Blues Skies Podcast
Season 1, Episode 8

Flying and fighting in the Maritime Jaguar

PR Ganapathy:
Hello and welcome to the Blue Skies Podcast. I'm PR Ganapathy, your host.

I'm very happy today that we are joined by Group Captain Sandeep Balyan. Sandeep was commissioned as a Fighter Pilot in 1993. He's a qualified Flying Instructor, an Instrument Instructor, Graduate of the Defence Services Staff College with the prestigious DS rating. He's been a Jaguar pilot for a substantial part of his flying career, has several thousand hours of military aviation time. He commanded one of the Air Force's first Akash surface-to-air missile Squadrons, for which he was awarded a Vayu Sena Medal in 2015 and recently after, I think 27 years of service, Sandeep has just retired from the Air Force and we'll be speaking to him about his plans going forward.
But welcome to the program Sir, thank you very much for joining us.

Gp Capt Balyan:
Thank you Ganapathy, it's a pleasure to be with you and look forward to a good interaction.

PR Ganapathy:
Likewise, thank you so much. So let's start off with the basics. Where did you grow up? Where did you study and what motivated you to join the AirForce and what was that initial journey like?

Gp Capt Balyan:
My father was in the Air Force so the initial foundation was already laid and like all Service Officers children I grew up all around the countryside, and the main areas essentially were Hyderabad, and followed by Delhi, so I did my initial schooling in Hyderabad and finally culminated my schooling in New Delhi in TAFS. So my father was posted in the Air Force Station Hakimpet, that’s.long time back, and that was the time when I was exposed to seeing flying as such, and which appeared to be fighter flying towards that time because I saw the jets flying. So during the family days we would go across to the Station and get a closer look at the aircrafts, and I guess that was a very impressionable age, and I think the full foundation was laid there. So I always dreamt thereafter of becoming a pilot.

PR Ganapathy:
Yes, for those of our audience who are not familiar with various Bases in the Air Force, Hakimpet was a Fighter Training Wing, if I remember correctly. And what aircraft would they have been flying at that time when you were a child?

Gp Capt Balyan:
Those times they were flying the Iskra and Kiran Mk1 and Mk2s

PR Ganapathy:
Okay great

Gp Capt Balyan:
They were an imposing sight, that was a very amazing sight, to see those aircraft fly and as a young child in Class 5, Class 6, I couldn't imagine anything beyond that. So I think that's where it all started. And finally I had good friends in my Air Force School Subroto Park where I was a hosteller, you included, where I learned more and more about the planes and always got more and more fascinated

PR Ganapathy:
And you joined the Air Force through NDA or did you come directly?

Gp Capt Balyan:
So somewhere down the line I heard this often, that NDA is the best entry to the Services, for it gives the basic foundation wherein you get to interact with lot of people, friends, senior, junior across the tri-services, who later on in your Service are a big, I would say, the handshake between the Services happens seamlessly, courtesy the foundation laid in the National Defence Academy. And so I felt that that would be the right way of joining the Services.

PR Ganapathy:
Great. Tell me a little bit about when you came to the Air Force Academy and your first flying experience. Which aircraft did you train on? Your basic training and then your advanced training.

Gp Capt Balyan:
So the flying training starts in the 6th semester of the National Defence Academy itself wherein you are given an exposure to basic flying. During our times, it used to be on the Glider aircraft - Accora glider - and subsequently, of course presently they fly the Microlights there. So that is where you get the first exposure of flying. And also they give you a good insight into the ground studies which are involved, related to aviation. So that's where the basic foundation is laid and thereafter it jumps when you reach the Stage 1 in the Training Academies. For me, the basic flying I did at the BFTS, it is a Basic Flying Training School at Allahabad, which was followed up by the Advanced that is Stage 2 training at Bidar, Air force Station, Bidar, which is also presently doing advanced training. So these are the two areas where we did the flying training. Basic training was on the HPT-32 aircraft and the advanced training was on the Kiran Mach1 aircraft Thereafter we moved to AFA for the Graduation ceremony, passed out from AFA as a Course all together.

PR Ganapathy:
And HPT-32 is, for those of the audience who are not familiar with it, a piston engine, side by side seating single engine aircraft, right?

Gp Capt Balyan:
That's correct.

PR Ganapathy:
What was it like to fly?

It is very interesting flying the aircraft. It is very nice. Sometimes you find your couse mates who have not even driven a cycle all their life, the first machine they're operating is an aircraft. So it's very fascinating. These two things are not linked and they did it equally well, if not better. So that is nice. HPT is a very good aircraft to learn your basics. Totally enjoyed it.

PR Ganapathy:
Everybody says they remember their first solo very clearly. Do you remember your first solo very clearly?

Gp Capt Balyan:
Absolutely. In fact, I was the first pupil of my Instructor to go solo. He was also doing his first Course with us. So that time I didn't realize how interesting for the Instructor also it is to see his first pupil go solo. And yes, it was an overwhelming feeling when you go for first solo,

PR Ganapathy:
Describe the day to us in a little more detail, give us a sense of what it was like.

Gp Capt Balyan:
So what essentially happens is that on the solo check day, you fly with a different Instructor who's essentially the Flight Commander of the CFI who takes you up for the Check wherein he checks your proficiency in your ability to go to a particular sector and come back safely and thereafter carry out circuit approach and landings, in various configurations. Having assessed your proficiency in making a safe landing, he takes you back to the flight, to the tarmac, and then he lets you go solo. And in case of HPT-32, he would just get out of the aircraft and somebody, the airmen, would come and fix the seat that is starboard. And then you continue the same aircraft taxi back, because the aircraft has adequate endurance, so it can fly about two to three sorties without refuelling. So we went for a solo.Things happen a little fast, but suddenly you find that you're all alone in the cockpit, which was appearing to be little bit tight, but is now very spacious. It's a very interesting feeling. It would be difficult to put in words, but, yes, it is very special. And then you are expected to take off and carry out a couple of circuits, and thereafter make a full stop landing. So all this while you have an Instructor who's at the controller hut and who monitors the approach, and if there's a requirement, he assists you in your assessment of approach being slow, low or high. So he may prompt you, if required. So it's a day of celebration once you land safely back,

PR Ganapathy:
How did they celebrate?

Gp Capt Balyan:
Yes, I guess you celebrate in different ways. You go back to your coursemates, they will be all very excited, especially if you're among the first few guys who have done the solo and more are lined up to go. So they would like to hear all the stories, possible permutation combinations, what could have been done right, or a whole lot of other things so that they can carry forward to their sorties, and then in the evening just get together, have a cup of maybe tea or some snacks etc.. That was the scope of the party, so to say, we enjoyed that much.

PR Ganapathy:
Fantastic. And what are the sorts of things you do on the HPT-32? Would you do aerobatics? Would you do cross country navigation by day, by night, any flying under the hood, instrument flying.

Gp Capt Balyan:
So HPT-32 aircraft was a fully aerobatic aircraft. So we would fly all the profiles, in fact, loops, barrel rolls, rolls. And it did a very interesting manoeuvre called the stall turn. It was an amazing manoeuvre, which HPT did. So, in addition, we did clovers, upper clovers and we practised forced landings, practice forced landings, low over shoots, and that's pretty much it. And of course, navigation used to be there, but it was not really cross country. It used to be triangular navigation that we used to do. We used to come back to our own Base.

PR Ganapathy:
And how about night flying and instrument flying with any of that?

Gp Capt Balyan:
So night flying essentially was an exposure to night flying in Stage 1. So during our time, used to fly about 3 hours of night flying. But they were essentially all dual sorties wherein you are first time being given exposure to the night and the environment. And of course, some part of this profile was under the hood.

PR Ganapathy:
I understand. Great. So tell me about the first time you transitioned to a jet, which is the Kiran.

Gp Capt Balyan:
Okay, so Kiran was a different league of aircraft. I still remember when he went from BFTS to Bidar. And when we went there, the flying was on, the Instructors were doing their ground training, et cetera. And we realised this aircraft was very fast. We all had self doubt. How are we going to manage this high speed aircraft? And of course it was an air conditioned aircraft that was another, super silent and the cockpit was simply amazing. So coming from BFTS, it was really a good experience. And no propeller on the nose, nothing. No noise. Yes. And much faster. So true, initially everybody had a self doubt.. How are we going to manage this machine which is moving so fast? And then as time goes by, the training is very good. Actually, I would say the Indian Air Force, the curriculum of training is outstanding. It holds your hand throughout. I think the values that I learned in my basic stage and my advanced

Stage have carried me through the entire service career.

PR Ganapathy:
Wonderful. And did you do any spin training in the HPT-32 or all the spinning happened on the Kiran?

Gp Capt Balyan:
So in the HPT-32, we did spin. In fact, the aircraft spun very nicely and recovered also fairly easily. And solo spinning happened only in advanced stage, that is Stage 2, Kirans. So that is the time when you are doing solo spinning. The only thing spinning was. So you heard from me, from your seniors, et cetera. there's a very critical phase of where you have to spin the aircraft. But I guess once you get the hang of it, it happens like any other manoeuvre. Yes. Some aircrafts have a little more different characteristics than the other. Some are benign and some are little more vicious when they are spinning. But then if you have adequate height. And once again, as I said, the procedures are very well laid out. So I guess all the coursemates of mine did well in spin of the aircraft,

PR Ganapathy:
I guess it's a question of just keeping your head at that time and remembering what you've been trained to do and not panicking and then things work out.

Gp Capt Balyan:
So as I said a couple of months back, the kind of training which is planned, the curriculum of training is so nicely laid out. I mean, they cover each and every aspect before I step into cockpit, the amount of training which I have to undergo, whether it was ground trading or whether it was aircraft technical knowledge or whether it was about the procedures or the standard operation, the layouts of the airfield area where we flew because, remember, there was no GPS at that time. So we had to learn by heart the layout of the area. And the only aid you had was the NDB. So there was one needle which was giving you all the general direction and you have to orient it based on that. So you had no direct readout of distance to go. But the training was so nicely made. I guess very few cadets have any difficulty in coping. I think the credit really goes back to the kind of curriculum the Air Force follows. The amount of effort which goes into making the Trainee to Instructor ratio is also very nice. So the Instructor is able to give good time to each one during training.

PR Ganapathy:
Wonderful. Yes. One of the unique things about military aviation is flying in formation \It is not something we do as civil aviators. When did you first fly in formation and what was the feeling like? How do you learn how to get good at it, because at some point I'm sure it becomes second nature.

Gp Capt Balyan:
Yes. So Advanced Stage 2 of the training essentially gives you exposure to all aspects of flying. It gives you exposure to air- to- ground, air to air, it gives you exposure to formation flying and various other aspects which will be used in your fighter flying. So we all had exposure in Stage 2 and there was a good syllabus in Stage 2 about formation flying. And

the fascinating thing about formation flying is that from the sortie number one to sortie number two, three, with each sortie, your progress is phenomenal. With the first sortie, you're very reluctant to go to the correct distance with respect to the other aircraft. But as the syllabus progresses, two sorties, three sorties down the line, the level at which you are learning and your comfort to maintain that position increase exponentially, I would say. So that's the way we got the first exposure of formation flying, and subsequently in my service career, I did a lot of fly pasts including the Republic Day Parade, the NDA Pass Out. These are the standard flights where we really had to exercise these skills. And besides, of course, tactical flying. Yes. It's a very important aspect, especially when you're going through two aircrafts are there and you have to go through a benign clouding and you can maintain good formation and distance.

PR Ganapathy:
Right. So as you progress along the Advanced Stage and you're approaching Graduation day, I'm sure the question on everyone's mind is whether they'll get fighters, transports or helicopters. And I know from the time you were a child, you were keen on becoming a fighter pilot. How was that experience? Like how do you find out what you're going to get?

Gp Capt Balyan:
So those two weeks, the last two weeks are very exciting. Everybody is trying to put his cards on the table. Everybody is wanting fighters, everybody is wanting a particular fleet, so to say. So, yes, it is a very interesting time. And we have a small interview with the Trifurcation team and they discuss your strengths and weaknesses, based on your performance in the training. And also based on the number of vacancies available, the call is finally taken by the Trifurcation Board. And at the end of it, you come to know where you are headed. So you have one of happy faces and not so many people who, most people will have made their choice, people don't make it and they generally call people, try and boost their morale together and at the end of it, when you look back, those were interesting times. So, in my particular case, we got the fighters and for some reason, because of our height, I was deemed to be unfit for the MIG series of aircraft. So we were selected to go for the Hunters. So I did my operational flying on the Hunter aircraft, and all my coursemates in the Hunter fleet were all 6ft plus.So we all landed up in Hunters.

PR Ganapathy:
So we've chatted about this before, but every pilot I've met who has flown the Hunter just loves that aircraft. So tell me what that was like and where did you do your Hunter training? Was that In Kalakunda or Jamnagar?

Gp Capt Balyan:
Let me go back a little bit. When I was a young kid in Hakimpet, when my father was in Hakimpet, there used to be this Thunderbolt team, which used to come and perform aerobatics, right?

PR Ganapathy:
Yes. In fact, I got an interview scheduled with one of the original Thunderbolts in a few weeks.

Gp Capt Balyan:
I had the opportunity to see these aircrafts that time and I was really awestruck

Later on the Thunderbolts came out of 20 SQN. So 20 Sqn was subsequently earmarked as the Hunter operational Flying Training Unit and it was in the Eastern Base. We moved to this Base and that's where all the Hunters aircraft were put together. The aircraft which had actually been part of the Thunderbolt team were also there and it was really nice to get a chance to fly those aircraft. And the experience of flying the aircraft is simply awesome. It's a different league. It handles so beautifully.

PR Ganapathy:
Was it quite a step up from the Kiran to the Hunter?

Gp Capt Balyan:
Yes, it was from the Kiran to Hunter.

PR Ganapathy:
So tell me a little more about the Hunter and your experience flying that and what sort of things do you learn during your operational conversion?

Gp Capt Balyan:
The Hunter was about 100 hours of conversion training that we did. And this essentially gets you into all the tactical aspects which you will require subsequently in the fighter flying. It gives you an introduction into the weaponry, a little more detail than what you had experienced in the Stage 2 and then low-level navigation, because Hunter was considered as a stepping stone to go onto the Jaguar fleet. So the Jaguar fleet used to be all low level. Everything about it was all lower level, so a lot of low flying was there. Low level training was there, including navigations, tactical flying at low level and we were also given introduction to the combat basic combat, 1 vs 1, 2 vs 1 all these kind of tactical situations were there.

But Hunter did not do much of night flying, so there was no night flying in the syllabus, but we didn't do just about everything.

PR Ganapathy:
What was combat like one versus one, two versus one? Describe some sorties to us.

Gp Capt Balyan:
Basically, there are different stages. These are about the time when you have the close-in combat with the CCMs so that's where you the aircraft had to come to a position of advantage to take a shot onto the defending aircraft or the enemy aircraft or adversary aircraft. So you had to physically manoeuvre the aircraft, use its energy to outsmart the enemy or the adversaries aircraft and get yourself into a position where you have an advantage and your CCM, you are able to launch. That's the main key. And in case you didn't make a missile, you didn't make a hit, then you can close in from that position into a position where you can take a gunshot. So these concepts are now slowly becoming

outdated with the event of PVR class missiles. But, yes, this remains the bread and butter for any budding combat pilot. You have to start at one versus one, one fighter, one defender, one attacker. Then you move to two defenders, one attacker. That's called two vs one. Then you move to two vs, two, wherein you have two defenders and two attackers. Then these attackers could be coming off a radar vector or they could be visual. So there are various permutations and combinations. So the syllabus progresses from - it starts with the tail chase, actually. So you start trying to maintain a position of tail chase the adversary aircraft, then you move into position, then you try one versus one and then you move to two versus one, then two versus two, and it goes on. So in the case of Hunters, we essentially maintain two versus one. It was an exposure there, but the aircraft was amazing, just manoeuvrable.

PR Ganapathy:
Lovely. So after about 100 hours on the Hunter, you were informed that you've been detailed to fly Jaguars, is it?

Gp Capt Balyan:
Yes. There were two strike fleets that we had at that time. One was the MIG 27s and the other was Jaguar. Jaguar was the mainstay..The MIG 27s we did not have as many Squadrons at that stage. So few of us went to the MIG 27s and majority of us continued to Jaguars. I moved from Kalaikunda to the front-line, based in Maharashtra. That's when we started our actual fighter flying.

PR Ganapathy:
Wow. What was that feeling like when you were nominated to join the Jaguar fleet? Which Squadron was that and what were they operating at the time? Which type of Jaguar?

Gp Capt Balyan:
Actually, of course, it was in the pipeline. We know we go to a Jaguar Squadron mostly, but which Squadron, and that was the interesting part. So that is the time we went to a Maritime Squadron, the only Maritime Squadron that the Air Forcehad at that time. Usually the Squadron did not host young pilots initially, because they did not have the required training effort. So it was a little surprise, but, yes, it was a welcome surprise.

PR Ganapathy:
What rank were you then? Did they commission you as a Pilot Officer?

Yes, that's interesting. I was a Pilot Officer then. That was a very interesting rank. It's no longer there in the Air Force now, but, yes, Pilot Officer then Flying Officer and I was very lucky. I served in all my ranks in the same Squadron at some stage.

PR Ganapathy:
Super. Tell me about your first experience seeing the Jaguar, flying in the Jaguar. And I think none of the aircraft you'd flown thus far had a simulator. But the Jaguar, I think, had a simulator, isn't it?

Gp Capt Balyan:

So we had a simulator and now from a single engine jet, we came onto a twin engine jet. So that was a big jump. And I remember the training, the training notes of the Jaguar are so exhaustive and voluminous. So initially we felt, oh, my God, this is going to be a lot of work here and my Squadron and my seniors were also good taskmasters. They expected nothing less than the best, so they also kept us on our toes throughout. Fortunately, I had a coursemate with me, so we were able to sail through. Yes, so the simulator was not in this Base of ours, for that, you have to travel all the way to Ambala so simulator training was done that time, but it was not a full motion simulator as we have today. So it was limited, it was little, I would say legacy simulator. Yes. But you could practice most of the equipment. And one subtle change that we all were flying a Darin 1 aircraft and the simulator used to be a Navas simulator. You could get your basic procedures, et cetera sorted out,and you could familiarise yourself with the cockpit, you could get a feel of the controls, you could see what the head-up display was, also a big jump. So far, we have not seen any head-up display on the aircraft. So when you saw a head up display, initially you could see through the head-up display. So that was a new addition. That was interesting. So the simulator was a big help in connecting this training void.

PR Ganapathy:
Wonderful. So let's come back to the Jaguar. We had a long interview with Group Capt Ajit Agtey, who did a lot of the Darin development work and then raised the first Darin Squadron. in fact, in Gorakhpur Deep penetration strike and what particularly was different about the maritime Squadron, how are those Jaguars different, their role different or equipment different?

Okay, so the Jaguar came to us in a version called Nav-wass. Here the navigation equipment was little legacy and the system would drift a little more and the head-up display also would tend to because the system was dated. I'm talking about 94-95 when these systems came. The system came earlier than that, so it was not as accurate as one would desire at that time, with the existing technology in the world at that stage. So Darin was an in-house development and this really gave a quantum jump to the navigation capability of the aircraft, navigation and weapons aiming and delivery capability of the aircraft. So the head-up display was much better, the navigation was far superior and the errors were far less. So, yes, even the head-up display was much improved. So coming to what is different in the normal Darin, normal Darin aircraft and that the one that is with Maritime aircraft also has what is called a radar. So the nose of the aircraft is slightly different from the other Jaguar aircraft, because here we have the radar and the other places you have a normal laser window and Peter for the fighter versions. So this was different. And the role required that you have a radar because you're going into the sea and in case you have to pick up the targets, the only way you could do is through the radar. The additional feature on a maritime aircraft, Jaguar is radar.

PR Ganapathy:
Give me a sense for what a typical mission for a Jaguar pilot would be like and what the sequence of events would be leading up to that mission. The planning, the briefing, the walking out the aircraft, just put us in the cockpit with you and give us a sense for what it is like.

Gp Capt Balyan:
Okay, so when you plan for a mission, or a sortie, or a let's say strike mission, the flying starts much earlier, let's say 24 hours, and if you have a little more time too. I'm just talking about the peacetime training. So let's say 24 hours before the Flight Command calls Crew A B C will fly this particular mission. And this is going to be a target, simulated target. This is going to be the weapon that you are going to simulate and this is going to be the configuration of the aircraft. This is the EW Kit that you'll have on board and this is the routing that you make a plan and this is the area where you may have an interception from an air defence aircraft plant. So all these things need to be now put together. So there will be a team which will be making the maps for the route, because earlier it should be on low level and low level. navigation is not easy and you could not really depend on the system throughout. There was no GPS. So if the system is out by, let's say, point three nautical miles, that's a lot of distance off track. In a strike, you will miss your target entirely. So you had to make a very detailed map, which is called high-scale, large-scale map, and make the final what we used to call a final point is the IP point. And then to the target, a detailed map would be made, which literally you have to mug up and, of course, you carried for reference in the cockpit, but because things are moving so fast, you have no time to refer, so most of it you would know by heart, and then which side is the other person going to be? He's going to be on the left, right. Tactical action will take which side after strike, which side, you will turn all those plannings have to be gone into a much detailed manner and it's a very time consuming and tedious process which has to be done diligently, repeatedly. And at the end of it, it's a very satisfying effort, but, yes, it is a lot of effort. And then you're coordinating with the element which is going to do an interception on you. Then you have to coordinate with them. What are the frequencies that you will speak to them and which is the area that you're going to plan for the interception. Will there be radar cover on that? Will there be no radar? So will it be visual? Simulator a form environment. What is the environment you will simulate.……

So all these aspects have to be played into and then the briefing is held prior to the mission. In case the mission is early morning, then you end up doing the briefing the previous night before you pack up for the day and all these aspects are covered with each member of the formation. And thereon you start the next day. When you come, the day starts with the early morning briefing which starts with medical,followed by briefing of the met elements, runway elements and the general environment basically. And thereafter you go back to the Squadron, you practice emergency and then you once again do a refresher briefing for the mission. Thereafter you proceed like in case of a Jaguar aircraft, the alignment time, ground manoeuvring time, etcetera is little on the higher side, as compared to a Navy aircraft because you have to feed the routes, the entire thing. So it takes about 40 45 minutes and to 1 hour depending on where you do your take off time that you reach the aircraft. And once you reach the aircraft, you are received by the ground crew and they assist you in the strapping up and startup thereafter you taxi out to the runway in use now, depends, Jaguar does a beautiful pair take off. So most departures in formation are pair take off and similarly while recovery also most recovery are as far as possible done on the pair landings. That's how it starts. When you go through the mission, going through point by point, making the radar contact with the various radar units, contacting the interceptors or thereafter the range

where you intend to drop a weapon, simulated weapon or actual weapon, carry out, regroup thereafter and come back to Base

PR Ganapathy:
And you're typically flying fairly low?

Gp Capt Balyan:
Yes. So most missions would be low level and in case the routing requires you to travel long distance, then it could be some legs, could be at the mid-levelt, roughly we fly about one and a half hours, but with the AAR coming in, the scope is increased considerably.

PR Ganapathy:
So for those of our listeners who don't know what AAR is, could you tell us a little bit about that?

Gp Capt Balyan:
Okay, so air to air refueling is a very interesting aspect. It really gives you a big jump in the capability of the aircraft and it reduces the downtime. You can have an aircraft in the air for much longer. You can have the aircraft radius of action increased considerably. So essentially it's a refuelling station in the air and depending upon what is the kind of mission, how many aircraft it has to refuel, the refuelling aircraft may go with you for a while and continue with you along the route for some time till it enters into outside the tacticall area and you can finish a mission and then come back and again tank up and go back to Base. So your fuel requirements get looked after. And, for example, you could fly from one end of the country to the other end, which wouldnt have been otherwise possible without AAR. So AAR gives a number of jumps.

PR Ganapathy:
As a pilot, it just seems incredibly hard to link up that probe with the basket. How did you find it when you did it for the first time? How long does it take before you get the hang of it?

Gp Capt Balyan:
Yes, actually, the formation flying that we do is a precursor. I mean, it sets the ball rolling, and when you have fairly good confidence in your formation flying, that's the time you move on to the air-to-air refuelling and air to air refuelling requires a very high level of skill, because in this case, the probe has to be flown into the basket. Right. So the basket is very small in diameter and particularly for Jaguar aircraft, the probe is placed in such a precarious angle that you have to assess, make an assumption that things are right. It's a little tricky. Yes, it's tricky, but, yes, with the practice things do. You have good references and critical thing is that you have to have the correct kind of overtake when you're coming close to the basket. You are also in the wake of a big aircraft in front of you. You have to avoid getting in its wake and all these things come into play, especially sometimes when you're doing your mission and you're low on gravy and you don't have too many chances, you really feel the pressure of making a contact. But, yes, when you make a contact, it's very satisfying.

PR Ganapathy:
Have you had situations where somebody has failed to make the contact and had to divert?

Gp Capt Balyan:
It happens mostly the air to air refuelling is planned in such a manner. It caters for contingencies where you may have to divert in case of a failed contact. So that's all usually for the training purposes. Sometimes it happens. Sometimes what happens is there are too many aircrafts waiting for the same tanker to refuse. So somebody who's waiting for a long time has not got a chance. He may then decide to go back and it becomes more interesting when it's night is even more interesting.

PR Ganapathy:
That must be really hairy.

We have done air to air rer refuelling both by moonlight and dark night. Both are very chilling and satisfying at the same time.

PR Ganapathy:
What was it like flying over the sea low level at night? And can you tell us any memorable missions that you had, especially against the Navy, where you were trying to find the fleet and strike it?

Gp Capt Balyan:
Okay, so maritime flying is a very, I would say, niche kind of flying. Very few Squadrons do it in the Air Force now, of course, the number of Squadrons doing the maritime flying has increased after the induction of SU 30s. We have earlier only Jaguar, of course, very limited flank was being taken up by the MIG27s, but mostly dedicated maritime Squadron was a Jaguars Squadron, essentially because you required twin engine to go see for retainancy. Basically, so many times, flying essentially requires that you will reach close to the enemy's ship surface units and the fire while you are still outside his closing within systems range of closing system. So you have to do a stand up kind of a launch. And that's why you carry the fairly good range. Now flying once again, because you have to go undetected, you have to fly low and flying low over the sea where there is no depth perception is little reduced because there are no stand out objects as such, because there are also no obstructions. Rarely you'll find any birds more than 25 miles out of the sea except the ones which have been going on the merchant vessels. Some ships are very rarely you'll find other. So it's fun and fun flying low level over the sea. It's a very nice feeiling. And searching an enemy ship in the ocean is like searching for a needle in a haystack. And the Indian Navy comes to the rescue for this purpose. Actually, the search part essentially is done by the Indian Navy. Search and validation is done by the Navy thereafter the strike mission as such, of course, because remember here, both the aircraft is dynamic and the ship is also dynamic. The target and the platform, both are dynamic. So that makes it even more challenging. So from the position that you would have known where the target was about some time back, it has moved from there. So as you come close in, you will have to use your own senses to identify which is the target that we're looking at and thereafter also ensure that you stay below it's radar horizon so you go undetected. And now try and carry out a manoeuvre so that you are

able to launch a weapon.

PR Ganapathy:
And for this, the Jaguar uses what the Sea Eagle or the Exocet. Which of the missiles do we have in the IAF?

Gp Capt Balyan:
So Sea Eagle was the missile that we had earlier and thereon we have moved on to the Harpoons. Now, as I told you, the SU30s have also come into the play. We have a new weapon which you are aware of Brahmos,will have ……..role that will be game changing because it is a supersonic missile. It's an option by the enemy ship closing weapon system. Extremely so. That would be game changer.

PR Ganapathy:
As an attack pilot, I'm sure you've had several occasions to fire live armament. Can you give us a sense of what it feels like to fire Rockets to a strafing attack, drop bombs of various kinds, just dump free fall retarder versus smart or guided, laser guided bombs and so on and so forth.

Gp Capt Balyan:
When you're doing live firing, when you're firing a weapon and it is really very intricate exercise, requires a lot of concentration because you don't want the weapon to go, because in any strikes, your professional competence is measured in terms of your capability to send the weapon where it is required. Right? So it is taken it's a very serious business in a strike score, I guess it would be same story.word over So a lot of effort is put in the training, ground training, analysis of previous missions, films that are available from previous missions. whether it is for rocket attack, whether it's for laid down attack or whether it's for medium level altitude, level release or dive release, you have to go through the full mechanics of the bombs, how they work, how the system is integrated onto the aircraft, what are the symbols that you see on the time of release, how it should be, except for the places where it's the auto release point. The rest of it is very interesting, especially I find when you're doing a low level during the high speed runs, when you're doing the low level attack. So that is the time when you really feel the entire thing moving fast and you have a very small target and moving at high speeds to be able to pull at the base of the target, simulate it's very interesting. So it takes a lot of practice and you have to train yourself well. You have to know your procedures are absolutely correct because you don't have time. Things move very fast towards the terminal phases of the attack, so you can't have distractions. Finally, it all boils down to your training. If your training is good, you know exactly what to do, what time that is the key for a good weapon, whether it's a rocket attack, whether it's a bomb attack, whether it's a medium altitude release attack, the system can assist you a lot. It caters for various aspects. bends,aircraft, flips, everything is catered. But you have to still have to fly that bomb line also, through the target and ensure the rider for the system. The release point is happening in such a manner that you're able to tune or your anticipation has to work in such a manner that you are able to let the pace every time. So that requires a lot of practice. When you get a very good score, it's very heartening also and very satisfying.

PR Ganapathy:
Give us imagine you've just come overhead the range. What happens then? What altitude are you at? And then the range officer clears you. How do you roll in? What do you see? What is the target like?

Gp Capt Balyan:
Okay, so the procedure essentially is for the aircraft overhead, the target or the range area at a specified height. This will vary depending upon how many aircraft the range already has ahead of you, like a normal traffic pattern at an airport also. So he will give you a level, which is he'll keep you stacking up depending upon the number of aircraft ahead of you. Usually you are given a slot, you have a ToT to make. So during that time, the range officer also tries to keep the aircraft out as far as possible, but there are delays and everything happens. Two Aircraft comes from different ways. It's low on gravy. He wants to do one more pass. So in those cases he tries to accommodate and there may be chances wherein he has to stack up the aircraft. So he kind of plays the ATC role also where he's managing the traffic on the radar frequency. Once you're cleared, you descend to a height which gives you a perspective of the ground below which you should not be going during your attack. So that's called a safety height run. We do a safety so you get a full feel of the pattern. You are also able to check out your system, system accuracy that is showing you the correct position of the target on the ground and thereafter you feed in. During the training mission, you do one dummy circuit kind of thing and thereafter you carry out your live ….. If you're carrying a weapon, a live attack would be essentially a rectangular pattern for the size of the pattern would increase or decrease depending on whether you are doing a rocket attack or whether you're doing LD attack or you are doing a medium level attack. So for a medium level attack, you will be climbing to a height around 15, 20,000 ft or higher and putting attacks on that side. And for low level attack, you will be about 500 ft. Mostly the height band that we are looking at when you're doing LGB attack or when you're doing a high release attack for a stand up weapon, this height could be much higher and the standoff distance would be much more. In case of standoff weapons, the aircraft may never come over the range itself. So thats another aspect. It's a various permutations and combinations.

PR Ganapathy:
Great we're coming up on the hour. So how many total hours do you have and how much of that was on the Jaguar?

So I have about 3000 plus hours of flying experience and close to 2000 on Jaguar.

PR Ganapathy:
That's just amazing. So what does the future hold for you? I know you've just left the Service. What are your plans?

Gp Capt Balyan:
Yes, I had a wonderful stint in the Air Force. I served for 27 years and now I've taken premature release from the Air Force and I intend to continue flying, get some more flying and I look to join Airlines outside. Now the situation is such that there may be a certain wait period involved, but right now I intend to join some flying preferably an airline

PR Ganapathy:
In the few minutes we have left, we haven't touched on your Flying Instructor period. I know you became a QFI, an Instrument Instructor, so you had spoken about being the first pupil that went solo of your Instructor. What was it like to be an Instructor, to send your first pupil solo? And what was that experience like?

Gp Capt Balyan:
Thank you very much. In fact, I was very lucky. I was among the youngest Instructors of my Course and having gone there at the early age, I had loads of patience also on my side. And I did a fairly long instruction tenure, almost of four years in the Training Academies. And of course, I was Instructor on Jaguar and …… Instructor also in there. But the Instruction flying satisfying that you do on the training is very satisfying. I would say you get to teach somebody the art of flying. It is really satisfying. So I was fortunate the way I did my flying training. I started in BFTS and then went to Bidar similarly. I was instructed initially on the HPT-32 and thereafter at the BFTS, and then I moved to Bidar as Instructor

People have no clue of flying, power, flying. So there you start telling them, what is the control column do, what is power, what is the pitch, what is the mixture, how to taxi the aircraft, how to anticipate for braking. So it is a very very time consuming and very tedious process. By the end of it, it is the most satisfying thing when you see your pupil, they go solo and become a pilot. And yes, when you see them in the Air Force, that's what they are doing. So they really become part of a family at the end of the day and there's a special relation which is between the Instructor and the pupil, and it stays forever. So I can never forget my Instructors on either of the threet. I have had Instructors HPT-32 and Hunter, Jaguar, all these aircrafts,, the Instructors who flew me and my dual checks and I went solo. Those Instructors will always remain special to me. It is a special bonding and likewise the pupils for whom I've done this solo time, they will always remain very special. They are my family, actually.

PR Ganapathy:
Wonderful. On that happy note, I think I want to thank you on behalf of the audience in the Blue Skies podcast and on behalf of the country for your service and thank you so much for taking so much time today to speak to us. Wish you the very best in the next chapter of your career, which hopefully is not delayed too much because of the covert pandemic, but all the very best Sir.

Gp Capt Balyan:
Thank you very much. It was an absolute pleasure speaking with you. And you yourself are such a keen aviator and really much that we learn from you too.

PR Ganapathy:
Well, folks, I hope you enjoyed that conversation with Group Captain Balyan. I think what struck me through this conversation was the very, very high, demanding standard that these pilots have to live up to and the incredible training that they've been given to ensure that they live up to that standard. That is what really came out to me. Flying at night, 50 or 80ft off the

water, trying to do air-to-air refuelling at night, hitting a target plus or minus a few feet on the first pass without an opportunity for a do-over. That's what's expected of these pilots. That's what they are trained to do. And that's what they're capable of doing. So if you wonder what's happening to your Tax rupees and how that's being spent and why the Air Force needs so much of money in peace-time, the reason is when the push comes to shove, when we count upon these pilots to drop a weapon on target in a Balakot or somewhere else, they are trained and they can do it and they can do it the first time to the level of accuracy that's expected of them. The other lesson that I learned from this is just the wonderful feeling of camaraderie that pervades the entire Air Force. And so while they set high standards, if you make it to fighters and somebody else doesn't, you do your best to cheer that person up. If you come into a new Squadron, whether you're a youngster and your seniors set high standards for you, they don't just set the standards and leave it to you to perform, but they really help you achieve that standard. And that's a camaraderie that I remember and that's what we heard about from Group Captain Balyan.

I hope you enjoyed the conversation. I know I did. Join us again next week. In the meantime, sign up for updates at blueskiespodcast.com. There you'll find links to follow us on Twitter, Facebook and Instagram. You can also write to us with your comments, questions, suggestions and feedback from the website or to blue Skies at PR Ganapathy.com. Subscribe to the podcast on any podcasting platforms such as Stitcher, Google podcast, Spotify, Apple podcasts and even on YouTube. If you like what you heard, share it with your friends, give us a rating in your favourite podcasting app and write us a review. It will help other people find us. I want to give my thanks to Saurav Chordia for our logo and Princip for the music. I want to reiterate that all the views expressed here are personal and this podcast has not been approved by or reviewed by the air force, Ministry of Defence or any branch of the Government. In the meantime, stay safe and Jai Hind.