CHAPTER IV: HINDUSTAN AERONAUTICS LIMITED

Audited Entity Profile

Defence Public Sector Undertakings (DPSUs) function under the administrative control of Department of Defence Production. There are nine DPSUs which are headed by respective Chairman cum Managing Director. Hindustan Aeronautics Limited (HAL) is a fully owned Government of India undertaking under the administrative control of Department of Defence Production, Ministry of Defence. HAL is currently involved in manufacture of Aircraft (trainers and fighters), Helicopters (utility and weaponised) their accessories and spares, repair and overhaul of the aircraft and helicopters, design and development of new product upgrades and manufacture of some of the important structures used in satellites. Indian Air Force is the major customer of HAL constituting more than 70 *per cent* of its turnover.

4.1 Estate Management in Hindustan Aeronautics Limited, Bengaluru

HAL had not formulated a Land Use Policy for management of its vast land resource spread over different locations. Acquisition of land already encroached upon and failure to clear the encroachments resulted in the land being not available to the Company. The Company also did not have the title for land valued ₹211.69 crore.

4.1.1 Introduction

Hindustan Aeronautics Limited (HAL), a Navratna company under the Ministry of Defence, is engaged in design, development, manufacture, upgrade, repair and overhaul of aircraft, helicopters, aero-engines, avionics and navigation system equipment and marine & industrial gas turbine engines for both military and civil applications.

HAL had acquired 11275.34 acres of land from Government and private parties till 31 March 2014 (**Annexure XI**).

4.1.2 Audit Findings

Audit observed the following:

4.1.2.1 Maintenance of Land Records

(i) Land in Possession of HAL: A comparison of the land in possession of HAL as per 1985 Compendium with the Award Copies[1] and Record of Rights of Tenancy and Crops Certificate[2] (RTC) revealed discrepancies like land included in the Compendium was in names of private parties as per RTC, non inclusion of Survey numbers in the Compendium and variation in area of land as per Award and Disinvestment details.

Management stated (March 2015) that the details of total acquired land was shown in the Compendium whereas in RTC/Award copies, Kharab[3] land was shown separately along with the total land and hence, there was difference between Compendium and RTC/Award copies.

The reply is not acceptable as Audit observed that there were differences between the areas of land mentioned in the Award copies *vis-à-vis* that

[1] Order passed by the competent authority acquiring the land and containing details of true area of the land, compensation to be allowed and apportionment of compensation among the persons believed to be interested in the land.

[2] This is an important Revenue record as it contains all possible data relating to lands held by an individual or group of individuals such as area, assessment, water rate, classification of soil, number of trees, nature of possession of the land, whether acquired by registered or unregistered document by succession, partition, mortgage, liabilities, tenancy and details of crops grown, land utilization, area under mixed crops, *etc.*

[3] Kharab land is one where cultivation is not possible and the land would be full of rocks and barren. The Kharab land will not be included alongwith cultivable land in sale deed and other records. Kharab land belongs to Government and at any time Govt has the power to take over the Kharab land for public cause.

included in the Compendium even after excluding kharab land. In respect of five villages wherein the area as per Award copies was 36 acres and 3 guntas including 32 guntas of kharab land, the same data as per Compendium was 104 acres and 20 guntas.

Audit further observed that:

- Absence of proper documentation for land held in possession of HAL resulted in dispute with M/s BEML, another DPSU[4]. HAL allowed BEML to use the Railway track on 9 acre and 29 guntas (between BEML and Byappanahalli), 5990 sq ft of land for Cycle Stand at a licence fee, 11500 sq ft of land for parking BEML buses and also allotted (June 2009) additional 1,100 sq ft for displaying Metro coach @ ₹17600 per month with 10 *per cent* escalation every year. BEML paid licence fee for these parts of land up to December 2009 and thereafter not only stopped payment but also claimed ownership of the land (April 2010) stating that these land were part of the indenture executed (1966) for transfer of 71.04 acres of land from HAL to BEML. Due to inability to establish ownership and resolve the issue, HAL could not recover rent of ₹8.71 crore (January 2010 to March 2015). HAL had not gone for any civil suit to decide the ownership and protect its interests.

- As could be seen from **Annexure – XI**, HAL was in possession of 2184.86 acres of land in Bengaluru Complex. However, HAL did not have the award copies in respect of 402 acres and 3836 guntas (220 survey numbers) with market value of ₹1499.53 crore as detailed in **Annexure XII**.

Management while accepting the audit observation replied (March 2015) that it was in possession of award copies in respect of 56 survey numbers and for the others it possessed the RTC copies.

[4] DPSU- Defence Public Sector Undertaking

The reply is not factual as audit analysis of 76 out of 220 survey numbers under possession of HAL revealed that HAL's name did not appear in the RTCs in 36 survey numbers covering 68 acres with market value of ₹211.69 crore (eight villages) **(Annexure XIII).**

- 76 survey numbers referred to above included 20 survey numbers owned by HAL in K G Thippasandra village as per the Compendium. Audit observed that HAL was not in possession of award copies in respect of 14[5] survey numbers and in 11[6] of the 14 survey numbers HAL's name was not appearing in the RTCs. Despite not possessing award copies and also RTC being not in the name of HAL, these survey numbers were included by HAL in the disinvestment data as the same was included in the Compendium.

Management replied (March 2015) that the RTC in respect of lands at KG Thippasandra village is in the name of HAL.

The reply is not factual in view of the position brought out above by Audit.

(ii) Title of Land at Nasik: HAL was in possession of 4620 acres and 13 guntas of land as on 31 March 2015 against which indenture[7] was done (June 1978) by MoD for only 4354 acres and 36 guntas. There was no indenture for balance 265 acres and 17 guntas (March 2015) though the land was in possession of HAL. Absence of proper title to the land would render it difficult for HAL to defend the land in case of any encroachment.

Management while accepting (March 2015) the lack of indenture for 265 acres and 17 guntas of land stated that the issue was being pursued with the

[5] Survey numbers 59/1,60, 61, 62, 63, 64, 66, 67, 68/3, 69, 70/2,72/1,72/2 and 73.
[6] Survey numbers 59/1, 60, 61, 62, 64, 66, 67, 69, 70/2,72/1 and 72/2

[7] granting, conveying, transferring and assuring HAL all right, title and interest in and upon the said land

Government of Maharashtra. Management also stated that land holdings were demarcated and compound wall constructed.

The reply is not acceptable as HAL Nasik division had earlier replied (December 2014) that though the land was initially demarcated and compound wall constructed, the adjacent villagers had repeatedly broken the wall. As the land is prone to encroachment as evident from repeatedly breaking of compound wall, HAL needs to take necessary action for updating land records.

4.1.2.2 Land under Encroachment

It was seen that 63.51 acres of land of HAL was under encroachment (**Annexure-XI)**. Few cases are discussed below:

(i) Acquisition of land despite existence of slums: 11.96 acres of land at Belur, Marathahalli and Vibhuthpura in Bengaluru was encroached. The Compendium of 1985 had brought out that HAL had acquired 10 acres and 19 guntas (out of 11.96 acres) despite existence of slums. HAL identified alternate land to rehabilitate the slum dwellers of Belur **v**illage and also accorded approval (July 2010) for allotment of 3.55 acres of land to Karnataka Slum Clearance Board (KSCB) for shifting of slums subject to allocation of equal area of land to HAL at the chosen place. As MoD approval was not received, KSCB decided (March 2014) not to allot the alternate land chosen by HAL and return the allotment of land made by HAL to it for rehabilitation of the slum. As HAL could not evict the slums, land remained under encroachment (March 2015).

Similarly, HAL's efforts since 1980-81 to evict the encroachments of land measuring 4 acres and 34 guntas in survey number 40 and 41 of Marathahalli village situated around the HAL factory at Bengaluru, did not fructify. HAL approached the Revenue Department in August 2007 to relocate the slums. The slum dwellers obtained stay for interfering with their possession by HAL and the case was pending (March 2015).

Management concurred (March 2015) with the observation.

Thus, acquisition of land with encroachment resulted in non-availability of the land to HAL besides leading to problems associated with litigation/clearance.

(ii) Delay in utilisation of land prone to encroachment: HAL identified (May 1998) 29 acres and 33 guntas of land spread over 18 survey numbers in Bengaluru as highly prone to encroachment out of which 27 acres were situated in and around the factory. Board resolved (June 2000) to sell the land and sought the permission of Govt. of Karnataka (GoK) (July 2000) and MoD (August 2000). GoK permitted (September 2000) sale of land to Central and State Government organisations, no communication was received from MoD. Due to lack of approval/directions from MoD, the Board (September 2007) approved 'in principle' the construction of quarters on the said land. The decision was yet (June 2015) to be implemented by HAL management.

(iii) Encroachment in Koraput division: Out of 3121.15 acres of land held by the division, 50.21 acres were encroached by 82 families who were cultivating the land for over 25 years. Though HAL awarded (October 2003) the work of construction of boundary wall to protect the estates, the work could not be completed due to interference by local villagers, lack of clearance from National Highway Authorities, etc.

Audit noticed (December 2014) from records that HAL took up the matter of eviction of encroachments with the District administration in year 2010 and with the Government of Odisha in 2013 to facilitate relocating the encroachers to different locations. Further, HAL Board was appraised in September 2014 that the Government of Odisha would facilitate eviction provided HAL agrees to bear the expenditure for their relocation and livelihood. The cost of eviction and relocation was estimated at ₹4.94 crore.

Management stated (March 2015) that though legal action was not initiated by the Company, HAL was in constant touch with the District administration for eviction of the encroachers and the State Government agreed to rehabilitate the encroached population.

Reply is not acceptable as besides not considering the legal action despite encountering problems in construction of boundary wall, HAL inordinately delayed (until 2010) taking up eviction of encroachments.

4.1.2.3 Lease and Sale of Land

Audit observed that 1,082.215 acres of land was leased to various agencies (**Annexure-XI)**. Deficiencies in lease of land are discussed as under:

(i) **Non execution of Lease deed**: Audit observed that HAL did not execute the lease deed in respect of 552.41[8] acres of land. Though the Board directed the management to execute the lease with approved terms and conditions to protect the interest of the Company and to get the lease deeds registered (October 2009), the divisions had not executed the lease agreements and registered the lease deeds.

Management stated (March 2015) that the Desk officer vide letter of June 1995 communicated the Ministry of Law's opinion that the ownership of HAL rests with the President of India and as such no lease agreements were entered into with Defence organisations. However, rent for the same was being collected by HAL. Management also stated that the lease agreement could not be executed as the execution of Conveyance/Gift deed of the said land was not executed in favour of HAL.

8

Unit	Total acres leased	Lease deed not executed
Bengaluru Complex	149.081	141.0515
Nashik	890.92	400.25
Hyderabad	2.29	2.16
Koraput	4.944	4.944
Kanpur	34.75	4.00
	1081.985	552.4055

The reply is not acceptable as HAL had title over the land and hence, lease deeds were to be entered into to protect the Company's interests and avoid legal complications in future.

(ii) **Non-renewal of Lease agreements**: Out of eight[9] lease agreements due for renewal as on December 2014 in Nasik and Bengaluru Divisions, lease agreements in six[10] cases covering 13.87 acres of land were not renewed till December 2014.

Management replied (March 2015) that Lease deed in respect of MSETCL was completed and efforts were on for getting the remaining five lease deeds renewed.

Reply has to be viewed considering the fact that lease agreements in four out of five cases were pending for the last five years and land being a valuable asset, HAL should have renewed the lease agreements immediately to avoid legal complications in future.

(iii) **Non-execution of Sale Deed:** HAL sold 218.719 acres of land to various organisations during the period from 1972 to 2006. Though the land was sold in 13 cases referred in **Annexure XIV**, HAL did not get the sale deed executed.

Management stated (March 2015) that the Desk officer vide his letter of June 1995 conveyed the Ministry of Law’s opinion that the ownership of HAL rests with the President of India notionally and thus there was no sale of land which is under the ownership of the President.

Reply of the Management is not acceptable as the land belonged to HAL and thus, execution of sale deed was necessary to protect Company's interests in case of legal disputes.

[9] NAL, Maharashtra State Police, Department of Post, M/s DTL, MSETCL, SBI, PNB and Mandir Samiti

[10] NAL, Maharashtra State Police, Department of Post, M/s DTL, MSETCL and Mandir Samiti

4.1.2.4 Non-inclusion of Escalation clause

Audit observed that HAL leased land for period ranging from five to 30 years and renewed the same for similar period. However, the lease rent remained fixed throughout the lease period as the lease deeds did not have escalation clause to take care of the inflation.

Audit further observed (December 2014) that in case of lease of land to a Joint Venture Company (HATSOFF) the rent was reduced at the behest (July 2008) of Registered Valuer citing closure of airport at HAL and consequent reduction in value of land in the area. Further, in leases with Indian Oil Corporation (IOC), Water Supply and Sewerage Board and three JVCs[11], HAL reduced/deferred the lease rentals at the request of the lessee without justification.

Management stated (March 2015) that the rent of JVCs was fixed on prevailing market rates as suggested by the Government approved valuer. Some of these JVCs requested for negotiated rents as their business module had encountered financial difficulties which were approved by the Board.

The fact remains that JVCs and IOC are commercial entities and HAL did not protect its interests while fixing the lease rentals for these organisations.

4.1.2.5 Absence of land manual

HAL issued three circulars/guidelines in March 1987 (Lease), April 1996 (Lease/Sale), and December 1998 (Amendment to Circular of March 1987) to deal with matters of sale/lease of land.

Audit observed that even though HAL has been acquiring land since 1942, it had not framed a comprehensive land manual covering long term development plans both for functional and non-functional needs vis-à-vis adequacy of the

[11] HATSOFF; International Aerospace Manufacturing Private Limited; HAL-Edgewood Technologies Private Limited and BAeHAL Software Private Limited.

existing facilities and suitability of vacant land available with it in the context of development of civilian infrastructure surrounding it.

HAL replied (March 2015) that preparation of land manual was not envisaged as the same was not mandated as per statute and comprehensive guidelines were already available.

The reply is not acceptable since guidelines are only need based and thus, are not a substitute for a comprehensive manual considering the vast extent of land available with HAL.

4.1.2.6 Non-digitisation of land records

HAL had preserved the land and estate records *i.e.*, approximately 3000 pages of Award copies and other notifications inside a fire proof cabin. Due to passage of time and wear and tear, these paper documents, maps, etc., were under threat of spoilage as only a few award copies were microfilmed.

Audit observed (December 2014) from the Compendium of 1985 that there were 40 years old records and files in the Estate Department, which were important and re-writing of the land registers was recommended. However, HAL was maintaining the records manually.

Management stated (March 2015) that the documents were preserved in fire proof almirah and digitisation of land records was in tendering stage.

The fact remains that even after 30 years of specific recommendation in the Compendium (1985), HAL had just initiated action for preservation of these important documents.

4.1.3 Conclusion

Comparison of land holdings as per the Compendium of land holdings prepared by HAL in 1985, the award copies with HAL and the data prepared for disinvestment revealed several discrepancies. HAL acquired land which was already encroached and failed to clear the encroachments. The lease agreements had not been executed and registered. Similarly, the sale deeds had not been executed even though the land was sold. Lease rents were fixed at nominal rates even for JVCs and commercial organisations. HAL had not framed a comprehensive land manual covering long term development plans both for functional and non-functional needs. The Company continued to maintain the important records manually.

4.2 Investment in Joint Venture Companies by Hindustan Aeronautics Limited

Five JVCs formed by HAL failed to achieve the intended purpose for which they were formed. Against total investment of ₹225.14 crore in 11 JVCs, a provision for diminution in the value of investment amounting to ₹49.90 crore was made in respect of five JVCs. Subsequent to formation of a JVC, shareholding pattern was changed thereby the other JV partner gained majority control in the JVC indirectly which was against the approval of the MoD. HAL failed to protect its interest in a JVC by not ascertaining the cost of license which led to loss of ₹10.93 crore. Lease rent amounting to ₹5.12 crore was pending recovery from two JVCs.

4.2.1 Introduction

HAL, as part of its operational strategy and risk sharing, had formed 11 Joint Venture Companies (JVCs) in the field of information technology, software development, operation and maintenance of aviation products, manufacturing & trading, avionics & simulators, design and development to facilitate development of new technologies and products and services. Details in respect of the JVCs are given in **Annexure XV**.

4.2.2 Performance of JVCs

Three[12] JVCs were earning profits, one[13] JVC was yet to commence commercial production and the balance seven[14] JVCs had accumulated loss as on 31 March 2014. Against total investment of ₹225.14 crore in 11 JVCs, HAL has already made provision for diminution in the value of investment amounting to ₹49.90 crore made in five[15] JVCs in its annual accounts for the year 2013-14. Details about Paid up capital, HAL share, Accumulated Profit/Loss and Diminution provided are given in **Annexure XVI**.

Audit, besides covering the genesis of the JVCs also covered transactions of HAL with the 11 JVCs during the period 2009-10 to 2013-14 to ascertain whether the requirements were complied while forming the JVCs, objectives of JVCs were achieved, HAL protected its interest while dealing with JVCs and proper mechanism existed to monitor and ensure compliance with shareholders agreement and other regulations.

Audit findings are discussed below:

4.2.2.1 Compliance to requirements for Formation of JVCs

(a) Failure to avail professional services in selection of JV partner and formation of JVCs

DPE guidelines (July 1997)/January 2000) stipulated that the proposals for entering into technology joint ventures must be presented to the Board of Directors in writing and reasonably well in advance with an analysis of relevant factors and quantification of the anticipated results and benefits. It further stipulated that risk factors, if any, must be clearly brought out and that all the proposals, where they pertain to capital expenditure, investment or other matters involving substantial financial or managerial commitments

[12] BAeHAL, Snecma and IRAL
[13] MTAL
[14] SAMTEL, HALBIT, HETL, Infotech, Hatsoff, Tata HAL and IAMPL
[15] HALBIT, HETL, Infotech, Hatsoff and Tata HAL

should be prepared by or with the assistance of professionals and experts and should be appraised by financial institutions or reputed professional organisations with expertise in the areas. The financial appraisal should also preferably be backed by an involvement of the appraising institutions through loans or equity participation. HAL formed nine JVCs subsequent to the said guidelines. Audit observed that HAL had not availed the services of any professional organisation with expertise in the respective areas.

HAL stated (March 2015) that the proposals were duly reviewed by in-house experts in the relevant field and finalized with due Board approval.

The fact remains that non-availing of the services of any external professional experts before entering into the JV agreements as stipulated in the DPE guidelines reflected on the performance of seven JVs which had accumulated losses and provision for diminution was made in five JVCs as discussed above.

(b) Non-compliance with provisions of Companies Act, 1956.

Section 297 of the Companies Act, 1956 stipulates that a company shall not enter into a contract with a private company for sale, purchase or supply of materials in which one of the directors of the company is a director. Further, in the case of company having a paid up capital of not less than ₹1 crore, previous approval of Central Government is also required for such transaction. However, it was observed that approval of HAL Board and Government of India was not obtained prior to entering into the contract in March 2008 for sale/service in respect of two JVCs viz., HETL and Hatsoff though one of the directors of HAL was also the director in the JVCs at that time. Audit observed that

- HAL obtained post facto approval of the Board for the contract entered into with HETL after 18 months in July 2009 and that of Government of India in September 2009.

- In respect of contract with Hatsoff, HAL Board was informed only in March 2012 *i.e.* after 4 years.

HAL stated (March 2015) that as regards Hatsoff, the Business plan inter alia, contained provision to source Cockpit from HAL and also for entering into supply agreement with Helicopter Division, there was no requirement to obtain approval of the Board again under Section 297 of the Companies Act, 1956. However, the Board was appraised (March 2012) of the above transaction.

The reply is not acceptable as paid up capital of HAL was more than ₹1 crore and prior approval of Central Government was required for such transactions as stipulated in the Companies Act. Further, the Business Plan spelt out the strategy, was not final and hence, prior approval of the Board was required to be obtained before entering into contracts as per provisions of Companies Act. The reply was silent regarding HETL.

(c) Overall monitoring of the performance of the JVCs

One of the key features behind success of the joint venture and achievement of the objectives of the partners is monitoring the progress of the alliance on a regular basis. Inadequate monitoring might lead to loss of revenue / return on investment made in joint venture and non-achievement of intended benefits to the partners. DPE guidelines, *inter alia*, stipulated (October 1997) that the Public Sector Enterprise (PSE) will establish transparent and effective systems of internal monitoring including the establishment of an Audit committee of the board.

Audit review of the agenda and minutes of the HAL Board (2007-08 to 2013-14) and the Audit Committee revealed that certain significant issues pertaining to the JVCs were not brought to the notice of the Board / Audit Committee of HAL in their meetings as detailed below:

- The Audit Committee only reviewed the orders placed on single tender basis to the JVCs; it did not oversee/monitor any other activities relating to the JVCs.
- Board after considering the proposed business plan of Infotech HAL Limited (a JVC) suggested (February 2007) that in future, SWOT analysis of the proposed JV partner be conducted and put up along with such proposals. However no such analysis was put up to the Board in respect of six JVCs which were formed subsequent to the Board suggestion.
- Board suggested (April 2007) formation of working group to monitor the progress of JVCs and submission of half yearly report to HAL board by the working group for better monitoring. Audit observed that performance of the JVCs was not put up to the Board regularly.
- Corporate Office of HAL issued (August 2009) guideline for formation of nodal agency for compliance to the provisions of Companies Act in respect of disclosure on related parties, disclosure/approval for cases where director's interest was involved and any other statutory provisions. HAL was yet to set up (March 2015) the nodal agency.

HAL stated (March 2015) that analysis in terms of estimated benefits, business potential, etc., was carried out in respect of the JVCs for selection of partners. HAL had an Audit Committee which reviews the placement of orders on Single Tender basis and all related party transactions were put up to the Audit Committee based on the corporate guidelines. HAL also stated that performance of the JVCs was monitored on a monthly basis and report was put up to Management. It added that representatives of the JV partners monitor and exercise control over the JVCs.

The fact remains that the Audit Committee did not oversee/monitor any other activities relating to the JVCs as stipulated in the DPE guidelines. Reply regarding putting up the report to the Board was not factual as Audit observed that no such reports were placed before the Board regularly.

4.2.3 Status of achievement of intended objectives of the JVCs

Audit reviewed whether the objectives for which the JVCs were formed were achieved and it was observed five JVCs had not achieved the objectives for which they were formed. The individual cases are discussed below:

4.2.3.1 BAeHAL Software Limited

The JVC was formed (February 1993) in association with British Aerospace Public Limited Company, U.K (BAe) (49 *per cent*) and HAL (40 *per cent*). The balance 11 *per cent* is presently (August 2015) held by BAeHAL Employees Welfare Trust.

Non-compliance with EOU status

This JVC was formed as a 100 *per cent* Export Oriented Unit (EOU) for development and marketing of computer software which was not related to the core business of HAL. While submitting the proposal for formation of JVC to MOD, HAL stated (1991) that there would be benefits through foreign exchange earnings as the JVC was 100 *per cent* EOU and the objective of JVC was to operate in the growing international market of high technology software. Audit observed that the export turnover which ranged between 90 *per cent* and 100 *per cent* of the total turnover up to 2003-04 decreased to less than 50 *per cent* of the total turnover from 2004-05. It was further observed that the domestic sales constituted 63 *per cent* of total sales. JVC's sales to HAL constituted 87 *per cent* of domestic sales during the period from 2004-05 to 2013-14. Therefore, HAL despite being a minor shareholder indirectly as brought out in para 4.2.7.1 was extending undue support to JVC. With low export turnover, JVC failed to achieve the objective of operating in growing international market.

HAL stated (February 2015) that as per rules, EOU Company can have permitted level of domestic sales and the JVC’s export satisfies the requirement/obligation as per legal undertaking given to Software Technology Park of India.

The reply is not acceptable since Foreign Trade Policy 2004-09 and 2009-14 stipulate that the entire production of EOU, Electronics Hardware Technology Parks, Software Technology Parks and Bio-Technology Parks shall be exported subject to the condition that for goods and services, including software units, sale in DTA in any mode, including on line data communication, shall be permissible up to 50 *per cent* of the FOB value of exports and/or 50 *per cent* of foreign exchange earned, where payment of such services is received in foreign exchange (FE). However, this has not been fulfilled by the JVC since domestic sales constituted 63 *per cent* of total sales during the period from 2004-05 to 2013-14. Under the circumstances, the JVC has violated the above rule by making the sale in DTA beyond the permissible limit. Thus, even though HAL set up a JVC for operating in the area which was not related to the core business of HAL, the main objective of the JVC viz. drawing benefits through foreign exchange earnings was not achieved due to low export turnover of the JVC.

4.2.3.2 HAL Edgewood Technologies Pvt. Ltd. (HETL)

The JVC was formed (April 2007) with equity participation of HAL, M/s Edgewood Ventures, LLC (Limited Liability Company), California, USA (Edgewood) and M/s Edgewood Technologies Pvt. Ltd. (EdgeTech), Bengaluru in the ratio of 50:26:24 respectively for development and manufacture of 3D technology based products for airborne use. Audit observations regarding the JVC are as under:

(i) Non-achievement of intended objectives: Though the Board desired that the profile of Edgewood and EdgeTech (formed in November 2005 and April 2006 respectively) indicating their financial and technical capabilities as well as confirmation regarding approval of Government of France for transfer of technology to JVC be furnished, Audit observed that no financial and technical details were furnished by the partners on the ground that revenues were not shown in its books of Edgewood as it was a limited liability company. Audit further observed from the HAL Board Note according approval for setting up of the JVC that 3D technology was patented by 3D Plus, France (an associate of the Edgewood) and the JVC would enter into an agreement with 3D Plus. As per the Annual Report of the JVC for the year ended 31 March 2014;

- the JVC entered (December 2007) into an agreement with 3D Plus for transfer of technology and paid TOT fee of ₹1.17 crore to 3D Plus and also incurred ₹0.55 crore towards Consultancy Fees on the Project.;
- as the agreement did not contain any time frame for setting up of the manufacturing facilities, the JVC entered (March 2011) into an amendment deed with 3D Plus agreeing to setup the manufacturing facilities not later than 31 December 2012 plus additional six months. However, the JVC did not set up the required manufacturing facilities within the date agreed to in the amendment deed;
- 3D Plus served (May 2013) a notice of termination of the Licence Agreement to the JVC and sought ceasing of use of all the confidential information of 3D plus received by the JVC;

Audit observed (December 2014) from the records that the JVC was in the process of discussion with 3D Plus for re-negotiation of the terms of licence.

Therefore, the main objective of formation of JVC viz. development and manufacture of 3D technology based products for airborne use was not achieved due to non-setting up of facilities by the JVC and consequent termination of the Licence Agreement by the partner.

HAL stated (March 2015) in reply that information on experience of the partnering companies was not available in records. HAL also stated that the

JVC was established to set up design facility for absorption of 3D technology but later shifted its focus on Open System Architecture Mission Computer (OSAMC) and in the present context, the relevance of the technology and market demand had to be assessed.

The reply confirms that the JVC was formed without verifying the technical and financial details of the JV partners and without assessing the relevance of the technology and market demand as stipulated in DPE guidelines.

(ii) Awarding of DARIN III Contract on Single tender basis: Audit observed from HAL's Board Note (September 2006) that Digital Map Generator (DMG) was a mandatory requirement for the present generation aircraft and the same was being imported. Considering the substantial requirement of indigenous DMG for all futuristic upgrade and new aircraft, HAL Board had approved (September 2006) proposal for Technology Development (TD) of Open System Architecture Mission Computer (OSAMC) with embedded DMG to be funded by HAL with financial outlay of ₹9.13 crore and to be completed within 18 months (i.e. by March 2008) from the date of sanction. HAL placed (March 2008) purchase order (PO) on the JVC on single tender basis for development of Hardware for OSAMC with embedded DMG at their quoted price ₹1.71 crore (excluding all taxes and duties). The scope of work included specifications finalisation, preliminary design review, engineering model delivery, hardware test delivery, and safety of flight unit delivery. As per the PO, the scheduled delivery of December 2008 was subsequently extended (February 2009) to December 2009. The JVC, however, had not delivered the product (March 2015).

Meanwhile, MoD entered (December 2009) into a contract with HAL for upgrading the Jaguar aircraft to Display Attack Ranging and Inertial Navigation Avionics (DARIN) - III[16] Standard of Preparation (SOP).

[16] DARIN III would be an operationally improved version of DARIN II with additional features like Multimode ELTA Radar, Glass Cockpit with Dual SMD and EFIS, Open System Architecture Mission Computer, Solid Stage Digital Video Recording Systems and additional functionalities relating to display and data handling.

According to the Contract, Final Operational Clearance (FOC) had to be achieved by June 2013. OSAMC was part of DARIN-III.

Even before the completion of Technology Development of OSAMC, HAL placed (July 2010) one more order on JVC on single tender basis for 11 numbers of Mission Computers for prototype development for DARIN III and full qualification testing and certification (QT&C) at ₹12.63 crore to be delivered by March 2012.

Due to non-availability of OSAMC hardware unit from the JVC, Mission and Combat System Research & Design Centre (MCSRDC) Division of HAL proposed (June 2013) for alternate development of six Mission Computers for DARIN III programme from Defence Avionics Research Establishment (DARE), DRDO at cost of ₹8.60 crore.

Audit observed (December 2014) that only three units were delivered by the JVC in October 2013.Development of prototype units was under progress at DARE (December 2014).

HAL replied (March 2015) that

- JVC partner Edgewood had developed many products through their companies in USA and entrustment of the project to JVC would be beneficial to HAL by way of technology and source codes besides flexible upgradations/changes to technology.
- JVC was chosen for this order as its President had good experience in design and development of avionics domain products and this would help immensely in the product development. It also stated that in view of the confidence generated by supply of OSAMC Engineering unit and the progress of Safety of Flights (SOF) testing, HAL released the second order on JVC after Board's approval.

- OSAMC development involved a highly intensive and complex technology, the technical issues arising during development were being resolved in a phased manner and alternate action was taken as a risk mitigation plan for development of OSAMC.

Reply is not acceptable as the JVC had not supplied (March 2015) the Hardware for OSAMC with embedded DMG. Audit observed that Quality Audit Report[17] had pointed out inadequate expertise to handle the project, lack of infrastructure for in house test facilities, non availability of approved automated test equipment and outsourcing of hardware design, fabrication and assembly, etc.,

The fact remains that due to non-assessing the infrastructure available and the technical limitations of the JVC before awarding the work, the FOC of DARIN-III project has not been achieved (March 2015) though the scheduled date was June 2013.

(iii) Outstanding dues from the JVC: An amount of ₹ 8.26 crore was due from the JVC on account of the following:

a) HAL Board approved (July 2009) allotment of 6780 sq. ft. of land to JVC located at HAL main factory premises at a lease rent of ₹ 2.31 lakh per month. The JVC defaulted in payment of lease rent from September 2008 onwards and by July 2014, the dues recoverable on account of lease rent from the JVC stood (March 2015) at ₹2.21 crore.

b) Audit further observed that an amount of ₹5.97 crore being the unadjusted advance granted to JVC between May 2008 and January 2014 for the OSAMC contract was still pending (March 2015).

[17] Undertaken in May 2012 by a team constituted (March 2012) by HAL and comprising of representatives from Centre for Military Airworthiness and Certification (CEMILAC), HAL, Directorate General of Aeronautical Quality Assurance (DGAQA), Bharat Electronics Limited (BEL) and DARE

c) HAL deputed engineers to HETL on payment basis since engineering resources of HETL was highly depleted. An amount of ₹82.14 lakh relating to salary of engineers deputed by HAL was also pending recovery from the JVC (March 2015).

HAL stated (March 2015) that though supplies were due, JVC could not supply as it was cash strapped and agreed with audit observation on the outstanding dues from the JVC.

The fact remains that HAL did not consider the technical and financial limitations of the JVC before awarding the contract of OSAMC. Due to non-adherence to the delivery schedule of OSAMC project by the JVC, the DARIN-III programme was affected and also HAL's funds were blocked.

4.2.4 HALBIT Avionics Private Limited (Halbit)

4.2.4.1 Supply of EFIS by JVC

The JVC was formed (May 2007) with equity participation of HAL (50 *per cent*), Elbit Systems Limited, Israel (26 *per cent*) and Merlinhawk Associates Private Limited, Bengaluru (24 *per cent*) for marketing, designing and integrating of airborne avionics products and systems. HAL placed (September 2011) order for three units of Engine and Flight Instrumentation System (EFIS) at a cost of ₹8.94 crore on the JVC[18] as part of Development phase to be supplied by October 2012. EFIS was required for DARIN-III programme. Audit observed from the records that the JVC supplied three units by November 2014 which had certain technical snags viz. poor performance of Air Data Attitude & Heading Reference System (ADAHRS) during dynamic conditions. Audit further observed from the Minutes of the Meeting of Jaguar DARIN-III Upgrade Programme held in June 2014 that it was decided that the

[18] On Single Tender Basis

alternative EFIS systems if any should be identified and integrated at the earliest.

HAL stated (March 2015) that ADAHRS was performing during rig testing but during aircraft flight testing results were out of tolerance. The flight trials were in progress for detailed performance evaluation. HAL further stated that though the progress was not good, solutions were emerging and hence the process of working with JVC was not discontinued.

The fact remains that placement of the order on JVC on single tender basis for a time-bound programme like DARIN-III upgrade without any previous experience with the JVC was not justified. Due to delay in supply of the units by the JVC, the FOC of DARIN-III project has not been achieved (March 2015) though the scheduled date was June 2013.

4.2.5 HATSOFF Helicopter Training Limited (Hatsoff)

The JVC was formed (January 2008) with equity participation of HAL (50 *per cent*) and M/s Canadian Aerospace Electronics Inc (CAE) (50 *per cent*) for providing and marketing military and civilian helicopter pilot flight training services. Audit observed the following:

4.2.5.1 Non-obtaining of commitment for usage of the facilities: As per the Business Plan, HAL was required to provide Land, Building with all related support infrastructure, structure and cockpits for three variants of DHRUV[19] (Army – IAF, Navy – Coast Guard and Civil Variants), While according 'in principle' approval (July 2006) to the proposal for the project 'HATSOFF' (Helicopter Academy to train by simulation of flying), HAL Board decided to take up with the Services (IAF, Army and Navy) and other operators for firm and long term commitments to use the simulator facility. Audit observed from the HAL Board Note (July 2007) that while the Indian Navy committed to use

[19] Advanced Light Helicopter

the facilities, no commitments were received from Indian Army and Air Force. The business plan of the JVC projected 18.97 *per cent* of the business from Navy and 60.85 *per cent* from Army and Air Force simulators. Though no commitment for usage of the facilities was received from Army and Air Force, HAL invested in the JVC. As the main income as per the JVC's business plan was from Army and Air Force simulators, HAL should have ensured the commitment of Indian Army and Air Force for utilisation of facilities before going ahead with the investment in the JVC. Audit also observed that the naval simulator was shelved (March 2012).

4.2.5.2 Extra expenditure due to non-ascertainment of cost of Licence: JVC entered into an agreement (September 2008) with HAL for supply of two fully populated cockpits of ALH and aircraft data licence at a total cost of USD million 7.27 (₹32.72 crore) which included ₹3.37 crore towards cost of acquiring rights and licence fee for Line Replaceable Units (LRUs) of Utility version and Weapon System Integrated (WSI) version of ALH. HAL had to procure the licences for the LRUs version as well as WSI version. Audit observed that HAL continued with the procurement of licences even though no commitments were received from Army and Air Force and the expenditure towards rights and licences was ₹14.30 crore after negotiation with M/s Israel Aerospace Industries, Israel (the vendor who was to provide the rights and licences for the utility version of ALH). Failure on the part of HAL in ascertaining the rates of licence before entering into an agreement with the JVC led to additional expenditure of ₹10.93 crore (₹14.30 crore – ₹3.37 crore) excluding cost of licence for WSI version which had not been ascertained.

HAL stated (March 2015) that the non-achievement of the projected business cannot be considered as a failure on HAL's part and HAL may extend support to the JVC. HAL further stated that it is not the responsibility of HAL to secure order for the JVC, Installation of Simulator was to be done by JVC and not by HAL. HAL further stated that it expected/considered that most of the supplier**s** involved would agree to give permission to use their LRUs at nominal cost and 28 out of 36 suppliers agreed to permit use of the LRUs and consent was obtained from three out of the balance eight suppliers for the LRUs of utility version at a cost of ₹14.30 crore against the estimated funds of ₹3.37 crore. It also stated that for WSI version, the extent of additional expenditure towards resolving rights and licence fee issue was yet to be analysed (March 2015).

Reply confirms that HAL had not done due diligence before entering into an agreement with JVC. Thus, investment in JVC without obtaining firm commitment from the Defence Services and subsequent shelving of Navy simulator resulted in non achievement of the intended benefits by JVC besides additional expenditure of ₹10.93 crore to HAL due to acquisition of rights and licences for LRUs.

4.2.5.3 Undue Financial assistance: DPE guidelines specify that all the proposals, where they pertain to capital expenditure, investment or other matters involving substantial financial or managerial commitments should be prepared by or with the assistance of professional and experts. However, without seeking the assistance of external professionals and experts, HAL released (March 2012 and June 2014) two loans of ₹12.10 crore to the JVC due to its poor financial position. The loan of ₹5.60 crore and interest of ₹58.42 lakh (₹66.64 lakh less TDS) were converted to equity in March 2013 and July 2013 respectively. As the JVC was performing far below projections, HAL extended repeated financial assistance to the JVC.

HAL stated (March 2015) that DPE Guidelines of October 1997 talks about Capital Expenditure and Investments and providing loans of ₹6.50 crore does not fall under this category.

The reply is incorrect since the said DPE guidelines address all matters involving substantial financial or managerial commitments with respect to the JVCs. Extending financial assistance to the JVC was not in HAL's interests.

4.2.5.4 Outstanding dues from JVC: JVC had also not paid lease rent to HAL for the land leased to JVC amounting to ₹2.89 crore for the period from April 2011 to March 2015.

HAL replied (March 2015) that the JVC had not paid the lease rent due to financial crisis.

4.2.6 Indo Russian Aviation Limited (IRAL)

4.2.6.1 Over dependence on HAL

The JVC was formed (September 1994) with equity participation from HAL (48 *per cent*), ICICI (5 *per cent*) and three Russian[20] partners (47 *per cent*) for undertaking supply of aviation equipment, providing services for repair and overhaul and ensuring technical and engineering support for exploitation of the aviation equipment and other related activities in India and abroad except former Republics of USSR**.** Audit observed from the Quality Audit Report[21] (QAR) that the JVC engaged only in trading activities *i.e.* supply of accessories, aggregates and spares, etc., and HAL was the major customer contributing upto 95 *per cent* of the turnover of the JVC during the period 2007-13. Further, QAR also pointed out that the JVC did not have any access to technology for engaging in other objects as defined in the Memorandum of Association and efforts were mainly focused on increasing the JVC business through trading activities.

HAL stated (March 2015) that IRAL was supporting HAL in supply of spares and ROH of LRUs of Russian Origin especially where major suppliers like Rosoboronexport did not support HAL as volumes were low and HAL was deriving the benefit of the JVC in this way.

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[20] Federal State Unitary Enterprise, RAC MiG (31 *per cent*), Ryazan State Instrument Plant (10 *per cent*) and Aviazapchast (6 *per cent*)

[21] Carried out (December 2013) at the instance of HAL by a team comprising of representatives of HAL and DGAQA

Audit further observed that the total turnover of the JVC during the period from 2007-08 to 2013-14 was ₹360.59 crore of which domestic sales was ₹347.44 crore (96 *per cent*) and export sales was ₹13.15 crore (4 *per cent*). Further, out of domestic sales of ₹347.44 crore, sales to HAL was ₹343.88 crore (99 *per cent*). This confirms the fact that the JVC was functioning only as a trading company and also was over dependent on HAL.

4.2.7 Non-protection of HAL's interest

HAL had invested in the JVCs and had appointed nominees on the Board of JVCs to monitor their performance. However, change in the shareholders made HAL a minority shareholder indirectly in one JVC was not in HAL's interest as discussed below:

4.2.7.1 BAeHAL Software Limited

Prior to giving approval for formation of JVC, MoD had observed (February 1991) ab-initio that there was no direct benefit to HAL from the JVC either by way of capacity utilization or transfer of technology as export earnings would accrue only to the JVC. It further stated that it appears that British Aerospace Public Limited Company (BAe) are keen that it shall remain a private company so that it does not come under the purview of the Government/Parliament and major exports earning of the proposed JVC seems to be only from captive orders from British Aerospace and as such the benefits envisaged in formation of the JVC have to be viewed with caution. However, HAL assured (February 1991) that it would exercise adequate control over the policy decisions as a majority share holder (HAL 49 *per cent* and Indian Financial Institution 11 *per cent*) and would be subject to rules similar to HAL. 11 *per cent* share of Indian Financial Institution was held by UTI when the JVC was formed. The shares held by UTI were transferred (March 2002) to BAeHAL Employees Welfare Trust. BAeHAL Employees Welfare Trust had three trustees viz. one chairman (HAL nominee) and two directors (BAe nominees). Due to BAe having more number of trustees, the Trust was *de facto* controlled by BAe only. Consequently BAe was a major shareholder indirectly in the JVC (by virtue of 40 *per cent* share in the JVC and *de facto* control through the Trust which had 11 *per cent* shareholding in the JVC). Thus, this was in violation to the assurance given to the Government.

HAL did not furnish any reply to the audit observation.

4.2.8 Conclusion

The JVC's were formed without availing the services of any professionals and experts. Five JVCs did not achieve the objectives for which they were formed. HAL failed to protect its interests while dealing with JVC's and also had no effective monitoring mechanism to oversee the operational performance despite being a major shareholder/equal shareholder in the JVCs.

4.3 Acceptance of contract for DARIN-III with fixed delivery schedule led to liquidated damages

Acceptance of a design and development contract with fixed delivery schedule without resorting to change orders provided for in the contract resulted in recovery of liquidated damages of ₹7.19 crore as of March 2014 by the customer.

MoD entered into (December 2009) a contract with M/s Hindustan Aeronautics Limited (HAL) for upgrading the Jaguar aircraft to Display Attack Ranging and Inertial Navigation Avionics System (DARIN) - III[22] Standard of Preparation (SOP) at a package price of ₹3113.02 crore as firm and fixed cost. The scope of the contract included trial modification and certification of three DARIN-I aircraft (a single seat, a maritime and a two seat

[22] DARIN III would be an operationally improved version of DARIN II with additional features like Multimode ELTA Radar, Glass Cockpit with Dual SMD and EFIS, Open System Architecture Mission Computer, Solid Stage Digital Video Recording Systems and additional functionalities relating to display and data handling.

Jaguar aircraft) up to Final Operational Clearance (FOC) standard at a cost of ₹411 crore and series modification of 58 Jaguar aircraft to FOC standard at a cost of ₹2702.02 crore. The contract stipulated levy of liquidated damages (LD) at 0.5 *per cent* of the value of delayed/undelivered stores/services for delay of every week or part thereof subject to a maximum of 5 *per cent*. The contractual timelines were:

Milestone	Details	Cumulative timeline
1	Project sanction (21 December 2009)	
2	Preliminary Design Review (PDR) was to be completed by 20.02.2010	2 months
3	Critical Design Review (CDR) to be completed by 20.09.2010	9 months
4	Commencement of the aircraft integration by 20.04.2011	16 months
5	First flight of prototype aircraft by 20.10.2012	22 months
6	Initial Operational Clearance (IOC) of Single Seat aircraft by 20.12.2012	36 months
7	Final Operational Clearance (FOC) by 20 .06.2013	42 months

Thus, according to the contractual commitment, FOC had to be achieved in 42 months of the project sanction which was June 2013.

The Contract stipulated that preliminary design review and critical design review would be achieved in co-ordination with IAF and thus it was inherent in the contract that there could be changes to the SOP and technical requirements. Clause 6 of the Contract clearly stated that though the specifications and statement of work are mentioned in the annexure to the Contract, HAL was to carry out the technical upgradation/alterations in design, drawings and specifications in consultation with the customer. It was also provided that any major change in technical specifications and its time and cost implications would be only through prior written agreement of both the parties through a Change order. However, HAL did not resort to change orders though there was major change in technical specifications which impacted the time and cost.

Audit observed that even after 60 months (December 2014), HAL had achieved only the fifth milestone of first flight of one prototype (Maritime) aircraft which should have been achieved in 22 months (*i.e.* by October 2012). Audit also observed that though HAL had 16 months available for procurement of all the parts/components required for commencement of aircraft integration by April 2011, there were delays ranging from eight to 24 months in procurement process of Avionics Integration Rig (AIR) and three systems[23] which were to be fitted on to the aircraft. The delivery schedules prescribed for supply of the three systems by HAL itself were beyond April 2011. As the contract timelines were not adhered, IAF deducted (2012-13) ₹4.11 crore towards liquidated damages for delay in achievement of the fifth milestone and HAL, considering further delays, had provided for ₹3.08 crore towards liquidated damages.

Management stated (February 2014/December 2014) that there were changes in SOP and configuration of design architecture considering the futuristic programmes of IAF which led to delay in freezing of technical requirements and finalisation of new systems in coordination with IAF and procurement. It also stated that the contract amendment would be taken up when the design and configuration would be mature enough to estimate the impact properly.

The reply has to be viewed in the context that HAL had committed to a fixed delivery schedule being aware of the fact that there could be changes in SOP as well as delay in freezing of technical specifications by IAF which would impact the committed delivery schedule. Acceptance of a fixed delivery schedule without freezing of SOP and not working through change orders

[23] Telemetry, smart multi function display and engine flight instruments system.

resulted in liability of ₹7.19 crore towards liquidated damages as on March 2014 and has potential to cause further losses to HAL with the progress of the contract. This decision of HAL was against its financial interests.

New Delhi **(B.P.YADAV)**
Dated: 18 November 2015 **Principal Director of Audit**
Air Force

Countersigned

New Delhi **(SHASHI KANT SHARMA)**
Dated: 23 November 2015 **Comptroller and Auditor General of India**