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## **INVASION OF THE COURAGEOUS INDIAN CRUSADERS**

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Relatively quietness rules when we arrive on the platform that will be our stage for today, after a welcome by amongst others the French basecommander and the Indian squadron commander who gave us a briefing and answered some questions. Outside the Mirages 2000 seem to be waiting on what their contribution will be this day, accompanied by some transport and VIP planes. In the background some French tankers seem to enjoy the upcoming sun on their frames. In the middle of this scene we find some Eye-catching-Blue-Birds of the Indian Airforce !

Suddenly the platform loses its quiet virginity and hard working Indian and French Pilots, crews kerosene-trucks, fire brigades and caretakers of about everything you can think of rule the pixels of our camera's. Inbounding huge, firm, proud machines suddenly appear, and seconds later some mighty SU-30MKI's move over the concrete of the French airbase Istres in a majestic but easy way. The experienced pilots swing their SU-30's from the runway over the taxiway to the platform, taxi behind the Mirages 2000 and park them as if they were familiar for years already on this base. But nothing like that at all. It's the first time the Indian Flankers are hosted by the French. The 'Invasion of the Courageous Crusaders' results in a fine line with Mirages 2000 and Flankers friendly side by side. The Indian ground crews march disciplined side by side to the Fighters of which they will take care after the first flights.

The Six Indian Air Force Sukhoi Su-30MKI visited the French air base Istres (BA-125) between 17-28 juni 2005 for joint exercises under the name Garuda 2. Garuda is the name of the beautiful bird on which the Indian God Vishnu reached the heaven. When you see the mighty Su-30MKI "Flanker" in all his majesty in the air no one could ever find a more suitable name. It was the first time Indian Flankers come for exercise to Europe. The Indian Air Force is very eager to gain experience in international exercises and to discover at what point they are in modern air warfare. Recently the Indian Air Force joined the big American exercise "Red Flag" at Nellis AFB and the exercise co-operative COPE Thunder at Elmendorf AFB in Alaska. India hosted the USAF back when a detachment of the 3<sup>rd</sup> wing F-15C from Elmendorf AFB take part in exercise COPE India at airbase Gwalior. In fact these occasions where the first bilateral Dissimilar Air Combat Trainings (DACT) between the USAF and the Indian Air Force in more than 40 years. France visited Gwalior AB too in February 2003 during exercise Garuda 1 with 4 mirages 2000 RDI which resulted in the return visit now.

### **SHARP IN THE SKY**

Objectives of this exercise was to learn from each other and find out how far interoperability could be reached. Of course every squadron is used to his own tactics and everyone is curious how it will work out. To find out where you are superior and where your weakness appears is very valuable. Occasion like this can

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bring many good aspects in the learning process. On the ramp “the invasion of the Courageous Crusaders” results in a fine line with Mirage 2000’s and Flankers friendly side by side. In the background we see some French tankers enjoying the upcoming sun on their frames. The Indian ground crews march disciplined side by side to the flankers and prepares them for action. Another hot day has yet to come. The first day was for the Indian Air Force to do reconnaissance and become familiar with the fly zones high above South France and the Mediterranean, following the next days with Air Combat Missions (ACM) with increasing complexity. Forces were split in Blue and Red forces with constantly change of settings. Attack and defensive missions like offensive and defensive counter air missions were on the programme. Combat Air Patrols (CAP) with 2 attackers versus a sweep force of 2 defenders or even a mixed force with 2 Flankers and 2 Mirages Red Force in the CAP role and the same setting in the sweep role Blue Forces. Meetings were both in visual combat (dogfight) and beyond visual range (BVR) engagements.

Also mixed patrols together to guard no-fly zones were exercised and finally there was a French AWACS involved to attack or defend this High Value Airborne Asset (HVAA). Another important exchange was the air-to-air refuelling cross linking exercise with each others tankers. One Boeing C-135FR from Istres served the Su-30MKI Flankers and a Il-78 Midas tanker served Mirages with new fuel.

Like the SU-30 this Ilyushin-78 is an imposing appearance. The inside of the plane is filled up with an enormous yellow painted tank. Possible to walk along but no more than that. It littuarely is a flying fuel tank ! Some 80 sorties were flown by the Mirage 2000 in different versions including the Mirage 2000 N strike version and 74 sorties by the Su-30. The AWACS was involved in 3 sorties (4 missions) and the tankers both in 4 missions.

### **COMMENTS FROM THE INDIAN COMANDER**

The answer on the question to the Indian squadron commander Shreesh Mohan what was learned so far was both modest and diplomatic. Because everything has yet to be evaluated no specific things were there to be mentioned. Both party’s learn about their own procedures and those of the opposite party. It is not that we do things wrong or they do it well. It is more we do things different and so we can learn and experience and perhaps reach new values or standards. It occurred that the USAF was a little bit disappointed in their performances with the F-15C against the Su-30MKI. The smiling answer was that we mustn’t exaggerate the performances of the Su-30MKI. Only in slow speeds the aerodynamics are better, but in high speeds there is equality. In his opinion the better radar and avionics of the Su-30MKI makes the difference. On the question if the Indian Air Force reached Air Superiority on the

Ltd (HAL) in Nashik and will go up to 120-140 (not exactly confirmed) until 2012/14. The deal includes production of Lyulka AL-35F turbofan engine too. The Su-30MKI has the newest features like “canard foreplanes” and thrust vectoring control (TVC) which increases the agility in combat dramatically. The superb airframe/engine combination is extremely impressive and gives the plane a very high angle of attack especially at lower speeds. Early examples of the Irkutsk batch lack this features which will be fitted later on. On the avionics part there is an interesting combination of Russian, Indian (mission computer), France (HUD) and Israeli (EW suite) components combined in a “glass cockpit” which could only be viewed by us with eyes. The Defense Research and Development Organisation (DRDO) of India and Bharat Electronics were involved with system integration. The radar is a Russian BARS-29 phase array radar and one of the most powerful in the world with multimode capacity which can engage simultaneously 2 aerial targets with the R-27 (AA-10 Alamo) and 4 aerial targets with the RVV-AE (AA-12 Adder) missile. HOTAS (Hands-on-throttle-and-stick) controls and digital fly-by-wire system (FBW) gives the pilot easy handling and data-link between the Su-30's gives enhanced awareness. India is searching for a system to unify data link on different kind of airplanes to have a on-line communication network. In the nose is the latest version ofIRST with collimated laser and TV-channels for advanced PGM (Precision Guided Munitions) guidance.

The concept is always two pilots in the SU-30MKI cockpit. India has only the twin-seater version in use. Just for a simple flight for example to move an object from one base to another will be carried out by one pilot, but all the (trainings) missions and operational flights will be flown with two pilots to share the workload and accomplish the mission together. Duty's and responsibilities are assigned because they increase, complex missions more and more demand responsibility and workload to be shared. Fully qualified pilots know exactly what task is to be carried out by whom and at what time. Ofcourse within training program WSO's and younger pilots who just finished their training, as well as instructor pilots can be found in the rear-seat of the cockpit. Indian Airforce is recruiting more pilots, so the back-seat can be used if desired by other (system) officers.

The pilot can influence his missiles with a helmet mounted cue sight system. For in flight refuelling India looks at two different ways. In this exercise a massive Il-78 Midas tanker with a huge yellow kerosene tank in the cargo area was used. Some 6 Il-78 tankers are serving in the Indian Air Force and probably some more will be ordered. On the other hand is there a “buddy system” to let one flanker refuel the other. This system is known under the FR-32B-75 central-line refuelling pod and India will order some more of this too in order to increase operational ranges when needed.

### **WHAT IS POSSIBLE IN THE FUTURE ?**

However the Su-30MKI in Istres were still the ones without Thrust Vectoring Control their performances are impressive. Exercising with the thrust vector controlled examples must be promising.

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Commander Mohan couldn't predict in what European country the Flankers will show up next but he is certain that this kind of exercises will continue. ' But Gentlemen I have first to end this one and let's have a drink now'. Those were the last words to me on the press day of a very sympathetic commander who seemed to feel so well and contempt with his French hosts.

Dutch Aviation Support  
Wim Das & Kees Otten

**Special thanks to commander Shreesh Mohan of the Indian Airforce.**

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