a cable and then you transport it
10 to a place that you can't reach by road, or you can do vertical replenishment on ships with this, so you take a load, whatever it is, from one place in undrivable conditions to other places and you drop it there.

ADV MPHAGA: And the casualty evacuation function, can you
15 take us through that?

BRIG GEN BURGER: Sir, I will just on the hoisting side there's just the hoisting, I must just mention, I think Colonel Viljoen referred to the 4x4 fraternity where they use winches, now this is basically an airborne winch where we take people on the
20 rescues from out of the mountains, up from the sea, we pick them up and it works on a winch, a motor that you can hoist the people up if you can't reach the land or the sea, the area by the helicopter itself.

Carrying on to evacuation Sir, Mr Chair is that that
25 is normally you have that whenever the ground troops are

11 SEPTEMBER 2013

PHASE 1

involved in any operation and as a quicker way of bringing your casualty out of the operational area to a place where they are geared for, and that we do, that is also one of our secondary roles that we often execute is casualty evacuation, we even do
5 it for other departments from time to time.

ADV MPHAGA: How frequent do you do such evacuations General, casualty evacuations?

BRIG GEN BURGER: Right Sir, it's basically the operational area, our command post is doing, are doing those tasks, I don't
10 always get all that information but whenever your troops are deployed on the Mozambican border or whatever, if he's been bitten by a snake or a scorpion or whatever, we do it very frequently, I can't tell you (indistinct) or whatever, but it must be there, you must have that protection of people.

15 **NOTE: Please take note that the witness is speaking very inaudibly. Transcription proves difficult.**

ADV MPHAGA: And the communication flights aspect?

BRIG GEN BURGER: Communication flights is to take people from one spot to the other, if you need to take a general to an
20 operational area we take them there, we do internal communication flight (indistinct) exercises, if there is a need to take people to a place. When we were deployed on the Lesotho border the best way of getting there for visits by the minister or whoever, it's done by helicopters, so that's part of the
25 communication flights.

11 SEPTEMBER 2013

PHASE 1

ADV MPHAGA: The command and control, can you take us through that?

BRIG GEN BURGER: Command and control I would think is the most important part of this aircraft where you normally have, you can do it yourself if you command and control your own aircraft, but when you are doing trooping in support of the Army you normally have an Army person within the helicopter and then he controls his troops on the ground and being elevated in a good position you can easily adjust the movement of your troops, but this is a very important aspect of this aircraft.

ADV MPHAGA: So it can be used in supporting role of the troops being the Army wing?

BRIG GEN BURGER: Yes that is our primary function, is the Army, but we can do it, we can even control our own aircraft if we have to go into a danger zone where there's enemy with your combat support helicopter supporting you, keeping the heads down so that this aircraft can command and control this (indistinct) of yours to get safety into the area.

ADV MPHAGA: The forward airborne controlling, what is that General?

BRIG GEN BURGER: It is almost similar than command and control but that's when you deliver weapons, a Hawk or a Gripen comes in support them by doing forward air control by telling them listen, the troops are there, don't shoot there, shoot this side or whatever the case may be but they're

11 SEPTEMBER 2013

PHASE 1

controlling fire from other aircraft and even your Rooivalk.

ADV MPHAGA: The next one is the search and rescue functionality, can you take us through that?

BRIG GEN BURGER: Search and rescue, that also often
5 happens, whenever an aircraft goes down we are responsible
as part of SASAR to execute certain duties, responsibility, and
when they realised that an aircraft hasn't reported or whatever,
then we go and look for that aircraft. It's planned and in a
certain way they've got their ways of SOP's to do the search.
10 On the rescue side, if you got hold of, or spotted the position
wherever a person has fallen off a cliff or hurt himself or fallen
off a yacht in the see, then you retrieve that person by means
of a hoist and that often happens. As a matter of fact on
Saturday a student, learner fell off a cliff in the Blyderivier
15 Poort area and then we recovered the body out of the mountain
on Saturday. Unfortunately he passed on but we recovered the
body.

ADV MPHAGA: And in respect of the disaster relief?

BRIG GEN BURGER: That video clip that we've shown, the
20 disaster relief specifically, Mozambique, we've done it very
often. I was the very first person after the election in 1994 to
be deployed as the (indistinct) on the ground commander of the
disaster relief operation there, or (indistinct) for that matter,
we are, I think world famous for that, that clip of the lady
25 giving birth to the baby girl, even today that lady, the mother

11 SEPTEMBER 2013

PHASE 1

receives a UN grant to support, that's the work we are doing and not only that, it's also fires, veldt fires, bushfires, whatever that we support.

5 ADV MPHAGA: And you refer also to special operations function, can you take us through that one?

BRIG GEN BURGER: Sir yes, that's where we operate with Special Forces or people that's going to places that other people mustn't know about, clandestine operation, we sometimes do that, it all depends on the situation.

10 ADV MPHAGA: And how much capacity General, are you able to indicate that the LUH can carry in terms of persons?

BRIG GEN BURGER: Sir, it's two plus six, so it can take eight people, but your passengers, troops are normally six.

15 ADV MPHAGA: And you further indicate that it can be used for urban operations?

BRIG GEN BURGER: There I'm basically referring to our support to the SAPS and operations that we get to now-now, Kgwele, (indistinct) things that we fly in the urban areas and because it's a twin aircraft we are capable and allowed to fly
20 over urban areas, so it's not dangerous for the people on the ground.

ADV MPHAGA: The VIP transport function?

BRIG GEN BURGER: In some cases we fly our heads, our chiefs, we sometimes fly dignitaries from overseas that is
25 required by DIRCO, aircraft could do that type of flying.

11 SEPTEMBER 2013

PHASE 1

ADV MPHAGA: Maritime operations function?

BRIG GEN BURGER: Sir basically the same, it's just from the ship over water, I've explained communication flights Mr Chair, mooring party [sic], I say mooring party is taking people from
5 shore to the ship or taking them back and put them onto the ship. Hydrographic support, that's the surveillance the Protea and those types of ships that move around and we can support them in their, that task, we could also as from the land side rescue from ships.

10 And I can maybe refer to the Oceanus incident that happened a few years ago where we basically saved 255 people from (indistinct) and after the last few persons I don't think it was 10 minutes then the ship sank, so we brought them ashore and they were saved. I think that was an outstanding
15 performance from the helicopters, now at that time we did it with Oryx's but we didn't have LUH's, but the LUH's also could be used in that regard.

ADV MPHAGA: And you have indicated it can also do maritime vertical replenishment, what is that?

20 BRIG GEN BURGER: Yes Sir, that's basically to take a load from land to ship or back to land, is to replenish, without landing on the ship you can put it down with the cargo sling on the ship.

ADV MPHAGA: And you say you can do also search and rescue
25 over the sea, to what extent will you compare it to the Lynx,

11 SEPTEMBER 2013

PHASE 1

the maritime helicopter?

BRIG GEN BURGER: Sir, the Lynx is basically not, the function of the Lynx is not only, it's not been procured for that function (indistinct), but the LUH because it's a twin you can
5 put the equipment on to make it seaworthy and it all depends on your range that you can operate into the water to go and rescue people, so it fulfills the same role as the (indistinct). All of them can do this task.

ADV MPHAGA: I think you have already mentioned about the
10 Special Forces deployment.

BRIG GEN BURGER: Yes, I did Mr Chair.

ADV MPHAGA: Thank you General. Maybe let's then go to page 8 and deal with the performance of the SDPP in terms of the constitutional mandate and you indicate that since the
15 delivery of the LUH it can be measured against the SAF User Requirements Specification, I think Colonel Viljoen has spoken at length about the URS, are you saying that the LUH is complied with those user requirements?

BRIG GEN BURGER: It is compliant Mr Chair.

ADV MPHAGA: But certainly you indicate that there has been
20 three accidents and the LUH's are down to 27, can you just take us through that?

BRIG GEN BURGER: Yes Sir, I can. Mr Chair we normally, well not normally, that's practice that we train our people
25 according to a curricular syllabus for different competencies

11 SEPTEMBER 2013

PHASE 1

and they are tested and we make sure that that person will supply it safely on that aircraft. We had those accidents which was very unfortunate, but like I've said from management's side we are doing, and we're implementing from time to time
5 new, not measures but training exercises to make flying more safe. Whenever we leave a person or task him to do a task then we are sure that that person can execute that task.

But you also have the human factor and it is also the responsibility of that pilot whenever he's applied in a role
10 or task or asked to do things that he is not comfortable with, to decline it. So, it's not nice to talk about this but we had those accidents and I can just say that in the case of the one accident that took place over the Woodstock Dam in Kwazulu-Natal the Board of Inquiry finding was it was due to human
15 error.

Then we had an accident in Potchefstroom where the pilot did a very hard (indistinct) and that was also due to human error. And then we had an accident in Ballito just north of Durban where the initial indication was that it was due to tail
20 rotor failure or malfunction, but the case is still pending as there is litigation involved, so I can't, it's basically *sub judice*, I can't reveal anything on this one further.

But like was mentioned by my colleague General Bayne we are belonging to a user group through the OEM, so
25 there are a lot of people flying the 109, so all these incidents

11 SEPTEMBER 2013

PHASE 1

that take place and possible technical problems we are referring to the user group and through the OEM they are sending back corrective actions *et cetera, et cetera* to fly the platform safely. So this was mentioned to them and then they

5 came back and said alright check this, check that and what the problem could be, but like I've said I'm not going to reveal on the outcome but that's the way we are operating those aircraft, we inspected our fleets.

And I can just say that in the case of the first

10 aircraft at the Woodstock Dam three people passed on, got killed, that were crew, South African Air Force members. Then the Kruger National Park one that was on the 30th of March this year where five people got killed, that Board is still on the go, although in May we, the Technical Review Board released the

15 aircraft technically to service again, but that review board, or the Board of Inquiry is still continuing.

I can just say that there are 540 A109 aircraft flying worldwide of which 82 or a 100 are LUH (indistinct) that we are flying. South Africa, Sweden, Nigeria, Malaysia, New Zealand

20 and Algeria are operating the LUH's and at this point in time I'm not aware of any fatal accident experienced by specifically the user group, the LUH countries and therefore I can basically confirm that the design of the LUH itself.

ADV MPHAGA: So the three LUH which were in accidents, they

25 are not repairable General?

11 SEPTEMBER 2013

PHASE 1

BRIG GEN BURGER: Sir, yes. The three, the Ballito one is not repairable, the KZN one over the Dam is not repairable, the Kruger National Park one is not repairable, the one that did the hard landing at Potchefstroom is repairable.

5 ADV MPHAGA: Thank you General, and in respect of the exercises and operations paragraph 32 you say that:

“The LUH was successfully deployed in exercises like Winter Solstice, an Air Force training exercise”.

Can you just take us through that?

10 BRIG GEN BURGER: Yes Sir. Winter Solstice is an Air Force exercise and we have successfully participated in more than one Winter Solstice exercise where it proved to be a very useable aircraft in the role, the reason why we acquired it for the roles, it's been applied very, very well.

15 ADV MPHAGA: Is it an annual exercise or was it a once-off?

BRIG GEN BURGER: No, it's an annual exercise Sir.

ADV MPHAGA: And the second one is the Young Eagle joint exercise with the Army, can you take us through that?

BRIG GEN BURGER: Sir yes, the Army has more than one
20 exercise like Seboka, the Young Eagle that they also are executing to get the air forces prepared and in most of armed operations our aircraft, specifically the helicopters are supporting, not only with the casual evacuation but part of the trooping, the command and control as was explained earlier on
25 when I explained those options.

11 SEPTEMBER 2013

PHASE 1

ADV MPHAGA: So, the Young Eagle and Seboka, they are also annual exercises that you do jointly with the Army?

BRIG GEN BURGER: Yes Sir, sometimes it's postponed or whatever but it's an annual exercise or exercises.

5 ADV MPHAGA: The Good Hope and Golfinho exercise, the SADC exercise, can you take us through that?

BRIG GEN BURGER: Yes, the Golfinho was quite a large exercise where we had our different forces coming from a SADC country and we, some of the people entered at Upington and
10 then we also go down to Lohathla and our aircraft, the LUH specifically were utilised in that exercise. The Good Hope one, let me just get to my reference, the Good Hope one, I'm sure that Good Hope one is in conjunction with the Navy, I'm not very sure on that one but I'm sure it's in collaboration with the
15 Navy.

ADV MPHAGA: And you also referred to Operation, is it Shield?

BRIG GEN BURGER: Yes, Shield was also the exercise practice for Kgwele for the Soccer World Cup.

20 ADV MPHAGA: Chairperson, I see it's about 11h30, it may be the opportune time just for a tea break.

CHAIRPERSON: I think we'll adjourn for about 15 minutes or so. Thank you.

ADV MPHAGA: Thanks.

25 **(Commission adjourns)**

(Commission resumes)

CHAIRPERSON: Can the witness confirm that he is still under oath?

BRIG GEN BURGER: I do.

5 CHAIRPERSON: Thank you. General, can I request you to speak directly into the mic because Judge Musi and I are having difficulties of hearing exactly what you are saying, can you just try and speak slowly and clearly and into the mic because we are battling to hear what you are saying.

10 BRIG GEN BURGER: Is that better Mr Chair?

CHAIRPERSON: Yes.

ADV MPHAGA: Thanks General. We were on paragraph 32, we are now proceeding to paragraph 33 in respect of the exercises and operations where the LUH participated. Now can you take
15 us through the Operation Chariot, the standing operation for firefighting and floods internally?

BRIG GEN BURGER: Mr Chair, I will refer to the standing operations and explain what they are all about, then I will go back to the back page where at 100, page 100 it will explain
20 more detail about the operation. Now Chariot is a standing operation for firefighting and floods internally, if ever we are tasked to do operations in this regard it's referred to as Ops Chariot. Corona as I've referred to is the Army border protection but it's not only Army, it's in support of the Army, all
25 the services are involved.

11 SEPTEMBER 2013

PHASE 1

Edel Valk is supporting the National Parks Board in nature conservation, Op Horizon and Rhino is anti-rhino poaching operation. Op Isipho is assistance to the President, presidency. We all know that Kgwele as the Soccer World Cup, and then Op Prosper is in support of the SAPS of the South African Police Services.

ADV MPHAGA: Take us to the detail that you said you will take the Commission through, on page 100 of the bundle in respect of the exercises and operations, the period that they took place, thank you.

BRIG GEN BURGER: Thank you Mr Chair, the very first one is Chariot, the firefighting and flood relief, there you have the dates in September, November 2010, we were doing firefighting in the Rosendal area. That's basically in a command and control role. In January 2012 we had the floods at Hoedspruit, in that area where our base was also severely damaged by the floods. November 2012 we did firefighting in Kimberley and then some of the floods, well it was a small flood that took place in January, February in Mozambique, just across the border that we participated in.

Op Cordite we only supported as an exercise by when we do mobilisation for Op Cordite in Sudan. Op Corona is the border protection and there we have different dates from 2010 to 2012 and where we did (indistinct), VIP communication flights and trooping, mostly trooping. Again Corona we were

11 SEPTEMBER 2013

PHASE 1

involved at Makhado also. Op Edel Valk 2010, October 2010, we supported the game census at Hoedspruit and again in 2011 game census we've done. Winter Solstice, that is our ...

5 ADV MPHAGA: General, before you proceed. Can you explain what is a game census?

BRIG GEN BURGER: That's like a census for people, it's the count of the different species in that area to be able to manage it better depending on the situation, the (indistinct) *et cetera*.

ADV MPHAGA: Was it for, was it private or public function?

10 BRIG GEN BURGER: Sir that is basically in support of ourselves, these two, we have game, not farms but we have, we're part of nature conservation, so we have game camps at Makhado as well as at Hoedspruit. May I continue Mr Chair? Winter Solstice, these two annual exercises Eastern Cape as
15 well as in Kimberley, the second one. Young Eagle normally takes place at Bloemfontein at De Brug, Golfinho I've referred to, that was a SADC exercise.,

Op Horizon, anti-poaching, rhino poaching, it is mainly in the Kruger National Park but we are getting involved
20 in down south in the Eastern Cape also. Isipho, that is VIP transport for the President, not necessarily the President himself. Okay Rhino, the Op name has changed now to Rhino and it's also that period that we participated there and that's also in March that the accident took place. Then we also were
25 involved in Kgwele very much so, Kgwele we flew over 275

11 SEPTEMBER 2013

PHASE 1

hours and that was quite a useful operation to see whether the system operates as we want it to operate.

And then also Shield, that was the forerunners for Kgwele. And then Op Prosper is in support of the SAPS on those occasions, August to September we participated in several operations, the same with the May, December 2011. Sir, that concludes my operational part.

ADV MPHAGA: Thank you General. Now in respect of the accident General, you indicated that in one of the accidents the pilot and three members passed away, am I correct?

BRIG GEN BURGER: Correct Mr Chair.

ADV MPHAGA: And in respect of the other two was there also loss of life?

BRIG GEN BURGER: The only other one was the one in the Kruger Park where five people got killed. So, it was two crew plus three soldiers, Special Forces soldiers and in the case of the dam it was three Air Force people.

ADV MPHAGA: Once you are constrained in elaborating in respect of the other accident, but you indicate that it relates to the error on the part of the pilot?

BRIG GEN BURGER: On the Woodstock Dam one the finding was human error, so with the accident in Potchefstroom human error. The Board on a KNP, Kruger National Park accident, the only outcome there is the release, the technical release to service, but the other part of the board is not finalised yet.

11 SEPTEMBER 2013

PHASE 1

ADV MPHAGA: And any remedial steps recommended or taken after these accidents?

BRIG GEN BURGER: Sir I've mentioned Mr Chair that we are continuously upgrading our curricular and syllabi, if the board
5 reveals certain aspects that's maybe neglected then we introduce measures to counter that.

ADV MPHAGA: I think it was indicated during evidence, I think of Viljoen, that in respect of accidents of these aircraft or rotary wings the aircraft are grounded until the investigation is
10 completed, is it the same process that was followed in respect of these accidents?

BRIG GEN BURGER: Yes Sir that is true, you either stop-fly or you ground. In the case of an accident normally you ground the aircraft until the board is finalised or not, or the technical
15 report are given, then according to that we have got strict rules and policy in that regard.

ADV MPHAGA: And in respect of the user group that you have already alluded to, are you aware of any accidents in respect of the members of the user group of the LUH?

BRIG GEN BURGER: I've mentioned Sir that I'm not aware and I'm speaking under correction, I'm not aware at this point of any serious accidents that took place.

ADV MPHAGA: And speaking of the user group General, what are the advantages of having this user group as part and parcel
25 of those who have purchased the same LUH?

11 SEPTEMBER 2013

PHASE 1

BRIG GEN BURGER: It was, Mr Chair it was very well elaborated to by General Bayne that the more people participate in this user group structure the more information you get on the system, if they experience or discover any
5 problems with the system or they are having maybe new advanced plans or suggestions for that matter they are referring it to the OEM and then it's just repeated to all the other people and it's also a yearly meeting that the user group go to where we discuss all the matters and issues and aspects
10 pertaining that system, all the problems that we experienced not only with possible faults but also with support, turnaround time of spares *et cetera*.

ADV MPHAGA: At paragraph 35 page 8 of the bundle you mention that:

15 *"Of the remaining 27 LUH's a couple of them await maintenance under regular maintenance programmes"*.

And then you say:

20 *"The supply chain management for the procurement of parts is lengthy"*.

Can you elaborate on that?

BRIG GEN BURGER: Mr Chair if I may I would then just say quite a lot on this whole situation, that will include the answer maybe of this. It was referred to by General Bayne that the
25 medium term expenditure plan is not conducive to operate all

11 SEPTEMBER 2013

PHASE 1

your systems fully, so that needs or requires then to work on austerity measures. Now Director (indistinct) also had to implement the austerity measures, so we prioritised our situation and our systems, remember I've referred to the fact
5 that we are operating five different helicopters and then we decided that our focus would be on the Oryx platform, the reason for that was, is that we have audit commitments for the Oryx and that we would focus to get the Oryx system to an accepted level.

10 Now going with this at this point in time we have luckily enough crew to do what we have to do but we've envisaged, and excuse me, what we've planned for. Now what we ... At this point in time there is no need to get people into the system of the Oryx for instance, we have enough crew
15 there. Now the LUH as I've mentioned is our trainer aircraft, so normally when they're finished and there's enough crews with the LUH and there's a need for Oryx crews we transfer the people over to the Oryx system and then for filling those vacancies and be trained to operate the system.

20 Now what we did is we did transfer some people to other systems but we kept a core group of instructors and people with the LUH. The reason for that is there was a change in policy with regard to our officers and specifically pilots, that the people must obtain degrees, developmental
25 training, and that gave us some space and leeway to shift our

11 SEPTEMBER 2013

PHASE 1

courses a bit to the right, so there was no immediate need to do courses on the LUH specifically, so and that gave us also the opportunity then to limit the budget of the LUH.

5 The next round we will again evaluate the situation and then we change our plans accordingly, but now that gave us a bit of leeway. And some of the members that was not caught up in this arrangement of the degree, the initial start of the first year, they have already done their planning but they are studying, we let them continue as part of the austerity
10 measures with the PC7's, so they are kept there, it's a cheaper platform to fly, the same as with combat systems, they are flying and keep their currency on that aircraft.

Now for the LUH system we have budgeted to have a contract with the OEM in place and then as was mentioned by
15 General Bayne also it normally, through the year funds become available. Why I say funds become available, for instance some of the spares could not be returned or sent and be paid within the financial year then we manage that, we monitor all that and we take that money away and we send that spare up at
20 a later stage and we take that money to utilise in the systems that we need it for.

So, we have budgeted for this system to maintain the integrity of the system, is to have the contract, to have 70 hours that we, 71 hours rather to run the engines and do some
25 calendar-based servicing until we are fortunate enough to

11 SEPTEMBER 2013

PHASE 1

receive some money.

Now the accident of the 30th of March was the end of the financial year, that ordered us basically to stop flying and ground the aircraft, but the grounding was lifted in May. 5 Now the contract is in place, so if we have money we can buy spares and to come back to the question that was asked by Evidence Leader Mr Chair was the long delay of spares. Now with the contract in place it's easier to quickly order and then the process is in place to bring spares in, but it takes some 10 time, some of the spares are from overseas and they've got their recess times, some holidays *et cetera, et cetera*, but you have to plan around it.

The other problem that we have with our serviceability of the aircraft was that we've changed, or the 15 user group, the OEM changed the service schedule of the system, a more cost effective service system but it entails administrative work that had to be redone, so some of the physical servicing that's been done where they change maybe spare parts and filters, that stays the same, but the admin 20 process has changed and now we have to go through the whole process again, so that delayed the serviceability of our aircraft. But that also give us the opportunity that our pilots could do their developmental training which they normally fall behind with in normal times when we operate them extensively, 25 and this also gave us an opportunity, or the ground crew, to be

11 SEPTEMBER 2013

PHASE 1

more exposed to the serving schedule.

So Sir, in the meantime the funds became available, we have aircraft serviceable, we are working hard to get them serviceable, we have started to finalise instructors course at
5 87 Helicopter Flying School in Bloemfontein and we are also, have started with the operational testing and evaluation finalisation as was mentioned by Colonel Viljoen. As our serviceability improve we will expand on our force preparation of the people at the squadron and hopefully by January when
10 we have to do that, those other forces to get the system flowing again, to get the pilots through, we will be in place to do what we have to do. Thank you Mr Chair.

ADV MPHAGA: Thanks General. The maintenance capability, do we have a local maintenance plant that is able to maintain
15 the LUH system?

BRIG GEN BURGER: Sir yes, the OEM has an approved dealership if I could call it that way, another structure, institution that could provide that service, but the design of our servicing schedules is that most of the services we can do at
20 the base, now with more exposure and experience of our own technicians we can take most of the work out of the hands of the OEM that we have in place, that is in South Africa, so it's a, that's why I've mentioned also the servicing schedules, we are getting inputs by the user group on how to change certain
25 things that's more cost-effective, we would like to have longer

11 SEPTEMBER 2013

PHASE 1

periods between services and we are working on that, but we have the capacity at this squadrons, it's enough to do what we have to do at the squadrons on our model that we're working on and we have the deeper level servicing OEM at Wonderboom.

5 ADV MPHAGA: In paragraph 36 you indicate the challenges that you were facing in respect of reduced flying hours and this affects the opportunities for both air and ground crews to enhance their skills, can you elaborate on that?

BRIG GEN BURGER: Yes. Mr Chair yes, with everything in life
10 the more you do it the better you can do it and I would like to see my people operate the system fully and to be able to put it to its full use, but with our measures that we've put in place by next year and after the (indistinct) has been signed off to the system we will be able to embark on that to fully apply the
15 aircraft operation. That is a problem at this point in time with the measures that we put in place that the people are not exposed as they should be, but we've limited the numbers of people at the squadron, so the next time or the next planning cycle we'll address that issue.

20 ADV MPHAGA: General Bayne has indicated that you have been provided with more budget than himself, is that correct?

BRIG GEN BURGER: That is correct Sir but I'm working all the time, but that's in lighter vein. No Sir, I've got five systems and General Bayne has got two systems, so that's why I have a
25 bigger budget.

11 SEPTEMBER 2013

PHASE 1

ADV MPHAGA: Now in paragraph 37 you indicate about the necessary logistics support elements that have been provided and including facilities at the units, bases and deeper level SAAF agencies, can you just elaborate on that?

5 BRIG GEN BURGER: Mr Chair yes, what we are trying to say here is the fact that what should have been done by the project to give the facility and to provide all the equipment and machinery and ground equipment to be able to operate the aircraft has been done. Latching onto this the OEM is for
10 deeper level services, but what we have to do at the squadrons we can do with the equipment and the training that we've received.

ADV MPHAGA: So you further indicate that because of the limited numbers that you have purchased in terms of the LUH's,
15 that limited also the capability to, for repairs to be done locally here, so 50% of the LUH's, are they repaired overseas?

BRIG GEN BURGER: Mr Chair, that's ... That is basically addressed by Colonel Viljoen, that whole issue around local repairs and the involvement of local industry, but it is also part
20 of the Defence Review that we must go for the most cost-effective way of operating the system and we are continuously looking into that. We have our engineers and General Pelsers people to support us here, so that has been scrutinised thoroughly, so we are going for the cheapest or most cost-
25 effective rather, options.

11 SEPTEMBER 2013

PHASE 1

ADV MPHAGA: Then in paragraph 8 you make a statement that the system was integrated in the South African Air Force without allocation of an operating budget, what do you mean by that General?

5 BRIG GEN BURGER: Mr Chair I can just say, and since Admiral Green has started with his evidence it was said that there was a way of sort of getting the money to operate. I'm not going to allude on that because I'm not really au fait with the situation but what normally happens is with the project you
10 get a certain amount of money to get the project going and to get it into service and to operate it with a spares package *et cetera, et cetera*, and General Bayne also referred to that. We've got a similar situation, is that we bought the system or the platforms but the backup was not sufficient and we thought
15 that the money that we could get out of the budgets later on would be sufficient to operate but that did not happen.

ADV MPHAGA: General, the fact that the air and ground crew could not get sufficient time to enhance their skills in respect of the flying hours, did that affect the reduction of their
20 numbers or you have retained their numbers?

BRIG GEN BURGER: In certain cases we let them fly with the other systems, but we even took a few of them to put them into the other system where we had vacancy, the others are doing courses and there's a core group as I've mentioned that is now
25 busy picking up on their competencies. But whenever the other

11 SEPTEMBER 2013

PHASE 1

people are coming back they will do their training again to be, as I've explained for the accidents, to be according to the curricula trained up to a point, force prepped, that they can safely operate the task they have been allocated.

5 ADV MPHAGA: Has that affected further recruitment of keen would-be pilots?

BRIG GEN BURGER: Mr Chair, it was also explained by General Bayne that we are in the (indistinct), we have a bit of a difficult time, so we are really, we are cutting down on the
10 numbers, but we don't stop with the people, we don't stop with training. I've mentioned that I've pushed my courses a bit to the right, there's a bit of a hold, but we're not stopping the process.

ADV MPHAGA: Has this reduction of flying hours led to the so-called grounding of any of the LUH's?
15

BRIG GEN BURGER: You can't say grounding Mr Chair, it is a fact that we are limiting the flying. We've put the austerity measures in place to keep the system integrity and fortunately we are receiving money now to continue, that was a bit of a
20 holdup but we are going back to normal as we continue now.

ADV MPHAGA: You are not experiencing the so-called mothballing process?

BRIG GEN BURGER: No Sir, in this case that 71 hours allowed us to run the engines and that is the specification of the OEM,
25 that is sufficient to maintain the aircraft. And we are running

11 SEPTEMBER 2013

PHASE 1

the whole fleet, we are not putting aircraft away. I must also say that you can't have all the aircraft available at one time, we call it staggering, so you've got a programme, we've got aircraft in service and aircraft operational available, operationally available, so we have now time to do all our staggering and to make our plans to have a proper system going in future.

5 ADV MPHAGA: Do you have sufficient pilots also to fly the LUH system?

10 BRIG GEN BURGER: At this point in time Mr Chair we have sufficient pilots to do what we're ordered to do.

ADV MPHAGA: Thank you General. In paragraph 39 you indicate that:

15 *“Despite all this all the South African Air Force essential operational needs can be provided from a combination of the LUH and other resources such as the Oryx, but this is substantially more expensive to operate than the LUH”.*

Can you elaborate on that paragraph General?

20 BRIG GEN BURGER: Sir yes, as I've said they are both utility helicopters, the one platform is just a bigger one, it can do more work at one time, and as we have done our planning, our austerity measures we have limited also on our support to employ, so we are adjusting the whole situation to get through
25 this period until we are in a position to continue normally.

11 SEPTEMBER 2013

PHASE 1

ADV MPHAGA: So you are saying that the next year budget is giving you some form of relief to say that you will be able at least to operate optimally at some stage?

5 BRIG GEN BURGER: Sir, Mr Chair, the budget is basically for the MTEF the same, but at this point in time there is some inputs, if I could call it interventions that give me a better situation next year that will lead to a better situation.

ADV MPHAGA: Thanks General. Let us move then to the topic of utilisation I think, which is the main topic that you say you want to speak about, and paragraph 40 speaks about that:

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“To date the LUH’s have flown over 18 000 hours since entering service in 2005”.

And you are saying further that it was initially planned for to fly 6 000 flight hours per year, which given the buildup of the fleet would amount to approximately 40 000 to date. So, you have flown almost half of the hours that were expected, can you explain General?

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BRIG GEN BURGER: Sir yes, it was also explained by Colonel Viljoen that you base your planning initially on an amount of hours per airframe, our plan was to have or to fly 200 hours per airframe per year, but remember now we build up from 2005 until 2009, we haven’t had all the aircraft at once, but the 40 000 is sort of the target here, that is fine. As we’ve said, because of the MTEF situation and a lot of other reasons sometimes you stop flying but mainly, mainly because of the

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11 SEPTEMBER 2013

PHASE 1

austerity measures we came up to 18 000 hours over this period. This is, the 40 000 would have been the ultimate, then it was a fully-fledged operational budget with everything that you basically need monetary-wise.

5 ADV MPHAGA: And you indicate further that:

“The hours flown allowed for 95% completion of the operational test and evaluation done at the units operating the aircraft with only air and ground crews”.

10 Can you explain that further?

BRIG GEN BURGER: Sir, the original project requirement as was explained by Colonel Viljoen, those OT&E requirement aspects have been handled, but as we went on with the evaluation, testing and evaluation other five other items came to the fore that we've added to the aircraft system like the observation system, the light, the guns, secure coms, and that is taking now time to finalise that, but the planes are well underway and the process for that matter is at this point in time that I can almost call a date when I'll be finished, so we are just finalising that, so we are almost finished with that.

15 ADV MPHAGA: So, the 18 000 hours you were indicating on paragraph 40 includes hours flown by all the 27 LUH's to date?

BRIG GEN BURGER: Sir that includes the hours flown by the aircraft that had accidents also, it's basically all 30, the others I have just (indistinct), but there were also hours flown with

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11 SEPTEMBER 2013

PHASE 1

some airframes in Italy to test and evaluate other requirements that we had that they, as part of a project did for us, Colonel Viljoen alluded to the fact that we've changed certain components and things that we wanted to change like the seats
5 *et cetera*, and they had to go through a test phase by flying, but I think it includes all of that, all of those.

ADV MPHAGA: Paragraph 41 you indicate that the (indistinct) *versus* actual hours flown is shown in the table on page 102, is it 102 of the bundle, 102, 103, can you take the commissioners
10 through that table?

BRIG GEN BURGER: Mr Chair yes, the table that you have here is an OSIS printout, it's an Operational Support Information System, so the whole history and everything, the servicing and replacements and whatever happens to that
15 airframe is registered on OSIS. Now hours are the basis on which we work for servicing and other management issues. This is basically what I've explained earlier on, is that these are the OSIS hours on top, captured hours are hours that the pilots at the squadrons are capturing in the authorisation books
20 and their logbooks and you will see differences there, but they are working differently because on the OSIS hours it's from engine start until engine cut where your captured hours is from wheels lift to wheels on the ground. So, there are maintenance tasks also done where pilots are not at all, only technical
25 people, where the engines are run and then is logged as OSIS

11 SEPTEMBER 2013

PHASE 1

hours on top, so that's where the difference comes in.

ADV MPHAGA: And what is the significance of this document Sir, General, that you have referred us to?

BRIG GEN BURGER: Sir, like I've mentioned Mr Chair is that it
5 is a management tool, it is a (indistinct) support system,
information system and the whole history and everything that
happens, the hours, the replacement of tyres *et cetera* is
logged on this, so this is also part, it talks about the servicing
schedules and this gives you warning of when a servicing
10 should come up, when a component should be replaced *et*
cetera, so it's a whole computerised system, the management
of your system, of your aircraft.

ADV MPHAGA: In paragraph 42 you refer to the maintenance
man-hours per aircraft tail number of the A109 fleet from
15 delivery to 31 July 2013, can you explain that before you refer
us to the schedule attached as Annexure "PP6"?

BRIG GEN BURGER: Sir yes, the same as with for the
platforms itself, the maintenance hours are also registered as
part of the system. And that will give us also, when we have
20 our discussions and deliberations with the user groups, that
will give us an insight of how well we are managing our
systems, are those hours not too many, should we not
implement other measures to get the hours down for training
and servicing, so it's a whole big thing that we are working on
25 but the main factor is the hours that we have is the hours that

11 SEPTEMBER 2013

PHASE 1

the people are working on the aircraft, it's also registered and logged on the system.

ADV MPHAGA: On page 104 you are referring us to the schedule of the maintenance man-hours, can you just take us
5 through the document.

BRIG GEN BURGER: Mr Chair, as the aircraft were commissioned to the Air Force those are the tail numbers on the left hand side and then you get the year, so those are the hours, at the bottom the total and the different airframes that
10 they've worked on that airframe for that period, and so it continues and you see it builds up as we continue, and in 2009 you will see that all the aircraft have been (indistinct) and that was the time that we've received the aircraft.

And then you will see some gaps, that are the
15 aircraft that most probably was in accidents and they were not longer accommodated for on the system. But this gives you the total, it gives you, this is a management tool on what hours you spend and maybe with this you can also restructure your people working on the aircraft *et cetera, et cetera*, so this is basically
20 management, it gives you all the information on what is done on the aircraft, with the aircraft by people working on it.

ADV MPHAGA: Now in respect of, I think Admiral Green and General Malinga's spoken much about deterrence, does it also relate to the helicopters?

25 BRIG GEN BURGER: Mr Chair I would think so, it's a more

11 SEPTEMBER 2013

PHASE 1

friendly environment because we are frequently collaterally used but I can assure you that the people that are basically on the ground and there are helicopters in the air with (indistinct), they will see this as a huge deterrence. I would think in the African situation that we experience now a gunship or combat helicopter will be very, very effective and that for sure is a deterrent at this point in time.

ADV MPHAGA: In paragraph 43 you are now dealing with the operating costs, you say:

10 *"The operating costs of the A109LUH calculated on a basis of cost per hour flown are higher than anticipated due to the low hours flown".*

Can you just elaborate on that?

BRIG GEN BURGER: Sir yes, our servicings, and it was referred to and mentioned by General Bayne, we're talking about calendar-based servicings and hourly-based servicing. Our system runs on calendar-based servicing, so what it means is a period, after a period you must service the aircraft, it doesn't matter whether you've flown any hours or not, so the more hours you've flown in that period, the most cost-effective that aircraft is, and that is worked into a formula where under the (indistinct) amount of hours, divide it into your cost *et cetera*, and a lot of other factors, and that makes the difference, so the more you fly, the cheaper or more cost-effective, I shouldn't, it sounds like a Spar advert, the more

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11 SEPTEMBER 2013

PHASE 1

cost-effective the system would be.

ADV MPHAGA: The non-utilisation, optimal utilisation of this LUH system, does it affect its life cycle in any way?

5 BRIG GEN BURGER: Mr Chair if I hear you correctly are talking about a life cycle?

ADV MPHAGA: That's correct.

10 BRIG GEN BURGER: Sir no, I wouldn't think so. What I would say is that you would get a more service out of an aircraft if you fly it continuously according to the schedules and if you fly it optimally, but I don't think the life cycle, although it all depends on whether you are decommissioning the system and how long you keep, but I don't think it will have a very serious influence on that.

ADV MPHAGA: Paragraph 43 you continue to say that:

15 *"With its much more advanced systems it is substantially more expensive than the Alouette III that it replaced".*

Can you just elaborate on that sentence?

20 BRIG GEN BURGER: Mr Chair yes, because of the added systems, it's got two engines now, although the fuel consumption of the two engines are the same than the Alouette I's engine, because it's a more advanced machine, better technology, but we have the different systems that we have to service, there are computers in the system, there are the added capabilities that forms part of the expenses, so there's a lot

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11 SEPTEMBER 2013

PHASE 1

more involved, the capacity capability of this aircraft is far more advanced, so if you work the capability back then actually you shouldn't say this but taking the Alouette as it was with basic dials, or instruments, and what we have now with the advanced computers, autopilot to fly the IF and to operate certain systems we can strap on other equipment and as part of the aircraft itself it's fitted for certain other capabilities and as we continue we will get some of those capabilities if the budget allows, then we can just sort of add it to the system and that is why it's like that.

ADV MPHAGA: And you also indicate that:

"The current resources available to the helicopter systems are insufficient to achieve full and sustainable operational status".

Can you just elaborate on that General?

BRIG GEN BURGER: Sir, Mr Chair yes, that's, like I've tried to explain during the austerity measures that we would like to see that we get allocated budget for the system that will allow us to fully operate to its (indistinct), but with the austerity measures we have to plan and then we are sort of concentrating, focusing on the requirement first before we continue with that, but we have got limitations there.

ADV MPHAGA: Does the issue of resources in any way affect your air and ground crews who uses this LUH system?

BRIG GEN BURGER: It does Sir Mr Chair, it's like people and

11 SEPTEMBER 2013

PHASE 1

in our case older people it's nice to buy a new car and then you would like to operate it, now the same with pilots, they are not there because it was just a job for them, to me it's a calling, you want to be in the Defence Force, you want to be a pilot, that's a dream and you want to fulfill your dream and you see people operate and you would like to do the same, so, and you work as a team, that is one of the main things, we are a family and we pull our technicians and everybody up with the pilots that's basically operating it in the air, but it would be much better and the people, the morale will pick up if they fly more, but we don't have a problem with that, the people understand the situation and then they get better.

ADV MPHAGA: Paragraph 44 you are referring the Commission to Annexure "PP7" which indicates the cost per flying hour as approved by the National Treasury dated 5 June 2013, can you take the commissioners through the document and its importance? Page 105.

BRIG GEN BURGER: Mr Chair yes, this is a tariff approved by Treasury that we are working accordingly, that's also for management purposes to be able to plan and budget and see where we can, or how we must operate our system. I've explained the cost, how we work out the cost, now this is basically according to what we, the inputs that we give through the engineers and a formula they work on, they get to this amount. Now the very top one is the A109, the first amount

11 SEPTEMBER 2013

PHASE 1

you will see there Sir is R80 800, that is what we are saying now is the (indistinct) will cost us for this period and that's the dry cost, on the right hand column you will see the amount of fuel that it uses and then we'll have to add that amount to the
5 cost, that is what it is costing us and if we do work for other government departments we will charge that rate. We usually don't do work for private entities, but they've also worked out a rate for that. But if, like I've said, if we could operate a full system for five years then you will have better information to
10 work on.

ADV MPHAGA: Are you saying General that when you were involved with other governments in terms of the use of the LUH they need to pay for the use thereof, whatever service you are providing?

15 BRIG GEN BURGER: Mr Chair, it was mentioned by General Bayne that all our employment is done and tasked by Chief Joint Operations and normally when we do taskings for other departments it's done through Joint Operations and are reimbursed for that.

20 ADV MPHAGA: What about the original involvement, is it for free?

BRIG GEN BURGER: The original?

ADV MPHAGA: The original, the original peacekeeping involvement, is it free of charge?

25 BRIG GEN BURGER: Sir, that's also being run through Joint

11 SEPTEMBER 2013

PHASE 1

Ops, it all depends on the decisions made but I would say yes, we are, for that government it might be free but Joint Ops pay, they've got an operating budget.

ADV MPHAGA: Thanks General. In paragraph 45 you indicate
5 that:

“From 2006 to December 2012 the total expenditure on the LUH fleet has been approximately R243 million”.

Can you elaborate on that?

10 BRIG GEN BURGER: Sir, that's just a total sum of since we've started budgeting for the system and the money we've allocated to the system, that is the sum total of the money that we spent up until that point.

ADV MPHAGA: And you further indicate that:

15 *‘During this period from 2006 to December 2012 in excess of about ...’.*

Is it 11 000 or 17 000 hours were flown?

BRIG GEN BURGER: Sir, Mr Chair, here I'm alluding to the hours flown basic operationally by the pilots since, remember
20 now when you get a system there are project money involved, so hours are deducted from that, but since the system is planning and budgeting for the LUH this is now money that is being spent for those hours flown.

ADV MPHAGA: You further indicate also that this is not a
25 realistic reflection of the costs that you will incur in the future

11 SEPTEMBER 2013

PHASE 1

over a similar period as warrantees and guarantees were in force until 2010, can you explain in detail what you mean by that?

BRIG GEN BURGER: When you procure a new system there are warrantees of certain systems *et cetera* that is basically given as part of the procurement amount. Now as the system matures and gets older the more servicings come in, bigger servicings come in, then that will have an influence on this, but this we also have basically a formula that we plan on. The factor that is throwing it around a bit is the number of hours flown, I think is where the crux come in, if we could fully fly the system then that will give us a better indication of what to expect in future.

ADV MPHAGA: So you indicate in paragraph 46 that in view of these factors you are unable to provide an accurate prediction of what would be your expected costs per flying hour of the LUH in the future, can you explain?

BRIG GEN BURGER: Yes we will almost get there, there could be some influences that takes it away from the real amount but there are factors like exchange rate, there's a lot of factors involved here, so it's not, you can't give the exact amount, it can be within a certain percentage of it, but it's difficult, there are different factors. Like was explained earlier on your aviation inflation runs between 10% and 15% per year, so that you must also take into account. Thank you Sir.

ADV MPHAGA: Thanks General, and you conclude with the

11 SEPTEMBER 2013

PHASE 1

issue of representivity status, issues were raised about this equipment or system, is it gender friendly, can women fly in your equipment?

BRIG GEN BURGER: Sir yes, it is gender friendly. It's a very sleek machine. It is, I can just say Mr Chair is that our representivity rate is 84% to 60%, so it's basically more than what was expected or what is expected, but we have trained, remember now that all the people training for helicopter flying goes from the system, we don't necessarily have the right amount of gender or females on the system now but they go through into the other system, so but it's one of our big responsibilities, is to sort that out, to get that right, the representivity figure, so we are working very hard on it.

I can just mention I have a lieutenant Sir, lady, black lady now that I'm giving training come from 16 Squadron, a technical lady, she's worked on the LUH's and Oryx's, but she's now advanced to the Rooivalk, so I'm giving her on-the-job-training now, she came up to see how we operate as a PSSM at the higher levels where the servicing and all the plans are made, now she goes back to the squadron and then she can implement what she's learned here at the squadron, but that is our big drive, is to sort that out, and with the new system it's much easier than with the old system to get your figures correct.

ADV MPHAGA: Now General as you would know that some

11 SEPTEMBER 2013

PHASE 1

critics are saying that the contracts should be cancelled, in other words the LUH was not, should be cancelled and I want to know from you what is your comment in the event that the Commission then recommends the cancellation of the contract including that of the LUH.

BRIG GEN BURGER: Mr Chair, for a soldier it's difficult to answer because we don't understand what they try to tell us but nevertheless this contract with the LUH is needed because that is our, where we start with our proper training and the collateral value that is added to the public is, you can't go without it, now this was not specifically bought for the collateral value but it forms an integral part of all the systems that we have in the Defence Force, not necessarily the LUH itself but in the Navy's case the Lynx's, the LUH supports the arm. We have an obligation to look at the protection and safety of our troops, I'm referring now to casualty evacuation *et cetera, et cetera*.

So, it is much needed, the agility, the flexibility of a helicopter system goes without saying, people really, you can get anywhere where other people and not even baboons can come or get, so that is a very versatile piece of machinery and because it's adding value throughout its life cycle I would think it will be very irresponsible to cancel the contract, but I say again this is an integral part of our other forces, they can't go without it, it's, you protect them with that, you support them

11 SEPTEMBER 2013

PHASE 1

with that and if you want to have a Defence Force then you should have these systems.

ADV MPHAGA: Will you be able to fulfill your constitutional mandate as the South African Air Force without this capability?

5 BRIG GEN BURGER: No Sir, because the mandate requires equipment and capabilities to do that and I'm not quite sure, I know that it's not possible.

ADV MPHAGA: Thanks General. Do you have anything further to add or any comment to make?

10 BRIG GEN BURGER: Mr Chair no, not much. I was quite quick but it was an experience to sit here. I can, I must say this, is that I've alluded to the fact that we are soldiers, we have got certain traditions and culture and within our own line like the choppers we're building certain traditions *et cetera*, we are
15 there to support the country and we would like to see that (indistinct) work, and I think we're a very good tool to support that, I must just maybe mention that we supported the first election in 1994, I myself flew that time a few, almost 80 hours to take ballot boxes and papers around, we supported the
20 Mozambique which is basically our closest neighbour, I'm not talking about Swaziland and Lesotho, but we supported them with their election and we even supported the DRC, Operation (indistinct) a year or two ago, to support them. So, not only for our own position in the country but also in our environment,
25 on the continent I would think that all the systems we're talking

11 SEPTEMBER 2013

PHASE 1

about is much needed to have a successful country and government.

ADV MPHAGA: Thanks Chair, I've got no further questions.

CHAIRPERSON: Thank you. Is there anybody who would want
5 to cross-examine the general? Thank you. Dr Madima?

DR MADIMA: No re-examination Chair.

CHAIRPERSON: No re-examination. I suppose the witness can be excused.

ADV MPHAGA: Thanks Chair.

10 CHAIRPERSON: General Burger thanks a lot, you are now excused from further attendance of this proceedings. Thank you.

BRIG GEN BURGER: Thank you Mr Chair.

15 ADV MPHAGA: Chair, I see it's almost 13h00, we may be calling General Pelser as our next witness after lunch and we'll indicate to the commissioners the situation.

CHAIRPERSON: We'll adjourn and we'll come back at 14h00. Thank you.

(Commission adjourns)

20 **(Commission resumes)**

CHAIRPERSON: Advocate Mphaga, is that your next witness?

ADV MPHAGA: That's correct Chairperson, Major General Pelser.

CHAIRPERSON: Can you ask the witness to take the oath?

25 **(Witness is sworn in.)**

11 SEPTEMBER 2013

PHASE 1

CHAIRPERSON: Thank you.

ADV MPHAGA: Thanks Chairperson. Major General Pelser will give evidence from bundle H and that's the only bundle that we are going to use for his evidence. Thank you Chair.

5

WITNESS NUMBER 6 : MAJOR GENERAL JOHAN DANIEL PELSER (Hereinafter referred to as "MAJ GEN PELSER"), GIVES EVIDENCE UNDER OATH

EXAMINATION IN CHIEF:

10 ADV MPHAGA: You are a major general in the South African National Defence Force, is that correct General?

MAJ GEN PELSER: That is correct Mr Chair.

ADV MPHAGA: For the purpose of giving evidence before the Commission you have prepared a statement and on page 4 of
15 the bundle is that your signature?

MAJ GEN PELSER: That is correct Chair.

ADV MPHAGA: Your evidence General will deal with the overall technical related matters in respect of the SDPP, am I correct General?

20 MAJ GEN PELSER: That is correct Chair.

ADV MPHAGA: Before going into the detail of your evidence as outlined in your statement can you go to page 6 and then take us through your *Curriculum Vitae*?

MAJ GEN PELSER: Certainly Chair.

25 ADV MPHAGA: I think it's clear from your CV that you are

11 SEPTEMBER 2013

PHASE 1

happily married with, I don't ... Any dependents?

MAJ GEN PELSER: Yes, I have two children.

ADV MPHAGA: And without going into the personal details at length can we then proceed to qualifications and awards, the first being your Masters in Engineering Management, University of Pretoria 1987?

MAJ GEN PELSER: Yes, I achieved the degree of Masters in Engineering Management at the University of Pretoria in 1987.

ADV MPHAGA: Are you modest General, I see you achieved it Cum Laude?

MAJ GEN PELSER: I was fortunate at the time that I had a large amount of experience and as this degree is basically about the life cycle management of systems from their early inception until their eventual disposal I had most of the background that was required for the degree.

ADV MPHAGA: And the other qualification is your B.Engineering Electronics which you achieved in 1980.

MAJ GEN PELSER: That is correct.

ADV MPHAGA: Did you major in Electronics or what other subjects did you do?

MAJ GEN PELSER: Yes, this degree started off as a degree in Electrical Engineering and during my first year it, the degree in Electronic Engineering became available and I switched over to Electronic Engineering, therefore all the subjects are directed towards eventually producing an electronic engineer,

11 SEPTEMBER 2013

PHASE 1

however, the early subjects are common for most engineering degrees.

ADV MPHAGA: And decorations and medals, you refer to the Military Merit Medal 2001, can you elaborate on that?

5 MAJ GEN PELSER: If my memory serves me correctly I received the Military Merit Medal in 2001 for my career contribution towards the establishment of the fighter projects, both the Cheetah projects as well as the establishment of a Military Aviation Authority in the period 1998 to 2000.

10 ADV MPHAGA: And the second one is the UNITAS Medal, can you elaborate on that?

MAJ GEN PELSER: The UNITAS Medal was conferred on all the members of the new South African National Defence Force upon the uniting of the previous defence forces, statutory and
15 non-statutory defence forces into one.

ADV MPHAGA: The Good Service Medal Silver and Bronze?

MAJ GEN PELSER: These medals are conferred upon members who provided meritorious service for 10 and 20 years respectively.

20 ADV MPHAGA: On page 7 then you deal with your career particulars and you indicate that before attestation in the permanent force during 1980 to June 1981 you were a consulting mechanical and electrical engineer, can you take us through that period?

25 MAJ GEN PELSER: I was working for General Mining at the

11 SEPTEMBER 2013

PHASE 1

time, I had received a bursary from General Mining to study and immediately after completing my first degree I worked for General Mining and I developed a microprocessor base voice monitor that monitored the safety of operations in mine hoists as well as the productivity. Then thereafter I went into basic military training at 1 Signals Regiment in Heidelberg, I also completed counterinsurgency training in Heidelberg as a signalman and was employed at 3 Electronic Workshop Tech Base Lyttleton, Pretoria where I was responsible for the maintenance of army radios and related automatic test equipment, and it was from there that I was recruited into the South African Air Force, primarily for the purposes of the fighter projects.

ADV MPHAGA: You were not tempted to stay in the mining world?

MAJ GEN PELSER: I found that after having completed the work on this mine hoist monitor which involved a lot of programming in very low level machine language I ate, slept, drank this low level programming but when it was completed I said that was very nice but I don't want to do it for the rest of my life, thank you.

ADV MPHAGA: Now after attestation in the permanent force January 1992 you say you attested in the South African Air Force as engineering officer. Can you elaborate?

MAJ GEN PELSER: As you will see in the rest of my

11 SEPTEMBER 2013

PHASE 1

testimony engineering officers are responsible for the creation of systems, the optimisation of capabilities and the optimisation of support for systems and the intent with my attestation was to get involved in the fighter programmes of the South African Air Force.

ADV MPHAGA: And what was your rank during 1992 General?

MAJ GEN PELSER: I believe it was a candidate officer until the completion of the Officers Forming Course in March 1982 whereupon I received the rank of lieutenant.

10 ADV MPHAGA: So 1982 you attended the Officer Forming Course and where after you were appointed as a lieutenant?

MAJ GEN PELSER: That's correct, that's a full lieutenant, not a one-star and a striper.

15 ADV MPHAGA: And April to October 1982 you were then a systems engineer for the Mirage F1 Systems Group and you were part of the 3 Squadron Air Force Base Waterkloof, can you take us through that?

20 MAJ GEN PELSER: The Mirage F1 was probably one of a last of the very complex analogue aircraft, so the complexity of that aircraft required the Air Force to put together a multi-disciplinary group to make sure that that problems that could arise on the boundaries between systems could be correctly diagnosed and corrected and this group, the Mirage F1 Systems Group at Air Force Base Waterkloof at 3 Squadron was
25 responsible for such multi-disciplinary problems and I served in

11 SEPTEMBER 2013

PHASE 1

this group until November 1982 when I became the head of this group.

ADV MPHAGA: 1982 November to July 1993 you were the head F1 Systems Group 3 Squadron, can you take us through that
5 period?

MAJ GEN PELSER: Then as I said I became the head of that group and I was responsible for managing the efforts of that multi-disciplinary group of artisans and engineers that were responsible for the maintenance and optimisation and
10 modification of the systems on the Mirage F1.

ADV MPHAGA: 1983 August to December 1985 you were a software systems engineer in Cheetah DE Acquisition Project, please take us through.

MAJ GEN PELSER: That was when the first of the fighter
15 programmes that I was involved in kicked off, the Cheetah-D and E Acquisition Project, I was involved as a software and systems engineer and I was, as such I was responsible for the specification, the design, the development, qualification and acceptance of the avionics on the Cheetah-D and E, including
20 the support of the avionics on that aircraft.

ADV MPHAGA: And January 1986 to March 1987 you were the project engineer and logistic officer for the Cheetah Acquisition Project, can you explain?

MAJ GEN PELSER: At that stage the delivery of the aircraft
25 started and we were preparing for receipt of those aircraft at

11 SEPTEMBER 2013

PHASE 1

both Louis Trichardt and now Makhado Air Force Base, and at Air Force Base Hoedspruit, I was responsible then for establishing the logistic support system for the Cheetah-D and E which included multiple servicing centres, maintenance units, depots and multiple contracts with industry.

ADV MPHAGA: And April to November 1987 you were the SO1 Engineering Avionics, then Air Force Headquarters. What is the SO1 General?

MAJ GEN PELSER: I apologise for the abbreviation, it stands for staff officer 1 and it typically refers, if I am correct, to a major-level appointment and this, in this post I was responsible for engineering and of avionics, including the development, optimisation and the support of Air Force avionics which then also included the technology development projects for air force avionics.

ADV MPHAGA: December 1987 to June 1998 then you were the SO Engineering Avionics, Air Force Headquarters, can you explain that?

MAJ GEN PELSER: At this time I was responsible for all engineering avionics in the Air Force including and then also including all Air Force technology development projects, not only avionics.

ADV MPHAGA: July 1988 to December 1991 you were then the systems logistic or logistic engineer, Cheetah-C Acquisition Project.

11 SEPTEMBER 2013

PHASE 1

MAJ GEN PELSER: This was the start and the main development phase of the second large Cheetah project, that for the Cheetah-C which was the fighter variant of the Cheetah and in that I was responsible for the specification development
5 qualification and acceptance of the avionics support segment of the system, meaning the maintenance capability for the Cheetah-C avionics, including the material resources, the organisations, facilities, manpower, contracts and throughout I was also responsible for the reliability, availability,
10 maintainability, test ability and all of this together being essentially the supportability of the Cheetah aircraft.

ADV MPHAGA: And then from January to December 1992 you were then responsible for the Cheetah-C implementation manager at the Air Force Base Louis Trichardt, can you take us
15 through that?

MAJ GEN PELSER: In this period it was the delivery period for the Cheetah-, all the aircraft were being delivered to the Air Force Base Louis Trichardt and now Makhado, and I was responsible for the implementation of the system there,
20 meaning all of it coming together, the correct facilities, the correct manpower, the correct spares, the aircraft being delivered and accepted, all the test equipment being installed, the manpower going on courses and being inducted into the system.

25 ADV MPHAGA: Now in your CV you mentioned Cheetah-C,

11 SEPTEMBER 2013

PHASE 1

Cheetah-D, E, what is that?

MAJ GEN PELSER: A Cheetah-D was a two-seater mainly ground attack aircraft, although it had a secondary air-to-air role. The Cheetah-E was a one-seater multirole aircraft but
5 mostly on the air-to-ground role with a secondary air-to-air role again, and the Cheetah-C was an optimised air-to-air variant of the Cheetah.

ADV MPHAGA: Then in January 1993 to January 1997 you were the Chief of Avionics Engineering at 5 Air Depot AFB
10 Waterkloof, can you take us through that?

MAJ GEN PELSER: In that post I was responsible for the specification, development, qualification, production and acceptance of Air Force avionics excluding electronic warfare systems and also responsible for the internal design work on
15 air force avionics, meaning work that we did ourselves that was not contracted out.

ADV MPHAGA: And then February 1997 to December 1998 you were the SSO Electrical Engineering, is it a senior staff officer?

20 MAJ GEN PELSER: Yes, that's correct.

ADV MPHAGA: At the Air Force Headquarters, can you take us through that?

MAJ GEN PELSER: Chair at that time I was responsible for all electrical and electronic engineering in the Air Force and
25 the management of all Air Force technology projects and the

11 SEPTEMBER 2013

PHASE 1

related budget for technology projects.

ADV MPHAGA: January 1999 to December 2000 you were the Senior Staff Officer Military Aviation Regulation, what did that entail?

5 MAJ GEN PELSER: Chair at the time I was responsible for development of all the rules and the instructions governing the specification, the design, the development, the qualification, production, acceptance, operation, maintenance and disposal of Defence aircraft and other aircraft, air systems from a
10 technical airworthiness viewpoint and similar regulatory requirements governing operations, operating and support of organisations, facilities and individuals. I was also responsible then for the development of the components of the Military Avionics Authority within the Air Force which like the
15 Civil Aviation Authority is responsible for the regulation of aviation, but military aviation in this case.

ADV MPHAGA: And then January 2001 to 30 June 2008 you were the Director Engineering Support Services, Chief Logistics, can you take us through that General?

20 MAJ GEN PELSER: In this post I was responsible for the strategic management of systems and other engineering, maintenance, fire and rescue service and ammunitions, ammunition in the whole of the Department of Defence, but at the strategic level which means strategy, policy, strategic
25 monitoring and control.

11 SEPTEMBER 2013

PHASE 1

ADV MPHAGA: Was it limited to the Air Force, this post, or was it overall South African Defence Force?

MAJ GEN PELSER: This was applicable to the whole of the Department of Defence.

5 ADV MPHAGA: And on 1 July 2008 to 30 September 2010 you were the Director Logistics Management, Chief Logistics, can you take us through that?

MAJ GEN PELSER: This post is responsible for the coordination of the, of logistics strategy, logistics planning,
10 logistics policy, internal controls, information systems and logistics risk management, reporting, compliance *et cetera*, throughout the whole of the DOD, all logistics in the DOD.

ADV MPHAGA: And from 1 October onwards you were appointed as Chief Director Force Development and Support,
15 South African Air Force, can you take us through that?

MAJ GEN PELSER: In this posting which I have been since 1 October 2010 and in which I still am I am responsible for Air Force maintenance, engineering, supply, bases, airworthiness and human resources.

20 ADV MPHAGA: We'll later deal in detail with these responsibilities. Then you also did the courses Officer Forming 1682, can you take us through that?

MAJ GEN PELSER: That is the course in 1982 which takes you from a candidate officer to a qualified officer and upon
25 which I then reached the rank of full lieutenant.

11 SEPTEMBER 2013

PHASE 1

ADV MPHAGA: And then the, is it Inertial Navigation Systems and Software, 1984 and 1985?

MAJ GEN PELSER: I needed this course to be able to do the work that I did on the avionics of the Cheetah-D and E, I
5 studied Inertial Navigation Systems in depth because I was involved in the software of the Cheetah-D and E and it was required to be able to understand that software.

ADV MPHAGA: Where was the course offered General?

MAJ GEN PELSER: The course was given to me by a
10 professor of the Haifa Technical University of Israel.

ADV MPHAGA: Which University?

MAJ GEN PELSER: Haifa University, Technical University in Israel.

ADV MPHAGA: Israel. Was it a fulltime course?

MAJ GEN PELSER: Yes, it was very intensive and I must say
15 that the complexity in this course, the mathematics and at the same time the applied mathematics, the science leaves you a zombie afterwards, virtually a zombie afterwards, you just think in terms of aircraft and angles and measurements.

ADV MPHAGA: Then there is this Junior Command and Staff
20 Course in 1987, can you take us through that?

MAJ GEN PELSER: This is the course that is intended for majors and I completed it in 1987 and I think was promoted immediately afterwards.

ADV MPHAGA: And then there's the Systems Engineering, is it
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11 SEPTEMBER 2013

PHASE 1

at ARMSCOR, 1998?

MAJ GEN PELSER: This course was an extremely interesting course because it gives you all the theory to really practice what we had been practicing in the projects already at that
5 time, all the theoretical background on systems, specification, analysis, the logistics components, the development management process, the technology management process *et cetera* was provided by a At Sparrius at the time and he was well-renowned for the course and it was attended at the time by
10 a large complement of military people joined by a lot of ARMSCOR people and a lot of industry people. Very valuable course.

ADV MPHAGA: Then the Senior Management Programme at the University of Pretoria in 1996?

15 MAJ GEN PELSER: This was part of the following military course, the Senior Command and Staff Course which is the qualification course to go from lieutenant colonel to colonel, and was a very, very valuable management programme instituted to improve the management capability of our staff
20 officers and our, just prior to this Senior Command and Staff Course which it was a requirement for.

ADV MPHAGA: Then I see you were registered as a professional engineer with the Engineering Council of South Africa in 1986, can you take us through that?

25 MAJ GEN PELSER: Yes, given the regulatory requirements

11 SEPTEMBER 2013

PHASE 1

on the Air Force today, the safety issues, airworthiness issues
it is essential that all engineers in the Air Force should
register as professional engineers and what is really meant by
that is that you can rely on the engineer to manage his own
5 competence in such a way that he knows what he's competent
to do and knows what he is not competent to do.

ADV MPHAGA: The Business Process Re-Engineering, what is
that?

MAJ GEN PELSER: Business Process Re-Engineering is an
10 important part of the optimisation of organisations and starts
off with business process modeling, analysis, optimisation and
the capture of business processes and improving them so that
they are as efficient as possible, this is also very useful if you
want to dabble in the redesign of organisations and re-
15 engineering of organisations.

ADV MPHAGA: Then you did a Joint Staff Course in 1998; can
you take us through that?

MAJ GEN PELSER: This was one of the last joint staff
courses, I think the second last if I remember correctly, it was
20 then later replaced by the Executive National Security
Programme but the Joint Staff Course is the course from
colonel to brigadier general and is attended by members of all
services, Army, Air Force, Navy and the Medical Health
Services and therefore it really provides you with a very broad
25 perspective on military operations, it's at a very strategic level

11 SEPTEMBER 2013

PHASE 1

and it also provides you with a lifelong network of friends that you can rely on.

ADV MPHAGA: Then there is this Acquisition Reform at the United States Department of Defence, can you just take us
5 through that achievement?

MAJ GEN PELSER: Acquisition Reform is an ongoing theme throughout all militaries and it goes about improving the process by which we acquire systems, especially defence systems, and it's very, it was very pertinent to our improvement
10 of our acquisition process at the time, it was presented by the United States Department of Defence and specifically their Defence Systems Management College, very, very competent body, and they have learnt a lot of lessons which they were able to convey to us.

ADV MPHAGA: Then the Civil Aircraft Airworthiness, can you
15 take us through that course?

MAJ GEN PELSER: As I said before in the period 1998 to 2000 we were structuring the ability to regulate military aviation within the Air Force and attendance of this course was
20 valuable so that we had the theoretical background to make sure that we were going the right way.

ADV MPHAGA: And then you then referred to the (indistinct) courses during 2003, 2007, could you just briefly take us
through?

MAJ GEN PELSER: After the promulgation of the Public
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11 SEPTEMBER 2013

PHASE 1

Finance Management Act it was realised that the Defence Force and the Department of Defence were ill-equipped to deal with the ramifications of that Act which is actually an extremely enabling but also a very extremely compliance directed Act and we started with a programme of training our officers to be able to deal with the Act, the specific courses that I attended were the Foundation Course on the Act, Revenue Expenditure, Asset and Liabilities Management, Internal Controls and Risk Management and Performance Management and I was very useful to be able to deal with the compliance issues which we face on a daily basis.

ADV MPHAGA: And it appears there is a further course on leadership that you attended in 2007, can you take us through?

MAJ GEN PELSER: This course was presented by Stephen Covey, the Stephen Covey who published the book *The 7 Habits of Highly Effective People*, the specific course went about second book *The Speed of Trust*, and how it affects the efficiency and effectiveness of leadership and I must just say this Stephen Covey is a wonderful down-to-earth man but with a wisdom that anybody can listen to at any time.

ADV MPHAGA: And lastly General, can you take us through your promotion dates as per the CV?

MAJ GEN PELSER: We've covered some of this before Mr Chair, but I was promoted to lieutenant on the 12th of January 1982 to captain on the 1st of February 1985, to

11 SEPTEMBER 2013

PHASE 1

major on the 1st of April 1988. Then to lieutenant colonel again on the 1st of April 1991, to colonel on the 1st of February 1997, to brigadier general on the 1st of January 2001 and to major general on the 5 1st of October 2010.

ADV MPHAGA: Thanks General, if you can go back to page 1 of your statement you indicate that you are the Chief Director Force Development and Support currently and you are responsible for the overall management of the Air Force 10 technical engineering and supply capabilities, base support, human resources and the technical airworthiness of the aircraft since October 2010, is that correct?

MAJ GEN PELSER: That is correct Mr Chair.

ADV MPHAGA: When you refer to the base support, how many 15 bases are you referring to?

MAJ GEN PELSER: We have nine bases.

ADV MPHAGA: And all these nine bases fall under your control?

MAJ GEN PELSER: No, the Directorate Base Support 20 Services fall under my control and they are responsible for providing support to all those nine bases but the command chain for those bases, in the command chain they fall under the general officer commanding Air Command.

ADV MPHAGA: And when you say that you are responsible for 25 the technical engineering and supply capabilities, what does

11 SEPTEMBER 2013

PHASE 1

that mean?

MAJ GEN PELSER: The Air Force's technical capabilities include maintenance and limited manufacturing capability, meaning that I am responsible for the overall management of that maintenance and limited manufacturing capability. The engineering in the Air Force is responsible for the optimisation of systems, the monitoring of systems and supply is responsible for a lot of commodities for example rations, uniform *et cetera*.

5
10 ADV MPHAGA: And human resources, what responsibilities are those?

MAJ GEN PELSER: The Director Human Resource Services reports to me and he is responsible for the whole of the life cycle of our human resources meaning from when we acquire the human resources through recruitment, appointment, then the career management, the succession planning and the eventual redeployment, retirement *et cetera* of our human resources throughout.

15
20 ADV MPHAGA: I think in paragraph 4 you are dealing with your responsibilities as the technical airworthiness overseer.

MAJ GEN PELSER: That is correct. The Occupational Health and Safety Act requires the Air Force to reduce the risk of military aviation, and I quote "*to as low as reasonably practicable*", meaning that you can never reduce the risk of military aviation, especially military aviation to zero, but you

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11 SEPTEMBER 2013

PHASE 1

should do what is reasonably practicable to do, and therein lies therefore a very complex tradeoff study between the military utility of an aircraft system and the risks related to that aircraft system.

5 Therefore we follow a very formal airworthiness certification process and I would like, Mr Chair I would like to take you through this process. It starts off with the user Requirement Statement wherein the operating intent is made clear, within that operating intent it has to say what we intend
10 doing with a system, under what circumstances it must be done, how we intend to operate that system, in this case an aircraft.

ADV MPHAGA: General, Colonel Viljoen has taken us through the URS system, is it the same thing that you are referring to here?

15 MAJ GEN PELSER: It's the same thing but now you are selecting certain information from the User Requirement Statement and determining the impact on the safety of the aircraft, and that allows you to start for example a preliminary hazard analysis, the next step in this process, that hazard
20 analysis is then maintained throughout the life of the aircraft.

ADV MPHAGA: Okay you may proceed to take us through the process.

MAJ GEN PELSER: Thank you. Once the User Requirement Statement has been analysed and the Hazard Analysis initiated
25 the certification basis for a new aircraft or a new acquisition is

11 SEPTEMBER 2013

PHASE 1

determined. This may have already been determined if it is a military off-the-shelf or commercially off-the-shelf aircraft, if it is a new development then we have much more control over the certification basis. By the certification basis we mean the set of airworthiness standards that this aircraft must comply with. Having determined the certification basis a certification plan is compiled and within this certification plan it will show how this project and programme will show compliance to all the requirements of the certification basis, this is known as the means of compliance which may be demonstrations, tests, analysis, whatever.

It is then planned and the compliance programme then starts, the compliance programme takes place throughout the development of a new aircraft for example and is typically witnessed by our own engineers, test flight engineers, test pilots or pilots so that we don't need to redo any part of it, so you will have heard throughout the testimony being the words "development test and evaluation" being used, typically the developmental test and evaluation is done by the design authority or the original equipment manufacturer and witnessed by ourselves, and meticulous record is kept of that witnessing.

And that record is called the Compliance Record, it's typically in the form of a compliance matrix which will say that it was planned to show compliance to each requirement by means of those acceptable means of compliance and there will

11 SEPTEMBER 2013

PHASE 1

then be a cross-reference to the report on the specific compliance evidence showing that compliance. This Compliance Record once it is completed you are in the position to analyse the overall compliance and analyse the overall airworthiness of the aircraft and then prepare airworthiness documentation which would typically show in what roles an aircraft is safe to employ and under what circumstances it is safe to employ.

All of this evidence would be presented to the Military Airworthiness Board which is chaired by a senior engineer, in this case a test, senior test flight engineer but also consists of test pilots, other engineers, other pilots and they together form a competent body or are able to listen to the evidence and apply their minds to the airworthiness and to determine whether we have indeed succeeded in reducing the safety risk to as low as reasonably practicable.

If the Military Airworthiness Board is satisfied then it grants an airworthiness approval in the form of a military type certificate, it's often first an initial military-type certificate maybe with some limitations so that the operational test and evaluation can be completed and once the operational test and evaluation is completed we have sufficient information to grant a full military-type certificate.

ADV MPHAGA: Now General this airworthiness test project is done immediately upon delivery of the aircraft or at what

11 SEPTEMBER 2013

PHASE 1

stage?

MAJ GEN PELSER: No It's throughout. The moment we start such a contract and even sometimes before you can start with planning the airworthiness process you can start with specifying the airworthiness requirements, you can start with preliminary hazard analysis because once you know what type of aircraft you are talking about you already have some indication of what hazards you may face with that type of aircraft and you can plan to eliminate those hazards in the design or construction or the operation of the aircraft and throughout the development, the design of the aircraft all the design information, all the design analysis *et cetera* are collected and together eventually form part of a body of evidence.

And then as the design is completed the prototypes are constructed, then the prototypes are tested, that's developmental test and evaluation, once again the evidence is gathered during developmental test and evaluation, meticulously documented, we know exactly which risks have been identified and how they have been mitigated through the development and the design.

Once the production starts you may have an initial production of the first articles and inspection of the first articles afterwards, but throughout production more evidence would be acquired. Most important during production is to

11 SEPTEMBER 2013

PHASE 1

acquire evidence that indeed the production aircraft are the same as the prototype aircraft and they are according to the design instructions. Then once the aircraft are delivered to us we can start operational test and evaluation and all of that, all the evidence gathered during operational test and evaluation then eventually forms the total evidence that shows that an aircraft is sufficiently safe.

ADV MPHAGA: Military Airworthiness Board, when does it sit to issue this military-type certificate?

10 MAJ GEN PELSER: The Military Airworthiness Board Chair would typically sit at various intervals during the original development, then lending credibility to the intended programme, what I refer to as the Compliance Programme, and then evaluating the certification basis, making sure that the certification basis covers all the requirements and would then sit regularly to guide the certification process, to evaluate the progress with the certification process and then eventually once they deem the certification process complete, would then grant the military-type certificate. So it's not a single sitting, it might take place over a period of multiple years.

ADV MPHAGA: Then the operational test and evaluation, can you just take us through paragraph 5 in that respect.

MAJ GEN PELSER: During the operational test and evaluation you would also look at the operational effectiveness of the aircraft system meaning can it perform its intended

11 SEPTEMBER 2013

PHASE 1

mission successfully, meaning also if it is intended to perform air-to-air, air-to-ground or reconnaissance missions, can it do so and also can it do so safely and ensure the return, safe return, and you also look at the operational suitability of the aircraft, is it suitable for operation within our environment, within our organisations, within our maintenance and support capability, the South African weather, is it suitable for field use and is it supportable in South Africa.

ADV MPHAGA: Thank you General. Can you then take us to the status of the certification in respect of the SDP's or the equipment.

MAJ GEN PELSER: Thank you Chair. The Gripen's contracted baseline which is known as Block 4.4 was certified in June 2013, it is currently released to operational test and evaluation for all roles and for the Soccer World Cup in 2010 a temporary full release for the air policing role was also granted to allow operation during that period. The Hawk aircraft is currently released to operational test and evaluation in all the training roles and was also fully released for the air policing role in 2010.

The A109 helicopter is currently certified for single pilot operation in accordance with visual flying rules, that is when the weather is such that you can see adequately and for two crew operation a minimum of one pilot and one type qualified crew member in accordance with instrument flying

11 SEPTEMBER 2013

PHASE 1

rules when the weather is such that you cannot see. The basic aircraft, your basic A109 aircraft was also civil certified.

ADV MPHAGA: And were military-type certificates also issued in respect of these equipment?

5 MAJ GEN PELSER: Yes, all three aircraft have an initial or provisional military-type certificates allowing them to continue with operational test and evaluation and once operational test and evaluation is completed we will then issue final military – type certificates.

10 CHAIRPERSON: I'm sorry Advocate Mphaga, just for my own understanding on 6.1 the witness says that the Gripen's contracted baseline Block 4.4 was certified in June 2013, what does that mean?

15 BRIG GEN BURGER: Chair, it means that we issued a military-type certificate or a provisional or initial military-type certificate allowing the aircraft to complete its full operational test and evaluation in all its intended roles. The contracted baseline referred to all the intended roles and this Block 4.4 is the specific configuration that the aircraft has in its final
20 contractual delivery status.

ADV MPHAGA: Meaning that is the process in respect of the operational test and evaluation completed?

MAJ GEN PELSER: No, it is still in operational test and evaluation.

25 ADV MPHAGA: It is only once that has been completed you will

11 SEPTEMBER 2013

PHASE 1

give a final military-type certificate?

MAJ GEN PELSER: That is correct Chair.

ADV MPHAGA: In respect of the Hawk, have they gone through the process completely to be awarded the final military-type certificate?
5

MAJ GEN PELSER: No. Chair, in the Hawk's case and indeed in the A109's case as well the provisional military-type certificate has been awarded, releasing the aircraft for full OT&E and only once the full OT&E has been completed will the final military-type certificate be awarded, however, as you can see the A109 is already fully certified for single pilot operation in visual conditions and for two crew operation in instrument flying conditions.
10

ADV MPHAGA: Does it mean that the A109 does not have certification in respect of night flying?
15

MAJ GEN PELSER: No, night flying is part of instrument flying, so it's either weather or night that would make it impossible to see adequately and forces you into instrument flying.

ADV MPHAGA: Now in the event that there is no final military-type certificate, does that in itself limit the operations or utilisation of this equipment?
20

MAJ GEN PELSER: It would if there were eventually no military-type certification but at the moment there are no limits to the operational test and evaluation and operation of these
25

11 SEPTEMBER 2013

PHASE 1

aircraft.

ADV MPHAGA: So the provisional military-type certificate is adequate for the optimal use of this equipment?

MAJ GEN PELSER: That is correct Chair.

5 ADV MPHAGA: Thank you General. Let's proceed then to deal with the technical and engineering capability. In paragraph 7 you indicate that the:

10 *“South African Air Force hands-on aircraft maintenance is performed by artisans who are trained at 68 Air School in the relevant systems theory and practice after achieving generic qualifications and a variety of specifications. They are also extensively trained on the specific type they are to maintain”.*

15 Can you elaborate on that paragraph?

MAJ GEN PELSER: Thank you Chair. Our artisans, and as I said here it is the artisans who are responsible for hands-on maintenance of aircraft on which I will elaborate somewhat more later. They are trained at 68 Air School in a variety of
20 specialisations, for example some would specialise in being mechanical fitters responsible for airframe and engine maintenance, some would specialise in instrument, radio, radar, there's about seven or eight specialisations. The complexity of modern aircraft requires those specialisations or
25 we are looking at reduction of the specialisations into the

11 SEPTEMBER 2013

PHASE 1

future as the aircraft become more and more computerised and the avionics become more and more generic.

These generic specialisations would then receive type conversation courses as well so that you start off with a generic background but are then trained on the specific systems for example on Gripen, Hawk, A109. And only when once you are trained on the specific systems of the aircraft that you work on are you considered competent to work on those aircraft and to sign out maintenance work as completed on those aircraft.

ADV MPHAGA: So, you have specialised artisans on each type of equipment?

MAJ GEN PELSER: Yes, on each of type of equipment and on each type of aircraft.

ADV MPHAGA: In paragraph 8 you emphasise the importance of effective maintenance and you make an example about the Israeli tanks can you elaborate on that?

MAJ GEN PELSER: Indeed. I think one cannot over-emphasise the importance of effective maintenance and as an example in the Six-Day War the Israelis, between the Israelis and their enemy some of those tanks that they used were heavily damaged five times and were then during the war repaired and sent back into the war and this is an extremely effective force multiplier because it is as if you had six times as many tanks, if that tank was not repaired and could not re-

11 SEPTEMBER 2013

PHASE 1

enter the war it would stand there useless for the rest of the time. Anybody who does not have that maintenance capability is obviously at a significant disadvantage.

And it should also be noted that typically such
5 maintenance is performed in the heat of battle during shelling
et cetera, we are fortunate in the air force that most of our
maintenance is performed back at bases, however, maintenance
on aircraft like attack helicopters could be performed right in
the battle as well because those helicopters are deployed along
10 with army forces.

The same argument of a force multiplication applies
to aircraft, if you can't repair your aircraft as soon as they
return and whenever they need repair, whether it be from battle
damage or just simple failures you are definitely at a
15 significant disadvantage.

ADV MPHAGA: But insofar as it may need to replace an engine
in one of the aircraft, would that take months or how long can
it take?

MAJ GEN PELSER: Aircraft are designed so that the
20 maintenance of the aircraft itself is expedited and for example
in the Mirage F1 the whole engine was on rails, you would
decouple the fuel lines to the engines, decouple the electrical
lines to the engine and then remove it backwards, sliding it
backwards on rails that are internal in the aircraft and on a set
25 of rails on a trolley that's external to the aircraft and

11 SEPTEMBER 2013

PHASE 1

essentially be able to replace that whole engine in about 20 minutes, and of course that is extremely important when you need that aircraft for the next mission. Most other components in the aircraft that are maintenance significant items that are likely to fail are designed in the same way that they can be removed and replaced as a whole and then repaired at leisure afterwards. That of course presupposes that you have sufficient serviceable spares at the time.

ADV MPHAGA: Is it as fast as they replace the tyres of the F1 racing cars?

MAJ GEN PELSER: Not quite, but in the order of minutes. You would typically be able to replace a line replaceable unit or a black box from an aircraft in 10 or 15 minutes.

ADV MPHAGA: Then in paragraph 9 you indicate that:

“The South African Air Force has sufficient aviation related artisans”.

And you also indicate the post-qualification experience and the retention, can you just take us through that paragraph General?

MAJ GEN PELSER: Chair, we currently have sufficient aviation related artisans for 90% of our aviation related artisan posts, we are fortunate in that their post-qualification experience is currently more than 10 years meaning that they are very competent, and this is due to the fact that we have had excellent retention in the past couple of years, very low rates of turnover in our aviation related artisans and when I

11 SEPTEMBER 2013

PHASE 1

say very low, anything below 5% would be low, and this is partially the result of a special technical allowance that we instituted in 2002 which has incentivised our artisans to remain within the Air Force.

5 ADV MPHAGA: And you also mentioned that the maintenance is managed internally by the technical officers and also that the artisans who show aptitude for management and command, they then proceed to be training officers. You indicate the technical officers to be about 80% of posts and the retention being good,
10 although there are number of junior resignations. Can you just take us through that?

MAJ GEN PELSER: The maintenance is typically managed by technical officers, as you said there it's executed by artisans who are non-commissioned officers and the maintenance
15 management is performed by the technical officers starting from second lieutenant upward. These technical officers are selected from the artisans typically but may also be trained in other ways, for example from technikons and they are selected for management and command aptitudes. We currently have
20 sufficient technical officers for about 80% of our technical officers' posts and the retention is once again excellent, except for the most junior technical officers where I would say the retention is good, we have a turnover in the order of 5% there. These numbers in total between the artisans and the
25 technical officers are definitely sufficient for our aircraft

11 SEPTEMBER 2013

PHASE 1

maintenance needs at the current required readiness levels.

ADV MPHAGA: In paragraph 12 you deal with the graduate engineers that are employed, challenges, experience with the resignation and can you just deal with that in detail General?

5 MAJ GEN PELSER: As I said before we employ graduate engineers to optimise military capabilities, to optimise military systems and also their support and to monitor aircraft fleets for ageing, obsolescence airworthiness challenges *inter alia*. We only have sufficient graduate engineers for 44% of the graduate
10 engineering posts and this is the result of an unacceptably high resignation rate of 22% per annum that we experienced over the past year and a half and therefore the average post-graduate experience of our engineers is only about five years.

The turnover that we have been experiencing is
15 caused by the availability of external employment opportunities, many of them in the large number of infrastructure projects in the country and also coupled with simultaneous remuneration challenges that we're experiencing.

ADV MPHAGA: And these resignations by the graduate
20 engineers and some of the technical officers, does it not affect the technical or the readiness in terms of maintenance of the equipment?

MAJ GEN PELSER: The number of artisans and technical
25 officers that we have is definitely adequate for our current needs and has no influence on readiness of our aircraft fleet,

11 SEPTEMBER 2013

PHASE 1

however, the number of engineers is definitely inadequate and we will definitely be taking action, however, the engineers are more employed in longer term activities, optimisation activities, monitoring activities which will not show up in the short term
5 but could affect our effectiveness or our economy and efficiency into the future.

ADV MPHAGA: Then you refer to the replacement training programme in paragraph 13 which is underway, can you take us through that?

10 MAJ GEN PELSER: Chair, we have learnt through hard experience but we have to continuously replace our technical personnel, it is, a resignation rate of up to about 7% is healthy, anything above 7% starts to affect the average experience levels, so we have to manage the outflow to make
15 sure that the outflow doesn't exceed 7%, however, ... That's per year. But also we have to be very realistic and practical and therefore we train replacements constantly and over many years we generally take about 7% to 10% new recruits into training in order to replace those we lose. This has worked
20 very well and you will find that most of industry, most of ARMSCOR has been also supplied by technical personnel that had the beginning of their career in the Air Force.

ADV MPHAGA: And you indicate that work that is beyond the South African Air Force own capability is outsourced, can you
25 just take us through that?

11 SEPTEMBER 2013

PHASE 1

MAJ GEN PELSER: As you may expect the work on aircraft systems is extremely complex, it requires a very wide variety of expertise and specialisations and you may not be able to maintain certain specialisations forever. Then on occasion
5 therefore you are forced to outsource work and that would be done through contracting, however, the main mechanism by which work outside own capability is outsourced is by a considered evaluation, a cost benefit analysis initially performed often during the acquisition of new aircraft.

10 You would consider the rate at which a specific piece of equipment would fail and then determine whether it would be more economical to buy more spares of that equipment and send the spares away to industry for repair when the units in the aircraft fail, or would it be more
15 economical to provide and invest in own capability.

Today's aircraft become more and more reliable and therefore the scale is swinging, however our, the Air Force's preference has been to establish capability as close as possible to the home base and that would typically be for the
20 first level of, and maybe the second level of maintenance. To do, also the Air Force's preference has been to do as much of a first and second level of maintenance as we can ourselves. For older aircraft we are still doing a lot of a third line of maintenance ourselves in our depots but the newer aircraft due
25 to their excellent reliability have not made this cost effective in

11 SEPTEMBER 2013

PHASE 1

many cases and therefore you would only do first and second line yourself and outsource the third line maintenance.

ADV MPHAGA: In paragraph 14 you refer to the negative audit report of the Auditor-General in respect of the Denel Manpower Contract. Can you take us through that and the consequences thereof?

MAJ GEN PELSER: The Air Force has had a manpower contract with Denel, it was called the Alternative Manpower Group, AMG. This contract was effective since 1986, however, in 2010 the Auditor-General ruled that it is an evergreen contract because it has not, had not been subjected to competitive procurement in that period. Even though Denel is a state-owned entity this was the opinion of the Auditor-General, this was carefully considered within the Department and it was decided to terminate that contract with Denel.

At the time there were 523 resources under that contract, human resources under the contract, it was decided to drastically reduce our use of that, those resources to just the most scarce and essential skills and after an optimisation process a new contract or a new agreement was established with Denel whereby 139 of these most scarce, most essential resources were retained and obviously we lost a whole lot of skilled resources in the process, however, we have multiple mitigation plans in place that we are sure will enable us to recover from the loss of these skills.

11 SEPTEMBER 2013

PHASE 1

Fortunately the Strategic Defence Packages, Gripen, Hawk and A109 were not very dependent on this source of manpower and were much more, much better catered for by own manpower and therefore we do not really see a large
5 constraint on the operation and support of the Strategic Defence Package aircraft systems because of this.

ADV MPHAGA: Thank you General. Now in paragraph 15 you are dealing then with the explanatory material and you indicate that it's just to eliminate the nature of military aviation and
10 technical aspects that may be (indistinct) in other evidence provided. Then can you take us to paragraph 16 where you deal with the total operating costs of most of the assets including the military aircraft.

MAJ GEN PELSER: Chair, thank you. I included this material
15 because we have heard reference to variable costs, fixed costs and the differences in operating costs as flying hours increase or decrease. If I may draw your attention to the attached graph marked "JP2", on that graph you can see fixed cost as a dotted and dashed line, fixed cost is that cost which you incur
20 because you have an aircraft system and because you want to operate that aircraft system and maintain its integrity, and fixed cost by its very nature does not depend then on the operating hours or the utilisation of the aircraft system.

Then as you operate an aircraft system you also
25 incur a certain variable cost, that is shown in the triangle

11 SEPTEMBER 2013

PHASE 1

between the fixed cost and the dashed line, and the dashed line then shows the total cost and you can see that it starts at a certain level and grows steadily as flying hours increase. Then when you divide the total cost by the flying hours you get the continuous line, the cost per flying hour and as you can see that it shows a constant decrease as flying hours increase and this decrease is experienced because the effect of the fixed costs are diluted over more operating hours, so we will have heard from the previous members giving evidence that their systems operate at a certain cost if they operate at high flying rates and at an increased cost when they, per hour cost when they operate at low flying rates and this graph just explains why.

ADV MPHAGA: So the more the flying hours, the more, the less the cost?

MAJ GEN PELSER: The less the per hour cost. The total cost increases but the per hour cost comes down as flying hours go up.

ADV MPHAGA: Thank you General. Now in paragraph 17 you indicate that aircraft do develop some failures from time to time, can you take us through that paragraph.

MAJ GEN PELSER: I included this paragraph Chair just to show how aircraft are supported. As all other manmade artifacts aircraft fail from time to time, however, they are designed such that no single failure should result in a

11 SEPTEMBER 2013

PHASE 1

catastrophic accident. The rate of failure is determined by the reliability of the aircraft, typically expressed as a meantime between failure and as I said before, modern aircraft are much more reliable than their predecessors and therefore their
5 meantime between failure is higher in flying hours between failures.

When an aircraft fails the repair is normally performed at multiple levels, when the aircraft returns you may have early warning either through the radio or through a data
10 link as to what failure has occurred and typically the correct crew with the correct ground support and test equipment and with the correct spares would then meet the aircraft when it returns in order to make sure that it is repaired as fast as possible. Such a repair is then effected by firstly diagnosing
15 what component has failed, determining it down to the component, by component I mean something like a computer box, a black box so-called or in technical terms a line replaceable unit and that line replaceable unit is then replaced by another that is just like it, completely replaceable, form fit
20 and function replaceable and serviceable, and once the faulty line replaceable unit is, has been replaced, the aircraft would be fully tested and declared serviceable and ready for flight again.

That line replaceable unit typically would be
25 returned to a workshop which preferably would be on the base.

11 SEPTEMBER 2013

PHASE 1

Of course whether the workshop is on base or not would depend on that investment analysis that I referred to earlier, cost benefit analysis because such a workshop may have very expensive test equipment, may have very expensive facility requirements, for example if it's radar there would be an aniconic chamber which is an expensive facility, if it is an inertial unit, inertial navigation unit there may be an inertial platform which is isolated from the rest of the environment, the shocks and vibrations in the rest of the environment, so investment in such a facility could run into millions.

And at that facility the, that line replaceable unit would be tested and the failure in the line replaceable unit would be isolated to the faulty shop replaceable unit, workshop replaceable unit and it's easiest to think of this as a computer black box with computer circuit boards inside, you decide among the 10 or more circuit boards inside which one has failed and it is then replaced by a serviceable shop replaceable unit or such a circuit card, completely replaceable unit, exactly the same item and once again the line replaceable unit is then tested on a test bench and declared serviceable and returned to service probably as a spare, not back to the same aircraft and that shop replaceable unit, now a computer card, is then returned to the depot or the original equipment manufacturer or some other certified maintenance facility for eventual maintenance where the card is repaired to piece-part level,

11 SEPTEMBER 2013

PHASE 1

integrated circuit, for example valves or screws or whatever might be required in that component.

This is done in this way so that the aircraft is very quickly released back to service because such an aircraft could easily be worth R40 million or a R100 million or more. Then the line replaceable unit is then repaired relatively expeditiously because it could also be expensive, a typical line replaceable unit might be worth R1 million and once you get down to the circuit card level it's tens of thousands of Rand, so you don't have very expensive assets lying around unserviceable, they must be returned to service as fast as possible, this discipline is called velocity management to make sure that there is a high speed of turnover of these units.

ADV MPHAGA: Then in paragraph 18 you talk about the faulty shop replaceable units which are removed from the faulty LRU's and replaced with serviceable spares, so can you just take us through that?

MAJ GEN PELSER: Yes. The faulty shop replaceable unit, that is the circuit board assembly for example, and that is then taken to the intermediate level workshop which as I said should be on the base to be repaired also by replacement and that shop replaceable unit which has failed is then sent to an air force depot in some cases where we have, where the cost benefit analysis has shown that it is effective to establish such a capability or alternatively it's sent to the original equipment

11 SEPTEMBER 2013

PHASE 1

manufacturer or to a licensed repair workshop, one that is approved by the original equipment manufacturer. It's very important that such a workshop should be approved by the original equipment manufacturer because we have to maintain the liability of the original equipment manufacturer for his design, should there be a serious design error in an aircraft that liability must be maintained and the, this audit trail of the repair of such a component must also be retained if there should be retained if there should be an accident for example.

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10 ADV MPHAGA: Now General Burger has indicated that there were accidents with three helicopters that led to basically the grounding of most of the aircraft, do you take any part in respect of that to ensure that the repairs are done or compliance is made with the decision of the Board of Inquiry?

15 MAJ GEN PELSER: A Board of Inquiry is immediately appointed, this is a command function, however, the staff for the Board of Inquiry is typically proposed by the Director Aviation Safety who does not report to me, so you will find in most cases that the Certification Authority and the
20 Investigative Authority are intentionally divorced, so for example you will find that in the United States of America you have the Federal Aviation Authority, the FAA, which is responsible for regulating aviation and certifying aircraft as airworthy but you have the NTSB, the National Transportation
25 Safety Board which is responsible for all investigations and the

11 SEPTEMBER 2013

PHASE 1

reason this is done is that there might have been an error even in the regulation or the certification and the independence of the Board of Inquiry must be ensured so that the Board of Inquiry may then direct itself to all possible elements or all possible causes independently without undue influence from people who were involved in the, either the certification, the maintenance, the operation or the regulatory process.

ADV MPHAGA: Insofar as the South African Defence Force has to meet its constitutional obligation, from the technical perspective are you able to say that that mandate can, is achieved or can be achieved?

MAJ GEN PELSER: Yes definitely, in terms of the operation and maintenance of these SDP's the Air Force is able to maintain these Strategic Defence Packages, it is not a simple matter, it will go ahead along with daily challenges but we have proven that we are able to maintain these aircraft and that can be seen in the fact that for example the Gripen objectives for 2012 were exceeded.

ADV MPHAGA: Now it is further apparent, you spoke about the training in respect of the technical officers and the engineers to an extent that they become specialists on the aircraft type and so on, how long and how intense is that training for them to achieve that specialist status?

MAJ GEN PELSER: The original training of an artisan typically takes a period of three years and consists of a

11 SEPTEMBER 2013

PHASE 1

(indistinct) component, which is gained in several school blocks and a set of lectures that we give at the, at our 68 Air School, and but more importantly the training of artisans relies on a lot of experience gained during practical training on similar aerospace material that is representative of the, of all the aircraft systems that we have, so for example if a mechanical fitter is trained he would be trained on jet engines, on the technology that is contained in our airframes *et cetera*, but as we said that is generic training, that is completed in about three years, however, that has to be followed by specific training on a specific type and the theory component of that could be anything from a month to multiple months, maybe even a year, and the practical component of that would, there would be some practical in that period but really the completing that training would then continue throughout the employment of such a person.

And there would be the work that the person does, would be monitored and only after such a person has gained sufficient experience would he be considered competent to sign off maintenance work on a specific aircraft or on a specific system on a specific aircraft individually or independently. You know before then there would have been some supervision and the supervisor would have signed off on his behalf. Later then as this person then gains more and more experience he would then start mentoring other artisans and later would then

11 SEPTEMBER 2013

PHASE 1

supervise other artisans and sign off on their behalf and also eventually get to a point where he can sign off on critical work, certain critical work has to be signed off by two people, it's called dual inspection. You would define what work is really
5 critical and that work would then be regulated so that it has to be signed off by two people, so such a person is called an inspector as well and that's an advanced stage of the training. So essentially the training continues although the initial training could be three to four years.

10 ADV MPHAGA: So it means that you have invested time and money on this training?

MAJ GEN PELSER: Yes, all the time that these people are in training they are also in our employ, so they are salaried, but that is not really the largest component of the investment that
15 we make in them, the real investment is in terms of those aircraft flying hours because you can only generate experience by repairing aircraft that had failed after flying and they only, as we said lately they are more and more reliable, so the opportunities for such training become less, the occurrences of
20 failures become less and you really need a lot of experience to have seen a lot of failures before we can consider that person totally competent and that means a huge investment in force preparation, but in the same way that you need to prepare pilots you need to prepare artisans and only flying hours can
25 do it.

11 SEPTEMBER 2013

PHASE 1

ADV MPHAGA: Is it in the Hawk where you have also an engineer sometimes flying with a pilot or is the Gripen?

MAJ GEN PELSER: No, in ... We have Gripen two seaters and Hawk is obviously a trainer aircraft and therefore is a two-seater but it's not engineers, we call those flight engineers and they are typically employed in transport aircraft and we also employ them in larger helicopters, the ... You can employ a flight engineer in an A109 and that's, often the person who is doing the control of hoisting and the mission role functions would be the flight engineer and the pilot would be concentrating on flying the aircraft safely, the flight engineer would say a little bit forward, a little bit backwards and in order to make sure that the activity like hoisting is completed successfully.

Such flight engineers are qualified artisans as well and are able to maintain at first line those aircraft or that so-called organisational level those aircraft because a helicopter could deploy independently for a short period and it might be necessary to take along a flight engineer just to make sure that you can maintain the aircraft wherever you land. The second seat in a Gripen or a Hawk is typically taken up by a second pilot or sometimes by a weapons systems operator or a navigator operating advanced weapons systems so as to relieve the primary pilot of that responsibility.

ADV MPHAGA: I see you haven't really much referred to the

11 SEPTEMBER 2013

PHASE 1

representivity in respect of your technical personnel, can you maybe deal with that?

MAJ GEN PELSER: Yes. Obviously representivity remains a challenge, however, we are doing extremely well up to about flight sergeant, we have a challenge in the area of warrant officers Class 2 and Class 1 and this challenge is exacerbated by the low mobility that we have at the moment, meaning the low turnover rate, and remains a problem, we are working on solutions. And then on the officers' side we are doing very well up to about lieutenant colonel, we have a challenge in the colonel ranks in the technical domain which we are also working on. It remains a challenge and once again progress is dependent on activity, the more you fly the faster progress can succeed. This, the representivity of all our specialisations is a very important issue for the Air Force and we are working on it constantly.

ADV MPHAGA: I think General Bayne during his evidence has also alluded to the fact that one of our, the advantages in respect of the Hawk was that the avionics capability in terms of development was done in South Africa, can you expand on that?

MAJ GEN PELSER: The Hawk avionics was developed by ATE, Advanced Technologies, a company in Midrand, they were specially developed so as to mirror the Gripen avionics so that when you advance from a Hawk to a Gripen it is extremely

11 SEPTEMBER 2013

PHASE 1

easy. This avionics capability has been nurtured by the South African Air Force through technology development funds for many years and has also participated in many of our aircraft systems. The previous avionics for the ASTRA was built by that company, the avionics for the Rooivalk was also built by that company. The company experienced financial challenges earlier this year but fortunately those financial challenges have been avoided, it has now been bought by Paramount Systems and is now known as TAP, and I'm not sure what TAP stands for, it's Technical-something or Technology, Advanced Technology Paramount or something like that, so I think that the future of the company is assured

ADV MPHAGA: And also in terms of job creation that has done well, can you expand on that?

MAJ GEN PELSER: Yes, obviously the development of avionics is very manpower intensive, it utilises systems engineers, software engineers, hardware engineers, technologists, technicians, artisans, even the production, the manufacturing of those systems were done in South Africa and it not only saves on foreign exchange but it really generates economic activity and gives excellent development opportunities for local technical personnel and employment opportunities as well.

ADV MPHAGA: Insofar as the LUH General Burger has also indicated that it's almost 50% of the actual repairs are done

11 SEPTEMBER 2013

PHASE 1

overseas but mostly they are done locally, am I correct?

MAJ GEN PELSER: That is correct and we are working on increasing the percentage of work that is done locally. Of course it has to be done carefully because the investment
5 required to switch over the repair work from a foreign company to a local company is often very high and each of those investments has to be evaluated carefully in terms of effectiveness, the cost benefit of such an investment.

ADV MPHAGA: From a technical perspective do you also get
10 any advantages from the other users of the similar aircraft like the Gripen's, LUH and the Hawk?

MAJ GEN PELSER: The user groups are extremely important to both the operational personnel and the technical personnel and also the management personnel of such a system, for
15 example the C130, I think that the collective knowledge on the C130 that exists within the users through the technical user group of a C130, which includes the United States Air Force *et cetera*, that collective knowledge on that aircraft system probably exceeds the knowledge that the original manufacturer
20 or design authority has on that aircraft.

The design authority is now working on newer aircraft, although we are getting exceptional support it is an older aircraft as far as they are concerned and the users now know more about the aircraft than the manufacturer, but what is
25 heartening is that many of these manufacturers actively support

11 SEPTEMBER 2013

PHASE 1

the user groups and attend the user group meetings, you get a lot of feedback then. Now it's important that we learn from the collective experience of the other users of each of our aircraft systems. You would find typically that as aircraft age certain weaknesses get exposed, older aircraft are built from aluminum and are prone for example to fatigue which means they crack and the tendencies to crack must be monitored very carefully, and when other users then use these aircraft at a faster rate than you use them then it's very advantageous if you can gain that information early on.

Also when other users experience reliability problems, other specific problems also in the way that they maintain, they might find optimisations in maintenance that you are not aware of and could save you a lot of money and even save you from possible accidents in future. It is always a good policy to have lead aircraft in your own fleet, meaning that some aircraft are flown one or two years ahead in terms of flying rate, that they precede your other aircraft significantly so that you can find latent defects in those aircraft as soon as possible, but it's more advantageous if someone else does it as well and they are even further ahead and you get more warning.

ADV MPHAGA: And during this multinational exercises that you have with other countries, does it also involve the technical staff in terms of your artisans and engineers?

MAJ GEN PELSER: Yes, during exercises our artisans are

11 SEPTEMBER 2013

PHASE 1

there to support our aircraft and to do the typical technical work, maintenance and turnaround activities, I have not up to now yet referred to turnaround activities but obviously when an aircraft returns from a mission it has to be refueled, some consumables like oils have to be refilled, some aircraft require oxygen, they need to be rearmed with ammunition, maybe bombs *et cetera*, and during such an exercise you have the opportunity to observe foreign crews doing the same thing and learning from how they do it.

10 A very significant advance was brought into our Air Force by the Swedes and it has to do with how you hang a bomb or even a pylon on an aircraft, they have a very, very simple device that looks like a fishing pole that is actually a small hoist device, and using this device you don't need to lift
15 the bomb up to a pylon. So you will find that during such an exercise many such interactions take place and people learn. We've also had the excellent compliments, we've received excellent compliments from other air forces especially in the way that we employ our aircraft and how we maintain our
20 aircraft.

When people who are long term operators of C130's for example see the state our C130's are in they are amazed because they can't believe how good those aircraft look, they exclaim that these look as good as they were when they were
25 new and I think that was drilled into the South African Air

11 SEPTEMBER 2013

PHASE 1

Force during the embargo years when it was not possible to easily replace aircraft.

ADV MPHAGA: General Bayne has also spoken about the advantages of the avionic systems between the Hawk and the Gripen, can you comment further on that?

MAJ GEN PELSER: The most important thing is that the Hawk avionics was "Gripenised", meaning that when you are inside a Hawk it is virtually the same as being inside a Gripen, and therefore all the procedural training that you would have to go through to convert from the Hawk to the Gripen is absolutely optimised by this very easy transition due to the similarity of the operation of the Hawk and the Gripen and this was an intentional effort from the project team which I think has been very successful and obviously reduces the amount of flying hours that are required during the conversion course from Hawk to Gripen.

ADV MPHAGA: Now would you say that the, our artisans, engineers and so on have gained invaluable experience by being part of the user groups and also in the multinational exercises?

MAJ GEN PELSER: Definitely. Whenever you gain international exposure there is an element of absoluteness to it, you could get into a false sense of expertise when you are left on your own but when you compare to other air forces, other defence forces, other operators then only do you really

11 SEPTEMBER 2013

PHASE 1

know whether your people are good enough or not, and we, I must say that we have been pleasantly surprised by the competence of our people. Also one should not forget the amount of exposure that we get during the projects because it's not only the project team that is exposed during the projects, but the first group of pilots as we've heard are trained by sometimes the manufacturer or sometimes the foreign operators and the first group of maintainers are also trained similarly and also we make sure that the large component of engineers are also exposed to the whole project and formally trained where necessary during the project.

ADV MPHAGA: Now in conclusion General what would be the effect then if the Commission decides to cancel these contracts in respect of the SDP's?

MAJ GEN PELSER: I think we've heard now very clearly in the evidence before, that went before that we definitely need these aircraft, that we have been fortunate that good aircraft have been selected, that we are operating these aircraft effectively, that these aircraft can do what we expect them to do, that we can maintain these aircraft and that a huge investment has gone not only into the purchase of the systems but into the preparation, the implementation of these systems and if we were to cancel now and return these aircraft most of that effort would be lost and wasted and at the same time we would be left with facing a reality that we still need such

11 SEPTEMBER 2013

PHASE 1

aircraft and would be forced to start new acquisition programmes for the aircraft. Therefore it is not recommended that these aircraft be returned and that other measures be found if necessary.

5 ADV MPHAGA: Any further comments?

MAJ GEN PELSER: Chair no, thank you very much, I will sustain.

ADV MPHAGA: Thank you Chair, that would be the evidence of the general.

10 CHAIRPERSON: Any cross-examination of the general? Any re-examination?

DR MADIMA: Thank you Chair, just one question.

RE-EXAMINATION:

15 DR MADIMA: General, the Gripen was only military-type certified in June 2013, some three months ago. Can you clarify for the Commission what the position was before that?

MAJ GEN PELSER: It was only released, fully released to OT&E three months ago, however, it was released for other roles before then, for OT&E, and had a preliminary military-type certificate for those other roles before then.

20 DR MADIMA: Does the same apply to the Hawk and the A109?

MAJ GEN PELSER: The Hawk, as I said, is currently released to operational test and evaluation in all its training roles and I
25 unfortunately do not have a date that the initial or provisional

11 SEPTEMBER 2013

PHASE 1

or military-type certificate was accorded, but it was significantly before the Gripen because the Hawk's were delivered before the Gripen.

DR MADIMA: Thank you Chair.

5 **QUESTIONS BY THE COMMISSIONERS:**

JUDGE MUSI: General, I just have one question. It centres around this issue of flying hours, I think this concept of flying hours plays a very important role in this whole business. There was evidence earlier here that the number of accidents in
10 which the LUV's [sic] were involved, or those that were investigated, I think the witness talked about three accidents, two out of them it was found that the accidents were due to human error, now I hear you saying that you brought all the necessary skills but you see there's a problem about
15 experience and you see, you can only pick up experience through accumulating flying hours. What does this mean, could it mean that the human error we spoke about in relation to those accidents is because of lack of experience?

MAJ GEN PELSER: Although some of those Boards of Inquiry
20 are still not completed or are subject to court cases and therefore *sub judicae*, if I analyse two of them were on operational issues, were due to operational issues and one of them might have been a technical issue. Flying hours are definitely the determinant, a good proxy measure for
25 experience and for competence, it is not the only measure, you

11 SEPTEMBER 2013

PHASE 1

may be repeating the same experience over and over again Mr Commissioner, but all things being equal flying hours are a very good determinant and indicator for competence. However, looking at the number of hours that have been accumulated on the A109 helicopter I do not think that the total flying hours are

5 inadequate, meaning that the flying hours should have been sufficient to ensure adequate competency in both the flying crew and the technical crew, and therefore I do not think that the flying hours were a cause for the accidents in this case.

10 JUDGE MUSI: And what are the impediments to accumulating a good number of flying hours?

MAJ GEN PELSER: The main impediment is funding. Funding directly determines flying hours and there have been some challenges on the funding of the A109, also of course after every accident as we've heard you have a stop-fly while the primary causes of the accident are determined and you would have, you have to satisfy yourself as operator of these aircraft that it is adequately safe to resume flying and that has also been, placed a limit on the accumulation of experience on

15 these aircraft.

20

JUDGE MUSI: One more thing General, and I don't know whether this is your terrain but let me ask you this because it has been ringing in my head, I've heard about the presence in the Air Force of helicopters that were not part of the SDPP, I've heard of Rooivalk and the Oryx and then of course there's

25

11 SEPTEMBER 2013

PHASE 1

the Pilatus but let's leave the Pilatus alone, the Rooivalk and the Oryx were not acquired as part of the SDPP, would you say it was necessary to acquire the A109 despite the fact that you have the Oryx and the Rooivalk?

5 MAJ GEN PELSER: Yes Mr Commissioner, it's important to note that these are aircraft in completely different classes, the Rooivalk is an attack helicopter or a combat support helicopter to be more precise, meaning that it is intended to support ground forces when those grounds forces require air support
10 and therefore it is very dedicated to that role only, it can carry no passengers, it can carry no load other than its weapons load and it cannot perform evacuation operations, casualty evacuations, medical evacuation operations and therefore should not be compared with the A109 at all.

15 The other helicopter, the Oryx, is a medium helicopter and is capable of transporting quite a large payload of either material or passengers or troops, it is capable of, it's been specially designed to operate in our hot and high circumstances, environment, and is obviously being in a higher
20 class, expensive, much more expensive than a light utility helicopter. A light utility helicopter is intended to do exactly that, communications meaning transporting commandos, especially for command and control purposes, as we heard being used to place a ground forces commander in a high
25 position so as to be able to command and control a combat

11 SEPTEMBER 2013

PHASE 1

situation, it's used for the transport of small amounts of passengers, small freight and also slinging operations and uplifting troops but small quantities of troops, so we're talking in the case of the LUH of four or five passengers and in the case of the Oryx of 16 passengers and therefore the LUH or A109 is significantly less expensive to acquire and also significantly less expensive to operate than the medium, than the much larger medium helicopter and it fulfills a specific niche in operations which cannot be fulfilled economically or effectively by the larger Oryx helicopter.

JUDGE MUSI: Thank you. As a layman I'm trying to grapple with this theory that you know the more the flying hours the less costly it becomes and the less flying hours the more costly, how does one explain this to a layman?

MAJ GEN PELSER: The important thing is that you incur the fixed cost whether you fly one hour or not, and then as you fly ore hours you divide the fixed cost by more and more flying hours, so if we were to say, let's say the fixed cost on one of these aircraft systems is R10 million per year, then if you fly a 1 000 flying hours then that converts to a R1 000 per flying hour, whereas if you flew 2 000 hours it would just convert to only 500 hours [sic] per flying hour, that's the fixed cost component, and to that you have to add the variable cost component which is actually constant per flying hour, so that's why total costs do not decrease but the per flying hour costs

11 SEPTEMBER 2013

PHASE 1

decrease as flying hours increase. I hope that is clear, I think I should have shown it on the graph again.

JUDGE MUSI: Thank you, thank you General, that's all from me.

5 CHAIRPERSON: Thanks a lot General, you are excused and I see it's already 16h15, can we adjourn now?

ADV MPHAGA: Thanks Chair. Just to mention that tomorrow Captain Jordaan will be led at 09h30 in the morning.

10 CHAIRPERSON: Thank you. Then we'll adjourn now. Thank you.

(COMMISSION ADJOURNS)