

## CHAPTER II: MINISTRY OF DEFENCE

### 2.1 Unfruitful expenditure on development of a system

**Due to improper decision and delayed development of ‘Takshak’ system, the objective of enhancing the operational capability of a fighter aircraft could not be achieved. As a result, an expenditure of ₹155.79 crore incurred on the project was rendered unfruitful.**

Ministry of Defence (Ministry) accorded a sanction (September 2005) for development of Electronic Warfare Suite for Fighter Aircraft (EWSFA) Suite for MiG-27 and TEJAS aircraft at a total cost of ₹311.71 crore<sup>1</sup> to be funded jointly by DRDO (₹279.62 crore) and IAF (₹32.09 crore<sup>2</sup>) with a timeframe of 66 months from the date of sanction. The sanctioned cost included an amount of ₹195.69 crore for development of EW suite for MiG-27 and MOD kit for 38 MiG-27 production aircraft. The objective of the programme was to enhance the operational capability of fighter aircraft and strengthen EW industry.

The EW suite for MiG-27 aircraft named ‘Takshak’ was to be jointly developed by Defence Avionics Research Establishment (DARE)<sup>3</sup> and M/s. ELTA, Israel. After user evaluation of the programme by September 2009, IAF had to sign a contract with M/s. BEL for production and procurement of ‘Takshak’ system and a separate contract was to be concluded with HAL for carrying out the integration work.

As per the development schedule of ‘Takshak’, the flight trials after successful ATP<sup>4</sup> were to commence in March 2009 and were to be completed by September 2009 which was subsequently extended to March 2011 due to delay in Lab Integration trials. During ATP conducted in December 2010, Air HQ found that despite considerable delay, the ‘Takshak’ system was not fully developed. The flight trials (D&D) were started after a delay of 21

<sup>1</sup> ₹311.71 crore = ₹195.69 crore (MiG-27) and ₹116.02 crore for Tejas

<sup>2</sup> IAF commitment of ₹ 32.09 crore was only for RWJ system for MiG-27 aircraft

<sup>3</sup> DARE = a unit of Defence Research and Development Organisation (DRDO)

<sup>4</sup> ATP = Acceptance Test Procedure *i.e.* Lab integration testing before flight trials

months (January 2011) wherein Air HQ observed (January 2011) that the system still could not meet a large number of technical specifications. IAF also acknowledged (January 2011) that induction of the 'Takshak' system in MiG-27 fleet would take at least another three years and complete fleet modification would be over only by 2016 whereas the MiG-27 aircraft fleet was planned to be phased out of service from 2014 onwards. Therefore, Air HQ decided (January 2011) to foreclose the project since it was not possible to operationally exploit this system on the aircraft. An expenditure of ₹155.79 crore had already been incurred on the project till then (January 2013).

We observed (June 2013) that even before the sanction (September 2005) for development of 'Takshak' system, IAF was aware (June 2005) that it would be difficult to sustain the MiG-27 aircraft fleet beyond 2012-16 in view of the limited life of the aircraft. A mention was made in Paragraph 2.6 of the Report of the C&AG (No. CA 5 of 2008) on the limited life of the MiG-27 aircraft. Ministry had in their Action Taken Note (ATN) dated 09 June 2011, stated that EW Suite 'Takshak' would be available from mid-2012 onwards. Ministry's reply is, however, factually inconsistent given the decision by Air HQrs (January 2011) to foreclose the project.

IAF in its reply (October 2013) stated that 'Takshak' could not be fully exploited on MiG-27 aircraft due to delay in development of the system coupled with premature failure of airframe and aero-engine of the aircraft. Therefore, IAF had to foreclose (January 2011) the project.

The reply, however, does not address the fact that the decision to develop the system was injudicious since it was known that MiG-27 aircraft had a residual life till 2016.

Thus, due to injudicious decision and delay in development of 'Takshak' system, the objective of enhancing the operational capability of a fighter aircraft could not be achieved. Besides, an expenditure of ₹155.79 crore incurred on the project was rendered unfruitful.

The draft paragraph was issued to the Ministry in June 2013; their reply was awaited (December 2013).

## 2.2 Delay in upgradation of an aircraft

**Facilities for extending the Total Technical Life and overhaul of aircraft 'A' along with its re-equipment could not be set up in time, despite an investment of ₹272 crore for Transfer of Technology. As a result 61 aircraft were grounded as of March 2013.**

Indian Air Force (IAF) inducted (1984-1991) Aircraft 'A' for transporting of troops and cargo, para trooping, supply dropping and casualty evacuation. The Total Technical Life (TTL) of the aircraft was 20,000 flying hours/ 25 years and 15000 landings. As on September 2006, there were 105 Aircraft 'A' held in the inventory of IAF. As these aircraft had residual service life, IAF initiated (2006) a case for extension of TTL of aircraft from 25 to 40 years. In order to expedite the procurement process, Ministry of Defence (Ministry) adopted the revenue procedure prescribed in Defence Procurement Manual (DPM) -2006 which stipulates a period of six months from initiation of the proposal till conclusion of the contract. Ministry concluded a contract (June 2009) at a total cost of MUSD 397.70 (₹1964.64 crore<sup>5</sup>) with a foreign firm<sup>6</sup> for extension of life of the entire fleet of 105 Aircraft 'A' from 25 to 40 years. Under the contract, TTLE<sup>7</sup>, re-equipment<sup>8</sup> and overhauling of 40 aircraft was to be carried out abroad between August 2009 and October 2013 and for the balance 65 aircraft, the same was to be similarly carried out between August 2011 and July 2015 at Base Repair Depot 'X' (BRD) under the Transfer of Technology (ToT) arrangement with the Original Equipment Manufacturer (OEM) as part of the contract which included a cost of ₹272 crore for ToT.

Our examination of documents in audit (December 2011 and September 2012) relating to the contract (June 2009) revealed the following:

Air HQ had initially proposed (March 2006) re-equipment, TTLE and overhaul of 60 out of 105 aircraft and only life extension and overhaul of the

<sup>5</sup> 1USD = ₹49.50

<sup>6</sup> Foreign firm = M/s. SPETSTECHNOEXPORT, Ukraine (OEM)

<sup>7</sup> Total Technical Life Extension

<sup>8</sup> Installation/replacement of certain flight and avionics equipment for operating the aircraft

remaining 45 aircraft. Under this proposal, five out of 60 aircraft were to be sent to the vendor's premises as per the provision in the earlier contracts concluded for other aircraft. The implementation of TTLE/OH and re-equipment on balance 55 aircraft was to be done in India after obtaining technology for life extension. For the remaining 45 aircraft, only TTLE/OH was to be done in India at BRD 'X'. The proposal was accorded Acceptance of Necessity (AoN) in September 2006.

As the life of 75 (71 *per cent*) out of 105 aircraft was due to expire between 2009-2012, Air HQ changed its plan and decided (December 2006) to re-equip the entire fleet of 105 aircraft along with life-extension and overhaul in order to reduce accumulation of the life expired aircraft. Under the revised proposal, IAF proposed to send 40 aircraft abroad instead of the earlier proposal (March 2006) to send only five aircraft and extend the life of balance 65 aircraft in India after obtaining ToT from the OEM. Accordingly, the contract concluded in June 2009 provided for the first batch of five out of 40 aircraft to be positioned at the vendor's premises by November 2009, under the Design and Development (D&D) phase, which was scheduled to be completed by August 2010. However, the first batch of 5 aircraft was positioned at vendor's premises in March 2010 and D&D along with TTLE/OH and re-equipment was actually completed in May 2011. Based on the experience of D&D phase on the five aircraft, TTLE/OH and re-equipment of 20 out of the remaining 35 aircraft at the vendor's premises had been completed (December 2013).

For implementation of TTLE/OH and re-equipment of the remaining 65 aircraft, the activities relating to setting up of the facility at BRD 'X' were to be completed by June 2011. However, the facility at BRD 'X' for the purpose had not been completed (October 2013).

We observed (February 2013) that even though IAF knew that the existing TTL (*i.e.* 25 years) of aircraft would expire from February 2009 onwards and the process of D&D and TTL extension would take almost four to five years based on the past experience, the initiation of the proposal was *ab-initio* delayed by the IAF. As such, the constraints of time forced the Ministry to employ the revenue procedure to expedite the process on the grounds of urgency. However, the benefit of this measure was lost as 30 months were taken to conclude the contract against the prescribed period of 6 months as per the DPM-2006. This delay coupled with a delay of nine months in

completion of D&D phase delayed the setting up of the facility for TTLE/OH at BRD 'X'.

The draft paragraph was issued to the Ministry in February 2013. Ministry stated (October 2013) that the decision to upgrade 40 aircraft abroad has resulted in availability of 25 upgrade aircraft in the fleet (October 2013). The Ministry further added that ToT could not have been set before the D&D phase completion (August 2010) as during D&D majority of the equipment frozen earlier during the contract stage was replaced with better and modern Western origin equipment. As a result, TTLE project scheduled for completion in June 2011 also got delayed which was yet to be completed (October 2013). Ministry also stated that the project had got delayed due to non supply of certain spares for integration of re-equipment on Aircraft 'A'.

However, Ministry in its reply failed to justify the delay in conclusion of the contract despite adopting the revenue procedure based on the grounds of urgency.

Thus, the benefit from an investment of ₹272 crore on creation of ToT facilities could not be made available on time thereby resulting in grounding of 61 aircraft (*i.e.* more than 50 *per cent*) as of March 2013.

### **2.3 Avoidable expenditure in procurement of aero-engines**

**Failure of the IAF to project a long term requirement of aero-engines of a transport fleet resulted in an avoidable expenditure of ₹227 crore.**

Aircraft 'A' is a medium tactical transport aircraft which is used primarily by the Indian Air Force (IAF) for transportation of the troops and cargo, para-trooping and casualty evacuation. Each aircraft is fitted with two aero-engines. The aircraft was inducted into IAF between 1984-91. Total technical life (TTL) of the aircraft was 20,000 flying hours/25 years whereas TTL of aero-engine was 6000 hours.

The Ministry of Defence (Ministry) concluded (December 2009) a contract with M/s Motor Sich (MSE), Ukraine *i.e.* Original Equipment Manufacturer of aero-engines (OEM) for procurement of 100 aero-engines at a total cost of MUSD 109 (₹543 crore) for sustaining the fleet upto 25 years (*i.e.* upto 2011).

Examination of documents in audit (June 2012) relating to procurement of 100 aero-engines revealed the following:

As of September 2005, there were 292 aero-engines held in the inventory of IAF. IAF carried out a census of aero-engines (September 2005) which were completing their life of 6000 hours upto August 2008 and worked out a net requirement of 17 aero-engines for procurement. Ministry, accordingly, concluded (June 2007) a contract with OEM for procurement of 17 aero-engines at a total cost of MUSD 12.27 (₹53.85 crore<sup>9</sup>). The contract provided for an option clause to procure 13 additional aero-engines by June 2008 at the same rate.

Immediately after conclusion of the contract (June 2007), a Special Review of entire assets of aero-engine was carried out by the IAF (August 2007) and a requirement of 130 aero-engines upto 2011 was worked out. After deducting 17 aero-engines (dues-in), for which contract was concluded in June 2007, net requirement had emerged as 113 aero-engines. Out of this requirement of 113 aero-engines, 13 aero-engines were procured under the option clause of the contract of June 2007. Contract for procurement of remaining 100 aero-engine was concluded in December 2009 with the OEM.

We observed (June 2012) that as procurement of aero-engines was an inescapable requirement, IAF should have placed the order for the entire long term requirement for sustaining the fleet upto 25 years (*i.e.* upto 2011), instead of placing the order for only 17 aero-engines in June 2007 with an option to procure 13 additional aero-engines by June 2008.

In response to an audit query (June 2012) about not entering into a contract for meeting the long term requirement, Air Headquarters (Air HQ) stated (September 2012) that IAF could not enter into a long term agreement in June 2007 for procurement of 130 aero-engines as the case for TTL<sup>10</sup> extension (from the existing 6000 hours to 9000 hours) of aero-engines was under deliberation with the OEM.

We do not agree with the view of Air HQ as the OEM had already intimated (July 2004) IAF that the TTL of aero-engines was 6000 engine hours only and the same could not be extended beyond 6000 hours. Further, within a

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<sup>9</sup> 1USD= ₹43.90

<sup>10</sup> TTL – Total Technical Life

period of two months (August 2007) since conclusion of the contract (June 2007) for 17 aero-engines, IAF had worked out a net requirement of 130 aero-engines. Therefore, IAF should have reviewed the position for TTL extension of aero-engines in 2005 itself for meeting the long term requirement of 130 aero-engines upto 2011.

We further noticed (February 2013) that IAF had paid @ USD 719,500 (₹3.16 crore) per engine against the contract of June 2007, whereas, IAF had to pay @ USD 10,90,000 (₹5.43 crore) per engine against the contract of December 2009. Thus, IAF had to incur a total of ₹227 crore extra on procurement of 100 aero-engines.

The draft paragraph incorporating our observation on additional expenditure was issued to the Ministry in February 2013.

In their reply (October 2013), the Ministry stated that due to repeated change of stand (February-September 2006) taken by the OEM on extension of TTL of aero-engine, final decision on extension of TTL was kept pending/delayed till that time.

The reply of the Ministry is not acceptable as keeping in view the OEM's confirmation of July 2004 regarding non-extension of the TTL of aero-engine beyond 6000 hours and also that the procurement of aero-engines was an inescapable requirement, the IAF should have reviewed the requirement of aero-engines in 2005 for sustaining the fleet upto 25 years (i.e. upto 2011) and concluded the contract in 2007 for the entire requirement (130 aero-engines). This is particularly relevant as by the Ministry's own admission (October 2013), the contract of June 2007 itself was concluded after ruling out the possibility of extension of TTL of aero-engines from 6000 hour to 9000 hours.

The fact, thus, remains that if the review of entire assets of aero-engines had been carried out in 2005 instead of August 2007, the requirement would have remained the same i.e. 130 aero-engines.

Thus, despite being aware (July 2004) of the long term requirement of aero-engines for sustaining the fleet upto 25 years, in view of non-extension of TTL of aero-engine by the OEM beyond 6000 hours, IAF concluded a contract (June 2007) only for procurement of 17 with an option to procure 13 additional aero-engines by June 2008. As a result, an avoidable extra

expenditure of ₹227 crore was incurred on procurement of 100 aero-engines against the contract of December 2009.

#### **2.4 Non-inclusion of variable percentage of profit in the contract for acquisition of Landing Craft Utility**

**Inclusion of the fixed profit percentage in the contract with M/s GRSE led to loss of ₹40.96 crore in acquisition of 'X' number of LCUs at a cost of ₹2169 crore. Besides, provision of ₹9 crore towards Project Management Cost in the contract was unjustified. In addition, availability of LCUs would be depleted due to lack of synchronisation in de-induction and replacement schedule.**

Landing Craft Utility (LCU) Mk-IV are primarily deployed during amphibious operations for transportation, deployment and recovery of troops and equipment. Further, these crafts are also deployed in peacekeeping role and search and rescue missions. Indian Navy (IN) had a force level of 'X' LCUs inducted during the period 1980-1987. De-induction of the existing LCUs was scheduled between 2011 and 2016.

In order to replace the de-inducted ships, necessity for acquisition of 'X' number of LCUs at an estimated cost of ₹1104 crore was accorded by Defence Acquisition Council (DAC) in November 2008. In February 2009, the Ministry of Defence (MOD) approved nomination<sup>11</sup> of M/s Garden Reach Shipbuilders and Engineers Ltd. (GRSE) Kolkata for construction of these ships. Accordingly, M/s GRSE was requested (April 2009) to forward delivery schedule and commercial offer for 'X' number of ships and M/s GRSE's quotation was received in October 2009. The Contract Negotiation Committee (CNC) proceedings commenced in December 2009 which were finalised in October 2010 and proposal for construction of 'X' number of LCUs was forwarded to the Cabinet Committee on Security (CCS) in July 2011. Government sanction for the project was accorded in September 2011. Subsequently, contract for acquisition of 'X' number of LCUs Mk-IV from M/s GRSE was concluded in September 2011 at a negotiated cost of ₹2169 crore.

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<sup>11</sup> Selection of Vendor without going through the competitive process after considering capacity and expertise of such vendor. As per DPP 2008, nomination is allowed for Defence Public Sector Shipyards for indigenous Naval Ship Building.



Our examination (October 2012) of the papers leading to the sanction of the project and conclusion of contract revealed that a higher percentage of profit was allowed besides other irregularities in the contract which are discussed in subsequent paragraphs.

## **I Higher percent of profit to the shipyard**

The Department of Defence Production (DDP) through its order in September 2007 re-visited the applicability of profit payable to Defence Public Sector Undertakings (DPSUs) for construction of Naval and Indian Coast Guard (ICG) Ships. Hitherto, profit element at 7.5 *per cent* was payable to the DPSUs on the basic cost of a ship. The revised policy provided for the variable percentage of profit between 7.5 *per cent* and 12.5 *per cent* of the basic cost of the ship, subject to achievement of the laid down benchmarks by the Yards and certification of the same by internal audit / overseeing naval authorities and the Adviser (Cost) in the DDP. The policy further stipulated that though a base rate of 10 *per cent* profit on basic cost of ship was allowed, the same could vary between 7.5 to 12.5 *per cent* of the basic cost of ship. However, profit payable at the rate above 7.5 *per cent* of basic cost of ship was subject to achievement of identified benchmarks. Thus, the policy clearly aimed at allowing profit percentage higher than 7.5 *per cent* of the basic cost of the ship only on achieving better performance.

Our scrutiny (October 2012) showed that in the instant case of acquisition, *ab initio* 10 *per cent* profit on basic cost of ship amounting to ₹163.86 crore (@ 10 *per cent* of basic cost of ₹1638.62 crore) was provided for in the contract, without linking the profit percentage with the performance of the Shipyard. Inclusion of performance related profit in the contract would have given the Ministry a leverage of altering the profit element between ₹122.90 crore (@ 7.5 *per cent* of the basic cost) and ₹163.86 crore (@ 10 *per cent* of the basic cost) based on the performance of the shipyard. By allowing a flat 10 *per cent* profit element on the basic cost of ship, Ministry was denied a leverage of reducing the profit to an extent of ₹40.96 crore.

Our scrutiny (October 2012) further revealed that within six months of commencement of the project, M/s GRSE requested for extending the delivery schedule of the first two vessels by three months. However, the profit element of 10 *per cent* of the basic cost was assured to the Shipyard.

IHQ MoD (Navy) stated (December 2012) that the variable profit mentioned in the *ibid* policy is applicable to cost plus contracts and may be applied to contracts on nomination basis. It further stated that though M/s GRSE was nominated for the present contract, the base rate of 10 *per cent* profit on the basic cost was considered as it was a fixed price contract.

The contention of IHQ MoD (Navy) is incorrect as the policy merely states that the variable profit element is applicable to contracts awarded on nomination basis and does not differentiate between the cost plus contracts and fixed price contracts. Profit percentage in excess of 7.5 *per cent* on the basic cost of ship is linked to achievement of benchmarks. This, however, was not ensured.

## **II Project Monitoring Cost in the contract**

The Contract Negotiation Committee (CNC) constituted to negotiate the terms and conditions of the contract including price, recommended inclusion of 'Project Monitoring Cost' at 0.5 *per cent* of the basic cost of 'X' number of LCUs at ₹9 crore. Project Monitoring was considered essential for ensuring timely delivery of ships to the Navy, by means of monitoring of the project at IN in real time. This required upgradation of the Project Monitoring software including Internet based Video Conferencing facility. Accordingly, the contract with M/s GRSE provided for Project Monitoring as requisitioned by the buyer (IN) limited to ₹9 crore, within six months of the date of contract. However, the contract did not specify the nature and contents of the Project Monitoring facilities.

Our scrutiny (December 2012) showed that the project monitoring consisted of server, secure video conferencing facility and leased line etc. for connectivity between the IHQ MoD (Navy), M/s GRSE, and the Warship Overseeing Team (WOT) at GRSE. These facilities, thus, were being created at the IHQ MoD (Navy) at New Delhi and the WOT (Kolkata), manned by the Navy personnel. However, instead of creation of these facilities directly by the Navy through its own budget, the Navy opted for creation of the facilities through M/s GRSE as part of the LCU acquisition contract. Setting up of such facilities at the Naval establishments by the shipyard was inappropriate. The actual items to be procured in the contract were also not specified.

IHQ MoD (Navy) stated (January 2013) that the Project Monitoring facilities were to be set-up at IHQ MoD (Navy), M/s GRSE and at WOT (Kolkata) and also stated that cost break-up of the system could be provided only after the items are procured.

The reply does not address the main issue that the expenditure on Project Management to be incurred at IHQ MoD (Navy) and the WOT should be through Navy's budget and not through the Shipyard to be paid for from the contract.

### **III Amphibious capability would be impacted in the intervening period**

IN had a complement of 'X' number of LCUs, which were acquired during 1980 to 1987. The present contract was entered into to replace the ageing / de-inducted LCUs. As per the de-induction schedule, 'Y' number of ageing LCUs have already been de-inducted from service and 'Y' number more LCUs would be de-inducted in 2013. As compared to this, the first vessel from the present contract would be inducted only in August 2014 (35 months after the contract date of September 2011). Thus, the force levels of LCUs would be critically low before the arrival of the replacements and the gap would be filled only in year 2016 due to lack of synchronisation between the new procurement and the de-induction schedule of LCUs.

While agreeing to the gap between de-commissioning of the existing and the new induction of 'X' number LCUs, IHQ MoD (Navy) stated (December 2012) that the gap would be bridged by augmenting the force level in a particular Command by deployment of the naval assets based at other naval bases and extending the life of the existing platforms.

The reply only reinforces the audit observation that till the year 2016, the Navy would have to manage its requirement with the available and ageing LCUs.

The draft paragraph was issued to the Ministry (April 2013); their reply was awaited (December 2013).