Civil/Military Cooperation

Prashant Sanglikar
Asst Director – Safety & Flight OPS, IATA

IATA: Trade Association of Airlines

- 260 Member Airlines
- Representing 83% of scheduled global air transport
- Members in India: Air India, Jet Airways, Jet Lite

IATA's Mission:

- To represent, lead and serve the airline industry
- Represent airlines' interests to governments & international organizations
- Assist the airlines in developing solutions to the issues affecting efficient operations

Civil/Military Cooperation

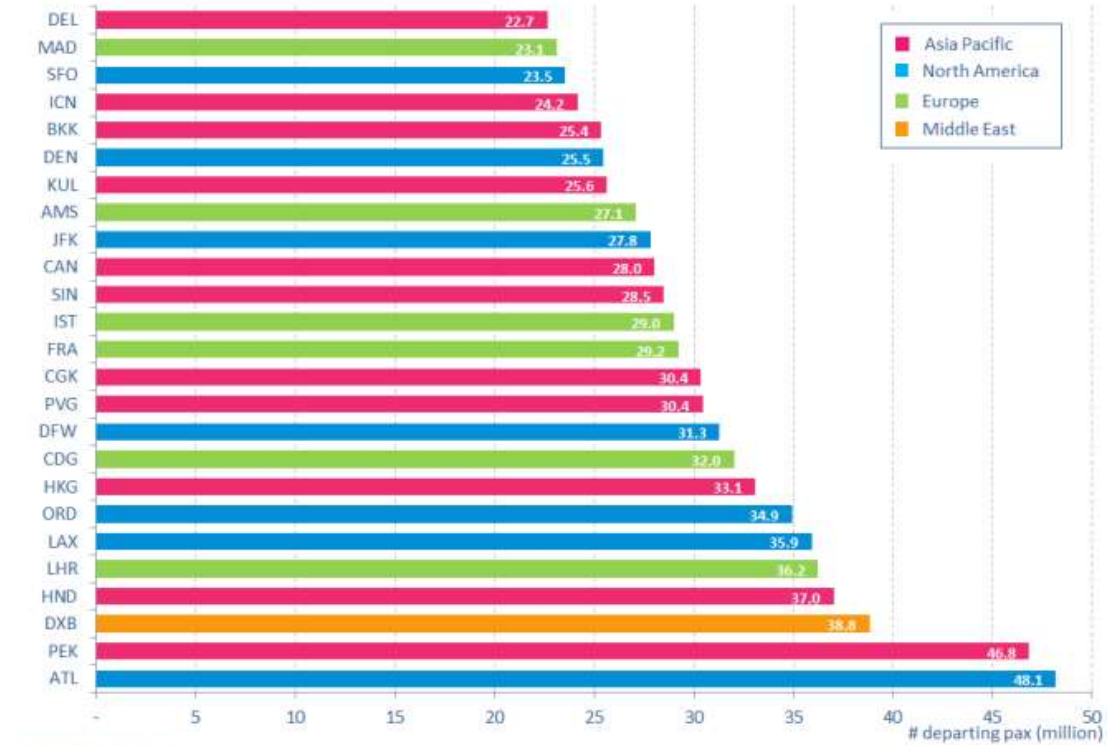
- Need Statement, IATA Growth predictions, Testimonies
- Lessons learned in other growing Aviation markets, impacts
- Strategy for decade ahead for Indian Sub-Continent
- Flexible Use of Aviation Infrastructure
- Bridging Gaps: Issues and best practices
- Rocket launches
- User Expectations: Low Hanging Fruits (Discussions)

Need Statement, IATA Growth Predictions and Testimonies

AVIATION'S CG : EASTWARD SHIEFT

01 APRIL 2016

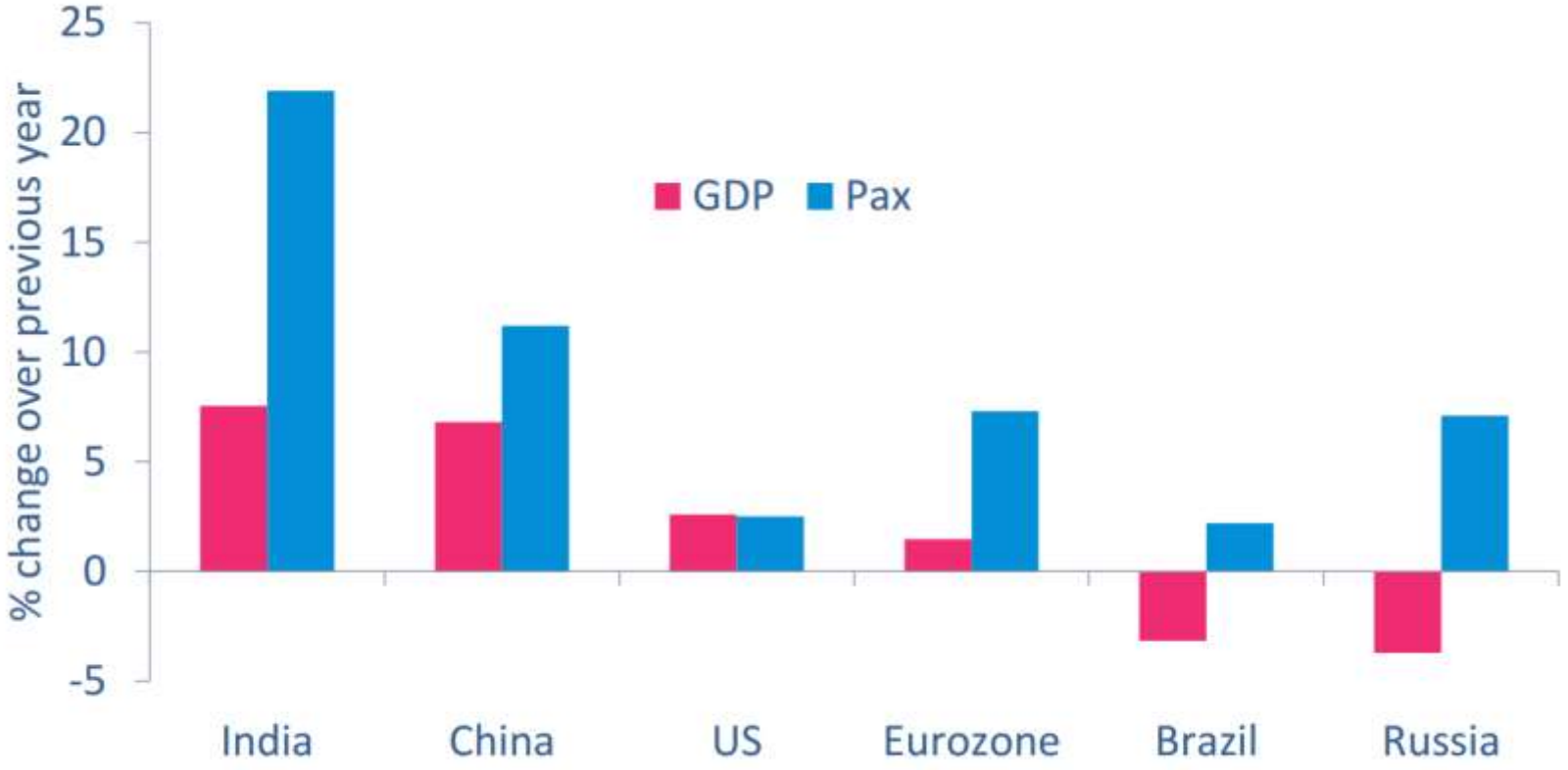
DEPARTING PASSENGERS – 2015 AIRPORT RANKINGS



Source: IATA PaxIS

↗ **Biggest mover is shared by Delhi and Shanghai, both have risen 9 places to #25 and #11, respectively.**

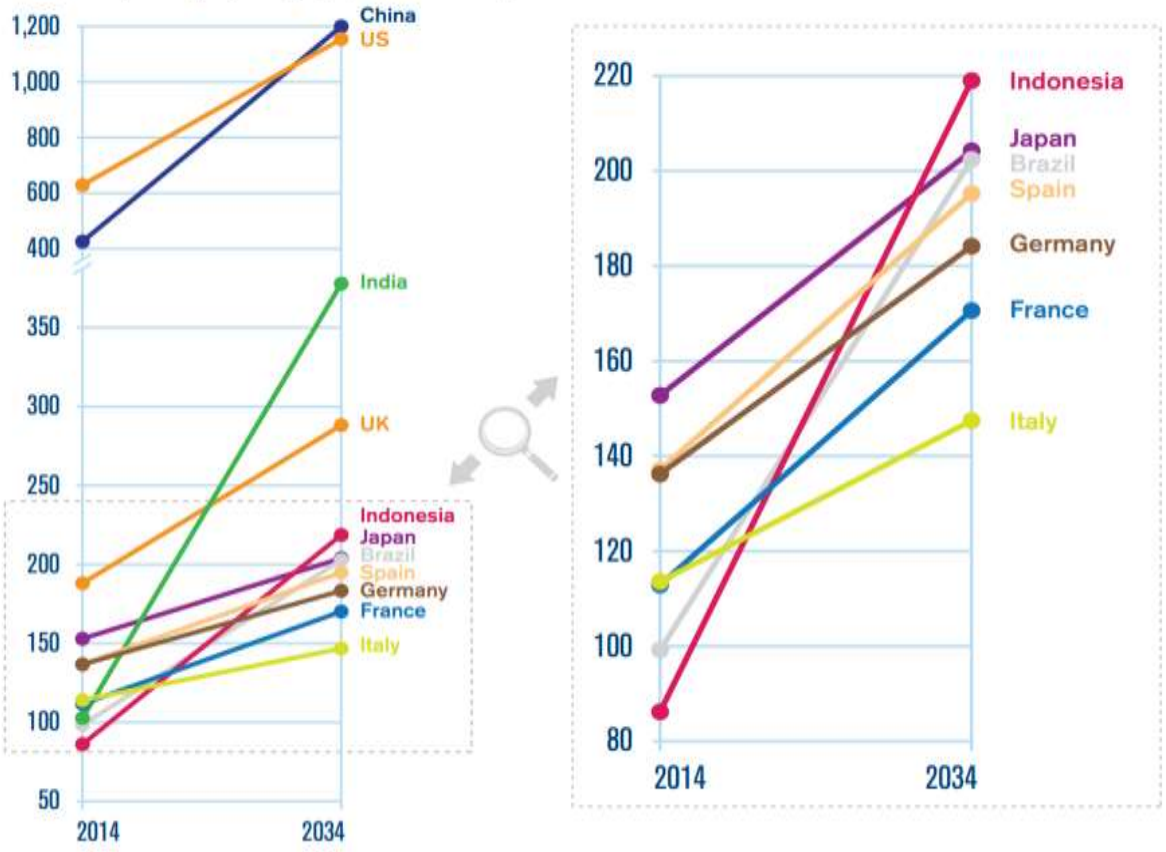
Economic and Passenger growth in 2015



Source: Datastream, IATA Statistics

Top Ten Passenger Markets

Million O-D passenger journeys (to, from and within)



INDIA

- India will displace the United Kingdom as the third-largest market in 2026,

Lessons Learned in other Growing Aviation Markets

Lessons from Growing Aviation Markets

- World's Busiest airports are able to maintain OTP ranking,
- By and large in ASPAC : No secret that delays are a major issue,
  - For airlines hub and spoke systems the enormous costs of delays are a major concern.
  - For passengers they are a major frustration.
  - For the economy they are a drain on productivity due to wasted time, missed meetings and trips foregone.
- In Adverse Weather performance drops exponentially,
- Optimum utilization of Airspace is a Key factor

Strategy for the decade ahead in Indian Sub-Continent

Five pillars of IATA's BOB-AS-ICO Roadmap 2016-2021

LOCAL OWNERSHIP WITH COLLABORATIVE DEVELOPMENTAL APPROACH

Safety	Schedules Integrity & Network Connectivity	Enhancing Airspace Utilization	Infrastructure Development	Regulatory Process

Enhancing Airspace Utilisation

- ATM Services delivery, Performance
- PBN development and ATS route network review

- Predictable and Consistent ATC Service delivery
- Flexible Use of Airspace
- Efficiently managing Adverse Weather Ops
- Developing Allies for seamless ATM
- ATS route network review
- PBN (Enroute, TMA, APCH)
- Higher FL UPR implementation

Infrastructure Development

- **Pace of Infrastructure development complementing Growth aspirations of Industry:**

  - **Enhancing connectivity across India to the World**
  - **Collaborative approach for Infra developments involving Airports, Airlines, ATM and Ground handling agencies.**
  - **Flexible Use of Aviation Infrastructure: Availability of Mil Airfields as plannable destination alternates.**

Bridging Gaps : Issues and Best Practices

Civilian and Military cooperation

Partnerships for Operational Safety & Efficiency enhancement:

- **Flexible Use of Aviation Infrastructure:**
  - **Data Driven Pro Active approach**
  - **Effective Diversion Management**
  - **Situation Assessment & Decision**
- **Airspace Capacity Enhancement:**
  - **More efficient use of existing capacity**
  - **Process flexibility**
  - **Improvement in predictability**
  - **Adverse Weather Operations**

Destination Alternates

- Statutory Requirement,
- Suitable but Distant Alternates

- Near by Alternates: Mil Airfields
  - Aeronautical DATA??
  - Infra Downgraded?? (RFF)
  - Within City Alternates
- Success story begins: Nasik-Ozar

Flexible Use of Aviation Infrastructure

- **SAFETY Enhancement**
  - **Single RWY airports,**
  - **Airport demand/Capacity balancing,**
- **Efficient Diversion Management**
- **Situation Assessment & Decision**

- Land at the Next Suitable Airport

- Access Seriousness & consider selection of a suitable airport

Flexible Use of Aviation Infrastructure

- **OPS Efficiency Enhancement:**

DSTN	ALT	ALT FUEL (Kg)	
		B747-400	B777-300
Mumbai	Ahmadabad	9800	6700
	Pune	4500	3100
	Nasik- Ozar	6200	4300

Δ Fuel for Long haul flights ≈ 300Kg / 1000Kg

- 50% Less ALT FUEL ⇨ Less Δ Fuel & CO2 Emissions
- Less ALT Fuel, Δ Fuel ⇨ More Payload ⇨ Increase Revenue
- Reduce disruption to passengers

Indian Subcontinent @ gateway for ASPAC, MENA, AFI

India OPS	Avg Share
Dom (Arr + Dep)	46%
Intl (Arr + Dep)	22%
Intl Overflying	31%

Airspace constraints:

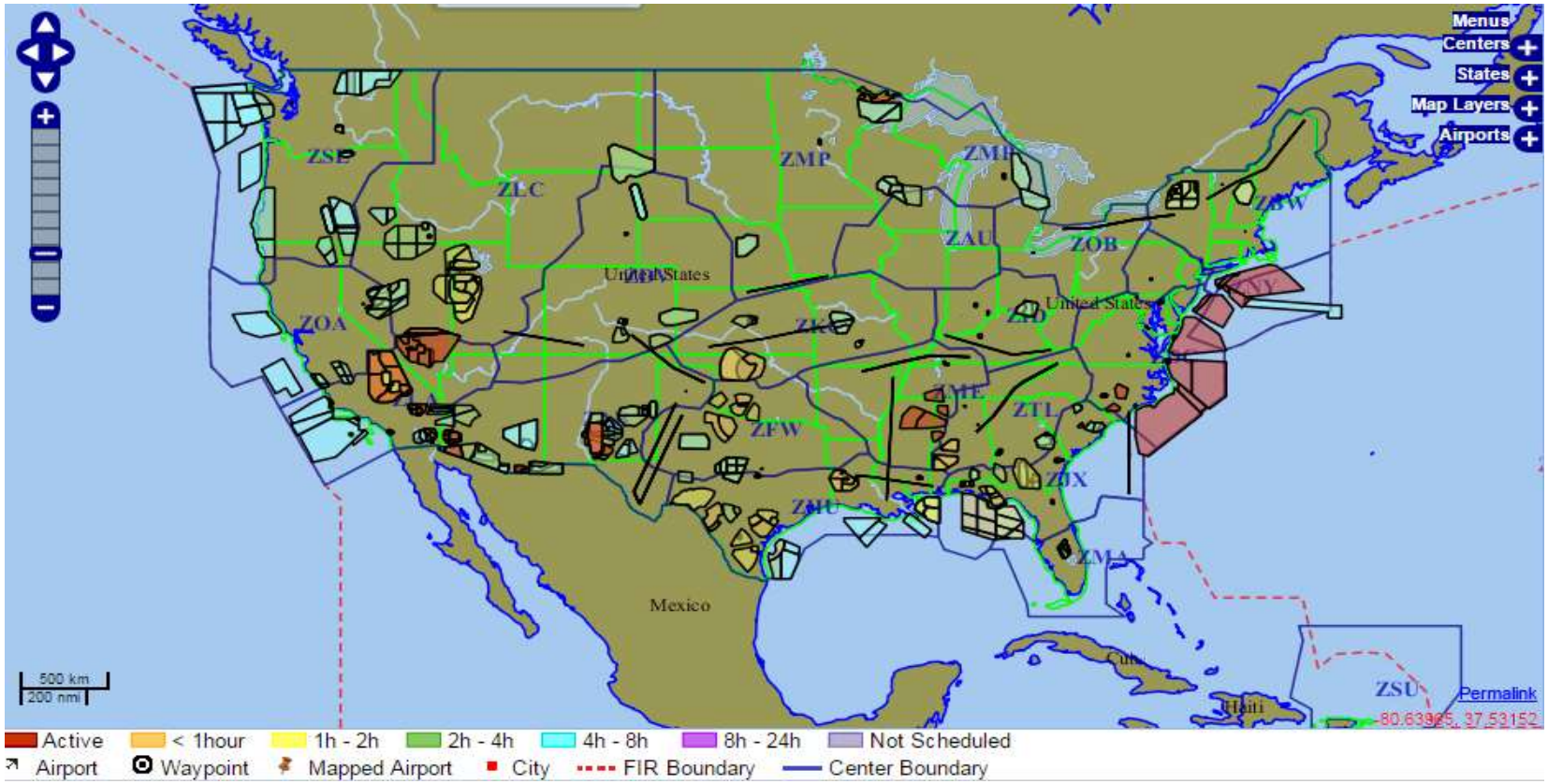
- Large Airspace permanently reserved for Mil,
- Restricted usage of “W” routes for Intl flights,
- Southern Indian airports not connected to Northern Intl AWY network,

More efficient use of existing capacity

Airspace constraints:

- Crossing Air Traffic Flows (Overflying East – West flow, DOM North South Flow),
- Bottlenecks due to Limited Entry/Exit points,
- Limited Airway Network and FL availability over Afghanistan and neighboring FIRs,
- Demand growth will continue……
- Need to balance it by Capacity enhancement ….
  - **Performance based Navigation (PBN)**
- Airspace ???

Airspace: Process flexibility

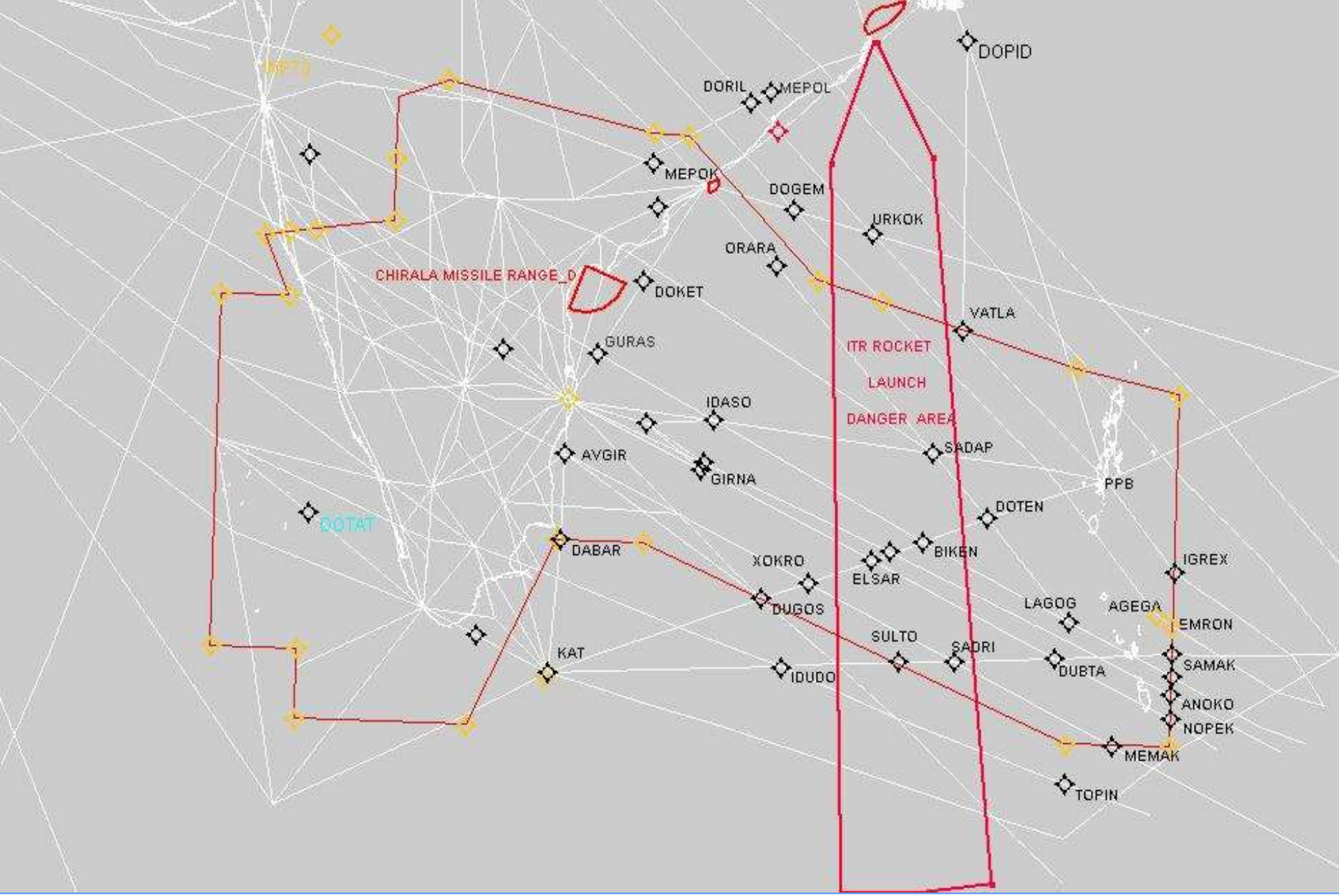


Improving predictability

Predictable	Airspace Availability / Restrictions for / due to
Time Table basis	↗ **Seasonal Adverse Weather Operations Plan,** ↗ **Ceremonial Fly Past and practice sessions,** ↗ **Major Mil Exercises.**
AIRAC cycle basis	↗ **Airspace Closures for Firing practice,** ↗ **Routine Mil Exercises,**
72 Hrs Advance Notice	↗ **Routine Practice.**
Short Notice	↗ **Dynamic enroute Wx**

Large Airspace Closures for Missile testing and Space launches


Bahrain
Qatar
Doha
Riyadh
Saudi Arabia
Abu Dhabi
United Arab Emirates
Gulf of Oman
Muscat
Oman
Yemen
Eritrea
Asmara
Djibouti
Gulf of Aden
Addis Ababa
Ethiopia
Somalia
Mogadishu
Kenya
Nairobi
Arabian Sea
India
Sri Lanka
Colombo
Laccadive Sea
Male'
© 2014 ORION-ME
© 2014 Google
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
US Dept of State Geographer
Google earth
Imagery Date: 4/10/2013 14°05'58.29" N 62°12'06.23" E elev -13450 ft eye alt 2518.40 mi


DOPID
DORIL
MEPOL
MEPOK
DOGEM
URKOK
ORARA
CHIRALA MISSILE RANGE_D
DOKET
VATLA
GURAS
ITR ROCKET
LAUNCH
DANGER AREA
IDASO
AVGIR
GIRNA
SADAP
PPB
DOTEN
GOTAT
DABAR
XOKRO
BIKEN
IGREX
ELSAR
DUGOS
LAGOG
AGEGA
EMRON
SULTO
SADRI
KAT
IDUDO
DUBTA
SAMAK
ANOKO
NOPEK
MEMAK
TOPIN

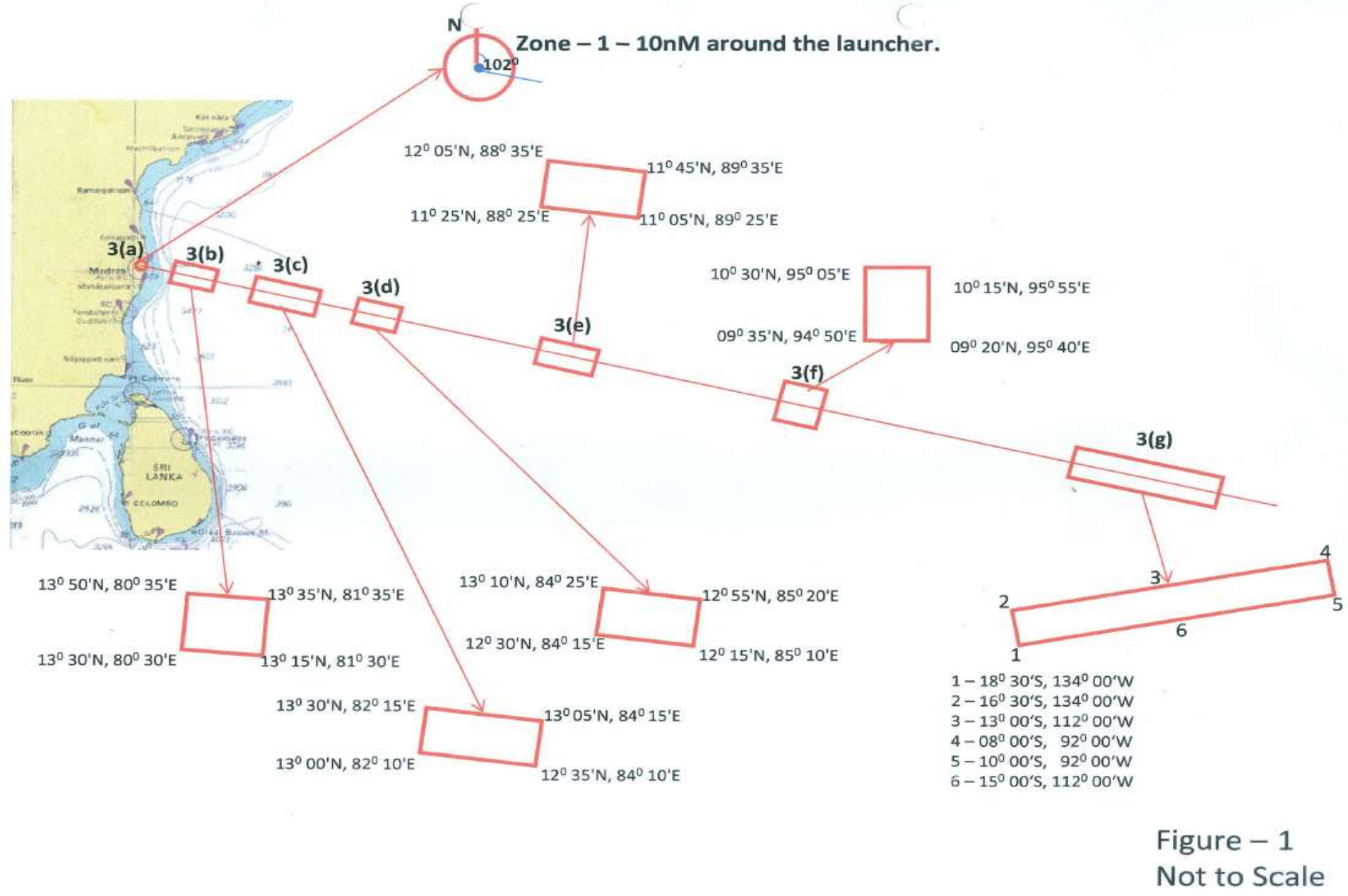


Figure – 1
Not to Scale

Large Airspace Closures for Missile testing and Space launches

- Impact on airlines:
  - Flight schedules;
  - Network Operations (i.e. flight connections);
  - Overflying clearances (obtain necessary overflying clearances from additional countries that would be overflown for alternate routes avoiding the danger areas).
- Mitigation: Advance intimation and timely co-ordination

Large Airspace Closures for Missile testing and Space launches

- Affects large portions of airspace across different FIRs,
- Launch Windows: Typically a launch gets over within a window of 30 minutes. But airspace is usually closed by NOTAM for four to eight hours,
- Launch Timing: The launch timing windows need to be set outside busy traffic hours,
- Launch Cancellations: Information about launch cancellations on specific days may not get disseminated in time,
- Opening of airspace post launch: Frequently, NOTAMs are not cancelled immediately by all affected FIRs,
- NOTAMs to be issues with appropriate Series and Codes.

Large Airspace Closures for Missile testing and Space launches

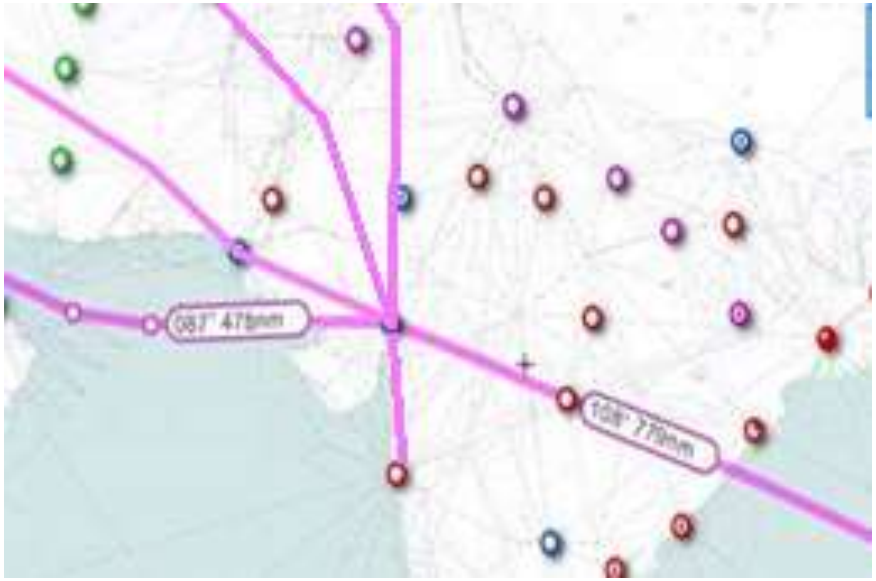
- Each launch means additional cost to airlines due to:
  - Cost of additional airborne time (fuel burn, maintenance, Crew etc.) for flying longer alternate routes;
  - Cost of delays (disturbance to flight schedules and network operations, missing connections, passenger hotel accommodation etc.);
    - IATA has reports from member airlines that these costs can exceed USD250,000 for each launch.

User Expectations :
Let’s Identify Low hanging fruits

Large Airspace Closures for Missile testing and Space launches

- Launch timings: Set up in co-ordination with ATC, ensuring minimal impact on aircraft movement,
- Launch Window: Curtailing it to minimum required,
- Improved Co-ordination: The impact of large airspace closures can be reduced by enhancing co-ordination among the stakeholders,
- Provide Update: Consider Issuing NOTAM for beginning of count down and estimated Lift Off, estimated Launch Over, Flights expected to operate beyond launch over estimate can flight plan normal routes?
- Immediately withdrawal of NOTAM as soon as the launch gets over,

Flexible Use of Airspace



- BOB-AS-ICO Connectivity: RASKI – AAE- NNP – L301N
- Mumbai – North America, Europe: BBB-AAE-VIKIT/TIGER/GUGAL
- Delhi – Europe (Day Time): BUTOP – GUGAL
- Delhi – Kolkata FIRs: M875, L509 Day time CDR2
- CDR2 routes in Kalaikunda airspace: During Rocket launches

Plannable Destination Alternates

- Agra Airbase as an alternate for IGI Delhi airport,
- Pune Airbase base as an alternate for CSI Mumbai airport,
- Navy airbases at Arakkonam and Cochin as alternates for Chennai and Cochin civil airports,
- HAL Bangalore as an alternate for Bangalore civil airport,

Air Defense Clearance (ADC)

3. All flights shall obtain Air Defense Clearance before entering ADIZ from respective FIC ten minutes prior to entering Indian Airspace.

- COMM Coverage issues for seeking Clearance prior entering Indian FIRs,
- DEP ADC process improved for Scheduled flights, but still issues for Non Scheduled operators, Charter and Ferry flights,
- Entire Data is shared by Civil ATC to Mil; time to review these requirements?

- Is ADC required anymore?
- Can we relieve airlines from this process??

Mumbai Airport

COLLABORATIVE DECISION MAKING

Welcome to ACDM Mumbai

Refresh

TSAT for Departures

Displayed Data captured at 2016-05-12 12:09 Z

Show 50 entries

Search:

Callsign	Dest	SOBT	EOBT	Rev EOBT	Bay	TOBT	ADC	TSAT
AIC094	VOMM	12:45	12:45		V18R	12:35	P732	13:18
SEJ415	VOBL	12:35	12:35		A5	12:25	P711	13:12
JAI252	VCBI	12:35	12:35		V8L	12:25	P885	13:11
AIC658	VIDP	12:30	12:30		V31R	12:20	P710	13:09
JAI311	VIDP	12:30	12:30		V21R	12:20	P709	13:08
JAI572	OKBK	12:25	12:25		V13	12:15	P904	13:02
IGO243	VAAH	12:25	12:25		88	12:15	P708	13:00
JAI461	VOMM	12:20	12:20		V20R	12:10	P706	12:55

Efforts for “PERFECT FLIGHT”

from vision to reality