

How Many Squadrons Does India Need?

Creating a framework and formula to calculate IAF squadron strength for two-front and four-front war scenarios

Eight chapters, 27 figures and 48 tables on how India reached 42 squadrons, what four war scenarios require, what the 2026–2040 pipeline delivers, and what force multipliers change. 40 pages, evidence graded and sourced.

DELTA DOCTRINES

October 2026 | Open-source analysis. Reported figures are sourced; model results and judgements are labelled.
Not intelligence reporting. Contains no classified material. Framework inputs are illustrative.

CONTENTS

Contents and reader's guide

Ch.	Chapter	Pages
1	Executive summary; how India arrived at 42 squadrons; today's squadron strength and aircraft	3–8
2	Framework: the formula for two-front and four-front requirements, in air-denial and air-supremacy modes	9–14
3	Detailed inventories: Indian Air Force, China, Pakistan, Bangladesh and Turkey	15–20
4	Calculation: required squadrons in the four scenarios, with sensitivity and Monte Carlo	21–27
5	Gaps in each scenario: by number, class, time and quality	28–31
6	Procurement pipeline year by year: Tejas Mk1A, Mk2, AMCA, 114 Rafale; net gaps	32–35
7	Force multipliers: CATS Warrior, drone warfare, AEW&C, network warfare	36–38
8	Conclusion and recommendations	39
A	Source register, method and limitations	40

What this paper does

The Indian Air Force's sanctioned strength of 42 fighter squadrons is the most quoted number in Indian air power debates, and the least examined. This paper does two things with it. It reconstructs where the number came from, and it tests it against a transparent formula that converts adversary air forces into the squadrons India would need in four scenarios: a two-front war with China and Pakistan, and a four-front war that adds Bangladesh and Turkey, each fought in an air-denial or an air-supremacy posture. The formula, its coefficients and the base-case adversary figures are taken from the Delta Doctrines framework deck supplied for this study [S1]. We add four things to it: current inventories updated to October 2026, a sensitivity and Monte Carlo layer that was actually run, a year-by-year pipeline projection to 2040, and a force-multiplier chapter that puts numbers on what drones, airborne early warning and networks can offset.

Evidence conventions

Label	Meaning	Where used
Reported	A figure published by a named outlet or government source at the date shown, tagged [S#]	Inventories, contract dates, history
Framework assumption	A coefficient or adversary figure from the framework deck: illustrative, not classified data [S1]	Formula coefficients; base fleet counts and deployment ratios
Delta Doctrines model	A result computed by us from stated inputs (Monte Carlo, pipeline cases, multiplier offsets)	Chapters 4–7
Delta Doctrines judgement	An ordinal score or split with no measured data behind it	Figure 5, the Table 11 quality weights, the Chapter 7 offsets

SQUADRON-EQUIVALENT

Throughout, one squadron-equivalent is 18 aircraft, the IAF planning convention of 16 single-seat jets and two twin-seat trainers [S1]. Where this paper counts in-service strength it counts the 505 single-seat combat aircraft listed in Table 3 and divides by 18, which gives 28.1; the official figure of 29 squadrons is used as the baseline for gaps.

CHAPTER 1 | EXECUTIVE SUMMARY

The 42-squadron number is a legacy, not a calculation, and every scenario exceeds it

The Indian Air Force has 29 fighter squadrons against a sanctioned strength of 42 [S5][S3]. The sanction has never been met in the way it is usually described, and it was never the output of a force-ratio calculation: it descends from the 1963 recommendation of the Tata Committee, cut for budget reasons from 50 combat squadrons to 35 and later restored to 42 [S1]. This paper asks a different question. If one builds the requirement bottom-up from the adversary air forces India could face, how many squadrons does it take, and how far is the pipeline from delivering them?

The answer in one paragraph

Using the master formula in the framework deck, a two-front war with China and Pakistan requires about 54 squadrons for air denial and 81 for air supremacy; a four-front war that adds Turkey and Bangladesh requires about 60 and 96 [S1]. A Monte Carlo run of 200,000 campaigns around those inputs puts the 10th–90th percentile range at 47–64, 69–97, 53–70 and 83–114 squadrons respectively. The sanctioned 42 would be sufficient in roughly 1% of two-front denial campaigns and in none of the other three scenarios. Against that, the Indian Air Force's pipeline of Tejas Mk1A, Tejas Mk2, AMCA and a possible 114 Rafale lifts strength only from 28 squadron-equivalents today to about 33 in 2035 and 43 in 2040 on our base case, because Jaguar, MiG-29 and Mirage 2000 retirements remove roughly 181 aircraft over 2027–2035. Force multipliers (loyal-wingman drones, wider drone warfare, airborne early warning and networking) cut the requirement by 12–35% if they work as designed, which is not enough to close any of the four gaps.

Scenario	Formula (squadrons)	Monte Carlo P10–P90	Gap vs 29 today	Base-case gap in 2035	With multipliers (60% realised)
2 fronts, air denial	54	47–64	25	21	48
2 fronts, air supremacy	81	69–97	52	48	63
4 fronts, air denial	60	53–70	31	27	53
4 fronts, air supremacy	96	83–114	67	63	75

Table 1. Headline results. Formula and base inputs from the framework deck [S1]; Monte Carlo, pipeline and multiplier columns are Delta Doctrines model outputs (Chapters 4, 6 and 7).

BOTTOM LINE

Even the most favourable combination in this paper, a two-front denial posture with every pipeline programme on its optimistic schedule and every force multiplier delivering in full, leaves India short of the requirement through 2040. The question for planners is therefore not whether to restore 42 squadrons but which scenario to buy for, and in what order.

Eight findings

- **The 42 number is a historical settlement.** It reflects what the Government was prepared to fund after 1962, not an assessment of adversary strength. The IAF chief said in October 2022 that 42 was needed and 'appeared difficult at the moment' [S3].
- **The lowest requirement is already above the sanction.** Two-front air denial needs 54 squadrons on the framework's inputs, 12 more than 42 and 25 more than the force has today.
- **China's deployment ratio is the swing variable.** Moving it from 16% to 25% adds 14 squadrons to the two-front denial figure; no other single input moves the answer as much (Chapter 4, sensitivity).
- **Adding Turkey and Bangladesh is cheap in numbers, costly in structure.** They add only 80 effective aircraft and six squadrons to the denial requirement, but they create a permanent eastern commitment and an expeditionary drone threat that the formula treats lightly.
- **Supremacy is a different force, not a larger one.** The 1.5 and 1.6 multipliers imply 27 and 36 extra squadrons for SEAD/DEAD, offensive counter-air and sustained sorties, which is a strike-heavy mix India does not currently have.
- **The pipeline replaces numbers, not mix.** By 2035 the force is 15 heavy, 12 light and only 6 medium squadron-equivalents, against a requirement for about 21 medium squadron-equivalents in the two-front denial case (the deck's 32:38:30 light:medium:heavy split). The 114 Rafale decision is the single biggest lever on the mix.
- **Delivery capacity is the constraint.** HAL states a Tejas Mk1A capacity of 24 a year while the contract timetable implies about 26 [S7]; GE has agreed to supply 113 further F404 engines [S8]. Retirements peak at about 28 aircraft a year in 2031–34.
- **Multipliers shift the problem; they do not remove it.** Even at full realisation the multiplier stack leaves the four-front supremacy requirement at 62 squadrons, double today's force.

Recommendations

#	Recommendation	Why	Evidence in this paper
1	Convert the 114-Rafale approval into a contract in 2027 and fix the medium-tier mix	Medium swing force is the largest class gap in every scenario	Chapters 5–6
2	Treat engines as the programme: lock GE F404 and F414 delivery rates and a second source	Engine deliveries cap Mk1A output	Chapter 6
3	Plan retirements against deliveries: extend Jaguar and MiG-29 only where a squadron would otherwise lapse	Retirements peak at about 28 a year in 2031–34	Figure 18
4	Fund AEW&C, tankers and networking as part of the squadron count, not as extras	Together they offset 3–6% of the requirement each	Chapter 7
5	Declare the scenario: air denial on two fronts is the buyable baseline; supremacy is a theatre-by-theatre goal	Supremacy needs 81–96 squadrons	Chapter 4
6	Run an official Monte Carlo and publish the confidence level the Air Force is buying	The sanction gives about 1% confidence for the lowest scenario	Chapter 4

READING NOTE

Every adversary figure and coefficient in the base case is illustrative and open-source [S1]. The conclusions that do not depend on the exact inputs are the structural ones: the requirement exceeds the sanction in all four scenarios, and the pipeline does not reach even the lowest requirement before 2040.

CHAPTER 1 | HISTORY

How India arrived at a sanctioned strength of 42 squadrons

The 42-squadron figure has a specific history, and the history matters because it shows that the number was set by what could be funded after a defeat rather than by what a calculation required. In October–November 1962 the IAF went into the Sino-Indian War with 23 combat squadrons and, for reasons that are still debated, did not use its combat aircraft in the offensive role [S1]. The shock produced an inquiry into India's military aviation needs. A committee comprising the three service chiefs, the Defence Secretary and J.R.D. Tata, the founder-chairman of Air India and a licensed pilot, was asked to draw up a ten-year roadmap of aircraft, radar and signalling equipment [S1]. Tata was the only civilian member, a choice a later Air Chief described as 'a little difficult to understand', although he judged the resulting report 'very well done indeed' [S1].

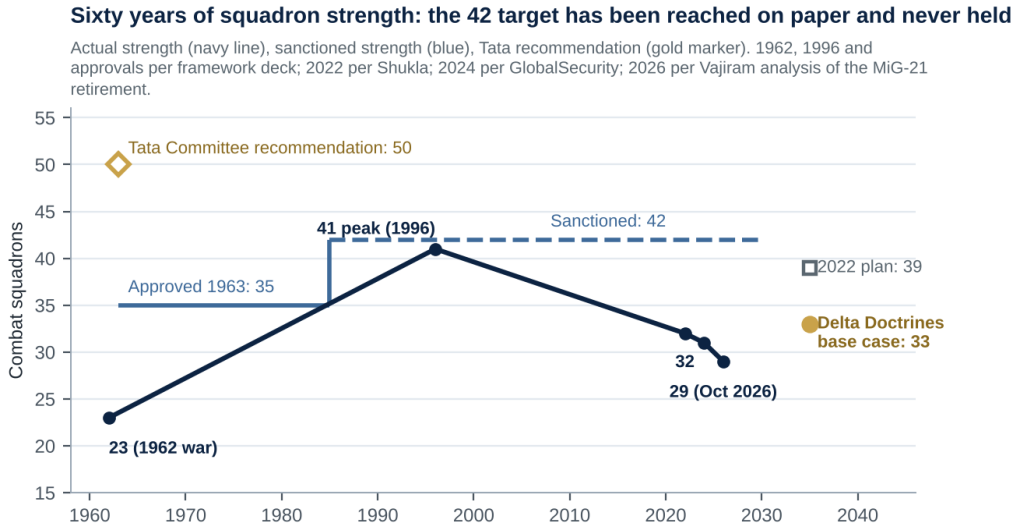


Figure 1. Squadron strength, 1962–2026, with the 2022 plan for 2035–36 and the Delta Doctrines base case. [S1][S3][S4][S5]

From recommendation to sanction

The Tata Committee reported in 1963 and recommended 50 combat squadrons, or 64 squadrons including transport. The Government, constrained by the budget, approved 35 combat squadrons (45 in total) [S1]. The target was later raised to 42, and actual strength peaked at about 41 in 1996 [S1]. From that point the trend is downward: 32 squadrons in 2022–23 [S3], 31 in 2024 [S4], and 29 after the MiG-21 was formally retired on 26 September 2025 [S5]. The framework deck states the point directly: the 42 figure traces to the 1963 recommendation, cut for budget reasons and restored over two decades, and was never itself the output of a two-front force-ratio calculation [S1].

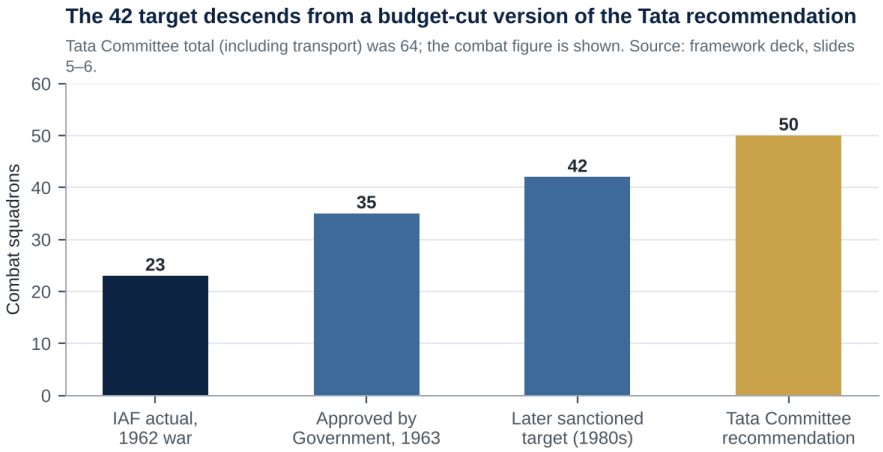


Figure 2. Combat squadron figures at each stage of the 42-squadron lineage. [S1]

What the 2022 plan assumed

The most recent public attempt to show how 42 might be restored is the 2022-23 to 2035-36 table published by Ajai Shukla after the Chief's statement [S3]. It started from 32 squadrons, retired about 15 (three MiG-21, six Jaguar, three Mirage 2000 and three MiG-29) and added 22 (Tejas Mk1A 4, Tejas Mk2 6, AMCA 6 and a 6-squadron medium multirole programme), arriving at 39 by 2035-36 [S3]. Three years on, the retirement half of that plan is on schedule and the induction half is not.

Type	2022-23 (squadrons)	2035-36 plan [S3]	Delta Doctrines base case 2035	Comment
Su-30MKI	13	13	15.0	12 additional aircraft on order; 84 to be upgraded [S2][S21]
Rafale / MRCA	2	2 + 6	5.7	114 cleared Feb 2026; no contract [S10]
Mirage 2000	3	0	0	Retiring 2031–35 on our assumption
MiG-29	3	0	0	Retiring 2030–35
Jaguar	6	0	0	Retiring 2027–34
MiG-21	3	0	0	Retired Sep 2025 [S5]
Tejas Mk1	2	2	1.7	30 aircraft in service [S2]
Tejas Mk1A	0	4	10.0	180 on order; first batch late 2026 [S7][S8]
Tejas Mk2	0	6	0.7	First flight Sep 2027 target [S9]
AMCA	0	6	0	First flight Sep 2028 target [S9]
Total	**32**	**39**	**33**	Base case is 6 squadrons below the 2022 plan

Table 2. The 2022 plan against the Delta Doctrines 2035 base case. Squadron figures for the base case are aircraft divided by 18.

Three lessons from the lineage

First, the number is a budget artefact. A figure set by what could be funded in 1963 has no obvious reason to match the threat of 2026, which now includes a Chinese air force with about 200 J-20 stealth fighters and a Pakistan that has begun adding J-10CE aircraft [S11][S12]. **Second, sanctions have outrun funding paths.** Every revision since 1963 has set a target without a delivery profile to reach it; the 2022 table is the first to attach dates, and those dates have already slipped. **Third, retirements are certain and inductions are not.** The three fleets scheduled to leave by 2035 are ageing airframes with firm retirement dates, while each replacement depends on a development milestone or a contract that has not yet happened.

> ANALYST JUDGEMENT
> The right reading of 42 is therefore as a floor negotiated under constraint, not as a ceiling derived from threat. The framework in the next chapter does not replace the sanction with a new magic number; it makes the assumptions behind any number visible.

CHAPTER 1 | CURRENT STRENGTH

What the Indian Air Force has today: 29 squadrons and 505 fighters

The Indian Air Force operates six fighter types in 29 squadrons, down from 31 before the MiG-21's retirement. The Su-30MKI is the backbone with 258 aircraft in 13 squadrons; the Jaguar is the second-largest fleet by numbers at 86 aircraft but is the oldest and is retiring; the Rafale fleet is only 36 aircraft in two squadrons. Counting single-seat combat aircraft only, the force has 505 aircraft, equal to 28.1 squadron-equivalents at 18 per squadron. The reconciliation with the official 29 is close, which is a useful cross-check on both the inventory and the squadron conventions [S2][S3][S5].

Type	In service	Squadrons	Class	Role and status
Su-30MKI	258	13	Heavy	Twin-engine multirole air-dominance; 12 more on order; 84 to be upgraded to 'Super-30' [S2][S21]
Jaguar IS/IM	86	6	Medium	Deep strike; 26 two-seat IB trainers listed separately; retirement 2025-26 to 2032-33 [S2][S3]
MiG-29 (B, UPG)	59	3	Light	Upgraded air-defence fighter; depleting about 2032-33 [S2][S3]
Rafale EH/DH	36	2	Medium	Omni-role; Ambala and Hasimara; 114 more cleared by DAC [S2][S10]
Mirage 2000 H/I	36	3	Medium	Being upgraded to 2000I; 10 trainers listed separately [S2]
Tejas Mk1	30	2	Light	Plus 8 trainers; Mk1A (180 on order) not yet in service [S2][S7]
Total	**505**	**29**		Class split: light 5, medium 11, heavy 13 squadrons

Table 3. Indian Air Force fighter inventory, October 2026. Aircraft from Wikipedia's list of active Indian military aircraft [S2]; squadron counts from the 2022-23 table [S3] adjusted for the MiG-21 retirement [S5]. Trainers are excluded from the 505 total.

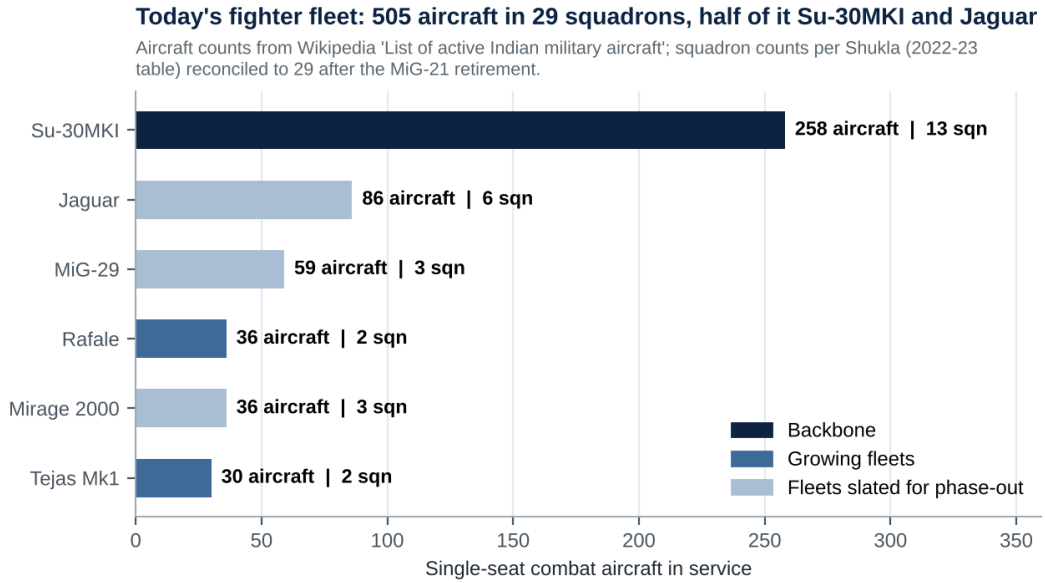


Figure 3. Combat aircraft by type with squadron counts. [S2][S3]

Reading the inventory

Two features of the inventory shape every later result. The first is concentration: 51% of single-seat combat aircraft are Su-30MKI, so a single fleet-wide issue (spares, an engine problem, a radar upgrade cycle) moves the whole force. The second is age: Jaguar, MiG-29 and Mirage 2000 together are 181 aircraft, 36% of the force, and all three are scheduled to leave by about 2035 [S3]. Their combined weight is why strength is flat or falling through the early 2030s even though new aircraft are arriving.

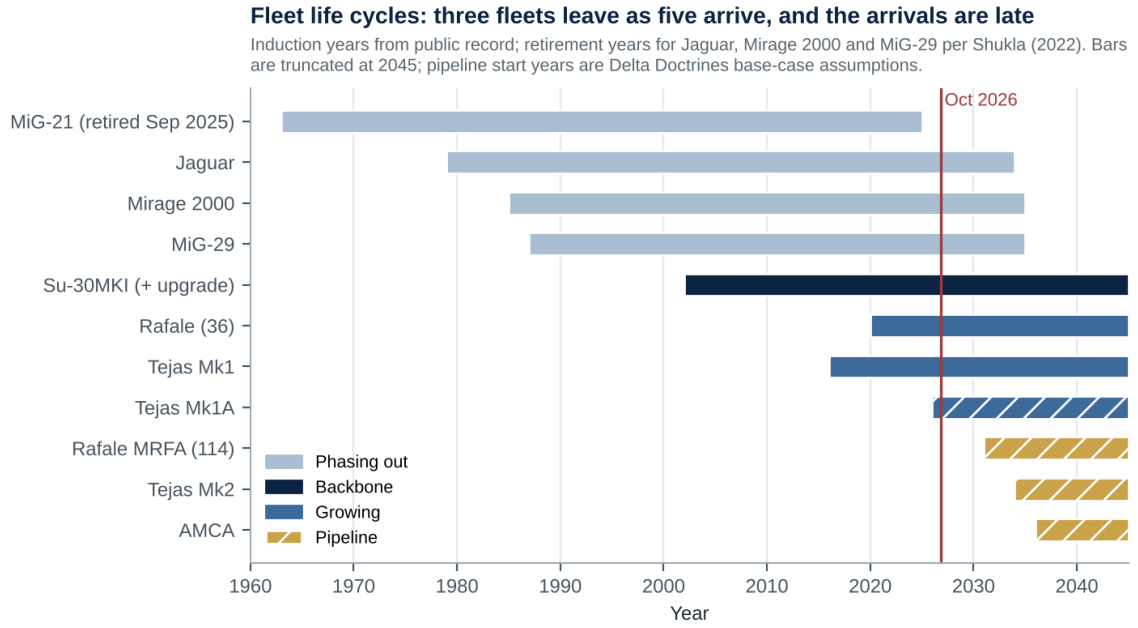


Figure 4. Fleet life cycles: induction year to planned retirement. Pipeline starts are base-case assumptions. [S3] and public record.

Reconciling the squadron count

Source	Date	Squadrons	Basis
Framework deck [S1]	2025	31	Before the MiG-21 retirement; about 540 aircraft
GlobalSecurity [S4]	2024	31	Su-30MKI 12–13, Jaguar 6, Rafale 2, MiG-21 3, MiG-29 3, Mirage 2000 3, Tejas 2
Vajiram and Ravi [S5]	Sep 2025	29	After MiG-21 retirement of No. 23 and No. 3 Squadrons (36 jets)
idrw [S6]	Jun 2026	29–31	Described as the sanctioned figure; 16–18 aircraft per squadron
Delta Doctrines bottom-up	Oct 2026	28.1	505 single-seat aircraft divided by 18

What the squadron count does not show

A squadron count is a nominal measure. It does not say how many aircraft are serviceable on a given day, how many pilots are current, how many have modern radar and missiles, or how many are in depot-level maintenance. The framework deck handles part of this through the 15% reserve factor, which covers training units, maintenance cycles and a strategic reserve [S1]. This paper keeps that convention and flags the limit: no public source gives serviceability for the fleet, and the model therefore assumes that squadron-equivalents reflect combat-ready strength after the reserve factor is applied.

The combat experience that frames the debate

The May 2025 India–Pakistan conflict is the first modern test of the two air forces against each other, and the public record is contested. The IAF chief stated on 3 October 2025 that at least a dozen Pakistani aircraft were destroyed or damaged, including four or five F-16-class fighters and an airborne early-warning aircraft, and dismissed Pakistan's claim of 15 downed Indian jets [S18]. The Chief of Defence Staff acknowledged on 31 May 2025 that Indian aircraft were lost without giving numbers or types [S19]. This paper does not adjudicate those claims. It uses them for one point: both air forces lose aircraft in a short high-intensity conflict, which is the logic behind the attrition factor in the formula.

> ANALYST JUDGEMENT
>
> The inventory today is a force built for a 42-squadron world that has been run down to 29 by retirement. The key planning fact is that the base of 505 aircraft is not the starting point for a build-up: for the next decade it is a stock that is depleting at one end while it is replenished at the other.

CHAPTER 2 | FRAMEWORK

The master formula: from adversary aircraft to required squadrons

The framework converts an adversary order of battle into an Indian requirement in four steps. It first counts only the aircraft each adversary can realistically commit against India, then converts them to squadron-equivalents, then adds cover for the aircraft that are never in the fight on day one, and finally adds a buffer for losses. Air supremacy is not a separate build-up; it is a multiplier on the denial result [S1]. The method sits in the 'force-ratio and attrition' tradition of force sizing, to which the deck adds capability-based and scenario-based thinking and, in this paper, a Monte Carlo validation [S1].

MASTER FORMULA (AIR DENIAL)

Required squadrons (denial) = [Σ (adversary aircraft × deployment ratio) ÷ 18] × 1.15 reserve × 1.20 attrition

Required squadrons (supremacy) = Required squadrons (denial) × supremacy factor, where the factor is 1.5 on two fronts and 1.6 on four [S1].

Term	Definition	Base value	Source of the value
Adversary aircraft (N)	Combat aircraft of each actor: fighters, fighter-bombers and bombers in the framework's counting	Pakistan 450; China 2,000; Turkey 200; Bangladesh 50	Framework deck [S1]; cross-checked in Chapter 3
Deployment ratio (DR)	Share of an actor's fleet realistically committed against India	Pakistan 85%; China 16%; Turkey 20%; Bangladesh 80%	Framework deck [S1]; tested in Figure 7
Aircraft per squadron	Conversion from aircraft to squadron-equivalents	18 (16 single-seat + 2 trainers)	IAF convention [S1]
Reserve factor	Training units, maintenance and upgrade cycles, strategic reserve	1.15	Framework deck [S1]
Attrition factor	Replacement buffer for combat losses and battle damage	1.20	Framework deck [S1]
Supremacy factor	Extra force for SEAD/DEAD, offensive counter-air, escort and sustained sorties	1.5 (2F); 1.6 (4F)	Framework deck [S1]

Table 4. Terms and base values of the framework formula.

Worked example: two fronts, air denial

Step	Calculation	Result
1. Effective aircraft	Pakistan 450 × 0.85 = 382.5; China 2,000 × 0.16 = 320.0; sum	702.5 (deck rounds to 703)
2. Squadron-equivalents	702.5 ÷ 18	39.0
3. Reserve cover	39.0 × 1.15	44.9
4. Attrition buffer	44.9 × 1.20	53.9, rounded to 54
5. Supremacy (2F)	53.9 × 1.5	80.8, rounded to 81

Table 5. Worked calculation for the two-front scenarios. The same steps with 782.5 effective aircraft give 60.0 (denial) and 96.0 (supremacy, ×1.6) for four fronts.

Why a formula, and what it can and cannot do

A formula forces every assumption into the open. A reader who thinks China will commit 25% of its fleet rather than 16% can change one number and see the consequence, which is a 14-squadron swing in the denial case. What the formula cannot do is reproduce combat outcomes. It sizes the force in numbers, treats adversary aircraft as interchangeable, and is silent on quality, geography and the order in which fronts open. Chapters 4 and 5 therefore add three layers around it: a Monte Carlo that replaces single numbers with ranges, a quality-weighting check, and a time dimension that tracks the force as it changes year by year.

CHAPTER 2 | FRAMEWORK

Defining the coefficients: what each one stands for, and how firm it is

Four coefficients carry the result: the deployment ratio, the reserve factor, the attrition factor and the supremacy factor. The base values come from the deck and are labelled illustrative [S1]. This chapter sets out what each represents, why the value is plausible, and the range we use in the Monte Carlo. Where the deck gives no basis, we say so.

Coefficient	Base	Monte Carlo range (min / mode / max)	What it represents	Evidence and caveat
Reserve factor	1.15	1.10 / 1.15 / 1.25	Aircraft in training, maintenance and strategic reserve	No Indian serviceability data is public. Air forces commonly keep 10–25% of airframes out of the front line; the range is Delta Doctrines judgement
Attrition factor	1.20	1.10 / 1.20 / 1.35	Combat losses and battle damage over a sustained campaign	May 2025 showed losses on both sides in about four days [S18][S19]; a longer campaign would raise the factor
Supremacy, two-front	1.5	1.3 / 1.5 / 1.7	Extra force to defeat adversary air defences and hold the sky	The deck gives the value, not a derivation. Figure 5 shows an illustrative split
Supremacy, four-front	1.6	1.4 / 1.6 / 1.8	As above, with more IADS and more theatres	Rises 0.1 because more fronts mean more SEAD/DEAD per available squadron [S1]
Aircraft per squadron	18	Fixed	IAF planning convention	16 single-seat + 2 twin-seat; USAF 18–24, RAF about 12, PLAAF regiments 24–30 [S1]

Table 6. Coefficients, Monte Carlo ranges and evidence. Ranges are Delta Doctrines choices around the deck's base values.

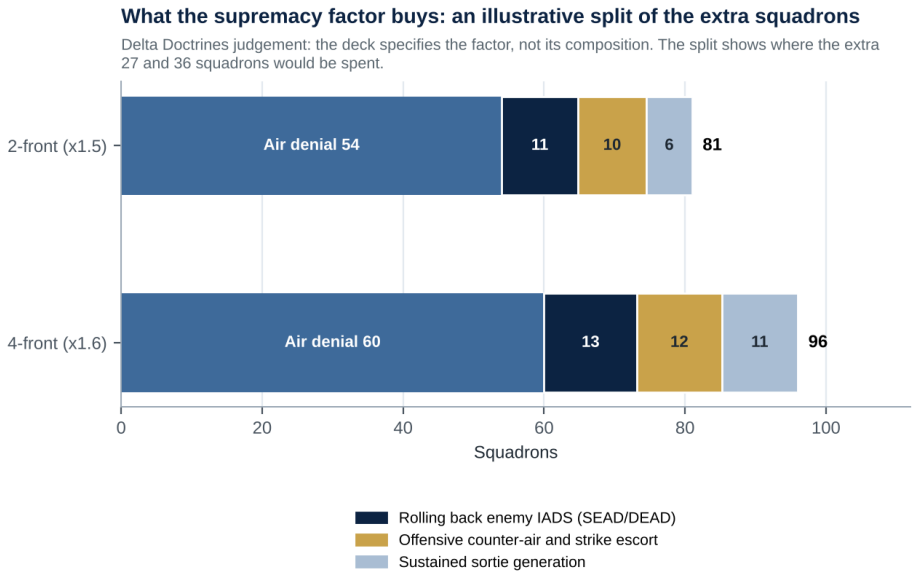


Figure 5. What the supremacy factor buys: an illustrative split of the extra squadrons. Delta Doctrines judgement.

Reading the supremacy factor

The extra 27 squadrons in the two-front case and 36 in the four-front case are the largest single block in any scenario, and the least explained. We split them for illustration into three tasks: suppression and destruction of enemy air defences, offensive counter-air with strike escort, and the additional sorties needed to keep pressure on for the length of a campaign. The split is a judgement. Its point is that supremacy is not 'more of the same': SEAD/DEAD needs specialist aircraft, standoff weapons and electronic warfare support.

> ANALYST JUDGEMENT
> The supremacy factor is the least certain coefficient in the framework and the one with the largest effect on the supremacy results. Treat the 81 and 96 figures as planning ceilings for a theatre-by-theatre campaign, not as a standing force target.

CHAPTER 2 | FRAMEWORK

Defining the two-front war: China and Pakistan, in denial and supremacy modes

The two-front scenario assumes that India fights Pakistan and China at the same time, in separate theatres: the western front from Jammu and Kashmir to the Rann of Kutch, and the northern front from Ladakh to Arunachal Pradesh. The two adversaries are modelled independently. The formula does not assume coordination, although a coordinated opening would raise the commitment ratios, and the Monte Carlo ranges allow for that.

Dimension	Air denial mode	Air supremacy mode
Objective	Prevent either adversary from achieving air superiority or conducting sustained strikes over Indian territory and forces	Gain freedom of action over both fronts; roll back adversary air defences; hold the airspace for joint operations
Core tasks	Defensive counter-air, interception, protection of airbases and key assets, limited counter-air	Offensive counter-air, SEAD/DEAD, escort, deep strike, sustained sorties
Formula	[Σ (N × DR) ÷ 18] × 1.15 × 1.20	Denial result × 1.5
Effective adversary aircraft	703 (Pakistan 383, China 320)	703, with the same commitments
Result	About 54 squadrons (972 aircraft)	About 81 squadrons (1,458 aircraft)
Home advantage	Counted in the deployment ratios: IADS, short transit, forward bases	Largely lost once forces cross the border and face adversary IADS
Main risk	Under-commitment to one front leaves the other exposed	Strike-heavy mix India does not yet have; high losses

Table 7. Definition of the two-front scenarios.

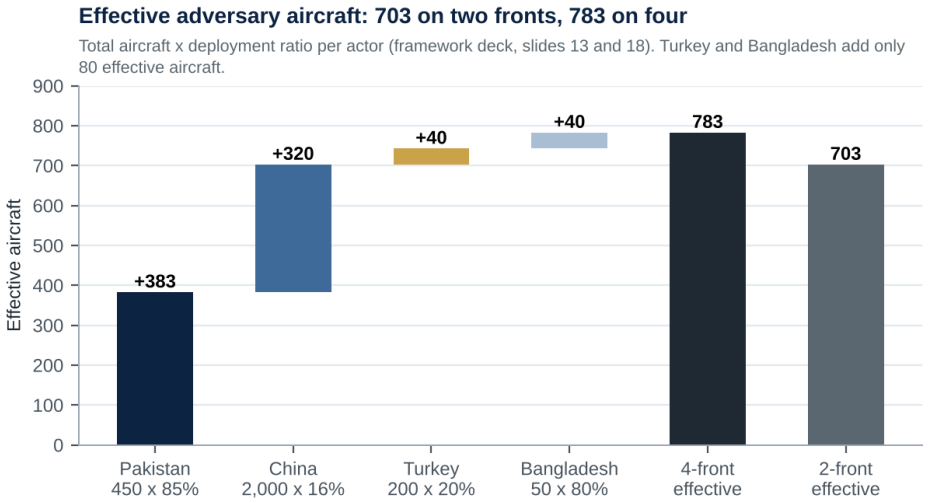


Figure 6. Effective adversary aircraft: two-front 703, four-front 783. Framework deck inputs [S1].

Why the western front is sized differently from the northern

The deployment ratios are the central modelling choice. Pakistan sees India as its near-exclusive threat axis and has no other active air-power contingency at this scale, so the framework assumes 85% of its fleet can be committed. China's air force is far larger, but its commands face Taiwan, the East China Sea and the South China Sea as well, and only the Western and Southern Theatre Command share is postured against India. That is how 2,000 Chinese aircraft become 320 effective ones. The result is a requirement that is split almost evenly: 383 of the 703 effective aircraft face the west, 320 the north.

> ANALYST JUDGEMENT
> The two-front result is more sensitive to China's ratio than to Pakistan's, because a few points of China's fleet equal tens of aircraft. The rest of the study treats China's commitment ratio as the variable that decides how much of the sanction is enough.

CHAPTER 2 | FRAMEWORK

Defining the four-front war: adding Bangladesh and Turkey

The four-front scenario adds Bangladesh on the eastern flank and Turkey as an expeditionary partner of Pakistan. The deck models them quite differently from Pakistan and China. Turkey has no border with India and is modelled as a token, logistics-limited commitment (20% of 200 aircraft, or 40 effective). Bangladesh is modelled as a small force defending itself (80% of 50 aircraft, again 40 effective) that nonetheless forces a permanent Indian commitment on a new axis [S1].

Actor	Aircraft	DR	Effective	Why it is a front	Modelled role
Turkey	200	20%	40	Reported military and industrial support for Pakistan; drone supply; F-16 operator	Expeditionary or drone-enabled detachment, not an independent theatre
Bangladesh	50	80%	40	Eastern border of 4,096 km; reported Chinese fighter talks; ties to China [S14]	Home-defence force; adds a standing commitment in the east
Added to two-front	250		80		Denial +6.1 squadrons; supremacy +15.2

Table 8. Additional actors in the four-front scenario. Framework deck inputs [S1]; Bangladesh border length is public record.

What changes in the arithmetic

Effective aircraft rise from 703 to 783, an increase of 11%. The denial requirement rises from 54 to 60 squadrons and the supremacy requirement from 81 to 96. The supremacy figure grows faster, +15 against +6, because the factor itself rises from 1.5 to 1.6. Put differently, 40% of the extra supremacy requirement comes from the factor and 60% from the extra aircraft. A reader who doubts that Turkey and Bangladesh are 'fronts' in any real sense can read the two-front results and treat the four-front ones as a stress test.

Metric	Two-front	Four-front	Change
Effective aircraft	702.5	782.5	+80 (+11%)
Squadron-equivalents (÷18)	39.0	43.5	+4.4
After reserve (×1.15)	44.9	50.0	+5.1
Denial (×1.20)	53.9	60.0	+6.1
Supremacy factor	1.5	1.6	+0.1
Supremacy requirement	80.8	96.0	+15.2

Table 9. How the numbers change from two fronts to four.

Where the framework is thin

The deck itself notes that Turkey and Bangladesh are modelled as additions to the formula rather than as full fronts [S1]. Two limits matter. First, a drone-enabled expeditionary force does not show up in an aircraft count at all, so the 40 effective Turkish aircraft may understate the effect in a conflict where unmanned systems carry the load. Second, the formula adds actors; it does not capture the cost of dispersal. A squadron committed to the east is unavailable in the west, so the real penalty of a fourth front is larger than the six squadrons the formula adds. We return to this in Chapter 5.

> ANALYST JUDGEMENT
> The most useful reading of the four-front case is as a test of structure. Adding two small actors increases the denial requirement by 11% but increases the number of places the IAF must be at once from two to four.

CHAPTER 2 | FRAMEWORK

Testing the deployment ratio: the assumption that matters most

Deployment ratios are the most contested inputs, and the heat map below shows why. Holding fleet sizes at 450 and 2,000, the two-front denial requirement runs from 41 squadrons (Pakistan 75%, China 10%) to 71 (Pakistan 95%, China 25%). Each extra point of China's ratio is worth 1.53 squadrons; each point of Pakistan's is worth 0.35. A reader who disagrees with the base case needs to defend a different China ratio before anything else.

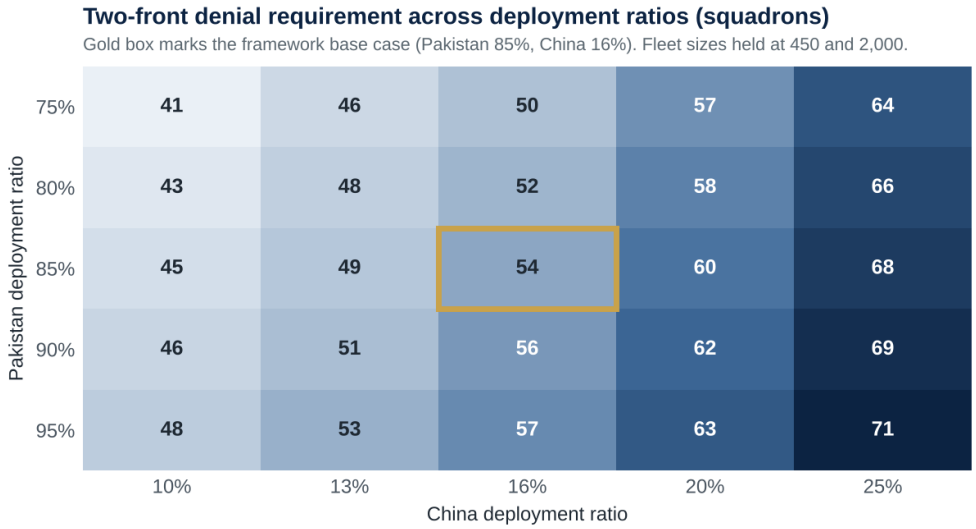


Figure 7. Two-front denial requirement across deployment ratios, squadrons. Framework base case boxed. Delta Doctrines calculation.

What the evidence says about China's ratio

Measure	Aircraft	Share of 2,000	Comment
Framework effective (16%)	320	16%	Deck base case [S1]
Modern fighters on the listed types	1,209	60%	J-10C 435, J-11 346, J-20 200, J-16 128, Su-30MKK 76, Su-35 24 [S11]
Base case as share of modern fighters	320	26%	Implies about one in four modern fighters faces India
Western Theatre share, if 1/3 of modern fighters	403	20%	Delta Doctrines judgement; sits inside the 10–25% range
Upper bound used in Monte Carlo (25%)	500	25%	Allows for a coordinated opening or a Taiwan-quiet period

Table 10. China's deployment ratio compared with open-source counts.

The reading of the table is that 16% is plausible but sits at the low end of what the open-source count would support. The listed modern types give 1,209 aircraft; 320 effective aircraft would be 26% of them. The framework's 2,000 includes older J-7, J-8 and JH-7 aircraft and bombers that matter less against India, so fleet size and ratio should be read together.

What the evidence says about Pakistan's ratio

Pakistan's 85% is easier to defend. It has one adversary, forward-based fighters and short flight times, and the May 2025 conflict suggested no real hedging against another contingency. The deck's 450 sits 15% above the 390 aircraft listed on the main types [S12], a cushion that offsets a ratio nearer 75%.

> ANALYST JUDGEMENT
> If China's true ratio is 25%, the two-front denial requirement is 68 squadrons rather than 54, and the four-front supremacy requirement is 118 rather than 96. Intelligence on PLAAF posture opposite India is therefore worth more to the IAF's force planners than any other single data point in this paper.

CHAPTER 2 | FRAMEWORK

An extension: weighting for quality, not just numbers

The framework counts aircraft, and treats a JF-17 and a Rafale as one aircraft each. That is deliberate: it keeps the formula transparent and keeps the inputs open-source. It also hides the change in force quality over the next decade, in which the IAF replaces Jaguar, MiG-29 and Mirage 2000 with Tejas Mk1A, Rafale and later Mk2 and AMCA. To test the effect we apply a simple quality weight to each type. The weights below are Delta Doctrines judgements on a Su-30MKI = 1.0 scale. They are not measured values and should be read as a sensitivity test.

Indian type	Weight	Rationale (judgement)	Adversary group	Weight	Rationale (judgement)
Su-30MKI	1.00	Reference: heavy, long range, large radar	Pakistan committed force	0.95	JF-17 and F-16 mix; J-10CE adds BVR with PL-15
Rafale	1.40	Omni-role, Meteor and SCALP, advanced EW	China committed force	1.20	J-10C, J-16, J-20; strong stand-off weapons
Tejas Mk1A	0.95	AESA radar, modern avionics, small payload	Turkey (F-16 mix)	1.10	Block 40/50 F-16s; KAAN not yet fielded
Tejas Mk1	0.80	Earlier standard	Bangladesh	0.60	F-7BG, no BVR missile
Tejas Mk2	1.15	Larger, more payload, better sensors			
AMCA	1.60	Fifth generation, stealth shaping			
MiG-29 UPG	0.80	Upgraded, but older airframe			
Mirage 2000I	0.90	Modernised, short on payload			
Jaguar	0.55	Strike aircraft, limited air-to-air role			

Table 11. Quality weights used in the extension. Delta Doctrines judgement; Su-30MKI = 1.00.

Results

Year (base case)	Aircraft	Squadron-eq. (÷18)	Average quality	Quality-weighted squadron-eq.	Change vs count
2026	507	28.2	0.91	25.6	-9%
2030	536	29.8	0.95	28.2	-5%
2035	594	33.0	1.05	34.5	+5%
2040	774	43.0	1.12	48.1	+12%

Table 12. Quality-weighted strength of the Indian fleet, base case. The 2026 count of 507 includes the two Tejas Mk1A modelled as delivered by year-end.

The adversary side gets the same treatment: weighting the effective aircraft by the group weights above gives a quality index of 1.06 for the two-front adversary (Pakistan 383 at 0.95, China 320 at 1.20) and 1.04 for the four-front adversary once 40 Turkish aircraft at 1.10 and 40 Bangladeshi aircraft at 0.60 are included. Multiplying the requirement by this index gives a quality-adjusted requirement of 57 (two-front denial), 86 (two-front supremacy), 62 (four-front denial) and 100 (four-front supremacy) in quality-weighted squadrons. Chapter 5 compares these with the quality-weighted fleet.

> ANALYST JUDGEMENT
> Quality weighting makes today's fleet look weaker than its count, because Jaguar and MiG-29 are 29% of aircraft and count at about 0.6–0.8. It makes the 2035 and 2040 fleets look stronger than their counts. Quality improves the trend, but the gap in 2035 is still 23 quality-weighted squadrons in the two-front denial case.

CHAPTER 3 | INVENTORIES

Indian Air Force fighter fleet in detail (1 of 2): the heavy and medium tiers

The inventory below goes type by type. It states what each aircraft contributes, how old it is, what is being done to it, and what the pipeline means for it. Numbers are single-seat combat aircraft in October 2026 [S2][S3]. Weapons and upgrade details are public record.

Type	No.	Sqn	Entered service	Engine / sensors (public record)	Principal weapons	Programme status
Su-30MKI	258	13	2002	2 × AL-31FP, thrust-vectoring; N011M radar (PESA)	R-77, R-73, Astra Mk1, Kh-31, BrahMos-A on about 40 modified aircraft	12 on order; 84 to be upgraded to 'Super-30' with AESA [S21]
Rafale EH/DH	36	2	2020	2 × M88; RBE2-AESA, SPECTRA EW	Meteor, MICA, SCALP, Hammer	114 cleared Feb 2026, not yet contracted [S10]
Mirage 2000H/I	36	3	1985	M53-P2; RDM or upgraded radar	Mica, Magic 2, laser-guided bombs	Upgrade to 2000I; retiring about 2031–35
Jaguar IS/IM	86	6	1979	2 × Adour; DARIN III navigation and attack suite	Bombs, rockets, Sea Eagle, ASRAAM on some	Retiring 2027–34; upgrade stalled

Table 13. Heavy and medium tier, public-record detail. Numbers from [S2][S3]; configuration from public record.

The heavy tier

The Su-30MKI is the only heavy fighter and is half the force. Its long range suits the northern front, where bases are far from the line, and its payload carries the heaviest standoff weapons. Its radar is the weakest part of the package: the upgrade plan swaps the original PESA for an AESA on 84 aircraft, which would raise its quality weight. The 12 aircraft on order would replace earlier losses. Otherwise the fleet has no growth path until AMCA, which is about 2036 in our base case.

The medium tier

This is the tier in trouble. Rafale is the best fighter in service, but there are only 36. Mirage 2000 and Jaguar together are 122 aircraft, 24% of the force, and both are due to go within the decade. The 114 Rafale cleared by the Defence Acquisition Council in February 2026 would refill this tier, but it is an acceptance of necessity, not a contract [S10]. Until it is signed, every retirement of a medium-tier squadron reduces the swing force that can move between fronts.

Age (years in service, 2026)	Types	Aircraft	Share of force
Over 40	Jaguar, Mirage 2000 (first aircraft)	122	24%
20–40	MiG-29, Su-30MKI (early production)	up to 317	up to 63%
Under 10	Rafale, Tejas Mk1	66	13%

Table 14. Age bands by type, approximate. Entry dates from public record; the Su-30MKI band includes aircraft built until the mid-2020s.

> ANALYST JUDGEMENT
> The Indian fleet is both old and concentrated. Its newest fighters are a small fraction of the whole, and the one type that is half the force is itself two decades into service.

CHAPTER 3 | INVENTORIES

Indian Air Force fighter fleet in detail (2 of 2): the light tier and its enablers

Type	No.	Sqn	Entered service	Engine / sensors (public record)	Principal weapons	Programme status
MiG-29 (B, UPG)	59	3	1987	2 × RD-33; Zhuk-ME on upgraded aircraft	R-77, R-73	Retiring about 2030–35
Tejas Mk1	30	2	2016	F404-GE-IN20; EL/M-2032 radar	Derby, R-73, laser-guided bombs	Plus 8 trainers
Tejas Mk1A	0 (2 in 2026)	0	2026	F404-GE-IN20; AESA radar (Elta EL/M-2052)	Astra, Derby ER, Python-5	180 on order (83 + 97) [S7][S8]

Table 15. Light tier, public-record detail. Tejas Mk1A is the induction programme on which the next five years depend.

The light tier is where most of the pipeline lands

The light fighter fleet is small today, at 89 aircraft (five squadron-equivalents), and the two largest programmes of the 2020s add to it. 180 Tejas Mk1A give 10 squadron-equivalents; 120 Tejas Mk2 in the programme of record would give 6.7 more. That is why the fleet's class mix changes so much by 2035: the light tier goes from 5 squadrons to 12, while the medium tier falls from 11 to 6 on our base case. Light fighters are cheaper and quicker to build, but they carry less and fly shorter distances. A force with more of them can defend a nearby airbase better than it can strike a distant one.

Enablers that count in a squadron's effect

Enabler	Today	Why it matters here	Status [S16][S17]
AEW&C	Phalcon A-50EI (3) and Netra Mk1 on Embraer-145 (about 3), public record	Widens radar horizon; cues fighters; passes targeting data	Netra Mk1A: six approved; Netra Mk2 on A321 planned; final operational clearance of Netra reported June 2026
Air-to-air refuelling	Six IL-78 (public record)	Extends range of every type; essential for the northern front	Additional tanker lease and purchase discussed in open sources
Electronic warfare	Aircraft self-protection suites; some standoff jammers	Needed for SEAD/DEAD	Limited public detail
Standoff weapons	BrahMos-A, SCALP, Meteor	Allows strikes from outside IADS range	Stock levels not public

Table 16. Enablers. In-service figures are public record; status lines carry source tags.

A squadron count says nothing about whether the enabling aircraft exist. The framework implicitly assumes that they do, because its reserve factor and the supremacy factor include the support burden. In practice, a force with 29 squadrons and six tankers is a very different instrument from one with 29 squadrons and 20. Chapter 7 returns to this when it values AEW&C; and tankers as force multipliers.

> ANALYST JUDGEMENT
> The IAF's light tier will be larger, newer and cheaper by 2035, but the heavy and medium tiers that do the long-range and strike jobs will be flat or smaller. Whether that is the right mix depends on which scenario India buys for.

CHAPTER 3 | INVENTORIES

China: the largest air arm in the region, mostly looking elsewhere

The People's Liberation Army Air Force and Naval Aviation field the largest fighter inventory in Asia. Open sources count about 1,209 aircraft on six frontline types, and the deck uses a round 2,000 for all fighter and bomber aircraft [S1][S11]. The relevant question for India is how much of that force can face south and west, and how quickly.

Type	Count [S11]	Generation	Role	Relevance to India
J-10C	435	4.5	Light multirole, AESA, PL-15	Highest count; based in several commands
J-11 (all)	346	4	Heavy air superiority	Older radar and weapons than J-16
J-20	200	5	Stealth air superiority	Deployments toward Tibet and Xinjiang are reported; scale unverified
J-16	128	4.5	Heavy strike	Long reach; stand-off weapons
Su-30MKK	76	4	Multirole, Russian-built	Older; limited
Su-35	24	4.5	Heavy air superiority	Few; Russian-built
Listed total	**1,209**			Deck figure of 2,000 includes older types and bombers

Table 17. PLAAF and PLAN frontline types. Counts from [S11], which reports listed types only; the generation column and the notes are Delta Doctrines assessment.

Geography is the constraint

The plateau limits what China can do from the airfields facing India. Hotan, Kashgar and Ngari Gunsa, and the Tibetan bases, sit at high altitude, where aircraft take off with less fuel and weapons and need longer runways. This reduces sortie rates and payload, and it is why a Chinese fleet of 1,200 or 2,000 aircraft does not translate into hundreds of aircraft over Ladakh. The Western Theatre Command, which faces India, also covers Xinjiang, and the Southern Theatre Command has the South China Sea. The framework's 16% reflects this. It also reflects the competing demand from the Taiwan Strait, which remains Beijing's first priority.

What would change China's ratio

- **Runway and shelter upgrades in Tibet**, which raise the number of aircraft that can operate at once.
- **Aerial refuelling and AEW&C**, which compensate for altitude limits and extend reach.
- **A quiet Taiwan Strait**, which frees theatres to reinforce the Western Command.
- **Coordination with Pakistan**, in which the Chinese commitment rises to hold Indian aircraft in the north.

ANALYST JUDGEMENT

China is the only adversary in the study that can change the answer by itself. Its fleet is four times Pakistan's, and the ratio assumed against India is the least certain input. We use a 10–25% range and draw the fleet between 1,200 and 2,400 in the Monte Carlo.

CHAPTER 3 | INVENTORIES

Pakistan: a smaller force, almost all of it pointed at India

The Pakistan Air Force is the adversary most easily modelled, because nearly all of it faces one direction. Open sources list about 390 aircraft on the main combat types, led by the JF-17 Thunder in several blocks and the F-16 fleet [S12]. The deck uses 450 for the combat fleet, which includes legacy and role-converted aircraft [S1].

Type	Count [S12]	Role	Comment
JF-17 (all blocks)	156	Multirole backbone	Block III adds AESA radar and PL-15 BVR missile
F-16 A/B/C/D	75	Most capable BVR-armed type before J-10CE	AIM-120 on later aircraft; maintenance dependent on US support
F-7PG	53	Air defence / legacy	Chinese MiG-21 derivative; limited
Mirage III	49	Strike / legacy	Being phased out
Mirage V	37	Strike / legacy	Being phased out
J-10CE	20	4.5-generation multirole	Entered service 2022; PL-15; the PAF's best fighter
Listed total	**390**		Deck uses 450 (adds other role-converted aircraft)

Table 18. PAF combat aircraft by type. Counts from [S12]; descriptions are public record.

Why Pakistan is modelled at 85%

The PAF has one operational adversary and a compact geography. Every base is within minutes of the border, so the force can be committed quickly and recovered quickly, which raises sortie rates and shortens the warning India would have. That helps defence and costs offence. For India, Pakistan's air defence is dense and layered, with Chinese systems on top of older Western ones, which increases the SEAD burden and is part of the 1.5 supremacy factor.

The May 2025 evidence

The conflict of 7–10 May 2025 is the only recent direct test. India's Air Chief stated that at least a dozen Pakistani aircraft were destroyed or damaged, including four or five F-16-class fighters and an airborne early-warning aircraft [S18]. Pakistan claimed to have downed several Indian aircraft, and India's CDS acknowledged losses without giving numbers [S19]. We make no finding on the claims. For the formula, the relevance is twofold: the conflict lasted about four days, so it says little about attrition in a campaign of weeks; and both sides emerged with their fleets largely intact, which supports an attrition factor of 1.2 rather than something far larger.

Indicator	Value	Note
Fleet in the deck	450	Monte Carlo draws 400 / 450 / 500
Fleet on listed types	390	13% below the deck figure
Deployment ratio	85%	Monte Carlo 75 / 85 / 92%
Effective aircraft	383	54% of the two-front total
Effect on requirement (denial)	29 squadrons	Pakistan alone, with reserve and attrition

Table 19. Pakistan in the framework.

> ANALYST JUDGEMENT
>
> Pakistan's contribution to the requirement, 29 squadrons in denial mode, equals what the IAF flies in total today. This is the clearest way to see why the IAF is stretched in a two-front case: one adversary alone can be matched only if nearly everything is committed to it.

CHAPTER 3 | INVENTORIES

Bangladesh and Turkey: small in aircraft, important in structure

The deck adds two smaller actors to the two-front baseline. Neither is a peer of Pakistan or China, and the paper does not suggest either wants a war with India. The question is narrower: if India planned for the worst combination, what would they add?

Bangladesh

The deck counts about 50 aircraft: F-7BG fighters (a Chinese MiG-21 derivative), K-8 and Yak-130 trainers with a light-attack role, and some older types [S1]. The force has no BVR-capable fighter and little reach. In 2025–26 open sources reported that Bangladesh was in talks to buy 20 to 24 Chinese J-10CE fighters, at about USD 2.2 billion [S14]. We found no confirmation of a signed contract, and treat the purchase as unverified. If it went ahead, Bangladesh's effective aircraft would not change much in count, but their quality weight would rise from 0.6 to about 1.1, which is enough to make the eastern front a factor in the quality-adjusted sums.

Item	Bangladesh	Turkey
Aircraft in the deck	50	200 (about 240 F-16s in open sources, public-record estimate)
Deployment ratio	80%	20%
Effective aircraft	40	40
Contribution to denial requirement	3.1 squadrons	3.1 squadrons
Contribution to supremacy requirement (4F factor 1.6)	4.9 squadrons	4.9 squadrons
Quality weight (judgement)	0.60 (1.1 with J-10CE)	1.10 (higher with KAAN, not yet fielded)
Evidence status	Fleet per deck; J-10CE talks reported, unverified	Fleet is a public-record estimate; support for Pakistan reported

Table 20. Bangladesh and Turkey compared. Denial contributions are 40 ÷ 18 × 1.15 × 1.20 = 3.07 squadrons each.

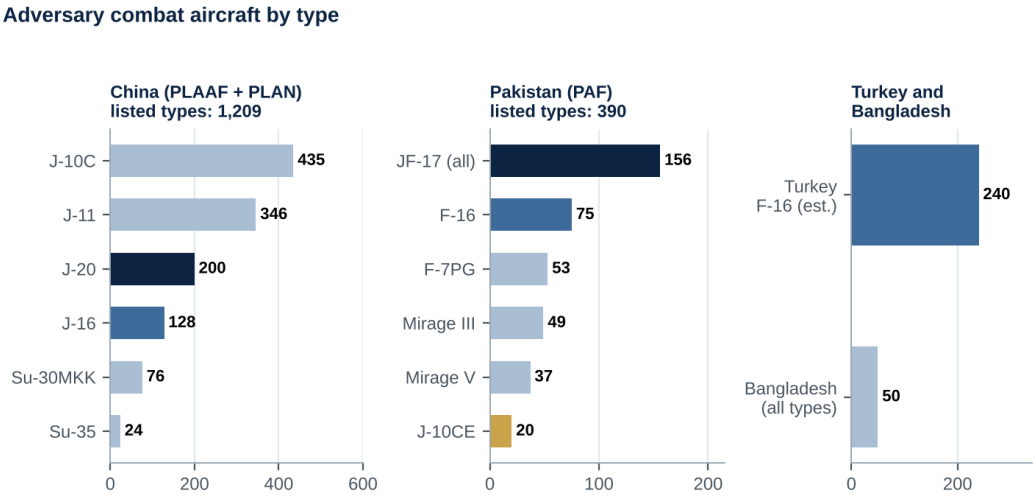
Turkey

Turkey operates a large F-16 fleet, builds its own combat drones and is developing the KAAN fifth-generation fighter. It has no border with India and no obvious means of basing aircraft near it. Reports of Turkish drones and technical support reaching Pakistan around May 2025 are the basis for modelling it as a token, drone-enabled partner. The framework's 20% means about 40 aircraft that could be present, which is more than Turkey could base in Pakistan in practice. The risk, then, is not Turkish fighters over India. It is Turkish unmanned systems, electronic support and spares making Pakistan's fleet more capable than its inventory suggests.

> ANALYST JUDGEMENT
> Both actors add 3.1 denial squadrons each in the formula. Against that, their strategic effect is out of proportion to the count: one opens a new axis for India's attention, the other gives Pakistan reach it lacks. A planner should treat them as modifiers of the first two fronts rather than as new ones.

CHAPTER 3 | INVENTORIES

Side by side: what each adversary brings against India



China: Wikipedia counts via EurAsian Times (listed frontline types only). Pakistan: 2025 South Asia assessment via idrw.
Turkey F-16 figure is a public-record estimate; Bangladesh per framework deck.

Figure 8. Adversary combat aircraft by type. China: listed types only. Pakistan: listed types. Turkey: public-record F-16 estimate. Bangladesh per deck. [S1][S11][S12]

Metric	India (today)	Pakistan	China	Turkey	Bangladesh
Combat aircraft (deck)	505 (single-seat)	450	2,000	200	50
Listed frontline types	505	390	1,209	about 240 F-16	about 50
Deployment ratio	n/a	85%	16%	20%	80%
Effective aircraft	n/a	383	320	40	40
Share of effective total (4F)	n/a	49%	41%	5%	5%
Denial squadrons implied	29 flown	29.3	24.5	3.1	3.1
Fifth-generation aircraft	0	0 confirmed	about 200 J-20	0 (KAAN in development)	0
4.5-gen BVR fighters	Rafale 36 (plus Su-30MKI)	J-10CE 20; JF-17 Blk III	J-10C 435; J-16 128	F-16 Block 50	none
Quality weight (judgement)	0.91 average	0.95	1.20	1.10	0.60

Table 21. Cross-adversary comparison. Fleet figures per Chapter 3 sources; shares and implied squadrons computed from the framework; quality weights are Delta Doctrines judgement.

What the comparison shows

- **Size and commitment diverge.** China's fleet is 4.4 times Pakistan's, but Pakistan contributes more effective aircraft because it commits 85% rather than 16%.
- **Pakistan alone is 29 squadrons of denial.** That equals the IAF's whole current strength, before China, Turkey or Bangladesh are counted.
- **India leads on none of the headline numbers.** It has fewer combat aircraft than China, and on the western front it faces a force of about 385 effective aircraft with its own 505 spread across two or more fronts.
- **The quality gap is narrowest against Pakistan and widest against China's stealth and heavy fighters.** A numbers-only formula slightly understates the Chinese component.
- **Turkey and Bangladesh are 10% of the effective total**, at about 3 squadrons each.

> ANALYST JUDGEMENT
> The inventory chapter's main result is that the formula's inputs are broadly supported by open sources at the level of order of magnitude, with China's ratio and Turkey's commitment the two most uncertain. The rest of the paper accordingly puts ranges around them.

CHAPTER 4 | CALCULATION

Scenario 1: two fronts, air denial requires about 54 squadrons

Applying the formula to Pakistan and China gives 702.5 effective aircraft, 39.0 squadron-equivalents before cover, 44.9 after the reserve factor and 53.9 after the attrition buffer. In aircraft terms that is 970 aircraft against the 505 flying today. The force would have to be 1.9 times its present size to hold both fronts in a denial posture, even if every squadron were deployed against the adversary that matters most.

Actor	Aircraft	DR	Effective	Sq-eq (÷18)	×1.15 reserve	×1.20 attrition (denial)	× supremacy
Pakistan	450	85%	382.5	21.2	24.4	29.3	44.0
China	2000	16%	320.0	17.8	20.4	24.5	36.8
Total			**702.5**	**39.0**	**44.9**	**53.9**	**80.8**

Table 22. Two-front calculation. The last column applies the 1.5 supremacy factor and is read in Scenario 2.

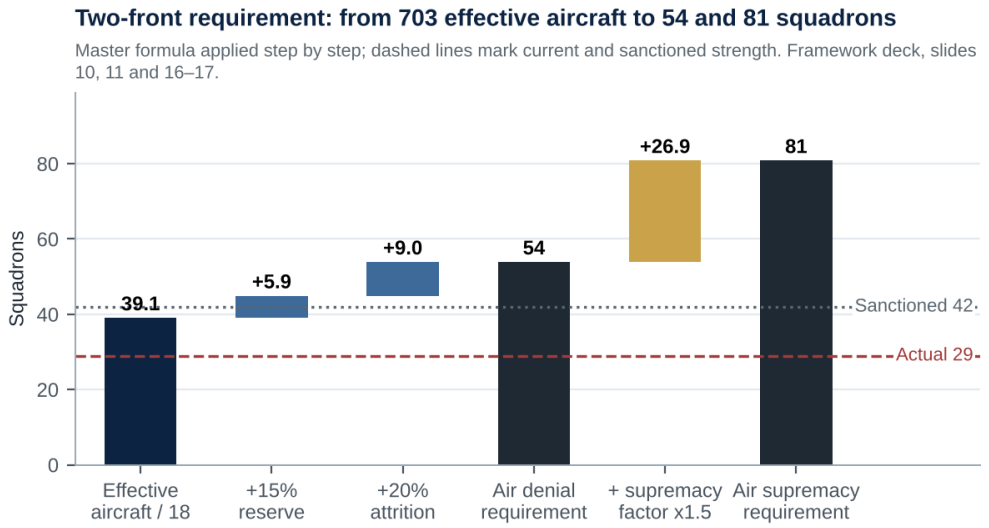


Figure 9. Two-front build-up from effective aircraft to the denial requirement. Delta Doctrines calculation on framework inputs [S1].

What 54 squadrons would look like

Measure	Required (2F denial)	Today	Gap
Squadrons	54	29	25 (86% more)
Aircraft at 18 per squadron	972	505 single-seat (about 522 incl. trainers)	about 450
Light / medium / heavy (32:38:30)	17 / 21 / 16	5 / 11 / 13	12 / 10 / 3
Western front (Pakistan share)	29.3	n/a	see Chapter 5
Northern front (China share)	24.5	n/a	see Chapter 5

Table 23. Two-front denial requirement against the current force. The class split uses the deck's 32:38:30 rule [S1].

Reading the result

The western front alone uses 29.3 squadrons, so the force that exists today would be fully consumed by Pakistan under this model. China then needs 24.5 more. The arithmetic does not assume one-for-one exchange: home advantage (integrated air defence, interior lines, prepared airbases) is already reflected in the deployment ratios [S1]. The requirement is the force needed to hold, in rotation and with reserves, against the 703 aircraft that could reach India.

> FINDING
> Two-front air denial needs about 54 squadrons (P10–P90: 47–64). The sanctioned 42 covers 78% of the central estimate and meets the requirement in about 1% of simulated campaigns.

CHAPTER 4 | CALCULATION

Scenario 2: two fronts, air supremacy requires about 81 squadrons

The supremacy requirement multiplies the denial figure by 1.5, giving 80.8 squadrons or 1,454 aircraft. This is 2.8 times today's squadron count and 1.9 times the sanctioned strength. The extra 27 squadrons are the force that would suppress Pakistani and Chinese air defences, escort strike packages, and keep enough sorties going for a multi-week campaign.

Front	Denial	Supremacy factor	Supremacy	Extra over denial	Aircraft (supremacy)
West (Pakistan)	29.3	1.5	44.0	14.7	792
North (China)	24.5	1.5	36.8	12.3	662
Two-front total	**53.9**		**80.8**	**27.0**	**1,454**

Table 24. Supremacy requirement by front. Delta Doctrines calculation on framework inputs [S1].

What the extra 27 squadrons are for

The deck defines the factor without breaking it down. For this paper we split it illustratively into SEAD and DEAD (about 11), offensive counter-air and escort (about 9) and sustained sortie generation (about 7), as shown in Figure 5. The first block is the most important and the hardest to buy. Rolling back Pakistan's layered air defence and China's long-range surface-to-air systems needs aircraft with anti-radiation missiles, stand-off weapons and electronic warfare support; Rafale, Su-30MKI and Jaguar carry some of these today, but in small numbers.

Task	Squadrons (judgement)	Platform implications	Gap today
SEAD / DEAD	11	Anti-radiation missiles, stand-off jammers, loitering munitions	Largest; stock and platforms limited
Offensive counter-air and escort	9	Long-range fighters with BVR missiles and tankers	Su-30MKI and Rafale; tanker-limited
Sustained sorties	7	More airframes, crews and maintenance depth	Depends on serviceability, not purchase

Table 25. Illustrative split of the supremacy uplift in the two-front case. Delta Doctrines judgement; the deck specifies only the factor.

How firm is 81?

The Monte Carlo puts the 10th–90th percentile range at 69–97 squadrons, because the supremacy factor (1.3–1.7) multiplies an already uncertain denial figure. The probability that 81 is enough is 48%. The probability that the sanctioned 42 would be enough is zero in 200,000 draws. Supremacy is the scenario in which India's force is most likely to be too small whatever coefficient values are chosen.

> FINDING
>
> Two-front air supremacy needs about 81 squadrons (P10–P90: 69–97), 52 more than today. It is better read as a theatre-by-theatre campaign goal, since it implies a larger and different force from the one the IAF has planned for.

CHAPTER 4 | CALCULATION

Scenario 3: four fronts, air denial requires about 60 squadrons

Adding Turkey and Bangladesh lifts the effective total to 782.5 aircraft and the denial requirement to 60.0 squadrons, an increase of 6.1 over the two-front case. The sum is 1,080 aircraft, 2.1 times today's fleet. Both added actors contribute 3.1 squadrons each, so the extra cost of the four-front case is small in the formula and large in structure, as Chapter 5 shows.

Actor	Aircraft	DR	Effective	Sq-eq (÷18)	×1.15 reserve	×1.20 attrition (denial)	× supremacy
Pakistan	450	85%	382.5	21.2	24.4	29.3	46.9
China	2000	16%	320.0	17.8	20.4	24.5	39.3
Turkey	200	20%	40.0	2.2	2.6	3.1	4.9
Bangladesh	50	80%	40.0	2.2	2.6	3.1	4.9
Total			**782.5**	**43.5**	**50.0**	**60.0**	**96.0**

Table 26. Four-front calculation. The last column applies the 1.6 supremacy factor and is read in Scenario 4.

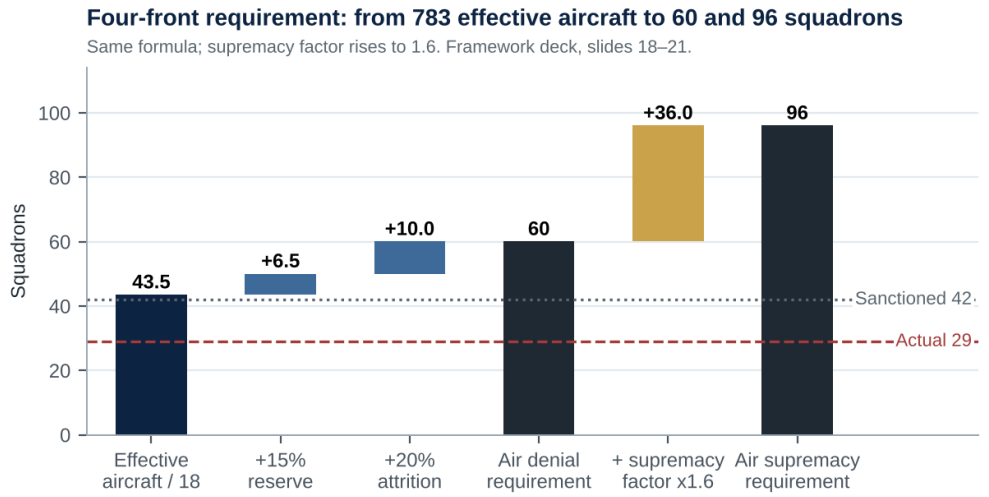


Figure 10. Four-front build-up from effective aircraft to the denial and supremacy requirements. Delta Doctrines calculation on framework inputs [S1].

Reading the result

The four-front denial requirement is 11% higher than the two-front one. That is modest. What the number hides is that the force would have to be split four ways. If squadrons are allocated in proportion to the formula's contributions, 29.3 face Pakistan, 24.5 face China, 3.1 go east and 3.1 are assigned to the Pakistan-linked threat, but a 3-squadron commitment to the east is in practice one forward squadron plus a reserve, a larger drain than the formula shows.

Measure	2F denial	4F denial	Change
Requirement (squadrons)	53.9	60.0	+6.1
Gap against 29 today	24.9	31.0	+6.1
Gap against 42 sanctioned	11.9	18.0	+6.1
Probability 42 is enough (Monte Carlo)	1.2%	0.01%	-1.2 points
P10–P90 range	47–64	53–70	+6 at each end

Table 27. Two-front and four-front denial compared.

FINDING

Four-front air denial needs about 60 squadrons (P10–P90: 53–70). With 42 squadrons the force is sufficient in one campaign in about 7,000, effectively never.

CHAPTER 4 | CALCULATION

Scenario 4: four fronts, air supremacy requires about 96 squadrons

The four-front supremacy figure is 96.0 squadrons, equal to 1,728 aircraft and 3.3 times today's strength. The framework deck calls this a requirement that 'sits well beyond what manned-fleet expansion alone can plausibly deliver' and says it forces sequencing or a reliance on unmanned mass [S1]. The model supports that reading: the IAF would need to more than triple its fleet, and building and crewing that force would take decades at any plausible delivery rate.

Actor	Denial	Supremacy (×1.6)	Extra over denial	Share of 96
Pakistan	29.3	46.9	17.6	49%
China	24.5	39.2	14.7	41%
Turkey	3.1	4.9	1.8	5%
Bangladesh	3.1	4.9	1.8	5%
Total	**60.0**	**96.0**	**36.0**	**100%**

Table 28. Four-front supremacy requirement by actor. Delta Doctrines calculation on framework inputs [S1].

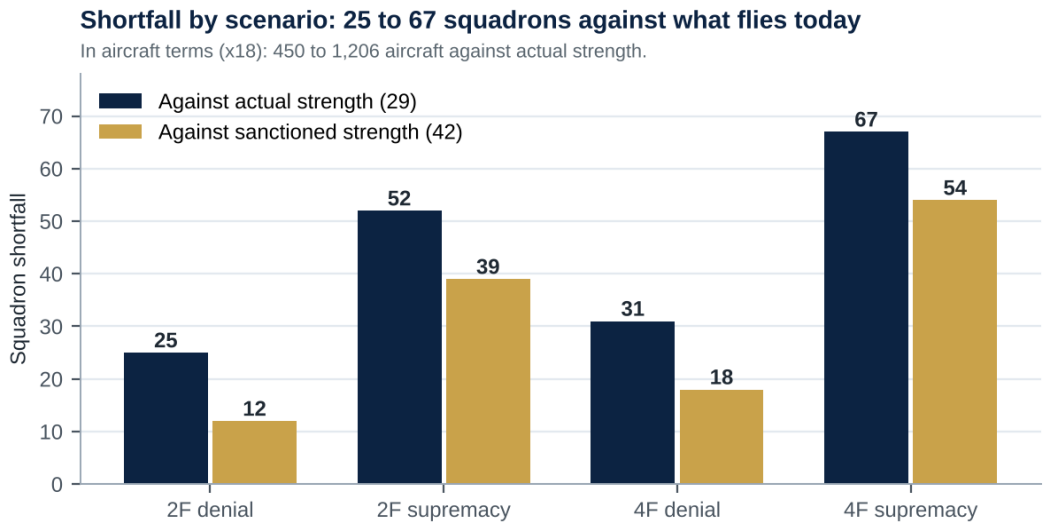


Figure 11. Shortfall by scenario against actual (29) and sanctioned (42) strength. Delta Doctrines calculation.

Scenario	Requirement	Aircraft	Multiple of today (29)	Gap v 29	Gap v 42	P10–P90
2F denial	54	972	1.9×	25	12	47–64
2F supremacy	81	1,458	2.8×	52	39	69–97
4F denial	60	1,080	2.1×	31	18	53–70
4F supremacy	96	1,728	3.3×	67	54	83–114

Table 29. The four scenarios at a glance.

FINDING

Four-front air supremacy needs about 96 squadrons (P10–P90: 83–114), 67 more than the IAF flies. At the 2022 plan's growth rate India would reach 39 squadrons in 2036; at the 114-Rafale scale it would reach about 43 in 2040. Supremacy on four fronts at once is not an attainable force target.

CHAPTER 4 | SENSITIVITY

What moves the answer: China's commitment, then attrition and supremacy

A one-at-a-time sensitivity test moves each input across its Monte Carlo range while holding the others at their base values. The two charts below show the results for the lowest and highest requirements. In both, China's deployment ratio leads.

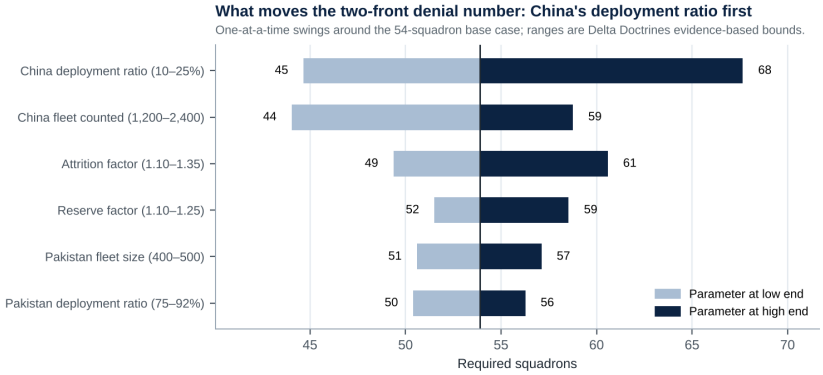


Figure 12. Two-front denial: one-at-a-time swings around 54 squadrons. Delta Doctrines model; ranges from Table 6.

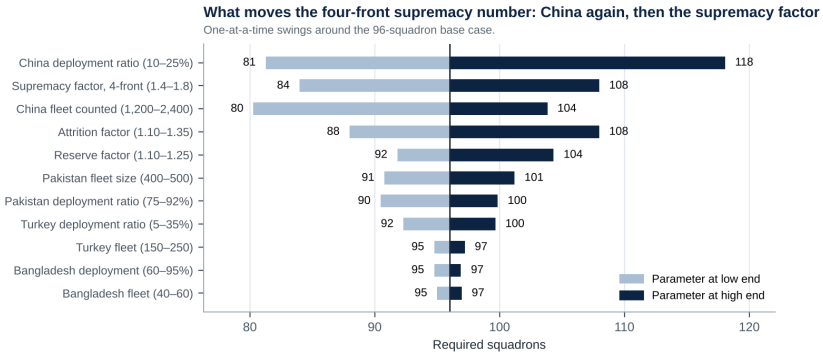


Figure 13. Four-front supremacy: one-at-a-time swings around 96 squadrons. Delta Doctrines model.

Rank	Input (range)	2F denial swing	4F supremacy swing
1	China deployment ratio (10–25%)	45–68 (23 squadrons)	81–118 (37)
2	China fleet counted (1,200–2,400)	44–59 (15)	80–104 (24)
3	Supremacy factor, 4F (1.4–1.8)	none	84–108 (24)
4	Attrition factor (1.10–1.35)	49–61 (11)	88–108 (20)
5	Reserve factor (1.10–1.25)	52–59 (7)	92–104 (13)
6	Pakistan fleet (400–500)	51–57 (6.5)	91–101 (10)
7	Pakistan deployment (75–92%)	50–56 (6)	90–100 (9)
8	Turkey deployment (5–35%)	none	92–100 (7)

Table 30. Ranked sensitivities from the tornado tests.

Three lessons follow. First, no input on the Pakistan side moves the answer by more than 10 squadrons, so uncertainty about Pakistan's numbers is not the main issue. Second, the coefficients the IAF controls through planning choices, the reserve and attrition factors, matter as much as adversary fleets: moving the attrition factor from the bottom to the top of its range swings the denial requirement by 11 squadrons. Third, the added actors barely register, which confirms that the four-front stress comes from structure and from the supremacy factor rather than from the Turkish and Bangladeshi fleets.

CHAPTER 4 | MONTE CARLO

Replacing single numbers with distributions: 200,000 simulated campaigns

The Monte Carlo draws every input from a triangular distribution whose mode is the deck's base value and whose limits are the ranges in Table 6. Fleet sizes, deployment ratios, reserve, attrition and supremacy factors vary together; each draw yields a requirement for each of the four scenarios. The method does not model combat; it shows how far the answer can move if the inputs are wrong in plausible ways. We ran 200,000 draws with a fixed seed so the results can be reproduced.

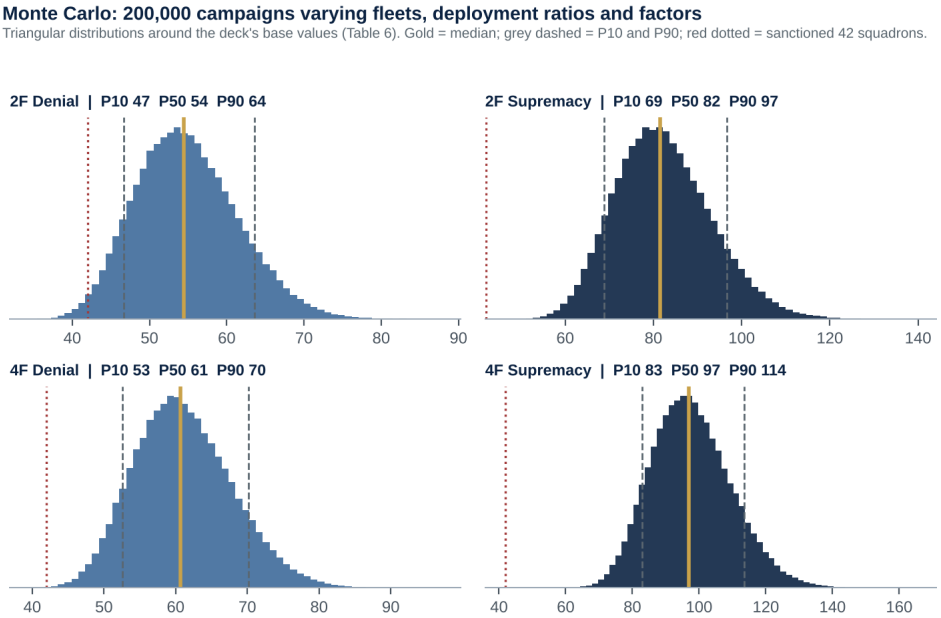


Figure 14. Monte Carlo distributions of the four requirements. Gold = median; grey dashed = P10 and P90; red dotted = 42 squadrons. Delta Doctrines model.

Scenario	Formula	P5	P10	P50	Mean	P90	P95
2F denial	54	45	47	54	55	64	66
2F supremacy	81	66	69	82	82	97	101
4F denial	60	51	53	61	61	70	73
4F supremacy	96	79	83	97	98	114	119

Table 31. Monte Carlo percentiles of the required squadrons. Delta Doctrines model; 200,000 draws.

What the distributions say

The medians sit within one squadron of the deck's point estimates, which means the base case is neither optimistic nor pessimistic against the ranges we chose. The distributions are wider on the right for supremacy, with the 95th percentile about 20 squadrons above the point estimate. Nothing in the simulation yields a requirement below 42 for any scenario except in 1.2% of two-front denial draws and 0.01% of four-front denial draws. The conclusion that the sanction is too low is therefore not a product of the base values. It holds across nearly all of the input space.

METHOD NOTE

The framework deck's ranges were not specified, so the ranges in Table 6 are ours. A reader who prefers narrower ranges will see tighter distributions; a reader who prefers wider ones will see more mass above the point estimates. The mean exceeds the mode because the distributions are right-skewed.

CHAPTER 4 | CONFIDENCE

How confident would a given force size make planners? Confidence curves and the summary

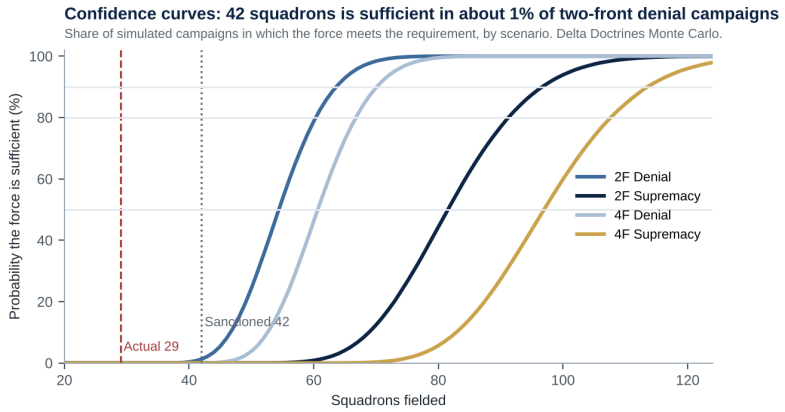


Figure 15. Probability that a force of a given size meets the requirement, by scenario. Delta Doctrines Monte Carlo.

Force size	2F denial	2F supremacy	4F denial	4F supremacy
29 (today)	0%	0%	0%	0%
42 (sanctioned)	1.2%	0%	0.01%	0%
54	48%	0.05%	15%	0%
60	79%	0.8%	46%	0.002%
81	99.99%	48%	99.7%	7%
96	100%	89%	100%	47%

Table 32. Probability that each force size is sufficient. Delta Doctrines Monte Carlo.

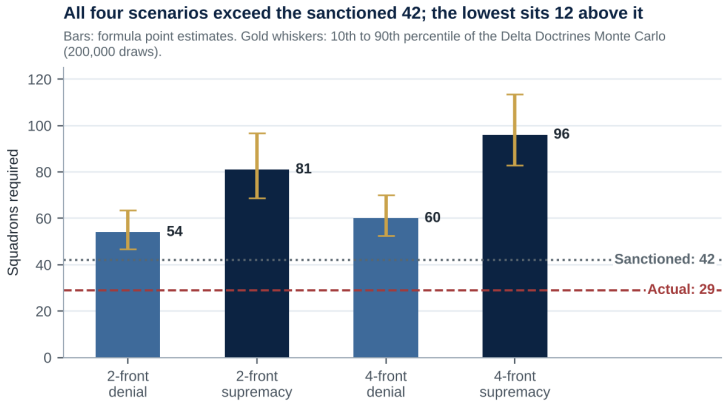


Figure 16. All four scenarios against actual and sanctioned strength, with 10th to 90th percentile whiskers. Delta Doctrines model.

> **AGAINST THE DECK'S ILLUSTRATION**
> The framework deck illustrated, without running a simulation, that 54 squadrons would achieve denial in about 7 of 10 campaigns and 65 in about 19 of 20 [S1]. Our computed figures are 48% at 54 squadrons and 93% at 65: the shape agrees, but 54 squadrons gives less confidence than the deck suggested.

Reading the curves

A planner choosing a force size is choosing a confidence level. Fifty-four squadrons give a coin-flip chance of meeting the two-front denial requirement; 60 give about four chances in five. A force of 81 gives certainty for denial and a coin-flip for two-front supremacy. The sanction of 42 does not give meaningful confidence against any of the four scenarios. We recommend that India's planners state explicitly which confidence level the Air Force is buying, as is done in several allied force-planning processes, and report it alongside the squadron count.

CHAPTER 5 | GAPS

The two-front gaps: how far short, in which classes

Against a 29-squadron force, the two-front requirement leaves a gap of 25 squadrons in denial mode and 52 in supremacy mode. The gap is not spread evenly across the three classes. Splitting the requirement by the deck's 32:38:30 light-medium-heavy rule and comparing it with the present fleet shows the largest shortfalls in the light and medium tiers, with the heavy tier closest to its requirement [S1].

Scenario / class	Required	Today	Gap today	Base 2035	Gap 2035	Base 2040	Gap 2040
2F denial, Light	17.3	5	12.3	12.3	5.0	16.6	0.7
2F denial, Medium	20.5	11	9.5	5.7	14.8	8.3	12.2
2F denial, Heavy	16.2	13	3.2	15.0	1.2	18.1	-1.9
2F denial, total	**54**	**29**	**25**	**33.0**	**21.0**	**43.0**	**11.0**
2F supremacy, Light	25.9	5	20.9	12.3	13.6	16.6	9.3
2F supremacy, Medium	30.8	11	19.8	5.7	25.1	8.3	22.5
2F supremacy, Heavy	24.3	13	11.3	15.0	9.3	18.1	6.2
2F supremacy, total	**81**	**29**	**52**	**33.0**	**48.0**	**43.0**	**38.0**

Table 33. Two-front gaps by class. Requirement split per the deck's 32:38:30 rule [S1]; 'Today' per Table 3; 2035 and 2040 from the base-case pipeline (Chapter 6). Positive gap = shortfall.

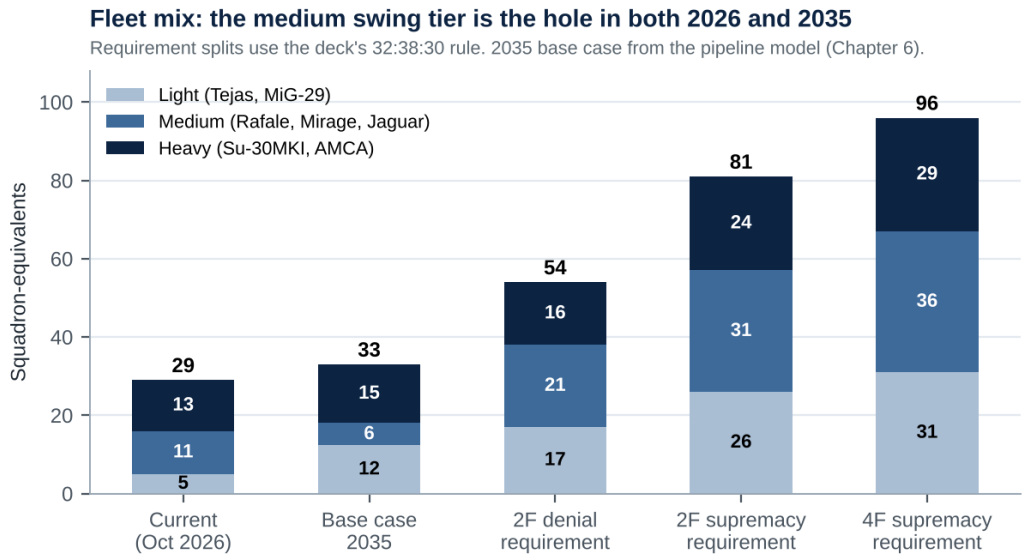


Figure 17. Fleet mix today and in 2035 against the requirement mix by scenario. Squadron-equivalents. [S1] and Delta Doctrines model.

Where the gap sits

Light tier. The gap today is 12 squadrons for denial and 21 for supremacy. This is the tier the pipeline fills fastest: by 2035 it falls to 5 and 14, as 180 Tejas Mk1A reach service. **Medium tier.** The gap is 10 squadrons today and grows to 15 by 2035 in the denial case, because Mirage 2000 and Jaguar leave faster than Rafale arrives. This tier carries 15 of the 21 squadrons missing in 2035. **Heavy tier.** The gap is small, 3 squadrons today and 1 in 2035 on denial, but it widens to 9 on supremacy because SEAD/DEAD and deep strike need heavy aircraft. The Su-30MKI fleet is the only one in the class and AMCA does not arrive in numbers before the late 2030s.

FINDING

The two-front gap is a medium-tier problem in the near term and a heavy-tier problem in supremacy. Closing it with light aircraft alone would deliver the right number of squadrons and the wrong mix.

CHAPTER 5 | GAPS

The four-front gaps: a bigger gap, a wider spread, and the quality-adjusted view

The four-front scenarios add six squadrons to the denial requirement and 15 to supremacy. Against a 29-squadron force the gap is 31 and 67. The class pattern is the same as in the two-front case, only larger.

Scenario / class	Required	Today	Gap today	Base 2035	Gap 2035	Base 2040	Gap 2040
4F denial, Light	19.2	5	14.2	12.3	6.9	16.6	2.6
4F denial, Medium	22.8	11	11.8	5.7	17.1	8.3	14.5
4F denial, Heavy	18.0	13	5.0	15.0	3.0	18.1	-0.1
4F denial, total	**60**	**29**	**31**	**33.0**	**27.0**	**43.0**	**17.0**
4F supremacy, Light	30.7	5	25.7	12.3	18.4	16.6	14.1
4F supremacy, Medium	36.5	11	25.5	5.7	30.8	8.3	28.2
4F supremacy, Heavy	28.8	13	15.8	15.0	13.8	18.1	10.7
4F supremacy, total	**96**	**29**	**67**	**33.0**	**63.0**	**43.0**	**53.0**

Table 34. Four-front gaps by class. Same method as Table 33.

The quality-adjusted view

The count-based gaps ignore the improvement in aircraft quality over the period. Applying the weights from Table 11 to both sides gives the picture below. The adversary quality index multiplies the requirement (1.06 for two fronts, 1.04 for four), while the Indian fleet is counted in quality-weighted squadron-equivalents (25.6 today, 34.5 in 2035, 48.1 in 2040).

Scenario	Count req.	Quality-adj. req.	Gap 2026	Gap 2035	Gap 2040
2F denial	54	57	32	23	9
2F supremacy	81	86	61	52	38
4F denial	60	63	37	28	14
4F supremacy	96	100	74	66	52

Table 35. Quality-adjusted gaps in quality-weighted squadron-equivalents. Base-case pipeline; weights are Delta Doctrines judgement.

Quality-weighting improves the 2035 and 2040 numbers but does not remove any gap. The 2026 gaps are larger than the count-based ones (32 against 25 for two-front denial) because the fleet is weighted below 1.0 at present. By 2040 the two-front denial gap closes to 9 quality-weighted squadrons, and four-front denial to 14. Supremacy gaps stay at 38 or more in every year shown.

> ANALYST JUDGEMENT
> On both a count basis and a quality-adjusted basis, only two-front air denial comes within reach of the pipeline, and only toward the end of the 2030s. The other three scenarios are outside the planned force in every case examined.

CHAPTER 5 | GAPS

Operational gaps: what the squadron count does not capture

A gap in squadrons is the simplest measure and understates the operational problem in three ways. First, a squadron committed to one front is unavailable to another. Second, the formula counts aircraft, not the conditions under which they fight. Third, some gaps are not in fighters at all. The table below shows what would happen if India allocated its 29 squadrons in proportion to the formula's own front shares.

Front	Adversary	Formula share	Denial requirement (4F)	29 sqn allocated pro rata	Coverage
West	Pakistan	48.9%	29.3	14.2	48%
North	China	40.9%	24.5	11.9	48%
East	Bangladesh	5.1%	3.1	1.5	48%
West-linked	Turkey (expeditionary)	5.1%	3.1	1.5	48%
Total		**100%**	**60.0**	**29.0**	**48%**

Table 36. Pro rata allocation of the present force to the four-front requirement. Delta Doctrines calculation. On two fronts the coverage is 54%.

Every front would be half covered. The real allocation would not be pro rata, and the pressure to concentrate in the west would be strong, but whatever the IAF moved toward one theatre would leave another thinner. India's interior lines help, because fighters can redeploy in hours, but redeployment needs tankers, ground crews, shelters and weapons at the receiving base, which are the scarce items.

Gaps the count does not show

Gap	Why it matters	Effect on requirement	Evidence
Serviceability	Squadron count assumes aircraft are ready; real availability is lower, and falls in a long campaign	Raises requirement; reserve factor covers part	No public Indian data; judgement
Tankers and AEW&C	Reach and awareness multiply every fighter, and are few	Raises effective gap if missing	Six IL-78; about six AEW&C aircraft [S16]
Weapons stocks	BVR missiles and standoff weapons deplete in days of high-tempo operations	Caps sortie value, not squadron count	Not public
Basing and shelters	Forward bases are limited; adversary strike on airbases is a main risk	Raises dispersal need	Judgement; May 2025 airbase strikes reported
Pilot depth	Aircraft need current pilots and training capacity	Limits induction pace	Not public
Simultaneity	Fronts may open at different times, which would ease the burden	Lowers requirement if sequential	Scenario design

Table 37. Gaps outside the squadron count.

ANALYST JUDGEMENT

The real-world gap is larger than the squadron gap in the near term, because serviceability, enablers and stocks are below planning values, and smaller in the long term if fronts are sequenced. We leave both as qualifications to the numbers, not as adjustments to them.

CHAPTER 5 | GAPS

The time dimension: the gap persists because retirements arrive before replacements

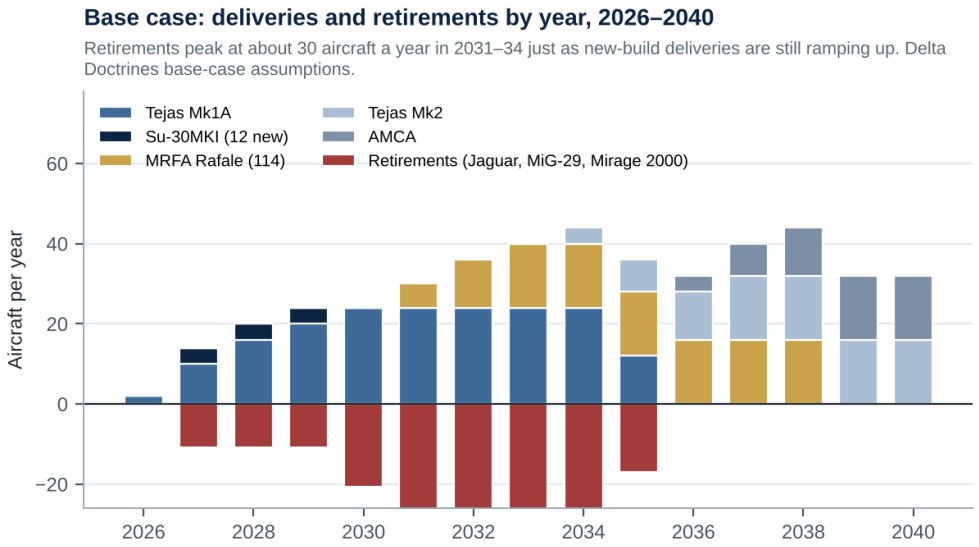


Figure 18. Deliveries and retirements by year, base case. Delta Doctrines pipeline model; retirement schedule per [S3] and public record.

Year	Fleet (sq-eq)	Gap v 42	Gap v 54	Gap v 60	Gap v 81	Gap v 96
2026	28.2	13.8	25.8	31.8	52.8	67.8
2028	28.9	13.1	25.1	31.1	52.1	67.1
2030	29.8	12.2	24.2	30.2	51.2	66.2
2033	31.0	11.0	23.0	29.0	50.0	65.0
2035	33.0	9.0	21.0	27.0	48.0	63.0
2038	39.4	2.6	14.6	20.6	41.6	56.6
2040	43.0	-1.0	11.0	17.0	38.0	53.0

Table 38. Base-case fleet and gaps against each benchmark. Delta Doctrines pipeline model (Chapter 6).

The shape of the problem

The fleet is almost flat for six years. Deliveries of 14 to 24 aircraft a year in 2027–29 are partly offset by retirements of about 11 a year, then retirements jump to about 28 a year in 2031–34, when Jaguar, MiG-29 and Mirage 2000 all leave together. The base case reaches 31 squadron-equivalents in 2033, 33 in 2035 and 43 in 2040. The gap against the 42-squadron sanction closes only in 2040, and the gap against the lowest scenario requirement is still 11 squadrons that year.

What this means for the next decade

- **2026–2030:** about 28 to 30 squadron-equivalents. This is the window of highest exposure: Tejas Mk1A deliveries only offset Jaguar and MiG-29 retirements.
- **2031–2035:** retirements peak and Rafale begins to arrive, so the medium tier is at its lowest point. Fleet strength grows by about three squadron-equivalents between 2030 and 2035, to 33.
- **2036–2040:** growth accelerates to about 2 squadron-equivalents a year as Rafale, Mk2 and AMCA deliveries peak. This is the only period in which the gap closes at pace, and it is the one furthest from today and most dependent on programmes yet to fly.

> FINDING
> The binding gap is not in 2040. It is the 2026–2035 window, when the force is flat at about 30 squadron-equivalents against a lowest requirement of 54. Anything that adds aircraft in that window is worth more than anything that adds them later.

CHAPTER 6 | PIPELINE

Tejas Mk1A: 180 aircraft, a 2033 contract date, and an engine-limited pace

Tejas Mk1A is the largest programme in the pipeline and the one on which near-term strength depends. The Air Force has ordered 180 aircraft in two batches, 83 and 97 [S7]. Deliveries began later than planned because GE's F404 engines arrived about two years behind schedule, and HAL has since received batches of engines at a steady pace [S8]. HAL has stated a production capacity of 24 aircraft a year [S7].

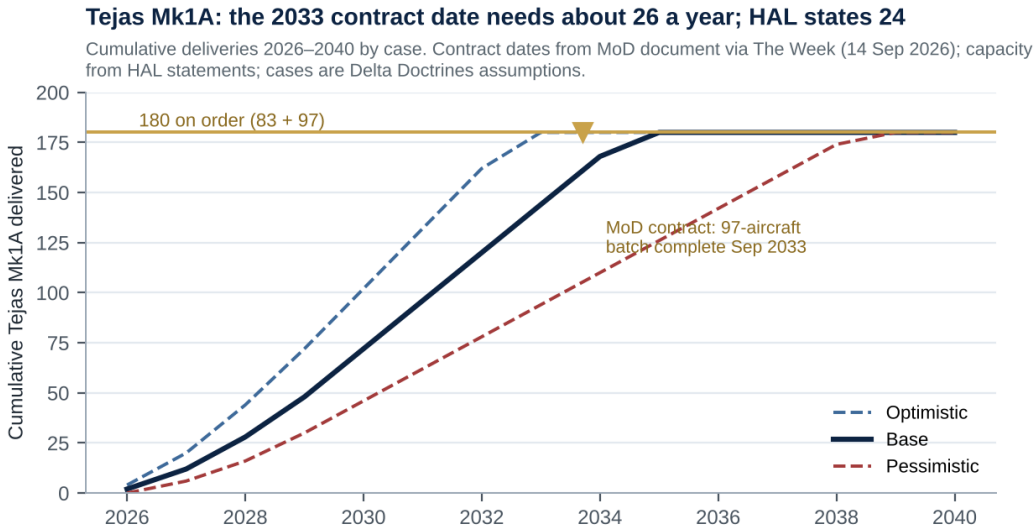


Figure 19. Tejas Mk1A cumulative deliveries by case. Contract dates [S7]; capacity from HAL statements; cases are Delta Doctrines assumptions.

Case	2026	2027	2028	2029	2030–34 (a yr)	2035	Total	Final delivery
Optimistic	4	16	24	28	30 (18 in 2033)	–	180	2033
Base	**2**	**10**	**16**	**20**	**24**	**12**	**180**	**2035**
Pessimistic	–	6	10	14	16	–	180	2039

Table 39. Tejas Mk1A delivery profiles. Delta Doctrines assumptions around the reported contract and capacity figures.

What the contract implies

The MoD document reported by The Week gives September 2033 as the date by which the 97-aircraft batch is due [S7]. Meeting it needs about 26 aircraft a year from 2027, above the 24 HAL says it can produce. The base case assumes the stated 24 a year from 2030 and a ramp of 2, 10, 16 and 20 in the years before; this completes in 2035, two years after the contract date. The optimistic case needs 30 a year from 2030, which would require a second line or a ramp that HAL has not announced. The pessimistic case holds output at 16 a year, the pace of the first batch.

The two dependencies

Engines. GE has agreed to supply 113 further F404-GE-IN20 engines [S8] and has been delivering in small batches. Each engine short is an aircraft not delivered, so a shortfall of six engines a year would cut output by a quarter. **Radar and weapons.** The Mk1A's AESA radar and its stand-off weapons are imported components with their own schedules; any slip would produce airframes without full capability.

> FINDING
> Tejas Mk1A adds 10 squadron-equivalents by 2035 in the base case, but only about 1.6 by 2028. The aircraft arrives at about the pace at which Jaguar and MiG-29 leave, so it holds the fleet level instead of growing it.

CHAPTER 6 | PIPELINE

Tejas Mk2, AMCA and Super-30: later, smaller, and more uncertain

The next generation of Indian fighters has not flown. The Defence Secretary said on 27 September 2026 that the Tejas Mk2 and AMCA could be inducted about 2034–35 [S9]. The Tejas Mk2 is targeted for a first flight in September 2027 and AMCA in September 2028 [S9]. Development programmes of this complexity routinely slip, and the cases here assume that induction follows first flight by six to eight years.

Fifth-generation and Mk2 deliveries barely register before 2035
Cumulative deliveries by case. First flights targeted Sep 2027 (Mk2) and Sep 2028 (AMCA); induction about 2034–35 per Defence Secretary statement, 27 Sep 2026.

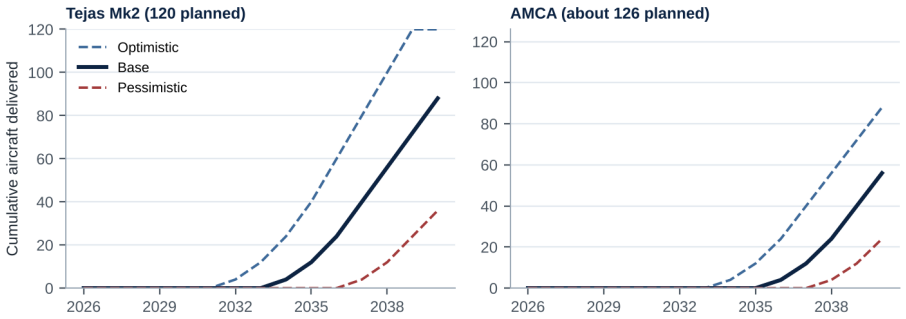


Figure 20. Tejas Mk2 and AMCA cumulative deliveries by case. Delta Doctrines assumptions around stated first-flight targets [S9].

Programme	Planned	Stage	Base: first delivery	Base: by 2035	Base: by 2040	Optimistic by 2040	Pessimistic by 2040
Tejas Mk2	120	Pre-flight; first flight Sep 2027 target	2034	12	88	120	36
AMCA	about 126	Pre-flight; first flight Sep 2028 target	2036	0	56	88	24
Su-30MKI (12 new)	12	On order	2027	12	12	12	12
Su-30MKI 'Super-30' upgrade	84	Approved in principle [S21]	n/a	n/a	n/a	n/a	n/a

Table 40. Next-generation programmes and delivery cases. Delta Doctrines assumptions around stated targets.

Why these programmes change the 2040 picture, not the 2030 one

Mk2 and AMCA add 8.0 squadron-equivalents by 2040 in the base case, and none that matter before 2035. They are the platforms that would raise the force's quality: Mk2 as a heavier, longer-range Tejas and AMCA as a stealth fighter. In the quality-weighted view of Chapter 2 they contribute disproportionately, which is why the 2040 quality-weighted fleet (48.1) is larger than its count (43.0). Their effect on the squadron gap is that they are likely to fill the heavy tier and the upper end of the light tier, which is where the supremacy gap is widest.

The Su-30MKI upgrade

The 12 new Su-30MKI aircraft, with deliveries of four a year in 2027–29, replace earlier losses and keep the fleet at 270 aircraft. The upgrade of 84 aircraft to the 'Super-30' standard, with AESA radar and new electronic warfare, does not change the squadron count but would raise the type's quality weight, perhaps from 1.0 to 1.2 for the upgraded aircraft. We did not include this uplift in the base case because no schedule or contract is public, but it would add about 0.1 quality-weighted squadron-equivalents for each ten aircraft modified, or about 0.9 for all 84.

> ANALYST JUDGEMENT
> AMCA and Tejas Mk2 are the two programmes that matter most to the 2040 force, and neither has a public schedule that can bear the weight put on it. A one-year slip in both costs about 1.8 squadron-equivalents in 2040.

CHAPTER 6 | PIPELINE

The 114 Rafale: the biggest lever on the medium tier, still without a contract

The Defence Acquisition Council cleared the proposal for 114 Rafale on 12 February 2026, with about 90 to be manufactured in India [S10]. This is an Acceptance of Necessity, not a contract, and we found no report of a signed agreement. If the 114 were delivered in full, they would add 6.3 squadron-equivalents, take the Rafale fleet to 150 aircraft (8.3 squadrons) and refill the medium tier that Mirage 2000 and Jaguar will leave.

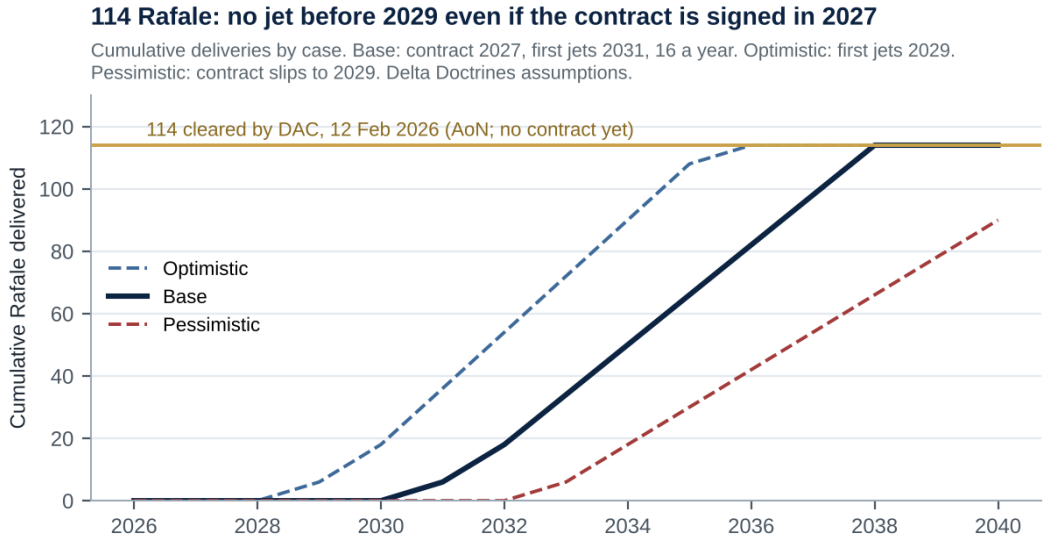


Figure 21. 114 Rafale: cumulative deliveries by case. Delta Doctrines assumptions around the DAC clearance [S10].

Case	Contract	First delivery	Rate	Delivered by 2035	Delivered by 2040	Sq-eq by 2035
Optimistic	2027	2029	up to 18 a yr	108	114	6.0 + 2.0
Base	**2027**	**2031**	**16 a yr**	**66**	**114**	**3.7 + 2.0**
Pessimistic	2029	2033	12 a yr	30	90	1.7 + 2.0

Table 41. Rafale (MRFA) delivery cases. 'Sq-eq' shows new aircraft plus the 36 already flying (2.0 squadrons). Delta Doctrines assumptions.

Why timing matters more than quantity

A jet delivered in 2029 does more for the 2030–35 gap than a jet delivered in 2036, because the retirements are concentrated in 2031–34. Signing in 2027 rather than 2029 is worth about 2 squadron-equivalents in 2035 (base against pessimistic case). The scale is also large against the programme: 114 aircraft at 16 a year takes eight years, which means that even on the base case the last deliveries arrive in 2038.

What the programme does to the mix

On the base case the medium tier is 5.7 squadron-equivalents in 2035 against a requirement of 21. Without the 114 it would be 2.0. With the optimistic schedule it would be 8.0 in 2035. No single programme changes the medium-tier gap as much, and none comes with as much schedule risk, since the contract, offsets, production in India and the French production line all have to move at once.

FINDING

The 114 Rafale decision is the largest single determinant of the medium-tier gap in 2031–35: 3.7 squadron-equivalents of new aircraft by 2035 in the base case, 1.7 in the pessimistic case and none without a contract. It is also the only programme that can still be accelerated by a decision taken in the next twelve months.

CHAPTER 6 | NET GAPS

Net gaps after the full pipeline: the requirement outruns the force in every case

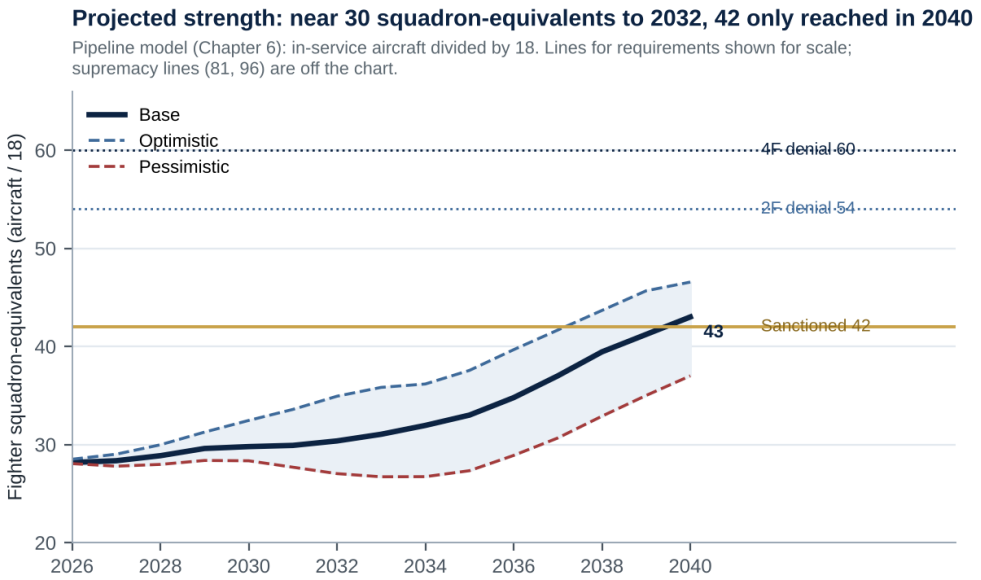


Figure 22. Projected fighter strength in squadron-equivalents, 2026–2040, by case. Delta Doctrines pipeline model.

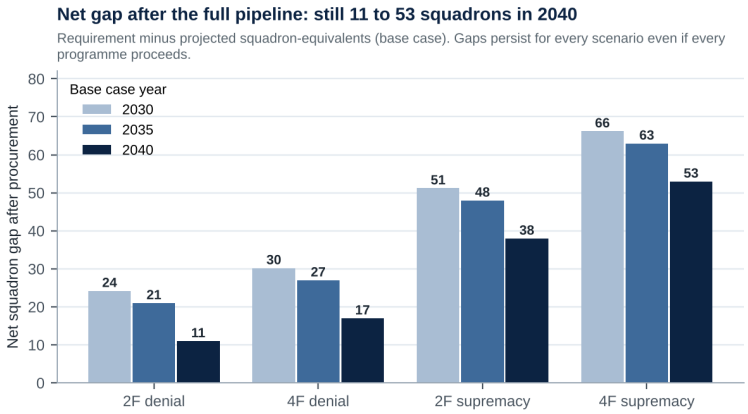


Figure 23. Net gap after the full pipeline, base case, in 2030, 2035 and 2040. Delta Doctrines model.

Case	2030	2035	2040	Gap v 54 (2040)	Gap v 60 (2040)	Gap v 81 (2040)	Gap v 96 (2040)
Optimistic	32.5	37.6	46.6	7.4	13.4	34.4	49.4
Base	29.8	33.0	43.0	11.0	17.0	38.0	53.0
Pessimistic	28.3	27.3	37.0	17.0	23.0	44.0	59.0

Table 42. Projected strength and 2040 gaps by case. Delta Doctrines pipeline model.

Reading the net gaps

Even on the optimistic case, the force passes 42 squadron-equivalents only in 2038 and reaches 47 in 2040. The base case reaches 43 in 2040. The pessimistic case ends at 37, five short of the sanction. None reaches the two-front denial requirement of 54. The 2040 gaps on the base case are 11 for two-front denial, 17 for four-front denial, 38 for two-front supremacy and 53 for four-front supremacy. In percentage terms, the pipeline delivers 80% of the lowest requirement and 45% of the highest.

> **FINDING**
>
> The net gap after every planned programme is 11 to 53 squadrons in 2040, and 21 to 63 in 2035. The pipeline reaches 42 squadron-equivalents only in 2040 and does not reach any of the four requirements.

CHAPTER 7 | FORCE MULTIPLIERS

How force multipliers could change the requirement: the method

The formula counts manned aircraft. Four developments, loyal-wingman drones such as CATS Warrior, wider drone warfare, airborne early warning and tankers, and network warfare, could allow fewer manned squadrons to do the same job. We apply each as a percentage offset to the manned requirement, applied one after another so that the offsets compound. Two values are run: the nominal offset (full realisation) and a risk-adjusted offset in which only 60% of each is realised, because none has been proven at scale.

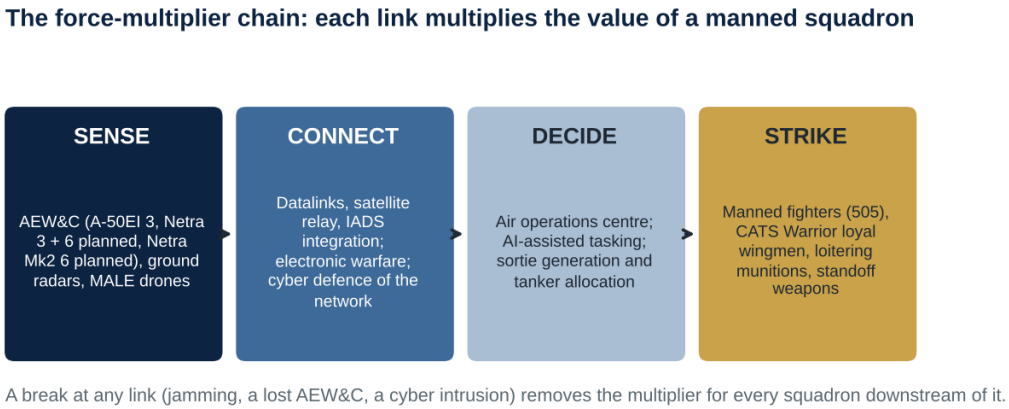


Figure 24. The force-multiplier chain: each link multiplies the value of a manned squadron. Delta Doctrines schematic.

Multiplier	Denial offset	Supremacy offset	Basis	Evidence status
CATS Warrior / loyal wingman UCAV	10%	22%	Offsets of -10% and -22% from the framework deck [S1]	Deck figure; prototype first flight expected 2026 [S15]
Drone warfare: ISR, loitering munitions, counter-UAS	3%	6%	Delta Doctrines assumption	Judgement; May 2025 use reported
AEW&C, AWACS and tankers	4%	6%	Delta Doctrines assumption	Judgement; fleet figures [S16]
Network warfare: EW, cyber, integrated air defence	3%	6%	Delta Doctrines assumption	Judgement
Combined (multiplicative)	**18.7%**	**35.2%**		60% realisation: 11.5% and 22.2%

Table 43. Force-multiplier offsets applied to the manned requirement. Only the CATS/UCAV values come from the deck; the others are Delta Doctrines assumptions.

Why offsets are larger in supremacy mode

The framework's own logic points the same way. Denial depends more on air defence and interceptors, which unmanned strike mass changes little, while supremacy rests on mass-heavy SEAD and counter-air tasks, where attritable drones can replace manned sorties [S1]. This is why the offsets for CATS Warrior are put at 10% for denial and 22% for supremacy, and why the other three are set at 3–4% and 6%.

The limits of the method

The compounding assumption treats each multiplier as independent, though they are not: loyal wingmen need networks, and networks need AEW&C. If any link fails, as under heavy jamming, the offsets of the links downstream fail with it. That is why the risk-adjusted case matters more than the nominal one for planning.

CHAPTER 7 | FORCE MULTIPLIERS

What the multipliers are worth, one at a time

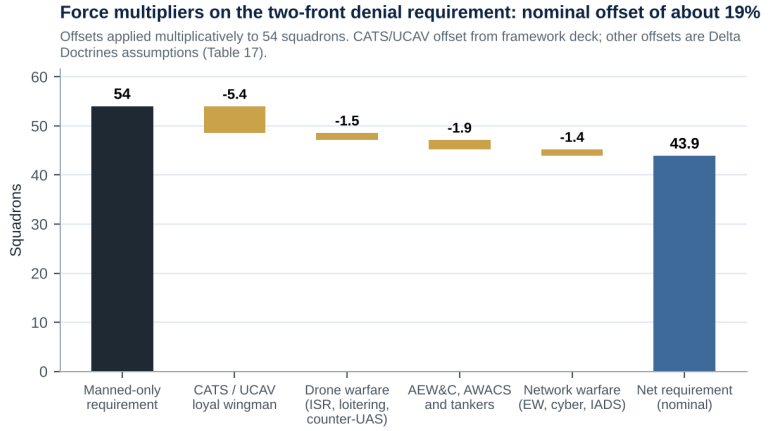


Figure 25. Force multipliers applied to the two-front denial requirement. Delta Doctrines model; CATS offset per deck [S1].

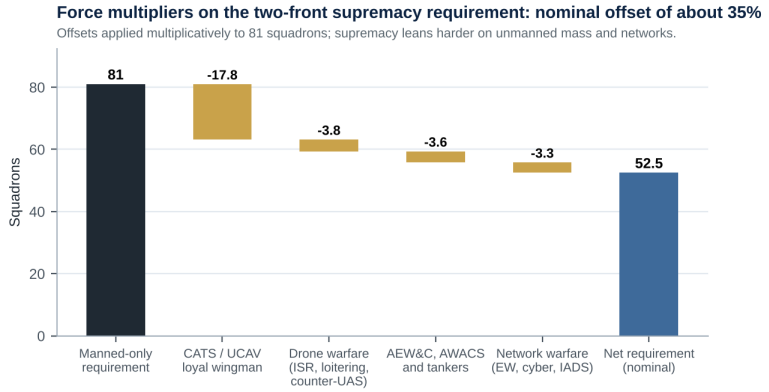


Figure 26. Force multipliers applied to the two-front supremacy requirement. Delta Doctrines model.

Multiplier	What it does	State of the programme	Main risk
CATS Warrior (HAL)	Attritable loyal wingman paired with a manned fighter; adds sensors, weapons and SEAD mass	Unveiled at Aero India 2025; a two-tonne prototype was reported to be aiming at a 2026 flight, with larger variants planned [S15]	Autonomy, datalink and survivability untested at scale
Drone warfare	Persistent ISR, loitering munitions, decoys and counter-UAS take over tasks from fighters	In use by both sides in May 2025 (reported); Indian industry growing	Counter-drone defences and adversary numbers
AEW&C and tankers	Longer detection range, better cueing, longer endurance	Netra Mk1A: six approved; Netra Mk2 on A321 planned; A-50EI (3) and IL-78 (6) in service [S16]	Few airframes; each loss is a large hole
Network warfare	Links sensors, shooters and air defence; electronic attack degrades adversary kill chains	Integrated Air Command and Control System operational; EW capability grows	Adversary jamming; cyber vulnerabilities

Table 44. Programme status of the four multipliers. Evidence status per source tags; Indian fleet figures are public record.

Taken one at a time, the squadron-equivalents saved in the two-front denial case are 5.4 for CATS, 1.5 for drone warfare, 1.9 for AEW&C and 1.3 for networks, a total of 10.1 or 18.7% of 54. In the supremacy case the corresponding saving is 17.8 for CATS and about 10.7 across the other three, 28.5 or 35.2% of 81. CATS Warrior alone is more than half of the denial offset and about 62% of the supremacy offset, which makes it the multiplier to watch.

> **ANALYST JUDGEMENT**
> AEW&C and tankers are the multiplier India can buy fastest and with least technical risk, but the offset is small because the fleet is already in place at a small scale. CATS Warrior is the multiplier with the largest upside and the largest uncertainty.

CHAPTER 7 | FORCE MULTIPLIERS

The revised requirement: multipliers narrow the gap, they do not close it

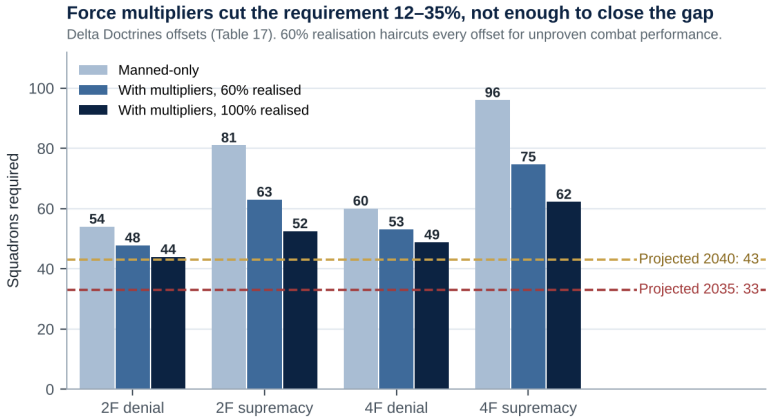


Figure 27. Requirement with and without force multipliers against projected 2035 and 2040 strength. Delta Doctrines model.

Scenario	Manned-only	CATS only (deck)	All four, 60% realised	All four, 100% realised	Base fleet 2035	Gap 2035 (60%)	Gap 2040 (60%)
2F denial	54	49	48	44	33.0	15	5
2F supremacy	81	63	63	52	33.0	30	20
4F denial	60	54	53	49	33.0	20	10
4F supremacy	96	75	75	62	33.0	42	32

Table 45. Requirement after force multipliers, in squadrons. CATS-only column is the deck's own result [S1]; other columns are Delta Doctrines model. 2040 fleet is 43.0 squadron-equivalents.

What the table says

Two-front denial comes within reach by 2040. At 60% realisation the requirement falls to 48 squadrons and the base-case fleet reaches 43, leaving a gap of 5. On the optimistic pipeline (46.6 in 2040) the gap is about 1 squadron. **Four-front denial is within about 10 squadrons** in 2040 on the base case. **Supremacy remains out of reach.** Even at full realisation, two-front supremacy needs 52 squadrons and four-front supremacy 62, both above any fleet the pipeline produces by 2040.

The lesson from combining pipeline and multipliers

The two curves behave differently over time. The multipliers reduce the requirement on a schedule set by their own development, which is largely after 2030, while the manned pipeline raises the fleet on a schedule set by retirements and deliveries. The 2026–2032 window therefore sees almost none of the benefit of either, and has to be met with the fleet India has and with multipliers that exist now: AEW&C, tankers, networking and drones already in service or production.

Priority for the 2026–2032 window	Why	Squadron-equivalent value (judgement)
Add tankers and AEW&C	Available now; multiply every squadron	1.1–1.9 (2F denial)
Mass-produce loitering munitions and counter-UAS	Industrial base exists; fast to buy	0.9–1.5
Harden networks and datalinks	Protects the other multipliers	0.8–1.4, and protects the rest
Accelerate CATS Warrior to squadron service	Largest offset, but not before 2030	3.2–5.4 (denial); 10.7–17.8 (supremacy), if proven

Table 46. Priorities for the near-term window. Delta Doctrines judgement.

> FINDING
>
> Force multipliers cut the requirement by 12–35% depending on scenario and realisation. They make two-front denial plausible by 2040 and leave supremacy outside the planned force. The next decade has to be won with the force that exists.

CHAPTER 8 | CONCLUSION

Conclusion: the number to plan for, and the order of decisions

This paper set out to turn the Indian Air Force's sanctioned 42 squadrons into the output of a calculation, and to test it against the force India actually has and is likely to build. Five conclusions follow.

- **The sanction is a legacy number.** It descends from the 1963 Tata Committee and a budget compromise; it was not derived from a force-ratio calculation [S1]. The IAF has 29 squadrons today.
- **All four scenarios need more than 42.** The formula gives 54, 81, 60 and 96 squadrons. A Monte Carlo of 200,000 campaigns puts 10th-to-90th percentile ranges at 47–64, 69–97, 53–70 and 83–114, and gives 42 squadrons about a 1% chance in the least demanding scenario and none in the others.
- **China's deployment ratio decides the answer.** Moving it from 16% to 25% adds 14 squadrons to the two-front denial requirement. Reliable estimates of the PLAAF's commitment against India are worth more than any other single input.
- **The pipeline replaces numbers, not the mix, and it is back-loaded.** On our base case the fleet is 30 squadron-equivalents in 2030, 33 in 2035 and 43 in 2040, with the medium tier thinnest in 2035. The net gaps in 2040 are 11 to 53 squadrons.
- **Force multipliers shift the gap but do not close it.** They cut the requirement by 12–35%, which makes two-front denial plausible near 2040 and leaves supremacy outside the force the pipeline delivers.

Scenario	Requirement	Base 2035	Base 2040	After multipliers (60%)	Verdict
2F denial	54 (47–64)	33	43	48	Within 5 squadrons in 2040; about 1 on the optimistic pipeline
2F supremacy	81 (69–97)	33	43	63	Not reachable; plan theatre by theatre
4F denial	60 (53–70)	33	43	53	Within 10 squadrons in 2040; needs sequencing
4F supremacy	96 (83–114)	33	43	75	Not an attainable force target

Table 47. Summary of the four scenarios.

What we recommend

Decision	Timing	Why
Sign the 114 Rafale contract and fix the delivery rate	2027	Largest single lever on the 2031–35 medium-tier gap
Secure F404 and F414 engine supply for Tejas Mk1A and Mk2	2026–27	Engine deliveries are the cap on light-tier growth
Manage retirements: keep Jaguar and MiG-29 squadrons only where a squadron would otherwise lapse	2027–31	Retirements peak at about 28 a year in 2031–34
Fund AEW&C, tankers, drones and networks as part of the squadron count	2026–30	Cheapest, fastest multipliers
Publish the confidence level the force is built for	2027	At 54 squadrons confidence is 48%; at 65, 93%

Table 48. Decisions in order.

FINAL JUDGEMENT

India should plan for two-front air denial, which needs about 54 squadrons on the central estimate and about 65 for 93% confidence; aim to reach it near 2040 using the pipeline and force multipliers together; and treat supremacy as a theatre-by-theatre goal supported by unmanned mass. The sanctioned 42 is not the right target. It is a waypoint that the base case reaches in 2040, which is 14 years from now.

APPENDIX

Source register, method and limitations

Tag	Source
S1	Delta Doctrines, IAF Squadron Strength Framework (podcast briefing deck; illustrative open-source model), formula, coefficients, history, UCAV offsets
S2	Wikipedia, List of active Indian military aircraft: current fleet counts
S3	Ajai Shukla, Business Standard (October 2022): 2022-23 to 2035-36 squadron plan; IAF chief's statement on 42 squadrons
S4	GlobalSecurity.org, Indian Air Force: 2024 squadron count
S5	Vajiram and Ravi, 'IAF Restructures Fighter Fleet After MiG-21 Retirement' (Sep 2025): vajiramandravi.com
S6	idrw.org: reporting on squadron figures and the IAF (June 2026); PAF assessment (2025)
S7	The Week, 14 Sep 2026 (MoD document on Tejas Mk1A contract dates); HAL chairman interview, The Week, 24 Jun 2025: theweek.in
S8	GE Aerospace F404 delivery reports: newkerala.com, telanganatoday.com, raksha-anirveda.com; 113-engine agreement per aviacionline.com
S9	Defence Secretary statement, 27 Sep 2026, on Tejas Mk2 and AMCA induction and first-flight targets (as reported)
S10	Defence Acquisition Council clearance of 114 Rafale, 12 Feb 2026: theaviationist.com; airforce-technology.com; wionews.com
S11	PLAAF/PLANAF type counts via EurAsian Times and Wikipedia (listed frontline types)
S12	PAF type counts: 2025 South Asia assessment via idrw.org
S13	Turkey F-16 fleet: public-record estimate (approximately 240); not independently verified
S14	Bangladesh J-10CE talks: theweek.in (Oct 2025), tbsnews.net, idrw.org, tribune.com.pk (Oct 2026); unverified, no contract found
S15	HAL CATS Warrior: edrmagazine.eu (Aero India 2025); idrw.org reports on prototype and larger variants
S16	AEW&C: airdatanews.com (Netra Mk1A), tribuneindia.com, idsa.in, drishtiias.com (Netra clearance, Jun 2026); theprint.in; Wikipedia (Netra Mk2)
S17	Tribune India, explainer on the age profile of the IAF fleet
S18	IAF chief's statement on Pakistani aircraft losses, 3 Oct 2025 (as reported)
S19	Chief of Defence Staff's remarks on aircraft losses, 31 May 2025 (as reported)
S20	Scroll.in, 'MiG-21 retirement a reminder about slacking defence procurement': scroll.in
S21	Su-30MKI additional order and 'Super-30' upgrade: as reported in open sources and S2

Method and limitations

- **Inputs.** The base fleet sizes, deployment ratios, reserve and attrition factors and supremacy factors are the framework deck's illustrative values [S1]; ranges for the Monte Carlo are our own. Nothing here is classified.
- **Reconciliation.** The deck uses 31 squadrons for current strength, a shortfall of 23 for two-front denial; we use 29 (after the MiG-21 retirement), a shortfall of 25. PAF listed types sum to about 390 against the deck's 450; China's listed types sum to 1,209 against 2,000. We keep the deck's numbers for the headline and test the alternatives in sensitivity.
- **Pipeline.** Delivery cases are Delta Doctrines assumptions around announced contracts, capacity and first-flight dates; they are not forecasts by HAL or the Air Force. Retirement dates for Jaguar, MiG-29 and Mirage 2000 are spread evenly over the ranges in [S3].
- **Judgement items.** Quality weights, force-multiplier offsets other than CATS, the supremacy split and the class gaps are judgement and are labelled where used.
- **Unverified.** Turkey's F-16 count and Bangladesh's J-10CE purchase are reported but not confirmed; the J-20 count and the 114-Rafale deal terms are as reported at the date of the source.