

Sanction letter and Project Report →

M/A)
MID/REP
M(P/AK)
M(PPP)
M(C)
M(R)
CUM (Road Safety)
17/10



1/18

MOST IMMEDIATE
TIME BOUND

Government of India
Ministry of Road Transport & Highways
(Planning Zone)

Transport Bhawan
1 Parliament Street,
New Delhi

No.NH-15017/79/2015-P&M

Dated, 18th October, 2016

To,
The Chairman,
NHA I,
G-5&6, Sector-10, Dwarka,
New Delhi

Subject: - Emergency landing facility on National Highways - Reg.

Sir,

Please find enclosed herewith a copy of D.O. letter dated 23.09.2016 from Hon'ble Minister of Defence's addressed to Hon'ble Minister (RT&H) on above mentioned subject along with details of stretches of Highways identified for development to facilitate Aircraft operations.

2. Considering the emphasis being assigned towards development of these emergency facilities on NHs, it is requested that the concerned Regional Officers of NHA I may be immediately instructed to urgently interact with the concerned Field Stations In-charge of Air Force and suggest tentatively 2-3 specific locations within their jurisdiction for each of these identified stretches. Further, the ROs of NHA I may also make efforts to urgently prepare detailed specific location-wise layouts, drawings and designs, etc., in consultation with concerned Field Air Stations In-charge. In this context, a copy of letter No. Air HQ/S-99153/5/AWSC, dated 10.08.2015 along with enclosure thereof is enclosed herewith for ready reference.

3. Secretary (RT&H) has desired to hold a meeting tentatively in next 15-20 days with the Officers and concerned ROs of NHA I, Air Force and MoD. Accordingly, it is requested that necessary instructions may be issued to all concerned for urgent needful action so as to be in readiness with the above mentioned information well before the meeting is held.

Enclosure: as above

Yours faithfully,

(Sudip Chaudhury)
Chief Engineer (Planning)

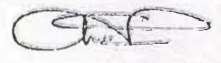
CGM (Road)
CGM (ASC)
May take n
a pt.
25/10/16
A circulate
copy of letter
& enclosure
to ROs &
Collect inputs
on Priority.
GM(T)/RSC#/AKS

2/18

Copy along with enclosures for information and necessary action to:-

- 1. The Defence Secretary, Ministry of Defence, New Delhi
- 2. The D(Air-I), Ministry of Defence, 363, Vayu Bhawan, New Delhi
- 3. The Gp Capt D Ops(AWSC), Dte Ops (AWSC), Room No. 592B(G/F), Air HQ (VB), New Delhi-110106

It is requested to consider giving necessary instructions to all concerned Field Air Stations In-charge of Air Force for providing necessary assistance.



(Sudip Chaudhury)
Chief Engineer (Planning)

3/18

8691



रक्षा मंत्री
भारत

MINISTER OF DEFENCE
INDIA

O/o Minister (RTH)
Diary No. 202302/16
Date 17/10/2016

23 September, 2016



Dear Shri Nitin Gadkari ji,

This has reference to your letter dated 15th June, 2016 regarding development of stretches on National Highways suitable for aircraft operations.

I had the matter examined by the Air Force authorities. Chief of the Air Staff has informed me that a detailed study had been carried out by them on the modalities of utilising Highways for aircraft operations during operational contingencies and natural calamities and stretches of Highways have also been identified for development to facilitate aircraft operations (*list enclosed*).

In order to follow up and give impetus to the proposal, there is a requirement for greater coordination between all the concerned agencies. An inter-ministerial coordination group of MoRTH, MoD and IAF officials can ensure that this strategic objective is successfully achieved. I therefore request you to issue necessary instructions in your Ministry in this regard.

With regards,

Yours sincerely,

Manohar

(Manohar Parrikar)

CB (PL)
V. Jay
Pl. set up
a meeting
with ROs
NHA I. AAF
Force.

SM
17/10

SANJAY MITRA
Secretary

Shri Nitin Gadkari
Minister of Road Transport and Highways
Transport Bhavan
New Delhi - 110001

SE(PL)
13/10/2016
Sany (RT+H)

Received on 17/11

Handwritten signatures and initials

4/18

Appendix
(Refers to para 2 of
Air HQ/S 99153/5/AWSC
dated 14 Jul 16)

HIGHWAYS SELECTED FOR DEVELOPMENT TO
FACILITATE AIRCRAFT OPERATIONS

1. Northern India. Stretches between Bijbehjara and Chinar Bagh
(in J&K area).

2. Western India. Stretches between:-

(a) Nachna and Ramgarh

✓(b) Phalodi and Jaisalmer

✓(c) Barmer and Jaisalmer

(d) Dwarka and Maliya

3. Central India. Stretches between:-

(a) Rampur and Kathgodam (under NHDP Phase-III)

(b) Lucknow and Varanasi Highway (one closer to Lucknow and the
other to Varanasi) (under NHDP Phase-IV)

(c) Bahraich and Nepalganj (under NHDP Phase-IV)

(d) Basti and Bhairawa (under NHDP Phase-IV)

(e) Delhi and Moradabad (under NHDP Phase-V)

4. Eastern India. Stretches between:-

(a) National Highway Development Project (NHDP Program)

(i) Kharagpur and Keonjhar

(ii) Jamshedpur and Balasore

(iii) Islampur to Kishanganj (NH-31)

(iv) Mohanbari to Tinsukiya

(b) Bharat Mala Scheme

(i) Digna and Chatarpur

4.

5/18

5. Southern India. Stretches between:-

(a) National Highway Development Project (Phase V).

(i) Vijayawada and Rajahmundry (closer to Vijayawada).

(b) Bharat Mala Scheme.

(i) Chennai and Pondicherry (closer to Pondicherry).

(ii) Kodikkarai and Ramanathapuram (closer to Ramanathapuram).

(iii) Bangalore-Chennai-Mumbai

(iv) Chennai to Kanyakumari.

(v) Tada to Chilakaluripet.

Note: Final stretches will be selected in consultation with Ministry of Road Transport, Highways and Shipping and after MoD clearance.

5.

S.O. 4(R)
RESTRICTED

8/18

(9)

Tele: 011-23013748
IP : 21115084

Dte of Ops (AWSC)
Room No. 592-B (G/F)
Air HQ (VB)
New Delhi-110 106


Air HQ/S 99153/5/AWSC

10 Aug 15

D (Air-I)
MoD

A PAPER ON
UTILISATION OF NATIONAL HIGHWAYS AS LANDING
STRIPS DURING EVENTUALITIES BY INDIAN AIR FORCE

1. Please refer meeting held with GOI, Ministry of Road Transport & Highways on 04 Aug 15 under the chairmanship of Secretary (RT & H) at 1000 hrs in Transport Bhawan, New Delhi.
2. A copy of 'Proposal on utilisation of National Highways as Landing Strips during eventualities by Indian Air Force' is enclosed, for your necessary action, please.


(HS Nival)
Gp Capt
D Ops (AWSC)

Appendix: As attached

Copy to:

Ministry of Road Transport & Highways
Transport Bhawan
1- Parliament Street

RESTRICTED

8

9/18

(2)

RESTRICTED

A PAPER ON UTILISATION OF NATIONAL HIGHWAYS
AS LANDING STRIPS DURING EVENTUALITIES BY INDIAN AIR FORCE

1. India has an extensive network of roads connecting remote areas of the country and across all types of terrains. The development of roads as key infrastructure has led to construction of high quality highways and expressways that could be utilised as runways along with some modifications and construction of limited additional infrastructure for operation of various types of aircraft during eventualities. The eventualities could be Natural Disasters, Humanitarian Relief, Emergency Landing of aircraft or requirements during war etc. It would be prudent to have these surfaces developed for dual use, which will save national resources and increase the nation's capability towards handling emergency situations.

AIM

2. The aim of the paper is to propose a model for developing suitable stretches of existing and planned national highways for use as landing strips by various types of aircraft during national emergencies and various contingencies.

OUTLINE

3. The paper discusses the factors under the following headings:-
- (a) Design considerations.
 - (b) Operational considerations.
 - (c) Command and control.
 - (d) Communication.
 - (e) Aerospace safety and Air Traffic Control aspects.
 - (f) Points for discussion with Ministry of Road Transport and Highways.

RESTRICTED

9.

10/18

RESTRICTED

2

- (g) Security.
- (j) Manpower and training requirements.
- (k) Management of supply chain.
- (l) Conclusion.

DESIGN CONSIDERATIONS

4. The primary factors that could be considered for ascertaining the suitability of any stretch of highway to be utilised as runway are length, cleared zone available, orientation, gradient and terrain. The requirements would have to be specified for fixed wing and rotary-wing aircraft separately. These factors are discussed below.

(a) Siting. The following factors need to be considered while identifying such linear stretches of highways/expressways: -

(i) Length. For fixed wing aircraft, a straight stretch of road more than 3000 m long would be required. However, linear stretches of 4-5 Km would be ideal to have cleared approach and take-off funnels (Laid down requirement: The funnel would be an arc of 10 degrees, \pm 5 degree either side of the road in which the height of vertical objects should not be more than 2.5% of the distance from each end of the designated stretch.) A proposed layout is placed as **Appendix 'A'**.

(ii) Width. A width of 45 - 48 m will be preferable for fixed wing aircraft. However, fighter aircraft can land even on suitable surfaces of width as little as 23 m. Additional 50 ft clearance on either side of road should be free from any obstruction.

(iii) Strength. The highway has to be able to bear the load of high speed landing/take off and operations of aircraft. The road should be capable of supporting operations of aircraft with all up weight of 40 Tonnes (Considering max all up weight of C-130 [16400 Lbs]).

RESTRICTED

10.

11/18

(2)

RESTRICTED

3

- (iv) Orientation. The orientation of the designated landing strip needs to cater for the surface wind conditions. Wind direction for the greater part of the year should be within ± 30 degree of the orientation of the road.
- (v) Gradient. Vertical gradient along the stretch should be less than 3.5% approx and across the stretch from centre line to either side (Camber) should be 1-2 % for fixed wing aircraft.
- (vi) Helipad Requirements. Helipads on the highways should have the dimensions of 30 m x 100 m for conduct of operations by Mi-8/Mi-17 class of aircraft. A miniature wind sock should also be installed to indicate wind direction and strength. There should also be a clear approach/take-off path at least on one side. The mean slope in any direction on the helipad should not exceed 3 per cent. The surface of the helipad should be resistant to the effects of rotor downwash and free of irregularities that would adversely affect the take-off or landing of helicopters. A proposed layout for helipad for Rotary-Wing aircraft is placed as Appendix 'B'.
- (b) Location. Highway portions would have to be chosen keeping in view the location of airfields within the same area, to accrue maximum operational benefits. They should be:-
 - (i) At a sufficient distance from hostile borders to prevent enemy interference but not too far away. A distance of 80-100 km could be considered wherever feasible.
 - (ii) Reasonably displaced from populated areas.

OPERATIONAL CONSIDERATIONS

- 6. Operating from highways is a contingency situation and hence, prolonged deployment of aircraft is not envisaged. However, during the requirement, the support system in terms of manpower, equipment and material would need to be positioned and may need to be kept for the entire duration. The support requirements should be minimal and as far as possible, temporary in nature.
- 7. Operations from these strips would have to be planned by day only. For night operations, suitable layout with the help of LED lights or portable lighting could be considered. Additional lighting arrangements would also need to be done for maintenance

12/18

RESTRICTED

4

and support activities. Security of assets on ground would also pose a challenge, which will have to be tied up with the civil agencies.

COMMAND AND CONTROL

8. Command and control structures for such deployments would be the responsibility of the Indian Air Force, in consultation with civil agencies.

COMMUNICATION

9. The communication systems for control of the aircraft will be positioned by the IAF and the civil agencies would also be involved for establishing other local communication links wherever feasible. Lay by would be required for positioning of vehicles carrying communication equipment.

SAFETY AND AIR TRAFFIC SERVICES ASPECTS

10. Foreign Objects and Bird Menace

(a) The surface would need to be checked for any foreign objects. This could be done by trained personnel from the civil administration under the supervision of IAF personnel.

(b) Bird watchers along with shooters would need to be deployed during activation.

(c) Preferably no garbage dump should exist within 10 km, along the approach or take-off funnel.

11. Obstructions

(a) These stretches should be free from obstructions like medians, signboards, trees, fences, sidewalls, high-tension cables, poles or any other construction.

RESTRICTED

12.

13/18

RESTRICTED

5

- (b) Approach and take-off funnel should also be devoid of obstructions.
- (c) Preferably the stretches should not have any underpasses, overpasses, culverts or bridges which do not confirm to load bearing strength.
- (d) There has to be fencing, catering for dog/cattle intrusion on either side, which should be collapsible outwards when crashed into (In case of any aircraft emergency), from the highway side.

12. Air Traffic Control Aspects

- (a) Mobile ATC vehicle with mobile electrical lighting system will be provisioned. A hard standing near the middle of the highway stretch needs to be made to establish this equipment.
- (b) Limited runway markings, distinct from road markings, will have to be made, and probably in yellow colour to avoid any confusion.
- (c) Mini Crash Fire Tender and mini Motorised Runway Sweepers would have to be positioned.
- (d) A hard standing for positioning of radar equipment, if required, may have to be constructed.

POINTS FOR DISCUSSION WITH
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS

13. The project would entail involvement of several agencies at the Central and State Govt levels.

- (a) A Memorandum of Understanding (MoU) between IAF and concerned Central/ State Govt agencies would need to be signed regarding issues pertaining to maintenance, operationalisation and control over these landing strips.
- (b) The concept could be part of the initial layout of a new highway project wherein the aspects brought out in the paper are included in the guiding parameters.

RESTRICTED

13

14/18

RESTRICTED

6

(c) Civil manpower could also be effectively utilised for various services after making them understand the IAF requirements.

(d) For activation, a core team would be required to be formed at the nearest IAF base, comprising one officer each from Operations, Maintenance and Administration to liaise with the following civil agencies:-

- (i) Highway Authority.
- (ii) District Administration including police.
- (iii) Fire Services Department.
- (iv) Health department for medical support.

SECURITY

14. Perimeter Security. The area would need to be secured by personnel from the local civil administration and a few IAF personnel. They may have to be provided with arms, to prevent sabotage or infiltration.

MANPOWER AND TRAINING REQUIREMENTS

15. Manpower Requirements. The manpower requirements will be worked out between IAF and the civil agencies.

16. Training Requirements. The Indian Air Force and the various agencies will be responsible for training their respective manpower.

MANAGEMENT OF SUPPLY CHAIN

17. The requirements of Supply Chain Management (SCM) were evaluated along with the infrastructure necessary for meeting these requirements. SCM essentially signifies the logistics support necessary to undertake operations in terms of Maintenance, Administration and HR requirements. These issues are discussed below.

RESTRICTED

14.

15/18

RESTRICTED

7

- (a) Proximity to Air Base. The nearest base would serve as the 'Home Base' to support operations at the site. The quality of road connectivity between the 'home base' and the designated location would govern the speed at which resources could be made available at the site.
- (b) Fuel Oil and Lubricants. Aviation fuel is the main ingredient to turn around any aircraft. Oil, lubricants and special additives (if any) would need to be supplied from the home base. These could be either pre-positioned or transported when the need arises.
- (c) Ground Equipment. This will be responsibility of the operating agency.
- (d) Storage Infrastructure. The requirement at the site would be for closed storage, covered storage and open storage. The equipment and stores could be pre-positioned or transported at the time of requirement.

CONCLUSION

18. Utilising stretches of roads/highways as landing strips needs to be considered from the viewpoint of availability of such linear stretches in the country, especially, in areas where established IAF bases are scarce. Availability of such sites could provide an option for aircraft to operate in case of national emergencies and various contingencies. The ongoing road projects and those under planning could be considered for such projects. This paper brings out only the general requirements for executing this task.

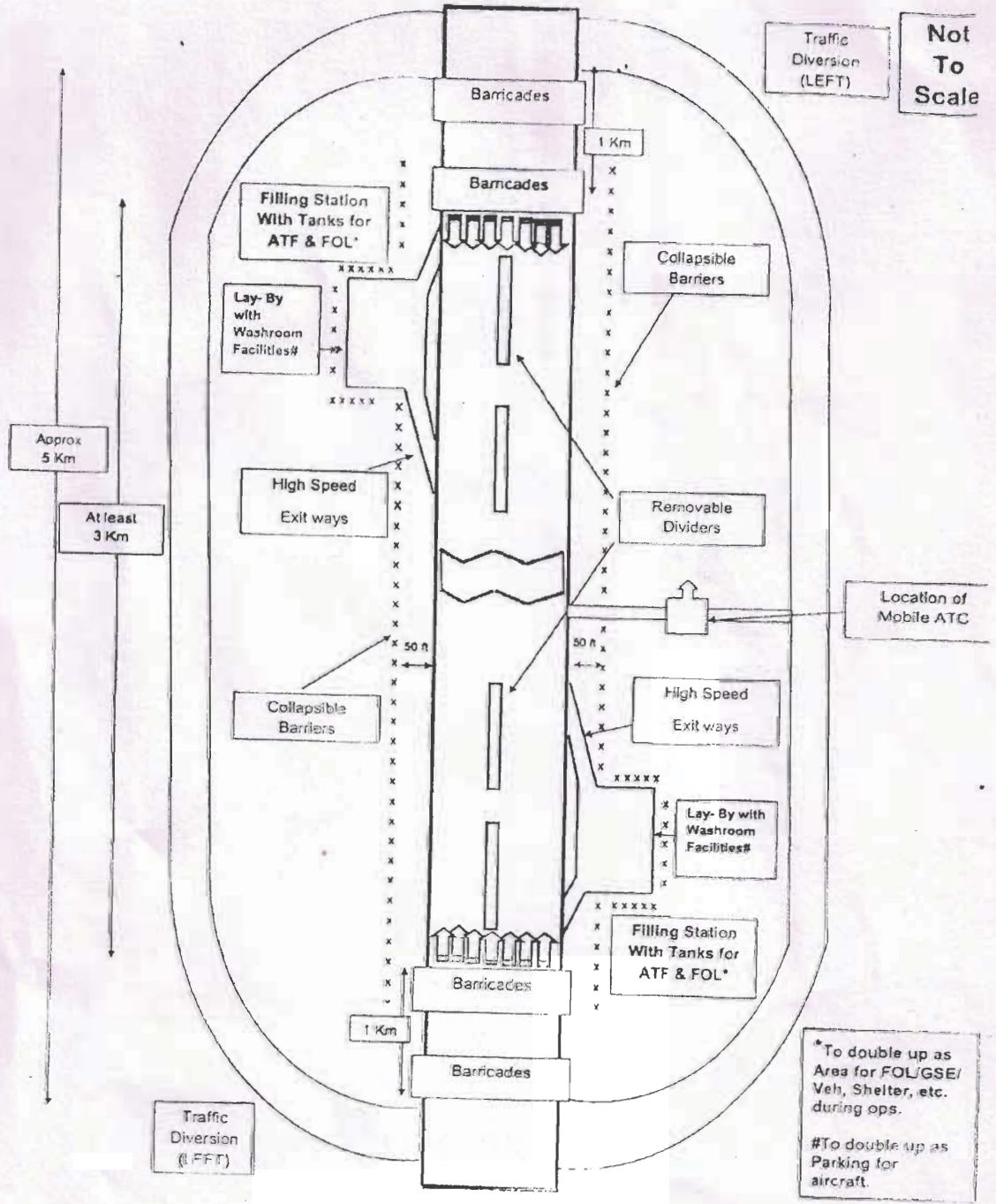
RESTRICTED

15.

17/18

Appendix A
(Refers Para 4 (a)(i))

SUGGESTED LAYOUT OF HIGHWAY AS RUNWAY



नितिन गडकरी
NITIN GADKARI



III
-57-
18/18
मंत्री
सड़क परिवहन, राजमार्ग
एवं पोत परिवहन
भारत सरकार
MINISTER OF ROAD TRANSPORT,
HIGHWAYS AND SHIPPING
GOVERNMENT OF INDIA

D.O. No. Secy/PS/2016

Dated: 15th June, 2016

11 84759/Secy
16/6
Dear Manoharji

During a recent review of the infrastructure sector targets, the PM has directed that the MoRTH and MoD should together develop a roadmap to provide stretches on NHs that are suitable for aircraft operations.

2. You may kindly consider setting up a Group to prepare locations deemed suitable for the requirements of your Ministry. We will be happy to associate ourselves with this effort.

3. The PM has desired that the roadmap should be developed by November, 2016.

With regards,

Yours sincerely,

(Nitin Gadkari)

Pl. keep.

16/6

Shri Manohar Parrikar
Hon'ble Minister of Defence,
Govt. of India,
South Block, New Delhi

CE (PL) /
SE (PL)

22/06/2016

Transport Bhawan, 1 Sansad Marg, New Delhi-110 001, Tel. : 23711252, 23710121 (O), 23719023 (F)
E-mail : nitn.gadkari@nic.in

Minister (RT&H)

letter issued
11/11/16

18.

परियोजना निदेशक/Project Director
भारतवायु पकई, बीकानेर/NHAI, PJI, Bikaner