CHAIRPERSON: Good morning. Can we ask the witness to confirm that he is still under oath?

MR FERREIRA: I do.

ADV MPHAGA: Thanks Chair. I think before we proceed with the RFO Mr Ferreira wanted just to clarify, I think it was a concern raised by the chairperson in respect of non-consideration of costs on the evaluation of the RFI and I think he says he wants to respond to that before he can proceed with the RFO. Thanks.

MR FERREIRA: Chair, morning Commissioner. Late yesterday afternoon I made a statement on the cost on a LIFT RFI where I said I do not know.

CHAIRPERSON: I'm sorry, before we continue by the way where did that statement appear? Remember there's in one of the documents, can you still remember which document was it?

MR FERREIRA: During the LIFT RFI we made a statement that the LIFT RFI contenders was not selected on cost. If we go to page 473.

CHAIRPERSON: I suppose it's the same statement which also appears on page 684, I think it's under paragraph 6.3?

MR FERREIRA: Yes Chair, we're going to repeat the statement on page 684 in respect to the RFO results. On, the paragraph is speaking on page 473 we were still speaking about the RFI, the Request for Information, selection to shortlist the contenders who has received an RFO.

CHAIRPERSON: Thank you.

MR FERREIRA: Chair, yesterday documents were added to the bundle and I would like us to go to page 736. Chair, paragraph 2.1 and 2.2 addresses the RFI phase and paragraph 2.3 will address the RFO phase. I would only like us now to look at paragraph 2.1:

> *"The first time that it was minuted that the LIFT Evaluation should not take cost into consideration was when the LIFT RFI Evaluation results were presented to a special Ukhozi Control Council meeting number 22B/1998 on the 30th of April 1998".*

And if you go to page 739 paragraph 5.1.2. Paragraph 5.1.2 "Decision":

> *"The following manufacturers/aircraft should receive a Request for Proposal based on a Military Value result from the Value System above 68% and cost not taken into account at all".*

CHAIRPERSON: So this decision was taken by the Ukhozi Control Council?

MR FERREIRA: Commissioner they reported to us and yes, it was taken at that point.

CHAIRPERSON: So in other words one must go to the Ukhozi Control Council to find out why they took that decision. Unfortunately you can't help us because you were not part of

that meeting.

MR FERREIRA: That's correct Chair.

CHAIRPERSON: Thank you.

MR FERREIRA: But as we continue I also want to read paragraph 2.2, it's still applicable to the RFI:

> *"On the 5th of May 1998 the approval by the combined AASB, AAC of 30 April 1998 of the recommended shortlist was presented to the Ukhozi Control Council. At this meeting it was minuted that the reason why the recommendation to the combined AASB, AAC was not based on cost effectiveness was because it was felt that the cost constraints for the inclusion of the LIFT into the Strategic Defence Packages should be determined by the AAC".*

And there we, well we got the minutes attached page 743, paragraph 7.1.3. Chair, we are referring to that page is of the minutes of the meeting of the Ukhozi Control Council, meeting number 23/1998 held at the South African Air Force HQ Room B101 on the 5th of May 1998 and it is minuted in that minute, and I was also present at that meeting.

CHAIRPERSON: I'm getting a bit lost, can you repeat the last two points that you are trying to make?

MR FERREIRA: Chair, the page I refer to page 743 is a part of the minutes of the Ukhozi Control Council Meeting

23/1998 held on the 5th of May 1998. If you go to page 741 and also if you look at the attendance list I did attend that meeting on page 741.

CHAIRPERSON: Okay, I see you were part of this meeting. Can you just explain to me what 7.1.3 mean and what was the reasoning behind it?

MR FERREIRA: Chair, the first part of 7.1.3 say that we only made the recommendation based on the Military Value and not on cost effectiveness, the reason why it was only made on Military Value and not cost effectiveness because it was felt that the cost constraints for the inclusion of the LIFT into the Defence Strategic Packages should be determined by AAC. We had no budget at that time for the LIFT, we had, we couldn't indicate the cost of that and we felt that it should be the AAC who recommends the packages that should take cognisance of the cost, we could not make a sound judgement on the cost.

If you recall as I said yesterday the Project Team's original recommendation was totally different and I don't know if you want us to go back to that statement you made yesterday, and then we were told to look at a certain performance above a certain level and a certain cost and then we were told only to look at the (indistinct) above a certain point, but our original recommendation of the team was totally different. And if you want to I can take you, we can go back and we can walk through that process again because I ...

ADV MPHAGA: But maybe before you go there ...

CHAIRPERSON: Just hold on.

NOTE: Caucus.

CHAIRPERSON: I hear what you are saying although I don't know what you are saying, although I don't quite understand it, maybe it might become clear this time also, because if at all you have got no (indistinct) for you to go and make a recommendation at the higher authority one would expect that you would tell them exactly what sort of money would be involved, (indistinct), I don't quite understand why, that is the reason why instructions were given that cost is going to be taken into account.

MR FERREIRA: Chair, if you recall that the LIFT was added very late into the SDP Packages and it was part of the International Negotiation Team to see what (indistinct) affordable package. Perhaps we need to move through our steps again, if you go to page 471, page 471. Okay:

> *"During a work session with the members of Project Ukhozi Control Council held on 24 April 1998 the Project Team recommended that taking into consideration an acquisition cost limit of approximately $300 million the selection should be done from the Jet Trainer Class of aircraft because of the affordability whilst providing an acceptable Military Value and real jet handling and*

performance. The recommendation included the MB339, the ICASA 101, the L59 and the L139. The team also recommended that L139 be included as the top end high cost contender to the shortlist and the S2311A as the low cost fallback option".

This was the recommendation made by the Project Team based on our evaluation results on the process taking cost effectiveness into account, so we made that recommendation and then we were looking at the cost around $300 million.

"However, the workgroup decided that the recommendation to the Ukhozi Control Council should not use acquisition cost as a limiting factor as no firm acquisition budget allocation existed, but rather base the shortlist on the Military Value of 60 and higher and a lifecycle cost effectiveness above 0.8. Taking this into account the shortlist were revised to the L159, L59, the 339, the S211A and the Hawk".

Now we come to the meeting of the 30th of April, the one we were speaking just now, the special Ukhozi Control Council meeting held to present the evaluation result and the replies:

"The presentation material was also agreed to (indistinct) Ukhozi workgroup sessions (indistinct). The Ukhozi Control Council approved the following aircraft as a role of their non-compliance to

mandatory requirements to be eliminated".

I don't want to go through those, what I want to pick up there:

"The Ukhozi Control Council has approved that the recommendation to be tabled at the AAC meeting for their approval state that the following manufacturer's aircraft should receive a request for final offer based on the Military Value result from the value above 68 and cost not taken into account. The (indistinct) L159, the 339, the Yak-130 and the Hawk 100 and the MIG80. It must be noted that AMX80 offered by (indistinct) also has a Military Value above 68 but it was excluded from the shortlist recommendation on the basis that it is primarily an operational aircraft. It is utilised also for training as a secondary role, thereby adding unnecessary operating costs because of the complexity of maintaining an operational aircraft with high redundancy".

Then:

"At the AAC meeting it was also agreed to remove the MIG80 from the list and we ended up sending (indistinct) request for offers for the L159, the MB339, the Yak-130 and the Hawk 100".

So there is the history from what eventually went out.

CHAIRPERSON: Okay. To be honest with you I'm still lost

but if I go through these papers again I might understand what the witness is saying. (Indistinct) why the decision was taken that cost should be taken (indistinct) or should not be taken into account, particularly (indistinct) what other witnesses have said. One witness said that no, he was told by Mr Shaik not to take cost into account, that he must give both the costed and the non-costed options. So I'm trying to trace the history of that and I thought probably this might help but then it doesn't help and in fact it complicates the situation even more for me, but then maybe that might be sorted out as and when we go (indistinct). Thank you.

ADV MPHAGA: Thanks Chair. Maybe later when you deal with the JIT Report we may also revisit the question. Thanks. But maybe whilst you are there Mr Ferreira this option of non-costing, was it consistent to the Value System?

MR FERREIRA: Chair, it was not consistent with the Value System, the Value System we have to provide them a Military Value of performance divided by cost.

ADV MPHAGA: So it was a deviation from the Value System that was approved and agreed upon?

MR FERREIRA: Yes Chair.

ADV MPHAGA: Thanks. Maybe let us proceed then to the RFO and then we can deal with this subject later again.

MR FERREIRA: "*On 12 May 1998 a RFO was issued to the shortlisted suppliers …*".

ADV MPHAGA: Maybe refer to a page.

MR FERREIRA: Page 19.

CHAIRPERSON: Page?

MR FERREIRA: Page 19.

CHAIRPERSON: Is it page 9-0 or page 1-9?

MR FERREIRA: Chair, page 1-9, 19.

CHAIRPERSON: Thank you for that.

MR FERREIRA: *On the 12th of May 1998 a Request for Offer was issued to the shortlisted suppliers, the LIFT RFO. The LIFT RFO consisted inter alia of the following documents, a request for final offer document, the User Requirement Statement, the concept integrated logistic support plan, the minimum airworthiness requirements and flight test instrumentations".*

Chair, if we go to page 497, Chair this is the Request for Offer, for final offer for Lead-In Fighter Trainer, the contents is very similar to the Request for Offer was issued on the ALFA Aircraft which we had discussed before. I would still want to go through this document, highlighting the relevant paragraphs referring to the LIFT and also to indicate, give an indication on the completeness of the Request for Offer that we sent out. On page 501:

"The South African Air Force needs to replace the current Impala MK1 Light Jet Trainer fleet of

aircraft with a fleet of modern subsonic Lead-In Fighter Trainer (LIFT) Aircraft. The South African Air Force requires a LIFT fleet to provide a cost effective and efficient stepping stone from the ASTRA Basic Trainer to the Advanced Light Fighter Aircraft (ALFA) which will be the frontline fighter of the South African Air Force at least up to 2035".

Now this paragraph:

"The LIFT Aircraft must consist of 24 dual seat fighter aircraft of which one must be fully instrumented for flight test requirements and one must be fitted for, but not with flight test instrumentation".

When we say "fitted for but not with" we mean that all the wiring required for flight test instrumentation should be in the aircraft but no components required to do the flight testing, that is what is meant by "fitted for but not with".

"The LIFT system must additionally include a mission support and training system to ensure cost effective transition onto the LIFT Aircraft up to a full proficiency and to continuously maintain peak proficiency ...".

What we are speaking here is about the mission simulator that must come with the aircraft on which the pilot trains or flies before he flies the actual aircraft.

"... and operating support equipment (the fuel tanks, the pylons, the mission pods) to ensure operational training tasks can be executed using SAAF inventory weaponry and mission equipment. A logistic support system to provide for economical logistic support of all the components of the LIFT system throughout the service life of the aircraft required".

We also mean the support of the mission simulator, we also mean the support of ground support equipment which you use to support the aircraft.

"The requirements for each of these above elements of the LIFT system are comprehensively defined in the document".

Paragraph 1.1:

"The objective of this request for final offer is to solicit a comprehensive and detailed final offer for supply of LIFT system complying to the requirements as defined in this document".

On page 402, 502 sorry, 502:

"The priority in the timescale for the LIFT System is to establish a Lead-In Fighter Trainer capability before the Impala MK1's are withdrawn from active service by 2005. This requires that the training unit for the LIFT system must obtain initial operational

capability for (indistinct) conversion and for operational conversion not later than January 2005. At least 12 aircraft must have been delivered by that date".

Then Chair on page 503, "The Contracting Parties".

"The South Air Force is the end user, called the user, of the intended LIFT system, the operational requirement for the LIFT system was defined by the South African Air Force and the operational test and evaluation and final acceptance will be conducted by the South African Air Force against the operational requirement. For the LIFT System Acquisition Programme the SAAF is represented by the director's projects, the South African Air Force direct, and overall programme execution and implementation, responsibility is delegated to the SAAF Chief Project Officer (CPO). The CPO is the co-head of the joint Project Team and is the formal interface between the Joint Project Team and the South African Air Force management and the various South African Air Force functions. The chief project officer has the overall responsibility for integrating the Lead-In Fighter Trainer system Level 5 in the system hierarchy into the SAAF as a combat system, Level 6 in the system hierarchy,

including the functions of personnel, operations and finances. ARMSCOR is the delegated acquisition agency for the South African Air Force and as such the legal contracting party called the buyer for the procurement of the Lead-In Fighter Trainer system. ARMSCOR must acquire the Lead-In Fighter Trainer system according to the conditions jointly agreed between South African Air Force and ARMSCOR. For the Lead-In Fighter Trainer System Acquisition Programme ARMSCOR is represented by the senior manager Air Craft Systems (ARMSCOR) directly responsible for the execution of the LIFT Acquisition Programme, is delegated to the ARMSCOR Programme manager. For the Lead-In Fighter Acquisition Programme (indistinct) co-heads the joint Project Team with the chief project officer but is the formal interface between the South African Air Force represented by the chief project officer and selected main contractor. The main contractor is the selected offerer for the Lead-In Fighter Trainer system, the main contractor will have the total contractual responsibility for executing of the LIFT System Acquisition Programme and will be the formal interface to all the subcontractors. The main contractor will be

appointed by the placement of a contract by ARMSCOR".

Page 504, the Figure 1, I will only repeat the RFO structure for the record:

"The RFO consisted out of an introduction, an RFO structure ...".

Which is this paragraph.

"... the terms and conditions of tender, ...".

Where we referred to Case Standard 10 of ARMSCOR.

"... the acquisition objects consisting out of 22 dual seater LIFT Aircraft, one dual seater (indistinct) aircraft and one dual seat aircraft fitted for but not with flight instrumentation, a mission support and training system, an operational support equivalent and a logistic support system. These acquisition objects were supported by Appendix 'A' which was used, the LIFT User Requirement Specification".

We also had a flight test instrumentation requirement attached, as attachment as well as a concept integrated logistic support plan. Paragraph 5 of the Request for Offer was acquisition management, the terms and conditions of contract referring to ARMSCOR standard terms and conditions, Case Standard 20, our project management requirements, our engineering management requirements with a reference to ARMSCOR Standard 61 which it's the technical contract conditions, the

minimum airworthiness requirements which is an attachment to the Minimum Airworthiness Requirements which is based on the United Kingdom Standard (indistinct) Standard 970. Chapter 6 addresses the Industrial Participation, with that we had an attachment called the Industrial Participation Guideline.

Chapter 7 we were addressing the financing. Chapter 8 is the leasing option which is new onto the LIFT Request for Offer, and then there was a chapter on how the Request for Offer should be completed, the layout of the offers. My next page is page 521 paragraph 3.2.10, "Assessment":

> *"Selection of the preferred offerer will be made by evaluation of the written responses. The buyer may enter into further discussions with the offerer for clarification purposes as part of the evaluation process. Details of these discussions will be recorded and will be regarded as an integral part of the offerers' response. The buyer reserves the right to request and if necessary to participate in the demonstration of any available equipment before assessment is finalised. The buyer will assess the offer against at least the following high level criteria; …".*

Page 522:

- *Training mission effectiveness. We are looking at performance of equipment and the support*

system in achieving the LIFT Training Requirements.

- *Lifecycle Cost. The cost of acquiring and supporting of the total system throughout its life.*
- *Risk. Address factors that can influence the success of the project.*
- *The South African Industrial involvement.*
- *All requirements in the function specification for the Lead-In Fighter Trainer system are classified as mandatory, highly desirable or desirable in the assessment of the offers to select the preferred main contractor.*

The offers will be evaluated and rated according to its compliance with the stated requirements according to the following priorities:

- *Compliance with the mandatory requirements.*
- *Compliance with the highly desirable requirements.*
- *Compliance with the acquisition management requirements.*
- *Compliance with the logistic support requirements and;*
- *Compliance with the desirable*

requirements".

Chair, next page is page 532. Chair, because logistics was an issue being the evaluation of the contenders I would like to go through the Log Support System that we required:

> *"The LIFT System shall include a Logistic Support Package determined for the SAAF (South African Air Force) support environment and operational requirements. The logistic approach to acquire support for the Lead-In Fighter Trainer aircraft is described in a Concept Integrated Logistic Support Plan. Emphasis is placed on logistics engineering in optimising the support package to ensure an affordable and low lifecycle cost and the cost effective solution for the lifetime support. The Concept Integrated Logistic Support Plan defines the expected responsibilities of both the Project Team and the contractor. The offerer shall analyse the (indistinct) to determine his responsibility for which he shall propose in the offer. The Logistic Offer shall at least include the following identified logistic contract elements; …".*

We speak about logistic management, logistics engineering, supportability test and evaluation, initial spares. Chair, I'm going down that table headed "Cost Elements". We continue on page 533:

"Operational level support and test equipment".

What we mean by operational support, level support equipment is whatever you require to turn an aircraft around after the mission while it's on the line which include also the refueling of the aircraft, also including if you have to load weapons, the loading of weapons, and all tests to be performed to declare the aircraft serviceable for the next flight.

"Intermediate level support equipment'.

What is meant by intermediate level support equipment is that if an item has failed on the aircraft and is removed from the aircraft at operational level what do we do at the next level to repair this item to declare it serviceable again, also included intermediate level support system, certain aircraft maintenance requirements which will take longer than a certain time to perform.

'Depot level support equipment".

By depot level support equipment we are referring to actual repairing an item that is damaged or broken. Here we specifically repair if there is an integrated circuit by replacing components on the circuit, or in the case of a hydraulic system replacing for instance the seals on that. We were looking at training and training equipment, technical data which included the technical publications, packaging. Packaging is the requirements of how to pack equipment, to transport the equipment and to store equipment.

Technical support. With technical support there's assistance required from the contractor during operations in support of the aircraft. This could be in the case of initial delivery, a field service representative or in the long term support a question and answer service provided by the contractor. And then Engineering Support. My next page I would like to highlight is page 535 paragraph 5.2.2 "The Joint Project Team".

"For ARMSCOR and the South African Air Force the Lead-In Fighter Trainer System Acquisition Programme will be managed by a joint Project Team co-headed by the South African Air Force chief project officer and the ARMSCOR programme manager. The ARMSCOR programme manager is the formal interface to the main contractor and will have the responsibility and authority to execute the contracted acquisition programme while the chief project officer will have overall programme responsibility including implementation and commissioning of the Lead-In Fighter Trainer System in the South African Air Force up to system handover to the South African Air Force operational community. The Joint Project Team will be staffed by both the South African Air Force and ARMSCOR appointed personnel. It is envisaged that for the

initial phase of the acquisition programme the joint Project Team will be stationed on the premises of the main contractor to oversee the programme. The duration of the stay will depend on the structure of the acquisition programme and the level of participation by local industry but should be at least up to delivery and self-acceptance of the first production aircraft".

The next page I want to highlight is page 538. Chair, the (indistinct) required cost breakdown for the total programme, we asked for the aircraft (indistinct) cost and then we also asked for a second level of breakdown in terms of the airframe, the airframe systems, the flight control systems, avionic systems . None, this was our requirement, when we come back to evaluation we will refer back to this but we expected to get a detailed costing from the contractors and we requested in our proposal we want a detailed costing from the contractors. The next page 543, paragraph 5.3.1 "Minimum Air Weapons Requirements":

"The contractor shall design, develop, integrate, construct, test, qualify and deliver a fully certified Lead-In Fighter Trainer system to the client. The certification of the Lead-In Fighter Trainer system shall take place according to the minimum air worthiness requirements as specified. Certification

of the Lead-In Fighter Trainer System shall be achieved through the client Military Aviation Authorisation (MAA) who will constitute a qualification board to manage, control and facilitate all certification issues. The offerer shall draw up a proposal, proposed certification programme plan to be included in his offer. Proof of compliance shall be demonstrated to the full satisfaction of the MAA".

The MAA is a South African Air Force authority and we have to prove to them that this aircraft can be safely operated in South African environment, so the contractor had to deal with a full certification and then that data was represented to the MAA and they then authorised us based on the information presented to them by the project to fly this aircraft in South Africa. The name has now changed to the MAB, Military Air Worthiness Board, but that was at that time the name called.

"Proof of compliance of hardware and software configuration items that had been certified by acceptable authorities in the contractor's country and which the certification based on the (indistinct) and change shall be agreed with the MOA through the Qualification Board. Proof of compliance of hardware and software configuration items of which the certified baseline will be changed for the

purpose of the contract or new items shall be submitted to the Qualification Board for the evaluation and approval. The buyer maintains the right to evoke the third party or independent authority to do acceptance and/or qualification".

Chair, these are the issues in the RFO which I would have wanted to highlight to you. Chair, Commissioner the next I want to walk through, we haven't done it and it's not referred to in my statement but it was attached to the bundle yesterday is the final selection Value System on page 697.

"The Lead-In Fighter Trainer (LIFT) Final Selection Value System".

Paragraph 1, "The Background":

"Within the structure of the government to government Strategic Defence Equipment Alliance Initiative launched by the Minister of Defence (Minister Modise), several countries were requested to submit proposals for the major defence equipment to satisfy the needs of the SANDF. It was decided also to include the Lead-In Fighter Trainer in the Strategic Packages. An interim Value System was used using the RFI information to down-select the four contenders from the proposals received. The request for best and final offer was sent out to these three contenders, the three

contenders before aircraft. The Interim Value System ...".

That's the Value System we used at the RFI:

"... determined conclusively and was approved at SAAF that each of the final contenders satisfy the minimum South African Air Force operational training requirement, is acceptable to the South African Air Force as its future Lead-In Fighter Trainer, is supplied by a reputable, reliable and capable supplier".

On paragraph 2:

"The evaluation of the best and final offers. The request for best and final offer for the Lead-In Fighter Trainer is a detailed document based on a Lead-In Fighter Trainer User Requirement Statement that specifies the complete functional requirement of the Lead-In Fighter Trainer system. Each criteria included in the functional requirement is classified as either mandatory, highly desirable or desirable. Each proposal will first be measured against the mandatory requirements to verify compliance to the minimum user requirement and then against the highly desirable requirements to rank the contenders in order of preference. The tool used to rank the contenders in order of preference is the

final selection Value System which will result in a Military Value for each of the contenders".

And please note the next paragraph:

"The Military Value will be divided by the lifecycle cost to provide a cost effectiveness for each contender. The rank order preference recommendation that will be submitted to the Package Steering Committee will be based on the highest to the lowest cost effectiveness but will be supported by a risk analysis".

On page 698 we have a figure that represent what I've just described, I will move now to paragraph 3, "The Objective of the Final Selection Value System":

"The objective of the final selection and Value System is to determine a Military Value based on the extent to which a contender satisfy the highly desirable criteria as specified in the user requirement specification and to rank the contenders from the highest to the lowest Military Value. Compilation of the final selection Value System. The final selection Value System was derived directly from the highly desirable criteria specified in the request for best and final offer. It follows the same hierarchy and sequence as used in the Request for Offer with some adaptations to

provide a more logical structure and to make the evaluation of the proposals easier. To obtain a full understanding of the final selection Value System it must be read in conjunction with the Request for Offer. Weights were allocated to the Value System during workgroup sessions with the Project Team, facilitated by Mr Robbie Miller, the manager of the Defence Research Centre at ARMSCOR. A computerised multi-criteria hierarchical decision making tool is used to run the final Value System".

We use the computer programme to record all the results and to run the process on.

CHAIRPERSON: Mr Ferreira, if you don't mind can we adjourn now, there is something which needs our urgent attention and probably come back at 11h30? Will that be okay Advocate Mphaga?

ADV MPHAGA: That's okay Chair.

CHAIRPERSON: Thank you. Then let's adjourn.

(Commission adjourns)

(Commission resumes)

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

MR FERREIRA: I do.

CHAIRPERSON: Thank you. Advocate Mphaga.

ADV MPHAGA: Thank you Mr Ferreira, you can proceed to

take us through the RFO.

MR FERREIRA: Chair, Commissioner, before we adjourned we were on page 698, I would like to move to page 699.

"The final selection Value System structure is indicated here as Appendix 'A'".

Which is page 702. Out of a 1 000 points for the Military Value programme management contributed 100, engineering management 100 or 10%, training functionality 500 or 50% and logistic support 300 or 30% of the final decision. The low level breakdowns are also included in the package and that's for reference. We can go back to page 699, the Risk Analysis document is attached herein on page 726 and Commissioner I want to only highlight the risk elements that we are looking at, at a very high level. On page 76 we are speaking about programme risk, on page 730 we are looking at the technical risk and then on page 732 we are looking at support risk, and then on page 734 we were looking at Industrial Participation Direct, the risks associated with that.

If we return to page 699 paragraph 7 is the Evaluation Team and I would like to point out on the LIFT side we also had other people assist us with the evaluation of the Request for Offers. Basically you can see at the bottom from the South African Air Force as well as from ARMSCOR and what areas they assisted us with the evaluation.

Then on page 700 the approval of the LIFT Value

System, it was approved by Lieutenant General Hechter on the 10th of June and it was approved by the Defence Secretary on 11th of June and the Request for Offer was only closed on the 15th of June, so the Value System was approved before the closure of the Request for Offers.

ADV MPHAGA: Are we now going back to your statement on page 19?

MR FERREIRA: That's correct Chair, page 19. I would like to continue with paragraph 6.20:

> *"On 18 May 1998 the SOFCOM was briefed on the LIFT Contender Evaluation Process including the evaluation process that had been (indistinct) to permit considerations of the LIFT requirement in the SDP Packages. Also during May 1998 the SAAF issued a User Requirement Statement for Project Winchester".*

On paragraph 6.21, that's page 20:

> *"All of the (indistinct) which had to be considered for the purposes of the Value System of the LIFT Request for Offer was the so-called Military Value. The Military Value was determined by mathematically calculating the contribution of each parameter in the Value System from the bottom to top accordingly to the hierarchical structure of the Value System. The Military Value is a measure of*

the total value that an aircraft system will have for the SAAF over its full intended service life in satisfying the specific operational requirements of the SAAF".

As set out in the User Requirement Specification document and if you look on page 21 the RFI process with the process for LIFT. If you go to page 21, the process to be followed is we received the proposals, we considered them against whether they satisfy the mandatory requirements, if not we obtain cost schedule indications in order to comply to mandatory requirements, we then measure them against the final selection of Value System to determine Military Value (indistinct) in terms of Military Value.

Then we calculated the cost effectiveness by dividing the Military Value by the lifecycle cost, we rank the order on Military Value again, this time you will see the cost. We then performed a risk analysis and then we made a final recommendation. If you look at that process when you rank it according to Military Value next to the block that says "Military Value" that can be considered as the non-costed options.

If you go down one block and you divide it by the lifecycle cost or by cost and you rank them there that can be considered as the costed options, there is no other difference between the two options that we were requesting them to put forward, no other

calculations took place, no other evaluation took place, all we did is we took the costed option, we provide them a Military Value divided by a cost and then in the non-cost option we only provide them with Military Value ranking, and that's the difference between the two options from the project side. On page 22 paragraph 6.22, ...

CHAIRPERSON: Okay thank you, you can continue.

MR FERREIRA: Thank you Chair. On page 22 paragraph 6.22:

> *"The integrated Project Team completed its evaluation of the offers received by the end of June 1998 and presented its resulted to the Ukhozi Control Council".*

I would like us to move to page 559.

CHAIRPERSON: 559.

MR FERREIRA: And Chair, this is Project Winchester Project Study Report, the source selection of the Lead-In Fighter Trainer, the LIFT Aircraft for the South African Air Force. This was the report that we issued after the completion of the Request for Offer Evaluation.

NOTE: Note that the witness is not speaking into the microphone, rendering his voice inaudible. Transcription of his evidence proves difficult.

MR FERREIRA: On page 560 I am a co-signatory of this

document, the layout of this document is very similar to the layout of the Request for Offer for the ALFA and there might be a repetition in some of the paragraphs I will highlight. I would like us to move to page 566 paragraph 1.1 "Project Definition":

"Project Winchester involves the replacement of the ageing fleet of Impala MK1 and MK2 Aircraft with a cost effective jet trainer and fighter trainer referred to as the Lead-In Fighter Trainer or LIFT, capable of effectively bridging the training gap between the ASTRA Basic Trainer and the Cheetah-C Medium Fighter and its replacement Advanced Light Fighter Aircraft. The aircraft does not have an operational role …".

CHAIRPERSON: Mr Ferreira if you don't mind can you just start over just to make sure that the recording is fine? Can you just start again on that introduction?

MR FERREIRA: Yes Chair.

"Project Winchester involves the replacement of the ageing fleet of Impala MK1 and MK2 Aircraft with a cost effective jet trainer and fighter trainer referred to as the Lead-In Fighter Trainer (LIFT), capable of effectively bridging the training gap between the ASTRA Basic Trainer and the Cheetah-C Medium Fighter and its replacement, the Advanced Light Fighter Aircraft (ALFA). The aircraft does not have

an operational role and will be required to perform collateral operational missions only".

Paragraph 1.2:

"Approval has been granted for the combined Staff Target 1/1998 and Staff Requirement 1/1998 on funds allocated and approved for Project Winchester to execute the project study. The Project Team approaches all identifiable suppliers that could satisfy or possibly satisfy the requirement with a Request for Information, also taking into account the results of Project Ukhozi into the project study for the Advanced Fighter Trainer (AFT). As a reply to the Request for Information 50 suppliers submitted 20 aircraft as potential contenders to satisfy the SAAF requirement for LIFT. The Winchester Project Team evaluated the information gathered from the Request for Information. The evaluation is discussed in the Interim Project Study Report which concluded with a recommendation on which contenders should receive a request for best and final offer (RFO). On 30 April 1998 a combined AASB/AAC approved that the request for best and final offer, a request for offer be sent out to three suppliers to solicit offers for the four shortlisted contender aircraft".

If you recall the Aermacchi ALFA-1 aircraft, the MB339 and the Yak-130.

> *"The shortlist of the RFO was issued to the shortlisted suppliers on 12 May 1998".*

Paragraph 1.3:

> *"To comply with the very restrictive schedule of Strategic Defence Equipment Package Process replies to the RFO were submitted …".*

And the date is wrong in the report, on the 13th of June, not on 6 April 1998.

> *"The Project Team completed the evaluation of the request for offers by the end of June 1998 and presented the results to the Strategic Offers Committee (SOFCOM) during the first week of July 1998. Due to the limited evaluation time the final project study report documenting the full evaluation process was completed by the end of August 1998. This report discusses the evaluation process, the results obtained and the recommendations based on the conclusions. The contract negotiations and the contract signature schedule will be determined by the Strategic Defence Equipment Package Process".*

Paragraph 2, "The Objective":

> *"The objective of this report is to recommend a*

ranking from most preferred to the least preferred based on Military Value only for the shortlist of aircraft types that received a Request for Offer to satisfy the requirement of the South African Air Force for a Lead-In Fighter Trainer. The Military Value excludes cost (indistinct) and operating and is only dependent on the functionality and performance of the aircraft. The Military Value is, however, divided by programme cost to provide the military cost effectiveness".

In this report. On page 568 a summary of who received the request for proposals, the United Kingdom, that's (indistinct) Aerospace for a Hawk 100, Italy Aermacchi for the MB339-FD, Italy Aermacchi for the AEM / Yak-130 and the Czech Republic Aero Vodochody for the L159. Then I would like us to go to page 570. At the end of paragraph 4.2:

"The South African Air Force and ARMSCOR members of the Project Team visited the suppliers during the tender evaluation period to conduct a flight evaluation of the contending aircraft. Provision for the inclusion of the (indistinct) results were also made in the Final Selection Value System".

I'd like to move to page 572, paragraph 6 "Offers Received":

"In general all four final offers were comprehensive

and complied to the requirements of the Request for Offer. The completeness depth of reply and applicability of the offer to the Lead-In Fighter Trainer in the South African Air Force environment varied from offer to offer as discussed in Chapter 8 of this report. A brief summary of the aircraft on offer as well as the most pertinent points of the final offer are provided below: …".

If you go to page 573, that's the Hawk Aircraft, that is an image of the Hawk Aircraft, I would like to point out under this Hawk Aircraft it was offered to us with a Rolls-Royce Adour Mk871-07 engine, its basic reliability or meantime between failures of 7.7 hours, the first date of service was 1976, there are 14 countries that flies the Hawk and Australia are flying the Hawk 100 Lead-In Fighter on which our proposal is based or our aircraft is based, in total plus 650 Hawks has been ordered. If we go to page 574 paragraph 2, "Development":

"A large local avionic system contribution led by ATE (Advanced Technology and Engineering) as avionics main contractor under the control of British Aerospace. Qualification Certification Flight Testing could be done locally and the design authority for the mission system would have been transferred to ATE".

The strong points:

- *Has an extensive client base.*
- *Is a well-integrated system.*
- *Established customer support capability.*
- *It's got growth options for a forward looking infrared.*
- *An in-flight refueling (indistinct), a full authoritative digital engine control and even for (indistinct).*
- *It can achieve transonic speeds in a dive, has a good air-to-ground operational capability".*

The weak points:

- *It's expensive.*
- *It's got limited air combat maneuvre capability.*
- *Low turn rate.*
- *Has no air-to-air range sensor".*

It doesn't have a radar. If you go page 575, that's the L159 offered by Aero Vodochody in conjunction with Boeing and Allied Signal, the engine in this aircraft is the Allied Signal F124/GA/100. The basic reliability and the meantime between failures is 12 hours, the first date it is serviceable is 1999, that's for the Czech Air Force. They had ordered 72 of these aircraft but if you consider the L59, the L39 plus 2 100 of these aircraft it was sold to 18 countries, all of them ex-Soviet countries.

On page 576 paragraph 2 "Development":

"Development currently in progress in (indistinct) configuration, customisation necessary to meet the South African Air Force requirements. Fly test instrumentation and weapon trails after first aircraft delivery to SAAF".

Logistic Support:

"It's got a comprehensive logistic support proposal including extensive logistic support analysis and engineering based on worldwide customer support experience".

The strong points:

- *It's a balanced operational capability.*
- *It's Modern, economical and reliable engine.*
- *Growth options for a fire control radar and air combat maneuverability.*
- *Reliable and robust airframe.*
- *Established customer support capability.*
- *Highly deployable.*

The weak points:

- *United State Systems.*
- *Limited access to software and (indistinct) level support. (This is specific to the avionics which is being done by Boeing).*
- *An incomplete proposal. (The engineering*

plans were not included).

- *The weapons delivery accuracy is low.*
- *Cockpit layout man/machine interface is poor.*

Page 577, the MB339-FD provided by Aermacchi and it's got a Rolls Royce Viper 680/43 engine in it, a basic reliability of 6 hours, first date it is serviced is 1975, there are 10 countries using Aermacchi Aircraft, in total they had delivered 203 aircraft. On page 578 is "Development".

> *"Minor customisation to meet the South African Air Force requirements and to satisfy industrial participation commitment, mainly communication system and electronic warfare fit".*

Logistic Support:

> *"A well-developed logistical support capability, comprehensive logistical (indistinct) proposal including extensive logistic support analysis and engineering. Detailed descriptions and spares list included".*

The strong points:

- *Good jet trainer.*
- *Low acquisition and operating cost.*
- *There's some commonality with our existing Impala Aircraft.*
- *Growth option for a forward looking infrared sensor.*

- *Very comprehensive proposal.*

The weak points:

- *The technology age of the engine limits growth.*
- *No re-engine option.*
- *Long-term support could become very costly*
- *There is no air-to-air (indistinct) sensor.*
- *Very limited operational capability.*
- *Low engine time between overhauls.*

What is meant by that is after a certain amount of hours flying you need to remove the engine from the aircraft and overhaul it. The last aircraft on page 579 the AEM / Yak-130, although this is a Russian designed aircraft it was offered to us by Aermacchi in partnership with (indistinct). This is a twin-engine aircraft, it had two (indistinct) or DB2S engines in it, the basic reliability was 8 hours, it's still under development and it has no (indistinct) but it was potentially Russia and Soviet Republic was their potential clients and they have non built today except for the demonstrator. Page 580 paragraph 2 "Development":

> "*It is currently under full scale development for (indistinct) demonstrated flying. Will undergo shape and size modifications before the next prototype. A low-scale development programme jointly funded by Aermacchi with Government support, (indistinct) and Sukhoi".*

There were logistic support after fully describing the logistic engineering process, no actual data available to verify the logistic parameters because it's still in the development programme. The strong points:

- *Modern high technology trainer with fighter-like characteristics fly-by-wire.*
- *It can take high G's.*
- *High growth potential.*
- *Advantages of cost and emerging of cost emerging technologies. (Cost means commercial off-the-shelf equipment).*
- *Opportunity to customise.*

Weak points:

- *Early in the development cycle.*
- *High development risk.*
- *Cost escalation.*
- *Cannot meet scheduled requirements.*
- *Twin-engine outside the (indistinct) fighter philosophy.*

I would like us to move to page 582 paragraph 7 on the Value System, 7.1, "The Methodology":

> *"Assist in compiling a Value System for the final selection of an aircraft contractor that is scientifically based, comprehensive, credible and transparent. The services of the manager*

(indistinct) centre was contracted. Under his facilitation a formal process for the development of a final selection Value System was followed".

As indicated on that figure on that page.

"The purpose of the final selection Value System is to rank the contenders that best can satisfy the requirement of the South African Air Force for a Lead-In Fighter Trainer System in order of preference to receive a contract based on Military Value".

If we go to page 583 where the text on 583 is the narrative description the figure we saw on the previous page and I would like to use the text to describe the process. Page 583 paragraph 7.1.1:

"Deriving from the Staff Requirement a more detailed user requirement was drawn up specifying, quantified and (indistinct) operational logistics and requirements. Management requirements were identified by ARMSCOR based on the Lead-In Fighter Trainer requirement and included in the Request for Offer ...".

Another typing error in the document.

"... as part of the overall requirement. Important evaluation parameters were identified and important contractual requirements were formulated from the

requirements. This was an iterative process developed over time during several workgroup discussions to ensure that all requirements were identified and that the evaluation parameters could be traced to a specific requirement. Whilst the evaluation parameters had been identified the value tree was constructed and worksheets prepared according to the hierarchical process and in the format suitable for running the V.I.S.A ...".

Which is a trade name:

"... computerised evaluation software model. (indistinct) of relative importance or weights or all the parameters (indistinct) at the specific level of the hierarchical value tree was done in workgroups (indistinct) on a wide range of South African Air Force and ARMSCOR personnel knowledgeable in a specific field. The workgroups were facilitated by the appointed consultant and resulted in the completion of the three prepared work sheets. The results from the work sessions were fed into the computer model to construct the Value System weighted value tree".

We had discussed the value tree when we were looking at the value systems. On page 584:

"The replies to the request for final offer were

measured (indistinct) each of the parameters in the Value System. This was done by determining how the contender complies to that specific requirement where after the contender's parameter value was compared to the score method as documented in the questionnaire score (indistinct) document and the score for that parameter for that contender calculated accordingly. The scores were then rolled up to the next level in the value tree, rolled up to the top according to the structure and weights of the Value System".

We will come back to the results later in the document, I would like to continue on page 584 paragraph 8.1, "Mandatory Requirements":

"The following table ...".

On page 585:

"... summarise the non-compliance to the mandatory requirements per contender and tables the number of mandatories per contender not met. The reason for eliminating or for the reason for the elimination of the AEM / Yak-130 was due to an unacceptable time schedule for delivery while it is further stated that all the other contenders (indistinct) evaluated despite not meeting all mandatory requirements. The following tables tabulated each contender's

non-compliance and gives the impact of each on the programme. Many commonalities exist but further to these the major issues are that the Hawk 100 has a limited turn performance and low air-to-air (indistinct) sensor fitted. The L159 has Russian ejection seats requires a number of cockpit and (indistinct) modifications, yet restrict South African industry modifications and has a limited mission debrief system. The MB339-FD has limited endurance, limited (indistinct) capability and no radio rated (indistinct) fitted. None of the non-compliance mandatories by the remaining three contenders was considered as unmanageable and was thus not worthy of a contender disqualification from further evaluation. All mandatories not met were presented to a special South African Air Force Command Council meeting held on 29 June 1998 as part of the Lead-In Fighter Trainer evaluation results presentation and (indistinct) or approved. These non-compliance will need to be addressed and resolved (indistinct) negotiations with the successful contender".

If we look at table 1, "A Summary of Non-Compliance". The non-compliance were recorded as:

+*Non-compliance that can be contractually included.*

+Non-compliance that required contract negotiations to be resolved.

+Non-compliance that require clarification.

+Non-compliance that need to be waived".

The number of non-compliant (indistinct) these categories are indicated in the table but is summarised that the Hawk had 12 non-compliances, the L159 11, the 339FD 12 and the Yak-130 nine. On page 586, and Chair and Commissioner, I would like us to walk through all these non-compliances as it will give us a better understanding of what we are talking about, starting with the Hawk on page 586.

ADV MPHAGA: Maybe before you proceed, on page 585 I'm counting the non-compliances of MB399-FDS 13 and not 12, am I correct?

MR FERREIRA: Chair that is correct, if you look on the next page there is actually 13. May I go on to the figure on page 586? The first non-compliance, had no backup for mission essential data processing, which means if your computer fails you cannot continue with the mission, the impact would be a mission abort and (indistinct) system fails. It had no air-to-air (indistinct) sensor fitted, no air-to-air gunnery practice capability. The other one I cannot read because it's blacked out in my presentation, but it would have restricted our air combat training capability there, the impact of that one was. The mission debrief system cannot synchronise and

simultaneously reconstruct two to four flight paths. You will have to debrief on individual flights. This is a good example where through contracting you could resolve this mandatory by in a contract we then enforce having four debriefing, four flights debriefing.

The Coms data link included as a growth option, the impact is additional cost. The emergency location transmitter fitted to the rear fuselage and not ejection seat, which means in an accident you can locate the aircraft but you cannot locate the ejection seat, that is what the impact of that was. The Hawk cockpit accommodates The Royal Air Force 3% and 99% percentile person [sic], (indistinct) ejector seat. We had to determine if this imposes any limitation on the SAAF policy selection.

What is meant here is that there is a standard for a person, the length of the arm, the length of the leg, the weight of the person and this aircraft was designed for people between the 3% and the 99 percentile, which means that heavy people or light people will not be able to fly the aircraft or people with long arms or short legs, that is the impact of this statement, a 3% and a 99% percentile. We must also remember this is for The Royal Air Force personnel, the South African percentile looks different.

No warning if maximum allowable speed with undercarriage down is exceeded. The pilot must monitor the

speed when the undercarriage is down. The oxygen mixture not selectable, it's automatically regulated by the O-Box. The computer spare processing and memory store capacity is less than 50%, it means limited upgrading capability. Computer expansion capacity in terms of (indistinct) less than 20%, it limits the upgrade capability and (indistinct) modification by the RSA industry restricted and it puts a greater reliance on the original equipment manufacturer for the software upgrades.

The reasons why we always specify growth in memory and growth in hardware capability is there is always improvement to the programme once you start using it, this allows you to upgrade the aircraft without going through a full replacement of the components. (Indistinct) for future use that if you want to add more weapons it allows you to upgrade the aircraft at a lower cost.

On the L159 on page 587. The L159 cockpit accommodation is standard, not provided, the dimensions given, Russian ejection seat, determine if it poses any limitations to the SAAF pilot selection. Again we refer here to the 3% to the 99 percentile, they couldn't give us a design parameter. The oxygen mixture not selectable, it's automatically regulated by O-Box. The inverted flight limited to 20 seconds, 30 seconds required. Limited inverted flights to 20 seconds. What we mean by limited inverted flight is that if the aircraft is upside down the SAAF require it to stay 30

seconds in that position, this aircraft only allows you 20 seconds to fly in the upside down position.

No target position indication in attack mode, require a software, a system software modification. The bomb, canon and rocket delivery (indistinct) do not meet the minimum requirements, we had to determine (indistinct) and correct possible software modifications, improving of the algorhytms. The next one I cannot comment on because it's, in our document it's been masked.

Weight point input into navigation system only in latitude and longitude, it required UTM bearing and range, it's a software modification. What we ask here is in your planning in saying where you want to fly from A to B and you put the parameters in on A, you put in the parameters on B and that parameters they can only take in terms of a latitude and a longitude and not in terms of other references used by the Army or by the Air Force.

Mission debriefing system cannot synchronise (indistinct) reconstruct two to four flight paths, you had to debrief individual flights. To clarify what (indistinct), if we have a mission of four aircraft flying it's beneficial if we can play back the results of all four aircraft at the same time and then we can compare where was the aircraft relative to each other during the mission and it's very important debriefing because there you can explain to the student where he is

making errors and not. By having individual debriefings you lose that capability of the joint debriefing advantage.

Computer (indistinct) and processing and memory store capacity less than 50%, it will limit your upgrade capability. Computer expansion capability in terms of available slots less than 20%, it will limit upgrade capability, and some modification by the RSA industry restricted, we have a greater reliance on the OEM for some of the upgrades. Remember this has got Boeing software in and (indistinct) no capability to upgrade the software of the mission system.

On page 588 the MB339-FD, again there is a typing error (indistinct) MD339 cockpit accommodates a WADC-TR52-231 standard which is I believe a European standard, 3% to the 97% person for the (indistinct) ejection seat. To determine if it imposes any limitations on SAAF pilot selection. There is a different standard that was used by the Hawk. The oxygen mixture is not selectable, it's automatically regulated by O-Box. No warning if maximum allowable speed with undercarriage down is exceeded. The pilot must monitor speed when the undercarriage is down. No attack position indicated in attack mode, it is a system software modification.

(Indistinct) bombing and the CCIP only, not implemented in CCRP. Now (indistinct) bombing is when you throw not one bomb but three or four bombs at the same time then you want to calculate where the middle bomb would fall on

the target, that's what is meant by (indistinct) bombing, so you start bombing before the target, over the target and past the target and what they say here is only, you can only do that in continuous calculated impact point where the bomb will hit and not implement and calculate a release point which is how you release the bomb. And then there is one that is blank and I suspect it goes around sustained turn rate.

And limited long-toss capability, we had to clarify the capability. Long-toss is a profile flown by the South African Air Force where they are going in at a very low level, pitching up the aircraft and in the pitch-up they release the bomb and the bomb then follows an aerodynamic path to the target. No backup (indistinct) essential data processing, you must abort your mission if your primary system fails. No air-to-air (indistinct) sensors fitted, if (indistinct) air-to-air gunnery practice capability.

Combat air patrol time on station of 55 minutes, we required the minimum of one hour, you have limited cap time on station. The mission debrief system cannot synchronise and simultaneously reconstruct two or four flight paths, you have to debrief the individual flights. Computer spare processing and memory storage capacity less than 50%, limited upgrade capability and software modification (indistinct) restricted, you have to place a greater reliance on AM for software upgrades.

Page 589, the Yak-130, first delivery possible only

in 2008 and we require training capability by 2005. This was an unacceptable delay and an unacceptable non-compliance. The AEM / Yak-130 cockpit accommodates an AAMRL-3R-85-062 1% to 99% person, (indistinct) people. The (indistinct) impose any limitation on (indistinct) pilot selection. The oxygen mixture is not selectable, automatically regulated by O-Box and no target precision indication in attack mode, system software modification. A limited long-toss capability, we clarified the capability. Landing approach speed is 140 knots, the required maximum is 130 knots, you approach at a higher speed.

No information provided on the mission planning and debriefing system, (indistinct) contract negotiation (indistinct) processing and memory storage capacity less than 50%, it will limit your upgrade capability. Computer expansion capability in respect of (indistinct) less than 20%, it has a limited upgrade capability.

NOTE: Note that the witness is speaking at an extremely fast pace rendering his voice inaudible. Transcription of his evidence proves difficult.

MR FERREIRA: Now software modifications by the RSA industry restricted, a greater reliance on AM for software upgrades. Chair, then I would like to move page 591. Chair this diagram shows you the first two levels of the evaluation results, the detail behind this is (indistinct) in the document

and I will not discuss that. In terms of the Military Value Index the MB339-FD came first with 73 points, followed by L159 second with 65 points, the Hawk 100 third with 64 points and the Yak-130 fourth with 47 points. If we look at the next level of programme management the MB339 provided the best offer and came first with 87 points, the Hawk 100 at 76 points, Yak-130 at 63 points and L159 at 61 points. You must remember this counted 10% of the top value.

On engineering management plans the MB339 came first with 89 points, Hawk 100 with 69 points, the Yak-130 with 27 points and the L159 (indistinct) any engineering documentation got 9 points. In terms of the training aircraft functionality which counts 30% of the decision, of the top value index, the L159 came first with 69 points followed by the Hawk with 64 points, then the MB339 with 61 points and the Yak-130 with 36 points.

The last item was the logistic support, again the MB339 got 82 points, the L159 77 points, Yak-130 66 points and the Hawk 100 with 58 points. As I said the end result was that the MB339 on the Military Value Index only came first with 73, the L159 with 65, the Hawk 100 with 64 and the Yak, 47.

From there I would like us to move to page 644. Al these pages between 599 and 644 gives the detailed discussions on the aviation that was followed in order to determine the values as presented on 599. Chair, on page 644

is the cost breakdown in these proposals, I would like to go through the left hand side under "Description". This cost breakdown included the unit fly-away price, main equipment cost, mission support and training cost, operational cost, logistic support system cost and programme cost, so the total after price as indicated there from the Hawk was $599 million, the L159 $514 million. The 339, $237.711 million, the Yak-130 $427.84 million. As you will notice there is nearly a double, the Hawk was double the price of the 339 in terms of the price offered.

Then again as all these offers were not on the same baseline we had to add cost in order to compare these aircraft against the same baseline. The adaptation to bring it up to comparable technical baseline on the Hawk were $8.1 million for the laser range sensor, on the L159 we estimated $1.32 million for the (indistinct). On the 339 we estimated $3 million for (indistinct) and nothing on the Yak-130.

Then there was cost options included in the proposal which is not in the offered price, in terms of the Hawk $5.81 million for the (indistinct) simulation and nothing on the L159. On the 339 $1.08 million for (indistinct). $3.76 million for a radar simulation. $2.36 million for (indistinct) display and on the Yak-130 $1.08 million for the inflight refueling tank.

Then as a programme there we made provisions for the contingency which is 3% of the price in terms of the Hawk

at 159 and 6% in terms of the 339 and the 130. If you add them altogether the total contract price for the Hawk was estimated to be $632.171 million, the L159 was $532.96 million, the 339 $305.611 million and the Yak-130 $454.62 million. If you add to that the shipment and insurance cost the total programme cost on page 643, or I must say it's indicated on page 643, when we do our cost effective analysis ...

CHAIRPERSON: I'm sorry, is it 643 or 644?

MR FERREIRA: 645 sorry, mine (indistinct). The total programme cost as indicated on page 645 was used by the Project Team where we did our cost effective analysis. The Hawk were $756.524 million, the L159 was $641.43 million, the 339 $377.71 million and the Yak-130 $550.562 million. I would now like to move to page 647. 10.3 "Leasing":

> *"The project (indistinct) also to consider a leasing option. The leasing of the aircraft was offered by BAe as well as Aero Vodochody as an option in their packages. Both companies, however, agreed that the leasing option would be more expensive over the lifetime of the aircraft than it would be to purchase the aircraft. The main concerns against leasing were insurance of equipment, the cost of leasing over a 30 year period and what would happen to the aircraft after the leasing period. Aermacchi did not include leasing as an option in*

their proposal as the price that the aircraft was offered at did not justify a leasing option".

I would like to move to page 648. In terms of risk, the risk scores are determined from a risk assessment, I'll summarise in this table. If you look at the risk score the raw score, the Hawk had 50 points against risk, MB339 at 58, L159 at 92 and Aermacchi 130 at 163. The higher the risk score the more risk is built into the programme.

If you normalise this risk and you normalise it by dividing the risk by the highest one the Aermacchi, the Hawk risk were 30, the MB339 at 35.6, the L159 at 56 and the Yak-130 at 100. Again the Yak was the one with the most risk. In terms of ranking the Hawk had the lowest risk followed by the 339, L159 and the Yak.

And then there was an (indistinct) report on risk which was documented later which was called the inverted risk score as an absolute value of risk. And Chair it's a very complex, you know it is a very complex formula, you know it is not a very complex formula but it's very difficult to describe the formula to you but basically what happened is the maximum risk a contender could have was 279, so what we have done is in terms of the Hawk, the Hawk got (indistinct) out of 279, if you divide the (indistinct) by 279 and you subtract that from 1 and you multiply by a 100 you get a risk score of the 82. In this case the higher the risk score the less risk there is. In a

normalised risk score value the Hawk then, or the risk score was 82.08, the 339 was 79.21, the L159 was 67.21 and the Yak-130 was 41.55.

Now this inverted risk score is used later in the report for doing certain calculations which was called the risk abatement calculations, when we come back we will speak about that, but that is why we had to do the inverted risk score. Now the risk score of 50 points or the normalised risk value of 30.1 with a value of 100 represent the highest risk contender the Hawk 100 presents the lowest risk followed closely by the MB339 with a risk score of 58, 35.6 normalised risk value. Though these aircraft are fully developed and currently in production requiring only some customisation to satisfy the SAAF operational requirement.

If you go to page 649 Chair, as I said the inverted risk scores are used later on in the calculation of the risk moderated Military Value and some risk may be unmanageable and totally unacceptable while other risk may be high, but manageable if monitored and risk abatement actions taken timeously when required.

The (indistinct) of risk assessment characterised according to the unacceptable risk (indistinct) risk are summarised below, first the unacceptable risk, the Yak-130, the earliest delivery date of the Yak-130 is 2008 while the latest required data for achieving a training capability on the LIFT is

2005. This risk is unacceptable. High but manageable risk Hawk 100, no high risks were identified, British Aerospace manage a comprehensive risk assessment and risk abatement programme.

The MB339, the MB339 has probably reached the end of its production run, this means that in 20 to 25 years most operators will start phasing out the MB339-FD from its inventory. While the airframe and avionic components can be maintained or replaced a high risk exists on the engine, with the production line closed and a very low demand for engine spares, sourcing engine spares components could become very expensive, (indistinct) this risk implies a high demand on the operating budget, options for (indistinct) these risks are on page 650, stocking up of engine spares while still economically available [sic], purchasing additional spare engines whilst still economically available [sic], (indistinct) engineering, licensing, production for producing required components while running a proactive support programme. Alternative, the MB339 could be phased out earlier than the planned 30 years' service life.

The L159, the L159 is still in an early phase of development with the two seat prototype engine test (indistinct) conducted flight testing and the single seat (indistinct) avionic test bed about to commence flight test. Considerable development must still be completed before design objectives can be verified. Some risk remain that not all design

objectives will be met, particularly with regard to weapons delivery accuracy. Source code and other technology class (indistinct) will not be provided with the Boeing local avionic suite, this means that the SAAF will remain (indistinct) on Boeing to achieve customised man/machine interface, incorporate later design changes, i.e. (indistinct) weapons integration or for depot level support. An alternative could be replacing the Boeing Avionics with RSA industry avionics with a possible increase in price.

The AEM / Yak-130, the fact that the (indistinct) AEM / Yak-130 can only be considered a technology demonstrator the aircraft must still undergo a full development cycle including changes to the structure constitutes a high risk. Chapter 12 ,"The Risk Moderated Military Value".

> *"The Military Value as determined by the final selection Value System does not take risk into consideration. For two contenders with an equal Military Value it would be preferable to select the contender with the lowest risk. To account for the impact of risk in selecting a contender the Military Value must be moderated by a risk factor. The table below indicates the Military Value and inverted risk score of the contenders".*

As I said that the Military Value of the (indistinct) 73 and the risk, the inverted risk score is 79.6.21. The L159 was 65 and

the inverted risk score was 67.21, the Hawk 100 at 64 with an inverted risk of 82.08 and the Yak-130 a Military Value of 47 with an inverted risk score of 41.58.

> *"The Military Value can be moderated by risk factoring in risk in a specific percentage (indistinct) moderated Military Value equals the Military Value at a certain percentage plus the risk score at the remaining percentage".*

To explain this, if I say my percentage for Military Value is 85%, so the Military Value will count 85% of the moderating, the Military Value, then the risk score will count 15% of that value, so I will multiply the Military Value by 85% and the risk score by 15% in order to get a moderated risk value. I don't want to discuss the figure below because it's not in colour and it's very difficult to explain but I would like to continue on page 652.

ADV MPHAGA: Before you proceed I just want to get clarification maybe for the Commissioners on page 650.

MR FERREIRA: 650?

ADV MPHAGA: 650 on paragraph 12. The significance of this that the Military Value as determined by the final selection Value System does not take risk into consideration, does it mean that risk was not to be considered?

MR FERREIRA: Chair, in all our previous reports we made a recommendation that we didn't include risk in the calculation,

when we did the tradeoff analysis we said these are the products and these were the risks associated with the products. If I refer back to ALFA RFO and the (indistinct) there was a military figure (indistinct) did not contain the risk as part of the figure and the risk were added (indistinct) take note, if you take this product these are the associated risks. This is the only programme to my knowledge where we had to do a risk moderated value, to provide a risk moderated value. On page 652:

> *"The question is to what extent should the Military Value be moderated by the risk score. This can be determined by calculating the cost to abate the risk as follows; on the Hawk 100 it constitutes no major risk and is therefore not considered in the calculation. On the Yak-130 the risk associated with the AEM / Yak-130 are major because of the early development phase of the aircraft and cannot reasonably be calculated, as it constitutes an unacceptable risk it is not considered for a calculation. The MB339, the major risk factor associated with the MB339 is that the engines might not be available or economically maintainable over the intended service life. This can be abated by purchasing of an additional 30 engines over and above the initial engine purchase including spare*

engines at the cost of $1.4 million per engine for 30 engines. The risk abatement cost is $42 million. This constitutes 11% of the programme cost. On the L159, the major risk factor associated with the L159 is the weapons delivery accuracy and upgrade of the avionic system. This can be abated by replacing the avionic system with an alternative system that can satisfy the weapons delivery accuracy and at the same time provide a greater local industry participation. As there should be little difference in the recurring cost the risk abatement cost will be for the development and integration of an alternative avionic system. The cost is estimated at $36 million which constitute to 5.6% of the programme cost. The highest risk abatement cost is therefore for the MB339 at 11% of the programme cost, allowing some leeway for additional risk abatement cost to counter some of the minor (indistinct) risk. The worst case should be a risk abatement cost of 50%. Based on the above reasoning a moderated Military Value is calculated at 50% risk score (indistinct) is proposed. So, for an 80% Military Value contribution and a 15% risk score contribution the risk moderated Military Value becomes on the 339

73.93, the Hawk 66.7, the L159 65.3 and the Yak-130 46.2".

Which as you normalised it the MB339 still came first at a 100, followed by the Hawk at 90.2, the L159 at 88.3 and the Yak-130 at 62.5. To understand the impact of this we should actually compare these results with the results on page 651 where the Military Value was indicated without risk and as we can see from this it had very little impact on the 339, it was 73, it was now 73.93. It had some impact on the, it had an impact on the Hawk where the Hawk was 64 and in the third place it now becomes 66.7 and in the second place.

In terms of the L159 it was a 65, it had very little impact but it dropped from the second to the third place from 65 to, a Yak-130 which had a, which was last at 47 is now even less, it's got 46.2. That was the impact of the risk moderated value and the impact, so in essential it had no impact on the actual, should have a great impact on going forth because it had a one point difference in the Value System. Then we also look on page 654.

ADV MPHAGA: Sorry, I see it's 13h00, maybe it may be the right time to adjourn.

CHAIRPERSON: If at all the witness is going to touch on a new point maybe let's continue until maybe 13h15 unless if at all he is going to start a new point which might take him an hour to complete.

MR FERREIRA: Chair, it's starting a new point, we'll now becoming to the contentious issues on this programme of cost and non… Chairperson, I am starting on a new point, what follow here is going to be the issues of the costed and the non-costed which I believe I would have liked to discuss in detail.

CHAIRPERSON: Then in that case we are going to start with the cost and non-costed issues. Let's take a break, we'll come back after 14h00.

(Commission adjourns)

(Commission resumes)

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

MR FERREIRA: I do.

ADV MPHAGA: Thanks Mr Ferreira, we, when we adjourned you were about to take us through the non-costed and costed portion.

MR FERREIRA: Chair and Commissioner, I would like now to go to page 657. Paragraph 15.1 "Cost Effectiveness":

> *"Cost effectiveness is a major consideration for South African Air Force and they must front the running cost of the LIFT Aircraft system. In parallel to funding all the other personnel operating and (indistinct) over the full intended service life while facing severe budget constraints. Cost effectiveness based on acquisition cost is also an*

extremely important consideration as the available capital can best be employed and address the equipment needs for the South African National Defence Force. As the MB339-FD represents the highest Military Value at the lowest operating cost it is clear that it provides the most cost effective solution from an operating cost perspective. The Project Team were, however, requested by the SOFCOM to present their recommendation based on programme cost as calculated in a cost breakdown of (indistinct) cost analysis. Based on the risk moderated value and programme cost the cost effectiveness rating of the contenders are as indicated below; ...".

MB339, cost effectiveness is 195.7 and if you normalise it at a 100 it came first. The L159 cost effectiveness was 101.5 and if you normalised it you got a figure of 52. The Hawk 100 cost effectiveness were 86.5 and when normalised it became 44.2, it came third. The Yak-130 at cost effective 83.9, after you normalised it came out fourth at 42.9. The MB339-FD has the highest risk moderated Military Value and the lowest programme cost, it therefore has the highest cost effectiveness with a programme cost approximately half of that of its competitors. The most cost effective margin is significantly 48% above its closest competitor.

"On this basis the MB339-FD is an obvious preferred option and ranks number one on the preference list. These risks associated with the MB339 must, however, be kept in mind. The MB339-FD family of aircraft is probably approaching the end of the production run, the Italian Air Force have 12 aircraft on order, the Venezuelan Air Force are reported to have ordered an initial batch of eight aircraft with an option of ordering more when funds are made available. Towards the end of the South African Air Force's intended service life of 30 years it could become very expensive to operate the MB339 if it is no longer in production and if the other operators have phased out or are phasing out their MB339's. This is particularly true with respect to the engine which is the highest contributor to operating cost which has little, if any future growth potential and for which there is no available replacement. The Italian Air Force has indicated that it intends operating its MB339 series well beyond 2020 as a Lead-In Fighter Trainer for their Euro-Fighter Aircraft. The operating cost trench will have to be carefully monitored and predicted and corrective or preventative actions taken well in advance to ensure that the long term economic

operation of the MB33-FD. One such action could be the acquisition of additional spares or particular engine spares and spare engines as discussed in the risk analysis while still economically available. Another option would be to enhance the local industry depot level support capability to provide through-life support. This could include manufacturing licenses for selected high usage or high cost spares. At the worst the SAAF may have to phase out the MB339's earlier than the intended service life, even then it still present a cost effective solution as for its active service period. The MB339-FD also has a very limited operational value attributable mainly to its relative low performance making it highly vulnerable (indistinct) the lowest sophisticated threat scenario and to this (indistinct) capability".

I would then like to go to page 660 and discuss the Hawk.

"The Hawk 100 is a ...".

CHAIRPERSON: I'm sorry. Which page are you looking at?

MR FERREIRA: Page 660.

CHAIRPERSON: Oh.

MR FERREIRA: *"The Hawk 100 is a well-proven aircraft and has gone through several development phases but still has some growth options at a large quantity*

produced and still is in production. It has a large client base, it represents the lowest risk of all the options, it is also the most expensive contender with a programme cost more than double that of the MB339. On cost effectiveness it is rated third and is therefore considered the second alternative after the MB3639-FD and after the L159. Because of its higher performance including a transonic capability when (indistinct) and in a dive the Hawk 100 presents a higher training envelope than the MB339-FD. With its weapon load carrying capability, the forward looking infrared and the possibility of (indistinct) additional engine control system the Hawk 100 provides the growth path through a limited life combat role, particularly in the air-to-ground missions. Due to its relatively poor turn performance with other (indistinct) and no fire control radar option the Hawk 100 remains very restrictive in the air-to-air combat capability".

Then I would like to go look at the lease option.

"As part of their responses to the Request for Offer the suppliers were also requested to submit a proposal for leasing the LIFT System over the required service life. The feasibility of the leasing option was also extensively discussed during a visit

to the suppliers to conduct flight test evaluation of the contending aircraft. Although the suppliers indicated their weariness to continue discussions on the leasing option should this be a real requirement none could come up with a feasible proposal. In general all considered leasing over such an extended period as impractical and likely to be extremely expensive. The conclusion is that leasing the LIFT aircraft over a 30 year period is not an option".

Now looking at the ranking page 661 paragraph 15.3:

"Note was taken during the evaluation that the Minister of Defence request not to make cost the only consideration when recommending a LIFT contender for final selection. The SOFCOM has also requested that the Project Team submit a recommended rank order based on risk moderated Military Value only, i.e. excluding any cost considerations. The ranking in order of preference based on risk moderated value only is indicated in the table below; ...".

As you look at the normalised figures the MB339 received 73.9 under risk moderated and were normalised at 100. The Hawk 100 risk moderated value was 66.7 and if normalised 90.2. The L159 65.3 and normalised at 88.3 and the AEM / Yak-130 at

46.2 and were normalised at 62.4. The recommendation, if you look at the cost effectiveness base preference ranking order as indicated in the table below there the MB339 got a 100, L159 52, Hawk 45 and the Yak-130. By removing the cost from the calculations as indicated above the Hawk's value went up from 45.1 up to 90.2, the Aermacchi stayed at a 100, the L159 went up from 52 to 88.3 and the Yak-130 went up from 42.9 to 62. The ranking of Hawk and L159 changed (indistinct) if you take the cost. So, except gaining 45 points in value it also changed positions with the L159.

You will also notice the difference between the MB339 with cost only to the Yak-130, there is a point difference of around 38, if you take cost into account the cost difference grows to 58. That was the impact of cost and non-cost on the proposal. "The Preferred Offer" paragraph 662, page 662. This is the preferred offer if cost is taken into account made by the Project Team, our first choice was the Aermacchi MB339, normalised Military Value of a 100, this is the most cost effective and least cost offer, the MB33-FD has at probability reached the end of its production run and could remain expensive to operate towards the end of the SAAF required service life of 30 years, particularly with respect to the engine which has no growth potential, nor an available replacement. It had very limited operational value.

Our second choice, the first alternative offer was

the Aero Vodochody L159 with a normalised value of 52, it had the largest (indistinct) content engine avionics, a (indistinct) depot level support could reside with the AM. It is strongly recommended that an alternative more capable avionic system with less restrictions being negotiations within a comparable programme cost should the L159 be selected. The L159 has the largest training (indistinct) and forward looking infrared, a flight control radar, and a (indistinct) engine (indistinct) against the best growth path to limit night combat role, air-to-air and air-to-ground role.

The second alternative is the British Aerospace Hawk 100 with a normalised value of 425.1, high cost option that's supported by a wide client base, the Hawk has a larger training envelope including a transonic capability (indistinct), a forward looking infrared, weapons load capability and possible FADEC on the engine provides growth path to limit, in a limited light combat role. The Hawk has a limited air-to-air capability.

And then the Aermacchi Yak-130 was an unacceptable offer as the delivery of the first aircraft exceed the latest in the service date for the training needed in January 2005 by three years. It is recommended that this offer not be further considered. If you look at the risk moderated Military Value base (indistinct) page 663, if acquisition and operating cost is not considered, is not a consideration but low risk is important the ranking, the preferred offer was still the

Aermacchi MB339-FD, some of the training aircraft a value of 100. This is the most cost effective and least cost offer, the MP339 has probably reached ... Okay, the same as was said before, it's got some (indistinct). This first alternative with a value of 90.2 is the Hawk MK100 and the second alternative with a value of 88.3 was the Aero Vodochody L159.

On page 664 "The Leasing Option", the note at the leasing option:

> *"Training overseas has been investigated and is not recommended by the SAAF because of pilot skill levels achieved and the loss of local fighter training capability. The risk of rate of exchange fluctuations is an issue better addressed by the Department of Finance that could lead to a substantial unforeseen cost".*

If we sent pilots overseas for training like the training school in Canada. Paragraph 17 "Approvals":

> *"The results of the evaluation of the LIFT Final Offers as documented in this report was presented to the SOFCOM on the 2nd of July 1998. The summary LIFT contender Evaluation Report (indistinct) June and submitted to the SOFCOM on the 1st of July 1998 also attached hereto. The presentation to the SOFCOM by the (indistinct) Project Team based the recommendation on Military*

Value only, separate presentations to the SOFCOM were made by different evaluation teams on the industrial participation value and the financing value. It is the task of the SOFCOM to combine the three individual values into a single liquidation per defence equipment system and to combine the defence equipment recommendations into a single Strategic Defence Equipment package recommendation. The SOFCOM will then present their recommendations to the AASB and the AAC for their approval and once approved compile a cabinet memorandum stating that the AAC approve recommendation. The Minister of Defence will submit the Cabinet Memorandum to the Cabinet for their consideration and approval. The Project Team acting in support of the SOFCOM presented the Military Value evaluation results and recommendations to the AASB on the 8th of July 1998 and to the AAC on the 13th of July 1998. After further approvals for the final source selection of the contenders within the Strategic Defence Package will be coordinated and communicated by the SOFCOM".

ADV MPHAGA: Just maybe to ... So you were part of the Project Team that presented to the SOFCOM?

MR FERREIRA: Chair, I was not part of that Project Team, it was only the APM at that time and the chief project officer that made the presentations.

ADV MPHAGA: But insofar as the presentation of the Project Team, was it to recommend the Aermacchi MB339 as the preferred, in terms of the technical evaluation as the preferred supplier?

MR FERREIRA: Chair, from the Project Team, and as I understand from the Air Force Team we always, we were quite happy, and as the Air Force said they are quite happy with their choice of Aermacchi, there was no pressure from us or anybody to my knowledge that said we must go for the Hawk 100. Chair, I now want to end this chapter by moving back to page 654, as part of the proposals received they also offered us proforma contracts, the companies. These proforma contracts we evaluated it in terms of their thoroughness in an effort to address and to reply to all the paragraphs, compliance, the deviation from the K-STD-0200 document which we attached as attachments there, and flexibility, indications of achieving a win-win situation.

In terms of thoroughness British Aerospace, they submitted a very comprehensive document covering all and more than the required information where they deemed it necessary. They elaborate intensively. The document is very use-friendly and can easily be verified.

Aero Vodochody, the detail provided in the document offered is well defined but not always clear. In some parts of the documents certain elements were considered as not applicable and other parts the same elements form part of concept contract.

Aermacchi, the document is short, to the point, covers all the aspects and is very user friendly. In terms of compliance British Aerospace, although they agreed to most of the K-STD-0020 conditions it was found that the conditions were subtly changed in their favour. When contracting with the British Aerospace each paragraph of the contract will have to be scrutinised carefully.

Aero Vodochody, not all the conditions of K-STD-0020 have been addressed in their questionnaire, however, in the concept contract reference were made to most of the conditions. Quite a number of conditions were not acceptable to them, however the (indistinct) felt that a difference of such a nature a proper contract cannot be concluded. Page 655, "Aermacchi":

> *"All the conditions of K-STD-0020 has been addressed. The deviations in this case are minor and will not have any influence on establishing of a proper contract".*

"Flexibility":

> *"British Aerospace. Due to the years of experience*

in this field it is doubtful whether major adjustments to the concept contract will be possible".

"Aero Vodochody":

"It appears that certain elements will not be negotiable, however, the fact that certain elements were not understood by the Aero Vodochody negotiations will have to take place in which event unacceptable conditions can also be renegotiated".

"Aermacchi":

"Of all the contenders Aermacchi appears to be the easiest to negotiate with. Due to a time constraint Aermacchi apologised for not submitting a 100% detailed concept contract and opened itself for further negotiations. In general (indistinct) issues which all the contenders had a problem with was force majeure, intellectual property rights and the inspection of their books. It is clear that the contenders do not understand the requirements of the abovementioned properly and therefore these obstacles can be managed".

In terms of ITAR, paragraph 40:

"All United States of America source equipment which has a military use and which is listed on the ammunition list are subject to control according to the ITAR Requirements. One item on the

ammunition list, be it technically, data information, software or hardware may be exported without the explicit written approval by the United States of America State Department. It is the contractor's responsibility to identify all the United States sourced equipment to determine which of those are on the ammunition list and to obtain the necessary State Department approvals for the re-export of these items. ARMSCOR and the South African Air Force as the end user must ensure that the necessary identification recording, monitoring, reporting procedures are in place and are strictly followed to ensure compliance with the ITAR Control Regulations. All four LIFT contending aircraft have United States of America sourced equipment onboard. The first order of (indistinct) of complying to the ITAR requirements are discussed below. The L159. The L159 has the most United States of America sourced equipment onboard and also the most critical United States source equipment. The full avionic suite is provided by Bayne while the complete engine including the FADEC System is supplied by Allied Signal. Both Bayne and Allied Signal applied for and was granted a license for the supply of technical data regarding avionics suite

and the engine respectively. With regard to the engine the license was issued subject to the following restrictions;

- *Computer sourced (indistinct) may not be released.*
- *Engine design methodology and data may not be released.*
- *(Indistinct) Section data and drawings may not be released.*
- *FADEC data including application software definition and overall technology may not be released.*
- *Depot level maintenance capability information may not be offered or released.*

It is not clear what restrictions will apply to the avionics system as the relevant state department was not included in the final offer. It is deducted from the following offer that source code and depot level support capability will not be granted in an export license. The result of this (indistinct) for repair, it needs to go back to the OEM in America and we have no capability in the country. Yak-130, 11 items of United States origin are listed as being included in the Yak-130, a request for an advisory opinion in accordance with the ITAR regulations has

been lodged with Aermacchi but the reply has not yet been received. Aermacchi is, however, confident that approval and relevant export license will be granted. Should this not be the case they commit to replacing the United States of America equipment with others of equivalent function without any impact in terms of cost or schedule. Most of the United States sourced equipment also have commercial use and should not present a problem. The most problematic item is probably the Honeywell navigation system or GPS. MB339. There are nine United States sourced units including the MB339. A request for an advisory opinion in accordance with the ITAR regulations have been lodged by Aermacchi but the reply has not yet been received. Aermacchi is, however, confident that approval of the (indistinct) export license will be granted. Should this not be the case they commit to replacing United States equipment with others of equivalent function without any impact in terms of cost and schedule. Most of the United States source equipment also have a commercial use, they should not present a problem. The most problematic item on the list is probably the head-up display and the Honeywell INS GPS and

the head-up display control unit. The Hawk 100. 12 Items of United States origin are listed on the Hawk 100. Of these four items have been confirmed to have export clearance. The further two are commercial products and should not have any restrictions. A formal response is still awaited on the other items. The British Aerospace did not anticipate any problems in obtaining the required export license. The most problematic item are probably the head-up display, the head-down display and the ramp air turbine".

Chair this concludes the Evaluation Report and we can now go back to my statement page 22. I'll continue with paragraph 623:

"The Integrated Project Team (indistinct) by SOFCOM presented its technical results to the SOFCOM Committee on the 2nd of July 1998 for consolidation and SOFCOM accepted the Military Value technical scores and consolidated these to the other evaluation results namely the NIP Evaluation results, the DIP Evaluation results and the Financial Evaluation results. The consolidated scores were presented by SOFCOM to the (indistinct) Committee in 1998. The LIFT Study Report describe the technical processes followed by

the IPT to select the preferred supplier and aircraft systems for the LIFT which best and (indistinct) at the lowest possible risks. The report was reissued after the announcement of the preferred supplier. The IONT negotiated the umbrella agreements which are high level agreements for the acquisition of the LIFT and the ALFA and included the DIP and the NIP. ON 18 November 1998 to the 31st of October 1999 the IPT negotiated the Supply Terms and conditions of the LIFT acquisition and the BAe system was the preferred supplier for the Hawk".

At this point I would now like us to move to page 669. Chair, this is the final report that was issued on the LIFT, it's a project study report for the acquisition of the Lead-In Fighter Trainer (LIFT) for the South African Air Force. It also in this report includes all activities that happened during the negotiation phase. On page 671 you will notice that I've signed this report as the LIFT programme manager and I was one of the authors of this report.

This report gives us a summary what happened in the RFI Phase, I'm not reading now, I'm only providing some more background. It also covered the process during the RFO phase which I do not want to repeat again because this is all covered by the RFO report, but I would like to start in this

report is on page 684, alright paragraph 6.4 "The Contractual Baseline":

> *"Following the selection of the Hawk 100 LIFT a detailed baseline was negotiated with BAe Systems, specific tradeoff studies were conducted during the negotiations".*

And these will now be discussed and they are also included in my statement. 6.5 "Engine Selection":

> *"The Hawk 100 Lead-In Fighter Trainer was initially offered with the Rolls Royce Adour Mk871 engine but the Allied Signal F124 was offered as an option".*

CHAIRPERSON: I'm sorry Advocate Mphaga, yesterday I've looked at this statement and the issues that the witness is dealing with, I'm not quite sure if anything turns around the question of the different parts of that aircraft. I know that you know, there was something about the engine, if you have dealt with the question of the engine and explained why (indistinct) the Rolls Royce was used, is it, does it serve any purpose to go through other parts of this aircraft? I'm not quite certain, maybe there might be a reason why you know you want to take that route?

ADV MPHAGA: Yes Chair. Maybe in particular the engine, I thought maybe it could just for the record to indicate the engine that was chosen which was the most advanced and cost

effective and then we can leave out the other issues which are in the statement, but the engine becomes in my view quite necessary

CHAIRPERSON: You are right, the engine, that there is a dispute around the engine (indistinct) I don't think there is anything which turned around the other items on that aircraft.

ADV MPHAGA: I agree Chair.

CHAIRPERSON: Thank you. Thank you.

MR FERREIRA: Chair, Commissioner then as we said we were looking at the engine, we are (indistinct) engine. (Indistinct). Without going into too much detail here the end result was that it would have cost us more money to integrate the (indistinct) engine into the aircraft. At the same time Rolls came back to us and they offered us an updated Adour engine, the 951 which achieved the same performance as the F124, had an increased life and included a FADEC system without affecting the price offered to us for the aircraft initially. When we do the presentation we will come back to indicate how this did impact the programme during the contract execution phase.

ADV MPHAGA: Okay no, thank you very much. Maybe we can just revert back to the statement and deal with the avionics also in the statement on page 23. Page 23 of the statement.

MR FERREIRA: Chair, we are going now to page ... I don't think we need to repeat 6.27.1 because that was the engine, we discussed that in brief. 6.27.2 "Avionic Suite Selection". The

Hawk 100 LIFT was initially offered with an ATE Avionic Suite, now ATE is a South African company using Smith Industry's avionic displays which is British. The South African Air Force URS called for an open architecture avionic suite and many other, and as many other SAAF aircraft (indistinct) displays, they are used on the C130 aircraft, they are used on the H-Aircraft, they were used on the ASTRA Aircraft. A (indistinct) offered a substantial industrial participation due to the fact that the SAAF would be operating a large aircraft fleet with (indistinct) displays.

BAe Systems strongly recommended the (indistinct) computer and the (indistinct) displays option, the avionic system is based on technologies established during the South African Technology Programme and ATE. And this formed part of the DIP proposal also. The air (indistinct) capability, several options were investigated in order to satisfy the SAAF URS, the option investigated included radar simulation, radar ranging and a fire control radar, the radar options proved to be too costly and the radar simulation option was approved by the SAAF.

On the canon several options were investigated in order to satisfy the SAAF URS, the options investigated included ...

CHAIRPERSON: I'm very sorry, I think I must interrupt now. I thought we had agreed that because to me the (indistinct)

appears as is the question of the engine was a bit of a dispute about, the (indistinct) there is no dispute about. If there is nothing which turns around any particular part of that aircraft I don't see the need of you reading all these things to us. We do have the documentation in front of us, we will read it in our own time.

ADV MPHAGA: Thanks Chair. Can we just proceed to paragraph 6.28 on page 25. Page 25.

MR FERREIRA: Alright Commissioner, page 25 paragraph 6.28:

> *"The approval budget (indistinct) was the amount of R4.681bn. The Umbrella Agreement Number 118/1, the Hawk Supply Terms 118/5, the Gripen Supply Terms 118/4 and the DIP Terms 118/(indistinct) was signed on 3 December 1999. In April 2000 the Joint DoD ARMSCOR Project (indistinct) foreign office team for the (indistinct) was launched and the IPT spent five years in the United Kingdom at BAe Systems managing and overseeing the various project phases and activities with the BAe System Team. The initial contractual delivery date for the first aircraft as per contracted specification was June 2005 and the contractual obligations were discharged in April 2007 to coincide with the completion of the contracted technical support*

services. The system could have been introduced over a two year period, however, a decision was made to introduce the system over a five year period".

And this ends, this is the end of the contracting phase up to contracting. The next few sections are prepared as a presentation.

ADV MPHAGA: Yes Chair, from paragraph 7 there's a presentation similar to the one that was prepared for the ALFA which has to be shown by Mr Ferreira. Maybe I'm not so sure that ... It is going to take about an hour or so?

MR FERREIRA: Yes Chair.

CHAIRPERSON: Advocate Mphaga if the presentation is going to take about an hour, what do you suggest we do now? (Indistinct) either we adjourn until tomorrow so that he doesn't break his presentation or we go on for 30 minutes and then proceed another 30 minutes tomorrow.

ADV MPHAGA: Yes Chair, maybe we may adjourn until tomorrow so that we can start with the presentation. I know there are documents also that we need that should be declassified which may also be important so that we then proceed tomorrow without any interruption.

CHAIRPERSON: Let me find out from the other two counsels if the arrangement would suit them?

ADV SOLOMON: Chair, Commissioner Musi, we've no

objection, we think we can use the rest of the day productively to sort out the addition of certain documents. I know I want to insert a document for the purposes of re-examination which would need to be declassified and there are some other documents my learned and good friend Mr Mphaga wants to use as well.

CHAIRPERSON: Okay, thanks.

ADV SNYMAN: Thank you Chair, we have no objection to the adjournment. (Indistinct) Commission and Mr Solomon.

CHAIRPERSON: Thank you.

ADV MPHAGA: Chair, maybe just (indistinct) there are other bundles that we need to add, the JIT Report, the Auditor-General's Report just for the purposes, and also the Critics Bundle just for tomorrow in the event that we are going to come across, or it's going to be necessary for us to put them to the witness.

CHAIRPERSON: So, you do confirm that we can postpone until tomorrow morning?

ADV MPHAGA: Yes.

CHAIRPERSON: We'll adjourn until tomorrow.

(COMMISSION ADJOURNS)