



INDRADHANUSH: SMALL DIFFERENCES WITH GREAT RESULTS !

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If you claim that your fighter is capable against any other aircraft of the same generation then sooner or later you will have to test this which results in coming up the 'hour of truth' when you are facing an opponent who is known to be very strong. The final outcome is quite exciting as the plane of your opponent is one that in theory has a great opportunity in real life opposite to assist you.

This summer four Indian Sukhoi Su 30MKI Flankers were guest at RAF Coningsby Lincolnshire to see what their level would be against the latest versions FGr.4 Typhoons of the Royal Air Force. In the exercise called 'Indradhanush 2015' both countries put in their best pilots (Aces).

FLANKER VERSUS TYPHOON

At first sight, the Flanker and Typhoon are of an entirely different class. The Flanker is much larger than the Typhoon and the Indian Flankers are manned by two pilots, the Typhoon by just a single pilot. Yet exercises were being plotted where a direct confrontation was simulated. Here the breaks got loose, this kind of confrontation has a build-up line during the expiring of the exercise period. It starts with Typhoon versus (vs) Flanker facing each other (1 vs 1) and later on 2 vs 2 and eventually eight planes opposite each other (4 vs 4). Also the scenery of two Typhoons facing one Flanker (2 vs 1) and vice versa was practiced. Eventually bigger formations were flown, such as protecting the personal area with high military value in it such as AWACS and the Indians did the same with their Ilyushin Il-78 tanker. It was also practiced with mixed versions with a combined Flanker / Typhoon fleet, attacked by other Typhoons.

FLANKER IS NO UNDERDOG

The English speak modest about the outcome but the Indians claim an overall victory of their Sukhoi 35's (12-0 !). We cannot ignore the fact that previously this was the case as well. The Indian Flankers exercised against other Western aircraft like the F-15C Eagle 3rd Wing USAF Elmendorf, Alaska in 'Cope India' 2004. Even then India won with flying colors, but the F-15's had by then had to act without a superior electronic radar (Electronically Scanned Array = AESA), a system that was brandnew in the Flankers (the latest technical development) and the Americans had accepted restrictions on the use of AMRAAM beyond visual range (BVR) missiles. In 'Cope India 2005' the USAF F-16's were beaten the same way ! It is also true that when the Indians flew a few years later with their SU-30MKI at the 'Red Flag' exercise at Nellis in the United States, they ended up with not a single 'loss' of an airplane during fighting with US warplanes. From these data can absolutely be concluded that the Su-30MKI is a formidable opponent, but does this go under all circumstances?

NOT SUPERIOR AT ALL POINTS

Technically Typhoon and Flanker do differ widely, but there are also similarities. The Typhoon has a better power / weight ratio (1.35) opposite the Flanker (0.98) and an agility that is better. This is of course due this better ratio with higher power in a lighter unit. The Typhoon is also faster than the heavier Flanker. However, the Flanker is already known as a highly maneuverable airplane with a high angle of attack. Because of the equipment with 'thrust vectoring' on the engines in which the jet pipes can be rotated at the outlets, so that the propellant flow of exhaust gases is deflected it was found that the maneuverability had increased again compared to the standard Flanker. This turned out to be sufficient to retain the predominance in the air. In dogfight-situations the Flankers over and over again were able to bend sharper where ultimately the Typhoon came in their sights for a kill. Even a victory was achieved by one flanker against two Typhoons! All this takes place in a 'within visual range' (WVR), where the aircraft remain within range of eachothers vision. Nevertheless the Typhoon proved to be not much inferior and a final victory really had to be enforced. The situation appeared to be very different when the 'beyond visual range' (BVR) basically made its entry. Maneuverability so disappears into the

background. Rockets are fired out of sight of the pilot, based on radar data. The Typhoon uses the MBDA Meteor missile which has a range of 100 kilometers with a speed of more than 4000 km/hr. India used the Vympel R27, flying Mach 3. The 'rating score' of the Meteor is higher. Of course you have to have here the right defense. The Flanker this way is more vulnerable to the improved Meteor missile, but also by a larger profile an easier target. In mutual cooperation the Flanker faded as well, because the data link system is not compatible with NATO Link 16 and 'awareness' can not be shared this way as it should be.

NEW DEVELOPMENTS ARE COMING UP

the Indians are keen on to be able to come out on its own people with a great victory over the former colonizer. But is this only fair? There is no talk of scenario restrictions and the 'rules of engagement' (ROE) under which pilots should work. These ROE's indeed were compulsory for the RAF pilots. In reality a fight will depend on many more factors that can affect the setting and it will rarely be a colistic confrontation at its own. Both countries however claimed to have learned a lot from each other. It is a warning to the West that the super agile Flanker, if equipped with the latest avionics and thrust vectoring exhaust is a real threat. The airplanes of this caliber only fly in Russia, India and China. Another aspect is that if you know where your opponent is, you can work on improving your own plane. In future, the 'stealth' technology will become much more important. This very moment we do not know yet the quality of the Russian Sukhoi T-50 PAK stealth, but one may assume that it will not be inferior in agility for the Flanker who comes from the same plant.

Interesting detail is that Russia and India have signed an agreement which stipulates that India will produce the export-version of the SU T-50PAK. Next to that other countries like China and even Iran bring 'stealth' aircraft on the market. No, the future is still open, but the image of Western superiority has stranded.

[Kees Otten & Wim Das](#)
