

FORTY-SEVENTH REPORT
PUBLIC ACCOUNTS COMMITTEE
(2002-2003)

(THIRTEENTH LOK SABHA)

DESIGN AND DEVELOPMENT OF
PILOTLESS TARGET AIRCRAFT

MINISTRY OF DEFENCE
(DEPARTMENT OF DEFENCE RESEARCH &
DEVELOPMENT)

[Action Taken on 21st Report of Public Accounts Committee (13th Lok Sabha)]



Presented to Lok Sabha on 13.3.2003

Laid in Rajya Sabha on 13.3.2003

LOK SABHA SECRETARIAT
NEW DELHI

March, 2003/Phalguna, 1924 (Saka)

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**COMPOSITION OF THE PUBLIC ACCOUNTS COMMITTEE
(2002-2003)**

Sardar Buta Singh

Chairman

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LOK SABHA SECRETARIAT

- | | | | |
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| 2. | Shri K. V. Rao | — | <i>Joint Secretary</i> |
| 3. | Shri Devender Singh | — | <i>Deputy Secretary</i> |
| 4. | Shri J. M. Baisakh | — | <i>Assistant Director</i> |

* Shri Chhatrapal Singh ceased to be Member of the Committee consequent upon his appointment as Minister on 29 January, 2003.

** Elected on 7.8.2002 *vice* Dr. Sahib Singh Verma ceased to be Member of the Committee consequent upon his appointment as Minister on 1.7.2002.

INTRODUCTION

I, the Chairman, Public Accounts Committee having been authorised by the Committee to present this Report on their behalf, do present the Forty-Seventh Report on action taken by Government on the recommendations of the Public Accounts Committee contained in their 21st Report (13th Lok Sabha) on "Design and Development of Pilotless Target Aircraft."

2. This Report was considered and adopted by the Public Accounts Committee at their sitting held on 10th March, 2003. Minutes of the sittings form *Part II* of the Report.

3. For facility of reference and convenience, the observations and recommendations of the Committee have been printed in thick type in the body of the Report and have also been reproduced in a consolidated form in *Appendix* to the Report.

4. The Committee place on record their appreciation of the assistance rendered to them in the matter by the Office of the Comptroller and Auditor General of India.

NEW DELHI;
12 March, 2003

21 Phalgun, 1924 (*Saka*)

SARDAR BUTA SINGH,
Chairman,
Public Accounts Committee.

CHAPTER I

REPORT

This Report of the Committee deals with the action taken by Government on the observations/recommendations of the Committee contained in their 21st Report (13th Lok Sabha) on Paragraph 30 of the Report of the Comptroller and Auditor General of India for the year ended 31 March, 1996 (No. 8 of 1997), Union Government—Defence Services (Air Force & Navy) relating to Design and Development of Pilotless Target Aircraft.

2. The Twenty-first Report which was presented to Lok Sabha on 19 April, 2001, contained 13 recommendations/observations. The action taken notes on all these recommendations/observations have been received from the Ministry of Defence (Department of Defence Research & Development) and are broadly categorized as follows:

- (i) Recommendations and observations which have been accepted by the Government.
Sl. Nos. 1-2, 4, 6, 8-13
- (ii) Recommendations and observations which the Committee do not desire to pursue in the light of replies received from Government.
Sl. Nos. 3, 5
- (iii) Recommendations and observations replies to which have not been accepted by the Committee and which require reiteration.
Sl. No. 7
- (iv) Recommendations and observations in respect of which the Government have furnished interim replies.

-Nil-

Findings of the Committee in the Original Report

3. The design and development of Pilotless Target Aircraft (PTA) alongwith its engine (PTAE-7), sanctioned by the Government in September 1980, was planned for completion by 1985. The Committee observed that after 14 years of its sanction, the PTA was cleared for Limited Series Production (LSP), only by Aeronautical Development Establishment (ADE), pending envisaged bulk production by Hindustan Aeronautics Limited (HAL). What was further disquieting to find that the PTAE was not cleared for production despite a lapse of 15 years after the planned date of completion. Expressing deep dissatisfaction over prolonged delay in commencement of series production of PTA and its engine, the Committee concluded that the twin objectives of reducing drain on foreign exchange and providing the Users with unmanned targets remained largely unfulfilled.

4. The action taken notes furnished by the Ministry of Defence have been reproduced in the relevant chapters of this Report. In the succeeding paragraphs, the Committee, however, deal with the action taken by Government on some of their observations/recommendations.

Delay in development of PTA engine (PTAE-7)

(Sl. No. 7, Para 54)

5. In their 21st Report, the Committee had observed that even though 15 years elapsed after the planned date of completion, Hindustan Aeronautics Limited (HAL) could not successfully develop the engine for PTA. As a result of delay, the Government incurred expenditure to the tune of Rs. 6.57 crore on import of 14 engines. Underscoring the urgency to complete the development of engine by HAL, the Committee recommended that all out efforts be made in this direction so that PTAE-7 enters production phase at the earliest, facilitating fulfilment of requirement of the Services and checking further drainage of foreign exchange.

6. The Ministry of Defence in their action taken note on the aforesaid recommendation stated as follows:

“As regards the present status of development of PTAE-7, the engines in the previous flight trials have performed satisfactorily except for the rise in bearing temperature. Design Modifications were introduced in the lubrication and cooling system of the engine. Two engines with the above modifications were tested in three flights during Dec., '00 successfully without any technical problems. These flights have also demonstrated the following achievements:

- * Successful refurbishing after recovery from Sea
- * Successful relaunch of the engine after flight and recovery
- * Satisfactory performance of all the engine systems

This is an important milestone towards the completion of the certification. Problem was faced in Turbine disk procured from M/s FORMETAL, Belgium. In the absence of improved blade castings from M/s. FORMETAL, indigenous development of castings has been taken up by DRDO (DMRL, Hyderabad). The disk with improved blades will be available by December 2001. It is planned to carry out the final flight trial covering the required flight envelope for certification of the engine towards first quarter of 2002 with three engines. As a concurrent engineering practice HAL Board has approved the proposal for going ahead with the Project Planning and implementation activity for series production of 125 Nos. PTAE-7 Engines for LAKSHYA with the provision that commitments for expenditure would be made only after receipt of order from Defence Services. HAL is making all out efforts towards certification of the engine and productionisation.”

7. The Committee are concerned to note that the engine for PTA is yet to be fully developed by HAL and commencement of its series production after certification could not be anticipated with any degree

of certainty. This causes serious misgivings about the expertise of HAL in fructifying vital defence projects within a reasonable time frame. Considering the importance of indigenous R&D efforts in such crucial areas, the Committee emphasize that expedient measures be taken to see that the development of the engine is completed at the earliest followed by its productionisation so that the Services reap the advantage of operating a fully indigenous pilotless target Aircraft. The Committee would like to be apprised of the progress achieved in this regard.

Delay in Bulk Production of PTA

(Sl. No. 9, Para 56)

8. The bulk production of PTA after its successful development was planned to be entrusted to HAL and the regular production was expected to commence from 1998-99 onwards. The Committee in their original Report found that even the requisite infrastructural facilities for bulk production were not created at HAL. The Committee desired to know the reasons for abysmal delay in setting up production facilities of HAL and the time frame for the commencement of bulk production.

9. In their action taken note, the Ministry stated as follows:

“HAL could not start up the Serial production of Lakshya so far pending the finalisation of orders from the Services. A number of meetings have been held in order to determine further requirement of IAF for Lakshya Target. As a result, Airforce has indicated that they would like to place order for Qty. 65 Lakshyas. HAL will take on the serial production on receipt of bulk order. The approach is to use the vendors who have been developed during the LSP programme. They will be the agencies for supply of on-board and other ground support equipments for the series production also. The infrastructure facility available with HAL which has been set up during this interim period would be adequate for commencing production of LAKSHYA immediately after receipt of order.”

10. The Committee have been informed that the infrastructure facility available with HAL would be adequate for commencing production of PTA and HAL will take up the series production on receipt of bulk order from the Services. The Committee hope that the Services have been appropriately sounded so that they firm up their requirements for PTA and the infrastructure created by HAL at huge cost would be effectively and optimally utilized in the best national interest. The Committee would like to be informed of the status of series production at HAL in due course.

CHAPTER II

RECOMMENDATIONS/OBSERVATIONS WHICH HAVE BEEN ACCEPTED BY THE GOVERNMENT

Recommendation

Recognising the need to provide realistic airborne targets for training air and ground crews in air-to-air and surface to air weaponry, government sanctioned in September 1980 design and development of Inter-Services pilotless target aircraft (PTA) by Aeronautical Development Establishment (ADE) at a cost of 17 Crore (FE Rs. 8 Crore). The development of PTA was planned for completion by 1985. Simultaneously, a development project for indigenous development of PTA engine (PTAE-7) was also sanctioned by Government at an estimated cost of Rs. 4.5 crore (FE-Rs. One crore) to Hindustan Aeronautics Ltd. (HAL) in September 1980. The engine was to be developed by September 1985, concurrently with the PTA. The Committee note that even though the need to develop PTA indigenously was identified in 1976, it took about four years for the Ministry to sanction the Project. The Committee feel that the studies including formulation of Inter-Services Qualitative Requirement (ISQR), feasibility study by ADE and HAL, which were undertaken during the interregnum could have been expedited facilitating early sanction of the project. The Ministry conceded that a faster decision with regard to project sanction would have been helpful. The facts brought out in the Audit Paragraph and further examination by the Committee revealed that execution of both the projects for development of PTA and PTAE was beset with delay, which not only resulted in cost over-run but also defeated the envisaged objectives of the project.

[S.No.1 Para 48 of the 21st Report PAC 2000-2001]
(13th Lok Sabha)

Action Taken

Observations of the Committee on the need for faster decision making with regard to project sanction are taken note of. The ministry proposes to vigorously monitor the progress of such proposals through various branches of Government, towards sanction, in future.

*(Ministry of Defence/Department of Defence Research & Development
OM No. DBFA/FA/83612/M/01 dated 20 May 2002)*

Recommendation

The Committee note that ADE was to manufacture 20 PTA prototypes by September 1985 to carry out flight tests for proving the design and User evaluation trials to facilitate an early decision by the Services on the quantum of production. However, the Committee find that against the 20 prototypes planned, ADE fabricated 18 prototypes by September 1993 *i.e.* after a lapse of eight years. As

per the original schedule development flight task of PTA was planned to commence by September 1983. As against this, first flight trial sortie with PTA prototype took place in December 1985 *i.e.* after a lapse of two years. While the User evaluation of PTA was planned to commence by 1987, evaluation phase-1 was conducted in May 1992, followed by completion of evaluation phase-II in April 1994. The project was closed in June 1994 and PTA (PTA-16) was cleared for Limited Series Production (LSP). The Committee take note of the various reasons advanced by the Ministry for the intermittent delays in developing PTA prototypes and carrying out User evaluation trials. The Committee do share the feeling of the Ministry that deviations from planned time schedules are reflective of imponderables in the implementation of R&D projects. The Committee disapprove the culture of providing over-optimistic targets by DRDO at the project formulation stage. An impression is created that the DRDO does not seriously take into account the likely imponderables in the execution of projects, which ultimately lead to delay with all the attendant complications. Given the complexity of the PTA project, five years time-frame was obviously unrealistic and the Committee do not agree with the contention of the Ministry that target date for completion set at each stage was considered feasible. The delay of eight years in the completion of PTA development project as against the envisaged target amply substantiates the point emphasised by the Committee. Another disturbing aspect of the PTA development project relates to seeking piecemeal extensions without correct assessment of the time schedule for the completion of the project. The Committee are dismayed that even after seeking extensions twice, first upto September 1988 and then upto March 1991, the project could not be completed. That the completion schedule should have gone awry repeatedly, speaks volumes of the unscientific assumptions on which the planned date of completion (PDC) of the project was based. As a result of the delay in the development of PTA Government had to spend a total amount of Rs. 23.42 crore in foreign exchange on importation of 25 PTA between December 1985 and March 1995. Successful development of PTA would have avoided this outgo of foreign exchange.

[S.No. 2 Para 49 of the 21st Report of PAC 2000-2001]
(13th Lok Sabha)

Action Taken

Observations of the Committee disapproving the culture of providing over-optimistic targets at the project formulation stage are taken due note of. The Committee's views that the probable dates of completion (PDC) of the project at various stages were not based on scientific assumptions are also carefully noted.

The Ministry has initiated measures to introduce more scientific methods to assess technology availability and maturity levels in the formulation of future R&D Projects.

*(Ministry of Defence/Department of Defence Research & Development
OM No. DBFA/FA/83612/M/01 dated 20 May 2002)*

Recommendation

The Committee note that PTA development project continued beyond 1991 and was formally closed in June 1994. Accordingly to the Ministry, based on the recommendation of the Peer Review and Programme Review Committee on PTA and PTAE, Raksha Mantri approved extension of PDC of the Project upto December 1992. On the question of obtaining approval of CCPA beyond December 1992, it was stated that as the CCPA limit for projects/schemes was enhanced to Rs. 50 crore on 24 August 1992 by the Ministry of Finance, approval from CCPA was not necessary. The Audit however, pointed out that since the amended limit applied to the schemes/projects that had been sanctioned after the issue of orders enhancing the limit and in the subject case, the project was sanctioned with the approval of CCPA, it was mandatory to get the approval from the authority which had originally sanctioned the project for extending PDC of the project. The Committee find logic in the argument adduced by Audit. *The Committee, however recommend that the matter be referred to the Ministry of Finance for ascertaining the exact implication of the instructions issued by them in August 1992 and the Committee apprised of the position in this regard. Further, the Ministry may also intimate the Committee whether approval accorded by Scientific Adviser to RM for extension of the project beyond 1992 was in order.*

[S. No. 4 Para 51 of the 21st Report of PAC 2000-2001]
(13th Lok Sabha)

Action Taken

The implications of revised instructions issued by Department of Expenditure on 24th Aug. 1992 and appropriate procedure for the extension of PDC was referred to Ministry of Finance. They have examined and opined that the PDC extension should have been approved by the Defence Minister and the Finance Minister.

After examining the matter, the Finance Minister has also given his *post facto* approval for extension of PDC from March 1991 up to 30.6.1994.

(In this regard Ministry of Finance, Dept. of Expenditure, U.O No. 44(2),/PF II/2001 dated 12th Oct. 01, refers.)

*(Ministry of Defence/Department of Defence Research & Development
OM No. DBFA/FA/83612/M/01 dated 26 December 2001)*

Recommendation

The Committee observe that the project for development of PTAE-7 by HAL was also plagued with abnormal delays and its implementation was far from satisfactory. Since the project could not be completed by 1985, PDC and cost of the project was revised several times. In the latest revision, the PDC of the project was extended to December 1990 and the cost was revised to Rs 9.22 crore. The project was also not completed by the extended date. The Ministry stated that since the engine of this complex technology was being developed for the first time in the country, development problems such as excessive rotor vibration and failure of turbine blades occurred necessitating design change. It was added

that due to redesigning and dependence on the offshore vendor to supply the required castings, the development time of the project got extended beyond the original estimated date. The Ministry also advanced several reasons of technical character including new technological challenges faced by HAL, the solution of which admittedly took longer time. The Committee need hardly emphasize that estimation of PDC of such a complex engine being manufactured for the first time in the country was over-optimistic and viewed in the light of available infrastructure in the country was apparently not feasible. Thus, over-estimation of the capability of HAL and underestimation of the likely problems in the project implementation right from the stage of the conceptualization of the project was suggestive of poor project planning.

[S. No. 6 Para 53 of the 21st Report of PAC 2000-2001]
(13th Lok Sabha)

Action Taken

The observations of the Committee with regard to delay and escalation of cost are factual. In retrospect, it is possible to see that the projection of time schedule was over optimistic. However, due to strategic importance of the project, a project of this nature had to be taken-up, even though some of the infrastructure required for the project was not available within the country at that point of time. Only by taking up such projects, will it be possible to build up the capability and expertise in new areas. If such projects are not taken up the import of such products will be continued, which may come under restrictions due to application of strategic nature besides draining the foreign exchange resources of the country.

*(Ministry of Defence/Department of Defence Research & Development
OM No. DBFA/FA/83612/M/01 dated 20 May 2002)*

Recommendation

The Committee observe that based on the urgent requirement of PTA by Air Force and Navy, the Ministry decided in May 1994 and March 1995 that 10 PTA would be produced (five each for the Air Force and Navy) by ADE at a total cost of Rs. 28.86 crore, even though the annual requirement of Air Force was 16 and that of Navy was nine. According to the Ministry, the rationale to launch limited series production at ADE was two fold viz. : to meet the urgent limited requirement of Air Force and Navy and (b) to facilitate smooth transfer of technology to the production agency with the least infrastructural development. As per the original schedule, one PTA was to be delivered to the Air Force in June 1996 and the balance at the rate of two each in August and December 1996. In case of Navy, all the PTA were to be delivered between August and December 1997. However, ADE failed to deliver any PTA by the scheduled time even though an amount of Rs. 18.76 crore was paid to them between October 1994 and November 1995. The reasons for slippage in time schedule of LSP were mainly attributed to Vendor related delay and delays due to documentation standard. The Committee fail to appreciate the reasons for delay adduced by the Ministry at this crucial stage when production orders were placed with ADE under special circumstances for

meeting the urgent requirements of the Air Force and Navy. Evidently, once again casual and wayward estimation on the part of ADE, without considering the possible impediments in the production stage, culminated in non-fulfillment of the ideal associated with launching LSP. The Committee note with dismay that only 3 aircraft, ground system and expendables were delivered to Air Force in September 1999 and April 2000 and no aircraft was delivered to Navy till November 2000. According to the Ministry, the Army had also placed an order on ADE on 13 June 1997 for 5 PTA, Ground Control Station, Ground Support Equipment, flight expendables for 50 flights at a total cost of Rs. 18.87 crore. These aircraft were to be delivered in 24 months. In this case also ADE failed to fulfill the delivery schedule even though Rs. 15.09 crore was paid by Army. The Committee were informed that Phase-I delivery was planned in June 2001, followed by final delivery by December 2001. While deprecating the delays at the stage of LSP of PTA, the Committee urge upon the Ministry to strictly watch the progress in production to guard against further slippage in the schedule of production. *The Committee would like to be apprised of the status of deliveries of aircraft to Air Force, Navy and Army.*

[S. No. 8 Para 55 of the 21st Report of PAC 2000-2001]
(13th Lok Sabha)

Action Taken

While it is agreed that there is a slippage in the delivery of LAKSHYAs produced under LSP, it is submitted that the delays are not due to casual or wayward estimation. The time estimations were made on the basis of the best information available at that time.

The status of delivery of LAKSHYA to the Air force, Navy and Army are as follows:—

For the Air force, 4 aircrafts alongwith Ground Control Station (GCS), Ground Support Equipments (GSEs) and flight expendables for 22 launches have been supplied. The 5th aircraft will be delivered by 30th November 2001, thus completing the AF order. ADE has also been supporting Air Force flight campaign from 1999 onwards in training the personnel and product support for successful launches.

For the Navy phase-I, delivery of 2 aircrafts with GCSs and GSE and 4 sets of flight expendables were delivered in March 2001 (The Navy have started utilising the Lakshya). Further deliveries will be effected in 2002.

For Army phase-I delivery of 2 aircrafts with the Ground Control Station, Ground Support Equipments and required flight expendables will be effected by 2002.

The phase-II delivery to the Army will be completed by June 2003. (The delay in delivery to the Army is due to US sanction). Some of the imported sub systems are not available. Indigenously developed efforts have been completed and the sub systems developed indigenously have been flight evaluated. These would be utilised in the aircrafts to be supplied to the Army.

*(Ministry of Defence/Department of Defence Research & Development
OM No. DBFA/FA/83612/M/01 dated 26 December 2001)*

Recommendation

The bulk production of PTA after its successful development was planned to be entrusted to HAL. The Committee were informed that the regular production at HAL was expected to commence from 1998-99. Lamentably, even the infra-structural facilities for bulk production at HAL is yet to be created. Intimating the status in this regard, it was stated that HAL had prepared a project report and sent to ADE for review and vetting. The rough estimate for the infrastructural facilities assessed by HAL for a production run of 100 PTA over a period of five years indicated that expenditure would be of the order of Rs. 60 Lakhs for Capital and Rs. 1331 Lakhs for Deferred Revenue Expenditure at 1999 price level. A Sub Committee nominated by the PTA Joint Management Board was in the process of reviewing the estimate made by HAL. The Committee were informed that these infrastructure facilities would be created only after receipt of a firm commitment from the Services regarding their requirement which is yet to be intimated by the Services. As regards bulk production, it was stated that regular production of PTA would commence when series production order is placed by the Users on HAL. From the foregoing, it is amply clear that the date of commencement of bulk production at HAL cannot be anticipated with any degree of certainty. Now in the present set up, when production facility at HAL is yet to be created and LSP at ADE is lagging behind, the Committee wonder as to how the projected annual requirement of PTA will be met. *The Committee would like to know the strategy chalked out the Ministry in this regard. They may be apprised of the reasons for the abysmal delay in setting up of production facilities at HAL and the time frame for the commencement of bulk production.*

[S. No. 9 Para 56 of the 21st Report of PAC 2000-2001]

(13th Lok Sabha)

Action Taken

HAL could not start up the Serial production of Lakshya so far pending the finalisation of orders from the Services.

A number of meeting have been held in order to determine further requirement of IAF for Lakshya Target. As a result, Air force has indicated that they would like to place order for Qty. 65 Lakshyas.

HAL will take on the serial production on receipt of bulk order. The approach is to use the vendors who have been developed during the LSP programme. They will be the agencies for supply of on-board and other ground support equipments for the series production also.

The infrastructure facility available with HAL which has been set up during this interim period would be adequate for commencing production of LAKSHYA immediately after receipt of order.

*(Ministry of Defence/Department of Defence Research & Development
OM No. DBFA/FA/83612/M/01 dated 26 December 2001)*

Recommendation

The Committee note with concern that the estimated cost of Rs. 12-15 Lakhs per PTA (airborne system only) in 1978/1980 price level had gone up to Rs. 109.8 Lakhs under limited series production. The increase in cost of PTA airframe by Rs. 97 Lakhs was mainly attributed to escalation in exchange rate variation, which occurred between 1978—97. The Committee are, however, inclined to conclude that time over-run in the completion of the project was crucial for consequential cost over run of PTA airframe. The Committee were informed that the likely cost of PTA under full-scale production was under the process of estimation by a Committee constituted by PTA Joint Management Board. The likely figure was estimated to be Rs. 1.8 crore at 2000 price level. *The Committee may be informed of the actual cost of PTA under series production.*

[S. No. 10 Para 57 of the 21st Report of PAC 2000-2001]

(13th Lok Sabha)

Action Taken

The cost of PTA under series production is estimated by HAL to be Rs. 2.18 cr. at 2000 price level, including amortised DRE.

*(Ministry of Defence/Department of Defence Research & Development
OM No. DBFA/FA/83612/M/01 dated 26 December 2001)*

Recommendation

The unit cost of PTAE-7 estimated at Rs. 3.88 Lakhs in 1979 had increased to Rs. 52.19 Lakhs in 1999. The increase in the unit cost of PTAE-7 was attributed to increase in rate of foreign exchange over the time period, increase in labour hours due to design change, reduction in the number of engine from 1000 to 125 and profit consequential. While it should be the endeavour of HAL to contain further increase in the cost of the engine, *the Committee would like to be apprised of the actual cost of the engine under full-scale production.*

[S.No. 11 Para 58 of the 21st Report of PAC 2000-2001]

(13th Lok Sabha)

Action Taken

The cost of the engine is estimated at Rs. 52.19 lakhs for a production batch engines at 1999-2000 price level.

*(Ministry of Defence/Department of Defence Research & Development
OM No. DBFA/FA/83612/M/01 dated 26 December 2001)*

Recommendation

The Committee are constrained to point out that despite elaborate mechanism instituted for monitoring/review of the progress of the Projects on PTA and PTAE, the implementation of the projects was far from satisfactory, when compared with

the achievements *vis-a-vis* laid down targets. It is appalling to observe that at no stage, the time schedule of the envisaged targets were adhered to. Hence, the Committee cannot help concluding the project management leaves a lot to be desired.

[S. No. 12 Para 59 of the 21st Report of PAC 2000-2001]
(13th Lok Sabha)

Action Taken

Comments of the Committee are noted. All efforts to achieve improvements in adhering to time schedules will be made by the Ministry in future.

(Ministry of Defence/Department of Defence Research & Development OM No. DBFA/FA/83612/M/01 dated 20 May 2002)

Recommendation

To sum up, after 14 years of its sanction, the PTA was cleared for limited series production and orders of 15 PTA only have been placed on ADE against the present estimated requirement of approximately 30 PTA. As a result of delay, Government had to spend a total amount of Rs. 23.42 crore in foreign exchange on importation of 25 PTA between 1985 and March 1995 in addition to resorting to conventional methods of training. The PTAE has not yet been cleared for production despite a lapse of 20 years of its sanction and 15 years after the original date of completion was fixed. 14 engines had to be imported by ADE at a cost of Rs. 6.57 crore as part of deliverables to Air Force and Navy under limited series production in 1995 and 1996. The total cost incurred on PTA was Rs. 26.21 crore and on PTAE Rs. 10.88 crore. Though saddened to note that even after a lapse of 20 years and expenditure of Rs. 37.09 crore, the twin objectives of reducing drain on foreign exchanges and providing the Users with unmanned targets remains largely unfulfilled, the Committee still hope dedicated efforts of the concerned engineers and scientists would fructify in near future.

[S. No. 13 Para 60 of the 21st Report of PAC 2000-2001]
(13th Lok Sabha)

Action Taken

In development of PTA, the various technologies of UAV have been developed which will go a long way in using/utilising these for various defence applications.

DRDO would like to reiterate that, notwithstanding the delays, the LAKSHYA development project has now resulted in a successful high technology product. Air Force and Navy have already inducted the system in Service. Army will do so next year. Serial Production orders for LAKSHYA are clearly in sight.

The indigenous engine development programme is also expected to succeed in early 2002, leading to its production to synchronize with the Serial Production of LAKSHYA.

The Development programme has thus made Indian defence forces self-reliant in the class of aerial targets needed by them on a continuing basis for live fire training of air defence systems. This has also built up DRDO's capabilities in

sophisticated technology areas of UAV, which is very important to provide futuristic operational capabilities.

All this has been possible only by the dedicated efforts of the engineers and scientists of DRDO and HAL as well as the constant support of the Armed Forces and the Government. The Ministry would like to assure the Committee that every efforts will continue to be made to exploit these capabilities in future programmes.

*(Ministry of Defence/Department of defence Research & Development
O.M. No. DBFA/FA/83612/M/01 dated 26 December 2001)*

CHAPTER III

RECOMMENDATIONS/OBSERVATIONS WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN THE LIGHT OF THE REPLIES RECEIVED FROM GOVERNMENT

Recommendation

The Committee observe that while approving the proposal for seeking extension of PDC of PTA development project upto March, 1991, the then Prime Minister desired that responsibility should be fixed for the enormous delay in the implementation of the project. On the question of fixing responsibility, the Ministry submitted that in the context of a technological development programme such as PTA, the directive regarding "responsibility for delay" was to be reckoned as "responsible causes" rather than responsible persons, as it was not possible to identify and single out responsible persons with any degree of fairness. The Ministry reportedly initiated necessary action to analyse and identify the causes of such technical failures and delays through a series of Peer Reviews. Based on the review of the Programme, two major changes were effected in the form of appointing a new Project Director and reorganising some of the Divisions within the laboratory. The Secretary DRDO, during evidence, informed the Committee that in technical and scientific work, there is a Board of Management which supervise the work. Because of one failure, a person cannot be just thrown out and if that happens, then science would not exist. The Committee appreciate the view of the Secretary in the matter. However, what is disquieting to note is the fact that no compliance report on the inordinate delay in completion of the project was submitted to the then Prime Minister after March, 1990, which violates the cardinal principle of accountability.

[S. No. 3 Para 50 of the 21st Report of PAC 2000-2001]
(13th Lok Sabha)

Action taken

Observations of the Committee are noted.

Although compliance report to PM has not been forwarded seperately after March 1990, but the progress was being reported in the monthly CCPA progress summary reports, until the closure of the project.

*(Ministry of Defence/Department of Defence Research & Development
O.M. No. DBFA/FA/83612/M/01 dated 20 December 2002)*

Recommendation

The PTA development project was formally closed in June, 1994 after incurring a total expenditure of Rs. 21.82 crore against a sanctioned amount of Rs. 21.84 crore. The Committee's examination revealed that an amount of Rs. 4.39 crore was not booked to PTA project, which included Rs. 2.87 crore on

account of salary and allowances of scientists and staff engaged in the project after March 1988 and a liability of Rs. 1.52 crore towards procurement of two bodies and pylons from HAL. The Ministry contended that since the manpower sanctioned for PTA was merged with the Revised Core Peace Establishment of ADE, the concept of debiting the project cost beyond 31 March, 1988 was entirely notional. The Committee are constrained to point out that the stance taken by the Ministry is improper as the Government sanction of 27 Sept. 1989 under which revised core Peace Establishment was authorised, clearly stipulated that the expenditure on manpower of project for development of an Inter Services PTA would continue to be debited to project cost till the closure of the project. The Committee were subsequently informed that the sanction of Government issued in 1989 was amended *vide* Ministry's letter dated 20 January, 2000 wherein the requirement of debiting the expenditure incurred on manpower in Peace Establishment of ADE to project cost was deleted. The Committee find no justification in favour of the amendment effected in the earlier sanction of Government after a lapse of near about 11 years. Evidently, the action of the Ministry, in the instant case, was oriented towards covering the procedural infirmity in computation of project cost, which was deplorable. As regards non-booking of expenditure of Rs. 1.52 crore to the project cost, it was stated that the decision to delink the payment due to HAL was taken by the PTA Steering Committee to effect closure of the Project. In this background of the matter, the Committee are inclined to conclude that non-booking of Rs. 4.39 crore in the project cost was a deliberate act on the part of the Ministry, because had the project cost been reflected accordingly, it would have exceeded the sanctioned amount by Rs. 4.37 crore, for which fresh Government sanction would have been necessary.

[S. No. 5 Para 52 of the 21st Report of PAC 2000-2001]
(13th Lok Sabha)

Action taken

Comments of the Committee are noted. However it is submitted that during the oral evidence to PAC in '98, this matter was clarified saying that there had been conceptual mistake in Government Sanction letter No. 2515/ADE89/R&D/Pers-3/478/S/D/R&D dated 27th Sept., '89. In accordance with the spirit of merger of project PTA, the staff cost had not been booked under the project cost beyond '89.

It was also confirmed that the conceptual mistake in the Government Sanction letter will be corrected by an amendment and hence amended letter dated 20th Jan., 2000 was issued.

Regarding payment of Rs. 1.52 crores to HAL, since all the technical issues including user evaluation for the PTA project were completed and the project had to be closed giving way to the limited series production for three services; a decision was taken to delink the payment to HAL. Subsequently, the payment to HAL was made after resolving some issues between DRDO and HAL, paying Rs. 147.43 lakhs as against Rs. 162.74 lakhs, independent of the PTA project.

*(Ministry of Defence/Department of Defence Research & Development
O.M. No. DBFA/FA/83612/M/01 dated 20 May, 2002)*

CHAPTER IV

RECOMMENDATIONS/OBSERVATIONS REPLIES TO WHICH HAVE NOT BEEN ACCEPTED BY THE COMMITTEE AND WHICH REQUIRE REITERATION

Recommendation

The Committee note that the first flight with indigenous engine was proposed to be test flown in June 1984. As against this test flight with PTAE-7, which was conducted in May 1995, met with partial success only. During flight, an engine lubrication problem was encountered due to which the flight was terminated and the PTA was recovered. The Committee were informed that flight trails were conducted with indigenous engine twice after May 1995, the first one on 14 April 1999 and the second one on 30 September 1999. In the flight trail of April 1999, engine performance during launch was stated to be satisfactory, but the performance in flight could not be ascertained due to premature termination of flight. This engine was stated to be lost. During trial of September 1999, after successfully completing the mission, the bearing temperature of the engine increased resulting in auto recovery of the aircraft. As regards the present status of development of PTAE-7, the Committee were informed that completion of type test and sealing of production drawings of the engine was anticipated in March 2001. Distressingly, HAL could not successfully develop the engine even after a lapse 15 years. As a result of the delay in the development of PTAE-7, 14 engines had to be imported by ADE from a foreign firm at a cost of Rs. 6.57 crore for PTA being produced for Air Force and Navy under limited series production. Underscoring the urgency to complete the development of engine by HAL, *the Committee recommend that all out efforts be made in this direction so that PTAE-7 enters production phase at the earliest, facilitating fulfilment of requirement of the services and checking further drainage of foreign exchange.*

[S. No. 7 Para 54 of the 21st Report of PAC 2000-2001]
(13th Lok Sabha)

Action taken

As regards the present status of development of PTAE-7, the engines in the previous flight trails have performed satisfactorily except for the rise in bearing temperature. Design Modifications were introduced in the lubrication and cooling system of the engine. Two engines with the above modifications were tested in three flights during Dec, '00 successfully without any technical problems. These flights have also demonstrated the following achievements:

- * Successful refurbishing after recovery from Sea
- * Successful relaunch of the engine after flight and recovery
- * Satisfactory performance of all the engine systems

This is an important milestone towards the completion of the certification.

Problem was faced in Turbine Disk procured from M/s FORMETAL, Belgium. In the absence of improved blade castings from M/s FORMETAL, indigenous development of castings have been taken up by DRDO (DMRL, Hyderabad). The disk with improved blades will be available by December, 2001.

It is planned to carry out the final flight trial covering the required flight envelope for certification of the engine towards first quarter of 2002 with three engines.

As a concurrent engineering practice HAL Board has approved the proposal for going ahead with the Project Planning and implementation activity for series production of 125 Nos. PTAE-7 Engines for LAKSHYA with the provision that commitments for expenditure would be made only after receipt of order from Defence Services.

HAL is making all out efforts towards certification of the engine and productionisation.

*(Ministry of Defence/Department of Defence Research & Development
O.M. No. DBFA/FA/83612/M/01 dated 26 December 2001)*

CHAPTER V

RECOMMENDATIONS/OBSERVATIONS IN RESPECT OF WHICH GOVERNMENT HAVE FURNISHED INTERIM REPLIES

NIL

NEW DELHI;
12 *March*, 2003

21 *Phalgun*, 1924 (S)

SARDAR BUTA SINGH,
Chairman,
Public Accounts Committee.

APPENDIX

CONCLUSIONS AND RECOMMENDATIONS

Sl. No	Ministry/Deptt. Concerned	Conclusions/Recommendations
1.	7 Ministry of Defence (Deptt of Defence Research & Development)	The Committee are concerned to note that the engine for PTA is yet to be fully developed by HAL and commencement of its series production after certification could not be anticipated with any degree of certainty. This causes serious misgivings about the expertise of HAL in fructifying vital defence projects within a reasonable time frame. Considering the importance of indigenous R&D efforts in such crucial areas, the Committee emphasize that expedient measures be taken to see that the development of the engine is completed at the earliest followed by its productionisation so tht the Services reap the advantage of operating a fully indigenous pilotless target Aircraft. The Committee would like to be apprised of the progress achieved in this regard.
2.	10 -do-	The Committee have been informed that the infrastructure facility available with HAL would be adequate for commencing production of PTA and HAL will take up the series production on receipt of bulk order from the Services. The Committee hope that the Services have been appropriately sounded so that they firm up their requirements for PTA and the infrastructure created by HAL at huge cost could be effectively and optimally utilized in the best national interest. The Committee would like to be informed of the status of series production of HAL in due course.

PART-II

MINUTES OF THE TWENTY-FIRST SITTING OF THE PUBLIC ACCOUNTS COMMITTEE (2002-2003) HELD ON 10TH MARCH, 2003

The Committee sat from 1600 hrs. to 1640 hrs. on 10th March, 2003 in Room No. 51, Chairman's Chamber, Parliament House, New Delhi.

PRESENT

Shri Chinmayanand Swami — *in the chair*

MEMBERS

Lok Sabha

2. Shri Haribhai Chaudhary
3. Dr. Madan Prasad Jaiswal
4. Shri Bhartruhari Mahtab
5. Dr. M.V.V.S. Murthi
6. Shri Rupchand Pal
7. Shri Kirit Somaiya
8. Shri Brij Bhushan Sharan Singh

Rajya Sabha

9. Shri Santosh Bagrodia
10. Shri K. Rahman Khan
11. Shri Bachani Lekhraj

LOK SABHA SECRETARIAT

1. Shri Devender Singh — *Deputy Secretary*
2. Shri R.C. Kakkar — *Under Secretary*

2. In the absence of Chairman, the Committee chose Shri Chinmayanand Swami to act as Chairman for the sitting under Rule 258(3) of Rules of Procedure and Conduct of Business in the House.

3. The Committee then took up for consideration the following draft Reports:

- (i) *** *** ***
- (ii) Action taken on the recommendations contained in 21st Report of PAC (13th Lok Sabha) relating to "Design and Development of Pilotless Target Aircraft".
- (iii) *** *** ***

4. The Secretariat briefed the Committee on the draft Reports. The Committee adopted the Reports without any modifications and amendments.

LIST OF AUTHORISED AGENTS FOR THE SALE OF LOK SABHA SECRETARIAT PUBLICATIONS

Sl. No.	Name of Agent	Sl. No.	Name of Agent
ANDHRA PRADESH		20.	The International Book Service, Deccan Gymkhana, Pune-4.
1.	M/s. Vijay Book Agency, 11-1-477, Mylargadda, Secundrabad-500361.	21.	The Current Book House, Maruti Lane, Raghunath Dadaji Street, Bombay-400001.
2.	M/s. Booklinks Cooperation, 3-4-423/5 & 6, Narayanguda, Hyderabad-500029.	22.	M/s. Usha Book Depot, "Law Book Sellers and Publishers" Agents Govt. Publications, 585, Chira Bazar, Khar House, Bombay-400002.
3.	M/s. Ashok Book Centre, Benz Circle, Vasavya Nagar, Vijayawada-520006. (A.P.)	23.	M & J Services, Publishers Representative Accounts & Law Book Seller, Mohan Kunj, Ground Floor 68, Jyotiba Fule Road, Nalgaum-Dadar, Bombay-400014.
4.	M/s. Labour Law Publications, 873, Kothi Bus Stand, Hyderabad-500001.	24.	The Marathwada Book Distributors, Parmimal Khadkeshwar, Aurangabad-431001.
5.	M/s. Law Publico Pvt. Ltd., opp. Telegraph Office, 5-1-873, Kothi, Hyderabad-500195.	25.	Messers Pragati Jer Mahal, 432, Kaibadevi Road, Bombay-400002.
6.	Shri V.A.N. Raju, Newspaper Agent, H.No. 1-2-58, Rahamath Nagar, Kazipet-506003. (A.P.)	26.	Messers Jaina Book Agency (India), 649-A, Girgaum Road, Dhobi Talao, Bombay-400002.
7.	M/s. Vivekananda Law Publishers, Shop No. 8, opp. Secundrabad Courts, Secundrabad-500010, Hyderabad.	27.	M/s. Thosar Granihagar Shabu Lasmi, 201, Samrath Nagar, Aurangabad-431009.
BIHAR		MANIPUR	
8.	Departmental Publications Sales Centre, Vikash Bhawan, New Secretariat, Patna (Bihar).	28.	Messers P.C. Jain & Co., Thangal Bazar, Imphal-795001.
9.	M/s. Progressive Book Centre, Zila School, Pani Tanki Chowk, Ramma, Muzaffarpur-842002 (Bihar).	MEGHALAYA	
GUJARAT		29.	Messers Paul's Agency & Distributors, R.K. Mission Road, Laitumkharh, Shillong-793003.
10.	M/s. Vijay Magazines Agency, Station Road, Anand-388001 (Gujarat).	PONDICHERY	
11.	The New Order Book Company, Ellis Bridge, Ahmedabad-380006 (T. No. 79065).	30.	Editor of Debates, Legislative Assembly Department, Pondicherry-605001.
HARYANA		PUNJAB	
12.	Messers Indian Documentation Service, Patel Nagar, Post Box No. 13, Gurgaon-122001 (Haryana).	31.	Messers Lyall Book Depot, Chaura Bazar, Ludhiana-141008.
13.	Messers Prabhu Book Service, Sadar Bazar, Gurgaon-122001.	RAJASTHAN	
14.	Messers Maharishi Dayanand University Book Shop, Rohtak-124001 (Haryana).	32.	Messers Pitaliya Pustak Bhandar, Jaipur-302001.
JAMMU		TAMIL NADU	
15.	Messers Haldia Publishers (India), 128-A, Gandhi Nagar, Jammu-180004.	33.	Messers C. Sitaraman & Co., 37, Royappettah High Road, Madras-600014.
KARNATAKA		34.	Shri I. Gopalkrishnan, Principal, Salem Sowdeswari College, Salem-636010.
16.	M/s. People's Book Houses, J.M. Palace Road, Mysore-570024.	35.	M/s. M.M. Subscription Agencies, 123, Third Street, Tatabad, Coimbatore-641012.
17.	Messers Geetha Book House, K.R. Circle, Mysore-570001.	UTTAR PRADESH	
18.	The Editor, Youth Gazette No. 154, Jyoti Niwas, 4th Cross, 4th Main 2nd Phase, Marjinath Nagar-560010 Karnataka.	36.	Law Publishers, Sardar Patel Marg, P.B. No. 70, Allahabad, (U.P.).
MAHARASHTRA		37.	Messers International Publicity Service, GPO Box No. 1114, Varanasi-211001 (U.P.).
19.	M/s. Sunderdas Gian Chand, 601, Girgaum Road, Near Princes Street, Bombay-400002.	38.	The Law Book Company (P) Ltd., Sardar Patel Marg, P.B. No. 1004, Allahabad-211001 (U.P.).

Sl. No.	Name of Agent	Sl. No.	Name of Agent
39.	Messers S. Kumar & Associates, Marketing & Sales Division, Information Group, 32, Sarojini Devi Lane, Guru Govind Singh Marg, GPO Box No. 251, Lucknow-226 001.	56.	M/s. Grover Book & Stationery Co., 58/109, Sahyog Building, Nehru Place, New Delhi-110 019 (T. Nos. 26419877, 26419651, 26440902).
40.	Messers Ram Advani Bookseller, Hazrat Ganj, GPO Box No. 154, Lucknow-226 001.	57.	M/s. Biblia Impex Pvt. Ltd., 2/18, Ansari Road, New Delhi-110 002.
	WEST BENGAL	58.	Messers Universal Book Traders, 80 Gokhale Market, Opp. New Courts, Delhi-110 054.
41.	M/s. Manimala Buys & Sells, 123, Bow Bazar Street, Kolkata-700 001.	59.	Messers Eastern Book Co. (Sales), Kashmir Gate, Delhi-110 006.
42.	Messers Bankura News Paper Agency, Machantola, P.O. & Distt. Bankura-722 101.	60.	Messers International Publicity Service, GPO Box No. 1114.
43.	Messers Book Corporation, 4, R.N. Mukerjee Road, Kolkata-700 001.	61.	Messers Jain Book Agency (South End) 1, Aurobindo Place, Hauz Khas, New Delhi-110 016.
44.	Messers Bolpur Pustakalaya, Rabindra Sarani (Shantiniketan) P.O. Bolpur (W.B.)	62.	Messers Seth & Co., Room No. 31-D, Block-B, Delhi High Court, Sher Shah Road, New Delhi-110 003.
	DELHI	63.	Messers Dhaowantra Medical & Law House, 592, Lajpat Rai Market, Delhi-110 006.
45.	M/s. Jain Book Agency, C-9, Connaught Place, New Delhi-110 001 (T. Nos. 23321663 & 23320806)	64.	Messers Oxford Subscription Agency, A-13, Green Park Extension, Delhi-110 016.
46.	M/s. J.M. Jaina & Brothers, P. Box 1020, Mori Gate, Delhi-110 006	65.	Messers K.L. Seth B-55, Shakarpur, Delhi-110 092.
47.	M/s. Oxford Book & Stationery Co., Scindia House, Connaught Place, New Delhi-110 001 (T. Nos. 23315308 & 23315896)	66.	Messers Jaina Book Depot, Chowk Chhapparwala, Bank Street, Karol Bagh, New Delhi-110 005.
48.	M/s. Bookwell, 2/72 Sant Nirankari Colony, Kingsway Camp, Delhi-110 009 (T. Nos. 27112309 & 23268786)	67.	Messers Kamal & Co., 27, DDA Shopping Centre, Arjun Nagar, Safdarjung Enclave, New Delhi-110 029.
49.	M/s. Rajendra Book Agency, IV-DR-59, Lajpat Nagar Old, Double Storey, New Delhi-110 024 (T. Nos. 26412362 & 26412131).	68.	Messers Standard Book Co., 125, Municipal Market, Connaught Place, P.B. No. 708, New Delhi-110 001 (T. Nos. 23712828, 23313899).
50.	M/s. Ashok Book Agency, BH-82, Poorvi Shalimar Bagh, Delhi-110 033.	69.	Messers Jayale (W) Agency, 1-196, Naraina Vihar, New Delhi-110 028.
51.	M/s. Venus Enterprises, B-2/85, Phase-II, Ashok Vihar, Delhi.	70.	Messers Sat Narain & Sons, 40-A, Municipal Market, Babar Road, Behind Modern School, Barakhamba Road, New Delhi-110 001.
52.	M/s. Central News Agency Pvt. Ltd., 23/90, Connaught Circus, New Delhi-110 001 (T. Nos. 23364448, 23364478).	71.	Messers R.K. Books, 40/21-A, Gautam Nagar, New Delhi-110 049.
53.	M/s. Amrit Book Co., N-21, Connaught Circus, New Delhi-110 001 (T. No. 23310398).	72.	M/s. D.K. Agencies (P) Ltd., A/15-17, Mohan Garden, Najafgarh Road, New Delhi-110 059.
54.	M/s. Books India Corporation, Publishers, Importers & Exporters, L-27, Shastri Nagar, Delhi-110 002. (T. Nos. 269631 & 714465).	73.	M/s. Ishwar Chandra Co., Baldev Bhawan, 9986, Ram Behari Road, Sarai Rohella, Delhi-110 005.
55.	M/s. Sangam Book Depot, 4378/4B, Murari Lal Street, Ansari Road, Darya Ganj, New Delhi-110 002.	74.	M/s. Vijay Book Service C/D/123/C Pitampura, New Delhi-110 034.