

[News, Events](#)



HANSA-3II at Aero India '98

A convincing performance by NAL's graceful bird



[AeroIndia bundle](#)



HANSA took off effortlessly ..



.. climbed swiftly



.. and charmed everyone with its grace, agility and finesse



.. then it turned around



.. came down to land



.. and made a perfect landing

HANSA at the Republic Day parade

go

[Sukhoi flying display-Aero India 1998](#)

[Other flying displays-1998](#)

[Reports from Aero India'98](#)

[Reports from Aero India 2001](#)

[Suresh kumar at Aero India 2001](#)

[Hansa in 2001](#)

[News, Events](#)



Sukhoi Flight Displays at Aero India 98 "The flying took one's breath away!"



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All the Sukhoi photographs on this page were shot by our colleague, Mr Satya Bhagwan, on his Nikon F-90X camera with a Sigma 70-300 ATX 4-5.6 lens. Mr Bhagwan shot these pictures in a programmed shooting mode, varying the aperture from F.11 to F.56 and the shutter speed from 1/750 to 1/2000 of a second. "I was fortunate to join a Russian group of photographers. The pilot was aware of our ground position -- and provided us with a feast of exciting shots which I shot on my Kodak Gold 200 ASA film", he told us.

[HANSA's flying display at Aero India 1998](#)

[Other flying displays-1998](#)

[Reports from Aero India'98](#)

[Reports from Aero India 2001](#)

[Suresh kumar at Aero India 2001](#)

[Hansa in 2001](#)

[Flying display-Aero India 2001](#)

[Flying display-Aero India 2003](#)

[Reflections on Aero India 2003](#)

[Aero India 2003 slide show](#)

[Flight Displays at Aero India 2003](#)

[HANSA at Aero India 2003](#)

[Flight display of Mirages at Aero India 2003](#)

[AeroIndia 2005](#)

[Flight Displays at Aero India 2005](#)

[SARAS at Aero India 2005](#)

[NAL stall at Aero India 2005](#)

[Surya Kirans at Aero India 2005](#)



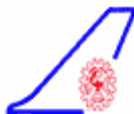
Home

[News, Events](#)

[Please send us your reaction.](#)

Updated on Feb 14 2005

[News, Events](#)



Flight Displays at Aero India 98

"They dived, danced, hissed, awed and captivated"



Home



Falcon

[AeroIndia bundle](#)



Mirage 2000

The French fighter had the audience spellbound with its amazing aerobatics..



Sukhoi 30

..but the Sukhoi versions from Russia really took one's breath away



Hawk 200

The British Hawk 200 is a serious contender for India's jet trainer requirement ..



MiG AT

..but faces stiff competition from Russia's MiG advanced trainer



All the photographs used in our coverage of Aero India '98 were shot by our colleague, Mr N S Suresh Kumar, on his Nikon F-70 camera with a 100-300 Tokina ATX F-4 lens. Suresh Kumar shot these pictures in the auto focus programme mode, varying the aperture from F.4 to F.11 and the shutter speed from 1/500 to 1/1500 of a second. "It wasn't easy with the cloudy skies, especially on the first four days, but I am happy with these results using the Fuji Superia 100 ASA film", he told us.

[HANSA's flying display at Aero India 1998](#)

[Sukhoi flying display-Aero India 1998](#)

[Reports from Aero India'98](#)

[Reports from Aero India 2001](#)

[Suresh kumar at Aero India 2001](#)

[Hansa in 2001](#)

[Flying display-Aero India 2001](#)

[Flying display-Aero India 2003](#)

[Reflections on Aero India 2003](#)

[Aero India 2003 slide show](#)

[Flight Displays at Aero India 2003](#)

[HANSA at Aero India 2003](#)

[Flight display of Mirages at Aero India 2003](#)

[AeroIndia 2005](#)

[Flight Displays at Aero India 2005](#)

[SARAS at Aero India 2005](#)

[NAL stall at Aero India 2005](#)

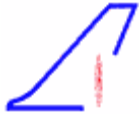
[Surya Kirans at Aero India 2005](#)



[News, Events](#)

[Please send us your reaction.](#)

Updated on Feb 14 2005

[News, Events](#)

Aero India 98

The third Bangalore air show is a big success in spite of bad weather



The first day

Air shows tend to be addictive; that's why the opening of Aero India '98, the third Bangalore air show was eagerly awaited. And judging from what one has seen so far, this one promises to be the best, especially if the weather improves.

The show opened on 8 December 1998 in cloudy skies at the Yelahanka Air Force Base. It was inaugurated by Mr George Fernandes, India's Defence Minister. The highlight of the inaugural ceremony was the promise made both by Mr Fernandes and India's Civil Aviation Minister, Mr Ananth Kumar, to set up a world class Air and Space Museum at Bangalore. "Given Bangalore's undisputed status as India's premier aerospace city, there cannot be a more appropriate location for the Museum", Mr Ananth Kumar said.

It was still chilly when the flying displays began shortly before 11.00 a.m. First three Jaguars streaked by, followed by three MiG-23's. Next one saw three Advanced Light Helicopters (ALH), manufactured by HAL, go by, with the Indian Tricolour fluttering proudly below.

Then came the moment everyone was waiting for. Nine Kiran aircraft of the Surya Kiran aerobatic team took off screeching and blazing. For the next quarter of an hour, the nine magnificent pilots lit up the skies with a series of breathtaking manoeuvres. It was stirring stuff, accompanied by some excellent commentary (especially by Komal G B Singh) and brief audio clippings of the team leader ("no. 1") instructing his other pilots. As one watched the aerial exploits of these daring pilots, one felt small and humble. Nothing one does on the ground can compare with the extraordinary skill, courage and valour of these incredible flying Indians.



The exhibition of aerial prowess was, however, still not over. Looking up in the sky, one saw a solitary helicopter flying high amidst the clouds. Soon tiny dots began to drop off from the helicopter. One by one, nine sky divers of the Akash Ganga team jumped off. After a free fall of several thousand feet, the gasping audience heaved a sigh of relief as the parachutes began to

HANSA-3 at Aero India '98



It must be a unique record. At each of the three Bangalore air shows (in 1993, 1996 and now 1998), a new HANSA aircraft from the NAL stable is on display.

This year it's the HANSA-311, which has just obtained the provisional certificate of clearance from India's Directorate-General of Civil Aviation, being flown by Sqn Ldr Baldev Singh. HANSA was among the first to participate in the flying displays at the inaugural function, and the little bird charmed everyone with its grace, agility and finesse. Sqn Ldr Baldev Singh ("we affectionately call him

open up. In an amazing jumping display, and fighting off the strong winds, most of the jumpers managed to land safely, right in front of the VIP enclosure, to a well-deserved round of applause.

The conditions were still not favourable for the flying displays of the Hawk 200, Mirage 2000 and the latest version of the multirole Sukhoi 30; but an hour later, when there was just a suggestion of sunshine, the planes took off to keep their appointed tryst with the Bangalore skies. They dived, danced, hissed, awed and captivated, painting the horizon with dazzling trails of colourful smoke.

Srinivas Bhogle

[HANSA's flying display at Aero India 1998](#)

[Sukhoi flying display-Aero India 1998](#)

[Other flying displays-1998](#)

[Reports from Aero India 2001](#)

[Suresh kumar at Aero India 2001](#)

[Hansa in 2001](#)

[Flying display-Aero India 2001](#)

[Flying display-Aero India 2003](#)

[Reflections on Aero India 2003](#)

[Aero India 2003 slide show](#)

[Flight Displays at Aero India 2003](#)

[HANSA at Aero India 2003](#)

[Flight display of Mirages at Aero India 2003](#)

[AeroIndia 2005](#)

[Flight Displays at Aero India 2005](#)

[SARAS at Aero India 2005](#)

[NAL stall at Aero India 2005](#)

[Surya Kirans at Aero India 2005](#)

'Baldie"', announced the commentator) took off effortlessly. The sound of the blowing wind muffled even the gentle drone of HANSA's Rotax engine. Silently and delicately, the pilot weaved enticing patterns in the sky. The HANSA climbed swiftly, rolled gently and suggested that it was an extremely comfortable plane to fly in. After enjoying himself in the skies for a few minutes, and giving the audience similar pleasure, Sqn Ldr Baldev Singh landed the aircraft even as the audience applauded. It was another convincing performance by NAL's graceful bird./SB

[HANSA flying display
AeroIndia bundle](#)

The Exhibition

The Aero India '98 exhibition was a veritable feast for the eye with over 100 international companies opting to exhibit. This time the exhibition was distributed across three hangars, appropriately named Mukherjee Hangar, Lal Hangar etc. in tribute to India's distinguished airmen. The first hangar housed most of the US companies, including Boeing, AlliedSignal and Bell Textron (with the stars and stripes

The NAL stall

adorning most stalls). The second hangar was predominantly "European", with Airbus Industrie, Aerospatiale, Dassault, British Aerospace etc. being the prominent exhibitors. Finally the third hangar comprised the big Indian aerospace establishments: HAL, DRDO, ADA, BEL, NAL etc.

Every exhibitor made a special effort to register his presence. Among the most popular stalls was that of Dassault (the French and Russian presence was especially strong at Aero India '98) where the multimedia imagery took one's breath away. The Boeing stall too was extremely crowded; the highlight here was the display of exquisite models of all Boeing commercial aircraft starting from Boeing 717 to Boeing 777 (but where was the Boeing 727 model?).

A pleasant surprise was the excellent quality of the displays at the DRDO and ADA stalls. It was abundantly clear that Indian R&D organisations too wanted to register a strong international presence in aviation markets (Dr A P J Abdul Kalam repeatedly talked of the export potential of Indian aerospace products); and judging by the large number of MoU's signed, especially by HAL, the Indian effort appeared to be succeeding.

[|Reports from Aero India 2001](#) [|Satya Bhagwan at Aero India 2001|Hansa in 2001|](#) [Suresh kumar at Aero India-2001 |](#)



NAL's stall was set up on a floor area 150% larger than in the earlier years; and although it wasn't a 'high profile' stall, there was no doubt that NAL too was much better organised this time than in the past. The models of SARAS, HANSA, 1.2m trisonic wind tunnel and the Acoustic Test Facility were quite striking; NAL's DFDR readout system was in actual operation; and the PowerPoint presentation outlining NAL's R&D capability and success too had a touch of class about it. A large number of enquiries related to the HANSA (which was to be expected since HANSA was participating in the flying displays); but the big surprise was the widespread interest shown in NAL's composite technologies: the visitors, in particular, appeared to be interested in NAL's composite repair technologies, autoclave development techniques and the co-cured co-bonded technology.

*J P Singh
NAL Coordinator, Aero India '98*

[News, Events](#) 

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Posted on 9 December 1998.