

India

Neutral (no change)**Highlighted Companies****Hindustan Aeronautics Ltd****ADD, TP Rs2970, Rs2534 close**

The Indian Air Force increasing its squadron numbers provides opportunities for HAL. The company's order pipeline remains solid, but the order finalization timeline is critical to maintain the growth momentum in FY23F-24F.

Bharat Electronics Ltd**ADD, TP Rs100, Rs95 close**

Electronics accounts for around 40% of modern warfare leading platforms where Bharat Electronics is a dominant player in India. In our view, its strong order backlog and the traction in exports will drive near-term sales, while large orders in the pipeline will aid medium-term growth.

Summary Valuation Metrics

P/E (x)	Mar23-F	Mar24-F
Hindustan Aeronautics Ltd	16.59	16.27
Bharat Electronics Ltd	23.31	21.51

P/BV (x)	Mar23-F	Mar24-F
Hindustan Aeronautics Ltd	3.68	3.15
Bharat Electronics Ltd	5.1	4.5

Dividend Yield	Mar23-F	Mar24-F
Hindustan Aeronautics Ltd	1.58%	1.62%
Bharat Electronics Ltd	1.87%	2.03%

Aerospace & Defence

Aero India 2023 – A sky full of opportunities

- Aero India 2023 witnessed the participation of over 98 countries where around 809 companies showcased their aerospace and defence capabilities.
- The huge participation at the event, especially the 'Bandhan' ceremony, witnessed the forging of 266 partnerships worth around Rs800m.
- Higher capital defence outlay and the indigenization push bode well for the companies in the defence sector. Retain ADD rating on HAL & BEL.

Showcased India as a global aerospace player

Prime Minister Mr. Narendra Modi inaugurated the 14th edition of Aero India at Air Force Station, Yelahanka in Bengaluru on 13 Feb 2023. In line with the 'Make in India, Make for the World' vision, the event aimed to promote the export of indigenous air platforms like Light Combat Aircraft (LCA)-Tejas, HTT-40, Dornier Light Utility Helicopter (LUH), Light Combat Helicopter (LCH) and Advanced Light Helicopter (ALH).

'Bandhan' ceremony witnessed the forging of 266 partnerships

The ceremony saw the forging of 266 partnerships including 201 Memorandum of Understandings or MoUs, 53 major announcements, nine product launches and three Transfer of Technology (ToT) agreements worth around Rs800bn.

75% of defence capital outlay earmarked for domestic industry

India's Defence Minister Mr. Rajnath Singh announced that 75% of the defence capital outlay (~Rs1tr) has been earmarked for the domestic industry in FY23-24. The Ministry of Defence (MoD) has been allocated a total budget of Rs5.9tr for FY23-24. The capital outlay pertaining to modernization and infrastructure development has been increased to Rs1.6tr.

The path to squadron strength of 42 via indigenous fighter jets

India is expected to induct 470 indigenously designed and developed fighter jets in the coming decade. India will be retiring its ageing fleet comprising MiG-21, Jaguar, Mirage – 2000 and MiG-29 jets in a phased manner and will be replaced/further increased by indigenous platforms like LCA Tejas Mk1A and 2, AMCA, and TEDBF.

India-US defence cooperation

The presence of US fighter jets at the event signifies the growing strategic importance, but we feel it was not a sales pitch as India is unlikely to be interested in buying them currently due to several reasons like high cost, ToT issues and also the US export control laws may restrict their sale. India and the US need to cut the red tape further to strengthen their ties.

Maintain Neutral rating

We believe defence public sector undertakings like HAL, BEL and BDL are set to benefit and are better placed to exploit the opportunities arising from a strong order pipeline and rising indigenization with a focus on modernization of the armed forces and export growth. However, due to the sharp run-up in defence PSU share prices in YTDFY23, we remain cautiously optimistic and retain our Neutral stance on the sector.

Analyst(s)**Dipen VAKIL**

T (91) 22 4161 1551

E dipen.vakil@incredcapital.com



Aero India 2023 – A sky full of opportunities

Showcased India as a global aerospace player ►

Prime Minister Mr. Narendra Modi inaugurated the 14th edition of Aero India at Air Force Station, Yelahanka in Bengaluru on 13 Feb 2023. The five-day event showcased India's growth in aerospace and defence capabilities as it displayed indigenous equipment/technologies and forged partnerships with foreign companies, in line with the 'Make in India, Make for the World' vision. **The event was meant to promote the export of indigenous air platforms like Light Combat Aircraft (LCA)-Tejas, HTT-40, Dornier Light Utility Helicopter (LUH), Light Combat Helicopter (LCH) and Advanced Light Helicopter (ALH).**

Aero India 2023 witnessed the participation of 98 countries which includes the defence ministers of 32 countries, air force chiefs of 29 countries and 73 CEOs of global and Indian original equipment manufacturers or OEMs. As many as 809 companies showcased their aerospace and defence capabilities at the event.

The major exhibitors include Airbus, Boeing, Dassault Aviation, Lockheed Martin, Israel Aerospace Industry, BrahMos Aerospace, Army Aviation, HC Robotics, SAAB, Safran, Rolls Royce, Larsen & Toubro, Bharat Forge, Hindustan Aeronautics (HAL), Bharat Electronics (BEL), Bharat Dynamics (BDL), and BEML.

'Bandhan' ceremony saw the forging of 266 partnerships ►

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Figure 1: Products launched at Aero India 2023

Company name	Description
Astra Microwave Products Ltd	Software Defined NAVIC / GPS receiver module Counter Drone Radar (based on technology from DRDO)
Bharat Electronics Ltd	HF-SDR Radio - An advanced software defined radio Goniometer : measures elevation angles for computation of target co-ordinates. Central Unit for portable radar: Designed and developed to indigenize and
Bharat Dynamics Ltd	JISHNU - A drone-delivered missile VLSRSAM (Vertically Launch Short Range Surface to Air Missile) SAL Seeker ATGM for BMP II : Semi-Active Laser Seeker based Anti-Tank Guided Missile for BMP-II is a subsonic missile
Munitions India Pvt Ltd	9 mm sub-sonic ammunition
ideaForge Technology Ltd	BlueFire Touch (BFT) - Ground Control Station (GCS) software

SOURCE: INCRED RESEARCH, COMPANY REPORTS

Figure 2: Major announcements by BEL at Aero India 2023

Bharat Electronics Ltd	
Company name	Description
Elbit Systems, Sigint-Elisra Ltd (Israel)	For Instrumented Electronic Warfare Range (IEWR) to be supplied to Indian Air Force. Technical collaboration agreement (TCA) for Unified Receiver Exciter Processor (UREP) of D29 systems.
Thales Reliance Defence Systems	Frame supply agreement for manufacture and supply of transmit and receive (TR) Modules, Radar LRU's and Micro Modules.
SAAB Sweden	Master development agreement for manufacture and supply of shelters.
Arpege SAS (France)	Teaming agreement to cooperate for Global Personal Communication System (GMPCS) monitoring solution for the ongoing Intergrated Electronic Warfare (IEW) programs for deserts and plains.
IAI Israel	Cooperation for domestic manufacture and supply of LORA Weapon System for the Indian Tri-services.
Bharat Earth Movers Ltd	Association with BEML to joint manufacture of LRSAM Program.

SOURCE: INCRED RESEARCH, COMPANY REPORTS

Figure 3: Major announcements by HAL at Aero India 2023

Hindustan Aeronautics Ltd	
Company name	Description
Safran Helicopter Engines	Workshare agreement for formation of JV for design, development, manufacture and life time support for the future 13-ton Indian Multi-Role Helicopter and its naval version deck based multi role helicopter (DBMRH).
Barij Dynamics LLC (Al Tariq), Abu Dhabi	To explore equipping of HAL's Light Combat Aircraft (LCA) with EDGE's guided weapons and offering to the Indian Air Force (IAF).
Hensoldt, Germany	Design, development and upgrade of obstacle avoidance system (OAS) for ALH platform and setting up manufacturing and repair facility.
Hensoldt, South Africa	Exploring collaboration to co-develop and co-produce stabilized multi-sensor airborne electro-optics Gimbal for Indian rotary and unmanned platforms and for future exports.
General Atomics Aeronautical System	HAL will provide MRO support for turbo-prop engine which power the MQ-9B Guardian High Altitude Long Endurance (HALE) Remotely Piloted Aircraft System (RPAS) manufactured by General Atomics.
Argentinian Air Force	Supply of spares and engine repair of legacy two-tonne class helicopters.
General Electric (GE) Marine	MoU to explore assembly, inspection and testing of the LM500 Marine Gas Turbine.
Pawan Hans Ltd	MoU to explore opportunities in MRO of airframe, landing gears and components of Dauphin Helicopters owned by Pawan Hans.
Skygear Aviation Pvt Ltd	MoU for collaboration on design, development & manufacture of UAV systems for 10 to 200 kgs payload using Drone Copter.
Elta Systems, Israel	MoU for cooperation on future Business in Maritime Patrol Radar (MPR) for Indian Platforms.
Saarloha Advanced Materials & Bharat Forge Ltd	Collaboration of indigenous development and manufacturing of aerospace grade metallic raw materials for Indian military applications.

SOURCE: INCRED RESEARCH, COMPANY REPORTS

Figure 4: Major announcements by BDL at Aero India 2023

Bharat Dynamics Ltd	
Company name	Description
Thales (Belgium)	Setting up manufacturing facilities for Laser Guided Rocket and its major components in India for Indian defence forces and future requirements of Export markets jointly with Thales.
EDGE Group (Al Tariq) - Abu Dhabi	To jointly produce the all-weather, day/night, long-range precision guided munition (LR-PGM) kits in India.
Bultexpro Ltd, Bulgaria	Setting up the manufacturing facilities for 122mm GRAD BM ER and NON ER rockets in India (including ToT).
Main Arrow LLC (UAE)	Exploring possibility to work on the TJ1000 Turbojet engine technology for Drones/Missiles for export market.

SOURCE: INCRED RESEARCH, COMPANY REPORTS

Figure 5: Other major announcements at Aero India 2023

Bharat Earth Movers Ltd	
Company name	Description
Excalibur Army spol. s.r.o., Czech Republic	Non Disclosure Agreement (NDA) for overhauling and manufacturing of V46-6 Engine.
Tata Advanced Systems Ltd	NDA to explore opportunities for HMV vehicle & sub-systems for mounting 155mm x52 Cal Truck mounted howitzer.
Aeronautical Development Agency (ADA)	Association in design and development of GHE/GHEs, manufacture of modules and sub-modules, mechanical systems for LCA Mk 2 program.
Other major announcements	
Company name	Description
MIDHANI	Signed 11 MoUs with HAL, HSL etc. to expand aerospace and naval materials, joint research & development, exports healthcare and training. Value could be around Rs5-6bn from these MoUs.
PTC Industries	MoU with Dassault Aviation to evaluate possibility of purchasing ingots, billets, rods, bars, components, casting, spares in titanium, super alloy, and other critical materials for aerospace application.
Garden Reach Shipbuilders & Engineers	Exploring potential cooperation with HAL in indigenisation of various grade of raw materials (steel, titanium and super alloy), casting components and sub-system for aero engine for MiG and Sukhoi aircrafts.
	Rolls-Royce Solutions GmbH: License production with localization of the MTU 16V4000M73L engine.

SOURCE: INCRED RESEARCH, COMPANY REPORTS

The path to squadron strength of 42 via indigenous fighter jets ➤

Recent media reports and interviews emphasized on the government's plan about its Mission 470. As a part of this, India is expected to induct 470 indigenously designed and developed fighter jets in the coming years. This will increase the squadron strength of the Indian Air Force or IAF & the Indian Navy and reduce the dependency on foreign countries such as Russia & France.

IAF's current fleet overly comprises imported jets like Sukhoi-30MKI, Mirage 2000, MiG-29, Jaguar, MiG-21, Rafale, and very few indigenous jets (Tejas Mk1).

Figure 6: Squadron strength of India's armed forces

Aircraft	Squadrons (2022-23)	Squadrons (2035F-36F)	Remarks
Rafale	2	2	In-service Government is evaluating decision on additional 26 Rafale Marine for Indian Navy (Decision expected soon).
Sukhoi-30MKI	13	13	In-service Deal to procure 12 additional SU-30MKI is delayed but on track.
Mirage 2000	3	0	To be retired in phases by 2032F.
MiG-29UPG	3	0	To be retired in phases from 2032F.
Jaguar IS/IM	6	0	To be retired in phases between 2025F-2032F.
MiG-21BISON	3	0	To retire in phases along side deliveries of Tejas Mk1A.
Tejas Mark 1	2	2	In-service
Tejas Mark 1A	0	4	Deliveries expected to commence from Feb 2024F.
Tejas Mark 2	0	6	Expected to be ready for induction by 2028F.
AMCA	0	2	Awaiting government sanction Will enter production stage in 10-12yrs after the project is sanctioned (Expected by 2034F).
TEDBF	0	2	Expected to take first flight by 2026F and expected to be ready for production by 2031F.
MRFA	0	6	AoN expected to be issued in 3-4 months.
Total	32	37	

SOURCE: INCRED RESEARCH, COMPANY REPORTS

Light Combat Aircraft (LCA) Tejas Mk 1A

HAL has already bagged an order for 83 LCA Tejas Mk1A for the Indian Air Force. HAL is expected to deliver the first three aircraft in 2024 and 16 aircraft annually over the next five years and alongside the IAF will start phasing out its MiG-21 jets. As per media reports, a follow-on order for 50 additional LCA Tejas Mk1A is expected in the coming years to take this number to 133 LCA Tejas Mk1A.

Light Combat Aircraft (LCA) Tejas Mk 2

It is likely that the government will procure 108 LCA Tejas Mk 2. During Aero India 2023, Defence Research and Development Organisation (DRDO) Chairman Dr. Samir Kamat indicated that LCA Tejas Mk 2 is likely to be ready for induction by 2028F. LCA Tejas Mk 2 will be a more advanced version of its predecessor and it will be much more capable with a powerful AESA radar and powerful engine,IRST sensor & better weapons payload.

Advanced Medium Combat Aircraft (AMCA)

The next aircraft to enter production after LCA Tejas Mk 2 is going to be AMCA. As per the DRDO chief, it is likely that first flight of this aircraft will happen around 2030F and its induction in three-to-four years after that. It is believed that the government will procure 126 AMCA.

Twin Engine Deck-Based Fighter Aircraft (TEDBF)

Indian Navy is expected to procure up to 100 TEDBF. At the Defence Expo 2022, Dr. Deodhare, Director General of Aeronautical Development Agency's (ADA) had reported that the TEDBF project can be executed in eight years after funding approval, and the aircraft is likely to enter the production stage by 2032F. Speaking on the sidelines of Aero India 2023, Indian Navy Chief Adm. R. Hari Kumar said they may get up to 45 TEDBF by 2040F.

Multi Role Fighter Aircraft (MRFA)

The procurement of 114 MRFA is at an advanced stage. The Acceptance of Necessity (AoN) is expected in the next three-to-four months after which the IAF will issue the detailed Request for Proposal (RFP).

Other major procurements likely in coming years

- A decision on acquiring 26 multi-role aircraft for the Indian Navy is expected shortly and the choice is between Boeing's F/A-18 E/F Super Hornet and Dassault Aviation's Rafale M aircraft. As per media reports, Rafale M is the front runner for this deal.
- The deal to procure 12 additional SU-30MKIs to replace the ones lost in accidents and 21 MIG-29s from Russia has been stuck, which both the IAF and Russian officials stated has only been delayed and is well on track.

Figure 7: Scaled version of LCA Tejas Mk 2



SOURCE: INCRED RESEARCH, COMPANY REPORTS

Figure 8: Progress timeline of LCA Tejas platform

Dec-95	TD-1 - First aircraft under the LCA program dedicated to the nation
Jan-01	Tejas took to the skies - a 20-minute flight.
Mar-03	Tejas prototype vehicle (PV-1) completes its first flight.
Apr-07	First flight of limited series aircraft was completed
Apr-12	Development of naval variant commenced & the first flight was carried out.
Dec-15	First series production aircraft handed over to the IAF.
Jul-16	First Tejas squadron 'Flying Daggers' was formed by the IAF.
Mar-20	Fully combat-ready as it completed the final operational clearance (FOC) standard test flight.
May-22	Most advanced version - Tejas Mk1A with advanced sensors and avionics successfully completes its first flight.

SOURCE: INCRED RESEARCH, COMPANY REPORTS

Figure 9: Scaled version of TEDBF



SOURCE: INCRED RESEARCH, COMPANY REPORTS

Figure 10: Scaled version of AMCA



SOURCE: INCRED RESEARCH, COMPANY REPORTS

Evolving India-US defence cooperation ➤

The US government put up a debut display of its fifth-generation fighter being used by its air force — the supersonic F-35. Other aircraft like Super Hornets, F-16s, and B-1B bombers were also displayed.

While the presence of US fighter jets signifies the growing strategic importance, we believe it was not a sales pitch as India is unlikely to be interested in acquiring them currently due to several reasons like high cost, ToT issues and also export control laws of the US may restrict their sale.

The US restriction is not just restricted to stealth aircraft exports but extends further to even the imports of defence supplies from India. **Mr. Amit Kalyani (Deputy MD, Bharat Forge), in a recent conference-call mentioned that India is still not approved as a preferred vendor for the US defence supplies.**

India and the US will have to cut the red tape further to strengthen their ties

US: In 2016, the US under the presidency of Mr. Barack Obama, recognized India as a 'Major Defence Partner' of the US. While the US has been gradually easing bureaucratic restrictions to allow for greater defence cooperation with India, another requirement is to amend the Arms Export Control Act (AECA) to reduce regulatory burden including easing congressional notification requirements.

India: While positive steps have been taken to eliminate the bureaucratic red tape, more work needs to be done to address the burdensome restrictions like investment cap, ownership limit and 'offset' policies which disincentivize the US and other international investors.

Maintain Neutral rating ➤

We believe defence PSUs like HAL, BEL and BDL are set to benefit and are better placed to exploit the opportunities arising from a strong order pipeline and rising indigenization with a focus on modernization of the armed forces and export growth. Due to a sharp run-up in defence PSU share prices in YTD FY23, we remain cautiously optimistic and retain our Neutral stance on the sector.

Figure 11: Defence sector - peer comparison

Company Name	Bloomberg Ticker	Closing Price	Mkt Cap	P/E (x)		P/BV (x)		ROE (%)		EV/EBITDA	
				Local Currency	US\$ bn	FY23F	FY24F	FY23F	FY24F	FY23F	FY24F
Indian companies											
Bharat Electronics	BHE IN	95	8.4	23.3	21.7	5.1	4.5	21.9	20.8	16.3	14.8
Hindustan Aeronautical	HNAL IN	2,534	10.2	16.6	16.3	3.7	3.2	22.2	19.4	9.3	9.1
Bharat Dynamics	BDL IN	958	2.1	31.7	24.1	5.1	4.3	15.9	18.0	21.5	16.2
Mishra Dhatu Nigam	MIDHANI IN	204	0.5	21.6	19.6	2.9	2.6	13.5	13.3	13.3	11.6
Bharat Forge	BHFC IN	829	4.7	48.4	26.0	5.4	4.7	11.2	18.1	22.2	15.7
Larsen & Toubro	LT IN	2,134	36.2	28.1	22.0	3.3	3.0	11.9	13.7	19.0	15.7
Solar Industries	SOIL IN	3,803	4.2	45.8	39.8	13.5	10.5	29.5	26.4	28.9	25.7
MTAR Technologies	MTARTECH IN	1,685	0.6	50.2	32.9	8.4	6.7	16.7	20.4	32.6	21.0
US companies											
Boeing	BA US	208	124.5	228.0	35.0	(8.9)	(12.1)	(3.9)	(34.5)	29.2	18.4
Lockheed Martin	LMT US	479	122.3	17.8	17.4	13.8	13.7	77.5	78.8	13.8	13.5
Raytheon	RTX US	100	146.0	19.9	17.2	2.0	2.0	10.1	11.5	14.2	12.7
Northrop Grumman	NOC US	476	72.9	21.6	19.5	4.6	4.3	21.1	22.1	15.3	14.3
General Dynamics	GD US	231	63.5	18.0	15.6	3.2	2.9	17.7	18.8	13.2	11.9
European companies											
Airbus Group	AIR FP	124	103.4	22.1	17.5	6.2	4.9	28.3	28.1	9.9	8.3
Safran	SAF FP	135	60.8	27.0	21.5	4.4	3.9	16.2	18.1	12.9	11.0
SAAB AB	SAABB SS	584	82.4	27.3	23.6	2.6	2.4	9.5	10.1	11.9	10.5
Kongsberg	KOG NO	439	82.2	23.8	21.2	5.4	5.0	22.6	23.6	14.5	13.2
Thales	HO FP	134	30.1	18.9	17.2	3.9	3.3	20.4	19.5	11.1	10.1
BAE Systems	BA/ LN	918	33.6	15.9	14.7	3.0	2.8	18.9	19.4	10.8	10.2
Dassault Aviation	AM FP	167	14.8	20.4	20.2	2.4	2.2	11.9	11.1	12.3	13.5
Leonardo Finmeccanica	LDO IM	10	6.4	8.6	8.2	0.9	0.8	9.9	9.5	5.3	5.1
Median				22.1	20.2	3.9	3.3	16.7	18.8	13.8	13.2
Median (Indian companies)				29.9	23.0	5.1	4.4	16.3	18.7	20.3	15.7
Median (US & Europe)				20.4	17.5	3.2	2.9	17.7	18.8	12.9	11.9

SOURCE: INCRED RESEARCH, COMPANY REPORTS

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